



सत्यमेव जयते  
Government of Gujarat



# A Compilation of Problem Statements

## Azadi Ka Amrit Mahotsav Hackathon - 2022

Facilitating Young Minds to Innovate  
towards  
Building Aatmanirbhar Bharat

Under  
National Education Policy-2020

SSIP



i-Hub  
Innovation & Entrepreneurship Hub

Education Department (Higher & Technical), Government of Gujarat  
Gandhinagar

2022





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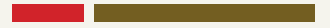
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“The young Indians will find a solution to any problem through innovation, research, design, development, and enterprise. Our young innovator shall never stop learning, questioning and solving. This novel problem shall not be the first nor the last problem; our innovators shall find a solution to make India Aatmanirbhar. Through the enthusiasm and spirit of our young innovators, our nation grows, and the planet prospers.”

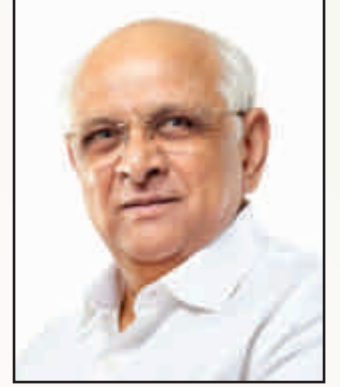
**Shri Narendra Modi**  
Prime Minister of India





## ભૂપેન્દ્રભાઈ પટેલ

મુખ્યમંત્રી, ગુજરાત રાજ્ય



### સંદેશ

ભારત દેશ આજે વિશ્વના ગણમાન્ય દેશોમાં પોતાનું સ્થાન ધરાવે છે અને ગુજરાત રાજ્યએ વિવિધ ક્ષેત્રમાં સફળતા હાંસલ કરી સમગ્ર રાષ્ટ્રમાં તેની આગવી ઓળખ ઊભી કરી છે. શિક્ષણની સાથે સાથે પોતાની આવડતને આધારે આગળ વધી, વિદ્યાર્થી આત્મનિર્ભર બને તે માટે સમયાનુસાર શિક્ષણનીતિમાં પણ અનેક પરિવર્તનો કરવામાં આવ્યાં છે. રાજ્યના શિક્ષણ વિભાગ દ્વારા વર્ષ ૨૦૨૨ થી ૨૦૨૭ સુધી અમલમાં મુકવામાં આવેલ સ્ટુડન્ટ સ્ટાર્ટઅપ એન્ડ ઈનોવેશન પોલિસી (SSIP 2.0) ને બહોળો પ્રતિસાદ મળી રહ્યો છે

સમગ્ર દેશમાં આઝાદીમાં અમૃત મહોત્સવની ભવ્ય ઉજવણી થઈ રહી છે ત્યારે, રાજ્યના શિક્ષણ વિભાગ દ્વારા SSIP 2.0 અંતર્ગત “આઝાદી કા અમૃત મહોત્સવ સ્ટાર્ટઅપ ઈનોવેશન ચેલેન્જ ૨૦૨૨” હેકેથોન સ્પર્ધાનું આયોજન આવકારદાયી છે.

MAGIC કનેક્ટ એટલે કે માર્કેટ, એકેડેમિઆ, ગવર્નમેન્ટ, ઈન્ડસ્ટ્રી, કમ્યુનિટીના વિચારને સાર્થક કરતી આ હેકેથોન સ્પર્ધાની સફળતા માટે આયોજકો તથા તમામ સ્પર્ધકોને હાર્દિક શુભેચ્છા પાઠવું છું.

(ભૂપેન્દ્રભાઈ પટેલ)



## જીતુભાઈ વાઘાણી

મંત્રી,  
શિક્ષણ (પ્રાથમિક, માધ્યમિક અને પ્રોટ)  
ઉચ્ચ અને ટેકનિકલ શિક્ષણ,  
વિજ્ઞાન અને પ્રોદ્યોગિકી



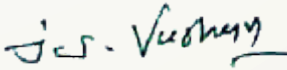
## સંદેશ

આપણા દીર્ઘદ્રષ્ટા માનનીય વડાપ્રધાન શ્રી નરેન્દ્રભાઈ મોદી અને આપણા માર્ગદર્શક શ્રી અમિતભાઈ શાહના નેતૃત્વ હેઠળ દેશમાં ઈનોવેશન અને ઉદ્યોગ સાહસિકતાને એક નવી દિશા અને દૃષ્ટિ મળી છે. ગુજરાતના શિક્ષણ વિભાગે માનનીય મુખ્યમંત્રી શ્રી ભૂપેન્દ્રભાઈ પટેલના સક્ષમ નેતૃત્વ હેઠળ રાજ્યના યુવાનોમાં ઈનોવેશન અને ઉદ્યોગ સાહસિકતાની સંસ્કૃતિ વિકસાવવા અનેક નવતર પગલાં ભર્યા છે અને તાજેતરમાં શિક્ષણ વિભાગે પાંચ વર્ષના સમયગાળા માટે સ્ટુડન્ટ સ્ટાર્ટ-અપ અને ઈનોવેશન પોલિસી (SSIP 2.0) રૂ. ૫૦૦ કરોડના બજેટ સાથે રજૂ કરી છે.

૨૦૧૭-૧૮, ૨૦૧૮-૧૯ અને ૨૦૧૯-૨૦ દરમિયાન યોજાયેલી હેકાથોન ઈવેન્ટ્સની અગાઉની આવૃત્તિઓને વિદ્યાર્થીઓ દ્વારા બહોળો પ્રતિસાદ મળ્યો છે. SSIP 2.0 ની જોગવાઈઓ હેઠળ, શિક્ષણ વિભાગે હેકાથોનની આગામી આવૃત્તિ રાજ્ય-સ્તરના કાર્યક્રમ તરીકે શરૂ કરી છે. સ્વતંત્રતાના ૭૫ માં વર્ષમાં જ્યારે ભારત “આઝાદી કા અમૃત મહોત્સવ” ની ઉજવણી કરી રહ્યું છે, ત્યારે હેકાથોનનું નામ “આઝાદી કા અમૃત મહોત્સવ હેકાથોન - ૨૦૨૨” રાખવામાં આવ્યું છે.

રાજ્યના ૧૦,૦૦૦ થી વધુ વિદ્યાર્થીઓ, સરકારી વિભાગો, સરકારી સંસ્થાઓ, ઉદ્યોગો અને અન્ય સંસ્થાઓના ૭૭૫ સમસ્યાઓના નિરાકરણ માટે આ ભવ્ય હેકાથોન સ્પર્ધામાં ભાગ લેશે તેવી અપેક્ષા છે.

આગામી “આઝાદી કા અમૃત મહોત્સવ હેકાથોન - ૨૦૨૨” ઈવેન્ટ માટે હું તમામ વિદ્યાર્થી સહભાગીઓને ભવ્ય સફળતાની શુભેચ્છા પાઠવું છું. મને ખૂબ વિશ્વાસ છે કે આ પુસ્તકમાં સામેલ સમસ્યાના નિવેદનોનો શ્રેષ્ઠ ઉકેલો મળશે જે સમાજ, ઉદ્યોગ, રાજ્ય અને દેશને ખુબ મદદરૂપ થશે.

  
(જીતુભાઈ વાઘાણી)





## ડો. કુબેરભાઈ ડીંડોર

રાજ્યકક્ષા મંત્રી,  
ઉચ્ચ અને તાંબ્રિક શિક્ષણ,  
વેધાનિક અને સંસદીય બાબતો



### સંદેશ

સ્ટુડન્ટ સ્ટાર્ટ-અપ અને ઈનોવેશન પોલિસી (SSIP 2.0) નો ઉદ્દેશ્ય પરંપરાગત અને નવા યુગની ટેકનોલોજીમાં નવીનતાઓ અને સ્ટાર્ટ-અપ્સને પ્રોત્સાહન આપવાનો છે. રાજ્ય અને દેશની મૂળભૂત સમસ્યાઓને પડકારો તરીકે લેવી જોઈએ અને આવી સમસ્યાઓના શ્રેષ્ઠ ઉકેલો પર ધ્યાન આપવું જરૂરી બને છે. આ સંદર્ભમાં શિક્ષણ વિભાગે “આઝાદી કા અમૃત મહોત્સવ હેકાથોન - ૨૦૨૨” નું આયોજન કર્યું છે.

વિવિધ સરકારી વિભાગો, ઉદ્યોગો અને અન્ય સંસ્થાઓએ તેમની સમસ્યાઓના નિવેદનો આપ્યા છે, જેના પર વિદ્યાર્થીઓ તેમનો સારાંશ રજૂ કરશે. પસંદ કરેલ વિદ્યાર્થીઓ શ્રેષ્ઠ ઉકેલ મેળવવા માટે સમસ્યા પર સળંગ ૩૬ કલાક કામ કરશે.

તમામ વિદ્યાર્થીઓની ટીમો, તેમના માર્ગદર્શકો અને શિક્ષકો માટે આ એક ઉત્તમ અનુભવ હશે. “આઝાદી કા અમૃત મહોત્સવ હેકાથોન - ૨૦૨૨” ઈવેન્ટના વિજેતાઓ ઈનામની રકમ ઉપરાંત SSIP 2.0 ગ્રાન્ટ માટે પણ પાત્ર હશે.

મને આશા છે કે આ ભવ્ય સ્પર્ધાને સર્વાંગી સમર્થન અને સફળતા મળશે જે “આત્મનિર્ભર ગુજરાત” ના સંકલ્પને સાકાર કરવામાં મદદરૂપ થશે.

(ડો. કુબેરભાઈ ડીંડોર)

## FOREWORD

Creativity and problem solving are two critical facets of innovation and start-ups. Given an enabling platform, young minds are capable of applying their creativity to become problem solvers and innovators. The Education Department has taken concrete measures to create an end-to-end ecosystem through Student Start-up & Innovation Policy (SSIP). Realizing that the innovation-led entrepreneurship development holds promise for growth, the Government has taken major policy initiatives with a meaningful innovation agenda, making efforts to encourage entrepreneurship by facilitating in more ways than one.

Inspired by the vision of Hon'ble Prime Minister Shri Narendra Modi, the Education Department formulated Student Start-up and Innovation Policy 2.0 in January 2022 to promote the culture of start-ups and innovation on a wide scale among the youth of Gujarat. To leverage the creative potential of young innovators in Gujarat, the State has developed a unique programme to engage youth in problem-solving and innovation through the "Hackathon". During the last three annual editions of the State-level Hackathon, a total of **31,537** students in **5951** teams registered to work on 662 challenges.

While taking the legacy further, this year also, Education Department (Higher & Technical), Government of Gujarat has launched a State-level "**Azadi ka Amrit Mahotsav Hackathon - 2022**". Gujarat Government Departments, offices, organizations and industries offered nearly 775 problem statements for this Challenge. The same has been compiled in the form of this Booklet which will be shared with all the Institutions as well as the students.

SSIP is making systematic efforts to give them all possible handholding support so that they develop innovative solutions which can be deployed at grassroots level. After launching the Programme, students will work on the challenges and submit a Synopsis through the Online Portal. Regional rounds and the Grand Finale of the "**Azadi ka Amrit Mahotsav Hackathon - 2022**" will be subsequently organized to evaluate their solutions. Best teams will also be given awards/appreciation based on their performance/solution.

I am confident that the State-level "**Azadi ka Amrit Mahotsav Hackathon - 2022**" will be a milestone in the Open Innovation Model not only in Gujarat but also for the entire Nation. I wish the best of luck to all the innovators. I am confident that each one of them will put in their diligent efforts employing their skills and impress all of us through the impact of their innovation on the Society at large.



(S. J. Haider, IAS)  
Principal Secretary  
Higher & Technical Education  
Government of Gujarat

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4	Energy & Petrochemicals Department	5
5	Food, Civil Supplies and Consumer Affairs Department	4
6	Forests & Environment Department	3
7	General Administration Department	5
8	Health & Family Welfare Department	12
9	Home Department	16
10	Industries & Mines Department	5
11	Labour, Skill Development and Employment	2
12	Legal Department	3
13	Panchayat, Rural Housing Development	1
14	Revenue Department	3
15	Roads & Building Department	2
16	Science & Technology Department	6
17	Social Justice & Empowerment Department	2
18	Sports, Youth & Cultural Activities Department	14
19	Tribal Development Department	10
20	Urban Development and Urban Housing Department	5
21	Women & Child Development Department	5
<b>GoG Department Total</b>		<b>152</b>
<b>Government Office</b>		
1	Admission Committee for Professional Diploma Courses (ACPDC), Gujarat	2
2	Amdavad Municipal Corporation	10
3	Bhavnagar Municipal Corporation	2
4	Border Security Force (BSF)	19
5	C U Shah Polytechnic Surendranagar.	5
6	Collector Office, Ahmedabad	4
7	Collector Office, Amreli	10
8	Collector Office, Bharuch	3
9	Collector Office, Bhavnagar	14
10	Collector Office, Chhotaudepur	3
11	Collector Office, Gandhinagar	2
12	Collector Office, Godhra	1
13	Collector Office, Jamnagar	1

14	Collector Office, Mahisagar	1
15	Collector Office, Morbi	5
16	Collector Office, Panchmahal	2
17	Collector Office, Patan	3
18	Collector Office, Porbandar	13
19	Collector Office, Rajkot	1
20	Collector Office, Sabarkantha	1
21	Collector Office, Surat	8
22	Collector Office, Surendranagar	2
23	Collector Office, Valsad	2
24	DDO Office, Ahmedabad	8
25	DDO Office, Amreli	7
26	DDO Office, Arvalli	2
27	DDO Office, Bharuch	3
28	DDO Office, Kachchh	3
29	DDO Office, Mahisagar	1
30	DDO Office, Navsari	5
31	DDO Office, Palanpur	11
32	DDO Office, Panchmahal	2
33	DDO Office, Patan	7
34	DDO Office, Porbandar	1
35	DDO Office, Rajkot	6
36	DDO Office, Surendranagar	2
37	DDO Office, Vadodara	2
38	DDO Office, Valsad	2
39	DDO Office, Waghai	1
40	DGVCL, Gujarat	1
41	Gandhinagar Municipal Corporation	9
42	GETCO	4
43	Government Engineering College Dahod	4
44	Government Engineering College Patan	1
45	Government Engineering College Valsad	6
46	Government Engineering College, Bhavnagar	4
47	Government Engineering College, Rajkot	3
48	Government Engineering College, Sector-28, Gandhinagar	4
49	Government Polytechnic Dahod	3
50	Government Polytechnic For Girls, Ahmedabad	2
51	Government Polytechnic Gandhinagar	5
52	Government Polytechnic Valsad	4
53	Government Polytechnic, Ahmedabad.	1
54	Government Polytechnic, Himatnagar	1
55	Government Polytechnic, Palanpur	1

56	Government Science College,Ahwa,Dang	1
57	Gujarat Knowledge Society / State PMU of SSIP 2.0	12
58	Gujarat National Law University, Gandhinagar	25
59	Gujarat Urja Vikas Nigam (GUVNL)	47
60	Jamnagar Municipal Corporation	13
61	Junagadh Municipal Corporation	7
62	K.D.Polytechnic, Patan	2
63	L. D. College of Engineering, Ahmedabad	1
64	L. E. College (Diploma) - Morbi	5
65	Mamlatdar Office, Botad	3
66	Mamlatdar Office, Dwarka	9
67	Mamlatdar Office, Palanpur	3
68	Nagarpalika Bharuch	5
69	Nagarpalika Himatnagar	10
70	Nagarpalika Porbandar	8
71	Nagarpalika Surendranagar-Dudhrej-Vadhvan	2
72	Namrata Bhuptani -GEDA	4
73	National Thermal Power Corporation Limited (NTPC)	15
74	PGVCL, Dwarka	1
75	Prant Office, Dwarka	9
76	R C Technical Institute Ahmedabad	2
77	Rajkot Municipal Corporation	6
78	Regional Transport Office, Bhavnagar	1
79	Regional Transport Office, Surendranagar	1
80	Regional Transport Office, Valsad	1
81	S P Office Patan	6
82	Surat Municipal Corporation	15
83	The Smart City Ahmedabad Development Ltd	21
84	Vadodara City Police	9
85	Vadodara Muncipal Corporation	11
86	Vishwakarma Government Engineering College, Chandkheda	4
<b>Government Office Total</b>		<b>489</b>
<b>Industry</b>		
1	Aarohi Embedded Systems Pvt Ltd	1
2	Abhyuday Bharat Mega Defense Cluster LLP	28
3	ACDC Tech.	1
4	Ajarakh Dyeing Unit, Dhamadka	1
5	Arena Animation, Kalawad Road, Rajkot	1
6	Austin engineering Co. Ltd.	1
7	Balief Corporation	1
8	Believer Renewal Energy	1
9	BrainyBeam Technologies Pvt. Ltd	1

10	BVG Life Sciences Limited	20
11	CADILA Pharmaceuticals Ltd.	1
12	Casa Tiles (P) LTD	1
13	CESS Automation, Ahmedabad	2
14	D. B. Engineer, Surat	2
15	Dhuvaran Thermal Power Plant	1
16	Dipti Glass work	1
17	Education institute for special Abled person,	1
18	eInfochips	4
19	ELLO Design - Furniture Design & Manufacturing	1
20	Equanimous Technologies	1
21	Esquire Ideation Pvt. Ltd.	1
22	Ferromatic Pvt. Ltd.	1
23	Gajanand IT Solutions	1
24	India Tobacco Company Limited (ITC)	6
25	Infolabz IT Services Pvt. Ltd.	1
26	JP Research India Pvt. Ltd.	1
27	JS Technology	1
28	Kachhua Solutions Pvt Ltd.	1
29	Keni construction	1
30	Kirtan Technologies.	3
31	Leaf Drive IT Solution	2
32	Mahavir Agro Industries	1
33	Maruti infracreation Pvt. Ltd.	1
34	Meditab Software (I) Pvt. Ltd.	1
35	Megna Electronics, Pune	1
36	Navi Energy Surat	1
37	Nilkanth Dental Care Hospital	2
38	NiTech Automation	2
39	NITREX	1
40	NIVIDATA Consultancy, Ahmedabad.	1
41	Pashava Energy Private Limited	1
42	Patidar Enterprise	1
43	Plus1 Health IT Systems	1
44	Power control Limited, Gundlav Valsad.	1
45	Pratibha Engineering Services Pvt. Ltd.	1
46	Ramdev Solar	1
47	Ratan Soap Factory	1
48	Realtech Paint & Chemical Industry	1
49	Rohan Dyes and intermediate limited	1
50	Rungta dying mill	1
51	SID Consultants	1

52	smartSense Consulting Solutions Pvt Ltd.	1
53	Sopan InfoTech	1
54	Spring Digital Print	1
55	SSM Infotech Ltd	1
56	Sunlight Infra Energy Pvt. Ltd.	1
57	Synchroics Pvt Ltd, Vadodara	1
58	Tandel engineering works, Pardi	1
59	TechSmith Solutions Pvt Ltd	1
60	Teksun Microsys Private Limited	2
61	Toy Innovation Challenge	12
62	Vaani Engineering Works, Vapi	1
63	Vaibhav Cement Product	1
64	Venus Equipment Mehsana	2
65	Vertical Transportation Industry	1
66	Virnit Automation	1
67	Vrundavan Polymer Pvt. Ltd.	1
68	WebCreta Technologies	1
<b>Industry Total</b>		<b>142</b>
<b>Grand Total</b>		<b>783</b>



# **Azadi Ka Amrit Mahotsav Hackathon 2022**

## **Problem Statements**

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## Agriculture & Cooperation Department

<b>Problem ID:</b>	PID001
<b>Challenge Title</b>	: Alternative Protein and Nutritional Supplements
<b>Name of the Department</b>	: Agriculture & Cooperation Department
<b>Challenge Description with context</b>	<p>: Protein – Meat alternatives are focused on delivering the same cultural and sensory experiences to animal-derived foods — so that consumers and producers have alternatives doesn't feel like a big sacrifice. Alt-protein products can be produced using one or a combination of the following three modalities, Plant-based, Fermentation-derived &amp; Cultivated.</p> <p>Why?</p> <p>As per a survey, meat and dairy use 83% of the world's farmland and are responsible for 60% of the greenhouse gas emission from agriculture.</p> <p>Also, contamination in animal-derived food products can result in food borne illnesses, at the cost of individual wellbeing and community health, and disproportionately affects low-to-middle-income communities.</p>
<b>Users</b>	: Consumers, FMCG companies, Fast Food Restaurant Chains.
<b>Expected Outcomes</b>	: New Food Products, RTE & RTC options, Bulk raw Material for Food Industries use.
<b>Impact</b>	: Farmer will get better price for their yield, Positive impact on climate change situation.

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<b>Problem ID:</b>	PID002
<b>Challenge Title</b>	: Nano fertilizers: A promise for future
<b>Name of the Department</b>	: Agriculture & Cooperation Department
<b>Challenge Description with context</b>	: Nanotechnology being the most promising technology with enumerable application in agriculture and food sector too. Fertilizers being most important input for crop production also being utilized exorbitantly and injudiciously causing great health concerns to entire ecology. Nanofertilizers broadly termed as magic bullets are rapidly gaining attention from various fraternities due to its high efficiency and large surface area. Nanofertilizers are being formulated and researched for their use in crop production with lot of due considerations and testing at different levels of safety.
<b>Users</b>	: Farmers
<b>Expected Outcomes</b>	: Farmers will be able to utilize this input very effectively for crop production with least chemical residue along with maintaining soil health that will lead to higher productivity and net returns.
<b>Impact</b>	: Gain in farmers' income with least load to government which provide hefty subsidies and ecological safety of the benefit of entire mankind.

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<b>Problem ID:</b>	PID003
<b>Challenge Title</b>	: Precision Agriculture using modern technologies
<b>Name of the Department</b>	: Agriculture & Cooperation Department
<b>Challenge Description with context</b>	<p>: Conventional farming practices are area-centric. There is a general set of crops cultivated throughout an area. All the farmers in that area follow the same procedures with respect to sowing, nourishing, irrigation and harvesting period. What these practices result in is unpredictability, overuse of resources and uncontrolled waste production.</p> <p>Advancements in big data analytics, IoT, AI, ML Drones and accessible satellite imagery can help combating the issue of unpredictability in agriculture.</p> <p>An App or Device for monitoring &amp; management of water quality, soil fertility, and health, crop growth and health (pest and diseases, macro &amp; micro-nutrients, water) using data analytics and digital extension including market intelligence, irrigation, farm management solutions to provide recommendation by integration of existing climatic, IoT and data from various sources.</p>
<b>Users</b>	: Farmer, stakeholder of Agriculture, Agriculture Experts.
<b>Expected Outcomes</b>	: Mobile App for Farmers, web platform, Robotics, Drone based IoT solutions for precision agriculture.
<b>Impact</b>	: Farmer will get assistance of timely information and IoT devices thought their crop cycles which will improve agricultural yield and reduce potential risks.

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<b>Problem ID:</b>	PID004
<b>Challenge Title</b>	: Portable Auto Flushing Filter for Groundwater Recharge through Tube well/Open well
<b>Name of the Department</b>	: Agriculture & Co-operation Department
<b>Challenge Description with context</b>	<p>: The Hon. PM of India has desired to raise the Indian economy to \$ 5 Trillion from present \$3.29 trillion by the 2026-27. Among these, the contribution of agriculture would be \$ 1 Trillion. This can be achieved through increasing the agricultural production. These can be achieved through enhancing the crop acreage and outturn per unit piece of land and water input along with the technological interventions in the agriculture sector. The crop acreage can be increased by making more land and water available for agriculture. Out of a total 140.13 million hectares of sown area, India's net irrigated area is 68.38 million hectares (48.7%) only while 71.74 million hectares are unirrigated. To achieve the food and nutritional securities, the irrigated agriculture has to be enhanced through water security by enhancing the surface and groundwater resources. The natural groundwater recharge is very less. Therefore, the technological interventions are required for enhancing the groundwater by artificial recharge through open/tube well. The artificial recharge using runoff from field or flowing water in stream requires due cares. The suspended sediment in runoff water has to be filtered to avoid the jamming of storage space in the aquifer systems. This requires the scientifically developed groundwater recharge filter.</p> <p>Once the water has been entered in the aquifer system, it becomes a democratic resource. Therefore, the farmers are reluctant to recharge the aquifer because the groundwater is a democratic resource.</p> <p>The filter has to be constructed nearby well site. The filter requires space and frequent cleaning. Its adoption is very cumbersome for the farmers. Therefore, there is a need for the portable and auto flushing filter for the groundwater recharge.</p> <p>The following are the problem statements on challenges.</p> <ol style="list-style-type: none"><li>1. The filter should be portable.</li><li>2. Filter should be auto flushing through external energy sources or through water potential energy.</li><li>3. The filtering efficiency and capacity should be as maximum as possible.</li><li>4. It can be such that it can be easily installed by a lay man.</li></ol>

5. It should require the least space.
6. The filter body material should be non-corrosive and resistance to weather of all seasons for long lasting.
7. The filtering media should be locally available and at least cost.

The water entering in the aquifer system should be free of air pockets.

**Users** : Farmer, students, stakeholder of Agriculture, Agriculture Experts, Line departments of GoI/GoG, NGOs

**Expected Outcomes** : The farmers will adopt the innovative technological interventions for the groundwater recharge through open/tube wells as it can be easily installed, efficient, least cost, auto flushing and not being a cumbersome. The first benefit of enhanced groundwater will be to farmer adopting it. The farmer's crop acreage and productivity as well income will enhance. The Agricultural outcomes for the state as well nation will be enhanced. There will be huge scopes for such filter from farmer's side as well as executing agencies of government and NGOs. Therefore, there are scopes for the innovative start-ups in the manufacture of such Portable Auto Flushing Filter for Groundwater Recharge through Tube well/Open well.

The total 150 lakhs such filter will be required in Gujarat state only. It can be extended to other states of India also.

**Impact** : The agricultural productions and productivity can be enhanced through assured water supply from groundwater resources.

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**Problem ID:** PID005

**Challenge Title** : Efficient Onion Storage

**Name of the Department** : Agriculture & Cooperation Department

**Challenge Description with context** : When there is a glut of onion in the market, the onion price will be dropped. How to store the onion for longer period storage of onion to catch higher price?

**Users** : Farmers

**Expected Outcomes** : Onion can be stored for longer period.

**Impact** : Farmers can catch more income

**Problem ID:** PID006

**Challenge Title** : Mango Canning

**Name of the Department** : Agriculture & Cooperation Department

**Challenge Description with context** : When there is a glut of mango in the market, the price of the mango will be dropped. Mango pulp could be collected and by processing i.e. sterilizing and filling in can for longer period help for storage.

**Users** : Farmers/Entrepreneurs

**Expected Outcomes** : Mango pulp canning helps for longer period storage.

**Impact** : At rural level farmers income could be increased and entrepreneurs can be prepared.

<b>Problem ID:</b>	PID007
<b>Challenge Title</b>	: Efficient Peigeon Pea Dal Machine
<b>Name of the Department</b>	: Agriculture & Cooperation Department
<b>Challenge Description with context</b>	: Pigeon pea grain husk is tightly attached with seed hence to make a dal without husk is a challenge.
<b>Users</b>	: Farmers/Entrepreneurs
<b>Expected Outcomes</b>	: Pigeon pea dal can be made without husk.
<b>Impact</b>	: At rural level farmers income could be increased and entrepreneurs can be prepared.

<b>Problem ID:</b>	PID008
<b>Challenge Title</b>	: Increase the Adoption of Technologies by Farmer to Get Higher Production
<b>Name of the Department</b>	: Agriculture & Cooperation Department
<b>Challenge Description with context</b>	: Technologies are available from the research centres are not applicable as such in different location situation. Many technologies are highly expensive. For better application of technologies, it requires skills. Skills can be improved through training. Training is generally given by theory only. So, lack of practical skills is not improving. Many time technological inputs are not available at a time and from near place with reasonable rate. For timely operation of crop labour shortage are the main problems. High rate of labour charges increase the cost of cultivation. Cost benefit ratio are not maintained and so farmers are not adopting technologies. So seeking improvement in adoption of Technologies by the farmers for higher production.
<b>Users</b>	: Farmer, Stock holder, Experts, Line department and NGOs
<b>Expected Outcomes</b>	: Location specific and sustainable technologies will helpful to satisfaction of the farmers.
<b>Impact</b>	: Farmer will sustain and retain in agriculture.

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<b>Problem ID:</b>	PID009
<b>Challenge Title</b>	: Crop residue management for energy generation
<b>Name of the Department</b>	: Agriculture & Cooperation Department
<b>Challenge Description with context</b>	: After harvesting of crops a lot of crop residues are generated and they lie here and there without any useful application and accounts for agricultural wastes. Sometimes crop residues are used as animal fodder but not all the waste generated is used. Therefore, it is necessary to use these waste crop residues for energy generation. Sometimes, farmers' burn crop stalks to clear the field and grow the next crop. Burning of these stalks produce smoke and CO <sub>2</sub> gas which affect the environment adversely and becomes main cause of climate change which is not desirable. Hence, it is best to use these crop residues for energy generation to biomass gasification or anaerobic digestion which will give farmers to sell these crop residues to the energy producing agencies/industries and get monetary benefits. Thus the income of farmers may be enhanced and our environment can be saved.
<b>Users</b>	: Farmers, renewable energy producing industries
<b>Expected Outcomes</b>	: Effective utilization of crop residues, renewable energy generation and clean environment
<b>Impact</b>	: Global warming and climate change will be reduced and farmer's income will be increased.



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<b>Problem ID:</b>	PID010
<b>Challenge Title</b>	: Processing@Farm: A sustainable technology driven value addition of the agricultural produce at farm
<b>Name of the Department</b>	: Agriculture & Cooperation Department
<b>Challenge Description with context</b>	: Agricultural produce is perishable in nature and its price is market driven. At the time of harvest framers have to sell produce at any cost due to non-availability of appropriate post-harvest management or processing facility with them and may have to bear financial as well as post-harvest losses. Hence, for each unit operation after harvesting there should be an economical, sustainable, readily available, or manufacturable and easy to use technology/machinery which is capable to process multiple farm produce.
<b>Users</b>	: Farmers, Entrepreneurs and Food processing industries
<b>Expected Outcomes</b>	: User friendly technology ready to adopt at farm level with minimal inputs and cost for post-harvest operations and processing.
<b>Impact</b>	: Farmers could become Agripreneurs and would able to earn more income and branding of local products will take place in line to this. Moreover, reduction in agricultural waste would be the ultimate benefit to the society.

<b>Problem ID:</b>	PID011
<b>Challenge Title</b>	: Enhancement of SRR(Seed Replacement Rate)
<b>Name of the Department</b>	: Agriculture & Cooperation Department
<b>Challenge Description with context</b>	<p>: Seed, the vehicle for delivering the benefits of technology, is the most important basic input, influencing the growth and sustainability in agriculture.</p> <p>“Seed replacement rate is the percentage of areas own under certified variety/quality seeds of crop to the total area sown under the crop”. Cultivating of old and obsolete varieties do not give the desired benefits for the farmers that they could get from using new varieties/quality seeds. Moreover,</p> <ol style="list-style-type: none"> <li>1. The yielding ability of the variety reduces generation after generation.</li> <li>2. The seed has more chances of infestation of insects and other pest.</li> <li>3. The purity per cent (admixtures) of seed will be less when compared to the certified one.</li> <li>4. The seed has chances of getting pest infestation during the storage.</li> </ol> <p>Quality seeds have the potential to produce healthy plants which is the key to food production and food security. Furthermore, seed is a potential commodity for overall agricultural development and entrepreneurship as well as an important component of agricultural biodiversity</p>
<b>Users</b>	: seed producers, seed traders and farmer
<b>Expected Outcomes</b>	: A better seed replacement rate shows a better utilization of the Certified/Quality Seeds. Certified seeds are better in productivity, hence the SRR is directly proportional to productivity. Thus, higher the Seed Replacement Ratio, higher is production as well as productivity, yield and increase farmer’s income,
<b>Impact</b>	: The agriculture productivity will increase which helps to get maximum farm income per unit area and farmer’s livelihood will improve.

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<b>Problem ID:</b>	PID012
<b>Challenge Title</b>	: Innovative agricultural input products to promote natural farming and improve soil health
<b>Name of the Department</b>	: Agriculture & Cooperation Department
<b>Challenge Description with context</b>	: Innovative solutions and agricultural input products to promote Natural Farming in India  Maximising soil productivity – How can we improve soil health, ensure a healthy soil structure and maximise nutrition whilst minimising soil loss?  Effective alternatives to chemical based nutrients, fertilizers, pesticides and insecticides, etc.
<b>Users</b>	: Farmers
<b>Expected Outcomes</b>	: New agricultural Input products for Natural Farming & Soil Health Management
<b>Impact</b>	: Reduces cost of cultivation, Rejuvenation of farm lands, Safe and healthy food for citizens, Helps in arresting growing needs for chemical fertilizer and reduce subsidy burden

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<b>Problem ID:</b>	PID013
<b>Challenge Title</b>	: A Computer Model on Profitable Farm Management
<b>Name of the Department</b>	: Agriculture & Co-operation Department
<b>Challenge Description with context</b>	<p>: Farm management involves large number of parameters viz. water resources, cost of cultivation, climatic conditions, suitability of soil for different crops, food requirement and food habits, marketing facilities and fluctuation of market price. It is difficult to arrive at a decision without the help of any programming approach. To develop a User friendly special ICT based on Windows Microsoft Visual Basic programme seems to be of prime importance with the following objective;</p> <ol style="list-style-type: none"><li>1. To develop a mathematical model for cropping pattern to get maximum benefits</li><li>2. To evaluate a suitable cropping pattern for optimum utilization of available resources</li></ol> <p>The ICT automatically maximize the profit under applied constraint and allocate the respective grown area for each crop. The principle crops cultivated by the farmers of the state in each season are to be considered and selected viz. twelve Kharif (Monsoon) crops as Jowar, Maize, Sesamum, Green gram, Black gram, Cow pea, Cluster bean, Cotton medium staple, Cotton long staple, groundnut, Bajra and Paddy; twenty Rabi (Winter) crops such as Wheat irrigated, Wheat unirrigated, Jowar, Pigeon pea, Castor, Onion, Garlic, Potato, Cumin, Isabgul, Fennel, Banana, Sugarcane planted, Sugarcane ratoon, Sugarcane, Tobacco bidi, Tobacco calcutti, Chikory, Gram and Mustard; and three Zaid (Summer) crops as Bajra, Paddy and Groundnut. The summer crops are generally grown where assured irrigation is available and the agro-climatic condition is suitable to the crops.</p>
<b>Users</b>	: Farmers
<b>Expected Outcomes</b>	: End user can easily download the model.
<b>Impact</b>	: Farmer will get optimum profit through selection of crops.

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<b>Problem ID:</b>	PID014
<b>Challenge Title</b>	: Automatic irrigation system controller
<b>Name of the Department</b>	: Agriculture & Co-operation Department
<b>Challenge Description with context</b>	: Water is a very scarce natural resource in India. The demand of water increased day by day in every domain and agriculture is the major user of this resource. So, efficient and judicious utilization of water is a humble duty of farmers. Farmers are using Micro irrigation systems in their field but due to lack of knowledge and due to human mentality, they are giving more water than requirement of the crop. Self-decisional automatic irrigation controlling system can help farmers to irrigate their field with higher water use efficiency. But due to, the higher cost of an automatic irrigation controller farmers cannot adopt it. So low cost smart irrigation controller can be developed.
<b>Users</b>	: Farmers
<b>Expected Outcomes</b>	: Experts can provide low cost IoT based smart irrigation controller using soil moisture sensors. In this kind of technology controller controls irrigation automatically based on soil moisture content and provide exact amount of water depleted from the root zone.
<b>Impact</b>	: Using this kind of technologies, farmer can save water and increase the area under crop.

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<b>Problem ID:</b>	PID015
<b>Challenge Title</b>	: Solar cold storages/cooling systems for Agricultural produce
<b>Name of the Department</b>	: Agriculture & Co-operation Department
<b>Challenge Description with context</b>	: Indian farmers have always struggled with reducing wastage of their produce due to a variety of reasons, including unstable market linkages and lack of facilities to store fast perishable items for any length of time. This has severe implications in India, where more than 80% of the farmers are smallholders who barely manage to eke out a living. One way to reduce wastage is to have air-conditioned warehouses where perishable produce can be kept. However, there are many issues with that too. Power supply in rural areas is unreliable, with frequent outages. In addition, it has been found that as much as 30% of the total expense of cold storage is energy costs.
<b>Users</b>	: Farmer, stakeholder of Agriculture, Agriculture Experts
<b>Expected Outcomes</b>	: Entrepreneurs and investors are increasingly turning their attention to unlocking greater value for farmers with innovative solutions powered by solar energy. Apart from drying food, markets include refrigeration; keeping livestock feed fresh, milling and other parts of the farm value chain.
<b>Impact</b>	: It facilitates the delivery of perishable agricultural products like fruits, vegetables, meat, fish, poultry, milk and milk-based products from production centres to consumption centres.

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<b>Problem ID:</b>	PID016
<b>Challenge Title</b>	: Agrivoltaic system
<b>Name of the Department</b>	: Agriculture & Co-operation Department
<b>Challenge Description with context</b>	: In India, the main income in rural area is from agriculture but only food production is not sufficient for the development of rural people. The next need after food is the energy to establish or run rural level industries, improved agriculture operations, processing of food etc. There are number of challenges in meeting the solar power capacity targets. First is the requirement of land. Solar energy installations are directly linked to land. A 1.0 MW solar PV power plant requires about 1, 00,000 sq. feet (about 2.5 acres, or 1hectare). SPV system can use to irrigate farmer’s fields, build cold storages in rural areas, and augment farmer’s incomes by feeding the surplus power generated into the grid. Harvesting solar power on farmer’s fields can thus act as harvesting another crop, and can provide a sort of insurance even when rains fail and ensures maximum utilization of land. Rural India faces sparse and sporadic supply of power even where there are grid lines. In many far North and North-East regions, the rocky and mountainous terrains pose a hurdle for laying grid and transmission lines. Solar power can help to bridge this gap in power supply and can be a game changer.
<b>Users</b>	: Farmer, stakeholder of Agriculture, Agriculture Experts
<b>Expected Outcomes</b>	: Aim to reduce competition for land resources between food production and PV power generation.
<b>Impact</b>	: The rural areas of India are far from the urban areas having lacking of power supply and there are drastic losses in transportation of electricity to long distance. However, from the SPV system implementation, farmers as well as rural people will be benefited from produced energy. Another advantage would be the transportation losses may decrease and extra income can be generated by energy supply to the grid that will also help to reduce migration of rural people to the urban area.

<b>Problem ID:</b>	PID017
<b>Challenge Title</b>	: Biomass based Energy Solutions
<b>Name of the Department</b>	: Agriculture & Co-operation Department
<b>Challenge Description with context</b>	: Biomass has always been and will continue to be used for food and animal feed purposes as well as a source of energy production. By definition, biomass is living and organic materials produced by plants (algae, crops and trees) by the process of photosynthesis and one of the main advantages and features of biomass is its renewability and neutral CO <sub>2</sub> impact as the fundamental mechanism of photosynthesis involves only renewable resources: sunlight, carbon dioxide, and water. The efficiency of biomass energy depends on how they can be converted into power, heat, fuel, and chemicals using a variety of thermo chemical and biochemical methods. Biomass energy crops can be used to produce almost all of our commonly used energy carriers, and the large variety of biomass feedstock and conversion methods makes biomass a versatile fuel.
<b>Users</b>	: Farmers, both rural men and women, and rural entrepreneurs
<b>Expected Outcomes</b>	: Biomass energy is a bridge solution—one that can help the world transition from fossil-fuel power to 100 percent clean, renewable energy. Until energy storage grows and the grid becomes more flexible, it can help meet electricity demand, complementing variable wind and solar power. Carbon-rich biomass can be harvested to produce heat, create steam for electricity production, or be processed into oil or gas. Doing so trades in carbon that is already in circulation, cycling from atmosphere to plants and back again. Grow plants and sequester carbon. Process and burn biomass, emit carbon, repeat. It produces net-zero new emissions, so long as use and replenishment remain in balance.
<b>Impact</b>	: Biomass is a sustainable energy source that can easily replace the use of conventionally used fossil fuels while at the same time offering several positive environmental advantages.



<b>Problem ID:</b>	PID018
<b>Challenge Title</b>	: Ask to Agri Expert- (App with backend)
<b>Name of the Department</b>	: Agriculture & Cooperation Department
<b>Challenge Description with context</b>	<p>: Farmers are always confused to ask any query related to farming. Farmers can ask query in their own language/images/voice/video. There should be dynamically updateable different topic. Farmer can submit their query in any form like text/images/voice/video. Authenticated users should update topic only. Application user should be verified first time by OTP. There should be manual or partially automated consult expert forwarding system for requested query. Every topic has multiple experts and there should be provisioned to forwarding query by their district. If any query attended by expert than that should not repeated. Expert can also answer the query using hand held device. There should be frequently asked question which is updated by authenticated users. There should be option for language (English/Hindi/Gujarati). Admin login to manage name and areas of experts. Farmer App and Expert App.</p> <p><b>Topics Example:</b> Crop-&gt;cotton-&gt;Pest Query-&gt; {ASK}  Crop-&gt;wheat-&gt;Plant Disease query-&gt; {ASK}</p> <p><b>Input by Authenticated User:</b> Topic Name (3 Level Min),Other needed information</p> <p><b>Input by Verified User:</b> text, images, voice, video (as Query)</p> <p><b>Environment:</b> Android</p> <p><b>Authenticated User:</b> State Agri. Uni. Extension, State Agri. Departments, Expert Team</p> <p><b>Permissions:</b> Expert will get query of own selected topic. Needed required action for privacy and confidentiality.</p>
<b>Users</b>	: Farmer, stakeholder of Agriculture, Agriculture Experts
<b>Expected Outcomes</b>	: End user can easily download. GUI, navigation of topic and Ask Query page should be user-friendly. Solutions should be notifiable. Authenticated user should be able to view geo-location of plotted query. Authenticated user can view and manage necessary data from their portal.
<b>Impact</b>	: Farmer will get primary solutions from hand held device which is given by trusted source.

<b>Problem ID:</b>	PID019
<b>Challenge Title</b>	: Easy Dissemination of the New Technologies Through Regional Languages App
<b>Name of the Department</b>	: Agriculture & Cooperation Department
<b>Challenge Description with context</b>	<p>: A well-developed digital infrastructure, especially in rural areas, is a precondition for digital agriculture and food systems. Although advances in technology and regulatory reform have improved access to ICT for people around the world, there still exists a digital divide. Just as a certain technology (e.g. dial-up Internet) becomes available across income levels, a new technology (e.g. broadband) appear, leaving users in developing countries ‘playing catch up’.</p> <p>Both literacy and education levels also remain particularly low for rural populations in developing countries and LDCs which presents a barrier to the use of digital technologies. Youth unemployment rates are often higher than the country average and this is especially the case in rural areas. Increasingly, employers want employees who are adept at using technology. A lack of e-literacy and digital skills in rural areas means these populations will fall behind in the modern labour market. There is a need for school curricula to incorporate digital subjects, for improved knowledge and skills among teachers and for increased availability of digital technologies in classrooms.</p> <p><b>Topics</b>      <b>Example:</b> Crop-&gt;Groundnut-&gt;Latest      Improved Technologies</p> <p><b>Environment:</b> Android</p> <p><b>Authenticated User:</b> State Agri. Uni. Extension, State Agri. Departments, Expert Team</p>
<b>Users</b>	: Farmer, stakeholder of Agriculture, Agriculture Experts
<b>Expected Outcomes</b>	: End user can easily download. GUI, navigation of topic page should be user-friendly. Authenticated user should be able to view geo-location of plotted query. Authenticated user can view and manage necessary data from their portal.
<b>Impact</b>	: Farmer will get all the information about new agricultural technologies from hand held device.

<b>Problem ID:</b>	PID020
<b>Challenge Title</b>	: Package of practices for crops through app in regional languages
<b>Name of the Department</b>	: Agriculture & Cooperation Department
<b>Challenge Description with context</b>	: Farmers will get all the information about new improved practices for different crops in regional languages. Authenticated Users should update topic only. Application user should be verified first time by OTP. There should be option for language (English/Hindi/Gujarati). Admin login to manage name and areas of experts. Farmer App and Expert App. <b>Topics Example:</b> Crop->cotton->Latest Crop Production Practices <b>Environment:</b> Android <b>Authenticated User:</b> State Agri. Uni. Extension, State Agri. Departments, Expert Team
<b>Users</b>	: Farmer, stakeholder of Agriculture, Agriculture Experts
<b>Expected Outcomes</b>	: End user can easily download. GUI, navigation of topic page should be user-friendly. Authenticated user should be able to view geo-location of plotted query. Authenticated user can view and manage necessary data from their portal.
<b>Impact</b>	: Farmer will get all the information about latest crop production practices of different crops from hand held device.
<b>Problem ID:</b>	PID021
<b>Challenge Title</b>	: University Selling Centre
<b>Name of the Department</b>	: Agriculture & Cooperation Department
<b>Challenge Description with context</b>	: Starting of Agriculture university selling centre. The main aim of this centre is providing facility of university technology and product on single selling point to the farmers, NGO, line department and other. It has emphases on need base area specific technology provide to the farmer so it will helpful to farmer for timely completion of Agricultural operation
<b>Users</b>	: Farmer, stakeholder of Agriculture, Agriculture Experts Line department, NGOS
<b>Expected Outcomes</b>	: Farmer have purpose the agriculture low cost product that was government approved and new technology used in his field also decrease the cost of agriculture inputs.
<b>Impact</b>	: Farmer will get the agriculture technology in his surrounding location and adopt new innovative agriculture technology

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<b>Problem ID:</b>	PID022
<b>Challenge Title</b>	: Establishment of Model organic farm
<b>Name of the Department</b>	: Agriculture & Cooperation Department
<b>Challenge Description with context</b>	: The major crops of the Narmada district are paddy, sugarcane, cotton, pigeon pea, sorghum, maize, gram, vegetables mainly okra, brinjal, vine crops etc, fruit crops like banana, mango, papaya etc. For getting the production potential of crops farmers are using excess amount of chemical fertilizers, injudicious use of pesticides and excess use of irrigation water. This has deteriorated soil fertility and productivity is stagnant. Looking to the situation there is need to established a model organic farm which having various self-sustained units, package of practices for different crops etc. Further, this centre will also provide demonstration on organic production technologies and impart trainings to the farmers in relation to organic cultivation. This centre will also provide technological backstopping to the farmers and market linking for the organic produce.
<b>Users</b>	: Farmers, stakeholders and agriculture department
<b>Expected Outcomes</b>	: The Krushi Vigyan Kendra, Dediapada will establish model Organic Farm which involves all the components like Animal Husbandry unit, Vermi-composting unit, Gobar Gas plant, Solar power panel etc. which can be useful to the farmer's community. Further, the production technologies of different crops will also be demonstrated on farm. This centre will provide technological backstopping to the farmers of the district in relation to organic farming.
<b>Impact</b>	: This model organic farm will be unique farm which demonstrate the production technologies on self-sustain bases. The popularization of organic farming technologies among the farmers will helpful in improving soil and plant health which in turn reduces environmental pollutions and improves public health.

## Climate Change Department

<b>Problem ID:</b>	PID023
<b>Challenge Title</b>	: Measuring & online monitoring L/G (liquid to gas) ratio for induced draft cooling towers
<b>Name of the Department</b>	: Climate Change Department
<b>Challenge Description with context</b>	<p>: Continuous monitoring of liquid to gas ratio for cooling towers is very essential for performance monitoring. While liquid flow can be measured using flow meters, air flow at the exhaust remains a challenge. Currently two methods are adopted for air flow measurement.</p> <ol style="list-style-type: none"> <li>1. By measuring air velocity at exhaust.</li> <li>2. By measuring temp &amp; RH of inlet &amp; outlet air and by doing enthalpy balance across CT.</li> </ol> <p>In both these methods, external wind, length of probe, measurement method, human errors in measurements, etc. are the challenges.</p> <p>Also these are instantaneous and one time measurements carried out during audits or performance assessment drives.</p> <p>Need to devise an approach or a method to precisely monitor L/G ratio continuously.</p>
<b>Users</b>	: All industries where cooling towers are used. Especially Thermal Power Plants which use induced draft cooling towers.
<b>Expected Outcomes</b>	<p>: L/G ratio has great impact on cooling tower performance and fine tuning L/G ratio can help in optimizing the cooling water supply temp. This will help in extracting maximum outcome from cooling tower in various seasons.</p>
<b>Impact</b>	<p>: 1 °C drop in cooling water temperature reduces compress or energy consumption by 2.7%.</p> <p>1 °C drop in cooling water temperature gives a heat rate savings of 5kcal/kWh.</p>

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<b>Problem ID:</b>	PID024
<b>Challenge Title</b>	: Multiple rewinding of motors used in water pumping stations.
<b>Name of the Department</b>	: Climate Change Department
<b>Challenge Description with context</b>	: Multiple rewinding of motor lowers the motor efficiency as compared to designed value. After two or three rewinding motor efficiency reduce drastically. Because of this, motor draws more power and results into higher electricity bill.  Reason behind the winding burn is mainly due to improper wire connections, miscalculation in required rating of motors, poor ventilation, valve throttling, overloading and short circuit.  Sometimes due to budget allocation, it is difficult to procure new motors rather than rewinding. Also, operation and maintenance play an important role in longer life of motors. History card of particular
<b>Users</b>	: Public Water Works, GWSSB, GWIL and Municipal pumping stations.
<b>Expected Outcomes</b>	: Avoid multiple rewinding of motor not more than three. This will help in maintaining motor efficiency within permissible range.
<b>Impact</b>	: Reduced power consumption in motors for the same application.

<b>Problem ID:</b>	PID025
<b>Challenge Title</b>	: Gradually depleting ground water levels in Gujarat.
<b>Name of the Department</b>	: Climate Change Department
<b>Challenge Description with context</b>	<p>: Although groundwater is often relatively well protected from pollution, poor management has resulted in negative impacts such as declining aquifer heads, groundwater quality deterioration, lower crop yields, ecosystem degradation, and in some cases, land subsidence and seawater intrusion.</p> <p>As we have an agriculture dominant state as well as nation. Hence, there is a higher requirement of water for irrigation purpose. Also, industries demand huge quantity of water for different process. Raising population also requires more and more water resources to fulfil their need. Ground water quality monitoring system is required.</p>
<b>Users</b>	: Agriculture, commercial, industrial, residential & municipal.
<b>Expected Outcomes</b>	: Raise and maintain the ground water level at specific desired point. Also, consideration of rain water harvesting as well as forestation. Ground water quality monitoring
<b>Impact</b>	: Deeper ground water level requires higher ratings of pumps used in different sectors like industries, agriculture and municipal. Deterioration of water quality and reduction of water in streams and lakes, or land subsidence
<b>Problem ID:</b>	: PID026
<b>Challenge Title</b>	: Cleaning of Solar panels with less water requirement
<b>Name of the Department</b>	: Climate Change Department
<b>Challenge Description with context</b>	: R & D of methodology of idea/ product which having less water requirement for Cleaning of Solar panels
<b>Users</b>	: Individual, Industries
<b>Expected Outcomes</b>	: Saving of water
<b>Impact</b>	: Water conservation & Energy efficiency increase

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**Problem ID:** : PID027  
**Challenge Title** : To make Solar Tracker more resilient to weather  
**Name of the Department** : Climate Change Department  
**Challenge Description with context** : Solar trackers are slightly more expensive than their stationary counterparts, as they are regarded as complex systems with moving parts. Trackers require more maintenance than fixed systems.  
**Users** : Individual, Industries  
**Expected Outcomes** : Approximately 20% to 25% more power generation than convention solar system  
**Impact** : Generate more electricity than their stationary counterparts due to increased direct exposure to solar rays.

**Problem ID:** : PID028  
**Challenge Title** : Improve energy efficiency after certification  
**Name of the Department** : Climate Change Department  
**Challenge Description with context** : After certification of building with energy efficiency rating the biggest challenge is to monitor the energy consumption periodically.  
**Users** : Individual, Industries  
**Expected Outcomes** : Improve energy efficiency time to time  
**Impact** : It regulate the energy efficiency rating system



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<b>Problem ID:</b>	: PID029
<b>Challenge Title</b>	: R & D technology for Green Hydrogen as a fuel
<b>Name of the Department</b>	: Climate Change Department
<b>Challenge Description with context</b>	: High energy requirement in compressed hydrogen storage, due to low specific gravity. Temperature and pressure requirements while storing hydrogen in solid form. Design aspects, legal issues, social concerns, and high cost.
<b>Users</b>	: Individual, Industries for upcoming hydrogen gas based vehicles
<b>Expected Outcomes</b>	: It aims to drive down the cost of hydrogen to Rs.150/kg by 2026. Scaling up green hydrogen will be essential to helping global economies to achieve net zero emissions by 2050. And also limit global temperature rises to 1.5C.
<b>Impact</b>	: The potential for additional system flexibility and storage, which support further deployment of variable renewable energy (VRE); contribution to energy security; reduced air pollution; and other socio-economic benefits such as economic growth and job creation  Emissions of hydrogen lead to increased burdens of methane and ozone and hence to an increase in global warming. Therefore, hydrogen can be considered as an indirect greenhouse gas with the potential to increase global warming.

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<b>Problem ID:</b>	: PID030
<b>Challenge Title</b>	: Develop new methods and technologies for Carbon Capture Utilisation and storage (CCUS)
<b>Name of the Department</b>	: Climate Change Department
<b>Challenge Description with context</b>	: Carbon capture and storage remains too unproven to be a viable strategy. There is no way of knowing if stored carbon will remain underground indefinitely. Injection could contaminate groundwater supplies or trigger earthquakes. The process is very energy-intensive and decreases the EROI of coal.
<b>Users</b>	: Individual, Industries
<b>Expected Outcomes</b>	: To capture and store carbon dioxide where it is produced at power plants that burn fossil fuels and at factories so that the greenhouse gas isn't spewed into the air.  Carbon capture and storage (CCS) is a proven emissions reduction solution, permanently removing CO <sub>2</sub> from the atmosphere. The benefits of CCS are environmental, economic and social with the positive impact both local and global.  The captured carbon dioxide would then be transported and stored or used in industrial processes.
<b>Impact</b>	: Carbon capture and storage can bridge the gap for the next few decades, cutting emissions until we can shift to a low carbon economy.  CCS may have an overall positive effect on air pollution; emissions of some pollutants may increase.

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<b>Problem ID:</b>	: PID031
<b>Challenge Title</b>	: Development of Small Scale Wind energy device
<b>Name of the Department</b>	: Climate Change Department
<b>Challenge Description with context</b>	<p>: Urban landscape and the physical challenges restrict the erection of small-scale wind turbines.</p> <p>Large-scale turbines fared well compared to small-scale wind turbine models.</p> <p>Others general challenges are as under:</p> <ol style="list-style-type: none"><li>(1) Highly controlled energy sector</li><li>(2) lack of awareness and information</li><li>(3) restricted access to technology</li><li>(4) lack of competition</li><li>(5) high transaction costs</li><li>(6) poor market infrastructure</li><li>(7) High investment requirements</li></ol>
<b>Users</b>	: Individual, Corporate Industries/ Commercial offices
<b>Expected Outcomes</b>	<p>: Eco-friendly energy alternative</p> <p>Unlike energy produced by fossil fuels while wind energy is completely clean and eco-friendly.</p> <p>Not only is wind power free to harness, but it's also 100% renewable.</p>
<b>Impact</b>	<p>: Wind energy projects provide many economic benefits to neighbouring communities: jobs, a new source of revenue for farmers and ranchers in the form of land lease payments, and an increased local tax base.</p> <p>Wind energy doesn't pollute the air like power plants that rely on combustion of fossil fuels, such as coal or natural gas, which emit particulate matter, nitrogen oxides, and sulfur dioxide—causing human health problems and economic damages.</p>

**Problem ID:** PID032

**Challenge Title :** Improve the electricity generation of Bi-Facial Solar Panels.

**Name of the Department :** Climate Change Department

**Challenge Description with context :** Bi-Facial Solar Panels can generate electricity by utilizing both side of the panels. However, it is difficult for the back side to work at optimum generation capacity since sunlight doesn't get to the back surface directly.

**Users :** Individual, Industries

**Expected Outcomes :** Improvement in the electricity generation from Bi-Facial Solar Panels leading to optimum utilization of sunlight.

**Impact :** Direct benefit the users of Bi-Facial Solar Panels whether they have a Solar Rooftop System or a Captive Solar Power Plant.

**Problem ID:** PID033

**Challenge Title :** Expansion of economic life of inverters used in solar rooftop systems

**Name of the Department :** Climate Change Department

**Challenge Description with context :** Inverters are utilized in solar rooftop systems to convert the generated direct current to alternating current. These inverters have to be replaced every 5 to 7 years. How can the life of these inverters be elongated as this will reduce the timely expense of replacing the inverter?

**Users :** Individual, Industries, Government

**Expected Outcomes :** Improvement in economical life of inverters to save the time and cost, also reduce in e-waste generation

**Impact :** Cost cutting in maintenance of solar rooftop systems

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<b>Problem ID:</b>	PID034
<b>Challenge Title</b>	: To develop heat sensitive battery management system for electric vehicles
<b>Name of the Department</b>	: Climate Change Department
<b>Challenge Description with context</b>	: In the recent times we have witnessed electric vehicle batteries immolate due to how weather conditions. The weather conditions of Gujarat most of the year is hot and dry or hot and humid. In these conditions, electric vehicle batteries are put under heat stress as constant acceleration and deceleration heats up the batteries. Therefore, battery management systems of these vehicles must have sensitive heat sensing systems. A mechanism must be designed for battery management systems utilized in electric vehicles which cut off the current supply if the battery temperature reaches a certain temperature to protect the battery from immolation.
<b>Users</b>	: All User of electrical vehicle
<b>Expected Outcomes</b>	: Improve the safety rating of electrical vehicles
<b>Impact</b>	: Overcome the drawback of electrical vehicles by reducing the chances of immolation of batteries and thereby increment in numbers of electric vehicle users

**Problem ID:** PID035

**Challenge Title :** Development of inverter to balance grid fluctuation in renewable energy like solar and wind energy

**Name of the Department :** Climate Change Department

**Challenge Description with context :** The stochastic nature of solar and wind energy production makes the frequency and voltage produced unreliable to an extent. Power inverters are supposed to adjust system fluctuations in solar power generation. However, they have proved to be weak in effectively carrying this out. In addition, the time of the day and the weather conditions continuously affect the production of power. Design power inverter for balancing the irregularities in the grid produced by renewable energy.

**Users :** Individual as well as government and industries operating wind farm and solar farm

**Expected Outcomes :** Improvement in continuous and stable power supply for effective renewable energy system

**Impact :** Efficient and stable renewable energy system

**Problem ID:** PID036

**Challenge Title :** Development of zero carbon electrolyzers to produce hydrogen

**Name of the Department :** Climate Change Department

**Challenge Description with context :** The electrolyzers is an apparatus that produces hydrogen through a chemical process (electrolysis) capable of separating the hydrogen and oxygen molecules of which water is composed using electricity. Hydrogen produced in this sustainable way, i.e. without emitting carbon dioxide into the atmosphere, can be the basis for a decarbonised economy.

**Users :** Researchers and developers of hydrogen operated vehicles

**Expected Outcomes :** A new way of development of hydrogen by sustainable Electrolyzer

**Impact :** Zero carbon emission electrolyser will boost decarbonised economy

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<b>Problem ID:</b>	PID037
<b>Challenge Title</b>	: Development of E-waste collection and segregation system
<b>Name of the Department</b>	: Climate Change Department
<b>Challenge Description with context</b>	: With the ever-changing and evolving technology, electronic devices become obsolete at a very fast rate. This has created a major issue of sophisticated E-waste management. Most of the solid waste like paper, plastic, glass, metal, etc. is collected by people from our doorstep by various door to door waste collecting peddlers. These peddlers generally don't collect E-waste as it doesn't provide much value to them. Various E-waste collection centres across cities and towns have been established, but due to lack of public awareness, people are not able to utilize these facilities. Awareness must be created in people about proper E-waste management. This would encourage people to rid themselves of their electronic waste in a well-organized manner. Proper collection chains must be established in order to collect and segregate E-waste. Vendors and peddlers collecting E-waste must be given proper training for segregation and separation of what needs to be recycled and what needs to be discarded.
<b>Users</b>	: Whole society
<b>Expected Outcomes</b>	: Software or a system to control and manage e-waste collection and segregation
<b>Impact</b>	: Better and efficient waste management system to reduce pollution generated by e-waste

**Problem ID:** PID038

**Challenge Title :** Designing of material of tyres which are highly durable

**Name of the Department :** Climate Change Department

**Challenge Description with context :** Tyres used in vehicles have to be changed around roughly every 30,000 - 40,000 Kms. Tyres with longer life span may be developed by altering the type of rubber used to make these tyres so that they can last longer, say 1 lakh kilometers. This would save the environment as less waste will be produced.

**Users :** Producers of tyres, vehicle user, waste manager

**Expected Outcomes :** Highly durable tyres with longer life span

**Impact :** Minimised rubber waste, less maintenance cost of vehicles

**Problem ID:** PID039

**Challenge Title :** Development of batteries incorporating 4R concept for sustainable development

**Name of the Department :** Climate Change Department

**Challenge Description with context :** Batteries used in vehicles these days have fixed life cycles after which they need to be replaced. These dry/gel batteries cannot be repaired or reused again and have fixed life spans. However, the batteries used in old times had longer life spans and could be repaired and reused. If a battery is designed which can be easily repaired and reused with minor changes and also operated for a large life span, it will reduce the generation of waste and it will also help conserve precious metals and natural resources.

**Users :** Battery manufacturers, users of vehicles, waste managers

**Expected Outcomes :** Repairable and reusable batteries

**Impact :** Major reduction in waste generation resulting in conservation of metal and natural resources



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## **Education Department**

<b>Problem ID:</b>	PID040
<b>Challenge Title</b>	: Portal for the Academic Inspection
<b>Name of the Department</b>	: Education Department
<b>Challenge Description with context</b>	<p>: To develop an application in which the common data are to be filled in and that will be mapped to specific formats of academic inspection like Directorate of Technical Education (DTE), Gujarat Technological University(GTU) and National Board of Accreditation(NBA).</p> <p>In academic institutions working under DTE, different offices are conducting regular academic inspections. Every time the institutes have to fill in the data in respective formats. So if an application is developed in which the common data required by all offices like DTE, GTU and NBA are filled in and that will be automatically filled in respective formats of the offices.</p>
<b>Users</b>	: All academic institutions working under DTE as well as the inspecting offices like DTE, GTU and NBA.
<b>Expected Outcomes</b>	: All academic data will be available on single platform.
<b>Impact</b>	: Time and resource saving, easily available data, easy to access data.

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<b>Problem ID:</b>	PID041
<b>Challenge Title</b>	: CES (App for Court Case Event & Status)
<b>Name of the Department</b>	: Education Department
<b>Challenge Description with context</b>	: Prompt resolution of every case against various departments of the government has always been a priority of the government. The details of the case can be easily understood by the top government officials, government pleaders as well as every government employee involved in the case. If the government pleaders understand the case well, they will be able to defend the government side as well as the officials will be able to get complete information about the case with a single click.
<b>Users</b>	: Government Officers, Government Pleaders
<b>Expected Outcomes</b>	: Authenticated user will be able to view and manage necessary case details. Smooth functioning of cases, Timely settlement of court cases.
<b>Impact</b>	: It will be useful for the officials as well as the government pleaders in understanding the case and in defending strongly in favour of the government.

<b>Problem ID:</b>	PID042
<b>Challenge Title</b>	: A web portal to maintain purchase data
<b>Name of the Department</b>	: Education Department
<b>Challenge Description with context</b>	: Design an application which contains list of items with all details in two categories (below 20,000 and above 20,000) for Purchase from which every institutes will add their number of required items and all the total number of required items' data will be reflected at DTE so purchase of all total required items will become easy and fast.
<b>Users</b>	: DTE, Institutes working under DTE.
<b>Expected Outcomes</b>	: All purchase data will be available centrally.
<b>Impact</b>	: All the process to collect data from every institute about the no. of same items need to be Purchased will become easy and fast.

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<b>Problem ID:</b>	PID043
<b>Challenge Title</b>	: History Card Android Application
<b>Name of the Department</b>	: Education Department
<b>Challenge Description with context</b>	: Application user should be verified first time by OTP. There should be frequently asked question which is updated by authenticated users. Following points to be covered through this application: <ol style="list-style-type: none"><li>1. Faculty can view only his/her history card through mobile application.</li><li>2. Different AGP (Academic Grade Pay) Movement [with date and order] for each faculty should be there.</li><li>3. By Admin Login, user can view and manage necessary data from their portal.</li></ol>
<b>Users</b>	: Class 1 to 4 (All designated working under the education department)
<b>Expected Outcomes</b>	: Status of History Card Service History AGP Movement
<b>Impact</b>	: Faculty can easily view their History Card, Service History and AGP Movement from the application only.

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<b>Problem ID:</b>	PID044
<b>Challenge Title</b>	: Portal to Finalise Warden-Rector
<b>Name of the Department</b>	: Education Department
<b>Challenge Description with context</b>	: Through this portal institute can suggest 3 names for Hostel Warden and 3 names for Hostel Rector. From the past records and different criteria's Portal will automatically finalize 1 name for Hostel Warden and 1 name for Hostel Rector. With the help of this portal we can find out the total duration of Warden & Rector of the Faculty throughout his career. There should be frequently asked question which is updated by authenticated users.
<b>Users</b>	: All Institute
<b>Expected Outcomes</b>	: End user can easily finalize their Hostel Warden & Hostel Rector. Authenticated user can view and manage necessary data from their portal.
<b>Impact</b>	: Institute can easily finalize the name of Hostel Warden & Hostel Rector. With the help of this portal we can find out the total duration of Warden & Rector of the faculty throughout his career.

<b>Problem ID:</b>	PID045
<b>Challenge Title</b>	: Real time Artificial Intelligence (AI) based Data Analysis for decision making
<b>Name of the Department</b>	: Education Department
<b>Challenge Description with context</b>	: Gujarat Council of School Education (GCSE), Samagra Shiksha has implemented various state- wide applications like Child Tracking System, Teachers Portal, Online Attendance System, Vehicle Tracking System, Migration Monitoring System, Gyankunj Project Monitoring Portal, Out of the school monitoring portal, School Monitoring Application, School Administration System, etc. These applications produce voluminous data pertaining to the status & progress school facilities, students, teachers and other education indicators. It's a challenge for real time analysis of the data generated across the applications for informed decision making.
<b>Users</b>	: Students ,School authorities, block, district & state administration
<b>Expected Outcomes</b>	: Actionable inputs for effective decision making & overall improvement in resource utilization & all the Education indicators
<b>Impact</b>	: Improved experience in Education facilities offered by Government

<b>Problem ID:</b>	PID046
<b>Challenge Title</b>	: Analysis & Improve transition rate from upper primary grade to secondary grade through the use of technology
<b>Name of the Department</b>	: Education Department
<b>Challenge Description with context</b>	: Government Schools faces issues of drop out in students from upper primary to secondary grade. State is continuously taking steps to ensure 100% transition rate at elementary to secondary level as well as put an effort to mainstream out of school children. However, the results are not as expected.
<b>Users</b>	: Students, school authorities, block, district & state administration
<b>Expected Outcomes</b>	: Technology solution for analysing transition rate from upper primary grade to secondary grade
<b>Impact</b>	: Improved transition rate from upper primary grade to secondary grade

<b>Problem ID:</b>	PID047
<b>Challenge Title</b>	: Student Life Cycle Management System
<b>Name of the Department</b>	: Education Department
<b>Challenge Description with context</b>	: As on today, there is a lack of master database of students linking it to unique student Id & maintaining it throughout the life cycle of students including school education, higher education, employment phase, etc., which can be accessed by the concerned authorities for updating / validating the credentials of students throughout the different phases of life.
<b>Users</b>	: Students, Education Department & its HoDs, State Government Departments like Health, Labour & Employment, etc., employers.
<b>Expected Outcomes</b>	: Web Portal with access rights to concerned authorities
<b>Impact</b>	: Hassle free & Paperless process of students' admission to schools (in-case of migration), higher education institutes and for employment process along with validation & verification

<b>Problem ID:</b>	PID048
<b>Challenge Title</b>	: Student dropout analysis for school education
<b>Name of the Department</b>	: Education Department
<b>Challenge Description with context</b>	: Right to education is key concern for government and at school level; drop out ratio is high due to poverty and social, economic reasons. If government have drop out student analysis on following different categories, it will be very useful in framing different policies. <ul style="list-style-type: none"> <li>• School wise</li> <li>• Area wise</li> <li>• Gender wise</li> <li>• Caste wise</li> <li>• Age/standard wise</li> </ul>
<b>Users</b>	: Education department and its Head of the Departments
<b>Expected Outcomes</b>	: Focused interventions on the high dropout rates
<b>Impact</b>	: Lowered dropout rates

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<b>Problem ID:</b>	PID049
<b>Challenge Title</b>	: Interlinking of School education, Higher Education and Technical Education at all levels throughout the country
<b>Name of the Department</b>	: Education Department
<b>Challenge Description with context</b>	: As on today we are not having any master database regarding students at various levels, without which framing policies with regard to education and upliftment of student community is difficult.  Provision of common platform in which the entire database of school education, higher education & technical education are interlinked, which will help government to identify the grey areas where actual focus is required. Further, the percentage of students entering various fields of education and percentage of students' dropouts also can be identified and also State/District wise dropouts can be identified and thereby these places can be targeted for improvement.
<b>Users</b>	: Government Agencies
<b>Expected Outcomes</b>	: Web portal
<b>Impact</b>	: Better planning & effective policy formation.

## Energy & Petrochemicals Department

<b>Problem ID:</b>	PID050
<b>Challenge Title</b>	: Electrical asset maintenance planner and task management system.
<b>Name of the Department</b>	: Energy & Petrochemicals Department
<b>Challenge Description with context</b>	<p>: The maintenance requirement from the consumer's point of view and line staff's point of view is noted verbally or on a paper system. When the actual maintenance order is given, the priority cannot be streamlined, based on the total database. The critical requirement of maintenance may get skipped, because of paper communication or verbal communication, or sometimes important aspect of the maintenance may also be left out.</p> <p>If the problem gets resolved, it can help the system to be improved in the most efficient way. Also, the maintenance which is critical can be prioritized based on the analysis given by the application. Also, the number of accident cases can be reduced.</p> <p>Consumer Role – To furnish/provide the detail in a prescribed way and co-operate their best possible to assist the system.</p> <p>Utility Role - Get used to the app and priorities the work on the basis of the analysis furnished by the App.</p>
<b>Users</b>	: Consumer and Line Staff and Field Engineers
<b>Expected Outcomes</b>	: Best fit with problem.
<b>Impact</b>	: Maturity based on strictness on implementation by higher authority up to staff level.



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<b>Problem ID:</b>	PID051
<b>Challenge Title</b>	: Project monitoring tool & MIS system
<b>Name of the Department</b>	: Energy & Petrochemicals Department
<b>Challenge Description with context</b>	<p>: Managing all these activities manually is a very tough and tedious task for the Cell. So there is a need for a “Web-based Project monitoring tool &amp; MIS System” which will help to automate the processes as well as be helpful for monitoring the different Projects handled by the Company/Cell.</p> <p>The Scope of Work of the service provider is to provide us with a comprehensive Project Monitoring Tool along with an MIS system. The scope of service shall include the development and support of an integrated information system for monitoring the different projects.</p> <p>This system gives us daily updates on project activity and the status of the project. Also, tasks will be managed as per requirement and coordinate with employees.</p>
<b>Users</b>	: Organisation Employees
<b>Expected Outcomes</b>	: Software application is to do a proper Management of the Project planning and will serve as a single repository of the data for the Projects.
<b>Impact</b>	: Ease of monitoring the different project and improve the decision making.

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<b>Problem ID:</b>	PID052
<b>Challenge Title</b>	: Inspection and testing of material
<b>Name of the Department</b>	: Energy & Petrochemicals Department
<b>Challenge Description with context</b>	: Mobile App based material testing and inspection activities system is not available. As a result, inspection work suffers due to sometimes non -available of various IS standards, various applicable test, methodology of testing, testing upper and lower limit values, lack of inspection knowledge etc. IS: Indian Standards GTP : Guaranteed Technical Parameters Following sub problems are required to be resolved through mobile App. <ul style="list-style-type: none"><li>• Testing Procedure and Testing formats differ manufacture to manufacture</li><li>• Indian Standards are not available with manufactures</li><li>• The inspector have to remain dependent on manufacturer for Specifications</li></ul> Previous testing record is not available Activity List Calibration of reports of all equipment and their due date of calibration to be checked <ul style="list-style-type: none"><li>• Material wise IS standard could be viewed</li><li>• Material wise IEC standard could be viewed</li><li>• Material Technical Specification and GTP could be viewed</li><li>• Material wise testing methodology<ul style="list-style-type: none"><li>○ Applicable test</li><li>○ Methodology of testing(In full details)</li><li>○ Sample criteria</li><li>○ Upper and lower limits</li></ul></li></ul> Inspection report <ul style="list-style-type: none"><li>○ Name of Inspector with designation</li><li>○ Date of inspection</li><li>○ Order No</li></ul>

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- Name of Material
  - Name of Company
  - Lots
  - Sample Lots
  - Test Reports

System Generated reports with remarks (Approved/Rejected Material)

**Users** : Power utility and All government organizations

**Expected Outcomes** : Android/IOs/Windows base Mobile app

**Impact** : Ease to record keeping and improvised decision making.

<b>Problem ID:</b>	PID053
<b>Challenge Title</b>	: Monitoring of quality of electricity line erection work carried out by contractor
<b>Name of the Department</b>	: Energy & Petrochemicals Department
<b>Challenge Description with context</b>	<p>: Line work of Electricity Distribution Network is not being monitored properly which may lead interruption in Power supply or accidents</p> <p>In Distribution Utility, the line work is being carried out through outsourced agencies across the utility in their various sub-divisions. The out sourced agencies/ Contractors carry out line work viz Erection of 11 KV line, LT line, poles, guy sets, transformer centre, earthing system, installation of RMU, Meters, maintenance of line, tree cutting ,etc. If poor monitoring or supervision happens, the line work quality may not be as per the standard requirement. This may lead to interruption or accident in power supply network.</p> <p>Presently subdivision engineer carry out checking but all the time due to large volume of work, not able to complete the task. Also due to urgency of work, contractors might take undue benefit of doing cheaper quality work.</p> <p>Contractors are having their labourers and supervisors, if they do not carry out work as per standard and if does not check this work; the quality of work will become inferior. As the quantum of the work is very large, sometimes, situation happens where above problem occurs.</p> <p>To eliminate the issue, a mobile app may be developed, which will enable the engineer to check or cross check the work in proper way. The app should also with the facility of uploading of site photograph.</p> <p>Steps for checking of various works should be prepared in an app. Only after completion of checking through the app, the payment to the agency should be made.</p> <p>Such kind of app will enable utility to have a control on contractor's behaviour for doing cheaper work.</p>
<b>Users</b>	: Utility and public
<b>Expected Outcomes</b>	: Web portal and mobile application
<b>Impact</b>	: Improvement in work quality and efficiency

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<b>Problem ID:</b>	PID054
<b>Challenge Title</b>	: Customer Feedback Information & Suggestion System For Power Utility Services.
<b>Name of the Department</b>	: Energy & Petrochemicals Department
<b>Challenge Description with context</b>	: Mobile App for the general public to submit their feedback and suggestions for improving the performance of any Power Utility. This can be achieved by systematic strategy in three steps. <ul style="list-style-type: none"><li>• Obtain the feedback and suggestions from the customer related to their subjects regularly;</li><li>• Analysis of the feedback and suggestion to improve the performance;</li><li>• Planning and implementation towards performance improvement with fixing up the responsibility of the concern officer.</li></ul> Suggestions, poor workmanship, attitude of employees, power interruptions, prone locations and unsafe locations can be uploaded with its photo image and geo-locations through mobile App. Activity List <ul style="list-style-type: none"><li>• Name of User, Mobile No, Address to be registered by User</li><li>• Nature of suggestions-In different category</li><li>• Various types of suggestions like<ul style="list-style-type: none"><li>○ Snapping of live conductor and lying unsafe on road</li><li>○ Open and unsafe utility wiring</li><li>○ Open underground cable</li><li>○ Poles stacked on road in unsafe manner</li><li>○ Miss use of Government / Utility material</li><li>○ Low ground clearance</li><li>○ Illegal construction under/near the live electrical line</li></ul></li><li>• All will be uploaded with images and geo-locations</li><li>• Action taken by department</li><li>• Tracking of status of suggestions</li><li>• Feedback from the user regarding utility/gov. actions</li><li>• Feedback from the users regarding employees</li></ul>

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- On the base of feedback from users, employees'/officers performance can be reviewed
  - Appreciation by utility/gov. department for good suggestions
  - Various types of suggestions for improvement of services in
    - Power Quality and Reliability
    - Billing
    - Administrative
    - New Connection
    - Material Quality
    - Others Innovative suggestion
    - Safety tips
    - Contact Us

**Users** : All Power utilities, all government departments and public.

**Expected Outcomes** : Android/IOS/Windows base Mobile app,

**Impact** : General public, Utility and all Government departments

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## Food, Civil Supplies and Consumer Affairs Department

<b>Problem ID:</b>	PID055
<b>Challenge Title</b>	: V.C.O. Performance Card
<b>Name of the Department</b>	: Food, Civil Supplies and Consumer Affairs Department
<b>Challenge Description with context</b>	: Voluntary Consumer Organizations carry out consumer awareness activities at remote area. They submit their monthly report physically at office. Monthly report should be send online so that it becomes easily accessible.
<b>Users</b>	: Government approved Voluntary Consumer Organization
<b>Expected Outcomes</b>	: Time will be saved, Less Paper work, E-governance
<b>Impact</b>	: Paperless work, Easy performance report generation and better evaluation.

<b>Problem ID:</b>	PID056
<b>Challenge Title</b>	: Creative Logo Design for Consumer Protection
<b>Name of the Department</b>	: Food, Civil Supplies and Consumer Affairs Department
<b>Challenge Description with context</b>	: Director Consumer Affairs works for consumer awareness, Pre-litigation of consumer complaints. Logo for consumer awareness should be well designed so that each consumer gets aware about their rights.
<b>Users</b>	: Citizens of Gujarat
<b>Expected Outcomes</b>	: Visual identity
<b>Impact</b>	: Easily comprehensible and helpful for illiterate people

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<b>Problem ID:</b>	PID057
<b>Challenge Title</b>	: Application for Consumer
<b>Name of the Department</b>	: Food, Civil Supplies and Consumer Affairs Department
<b>Challenge Description with context</b>	: Consumer can ask query in their own language. There should be manual or partially automated consultation expert forwarding system for requested query. There should be FAQs which is updated by authenticated users.
<b>Users</b>	: Citizens of Gujarat
<b>Expected Outcomes</b>	: Redress complaint within short time
<b>Impact</b>	: Consumers can be protected

<b>Problem ID:</b>	PID058
<b>Challenge Title</b>	: Monthly Statement Compilation System
<b>Name of the Department</b>	: Food, Civil Supplies and Consumer Affairs Department
<b>Challenge Description with context</b>	: Office of the Controller Legal Metrology carries out monthly statement at Taluka place. They submit their monthly report physically at district office. Then district office submits whole district statement to Head Office. Monthly report should be send online so that it becomes easily accessible.
<b>Users</b>	: Legal Metrology offices including Taluka/District and Head office
<b>Expected Outcomes</b>	: Time will be saved, Less Paper work, E-governance
<b>Impact</b>	: Paperless work, Easy performance report generation and better evaluation.



## Forests & Environment Department

<b>Problem ID:</b>	PID059
<b>Challenge Title</b>	: Dusting Collection mechanism from Quartz Stone crushing units (Air Pollution)
<b>Name of the Department</b>	: Forests & Environment Department
<b>Challenge Description with context</b>	: Microsize of the Particulate matters: Difficult to arrest at source resulting into high air pollution.
<b>Users</b>	: Industry and surrounding habitats
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• Research innovation on the subject will result into reduction of particulate matter at source</li> <li>• Minimization of air pollution</li> </ul>
<b>Impact</b>	: Reduction in diseases resulting from air pollution such as Chronic obstructive pulmonary disease (COPD)

<b>Problem ID:</b>	PID060
<b>Challenge Title</b>	: High Ammonia liberation while manufacturing of CPC Blue
<b>Name of the Department</b>	: Forests & Environment Department
<b>Challenge Description with context</b>	: Ammonia in the industrial effluents and gaseous emissions resulting into water and air pollution, respectively
<b>Users</b>	: Industry and surrounding habitats
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• Research on the subject will result into reduction pollutants in industrial effluents</li> <li>• Minimization of water pollution</li> <li>• Minimization of air pollution</li> </ul>
<b>Impact</b>	: <ul style="list-style-type: none"> <li>• Ammonia free effluent / effluent having reduced level of ammonia. Saving water as a resource.</li> <li>• Reduced air emissions</li> </ul>

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<b>Problem ID:</b>	PID061
<b>Challenge Title</b>	: Disposal of wastewater generated by Water Jet weaving units
<b>Name of the Department</b>	: Forests & Environment Department
<b>Challenge Description with context</b>	: Disposal of the wastewater generated by water Jet weaving units can be addressed Reduction in pollution load in wastewater
<b>Users</b>	: Industry and surrounding habitats
<b>Expected Outcomes</b>	: Improving the water quality of water bodies nearby water jet weaving units Water pollution reduction in surrounding area
<b>Impact</b>	: Disposal of wastewater in to nearby nallah/ khadi adversely affecting the water quality

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## General Administration Department

<b>Problem ID:</b>	PID062
<b>Challenge Title</b>	: Employee Happiness & Welfare System
<b>Name of the Department</b>	: General Administration Department
<b>Challenge Description with context</b>	<p>: In current situation while doing official work, sometime employee passes through depression and anxiety due to heavy workload.</p> <p>Employees as a human being faces so many problems related to social, educational, health and so on. So there is a requirement of system which allows Group communication and sharing of information among the employees to help out one another and thus by increase in the happiness index of the employees and it will reflect automatically in his official work.</p> <p>As an example if some employee needs specific group of blood during emergency, may communicate with the group of employee and their family members. Also sometime Employees want to organize cultural event, so the details may be shared and interest may be collected among the employees. If any employee interested in cycling, drawing or any sports event, he can automatically find employee with same interest.</p> <p>In this application there will be data of Education Qualification of employee and his family, so if any person wants his or her son/daughter to join any academic course/stream he gets guidance from other employees.</p> <p>Employees can easily join the group of various subject discussions. Similarly, employees may communicate for many purposes.</p>
<b>Users</b>	: Employees
<b>Expected Outcomes</b>	: System should provide effective way of communication and information sharing among the employees.
<b>Impact</b>	: It will increase the happiness index of the employees and thereby increasing their efficiency at work environment and thus objective of better service to public can be achieved easily.

- Problem ID:** PID063
- Challenge Title :** Employee Promotion System
- Name of the Department :** General Administration Department
- Challenge Description with context :** General Administration Department maintains Human Resource Details about all employees in Sachivalaya. Employees may belong to various cadres and are promoted as per Government of Gujarat Rules for Promotions. For promotion, a seniority list, performance appraisal of last 5 years, clearance of Departmental Exam, Hindi and CCC+ exam and other parameters as prescribed in promotion rules are needed.
- A proposed system should generate zone of consideration (list of eligible employees) based on seniority list and employees' performance appraisal data for last 5 years by integrating all the rules.
- System should generate draft of final orders of selected employees in prescribed format.
- Users :** Cadre Controlling Authority of all departments.
- Expected Outcomes :** Through this online promotion system, various process for promotion like departmental promotion committee, performance appraisal checking and other check points can be checked very easily, punctually and in prompt.
- Impact :** Saving of time and efforts in for giving promotion to employees.
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- Problem ID:** PID064
- Challenge Title :** Employee Training System
- Name of the Department :** General Administration Department
- Challenge Description with context :** Currently Sardar Patel Institute of Public Administration (SPIPA) issue whole training schedule on different subject for a year. It is compulsory for employee to attend 2 or 3 training in a year. By this system employee can apply online for the training course/subject. These applications will go to competent authority for approval and after approving this application these data go directly to SPIPA.
- SPIPA will get a consolidated list of all employees from various departments to arrange training. Employees may get final intimation through the application. Different types of report of Training taken by various cadres of employees can be generated by the system.
- Users :** Employees, SPIPA

<b>Expected Outcomes</b>	: The proposed system should maintain the training details of all employees and allow them to apply for training in online mode.
<b>Impact</b>	: SPIPA makes use of this system to maintain record of employee training easily and saving of time and employees have easy to use online interface to apply for the training issued by SPIPA.
<b>Problem ID:</b>	PID065
<b>Challenge Title</b>	: Vehicle Sharing System
<b>Name of the Department</b>	: General Administration Department
<b>Challenge Description with context</b>	<p>: Employees working in sachivalaya may come from various regions of Ahmedabad, Gandhinagar and nearby places with their personal vehicles. Due to high prices of fuel, sharing of vehicle among employees is necessary nowadays. So a vehicle sharing system is required to help employees to save their fuel expenses.</p> <p>Employee with vehicle may share a route to other employees so that interested employees with same route may join and the travel to the sachivalaya. The system should support the dynamic generation of a group of employees for sharing vehicle.</p> <p>This system will definitely help in saving fuel expenses, reduce traffic in peak hours and also make city less polluted.</p>
<b>Users</b>	: Employees
<b>Expected Outcomes</b>	: The system should generate the dynamic group of employees for sharing vehicle based on a same route.
<b>Impact</b>	: This system will definitely help in saving fuel expenses, reduce traffic in peak hours and also make city less polluted.

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<b>Problem ID:</b>	PID066
<b>Challenge Title</b>	: Online Order Canteen System
<b>Name of the Department</b>	: General Administration Department
<b>Challenge Description with context</b>	: Sachivalaya has canteens within campus premises. Employees in Sachivalaya needs information about all available items in canteens and give the order for the items directly through online mobile application. The online payment of item purchased should also be supported through the application. Officers with KOT (Kitchen Order Ticket) within 5000 Rs/Year should be supported by the application. The individual canteen wallet support is required in the application. Employees can also book the order in advance for purchasing items in bulk. Employees can also give rating for the food items supplied to improve the quality of the items. The canteen should supply the item purchased by employee with order closure.
<b>Users</b>	: Employees
<b>Expected Outcomes</b>	: The proposed system should support the order and payment for the items purchased from canteen through online mode.
<b>Impact</b>	: The system will be helpful to employees with updated status of items available and payment for buying online to save the time and efforts.

## Health & Family Welfare Department

<b>Problem ID:</b>	PID067
<b>Challenge Title</b>	: Clinical Decision-Making tool for screening of children using IMNCI tool.
<b>Name of the Department</b>	: Health and Family Welfare Department
<b>Challenge Description with context</b>	: IMNCI is evidence-based tool for screening and management of the common neonatal and childhood illness. IMNCI tool addresses the major cause of childhood and neonatal mortality including diarrhoea, pneumonia, ear problems, breast feeding problems etc. It includes triaging of the neonatal as well as childhood according to signs and the symptoms, information regarding counselling, pre-referral treatment, referral as well as post-referral method. Despite hue effort in capacity building as well as the technical assistance, it is still underutilized at the field level by frontline health worker like ANM/ FHW.
<b>Users</b>	: Front-line Health Worker (ANM/ FHW).
<b>Expected Outcomes</b>	: Digital clinical decision-making tool which can be easily used through mobile for screening of sick children.
<b>Impact</b>	: Decreased childhood morbidity and mortality.

<b>Problem ID:</b>	PID068
<b>Challenge Title</b>	: Underutilization and lack of mechanism of taking action based on partogram.
<b>Name of the Department</b>	: Health and Family Welfare Department
<b>Challenge Description with context</b>	: Partogram is the most important tool for health workers at any level to assess the progress of labour and take appropriate actions to avert maternal and child mortality. A partogram has an alert and action line. If the plotted graph crosses alert line, it indicates prolonged labour in which case, the case has to be referred to a first referral unit along with the plotted partogram. If the plotting crosses action-line, ideally intervention (for e.g., c-section) has to be immediately undertaken.  In facilities like PHC, often partogram are not utilised fully or correctly due to several reasons. A digital partogram which can generate alert and send information to referral centres can greatly reduce maternal and child mortality by providing real-time decision support, improve data entry, and strengthening referral chain.

**Users** : Health staff at functional delivery points (Primary Health Centres).

**Expected Outcomes** : Digital platform for recording the partogram.

**Impact** : Improved child-birth outcomes (decrease in maternal and child mortality rates)

**Problem ID:** PID069

**Challenge Title** : Self-identifying the mental health status and get guidance for support.

**Name of the Department** : Health and Family Welfare Department

**Challenge Description with context** : Considering the increasing burden of the mental disorders (as evidenced in National Mental Health Survey-2016), it is important to identify the people at the risk of developing mental disorder at early stage to take the necessary action. Primary Health Care centre is a gate-keeper of the Indian public health care delivery system and also an opportunity to screen patient for the risk of developing mental disorders. There are some validated tools are available for screen of the person for risk of developing psychiatric disorders, however, ready availability, taking response from patients, interpretation and quick guide for taking action based on the interpretation of the tool score is still challenge for effective and efficient utilization of the screening tool.

**Users** : Public as well as Frontline Health worker.

**Expected Outcomes** : Mobile application for screening of mental health.

**Impact** : Raised awareness and care-seeking for mental health



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<b>Problem ID:</b>	PID070
<b>Challenge Title</b>	: Health care service delivery data validation.
<b>Name of the Department</b>	: Health and Family Welfare Department
<b>Challenge Description with context</b>	: Under any national health program many data pertaining to service delivery is taken and captured in physical as well as digital form through front-line health worker. These data are collected, analysed and reviewed at district and state level frequently. However, there are gap in validation of the collected data especially at level of the mid-supervisory level. Fixed proportions of the beneficiaries can be randomly chosen from the electronic database, which to be visited by the supervisors (i.e 5% by immediate supervisor (Female Health Supervisor), 1% by second level supervisor (Primary Health Center Medical Officer), 0.25% by third level supervisors (Taluka Health officer) and 0.1% by District level supervisors). Supervisor will collect the data which will be matched with data collected by frontline worker. A discrepancy reports will be generated, which can be used from improving the quality of the data. During the process of validation, the supportive supervision component can be added. This mechanism can be utilized for the supportive supervision.
<b>Users</b>	: Health Supervisor (Family Health Service FHS), Medical officer, Block Health Supervisor.
<b>Expected Outcomes</b>	: Data validation and supportive supervision module.
<b>Impact</b>	: Improve in data quality and service delivery.

<b>Problem ID:</b>	PID071
<b>Challenge Title</b>	: Knowledge accreditation of the frontline workers.
<b>Name of the Department</b>	: Health and Family Welfare Department
<b>Challenge Description with context</b>	: Health functionaries undergo a range of trainings and capacity-building activities, related to a range of programs addressing different health conditions. There is a mechanism of knowledge assessment of the health worker at PMCC centre through telephone conversation. In the same line, this mechanism can be extended using digital technology. The simple tool including multiple choice questions from different domain can be used for the knowledge assessment and grading of the workers according to score obtained. This mechanism can be used for appraisal, training need assessment, self-analysis and self-motivation.
<b>Users</b>	: Front-line health worker.
<b>Expected Outcomes</b>	: A virtual platform/portal that supports e-assessment and e-certificate delivery.
<b>Impact</b>	: Enhance capacity of health functionaries to deliver quality of health service delivery, assessment of training needs of health functionaries.

<b>Problem ID:</b>	PID072
<b>Challenge Title</b>	: Post-Stroke rehabilitation support
<b>Name of the Department</b>	: Health and Family Welfare Department
<b>Challenge Description with context</b>	: Following an episode of stroke, patient develops varied grade of disability which requires post-stroke rehabilitative care. A mobile application with tele-physiotherapy solution and follow up care as well as patient and family learning materials can aid in improving the prognosis.
<b>Users</b>	: Stroke patients and family.
<b>Expected Outcomes</b>	: Mobile application with tele-physiotherapy solution and follow up care.
<b>Impact</b>	: Improved outcomes, reducing burden of disability associated with stroke.

<b>Problem ID:</b>	PID073
<b>Challenge Title</b>	: Smart First Aid App
<b>Name of the Department</b>	: Health and Family Welfare Department
<b>Challenge Description with context</b>	: First aid is the first and immediate assistance given to any person suffering from either a minor or serious illness or injury with care provided to preserve life, prevent the condition from worsening, or to promote recovery. First aid is generally provided by lay person, as health personnel may not be in vicinity. Smart First Aid application can provide digital solutions based on complaints entered in the app. It can generate actions to be undertaken as well as call ambulance and provide preliminary information to the paramedical staff.
<b>Users</b>	: Public
<b>Expected Outcomes</b>	: Mobile based First AID app.
<b>Impact</b>	: Effective and quick first aid can avert preventable mortality.

<b>Problem ID:</b>	PID074
<b>Challenge Title</b>	: Smart Referral for Sick newborns to save lives
<b>Name of the Department</b>	: Health and Family Welfare Department
<b>Challenge Description with context</b>	: A newborn infant, or neonate, is a child under 28 days of age. During these first 28 days of life, the child is at highest risk of dying. To ensure appropriate and timely care to newborns, the SNCU (Special Newborn Care Unit) are established in Medical Colleges and District Hospitals which receive referred sick neonates, either inborn or out-born. Most of the times medical college SNCUs are overburdened and neonates may need to be referred to DH SNCU or other SNCUs. A smart referral from functional delivery points through inputs of vital signs, complaints, laboratory parameters to SNCU in case of out-born baby, as well as inborn cases. Moreover, referral between SNCUs in case of non-availability of bed to ensure timely care of sick newborn.
<b>Users</b>	: Facility Based Newborn Care Facilities: NBCC, NBSU, SNCU.
<b>Expected Outcomes</b>	: Inter-operable digital platform for linkage of functional delivery point and SNCU.
<b>Impact</b>	: Improving neonatal survival outcomes by strengthening referral.

**Problem ID:** PID075

**Challenge Title** : Self care and routine check-ups/ investigations for early identification of the complications of the diabetes mellitus.

**Name of the Department** : Health and Family Welfare Department

**Challenge Description with context** : Strict glycemc control as well as routine monitoring is core component for preventing as well as early identification of micro as well as macro vascular complication among patients with the diabetes mellitus.

**Users** : Patients of Diabetes Mellitus.

**Expected Outcomes** : Self-care mobile application which includes alerts for necessary investigation (HbA1c, fundoscopy etc.) for status of glycemc control and early identification of DM complication.

**Impact** : Prevention of complication and improve in quality of life among patients of the diabetes mellitus.

**Problem ID:** PID076

**Challenge Title** : Creating a module on adolescent using TeCHO+ data.

**Name of the Department** : Health and Family Welfare Department

**Challenge Description with context** : There is a strong focus on strengthening health service delivery to adolescents (age group of 10-19 years old). An information technology enabled real-time aid that facilitates name-based tracking of each and every enrolled adolescent, for their status of malnutrition and anaemia has potential to enhance timely health service delivery to adolescent and enhancing monitoring of the same.

**Users** : Front-line health workers (ASHA/ AWW/ ANM).

**Expected Outcomes** : Adolescent Health Module for tracking of the anaemia and malnutrition.

**Impact** : Information technology enabled, real-time, name-based tracking of adolescent for their health status and service delivery.

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<b>Problem ID:</b>	PID077
<b>Challenge Title</b>	: Develop integrated dashboard for senior authorities to review key result areas/ core indicators.
<b>Name of the Department</b>	: Health and Family Welfare Department
<b>Challenge Description with context</b>	<p>: Digital dashboard with health indicators is one of the most important tools for health authorities to monitor the health situation in their respective areas. We have separate dashboards for different programs ex. Techo+, HMIS, IHIP. But there is no one stop solution for monitoring key result areas/ core indicators at one place.</p> <p>So, we want to build a dashboard which fetch the data from existing applications and perform automated analysis on the basis of predesigned and approved sensitive and specific health indicators. It will display those key result areas/ core indicators according to their importance at different levels.</p> <p>It will help in data driven decision making and improve monitoring of existing health situation.</p>
<b>Users</b>	: Minister, secretary and Health authorities at different levels.
<b>Expected Outcomes</b>	: Digital dashboard for key result areas/ core indicators at one place for senior authorities
<b>Impact</b>	: Improved monitoring of health indicators which will ultimately improve health related services.

<b>Problem ID:</b>	PID078
<b>Challenge Title</b>	: Digital ASHA incentive payment portal
<b>Name of the Department</b>	: Health and Family Welfare Department
<b>Challenge Description with context</b>	: Accredited Social Health Activists (ASHA) are frontline health volunteers ensuring delivery of health and awareness services to the last mile. The ASHAs are given performance-based incentives for ensuring service delivery in the communities. Currently the payment of incentives is carried out manually in paper-based formats. This results in delays in payment of incentives. Further paper-based format of record keeping results in data limitations, restricting in-depth and disaggregated analysis of ASHA performance. Analysis of different types of incentive-linked service delivery at block, district and state levels has potential to reveal existing challenges in delivery and uptake of various activities being undertaken by ASHAs and throw light on corrective measures.
<b>Users</b>	: Front-line health workers especially-ASHA for performance records, and claiming the incentives, Auxiliary Nurse Midwife (for verification), Medical officer and other higher-level officials (for approval), and administrative unit at district/state level (releasing ASHA incentives payment)
<b>Expected Outcomes</b>	: A digital mobile and web-based portal/tool which can be used by ASHA to insert details of their performance and claim incentives, which can be verified by ANMs, approved by Medical Officer and authorities at higher level and the payment could be released by the administrative unit at district/state level, responsible for payment of ASHA incentives.  A digital system of ASHA incentive payments would potentially simplify the payment process, reduce paper-work and manual record-keeping, thereby reducing the delay in payments of incentives.  Increase transparency in the payment of incentives  It would also help digitize the performance-linked services records, which could be used for in-depth analysis of ASHA performance by service and program type, and geographically, which can suggest corrective measures to enhance ASHA performance.
<b>Impact</b>	: Timely release of payments would likely result in higher motivation of ASHAs to deliver services efficiently

## Home Department

<b>Problem ID:</b>	PID079
<b>Challenge Title</b>	: e-Bandobast - Application for Manpower Deployment of Gujarat Police Force for VVIP/VIP bandobast
<b>Name of the Department</b>	: Home Department
<b>Challenge Description with context</b>	: Application for Manpower Deployment of Gujarat Police Force. When there is any VVIP/VIP movement or festivals, Elections and other events, a deployment plan has to be created for judicious deployment of available force for prevention of any outbreak of Law and Order.
<b>Users</b>	: Officers and Police Personnel of Gujarat Police. Police Stations, Traffic Police, SRP Companies.
<b>Expected Outcomes</b>	: A user friendly software and mobile App which can be help in preparing these bandobast scheme easily and rapidly is needed.
<b>Impact</b>	: It takes lot of time, particularly for prepare bandobast scheme for optimal deployment of available force.

<b>Problem ID:</b>	PID080
<b>Challenge Title</b>	: e-Beat/Beat Management System.
<b>Name of the Department</b>	: Home Department
<b>Challenge Description with context</b>	: Application for of Gujarat Police Force. When police personnel and officers are deployed in the field for patrolling to maintain Law and Order and prevent crime, it is difficult to track their attendance, their presence in the field, deployment paths and routes were done by them for maintenance of Law & Order.
<b>Users</b>	: Officers and Police Personnel of Gujarat Police. Police Stations, Traffic Police, SRP Companies.
<b>Expected Outcomes</b>	: An IT solution is required which shall consist of available app in which police registered attendance in field and enter details of work done by them. The desktop application shall consist of reports produced through this data entry which can be used by supervisory officers to monitor the work of police personnel in field.
<b>Impact</b>	: This will improve the professionalism and effectiveness of police patrols.

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<b>Problem ID:</b>	PID081
<b>Challenge Title</b>	: e-Hajiri Master - Application for Manpower Deployment of Gujarat Police Force
<b>Name of the Department</b>	: Home Department
<b>Challenge Description with context</b>	<p>: Application for Manpower Deployment of Gujarat Police Force. This project will give solution to personnel and officer of Gujarat Police by providing them transparent duty deployment. Take care the need of rest, exposure of various duties, motivation by change in duties. This application will provide the better supervision over the deployment at Police station level. This application will provide the data for analysis – who did what duty and for how much time? Are there too many police constables in general/ personal staff duties?</p> <p>The manual deployment is getting more difficult as the strength of police stations are increasing state wide. In a city/urban police station with staff of more than 125 it is very difficult for the police inspector to personally and monitor day to day deployment. Manual deployment takes more time and leads to error in hajiri patrak.</p> <p>This will reduce the complaints related to duty deployment. Police personnel are deployed in police station have different ranks, gender, armed/unarmed. Some police personnel can only be given specific task (e.g. investigation and PSO charge can be given to head constable and above). This leads to the need of a software for intelligent duty rotation.</p> <p>The beat/Chauki duty allocation to the police staff should be automatically done. The system should itself allocate the beat/Chauki to newly coming police staff.</p> <p>The staff should automatically be assigned to the work based on algorithm which considers the staff strength, education, qualification, driving experience, previous experience etc.</p> <p>The automatically work assignment facility is transparent, efficient and leaves no ground of any biasness.</p> <p>Flow: Add staff wing -&gt; Wing type (Law &amp; Order) -&gt; Wing Level (Beats) -&gt; Start Date -&gt; Submit</p> <p>Using an algorithm duty assignment automation is done in such a way that personnel performed any specific duty will be the last preference for same duty in his/her next turn.</p> <ul style="list-style-type: none"><li>- Rotation of duty ensured which keeps workforce active for versatile jobs</li></ul>



- Equal opportunities to all staff ensured without leaving any ground of partiality in duty assignment

Flow : Duty roster by staff -> Staff name -> Start Date – End Date -> Show Print (Tabular Information – Date, Type of duty, Timings, Details)

This will be a platform to enforce organization wide HR policy

- Allows the separation of Law & Order with investigation – every person posted to a police station has to be assigned to one of three wings (Investigation, Admin, Law & Order)
- 8 hour shift system
- Rest roster – allows for duty rest to all personnel in a periodic cycle

There should be features –

- a. Allow for meeting the unique job requirements of a certain role e.g. writer
- b. Ensures data that will facilitate the proper rotation of staff
- c. There is a reluctance in adding name to beat because as in-charge there will be responsibility over the crime and criminals in the area.

Flags will be generated in monitoring report, if adequate rest is not given to staff in span of 14 days.

With any emergent situation/bandobast DySP/SP/DCP can stop the rest roster without disturbing the logic of rest to all.

Monitoring reports: Police station -> Total Staff -> Last Roster -> No. of Duties -> No. of staff assigned.

This model can be extended to traffic police and SRP companies.

The rotation of duties and effective utilization of staff will leave less scope for diversion and underutilization of staff

### Users

- : Officers and Police Personnel of Gujarat Police. Police Stations, Traffic Police, SRP Companies.

### Expected Outcomes

- : Mobile App/Web browser-based interface at police station/office level. Web/App based interface for Senior Police Officers. The software should generate report for viewing and in excel format.

The dashboard will provide at-a-glance view of manpower management of officers in their area with drill down options.

The officer can view red flags and take corrective measures. Monitoring reports to be generated at all levels of supervision.

- Mobile app linked to the application will provide the access to all the police staff.
- Impact** : This will improve the professionalism and work culture in police There will be a better work life balance for police personnel
- Health conditions will improve as there will be more time available for exercise and healthy eating habits.
- The public service delivery will improve.
- Problem ID:** PID082
- Challenge Title** : Speech processing tool that can recognize the language and can translate voice into text.
- Name of the Department** : Home Department
- Challenge Description with context** : Whenever the any voice data is to be available then how to identify the language of the input data and also translate in to appropriate language. What Exact Problem is being Solved? Sophisticated speech processing tools are not available economically that can recognize the language being spoken and translate it into an appropriate language text.
- Users** : Crime branch and other investigative agencies
- Expected Outcomes** : Application will first recognize the speech's language and also then able to translate it into the voice into the text.
- Impact** : Ease in crime detection and reduction in crime rate.

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<b>Problem ID:</b>	PID083
<b>Challenge Title</b>	: Criminal Profiling using OSINT (Open Source Intelligence Tools)
<b>Name of the Department</b>	: Home Department
<b>Challenge Description with context</b>	: Availability of relevant and timely information is of utmost importance in conduct of business by Police, particularly in investigation of crime and in tracking & detection of criminals. Police organizations everywhere have been handling large amounts of information and huge volume of records pertaining to crime and criminals. Information Technology (IT) can play a very vital role in improving outcomes in the areas of Crime Investigation and Criminals Detection and other functioning of the Police organizations, by facilitating easy recording, retrieval, analysis and sharing of the pile of Information. Tracing the criminals from the available profile in the files by easy recording, retrieval, analysis and sharing of the huge information.
<b>Users</b>	: Crime branch and other investigative agencies
<b>Expected Outcomes</b>	: Secured Criminal Identification System with high accuracy.
<b>Impact</b>	: Availability of timely information in investigation of crime as well as tracking and tracing of criminals. Crime detection and investigation becomes easier.

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- Problem ID:** PID084
- Challenge Title** : QR Code based citizen feedback system for Gujarat Police
- Name of the Department** : Home Department
- Challenge Description with context** : QR (Quick Response) Code based citizen feedback system.
- This project will give solution to citizens to provide feedback by just scanning a QR code pasted in Police Station for feedback. Citizens will be required to fill a feedback form online. Any officer with login rights can directly monitor the perception of public regarding policing in Police Station/Sub Division/District/City.
- The application calculates the perception of public about Police.
- Flow Example: Respondent Scans the QR Code -> Login screen opens on Respondent mobile -> OTP is sent on respondent mobile -> Respondent fills the Feedback form -> Respondent submits feedback.
- The QR code pasted will also have instructions/ guide regarding the steps. Viz. open camera, select the type of phone (iPhone/Android) user, Tap the notification for further action on Web based feedback form.
- There will be no installation of any App on citizen mobile phone. Feedback will be taken on the following questions:
1. How did you come to the police station?
    - a. Through a person known to a police officer
    - b. With a neighbour/ local leader
    - c. On your own
  2. After how much time you were heard in PS
    - a. More than 15 minutes
    - b. 15 minutes
    - c. 10 minutes
    - d. 5 minutes
    - e. Immediately
  3. How would you describe your experience with police officers in the police station?  
(\_\_\_\_\_) Maximum 300 characters allowed.
  4. Submit

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After the submission, there is information about citizen service app and contact number of police control room.

### Admin Login

1. Admin Login Screen
2. Admin Overview
3. Admin Detailed
4. Generate QR code

There shall be a website for accessing the feedback management system. Login will be via email id and password. Captcha will be included.

### The reports will be

1. Number of feedbacks
2. Total Feedbacks
3. Police station wise
4. Sub division wide
5. District wise
6. Responses

This will be shown in a bar/pie/histogram color chart format. The data should be able to be view in tabular format and also can bedownloaded in excel format.

- Users** : Citizens, Officers and Personnel of Gujarat Police
- Expected Outcomes** : Citizens can easily give feedback. Mobile web browser-based interface. Officers can get details of quality of service of any police station by analysis of related data. Web/App based interface for Police Officers.
- Impact** : Citizens will get better behaviour of police and faster response from police in due course of time.

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<b>Problem ID:</b>	PID085
<b>Challenge Title</b>	: Email Address tracking and tracing System
<b>Name of the Department</b>	: Home Department
<b>Challenge Description with context</b>	: When an email is sent to a recipient, an email goes through a number of mail servers to reach the final destination. Each time an email passes through a mailserver, mail header is added with server's IP address. To trace your email source, you'll have to find email header first. Depending on type of email client you use, locating the email header may require slightly different steps but every email comes with a header so you should be able to find it. Finding the Exact email ID of the messenger and finding other details about him/her.
<b>Users</b>	: Crime branch and other investigative agencies
<b>Expected Outcomes</b>	: Application tool verifies an email address by connecting to the mail server and verifies whether the mailbox exists and an email can be received.
<b>Impact</b>	: It becomes easy to trace the messenger and may help in crime detection.

<b>Problem ID:</b>	PID086
<b>Challenge Title</b>	: Facial Recognition System
<b>Name of the Department</b>	: Home Department
<b>Challenge Description with context</b>	: A face recognition system is a computer application capable of identifying or verifying a person from a digital image or a video frame from a video source. One of the ways to do this is by comparing selected facial features from the image and a face database. Recognizing the facial details from the available insufficient information.
<b>Users</b>	: Crime branch and other investigative agencies
<b>Expected Outcomes</b>	: Properly designed systems installed in airports, multiplexes, and other public places can identify individuals among the crowd, without passers-by even being aware of the system.
<b>Impact</b>	: It becomes easy to trace the messenger and may help in crime detection.

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<b>Problem ID:</b>	PID087
<b>Challenge Title</b>	: Fake Social Media Profile detection and reporting
<b>Name of the Department</b>	: Home Department
<b>Challenge Description with context</b>	: The social life of everyone has become associated with the online social networks. These sites have made a drastic change in the way we pursue our social life. Making friends and keeping in contact with them and their updates has become easier. But with their rapid growth, many problems like fake profiles, online impersonation have also grown. Fake profiles often spam legitimate users, posting inappropriate or illegal content. Several signs can help you spot a social media fake who might be trying to scam your business.  Identifying fake social media profiles and taking corrective measures.
<b>Users</b>	: Crime branch and other investigative agencies
<b>Expected Outcomes</b>	: An Application software that detects the fake social media profile
<b>Impact</b>	: People will refrain from creating fake social media profiles and there will be prevention of cheating at large on

**Problem ID:** PID088

**Challenge Title** : Activity Monitoring of any person through multiple social media platform like social network and social media

**Name of the Department** : Home Department

**Challenge Description with context** : Once you connect your multiple social networks to SumAll, it'll start pulling data and insights from your accounts, dropping the numbers into a central dashboard of analytics. You can then check up on these stats by visiting the app, or you can ask for a daily or weekly email with all the info. Suspicious people with criminal intentions using multiple media for their criminal activities which needs to be monitored for further actions.

**Users** : Crime branch and other investigative agencies and suspicious users

**Expected Outcomes** : 
 

1. Develop an Android Application which will work as one dashboard to identify the person.
2. Reports come to you--no additional clicking or hunting.
3. Choose the stats that matter--manage social media using the metrics that are most important to you

**Impact** : Criminals with negative intentions will refrain from using multimedia platforms for criminal activities.

**Problem ID:** PID089

**Challenge Title** : Forensic Disk Imaging Hardware

**Name of the Department** : Home Department

**Challenge Description with context** : High-performance, Rugged Forensic Unit which is a Portable Forensic Imager with the ability of Server Computer Forensic Investigative platform which supports different fields from multiple sources to multiple targets simultaneously with the Hash verification function. It should support SAS, SATA, USB and IDE drives via different ports, and other storage devices. Agencies are using imported tools for the evidence acquisition purpose. Existing tools don't have advanced capacity for the faster imaging.

**Users** : Investigation Agencies, Law Enforcement Agencies

**Expected Outcomes** : Made in India Forensic Disk Imaging solution which helps agency to solve the forensic imaging issues at low cost.

**Impact** : It helps agencies to do disk imaging faster and which is more trustworthy.



<b>Problem ID:</b>	PID090
<b>Challenge Title</b>	: Anti-Drone System
<b>Name of the Department</b>	: Home Department
<b>Challenge Description with context</b>	: An Anti-Drone Solution which can counter or intercept the UAVs using various techniques like RF Jamming, Lasers, Auto Missiles, Radio Spoofers, Attack Birds, Drone Guns, GPS Spoofing, Nets and Guns, High Power Microwave (HPM) Devices or any other. As Drone policies are smoothening, unwanted UAVs are being detected at unexpected places which needs to be countered or intercepted for the privacy and security reasons.
<b>Users</b>	: Investigation Agencies, Law Enforcement Agencies, Armed Forces
<b>Expected Outcomes</b>	: Made in India Anti-Drone System to detect and/or intercept UAVs using different methods.
<b>Impact</b>	: Neutralizing airspace from the UVAs for the quick action solution

<b>Problem ID:</b>	PID091
<b>Challenge Title</b>	: Drone Forensics
<b>Name of the Department</b>	: Home Department
<b>Challenge Description with context</b>	: Drone forensic and data acquisition from the drone is a big challenge as multiple drone solutions are in market and very less commercial grade tools are supporting data extraction from the drones. Taking data and doing analysis, both are challenges which is faced by the agencies. Drone Forensics data extraction and analysis is big challenge as no standard frameworks are implemented and no such tools are available for the extraction process.
<b>Users</b>	: Investigation Agencies, Law Enforcement Agencies, Armed Forces
<b>Expected Outcomes</b>	: Forensic solution which can give drone data like GPS logs, Home-location, Controller, Ground Station Data, Multimedia Data, Flight Path etc.
<b>Impact</b>	: Ease of use of Drone Forensic for the rapid actions on the certain location.

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<b>Problem ID:</b>	PID092
<b>Challenge Title</b>	: IoT Forensics Framework
<b>Name of the Department</b>	: Home Department
<b>Challenge Description with context</b>	: Need to create framework where forensics of IoT devices can be done in open- source standard proprietary, identification of data can be done with status (speed of wind, distance), location, relationship, timing and data (device to device, human to device) etc. Major IoT devices are evolved around proprietary environment where data extracting is big challenge, due to Heterogeneous nature of the IoT cyber physical environments. Thus there is need for the framework which address the issues of IoT Forensics.
<b>Users</b>	: Investigation Agencies, Law Enforcement Agencies
<b>Expected Outcomes</b>	: Can be execute forensics from the different devices like proprietary hardware, software among IoT devices, sensors, different application based embedded devices and etc.
<b>Impact</b>	: Forensic methods can be developed for devices like IP Camera, Wearables, GPS Trackers, Doorbell cam, Smart Lock, Smart Food Processing Devices, Air Purifiers, Fitness Activity Trackers, Different Sensors, Smart Home Automation Systems, AI based Personal Assistant etc.

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<b>Problem ID:</b>	PID093
<b>Challenge Title</b>	: Vehicle Forensic
<b>Name of the Department</b>	: Home Department
<b>Challenge Description with context</b>	: Vehicle Forensics can include the data extraction from the vehicle in plug and play manner which certain kind of data can be found such as speed information, break status, location data, entertainment information etc. The first step is to understand the source of the evidence. This includes original equipment manufacturer (OEM), brand, model, architecture, software, and physical components. Infotainment and telematics systems usually provide the best source of data. Law enforcement uses specialized tools to obtain data from infotainment (phone and connected device data), telematics (navigation data), and GPS (location data). Investigators can rely on vehicle forensics because Automobiles have become "witnesses who will not lie", providing a more effective means and platform for Law Enforcement agencies to deal with different criminal cases and incident.
<b>Users</b>	: Investigation Agencies, Law Enforcement Agencies
<b>Expected Outcomes</b>	: Rapid action can be taken from the data of vehicle which are used in the criminal activities, root cause analysis of incident investigation.
<b>Impact</b>	: Vehicle condition monitoring output can be observed which can utilized for the incident investigation.

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<b>Problem ID:</b>	PID094
<b>Challenge Title</b>	: Scada Security Solution
<b>Name of the Department</b>	: Home Department
<b>Challenge Description with context</b>	: SCADA networks are responsible for providing automated control and remote human management of essential commodities and services such as water, natural gas, electricity and transportation to millions of people. SCADA systems is vulnerable to SCADA security threats. Hardware and software that detects or secure the change in the direct monitoring and/or control of physical devices, processes and events in the enterprise solution. Industrial Control Systems (ICS) and Operational Technology (OT) are base of critical infrastructure, if this got compromise then the process flow of many sector got disturbed. The security of this infrastructure is must.
<b>Users</b>	: Investigation Agencies, Law Enforcement Agencies
<b>Expected Outcomes</b>	: SCADA systems are used in many different industries to collect and analyze real-time data, as well as to control functions, which makes them a target tomalicious hackers. So it must be secured from getting compromise.
<b>Impact</b>	: Security of Critical infrastructure includes the vast network of highways,connecting bridges and tunnels, railways, utilities and buildings necessary to maintain normalcy in daily life. Thus the security of this infrastructure is necessary.

## Industries & Mines Department

**Problem ID:** PID095

**Challenge Title** : Tracking of heavy equipment and trucks transporting minerals from mines to customers and within the mines to detect divergence from their planned path to customer and to detect pilferage if any

**Name of the Department** : Industries & Mines Department

**Challenge Description with context** : The solution consists of an IOT enabled sensor-based system which will detect –

- Location
- Movements
- Usage
- Productivity (from the above parameters)

A plugin hardware-based system which detects the above parameters through a combination of sensors such that installation requirements are minimal, and the device made is modular.

The hardware transmits data to the cloud in real time and populates a given dashboard. The dashboard converts the data into some insights of usage, productivity and Overall Equipment Effectiveness. The dashboard must provide basic visualisations of the usage/productivity of the vehicle as well.

The dashboard must also provide route planning and tracking of the vehicle to show deviation from the given path through geo fencing.

**Users** : Mining site managers, mining company management

**Expected Outcomes** : The outcome is a simple dashboard which can be used by site managers to take appropriate action.

**Impact** : The objective of the solution is to give an overall understanding of the productivity of the resources for effective resource mapping and detection of pilferages. This will help in optimising of machine allocation to the given worksite, to improve productivity of each machine and also avoid pilferages.

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<b>Problem ID:</b>	PID096
<b>Challenge Title</b>	: Using AR / VR to train operators on equipment operated in hazardous environments
<b>Name of the Department</b>	: Industries & Mines Department
<b>Challenge Description with context</b>	: Mishaps may occur at hazardous sites when the operator is undertrained or not trained at all beforehand.  The solution must include content, modules and usage manuals for operators in the form of a complete educational session complete with tests and training for heavy machines at mines.  The educational session must be in the form of Augmented Reality and Virtual Reality so that the operator gets the real feel of the environment and has a pseudo hand on experience.  Haptic feedback should also be included so to provide sensory feedback to operator in training.
<b>Users</b>	: Site operators, Course administrators, Mining companies
<b>Expected Outcomes</b>	: The outcome will be in the form a desktop-based application which will be basic course content on how to operate various machines and do's and don'ts for safety. This can be administered to all operators with a test and they can go on site only once the test is passed.
<b>Impact</b>	: To enhance, worker safety, uptime of machines and overall productivity of the site as accidents and failures due to untrained or undertrained staff are avoided.

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<b>Problem ID:</b>	PID097
<b>Challenge Title</b>	: Safety management of Mining and Industrial workers using innovative sensors & technologies
<b>Name of the Department</b>	: Industries & Mines Department
<b>Challenge Description with context</b>	: The hardware will be of two types –  Wearable – To be worn by workers or operators, which will detect the location and movements of the user across the complete mining site, and it will consist also of an SOS button. The wearable will automatically detect where the worker is, at what height and if the worker has fallen.  Sensor Nodes – Sensor node hardware to be deployed at strategic points throughout the mining site such that the ambient air quality can be detected along with concentration of various hazardous gasses, SO <sub>x</sub> , NO <sub>x</sub> , methane, etc.  The dashboard must provide a map view of the mining site with the locations of the workers along with analytics on the quality of environment. The risk quotient of each of the workers must be updated in real time based on their location and ambient air quality.
<b>Users</b>	: Mining site managers, mining company management
<b>Expected Outcomes</b>	: The outcome is a simple dashboard which can be used by mining site managers.
<b>Impact</b>	: The objective of the solution is to enhance overall worker safety and increase worker productivity by enabling a safe environment and taking appropriate risk mitigation measures as needed.

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<b>Problem ID:</b>	PID098
<b>Challenge Title</b>	: Solution design for assessment of Carbon Footprint in Industries and Mines
<b>Name of the Department</b>	: Industries & Mines Department
<b>Challenge Description with context</b>	: The solution is an assessment, management and monetisation platform of carbon footprints for industries and mines. Initially, given some amount of basic data of the size, scale and level of operations of the platform assesses the amount of carbon emissions by the industry. It also enables suggestions on how to reduce the carbon footprint. If there are any carbon emissions reduced, then it integrates a carbon footprint monetisation methodology.
<b>Users</b>	: Management group of the mining company
<b>Expected Outcomes</b>	: Awareness of best practices used globally to reduce carbon emissions.
<b>Impact</b>	: Making mining industries more environment friendly through an incentive of a monetisation platform.



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<b>Problem ID:</b>	PID099
<b>Challenge Title</b>	: IoT solutions for optimising energy usage in Industries
<b>Name of the Department</b>	: Industries & Mines Department
<b>Challenge Description with context</b>	<p>: IoT solutions which eventually enable optimising energy usage in the process. These solutions may include</p> <p>Machine production monitoring and optimisation through various sensors and data acquisition units. Monitoring of production leading to enhancement of machine productivity leading to less energy conservation per unit production.</p> <p>Predictive and preventive maintenance to optimise uptime of manufacturing and optimising energy efficiency of machines.</p> <p>Data analysis and insights on energy usage patterns to optimise machine parameters or HVAC parameters for better energy efficiency.</p> <p>Actuation systems to switch off machines during non-operation hours at a safe interval to enable energy efficiency.</p> <p>Other ideas are also welcome in this domain.</p>
<b>Users</b>	: Machine operators, management team of manufacturing company
<b>Expected Outcomes</b>	: Various idea or thoughts leading to a concept of how energy use can be optimised.
<b>Impact</b>	: Enhanced energy optimisation through various technological interventions.

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## Labour, Skill Development and Employment

<b>Problem ID:</b>	PID100
<b>Challenge Title</b>	: Data Convergence between Departments
<b>Name of the Department</b>	: Labour, Skill Development and Employment
<b>Challenge Description with context</b>	<p>: Gujarat Skill Development Mission (GSDM) is the nodal agency for Skill Development activities in the state. Apart from GSDM, Skill Development Schemes are being offered in the state of Gujarat by various departments like Tourism, Rural, Cottage, and Tribal Depts etc. It is imperative to unify the efforts of the state to ensure that there is no duplication of efforts and waste of resources. The department offering a skill development program should be able to check the learning record of the beneficiary so that the redundancy could be kept in check. Besides, a unified view of skill development efforts of the State is possible only if the Skill Development data of all the departments involved in Skill Development is available on a common platform. This could help the state in identifying and developing State Skill Development plans and also in bridging the Skill gaps of the state.</p> <p>The upskilling efforts are also hampered due to absence of previous skilling records of an individual.</p>
<b>Users</b>	: Departments conducting skill activities.
<b>Expected Outcomes</b>	: This shall create a validated data pool of beneficiaries with skill set acquired and expertise gained, on a single platform accessible for all the departments.
<b>Impact</b>	: This can resolve the data redundancy & duplication of efforts; aid in developing effective scheme framework & policies and also facilitate the department in selection of correct set of beneficiaries.

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<b>Problem ID:</b>	PID101
<b>Challenge Title</b>	: Skill Register for Unique Beneficiary Id
<b>Name of the Department</b>	: Labour, Skill Development and Employment
<b>Challenge Description with context</b>	<p>: Skill Development schemes are being implemented by various departments across the state targeting unique set of beneficiaries. Most of the schemes are employment (wage/Self) oriented and departments usually have to allocate substantial fund and dedicate resources for implementation. However, there are instances where a single beneficiary ends up enrolling in several schemes across departments without taking the provided employment option. This is usually misused by implementation partners who are unable to mobilize candidates.</p> <p>Certain skill development schemes have eligibility criteria stating that the beneficiary should not have taken the benefit of same scheme during the past six months but due to unavailability of unique beneficiary register it is very difficult to track the same.</p> <p>This could be mitigated to a certain extent if a common Skill Register with a unique Beneficiary Id is created.</p>
<b>Users</b>	: Gujarat Skill Development Mission (GSDM) and other Departments
<b>Expected Outcomes</b>	: This shall create a validated register of beneficiaries with record of an individual beneficiary providing information about skill development scheme, job roles, training duration, certification date, current skilling status etc. accessible to GSDM and relevant departments.
<b>Impact</b>	: This can resolve the data inaccuracy and would lead to selection of correct beneficiary, Skilling type (skilling/up skilling/re-skilling), enrolment eligibility status of beneficiary.

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## Legal Department

<b>Problem ID:</b>	PID0102
<b>Challenge Title</b>	: Acknowledge System About the State Opinion in Criminal Matters
<b>Name of the Department</b>	: Legal Department
<b>Challenge Description with context</b>	: To inform about Legal Department's opinion regarding filing Criminal Appeals in the Hon'ble Gujarat High Court, Hon'ble Supreme Court and District Government Pleader and Public Prosecutor in time to take next course of action.  There must be proper security of means to be designed and it must have access with the admin only to add or delete the concerned one. Same way decision of court is also to be conveyed to Legal Department in time by government pleader to start thinking for the appeal in future.
<b>Users</b>	: Public Prosecutor Gujarat High Court, Advocate On Record in Supreme Court, Additional Public Prosecutor and Additional Government Pleader of All Districts of Gujarat State.
<b>Expected Outcomes</b>	: The respective criminal cases at different level can be easily monitored by the all concerned Government officers and Government pleaders. Data can also be fetched at any time District wise, Case Details wise, Advocate wise, Court Wise etc. Also monitoring will help to prepare the budget for expenditure expected to go for appeal for cause of Justice.
<b>Impact</b>	: Legal Department to provide information quickly regarding criminal appeals to Hon'ble Gujarat High Court, Hon'ble Supreme Court and District Government Pleader and Public Prosecutor in time to maintain the soul of Justice effectively by speeding up the pace of information and decisions taken by the Legal Department and vice a versa.

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<b>Problem ID:</b>	PID103
<b>Challenge Title</b>	: Monitoring of advocate bill and fees paid by portal/app-IT based solution.
<b>Name of the Department</b>	: Legal Department
<b>Challenge Description with context</b>	: The concerned persons will be Advocates to concerned cases at different courts, persons from Kayadabhavan (New Delhi), persons from Kayadabhavan - High court campus, persons from District & Sessions court, persons from Tribunals, and concerned persons from the Legal department of Government of Gujarat. Concerned bill approving authorities at different level need to put information of bills and get them approved and credit with concerned advocate accounts.
<b>Users</b>	: Details like Paid fees for Case wise, Advocate Wise, Year Wise, court wise as well as bills in process will be available on one click. It will help to prepare the budgetary provision at different data available from the IT based means. It will avoid duplication of bills and its payments.
<b>Expected Outcomes</b>	: Total amount paid to advocates and in particular case will give financial burden to state government. Sometimes fees paid to Advocates are higher than original suit amount. Duplication of Fees bill will stop. Advocate can get exact amount easily if he provides details correctly. It helps to prepare the budgetary provision for same looking at the different data available from this IT based means.
<b>Impact</b>	: The concerned persons will be Advocates to concerned cases at different courts, persons from Kayadabhavan (New Delhi), persons from Kayadabhavan - High court campus, persons from District & Sessions court, persons from Tribunals, and concerned persons from the Legal department of Government of Gujarat. Concerned bill approving authorities at different level need to put information of bills and get them approved and credit with concerned advocate accounts

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<b>Problem ID:</b>	PID104
<b>Challenge Title</b>	: Legal Awareness System
<b>Name of the Department</b>	: Legal Department
<b>Challenge Description with context</b>	: People are always confused to ask any query related to Legal problems/litigations. People can ask query in their own language/images/voice/video. People can submit their query in any form like text /images/voice/video. Topics should be updated by Authenticated Users only. Application user should be verified first time by OTP. There should be manual or partially automated consult expert forwarding system for any requested query. Every topic has multiple experts and there should be provision to forwarding query as per their district. If any query attended by expert, it should not be repeated. Expert can also answer the query using hand held device. There should be frequently asked question which is updated by authenticated users. There should be option for language (English/Hindi/Gujarati). Admin login to manage name and areas of experts. People's App and Expert App Topics Example:- (1) Civil (2) Criminal (3) General (4) Matrimonial (5) Land  Input by Authenticated User: Topic Name (3 Level Min), Other needed information.  Input by Verified User: text, images, voice, video (as query)  Environment: Android  Authenticated User: State Legal Service Authority, District Legal Service Authority.  Permissions: Expert will get query of their own selected topics. Needed required action for privacy and confidentiality.
<b>Users</b>	: People, stakeholder of Courts, Advocates and Experts
<b>Expected Outcomes</b>	: End-user can easily download. GUI, navigation of topic and Ask Query page should be user-friendly. Solutions should be Notifiable. An authenticated user should be able to view the geo- location of plotted query. An authenticated user can view and manage necessary data from their portal.
<b>Impact</b>	: People will get primary solutions from hand held device which is given by trusted source.

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## Panchayat, Rural Housing Development

<b>Problem ID:</b>	PID105
<b>Challenge Title</b>	: Solid Waste Management Awareness System for Rural Areas
<b>Name of the Department</b>	: Panchayat, Rural Housing Development
<b>Challenge Description with context</b>	: Enhance the Solid Waste Management Awareness System for Rural Areas, including the end-to-end management of solid waste. It starts with segregation of dry and wet waste at the source, door-to-door collection of segregated dry and wet waste at regular intervals, and treatment and end disposal of biodegradable and non-biodegradable waste.
<b>Users</b>	: All Villagers
<b>Expected Outcomes</b>	: Improved cleanliness of the village, improved living conditions and environment, composting of wet waste results production of bio-fertilizer.
<b>Impact</b>	: Behavioural change toward sanitation and cleanliness, Improved health, and sustainable waste management practices.

## Revenue Department

<b>Problem ID:</b>	PID106
<b>Challenge Title</b>	: Land Registry with Self-Sovereign Identity
<b>Name of the Department</b>	: Revenue Department
<b>Challenge Description with context</b>	<p>: The land registry system is a way to store, protect, and publish land records and facilitate the transfer of land ownership while protecting the rights of the people who own it, which makes people more likely to trust each other. To prevent fraud, it is essential to verify the identity of the people involved in a transaction. Many recent studies have shown that a digital identity is essential for performing a secure real estate transaction and verifying ownership of real estate. Verifying the identity of the parties in a transaction can help avoid cyber fraud and crimes. Unfortunately, the current land registry system lacks a digital identity solution that allows users to manage their personal data. Using digital identity in the land registry system would reduce the time required, the risk of fraud, and information loss.</p> <p>The SSI model is the only one that allows users to retain control over their personal identification data all other systems' identity models rely on the identity providers.</p> <p>The SSI approach would allow governments to issue digital IDs that can be used to access any digital services without significant infrastructure and additional obligations. Governments register identity records in blockchain and trust lists using a self-sovereignty strategy. The government will no longer have the responsibility of verifying to make sure that the certificates are valid. In the SSI system, the government only needs to issue digital certificates and register cryptographic proofs in certificates in a public and decentralized network, removing the government's need to maintain additional infrastructure.</p> <p>Individuals will have full control over the sharing of data. The government does not need to validate and authorize digital credentials issued by government agencies explicitly.</p>
<b>Users</b>	: Citizen, SRO, Banks, Revenue dept., District land records user
<b>Expected Outcomes</b>	<p>: The advantages of applying the SSI solution to the land registry are :</p> <p>1. User sovereignty 2. Enhancing access to financial assistance 3. Real estate market efficiency 4. Post-conflict land ownership.</p>
<b>Impact</b>	: Prevention of frauds in registry and increase in trust of citizen



<b>Problem ID:</b>	PID107
<b>Challenge Title</b>	: Chatbot for revenue website
<b>Name of the Department</b>	: Revenue Department
<b>Challenge Description with context</b>	: The revenue department has provided online services to citizens through iORA. There are multiple services and with each service, there is an application form to be filled up by the citizen. If a citizen has an issue with what type of application, he has to submit to get a farmer certificate or encumbrance certificate, a chatbot can help him/her with proper guidance on how to apply, from where to apply, required documents, required details etc. A chatbot to guide citizen for various needs regarding revenue matter like various online services of the department, decision making from multiple applications, collect feedback from citizens. When a chatbot may not know the answer, it can transfer users to an agent or direct them to a self-service knowledge center.
<b>Users</b>	: Citizen
<b>Expected Outcomes</b>	: Chatbot to aid the citizens for revenue related matters.
<b>Impact</b>	: Citizen can easily avail various services with ease and it increases transparency between government and people.
<b>Problem ID:</b>	PID108
<b>Challenge Title</b>	: Automatic Digitization of Maps
<b>Name of the Department</b>	: Revenue Department
<b>Challenge Description with context</b>	: In Land Records department, there is a large number of old maps maintained in physical form. It takes huge effort to digitize them. So, applying image processing and Artificial Intelligence techniques on scanned maps, the digitization process can be automatic. Output should be map in vector format eg .dwg /.dwf /.shp etc.
<b>Users</b>	: People of Gujarat, Surveyors of Land Records Department
<b>Expected Outcomes</b>	: Large number of maps stored physically will be converted into digital form. It will reduce efforts to manually digitize them.
<b>Impact</b>	: Reduction in efforts of map digitization, and making process more efficient and accurate.

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## Roads & Building Department

<b>Problem ID:</b>	PID109
<b>Challenge Title</b>	: Pre monsoon and Post monsoon inspection of Bridges
<b>Name of the Department</b>	: Roads & Building Department
<b>Challenge Description with context</b>	: Every year major and minor bridges are inspected twice by the department. First inspection is to be carried out in the month of May/June before monsoon. Second inspection is to be carried out in the month of October, post monsoon. In both inspections, report field engineer has to go to the site and inspect various components of the bridge for safety aspect and make entry in the bridge register kept at the division level. Historic data of the bridge i.e. construction of year, completion cost, type of superstructure etc. are to be entered also. These data is to be kept on server. Field Engineer shall go the field and he/she can upload photographs of the structure (not from gallery) and other inspection details through mobile may be on android and IOS system. It has to catch the live data to the server.
<b>Users</b>	: At field level Assistant Engineer/Additional Assistant Engineer/ Deputy Executive Engineer/ Executive Engineer. Technical Under Secretaries, Chief Engineer & Additional Secretary and Secretary can monitor and generate various types of reports at Secretariat level.
<b>Expected Outcomes</b>	: Live bridge inspection reports will be available to all technical officers.
<b>Impact</b>	: Monitor process will become much easier and transparent.

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<b>Problem ID:</b>	PID110
<b>Challenge Title</b>	: Live processing of letters of Hon'ble Member of Parliament and Member of Legislative Assembly
<b>Name of the Department</b>	: Roads & Building Department
<b>Challenge Description with context</b>	: In normal processing, it takes around 1 month to get necessary details in response to letters of Hon'ble Member of Parliament and Member of Legislative Assembly. To cut short time, online portal can be developed where letters of Hon'ble Member of Parliament and Member of Legislative Assembly can be uploaded which will be instantly visible to concern Executive Engineer. After necessary field visit, concern Executive Engineer can upload his response online, so that Hon'ble Member of Parliament and Member of Legislative Assembly can be given reply in a short time.
<b>Users</b>	: Field offices and Secretariate offices
<b>Expected Outcomes</b>	: Letters of Hon'ble Member of Parliament and Member of Legislative Assembly can be processed in a shorter time span.
<b>Impact</b>	: Accuracy and time saving.

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## Science & Technology Department

<b>Problem ID:</b>	PID111
<b>Challenge Title</b>	: ekAyana
<b>Name of the Department</b>	: Science & Technology Department
<b>Challenge Description with context</b>	: Various gatherings/meetings are held to cater different issues/points discussion by various government officials. It is required to send agenda and based on that at meeting time, note down Minutes of Meeting. Documents presented are also to be shared.
<b>Users</b>	: Government Official Sachivalay/Collectorate/District/Taluka Offices, Government Offices
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• Portal that provides functionality for putting up agenda</li><li>• Minutes of Meeting preparation module</li><li>• Documents sharing module</li><li>• Venue management</li><li>• Invited Officials Management</li><li>• Discussion Agenda display</li><li>• Various Notification to attendees</li><li>• Approval of agenda MoM by Official attendee</li></ul> Search functionality of meetings
<b>Impact</b>	: Government Officials can get information about various meetings, its MoM, agenda, venue, documents relevant to meetings, search about previously held meetings, etc.

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<b>Problem ID:</b>	PID112
<b>Challenge Title</b>	: Gujarat Directory
<b>Name of the Department</b>	: Science & Technology Department
<b>Challenge Description with context</b>	: Whenever a citizen wants to know about various information of different departments and its relevant sub organization they have to visit their website individually. Structure and GUI of website of different departments are also varied. So the citizen can't be able to retrieve relevant information easily.
<b>Users</b>	: Citizen, Government Official, Government
<b>Expected Outcomes</b>	: Website that displays all departments of government After Clicking department there should be sub organization On visiting Sub organization/ Department citizen should be able to access some basic information (including contact details) and schemes of that department/organization
<b>Impact</b>	: Citizen can get information of various government department with minimum efforts. Government can update their latest information quickly.

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<b>Problem ID:</b>	PID113
<b>Challenge Title</b>	: Jan Suvidha Portal
<b>Name of the Department</b>	: Science & Technology Department
<b>Challenge Description with context</b>	: Citizens are seeking for information about various government schemes and they want to know about various documents required and procedure for taking benefits of schemes offered by government. Citizen need to fill their basic information every time when filling form for getting benefits of various schemes. So there should be a centralized portal that can store citizen's basic information and based on that they can know about applicable scheme relevant to him/her and they can apply to that scheme accordingly. On the other hand, Government officials can also analyse citizen data who had applied to various schemes.
<b>Users</b>	: Citizen, Government Official, Government
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• Web Portal with various user login (citizen, officers) (OTP based)</li><li>• Dashboard for users</li><li>• Various Department Admin user can create customize user input web forms required for applying to scheme</li><li>• WhatsApp API that can send relevant info message/link to citizen to apply for any scheme</li></ul> Citizens can have all documents linked from Digi locker
<b>Impact</b>	: Citizens can get maximized benefits of various government scheme with minimum efforts. Government can analyse pattern and based on that can identify citizens' requirements.

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<b>Problem ID:</b>	PID114
<b>Challenge Title</b>	: Productivity Increase in Organic Farming
<b>Name of the Department</b>	: Science & Technology Department
<b>Challenge Description with context</b>	<p>: Paramparagat Krishi Vikas Yojana (PKVY), Bhartiya Prakritik Krishi Padhdhati (BPKP) and National Mission on Clean Ganga (NMCG), are a few of the initiatives by which Government is trying to improve soil health by Organic farming.</p> <p>Still relevant solutions are needed to meet this objective and to improve farmers' economy by reducing input cost. Production of Biofertilizers, Organic Manure, Organic Fertilizer, Phosphate-rich organic manure (PROM), Vermicompost, Bio-control, Bio-pesticides with the use of Biotechnology are needed more emphasise.</p>
<b>Users</b>	: Farmers and other stakeholders in the field of Agriculture Biotechnology.
<b>Expected Outcomes</b>	: Organic farming will reduce soil erosion, improve soil health, quality of product, reduce water pollution, conserve water, improve biodiversity in the area, reduce economical burden on farmers.
<b>Impact</b>	: It helps in improving goal of Atmanirbhar Bharat through Paramparagat Krishi Vikas Yojana (PKVY), Bhartiya Prakritik Krishi Padhdhati (BPKP) and will make farmers independent and will help in improving the environment.

<b>Problem ID:</b>	PID115
<b>Challenge Title</b>	: Waste to Wealth using tools of Environmental Biotechnology
<b>Name of the Department</b>	: Science & Technology Department
<b>Challenge Description with context</b>	: Various types of wastes from cities, rural areas including waste from human, medical, agricultural, animal sources and industries that create land, water and air pollution are to be transformed into sustainable form. This challenge focuses on utilizing Microbes which can degrade the waste and convert them into valuable products and raw materials. Production of industrially important bio-based products by degrading waste and cleaning environmentally harmful compound through microbes with the use of Biotechnology are to be prepared.
<b>Users</b>	: Stakeholders in the field of Environmental Biotechnology.
<b>Expected Outcomes</b>	: Help to clean landfill sites, clean environment, production of cheap & re-usable raw materials for Industries.
<b>Impact</b>	: Cleaning environment by reducing waste accumulation as well as improving economy by producing cheap industrial raw material that reduces production cost.

<b>Problem ID:</b>	PID116
<b>Challenge Title</b>	: Improve Health Quality Through Medical Biotechnology
<b>Name of the Department</b>	: Science & Technology Department
<b>Challenge Description with context</b>	: Developing point of care diagnostic kits development. Neutraceutical products as alternative to costly remedies and treatments can help to improve health related issues through Biotechnology. Health quality is a major concern after pandemic situation. Much improvement is needed to cope-up with increasing population to meet their health issues.
<b>Users</b>	: Stakeholder in the field of Environmental Biotechnology.
<b>Expected Outcomes</b>	: Neutraceuticals and Point of care diagnostics will help in reducing the disease burden and will contribute towards health improvement.
<b>Impact</b>	: Low cost diagnostic process/instruments increase affordability to India people. Neutraceuticals will help in building healthy society through the use of novel food supplements.



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## Social Justice & Empowerment Department

<b>Problem ID:</b>	PID117
<b>Challenge Title</b>	: All Result at Single Platform
<b>Name of the Department</b>	: Social Justice and Empowerment Department
<b>Challenge Description with context</b>	: Details of all year results of students of all schools / colleges / institutions of the state should be brought online on one platform. So that the details of the result can be verified online before awarding the scholarship.
<b>Users</b>	: Students / Govt. Department
<b>Expected Outcomes</b>	: All educational result may be available at single database.
<b>Impact</b>	: Students and Government offices can access result any time.

<b>Problem ID:</b>	PID118
<b>Challenge Title</b>	: Aadhar Attendance System
<b>Name of the Department</b>	: Social Justice and Empowerment Department
<b>Challenge Description with context</b>	: Aadhaar attendance system should be set up at all school / college / institution level in the state. So that it can be easily obtained when it comes to providing student attendance.
<b>Users</b>	: Government offices, students, institutes
<b>Expected Outcomes</b>	: Actual attendance will be captured
<b>Impact</b>	: Government offices can monitor attendance.

### Sports, Youth & Cultural Activities Department

<b>Problem ID:</b>	PID119
<b>Challenge Title</b>	: Create Nfts (Non-Fungible Token) Of Cultural Artifacts For Commercializing Gujarat’s Heritage
<b>Name of the Department</b>	: Sports, Youth & Cultural Activities Department
<b>Challenge Description with context</b>	: A platform for the creation, and exchange of NFTs which are based on cultural artifacts and artwork.  NFTs are a unique, tamper-proof identification system for an artwork that is digital, making it available to acquire on Blockchain technology, powered networks like Ethereum technology. These NFTs are minted through smart contracts, these can be coded such that artists get a percentage each time their work is sold.
<b>Users</b>	: Buyers and traders of NFTs, collectors of handicrafts, cultural artifacts
<b>Expected Outcomes</b>	: New revenue streams for Artisans, Collaborative, and Associations of Gujarat
<b>Impact</b>	: <ul style="list-style-type: none"> <li>• Monetary security for artists</li> <li>• Promotion of Gujarat’s culture and heritage</li> </ul>

<b>Problem ID:</b>	PID120
<b>Challenge Title</b>	: Creating A Gujarat Museum/Cultural Experience In The Metaverse
<b>Name of the Department</b>	: Sports, Youth & Cultural Activities Department
<b>Challenge Description with context</b>	: A platform for creating a digital museum in the Metaverse to showcase the rich cultural heritage of Gujarat. With a support platform and virtual guides, owners of museums and historical monuments can draft up augmented reality blueprints of their properties/artifacts to attract visitors in the Metaverse. Through open access initiatives, a recreation of collections in augmented and virtual reality is to be promoted.
<b>Users</b>	: Owners of Cultural artifacts, Tourism Department, Users of Metaverse
<b>Expected Outcomes</b>	: A virtual museum displaying Gujarat’s heritage in the Metaverse
<b>Impact</b>	: Technology led boost to Gujarat’s cultural heritage

<b>Problem ID:</b>	PID121
<b>Challenge Title</b>	: Block Chain-Based Athlete Management System To Unify Data Throughout Athlete Lifecycle
<b>Name of the Department</b>	: Sports, Youth & Cultural Activities Department
<b>Challenge Description with context</b>	: Performance indicators in a sequential manner coded on block chain-based network can provide trends and insights by analysing data from the entire lifecycle of the athlete.  The adoption of block chain technology in the sports industry can simplify athlete data collection and sharing. It can assist in smart athlete management, irrespective of change in support staff, coaches and other persons involved in the development of these athletes. It can serve as a single repository of athlete data and can be scaled to national / international level competitions as well.
<b>Users</b>	: Athletes, trainers, coaches, sports managers
<b>Expected Outcomes</b>	: A functional Athlete Management System using blockchain technology
<b>Impact</b>	: Improved data security and transparency and repository of data

<b>Problem ID:</b>	PID122
<b>Challenge Title</b>	: Artificial Intellingent System To Improve Athlete Performance And Predict Competitor Performance
<b>Name of the Department</b>	: Sports, Youth & Cultural Activities Department
<b>Challenge Description with context</b>	: An AI application that can predict performances based on data input. Recording data, data from user, activity data from wearables and game equipment can be used for analysis of athlete performance. This will enable the AI application to predict future performances and competitor performances and thus, help coaches, players to alter patterns, strategies and make better decisions.
<b>Users</b>	: Athletes, trainers, coaches, sports managers
<b>Expected Outcomes</b>	: Performance predictions based on different strategies
<b>Impact</b>	: Assistance in strategy making, based on data backed predictions.

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<b>Problem ID:</b>	PID123
<b>Challenge Title</b>	: Software application to measure athlete training intensity & efficiency and provide feedback
<b>Name of the Department</b>	: Sports, Youth & Cultural Activities Department
<b>Challenge Description with context</b>	: Application that can calculate physiological metrics of an athlete's performance and provide instant feedback. Through the application, performance diagnostics to create a granular analysis of the physiology of an athlete can be derived based on pre-loaded metrics and training modules. Athletes can record their test using in-built video with this application to get results and access performance metrics. Eg: An athlete uses the application to record himself/ herself performing a particular exercise and the application provides feedback on intensity, posture, form and technique using algorithms within the platform
<b>Users</b>	: Athletes, coaches, trainers
<b>Expected Outcomes</b>	: Application to give feedback to athletes on training
<b>Impact</b>	: Performance improvement at elite and grassroots level using easy to access feedback through an app.

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<b>Problem ID:</b>	PID124
<b>Challenge Title</b>	: A Digital Solution For Standardized Classification Of Para-Athletes
<b>Name of the Department</b>	: Sports, Youth & Cultural Activities Department
<b>Challenge Description with context</b>	: In Parasports, athletes are grouped by the degree of activity limitation resulting from the impairment. This classification determines which athletes are eligible to compete in a sport and how athletes are grouped together for competition.  A digital solution that can identify and assess the extent of disability and limitations of an athlete based on recordings or camera input. The tests will be developed based on official criteria followed in international sports events.
<b>Users</b>	: Para-athletes, coaches, para sports associations/federations
<b>Expected Outcomes</b>	: An indicative category classification for para-athletes.  Classifying from the start can be done so that their training can be aligned accordingly.
<b>Impact</b>	: An indicative classification will help para-athletes to be grouped more accurately from the start and align their training accordingly. This will reduce the risk of wrong classification.

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<b>Problem ID:</b>	PID125
<b>Challenge Title</b>	: Application to track fitness data of all in-school students periodically
<b>Name of the Department</b>	: Sports, Youth & Cultural Activities Department
<b>Challenge Description with context</b>	: An easy-to-use system/process to measure fitness data. A platform that can automatically update the data with periodic assessments.  A standardised battery of tests will be prescribed in the platform and users can record their own data. This data will then be compiled and presented in the form of a 'Fitness Index' of a particular region based on the data recorded by a large number of individuals.
<b>Users</b>	: School Students, Coaches, Sports administrators
<b>Expected Outcomes</b>	: Fitness data across the state aggregated by district, age, gender
<b>Impact</b>	: <ul style="list-style-type: none"><li>• Available repository to easily identify potential talent</li><li>• Regular check on healthy growth and development</li><li>• Identification of early signs of any health issues</li><li>• Potential solutions can be worked upon to augment fitness levels after they have been measured</li></ul>

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<b>Problem ID:</b>	PID126
<b>Challenge Title</b>	: Registration and approval of Youth and cultural activities for Commissioner Youth service & cultural activities
<b>Name of the Department</b>	: Sports, Youth & Cultural Activities Department
<b>Challenge Description with context</b>	<p>: 1. Create a portal like <a href="https://gpsc-ojas.gujarat.gov.in/">https://gpsc-ojas.gujarat.gov.in/</a> for the registration and approval process for adventure and cultural activities. Get registration forms from: <a href="https://commi-synca.gujarat.gov.in">https://commi-synca.gujarat.gov.in</a> &gt; E-citizens &gt; Applications.</p> <p>2. Create registration forms as per the format mentioned above. Consider uploading necessary documents &amp; photographs.</p> <p>3. Primary eligibility filter required for the applications as per the rules assigned for the respective advertisement.</p> <p>Create an approval process in the following order:</p> <ol style="list-style-type: none"><li>1. Clerical staff approval</li><li>2. Officer approval (District sports officer / District youth development officer)</li><li>3. Commissioner</li></ol> <p>Approval flow is different for different categories of the registration like adventure, sports or culture. Thus provision should be given to customize the flow of approval.</p> <p>Environment: Mobile application/ Portal</p> <p>Important: Process automation is required for Mt. Everest expedition &amp; Rock climbing.</p>
<b>Users</b>	: Sport person, local artists, Administrator
<b>Expected Outcomes</b>	: Automate the registration and approval process.
<b>Impact</b>	: <ul style="list-style-type: none"><li>• Administration will get solution for approval process.</li><li>• Get ease of status access for their application</li></ul>

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<b>Problem ID:</b>	PID127
<b>Challenge Title</b>	: Registration, approval & I-card generation for local artist of Youth and Cultural Activities
<b>Name of the Department</b>	: Sports, Youth & Cultural Activities Department
<b>Challenge Description with context</b>	: For I-card generation of local artists (Gujarat) <ol style="list-style-type: none"><li>1. Registration form (<a href="https://commi-synca.gujarat.gov.in/application-forms-guj.htm">https://commi-synca.gujarat.gov.in/application-forms-guj.htm</a>)</li><li>2. Software defined Pre-approval filter (using predefined rules)</li><li>3. Create an approval process in the following order:<ol style="list-style-type: none"><li>a. Clerical staff approval</li><li>b. Officer approval (District youth development officer)</li><li>c. Commissioner</li></ol></li><li>4. After approval, I-cards should be printed in predefined format and make a cover page to send by registered post.</li><li>5. These cards can be used for medical assistance at various registered hospitals and concession for the Railway &amp; ST buses.</li><li>6. Generate utilization report</li></ol> Environment : Mobile application/ Portal
<b>Users</b>	: local artists, Administrator
<b>Expected Outcomes</b>	: Automate the registration and approval process. Utilization report for respective I-cards
<b>Impact</b>	: Administration will get solution for approval process. Get ease of status access for application.



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<b>Problem ID:</b>	PID128
<b>Challenge Title</b>	: Khel Pratibha Purashkar
<b>Name of the Department</b>	: Sports, Youth & Cultural Activities Department
<b>Challenge Description with context</b>	<p>: Government of Gujarat supports financial aid to the youth of the state through Khel Pratibha Puraskar. This "puraskar" is given to the national and international players. Details of this awards are provided at <a href="https://sportsauthority.gujarat.gov.in/schemedetail.htm?56">https://sportsauthority.gujarat.gov.in/schemedetail.htm?56</a>.</p> <p>The main problem to provide the <i>Purashkar</i> is the mass registration and assessment eligibility criterion.</p> <p>The Sports Authority of Gujarat (SAG) which is a part of the Sports, Youth and Cultural Activities Department, is required to develop the mobile application/web portal for the registration and auto eligibility filtration at the primary level [mentioned in the above link]. Thereafter, the approval process should pass through the district coach and appointed officer in charge. Once the approval is done, It should be intimated to the beneficiary through SMS or email.</p> <p>Environment : Mobile application/ Portal</p>
<b>Users</b>	: Sports person, District coach, Chief Coach, (SAG) Secretary
<b>Expected Outcomes</b>	: Automate the registration and approval process for <b>Khel Pratibha Puraskar</b> .
<b>Impact</b>	: <ul style="list-style-type: none"><li>• Administration will get solution for approval process.</li><li>• Sports players will get ease of status access for their application</li></ul>

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<b>Problem ID:</b>	PID129
<b>Challenge Title</b>	: ShaktiDoot
<b>Name of the Department</b>	: Sports, Youth & Cultural Activities Department
<b>Challenge Description with context</b>	: Shaktidoot Yojana of Govt of Gujarat has played a major role in taking the sporting culture of the state to newer heights. This scheme aims to provide a maximum of 25 lacs Rs. annually to the talented players of the state. The eligibility criterion is medal winner in the open, junior or sub-junior championship organized by all India federation. For this scheme, one is required to make a registration with the appropriate document upload with auto eligibility filtration at the primary level. There is a requirement of the workflow association for the approval process with the registered application. The associated reports should be generated in pdf and there has to be a final certificate which will be signed by commissioner SAG (Sports Authority of Gujarat).  Details are available at: <a href="https://sportsauthority.gujarat.gov.in/schemedetail.htm?55">https://sportsauthority.gujarat.gov.in/schemedetail.htm?55</a>
<b>Users</b>	: Sports person, District coach, (SAG) Secretary
<b>Expected Outcomes</b>	: Automate the registration and approval process for <b>Shaktidoot</b> .
<b>Impact</b>	: Administration will get solution for approval process. Sports players will get ease of status access for their application

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<b>Problem ID:</b>	PID130
<b>Challenge Title</b>	: Khel Mahakumbh
<b>Name of the Department</b>	: Sports, Youth & Cultural Activities Department
<b>Challenge Description with context</b>	: Every year Sports Authority of Gujarat organizes sports events, popularly known as Gujarat Khel Mahakumbhh. Various games such as Table tennis, Kho- Kho, kabbadi, Wall Climbing, Rugby, Football, Lawn tennis, Shooting, Wrestling and others are being played by the players (Men/ Women). This event incorporates 36 games and Special Khel Mahakumbhh for Divyang players.  Following are the major problem which can be automatized: <ol style="list-style-type: none"><li>1. Player Registration, Coach Registration, mapping of coach and player, Institute/Schools/Club registration includes their player details and coach details.</li><li>2. Coach and Player can approve or reject that request. After registration/mapping automated notification will go to the coach and player for approval/rejection. Upload associated achievement certificates, documents etc.</li><li>3. File details for the financial aids with budget details like a uniform, equipment, coaching, travelling or residential expense or misc.</li><li>4. There is a requirement of the workflow association for the approval process with the registered application.</li><li>5. Automatized schedule of games.</li></ol>
	Environment: Mobile application/ Web portal
<b>Users</b>	: Sports person, District coach, (SAG- Sports Authority of Gujarat ) Secretary, School/Institutes, Clubs
<b>Expected Outcomes</b>	: Automatize the registration and approval process for <b>Khel Mahakumbhh</b> . Auto generation of schedule.
<b>Impact</b>	: Administration will get solution for approval process & schedule generation with important reports.

<b>Problem ID:</b>	PID131
<b>Challenge Title</b>	: Web and mobile application for Game Management.
<b>Name of the Department</b>	: Sports, Youth & Cultural Activities Department
<b>Challenge Description with context</b>	: Below mentioned points should be covered as part of Game Management. <ul style="list-style-type: none"> <li>• Game Creation/Updation/Deletion</li> <li>• Game Scheduling</li> <li>• Player assignment</li> <li>• Game results/live score updates</li> </ul> Player analysis using video/image processing
<b>Users</b>	: School Students, Coaches, Sports administrators
<b>Expected Outcomes</b>	: A comprehensive system to manage and monitor whole multi gaming event.
<b>Impact</b>	: Easy to manage multi gaming event

<b>Problem ID:</b>	PID132
<b>Challenge Title</b>	: Web and mobile application for player's accommodation and transport management
<b>Name of the Department</b>	: Sports, Youth & Cultural Activities Department
<b>Challenge Description with context</b>	: Below mentioned points should be covered as part of this application. <ul style="list-style-type: none"> <li>• Player registration/integration with player life cycle application and game management application</li> <li>• Transportation scheduling and resource assignment.</li> <li>• Accommodation scheduling and resource assignment.</li> </ul> AI based Chabot/voice-based assistant for transport/accommodation related queries.
<b>Users</b>	: School Students, Coaches, Sports administrators
<b>Expected Outcomes</b>	: Easy to manage accommodation and transportation
<b>Impact</b>	: Easy to manage accommodation and transportation

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## Tribal Development Department

<b>Problem ID:</b>	PID133
<b>Challenge Title</b>	: Identification of Eligible Beneficiaries of Various Government Welfare Schemes.
<b>Name of the Department</b>	: Tribal Development Department
<b>Challenge Description with context</b>	: At present, the applicant has to approach Government authority to avail Government benefits under welfare schemes. It is possible that many deprived eligible beneficiaries may not be knowing about the benefits which they can avail, hence, it becomes difficult for the Government machinery to reach out to the deprived community.
<b>Users</b>	: If, a Central Data Bank of eligible beneficiaries under various welfare schemes can be organized, instead of waiting for the beneficiary to approach Government authority, the Government authority can approach already identified eligible beneficiary to provide benefits under various Government welfare schemes.
<b>Expected Outcomes</b>	: Applicants of welfare schemes Government authorities
<b>Impact</b>	: A Central Data Bank of eligible beneficiaries for various Government welfare schemes.

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<b>Problem ID:</b>	PID134
<b>Challenge Title</b>	: Identify Developmental Gaps in Tribal Areas.
<b>Name of the Department</b>	: Tribal Development Department
<b>Challenge Description with context</b>	: The Government aims at development of tribal areas in the state. There are 14 tribal districts on the eastern belt of the state. Ranging from Banaskantha to Dangs. For a need based development plan, identification of developmental gaps is very important.
<b>Users</b>	: Various Government departments work in tribal areas for developmental activities. Similarly, local bodies also work on tribal area development. At present, state authorities as well as local bodies and various departments take up developmental activities in tribal areas in isolation, therefore, there is a possibility of lack of synergy and duplication of activities or efforts.
<b>Expected Outcomes</b>	: Government authorities.
<b>Impact</b>	: Identification of developmental needs in tribal areas ranging from requirement of roads, dairy, APMC, educational facilities, health facilities, electrification etc. and centralized development plan with distinguished allotment of responsibilities amongst State authorities as well as local bodies.

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<b>Problem ID:</b>	PID135
<b>Challenge Title</b>	: Mapping Of Resources In Tribal Areas.
<b>Name of the Department</b>	: Tribal Development Department
<b>Challenge Description with context</b>	: If all the resources in tribal areas are tapped for developmental activities, there can be a huge scope of creation of employment and economic activities.
<b>Users</b>	: Development of tribal area is the mandate of the Government. There are many resources in tribal areas, such as easy access to labour force, availability of raw material and so on. At present, there is no specialized mechanism for mapping of resources in tribal areas, hence, it becomes difficult to transform the resources in developmental activities.
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• Government authorities</li><li>• Any other entity approved by Government</li></ul>
<b>Impact</b>	: Any digital solution which can help the Government and any other entity approved by Government to know about the resources in tribal areas and undertake economic and developmental activities accordingly.

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<b>Problem ID:</b>	PID136
<b>Challenge Title</b>	: Monitoring of Tribal Sub Plan Funds
<b>Name of the Department</b>	: Tribal Development Department
<b>Challenge Description with context</b>	: Different departments of the State are allocated funds under tribal sub plan for development of tribal area and tribal community. As of now monitoring of financial progress is made possible through IFMS but monitoring of physical progress is done through field offices of various government departments.
<b>Users</b>	: State government allocates around 20% of this fund to tribal development department and remaining 80% TSP fund is allocated to different line departments. It is very important for tribal development department to monitor physical and financial progress under tribal sub plan. Tribal Development Department (TDD) monitors financial progress through Integrated Financial Management System. However, physical progress actually takes place at the filed level for which there is no integrated monitoring tool. It is therefore necessary to develop an integrated physical progress monitoring tool for tribal sub plan.
<b>Expected Outcomes</b>	: Various Government Departments and Head Of the Departments
<b>Impact</b>	: A digital solution which can help Tribal Development Department to monitor physical progress for tribal sub plan.



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<b>Problem ID:</b>	PID137
<b>Challenge Title</b>	: Online portal for schemes of Subsidized loan to tribal beneficiaries.
<b>Name of the Department</b>	: Tribal Development Department
<b>Challenge Description with context</b>	<p>: Gujarat Tribal Development Corporation implements various schemes for subsidised loan to tribal beneficiaries which includes loans for foreign studies, pilot training, self-employment, tractor trolley etc. As of now 79 such schemes are implemented through online portal whereas 07 schemes are still implemented manually. These include schemes for IDDP (Integrated Dairy Development Project), Marketing, interest subsidy for bankable loan, fishing schemes, Nahri Kendra, IELTS coaching class. (<a href="https://adijatinigam.gujarat.gov.in/">https://adijatinigam.gujarat.gov.in/</a>)</p> <p>If these schemes are implemented through an online portal, the entire implementation process would become more transparent and speedy implementation would be ensured.</p>
<b>Users</b>	: An online portal for 07 schemes of GTDC which can provide the facilities to tribal beneficiaries to apply online with digital documents and GTDC to approve the benefits online.
<b>Expected Outcomes</b>	: GTDC and eligible tribal beneficiaries.
<b>Impact</b>	: An online portal.

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<b>Problem ID:</b>	PID138
<b>Challenge Title</b>	: Physical growth of tribal students
<b>Name of the Department</b>	: Tribal Development Department
<b>Challenge Description with context</b>	: Gujarat state Tribal Education Society manages 103 residential schools which cater to more than 30,000 tribal students every year. For the school going students, physical growth is extremely important for the physical, mental and emotional wellbeing of the students. Though schools organize some physical activities, adding variety to this can benefit the students immensely. Therefore, we need to develop a digital library of the physical activities (Games, yoga etc.) to achieve physical growth of the students in a play way method.
<b>Users</b>	: A digital library of physical activities (Games, Yoga etc.) to achieve physical growth of students in a play way method. This library should be accessible online and must show the rules of a game with video clips on how the play the game or yogasanas etc.
<b>Expected Outcomes</b>	: Tribal Students and teaching staff of the schools managed by Gujarat State Tribal Education Society.
<b>Impact</b>	: Web based library of physical activities

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<b>Problem ID:</b>	PID139
<b>Challenge Title</b>	: Career Dendrogram
<b>Name of the Department</b>	: Tribal Development Department
<b>Challenge Description with context</b>	<p>: Students want to become scientist, doctor, engineer, architect, designer etc. Every student aspires to become a great person and self-reliant, but their passion and likings are diverse. Students are facing problems with the goals to choose their career because of lack of guidance or knowledge.</p> <p>As each individual nurtures different desires in his/her life, there is a need for career dendrogram, so that students can select their subjects and to become the best in his vocation and excel in life rather than making wrong selection of course or education or career.</p> <p>If students can be provided with basic information for selection of courses/career and further list of institutes which can offer them best education in their area of interest, students can make decisions regarding their career/course selection.</p>
<b>Users</b>	: Career guidance at early stage of selection of career
<b>Expected Outcomes</b>	: All students
<b>Impact</b>	: Informative web site/ Mobile application which provides authentic data for job trends, articles, future trends and institutes.

**Problem ID:** PID140

**Challenge Title :** Research Data Collection and Evaluation

**Name of the Department :** Tribal Development Department

**Challenge Description with context :** TRI, Gujarat has prepared more than 500 research reports on Tribes of Gujarat since 1962. As far as research is concerned, data collection and evaluation process is the biggest challenge to complete on time. Since it will be done manually, it will take lot of time, manpower and energy at the same time. There has to be some sort of technique or automation in the field of research work.

**Users :** TRI, Gujarat

**Expected Outcomes :** An interactive digital tool to collect data from the large sample size (rural tribal people) and a digital solution to analyse and evaluate the collected data.

**Impact :** In time, good quality research work will come out from the institute which leads to frame work of policy for tribal community of the state.

**Problem ID:** PID141

**Challenge Title :** Master Trainers module for the Training program of Tribal Development Department

**Name of the Department :** Tribal Development Department

**Challenge Description with context :** TRI, Gujarat has conducted more than 200 capacity building training programs in last five years for various officials who are working in tribal areas of the state. Training has to be done with standard Training Module and with the support of Master Trainers. As of now there is no standard training module followed during training program and there is always a search for Master Trainers at the time of Training Program.

**Users :** TRI, Gujarat

**Expected Outcomes :** Formation of Standard Training Module will definitely reduce the time-consuming exercise that has to be done every time.  
List of Master Trainer will be useful for training purposes.

**Impact :** A number of training programs and quality of training will improve.

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<b>Problem ID:</b>	PID142
<b>Challenge Title</b>	: Identify Nutritional Deficiency In Young Tribal Children
<b>Name of the Department</b>	: Tribal Development Department
<b>Challenge Description with context</b>	: Under the umbrella of Tribal Development Department, various types of residential schools and hostels are managed for tribal students. The number of such residential schools is more than 1000 which cater to more than 1 lakh tribal students every year. As problems like stunting, underweight, anaemia and other nutritional deficiency are found in young children, they are more prone to malnourishment, which affect on their overall health and studies. To avoid these problems, cumulative efforts such as periodic medical examination and general health check-up can be done and proper effective database shall be prepared for a sustainable solution.
<b>Users</b>	: School management including teaching staff
<b>Expected Outcomes</b>	: An integrated health management system for the students of residential schools.
<b>Impact</b>	: Improved health of the students.

## **Urban Development and Urban Housing Department**

<b>Problem ID:</b>	PID143
<b>Challenge Title</b>	: Implementation of Model Tenancy act.
<b>Name of the Department</b>	: Urban Development and Urban Housing Department
<b>Challenge Description with context</b>	: Due to urbanisation, people migrate from rural areas to urban ones for employment and other reasons, but at the initial stage, they require houses on rent bases in the cities. Rents in such urban areas require to be controlled and regularized.
<b>Users</b>	: Beneficiary, Urban Local Body, house owner
<b>Expected Outcomes</b>	: Necessary steps need to be taken up for regularise the rent in the urban areas
<b>Impact</b>	: Control on fraudulent activities and relief to the migrants to move in unknown cities

<b>Problem ID:</b>	PID144
<b>Challenge Title</b>	: Affordable Housing Stock Made Available in The Urban Areas
<b>Name of the Department</b>	: Urban Development and Urban Housing Department
<b>Challenge Description with context</b>	: Due to urbanisation, there is a huge demand for low cost houses in the urban areas. But land is main resistance and shortfall in low cost housing availability. So the beneficiaries cannot get the houses at an affordable rate.
<b>Users</b>	: Beneficiary, Urban Local Body, Private developers
<b>Expected Outcomes</b>	: Necessary steps need to be taken up for land made available in the city area or a strategy is needed to develop affordable housing stock to meet the requirement in the city.
<b>Impact</b>	: Balance in demand and supply of low cost housing in the urban areas.

<b>Problem ID:</b>	PID145
<b>Challenge Title</b>	: Reduction in Construction Timeline of The Houses/Projects Under Pradhan Mantri Awas Yojana (Urban)
<b>Name of the Department</b>	: Urban Development and Urban Housing Department
<b>Challenge Description with context</b>	: Standard timeline for completion of the project is around 18-24 months at the initial stage. But during the implementation it is going to increase over the years.
<b>Users</b>	: Agency/Contractor, Urban Local Body
<b>Expected Outcomes</b>	: To develop a system to monitor the timeline of different activities and their timely completion schedule. Redressal system of the respective resistance/ problems.
<b>Impact</b>	: Projects can be completed in the standard timeline and beneficiaries can get the houses in time bound manner.

<b>Problem ID:</b>	PID146
<b>Challenge Title</b>	: Reduction in cost of construction for the houses/projects under Pradhan Mantri Awas Yojana (Urban)
<b>Name of the Department</b>	: Urban Development and Urban Housing Department
<b>Challenge Description with context</b>	: The objective of the scheme is to provide the houses in the urban areas at an affordable rate. But cost of construction is increasing year by year. They affect to development of affordable houses and also financial burden on the respective ULBs.
<b>Users</b>	: Agency/Contractor, Urban Local Body
<b>Expected Outcomes</b>	: How to reduce the cost of construction so that it become affordable for the beneficiaries?
<b>Impact</b>	: Beneficiaries can get the houses at an affordable rate without extra financial burden on respective ULBs.

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<b>Problem ID:</b>	PID147
<b>Challenge Title</b>	: A Slum Dwellers Conflict Resolution System
<b>Name of the Department</b>	: Urban Development and Urban Housing Department
<b>Challenge Description with context</b>	: In spite of providing houses free of cost at the same place to the slum dwellers, they are opposed to move horizontal to vertical development. Due to this reason, project get affected and delay in timeline.
<b>Users</b>	: Requirement of particular Strategy/way forward so that project can't be affected and all slum dwellers not oppose to adopt the redevelopment.
<b>Expected Outcomes</b>	: Slum dwellers, Urban Local Body
<b>Impact</b>	: Requirement of particular Strategy/way forward so that project can't be affected and all slum dwellers not oppose to adopt the redevelopment.



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## Women & Child Development Department

**Problem ID:** PID148

**Challenge Title** : A Efficient Payment Portal for Ganga Swarupa Arthik Sahay Yojana

**Name of the Department** : Women & Child Development Department

**Challenge Description with context** : To cover all eligible beneficiaries of the state under this scheme as well as to take the beneficiaries from welfare to development.

**Users** : Widow Beneficiaries whose Age:18 Yrs to life time and Income criteria: Urban- Rs 1.50 lakh and in Rural- Rs 1.20 lakh.

**Expected Outcomes** : PQLI of widows may increase.  
Economic rehabilitation of widows in the main stream of society.  
Widow beneficiaries can become self-reliant and live peaceful life.

**Impact** : At this time 12.12 lakh widow beneficiaries are covered under this scheme and timely financial assistance help to widow beneficiaries is provided in routine life for self-help.

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<b>Problem ID:</b>	PID149
<b>Challenge Title</b>	: Location Based Crime Analysis and Mapping
<b>Name of the Department</b>	: Women & Child Development Department
<b>Challenge Description with context</b>	: Getting details of various types of violence against women in the state, especially in case of domestic violence, sexual abuse, teasing, rape, dowry, child marriage, sexual harassment and status of infanticide or any incident where violence takes place.  Because of the conservatism and mentality of the society, the violence of women in some areas of the state / districts continues to increase. If there is accurate information about the status of women's violence in the area, it will help the Department to curb effectively.
<b>Users</b>	: Related Officer (Taluka, District and State level)
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• To make mapping easier by area in relation to the type of violence so that specific strategies can be prepared to prevent specific violence.</li><li>• Arrangement of systemic reporting of cases of violence, area wise and make arrangements so that trends of last 3 to 5 years can easily be found.</li><li>• Identifying the causes and beliefs of the same violence can be easily managed.</li></ul> Different agencies, organizations can be interlinked to solve this problem
<b>Impact</b>	: Effective implementation of strategies can reduce the violence with women

<b>Problem ID:</b>	PID150
<b>Challenge Title</b>	: Women Welfare Schemes Under One Canopy (Mobile Application or Portal)
<b>Name of the Department</b>	: Women & Child Development Department
<b>Challenge Description with context</b>	<p>: Government of Gujarat has implemented many welfare schemes for women in the State. All the schemes fall under the various departments. Each scheme has different criteria for selections of beneficiaries. A dedicated website where all departments' women related updated schemes and beneficiaries (segregated) information available for citizen is needed.</p> <p>Information regarding brief description, target, type of benefits, district level contact person, address of office and eligible beneficiary criteria etc can be added.</p> <p>If such problems are resolved on the digital platform, it could help to promote women welfare schemes and bring awareness across the State.</p>
<b>Users</b>	<p>: </p> <ul style="list-style-type: none"> <li>• Any citizen of the State</li> <li>• Particularly women and youth who are seeking information of Govt. schemes.</li> <li>• Government officers (implementers)</li> </ul>
<b>Expected Outcomes</b>	<p>: </p> <ul style="list-style-type: none"> <li>• All the scheme related information available under one umbrella for beneficiaries including women.</li> <li>• Information about application forms and lists of necessary supporting documents.</li> <li>• Geographical mapping of district office locations or contacts for support women welfare activities.</li> <li>• Geographical mapping of such NGOs/CBOs/Shelter homes/Child Homes/Old age home etc.</li> </ul>
<b>Impact</b>	<p>: </p> <ul style="list-style-type: none"> <li>• Any citizen can access the online information of schemes.</li> <li>• Real time updating of information</li> <li>• No need to visit various Government offices at state and district level.</li> <li>• Create the Public awareness about the schemes.</li> </ul>

**Problem ID:** PID151

**Challenge Title :** A State Web Portal for Women Sexual Harassment at Workplace

**Name of the Department :** Women & Child Development Department

**Challenge Description with context :** Lack of updates of information about sexual harassment cases of women in the workplace

**Users :**

- The cases of sexual harassment being registered in all government offices cannot be monitored
- It is difficult to implement directives at the state and district level as well as implementation of these laws.

**Expected Outcomes :** Related Officer (Taluka, District and State level)

**Impact :** Common MIS of state and district level can be made in which each office can easily enter the status report.  
At state level monitoring of status of report can be done by nodal department and study of data can be done.

**Problem ID:** PID152

**Challenge Title :** Resolution of Registration of A Beneficiary in Multiple Services (cases / duplication of service)

**Name of the Department :** Women & Child Development Department

**Challenge Description with context :** More than one structure is functioning at district and taluka level by the Department of Women and Child Development to assist women as well as to register grievances. , Which leads to duplication of the beneficiary. Serving the same person through different structures is a waste of resources and time.

**Users :** Officers of various structures

**Expected Outcomes :**

- Duplication of cases can be prevented
- Accurate information on how many benefits / services are actually provided by each of the structures can be obtained

Can be served quickly and efficiently

**Impact :** The maximum beneficiary can be covered as well as the problem can be solved quickly.

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## Abhyuday Bharat Mega Defense Cluster LLP

<b>Problem ID:</b>	PID153
<b>Challenge Title</b>	: Foliage Penetration Radar Technical Integration with Night Vision/Surveillance Devices
<b>Name of the Industry</b>	: Abhyuday Bharat Mega Defense Cluster LLP
<b>Challenge Description with context</b>	: A huge proportion of our forces are deployed in the Jammu & Kashmir and North East regions of the country.  Vegetation cover in such areas is vast which facilitates the irregulars/ANEs to close in on their own troops without being detected and launch surgical strikes.  Though a large number of NVDs are held with the unit, foliage penetration remains a challenge.  Presently, there is no worthwhile solution to this handicap with our armed force
<b>Users</b>	: Individual soldiers
<b>Expected Outcomes</b>	: Operational blindness/lack of surveillance renders the fighting ability of own troops and incapacitates the soldier with min/no reaction capability. In-service equipment lack such technology and the innovative solutions are not fool-proof.
<b>Impact</b>	: It creates a fool proof system leads and helps to detect, identify and recognize objects / targets thereby reducing operational blindness.

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<b>Problem ID:</b>	PID154
<b>Challenge Title</b>	: Camouflage of a soldier in the field to achieve invisibility
<b>Name of the Industry Challenge Description with context</b>	: Abhyuday Bharat Mega Defense Cluster LLP  : Soldiers are required to be camouflaged from enemies aerial and ground-based sensors by day and night in the visual, Ultraviolet, infrared, thermal, and radar bands.  True camouflage will only be achieved if a well-concealed soldier is able to reach his objective without the enemy being able to locate him.
<b>Users</b>	: The problem is a challenge for the individual soldiers and fighting vehicles of the Army in field conditions.
<b>Expected Outcomes</b>	: The challenge is to protect personnel, equipment, logistic facilities, and strategic assets against detection in the complete spectrum. The sensors are fitted right from satellites, aircraft, helicopters, and UAVs in the third dimension to the ground-based long-range surveillance equipment operating continuously day and night. Thus, camouflage now is a necessity for the survivability of the force right from the time it moves out of its permanent locations to the time it prosecutes its might on the enemy.
<b>Impact</b>	: Personnel, equipment, logistic facilities, and strategic assets are protected.

<b>Problem ID:</b>	PID155
<b>Challenge Title</b>	: Development of Fuel Air Explosives to breach minefields
<b>Name of the Industry</b>	: Abhyuday Bharat Mega Defense Cluster LLP
<b>Challenge Description with context</b>	: Mines are employed by a defender to create artificial obstacles to restrict the mobility of the attacker. The attacker needs to breach these minefields faster than the defender is able to regroup and reposition his resources.  The current method of mechanical breaching of minefields is time-consuming besides equipment and manpower intensive. Fuel air explosive is a technology that needs to be developed for quick clearance of minefields
<b>Users</b>	: The problem is faced by offensive troops of the Army which are required to advance and capture enemy territory for a decisive victory in war. It is faced in all terrains and by all formations
<b>Expected Outcomes</b>	: A quick explosive option using fuel-air explosives will ensure saving of critical time besides equipment, manpower, and casualties.
<b>Impact</b>	: Help to save critical time.

<b>Problem ID:</b>	PID156
<b>Challenge Title</b>	: High assurance testing for hardware
<b>Name of the Industry</b>	: Abhyuday Bharat Mega Defense Cluster LLP
<b>Challenge Description with context</b>	: Military equipment has a variety of electronic hardware procured from manufacturers and suppliers from around the world.  <ul style="list-style-type: none"> <li>• To ensure security, it is essential to ascertain that the imported hardware is free of embedded malware, backdoors, and hidden processes and can be relied upon to operate in a hostile cyber environment.</li> <li>• There is a need to have a “High Assurance Test” capability to test all electronic hardware for embedded malware, backdoors, and hidden processes</li> </ul>
<b>Users</b>	: All branches of the Army with communication equipment.
<b>Expected Outcomes</b>	: Improved communication
<b>Impact</b>	: Enhanced security and fearless communication

**Problem ID:** PID157

**Challenge Title :** Indigenous Hardened Operating System (OS)

**Name of the :** Abhyuday Bharat Mega Defense Cluster LLP

**Industry Challenge Description with context :** Indian Army is using operating systems developed by private players i.e. Microsoft, Red Hat, etc.  
There is a requirement to develop an indigenous and secure OS, customized to meet the requirements of defense forces.

**Users :** All users of data terminals

**Expected Outcomes :** Improved operating system

**Impact :** Enhanced secured operating system helps to ensure security.

**Problem ID:** PID158

**Challenge Title :** Image processing and fine pointing and tracking of the laser beam onto the target.

**Name of the :** Abhyuday Bharat Mega Defense Cluster LLP

**Industry Challenge Description with context :** The critical requirement is to aim and maintain the laser beam on the vulnerable spot on the target until a kill is achieved.

**Users :** Individual soldiers

**Expected Outcomes :** The problem pertains to equipment design and configuration.

**Impact :** Save critical time as well as ensured security against the vulnerable spot.



**Problem ID:** PID159

**Challenge Title :** Magnetic Mapping of Advanced Light Helicopter

**Name of the Industry Challenge Description with context :** Abhyuday Bharat Mega Defense Cluster LLP

**Challenge Description with context :** The Helmet Mounted Head-Up Display, Gun turret, and Electro-Optical Pods of the helicopter need to be precisely synchronized to achieve proportionate movement of onboard devices in all six planes. Magnetic mapping of the helicopter is essential to achieve this synchronization. A capability/portable device to undertake precise magnetic mapping needs to be developed to perform the task indigenously.

**Users :** The problem pertains to equipment design and configuration

**Expected Outcomes :** Improved Magnetic Mapping of Advanced Light Helicopter

**Impact :** Efficiency will be increased.

**Problem ID:** PID160

**Challenge Title :** Obstacle Avoidance System (Wire Strike Protection System)

**Name of the Industry Challenge Description with context :** Abhyuday Bharat Mega Defense Cluster LLP

**Challenge Description with context :** Low flying helicopters of Army Aviation by night rely on the surveyed/updated maps to stay clear of obstacles/ wires.

**Challenge Description with context :** Real-time information about these objects can exponentially enhance flight safety and help in avoiding accidents due to wire strikes.

**Users :** Problem is being faced by helicopter pilots

**Expected Outcomes :** Real-time information about these objects

**Impact :** Enhanced security and fearless flying

**Problem ID:** PID161

**Challenge Title :** Night Vision device for Aircrew

**Name of the :** Abhyuday Bharat Mega Defense Cluster LLP

**Industry Challenge Description with context :** Night vision for low flying operations or during take-off and landing phases assumes importance for obvious reasons. Limited field of view reduces situational awareness which might be critical in constricted areas. Thus there is a need to enhance the field of view of night vision devices employed during flying operations

**Users :** The problem is faced by the aircrew.

**Expected Outcomes :** Enhance the field of view of night vision devices

**Impact :** Helps in critical operation as well as movement during the night.

**Problem ID:** PID162

**Challenge Title :** Sniper Scope

**Name of the :** Abhyuday Bharat Mega Defense Cluster LLP

**Industry Challenge Description with context :** The snipers are force multipliers to any Infantry/ Scouts Battalions. The high standard of sniper training and their imaginative employment leads to decisive and out-of-proportion results. However, in High Altitude Areas, sniper accuracy is affected by inaccurate distance measurement due to terrain conditions and high crosswind component at the target end.

**Users :** The equipment is required for small teams deployed in Counter-Terrorist operations, plains as well as in HAA up to 20000ft. It will be used on a regular basis.

**Expected Outcomes :** Improved sniper accuracy

**Impact :** Enhanced the capabilities of the team.

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<b>Problem ID:</b>	PID163
<b>Challenge Title</b>	: Inert Training Ammunition for Mechanised Forces
<b>Name of the Industry Challenge Description with context</b>	: Abhyuday Bharat Mega Defense Cluster LLP : Presently, AFV gunners firing practice is limited to only once a year. Even in such a scenario, to negate the shortage of live training ammunition for firing practice, gunners must be facilitated firing practice using inert ammunition
<b>Users</b>	: An AFV crew comprises of commander, gunner and driver.
<b>Expected Outcomes</b>	: While the driver is concerned with the movement/manoeuvre of the AFV, the gunner operates the weapon system to bring about maximum damage/destruction of the enemy. The AFV commander is the crew commander & commands both driver & gunner to achieve the tactical objectives/aims. Training/practice under battlefield conditions will lead to achievement of laid down training objectives.
<b>Impact</b>	: Training/practice under battlefield conditions will lead to achievement of laid down training objectives.

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<b>Problem ID:</b>	PID164
<b>Challenge Title</b>	: Development of Titanium Based Light Weight 120 mm Mortar
<b>Name of the Industry Challenge Description with context</b>	: Abhyuday Bharat Mega Defense Cluster LLP : 120 mm Mortar is being employed extensively in mountains to provide artillery support especially in areas those are inaccessible by Field (Towed) Artillery. Presently the complete weight of the gun along with its sight and accessories is 421 Kgs. To be carried manually the gun is to be dismantled into three parts and requires a detachment of five personnel to ferry the equipment. Thus the weight to be ferried by each person is still too high especially since the same will be resorted to in mountains having very rough terrain. A possible reduction in the overall weight of the gun will improve the overall deploy ability of the gun as well as lead to a possible reduction in the overall manpower employed.
<b>Users</b>	: All troops that are deployed along the Northern as well as North-Eastern Borders. Operating Environment. Conventional/ Hot War Deployment
<b>Expected Outcomes</b>	: The basic solution that can be offered for the same is replacement of the construction material of major sub assemblies of the gun such as the mount (presently weighing 86 kgs) and the base plate (presently weighing 80 Kgs) with titanium alloy.
<b>Impact</b>	: A possible reduction in the overall weight of the gun will improve the overall deploy ability of the gun as well as lead to a possible reduction in the overall manpower employed.

**Problem ID:** PID165

**Challenge Title :** Wheeled or Self Propelled System for ZU Gun

**Name of the Industry Challenge Description with context :** Abhyuday Bharat Mega Defense Cluster LLP

**Users :** Air Defence unit

**Expected Outcomes :** Wheeled or Self Propelled System for ZU Gun for easy mobility so that spotting of location by enemy can be avoided.

**Impact :** With increase in the mobility of the gun it would make it difficult for the enemy to spot the correct location of the gun if it shifts its position after small intervals of time. Another important aspect of war is achieving surprise which can be gained through increasing the mobility of the gun sys.

**Problem ID:** PID166

**Challenge Title :** Test Equipment: Checking Barrel Wear of Artillery Guns (Laser Based Inspection)

**Name of the Industry Challenge Description with context :** Abhyuday Bharat Mega Defense Cluster LLP

**Users :** User (Skill Sets). All Field & Medium units.  
Operating Environment. All types of terrain.

**Expected Outcomes :** Periodicity of Exploitation. During operations & training

**Impact :** Improvement in Accuracy of fire

**Problem ID:** PID167

**Challenge Title :** Hydraulic AFV Lifting Device & Ramp

**Name of the :** Abhyuday Bharat Mega Defense Cluster LLP

**Industry Challenge Description with context :** Railway ramps and Military Rail Girder (MRG) sets are presently used for unloading AFVs from rolling stock. However, there can be an eventuality wherein AFVs are required to be unloaded at a place where railway ramps do not exist and MRG sets are either not available or are inadequate. Moreover, use of MRG sets can cause some damage to railway tracks which needs to be repaired before further usage which may imply delay in induction of subsequent forces. Hence, alternative ways for AFV unloading need to be devised.

**Users :** Mechanised Forces Units

**Expected Outcomes :** It is proposed to design and fabricate a lifting device (akin to a set of heavy duty jacks) that can lift the loaded tank and turn it sideways.

**Impact :** Easy and maintenance free lifting device which consumes lesser time to unload the tank.

**Problem ID:** PID168

**Challenge Title :** Engine Auto Shut Down Mechanism

**Name of the :** Abhyuday Bharat Mega Defense Cluster LLP

**Industry Challenge Description with context :** Engine Auto Shut Down Mechanism for 'A' vehicles in case of high temperature or low coolant level or low engine oil pressure.

A need is felt to devise a mechanism which will constantly monitor the engine oil pressure, temperature and coolant level of an AFV and will automatically shut down the engine if engine oil pressure or coolant level falls below the specified limits or if the engine temperature exceeds the higher limit thus preventing engine seizure.

**Users :** Field units equipped with T-72, T-90 tanks and BMP-II.

**Expected Outcomes :** Engine Auto Shut Down Mechanism for 'A' vehicles in case of high temperature or low coolant level or low engine oil pressure.

**Impact :** A longer life of vehicles.

<b>Problem ID:</b>	PID169
<b>Challenge</b>	<b>Title</b> : Test kits for checking quality of meat during active hostilities and overseas operations.
<b>Name of the Industry</b>	<b>the</b> : Abhyuday Bharat Mega Defense Cluster LLP
<b>Challenge Description with context</b>	<b>with</b> : Food safety especially that of foods of animal origin, wrt detection and prevention of accidental food contamination has been the part of mandate of RVC. Provision of test kits to detect excess bacterial load, over expiry date of frozen meat, presence of chemicals, hormones, antibiotics and toxins will go a long way in ensuring public health.
<b>Users</b>	<b>:</b> User (Skill Sets). RVC officers engaged in inspection of food of animal origin are unable to carry out their duties efficiently due to lack of readymade test kits to detect microbial load, pesticides, antibiotics, bacterial toxins and other harmful chemicals in meat/chicken. The problem is further aggravated by the procurement of self-certified frozen/chilled meat and chicken for consumption by IA troops. Operating Environment. Field units /Peace establishment of Defence/Overseas Operations.
<b>Expected Outcomes</b>	<b>:</b> A test kit to check the quality of food having animal origin.
<b>Impact</b>	<b>:</b> Easier testing of food quality will help to assure healthier environment.
<b>Problem ID:</b>	PID170
<b>Challenge</b>	<b>Title</b> : Light Weight Material Permanent Defences
<b>Name of the Industry</b>	<b>the</b> : Abhyuday Bharat Mega Defense Cluster LLP
<b>Challenge Description with context</b>	<b>with</b> : Coupled with the threat to the borders from unfriendly neighbours, inhospitable and unique terrain along the borders necessitates the need to maintain 24 x 7 vigil along the borders. In order to ensure that our borders especially the Line of Control and Line of Actual Control are guarded day in and day out, there is a requirement to construct bunkers / permanent defences. These bunkers will be used during normal circumstances as well as hostilities for the troops to fight the enemy.
<b>Users</b>	<b>:</b> The problem is being faced by all troops who are employed in mountainous terrain especially high altitude areas.
<b>Expected Outcomes</b>	<b>:</b> Bunkers (Permanent defense) designed with light weight material
<b>Impact</b>	<b>:</b> Easiness for troop working in mountainous terrain.

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<b>Problem ID:</b>	PID171
<b>Challenge Title :</b>	All-in-one Mobile Communication Handsets
<b>Name of the Industry Challenge Description with context :</b>	Abhyuday Bharat Mega Defense Cluster LLP : Today, there are different mobile handsets for different technologies i.e. CDMA, 4G (LTE), Satcom terminals, Combat Net Radios. Therefore, a soldier in the TBA will need to carry and handle different sets at one time which are cumbersome and difficult to manage which reduces the efficiency of the soldier. With the advancement of ICT technology, the subscriber devices form factors have reduced greatly in size. There is a need to have a subscriber device supporting multiple mobile communication technologies.
<b>Users :</b>	The communication devices are being used by all personnel irrespective of arms / services.
<b>Expected Outcomes :</b>	With the advancement of ICT technology, the subscriber devices form factors have reduced greatly in size. There is a need to have a subscriber device supporting multiple mobile communication technologies.
<b>Impact :</b>	Easier communication by having device which is easy to carry and operate for multiple mobile communications.



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<b>Problem ID:</b>	PID172
<b>Challenge Title</b>	: Air Interface Security Vulnerabilities of LTE System.
<b>Name of the Industry Challenge Description with context</b>	: Abhyuday Bharat Mega Defense Cluster LLP : Induction of LTE technology for mobile communications is critical for operational communications. However, commercial LTE technology has various security vulnerabilities, including air interface vulnerabilities, which can lead to Denial of Service (DoS) Attacks. There is a need to identify various security vulnerabilities in commercial LTE and evolve solutions for the same including customized Layer 1, Layer 2 and Layer 3 protocol stacks, randomization of Physical Random Access Channel (PRACH) occurrence in Paging Control Channel (PCCH) frames as well as customized LTE chipsets/external crypto attachment for proper red/black separation, trusted country specific encryption algorithm, Key and Random Challenge (RAN) generation and Key management facilities.
<b>Users</b>	: All users of military LTE networks.
<b>Expected Outcomes</b>	: A special technology to handle critical operational communication.
<b>Impact</b>	: Safe communication.

**Problem ID:** PID173

**Challenge Title :** Self-Healing Fabric

**Name of the :** Abhyuday Bharat Mega Defense Cluster LLP

**Industry Challenge Description with context :** In the present operational environment, rapid blood loss due to gunshot wounds and splinter injuries are the major causes of death on the battlefield.  
There is a requirement to design and develop combat uniforms that have the ability to prevent the bleeding of a soldier suffering from gunshot wounds/splinter injuries.

**Users :** All soldiers engaged in conventional and sub-conventional operations. Operating Environment.  
Conventional and sub-conventional environment. Periodicity of Exploitation. Soldiers engaged in active operations.

**Expected Outcomes :** Detail review about combat uniforms that have the ability to prevent the bleeding of a soldier suffering from gunshot wounds.  
Development of Self-Healing Fabric in later stage, needs detail research.

**Impact :** Protect soldiers from rapid blood loss and ultimately save life.

**Problem ID:** PID174

**Challenge Title :** Light Weight Cold Climate Clothing

**Name of the :** Abhyuday Bharat Mega Defense Cluster LLP

**Industry Challenge Description with context :** The present winter clothing being used by the Indian Army is cumbersome restricting freedom of movement of the troops and makes use of equipment like radio sets & carriage of personnel loads difficult.

**Users :** The problem is being faced by all troops who are employed in mountainous terrain especially high-altitude areas. In addition, troops who have authorized this clothing in other areas too are facing the problem.

**Expected Outcomes :** The soldiers can top the fleece with a lightweight, waterproof windbreaker or a breathable soft shell set designed for cold, rainy ways. A waterproof layer offers even more protection in prolonged, hard rain.

**Impact :** The soldiers get some free and safe movement in cold.

<b>Problem ID:</b>	PID175
<b>Challenge Title</b>	: All-Terrain Ground Vehicle
<b>Name of the Industry Challenge Description with context</b>	: Abhyuday Bharat Mega Defense Cluster LLP  : The terrain on the Northern frontiers is either glaciated, rocky, marshy, or moraine infested. Construction of roads and tracks in these areas is time-consuming and requires massive effort in terms of reconnaissance and surveillance, construction equipment, and subsequent maintenance efforts, mandating a complete revision of operational plans in a specific sector.  Developing a viable communication network in forwarding areas along the Northern frontiers will also have huge financial implications.  Therefore, there is a need to develop an all-terrain vehicle that may assist in the fast movement of stores, equipment, and transport in rugged terrain. The operational environment of this vehicle will be High Altitude Areas, i.e, up to 19000ft along flat and rugged terrain as obtained in our Northern and Eastern Sectors.
<b>Users</b>	: The problem is being faced by all troops who are employed in mountainous terrain especially high-altitude areas. In addition, troops who have authorized this clothing in other areas too are facing the problem.
<b>Expected Outcomes</b>	: Easy move troops or supplies in snow-bound terrains and in marshy/sandy environments
<b>Impact</b>	: The issues our jawans faced during border patrol because of infiltration, heavy burden, high altitudes and lack of oxygen, and the corresponding mental health issues can be attend.

**Problem ID:** PID176

**Challenge Title :** Challenges in the conduct of continuous surveillance of Passes along the Line of Actual Control (LAC) in the High-Altitude Area (HAA).

**Name of the Industry Challenge Description with context :** Abhyuday Bharat Mega Defense Cluster LLP

**Users :** Reconnaissance and surveillance by the physical presence of troops along the vast frontier is a tedious and manpower intensive process. Therefore, there is a requirement of developing energy-efficient surveillance cameras that once deployed along inaccessible areas are capable of communicating real-time information to the troops, without actually deploying them on the ground.

**Users :** Troops operating in all types of environments i.e, Counter Insurgency Operations, Desert, and High Altitude Areas.

**Expected Outcomes :** Wireless Sensor Network (WSN) is one of the upcoming technologies in the field of wireless communication which can play an effective role in the monitoring of the remote areas for applications like military surveillance.

**Impact :** Smooth and continuous surveillance can be done in remote areas.

**Problem ID:** PID177

**Challenge Title :** Lack of Credible Location Awareness System

**Name of the Industry Challenge Description with context :** Abhyuday Bharat Mega Defense Cluster LLP

**Users :** Lack of a credible location awareness system is a crippling problem faced by the command and control setup in any military operations especially in Counter Insurgency / Counter-Terrorism operations.

**Users :** All military users.

**Expected Outcomes :** Operation Environment. Combat environment in rugged / network non-accessible terrain.

**Expected Outcomes :** Develop technology includes sensors and methods for detecting or calculating the geographical position of a person, a mobile device or other moving objects. The most common location-aware technologies are GPS, assisted GPS (A-GPS), Wi-Fi, Enhanced Observed Time Difference (E-OTD) and Enhanced GPS (E-GPS).

**Impact :** Identification of location and used in military operations especially in Counter Insurgency / Counter-Terrorism operations.

<b>Problem ID:</b>	PID178
<b>Challenge</b>	<b>Title</b> : Design and Development of Snow Mobiles for Snow and Glaciated terrain
<b>Name of the Industry</b>	<b>Challenge</b> : Abhyuday Bharat Mega Defense Cluster LLP
<b>Description with context</b>	<b>Description</b> : Snow Mobile is an appropriate mode of transportation for men and materials in glaciated and snowbound terrain. It is the mainstay of logistic maintenance for all posts in snowbound and glaciated areas. In absence of roads and tracks in such areas, snowmobiles are a cost-effective and faster mode of transport. Snow Mobiles are used for a variety of tasks such as carriage of heavy loads to forward posts, casualty evacuation from the forward post to the helipad, carriage of ammunition and fuel, etc.
<b>Users</b>	<b>Users</b> : Troops deployed in the snowbound / glacier terrain and Siachen Glacier.
<b>Expected Outcomes</b>	<b>Expected Outcomes</b> : The snow mobiles should have operational characteristics including snow & high altitude terrain operations, with good operational ability of altitude in operating temperature of Plus 10 degree Celsius to Minus 50 degree Celsius.
<b>Impact</b>	<b>Impact</b> : A cost-effective and faster mode of transport for army in cold climate

<b>Problem ID:</b>	PID0179
<b>Challenge</b>	<b>Title</b> : Navigation Device with integrated GPS, digital compass, and GIS application, with the facility to use raster, vector, and 3-D maps.
<b>Name of the Industry</b>	<b>Challenge</b> : Abhyuday Bharat Mega Defense Cluster LLP
<b>Description with context</b>	<b>Description</b> : The current GPS used is of old vintage, is less user-friendly, and does not include an integrated digital map, compass, and GPS application. Thus a soldier has to use three to four devices for navigation, which increases the overall weight and number of equipment being carried by a soldier.
<b>Users</b>	<b>Users</b> : Troops operating in field areas / Counter Insurgency operations
<b>Expected Outcomes</b>	<b>Expected Outcomes</b> : Develop compact GIS for capturing, storing, checking, and displaying data related to positions.
<b>Impact</b>	<b>Impact</b> : The soldier has to use only one device in place of three to four devices for navigation, which increases the overall weight and number of equipment being carried by a soldier.

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<b>Problem ID:</b>	PID180
<b>Challenge Title</b>	: Storage of FOL in operational conditions.
<b>Name of the Industry Challenge Description with context</b>	: Abhyuday Bharat Mega Defense Cluster LLP : The Army provides bulk petroleum to all land-based forces in a theatre of operations, and most of the FOL handling units in the field are required to establish a Petroleum Point (PP) for this purpose. Depending on the size of the operation, this may mean that several thousand liters of fuel must be received and stored in barrels and jerricans in makeshift shelters with limited storage capacities and which are vulnerable to enemy shelling, terrorist action, and fire hazard.
<b>Users</b>	: The equipment is required by all the fighting formations deployed in forwarding areas.
<b>Expected Outcomes</b>	: Develop new material and devices for FOL. Think out of the box and develop FUEL CELLS AND HYDROGEN SYSTEM for extreme area.
<b>Impact</b>	: Able to keep safe FOL from enemy shelling, terrorist action, and fire hazard.

## Border Security Force (BSF)

<b>Problem ID:</b>	PID181
<b>Challenge Title :</b>	Detection of rogue drones on border
<b>Name of the Department :</b>	Border Security Force (BSF)
<b>Challenge Description with context :</b>	Regular attempts are made on the border by sending low flying drones to get sensitive information/ movements in the border area. As the fly path of these drones is low to be detected by radars, so detecting these rogue drones during the night becomes difficult by naked eyes. So, on ground troops face problems in locating & tracking to take further neutralization action.
<b>Users :</b>	Soldiers
<b>Expected Outcomes :</b>	A system, which could detect these rogue drones with their height & distance within the range limit of 1 km and disrupt its mission by jamming. So that the border deployed Jawans could detect these flying objects/ drones easily and track to neutralize/ destroy it by above jamming/ manual firing on that.
<b>Impact :</b>	Monitoring and Patrolling to enhance the security.

<b>Problem ID:</b>	PID182
<b>Challenge Title :</b>	Decaying and rusting of border defence infrastructure
<b>Name of the Department :</b>	Border Security Force (BSF)
<b>Challenge Description with context :</b>	The Border Fencing and Civil works in the Rann/Creek area face decaying and rusting problems due to the typical nature of environmental peculiarities and get damages/reduced life years. This problem is peculiar to Rann/Creek area, resulting in frequent structural damages to national security infrastructure.
<b>Users :</b>	Soldiers, Administrators
<b>Expected Outcomes :</b>	To study and develop appropriate material /combination of mettle suitable to withstand these deviations caused due to environmental factors to prevent decaying & rusting to increase the life of constructed buildings/border fencing.
<b>Impact :</b>	Sustainable as well as Secured Environmental Infrastructure for the BSF to reduce the cost as well as enhanced security.

**Problem ID:** PID183

**Challenge Title :** Low Load Bearing Soil Capacity In Creek Area For Construction Activities

**Name of the Department :** Border Security Force (BSF)

**Challenge Description with context :** The Soil of Creek area has the less load-bearing capacity, as a result constructing border infrastructure to accommodate troops in Creek area for all weather deployment with long durability of infrastructure in saline water, the high wind pressure is a challenge for security.

**Users :** Infrastructure developers / contractors, Soldiers

**Expected Outcomes :** To develop construction material /combination, which could be used in the construction of buildings/infrastructure in low load-bearing Creek areas withstanding the salinity effect, strong enough for high wind pressure and has a longer life, to accommodate and deploy troops in Creek terrain.

**Impact :** Sustainable as well as strong infrastructures for the troops to give them security.

**Problem ID:** PID184

**Challenge Title :** Surveillance system

**Name of the Department :** Border Security Force (BSF)

**Challenge Description with context :** 24X7 observation/ surveillance in the Creek area, which is 35 km away from the mainland and has a limitation of physical movement due to being marshy nature. And, it is difficult during stormy/bad weather or foggy season for maintaining high surveillance by human efforts and troops have to physically station in extreme condition to ward off any threat. Also, GPS tracking of the intruder without his notice, if once spotted is required.

**Users :** Soldier and Officers

**Expected Outcomes :** To develop a system based on technology to detect during the day/night movement of living creature / humans / object, to communicate to troops on baseline about 35 km away / Floating BOPs in the system to have detection and tracking option facility through sensors/signals communicating to Ops base despite no mobile or other items carried by the intruders and force can launch an operation to apprehend/neutralize in the short time of span.

**Impact :** Smoother communication and identification of threat as the earliest for the action.



<b>Problem ID:</b>	PID185
<b>Challenge</b>	<b>Title</b> : Death of Camels
<b>Name of Department</b>	<b>the</b> : Border Security Force (BSF)
<b>Challenge Description with context</b>	<b>:</b> Last year 08 Nos of camels died in recent years (2019 & 2020) in the desert border area due to less exercise/some disease, caused by high-calorie feed. Most of the camels are dying due to Traumatic Reticuloperitonitis (TRP), Rabies, Pulmonary Tripe calories, Paraplegia & cardiac failure cases. As, the common ideas, appears behind camel deaths to be heavy or nondigestive feed. So, BSF is losing its essential animal asset for unknown reasons.
<b>Users</b>	<b>:</b> Medical officers / nutritionist
<b>Expected Outcomes</b>	<b>:</b> Requirement to evaluate the camel feed and then routine and suggest some feed/water standards keep them healthy/ fit for utilization in border duties.
<b>Impact</b>	<b>:</b> It will help to increase the health as well as lives of the camels.

<b>Problem ID:</b>	PID186
<b>Challenge</b>	<b>Title</b> : Desing of Women Specific Clothing & Their Fitness Uniform
<b>Name of Department</b>	<b>the</b> : Border Security Force (BSF)
<b>Challenge Description with context</b>	<b>:</b> Women employees are serving in executive cadre in far flung areas with their male colleagues. However, the design of the uniform is male-oriented. So, to have comfortable and better fit designing of dress & clothing, it is essential to develop women-specific cloth/design to make it comfortable wearing.
<b>Users</b>	<b>:</b> Women officers
<b>Expected Outcomes</b>	<b>:</b> Women-specific cloths according to specification and well fit the design of the uniform.
<b>Impact</b>	<b>:</b> Ease of work for women officers to increase the efficiency.

**Problem ID:** PID187

**Challenge Title :** Ration supply in force and health of troops

**Name of the Department :** Border Security Force (BSF)

**Challenge Description with context :** Presently, the health/physical fitness of troops is a matter of great concern because a large number of troops is dying due to cardiac arrest and other illness than operations. So ration, supplying in messes should be having required calories but less harmful properties. In view of that, how we improve the standard of messes and how to control the disease through diet.

**Users :** Dietician, Nutritionist or Officers

**Expected Outcomes :** A system to check/inspect the quality of ration items, making process, calories chart, combined menu, balanced diet for vegetarian/nonvegetarian troops are required so that the standard of food can be maintained and calories of diet could be balanced.

**Impact :** Balanced nutrient diet will help to improve health of troops as well as decrease in death ratio of troops.

**Problem ID:** PID188

**Challenge Title :** Mobility in creek area

**Name of the Department :** Border Security Force (BSF)

**Challenge Description with context :** Creek area is marshy/ mudflat terrain with water channels in between. So, the mobility of force is difficult and restricted for surveillance purposes. There is a requirement to have a machine-like sand scooter/snow scooter for faster movement across the Creek area. Which could run in-ground as well as water channels. in all such terrain, a special vehicle like a sand scooter may be developed to overcome the problem.

**Users :** Soldiers and Administrators

**Expected Outcomes :** We want a vehicle with properties of traveling in all types of terrain i.e water channels, mudflats, plain to increase our operational efficiency in Creek /Coastal areas and does not sink in the slush/marsh.

**Impact :** Sustainable and secured transportation in any circumstances to survive in critical conditions.

**Problem ID:** PID189

**Challenge Title :** Limited availability of bulletproof jackets/helmets

**Name of the Department :** Border Security Force (BSF)

**Challenge Description with context :** BSF and other security forces are facing challenges with regard to the availability of bulletproof jackets/helmets, as Indian manufacturers are still not able to make as per guidelines, set for quality. So, this provides prospective avenues for innovation and industrial start-ups to make India self-reliant for the Jawans.

**Users :** Soldiers

**Expected Outcomes :** To develop material /combination, which could be used to make Bulletproof jackets/helmets, which could provide resistance generally from 7.62 mm x 39 mm bullets.

**Impact :** This is will increase the protection and security of the Jawans.

**Problem ID:** PID190

**Challenge Title :** Frequent decaying of ofc cable and electric ug cable in rann and creek area

**Name of the Department :** Border Security Force (BSF)

**Challenge Description with context :** Maybe due to the salty soil property the Electric cables laid for Border floodlights get frequently defective and decays. It becomes difficult to dig and speedily remove the fault every time, to maintain the uninterrupted lights for night border domination. The problem could be in decaying of polymer coating or rusting of cables inside, or some artificial environment causing resistance to melting the wires, etc. As we cannot change the salty property of the soil or the natural environment there, so some solution to this problem is needed in the interest of national security. Also, many companies coming to the Rann area may get benefitted.

**Users :** Administrators, Infrastructure developers

**Expected Outcomes :** To develop material/combination, which could be used specifically for Rann and Creek or similar areas across countries, which could withstand this environment and not to develop this problem and help in a constant supply of electricity to BFL.

**Impact :** It will ensure the constant supply of electricity and increase the durability of the underlying cables

<b>Problem ID:</b>	PID191
<b>Challenge Title</b>	: Desalination of highly salty, iodine and bromine mixed water of rann and creek area to make it potable at bop levels
<b>Name of the Department</b>	: Border Security Force (BSF)
<b>Challenge Description with context</b>	: As BSF BOPs are located in the far-flung border area on the outer edge of Great Rann and Creek area of Gujarat, where water is though available in abundance, but has a high TDS of more than 30,000 and is mixed with high content of salt, iodine, Bromine, and other chemicals. This makes this locally available water harmful and unsafe for any use on the human body. As, BSF is deployed in a strength of 30 to 35 per BOP, so for their daily chores/ consumption, a minimum of 1000 ltr water is essentially needed at each forward location post. In Tripura, they have developed locally, brick candle filters to remove salt, iron, and fluoride content from water and under BADP made small cemented tanks with such filters in BOPs and Villages, which convert or cleans the local water into potable water in sufficient quantity in 24 hours. Also, by this solution, many villages and companies coming to the Rann area will be benefitted.
<b>Users</b>	: Local community members
<b>Expected Outcomes</b>	: To innovate some filtration system, which could be used for breaking this contaminated combination of locally available brackish, ionized water of Rann and Creek area to make water potable for use in the border area. This will save huge consumption of fuel, man-hours and Govt money, which could be used elsewhere for benefit of society.
<b>Impact</b>	: This will save huge consumption of fuel, man-hours and government money, which could be used elsewhere for benefit of society as well as help the soldiers.

<b>Problem ID:</b>		PID192
<b>Challenge</b>	<b>Title :</b>	Growing Of Locally Sustainable Vegetation/ Vegetables Around Bsf Bops In Rann And Creek Area
<b>Name of Department</b>	<b>the :</b>	Border Security Force (BSF)
<b>Challenge Description with context</b>	<b>with :</b>	As BSF BOPs are located in a far-flung border area at the outer edge of the Great Rann and Creek area of Gujarat, where hardly any vegetation is found. However, it has been also observed that some growth of wild vegetation comes up wherever, some favourable soil support is there in the same environment, on which many wild animals or species survive. So, taking that as a clue, some challenges could be accepted to develop some variety of vegetable or vegetation near BSF BOPs which could be consumed locally and could be produced in sufficient quantity withstanding all disadvantages of harsh climate and high TDS water environment there. This will bring a positive feel and creativity in the monotonous routine of troops, deployed in a strength of 30 to 35 per BOP, and will give locally available fresh food items for use., Also, by this solution, many villages and companies coming to the Rann area will be benefitted.
<b>Users</b>	<b>:</b>	BOP, village people
<b>Expected Outcomes</b>	<b>:</b>	To develop agricultural edible vegetable produce sustainable without any external support in Rann and Creek area environment. Which could be also used elsewhere for benefit of society.
<b>Impact</b>	<b>:</b>	It will help to sustain the soldiers as well as society also.

<b>Problem ID:</b>	PID193
<b>Challenge Title</b>	: Skin and ankle joint disease in BSF troops deployed in rann and creek area
<b>Name of the Department</b>	: Border Security Force (BSF)
<b>Challenge Description with context</b>	: As BSF BOPs are located in far-flung border area at the outer edge of the Great Rann and Creek area of Gujarat, where troops are constantly exposed to harsh and extreme vagaries of the climate and marshy terrain which is typical of this area. Due to this dryness and salty wind hitting during duty and routine work, the skin related problems are generally complaint. Similarly, due to regular contact of troops feet to this salty, chemical content mixed marshy soil, the ankle joints pain and become hard and stiff. This being an area-specific typical problem and troops remain posted for a few years, goes unnoticed or undiagnosed. However, they need a permanent solution, so that troops for their medical awareness are briefed on arrival to take adequate precautions or treatment once they notice such symptoms and remain fit to serve the country during Gujarat Tenure and even after being posted out to other regions.
<b>Users</b>	: BOP, Local members
<b>Expected Outcomes</b>	: To innovate or develop some medication for not allowing such skin or joint-related diseases to develop here and suffer later on too.
<b>Impact</b>	: It will helps BSF troops to maintain their health and hence efficiency will be increased.

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<b>Problem ID:</b>	PID194
<b>Challenge Title</b>	: Durability of Footwear In Rann And Creek Area
<b>Name of the Department</b>	: Border Security Force (BSF)
<b>Challenge Description with context</b>	: BSF has similar standards of different types of footwear for all troops across the force, with some special authorization to a specific area to cater to extreme climatic conditions. However, there is a requirement to develop special footwear for the Creek and Rann area climate or terrain, due to the existing typical property of chemical mixed and rich salt content soil here. This adversely impacts the routine footwear of troops, after used in foot movement. It is also a fact that the movement in the creek and Rann area is frequently done on foot, due to road and tracks limitations.
<b>Users</b>	: Armed forces
<b>Expected Outcomes</b>	: Durable footwear as per standard, not affect by weather condition.
<b>Impact</b>	: It will give return of investment and help BSF troops.

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<b>Problem ID:</b>	PID195
<b>Challenge Title</b>	: Wide Area Surveillance Scanning System For Rann And Creek Area
<b>Name of the Department</b>	: Border Security Force (BSF)
<b>Challenge Description with context</b>	: As the area is vast and with rare or least physical movement across IB and Rann & Creek Area. So, deployment of a large number of manpower on the border to detect and stop any probable infiltration is uneconomical, and that too not fool proof, due to various external and human limitation factors. Thus, the use of best and smart AI-based technology with all analytical capability and feed to different levels is needed to scan the area periodically and detect motions happening in such vast areas and alert the troops for a specific situation or challenge emerging. This will give additional task-specific proficiency in BSF border operations, 24x7 hrs continuous surveillance of area without any interruption, ground-level analysis for planning action or reaction with adequate relief from monotonous, and blank observing routine/fatigue.
<b>Users</b>	: Border observation post
<b>Expected Outcomes</b>	: To innovate or develop some software combined technical solution to be placed at regular intervals on the border at sufficient distance from IB with all communication facilities to have uninterrupted scanning of wide areas and alert system for better security.
<b>Impact</b>	: It will provide uninterrupted Networking & Communication of BOP to enhance the security.



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<b>Problem ID:</b>	PID196
<b>Challenge Title</b>	: Providing communication facility to troops deployed in rann and creek area
<b>Name of the Department</b>	: Border Security Force (BSF)
<b>Challenge Description with context</b>	: Due to no villages or civil administration establishments existing near the border in Rann and reek area due to being uninhabitable, the commonly available communication facilities are not available to troops deployed in the border area. Independent system or facility only for this purpose is costing very high as well guided by many regulations. Thus, some local extension of the available communication system or network needs to be devised to assist it in reaching up to BOPs, with minimum employment of commitment or resources and expenditure. Also, it is not used by Anti National Elements.
<b>Users</b>	: Administrator and soldiers
<b>Expected Outcomes</b>	: To innovate or develop some technology-based system to help extension of mobile or communication network to BOP level for the welfare of troops and easy communication with them and remove their isolation from their relations.
<b>Impact</b>	: It will help the family of soldiers as well as improve mental health of soldiers.

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<b>Problem ID:</b>	PID197
<b>Challenge Title</b>	: Drone based surveillance in rann and creek area
<b>Name of the Department</b>	: Border Security Force (BSF)
<b>Challenge Description with context</b>	: Due to high-speed wind and the gush of salt storms, visibility during the summer and rainy seasons gets affected, and this affects observation too. Also, the Movement of troops and vehicles becomes very difficult. So, to have wide area check in Rann and Creek area, where the vertical view is wide and clear in vast spread bare ground, the Drones having sufficient robustness and better sustainability in moderate or high wind to fly with capability to be navigated for about 2 KM around and 45-minute fly/ run time. This can track any intruder taken advantage of bad weather and neutralized at selected destination/ place.
<b>Users</b>	: Administrator and soldiers
<b>Expected Outcomes</b>	: To innovate or develop drones with high sturdiness, high-end surveillance capability with GPS based tracking, navigation guided system solution with longer duration fly time.
<b>Impact</b>	: It will help troops for safe and secure movement of BSF troops.

**Problem ID:** PID198

**Challenge Title :** Detection of underground tunnels

**Name of the Department :** Border Security Force (BSF)

**Challenge Description with context :** Normally, the movements done on and over the ground is detectable by some of the technology based on the combination of motion sensors and add ons. However, the movement done through tunnels dug underground at a depth of 2 to 3 meters below the surface is difficult to be deducted y any sensors. Because of that, it is very difficult to guard against such challenges. Even during winter or bad weather these tunnels are safe for movement. The general dimension of these tunnels is 1 mtr x 1mtr for easy movement. The plying of even the weight of heavy vehicles like 5 tonners or tractor is easily withstood by normal alluvial soil earth of 1.5 meters thickness. Thus it would be a great achievement, if any technique is developed to detect such deep underground tunnels.

**Users :** Soldiers

**Expected Outcomes :** To innovate or develop any technique for detecting about 1 meter to 2 meters deep underground tunnels.

**Impact :** It will save the lives of BSF troops as well as increased surveillance.

**Problem ID:** PID199

**Challenge Title :** Construction of low-cost load infrastructure suitable for creek and rann area

**Name of the Department :** Border Security Force (BSF)

**Challenge Description with context :** The soil of the Creek and Rann area, due to salinity adversely affects the load constructed with routine bitumen mixture and it does not last too long. Thus, the load requires frequent/ regular maintenance to make it operational worthy, which is regularly affecting BSF operational activities on border and eating away much of BSF budget allocation.

**Users :** BSF troops

**Expected Outcomes :** To develop some compound/ material, which is strong enough to be used on road to withstand the pressure of vehicle movement and also could sustain the adverse impact of soil to last for a longer period and do not require much effort on maintenance.

**Impact :** It will helps to build durable economical roads to reduce the cost.

### Vadodara City Police

**Problem ID:** PID200

**Challenge Title :** Use of Indian Credit Cards abroad

**Name of the Department :** Vadodara City Police

**Challenge Description with context :** Most Indian credit cards require a 4 digit PIN to approve a transaction at a merchant location. While credit cards usage in some countries like in US do not require any such PIN no matter whether the card is issued in their country or others, like India. An Indian travelling abroad if loses his card or cloned that card by scammer and before it is blocked, the usage by the scammer cannot be controlled as it appears to be legitimate transaction in that country where PIN is not needed. Getting support to resolve such fraud could be challenge.

**Users :** Banks, Law regulating agencies, Indian credit card user travelling abroad

**Expected Outcomes :** Security features for such credit card

**Impact :** It ensures customers to minimize the risk of fraud and illegitimate use of credit card

**Problem ID:** PID201

**Challenge Title :** Use of Indian Credit Card For Overseas Websites

**Name of the Department :** Vadodara City Police

**Challenge Description with context :** It is noticed that some overseas websites honour transactions with just details printed on the credit card (Name, number, expiry and CVV). Such sites do not have provision to trigger OTP for additional security though Indian credit card is used. Most Indian students applying for US universities may have experienced this. In this situation, someone's credit card details and CVV number can be used for such transactions. Since those websites are not under Indian jurisdiction and its legal for the website to process the card's transaction like that, seeking support for fraud transactions could be challenge.

**Users :** Banks, Law regulating agencies, Indian credit card user using it on overseas websites

**Expected Outcomes :** Security features for such credit card

**Impact :** It ensures customers to minimize the risk of fraud and illegitimate use of credit card.

<b>Problem ID:</b>	PID202
<b>Challenge</b>	<b>Title</b> : Calls From Internet Phone
<b>Name of Department</b>	<b>the</b> : Vadodara City Police
<b>Challenge Description with context</b>	<b>with</b> : There are a number of options to subscribe for international phone numbers that can be used from anywhere in the world over the internet. For example, the caller has subscribed to a US number (like +1 (999) 999-9999) but he may be using it sitting in India. (Most call centers and legitimate IT companies in India have such facility.) Any calls from such callers to Indian users will appear like an overseas call but in reality it may be from his next door neighbour. Tracing any fraud calls i.e. phone locations / callers may be challenge as most scammers use VPN and their live IP is not visible.
<b>Users</b>	<b>:</b> Law regulating agencies, Internet phone user
<b>Expected Outcomes</b>	<b>:</b> Internet phone user tracing
<b>Impact</b>	<b>:</b> It will provide safe calling environment and minimization of fraud as well as helps in crime Investigation
<b>Problem ID:</b>	PID203
<b>Challenge</b>	<b>Title</b> : WhatsApp Calls
<b>Name of Department</b>	<b>the</b> : Vadodara City Police
<b>Challenge Description with context</b>	<b>with</b> : WhatsApp setting allows the phone number to be different from the SIM installed on the phone. Any calls or communication from such WhatsApp account cannot be related to actual caller. It is difficult to trace such caller because the internet he is using is via VPN and the phone number associated with WhatsApp is of different identity / phone which may not be live so tracing the tower / location data cannot be traced.
<b>Users</b>	<b>:</b> Law regulating agencies, WhatsApp Call user
<b>Expected Outcomes</b>	<b>:</b> WhatsApp phone user tracing
<b>Impact</b>	<b>:</b> It will provide safe calling environment and minimization of fraud as well as helps in crime Investigation.

**Problem ID:** PID204

**Challenge Title :** RFID Enabled Credit and Debit Cards

**Name of the Department :** Vadodara City Police

**Challenge Description with context :** For past couple of years, Indian banks have started issuing credit and debit cards fitted with RFID chip. These cards are not required to be either swiped on magnetic tape reader nor inserted into the card reader for validating the chip. Instead bringing the card close to the card reader (and tapping), is sufficient to access the card and approve the transactions without entering any OTP. The present limit is of Rs.5000. On one hand it is to facilitate for quick transactions but unknowingly tap may result into a fraud transaction. For example, if such card is in the wallet in the back pocket and scammer taps a card reader machine in the crowded public transport or mall may trigger a transaction that gets validated without knowledge of the card holder. Such scenario can't be ruled out and most high end users may not notice and report such fraud transactions.

**Users :** Banks, Law regulating agencies, card user

**Expected Outcomes :** Security features for such cards to minimize the fraud.

**Impact :** It will ensure used to minimize the of fraud and and illegitimate use of such cards

**Problem ID:** PID205

**Challenge Title :** Screen share apps like Anydesk and Teamviewer

**Name of the Department :** Vadodara City Police

**Challenge Description with context :** The frauds associated with screen share apps have been reported for quite some time now. The caller pretends to be a legitimate executive from the wallet company asking the user to install the Anydesk or Teamviewer or similar app from playstore and grant full access of their phone. Since transaction is processed from the user's own phone, the transaction appears to be a regular one though it was forced by a scammer.

**Users :** Remote service companies, Apps developers and user

**Expected Outcomes :** Security features for such apps, prevention of financial transaction via screen share apps

**Impact :** Users are ensured to use any screen share application without any hesitation as well as any financial fraud risk.

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<b>Problem ID:</b>	PID206
<b>Challenge Title</b>	: Data leakage
<b>Name of the Department</b>	: Vadodara City Police
<b>Challenge Description with context</b>	: There are many instances where user data from financial institutes leak and land in the hands of scammers. Here a few experiences users have shared. <ul style="list-style-type: none"><li>• The day I initiate a stock trade on a XYZ portal, I receive a call in the evening or next day from some Stock broker asking whether I do any trading and interested in their services. Such callers are initially appearing to be cold caller but they are scammers are they have some sources in XYZ to share vital info about the customer.</li><li>• Two users have shared similar experience: My grandfather passed away more than 2 decades ago, yet I received a call on our landline from an insurance company that a policy was purchased by him 10 years ago and full premium was not paid hence to get the surrender value some process is required.</li></ul>
<b>Users</b>	: Law regulating agencies, Data collection, storage and user companies, Phone user
<b>Expected Outcomes</b>	: Prevention and tracing of data leakage, National web portal for helpline and listing such fraud callers with description, Data Privacy tools for prevention of user data sharing to third party for profit gain
<b>Impact</b>	: Users get the protection against any data leakage from the any online portal.

- Problem ID:** PID207
- Challenge Title :** Deepfake Ransomware
- Name of the Department :** Vadodara City Police
- Challenge Description with context :** Deepfakes are the manipulation of media, may they be still images and/or videos accompanied by voice, using artificial intelligence (AI), resulting in a believable composite that is challenging to the naked eye and/or software. We've touched on the topic of deepfakes in several of our articles here on the Labs blog, including the possibility of such technology being used in scam campaigns. Ransomware, on the other hand, is malware that holds the victim's files hostage, either by encrypting important files or locking victims out of certain computer features to prevent them from performing remediation steps, until a ransom is paid.
- Users :** Law regulating agencies, Data security Companies, Computer and mobile user with internet
- Expected Outcomes :** Security features for such Deepfake Ransomware
- Impact :** Users are get protection against the Ransomware.
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- Problem ID:** PID208
- Challenge Title :** To verify the genuineness of messages shared on social media messenger
- Name of the Department :** Vadodara City Police
- Challenge Description with context :** In social media, there are many messages we see daily which are outdated or which are not true. Many pictures, news or information which claimed to be correct but instantly they come out to be outdated. Many riots, fights, viral information and modified or distorted pictures or videos have been shared through various social media platform such as WhatsApp, Facebook, telegram etc which is not correct or latest. This misleads the people with inappropriate information. How we can justify the originality of the message. How we can know which person has originally created the message and also at which location. If we can see the correct date, time, place and person detail on each message may we can decrease the quantity of viral and wrong information shared with people.
- Users :** Law regulating agencies
- Expected Outcomes :** Tracing social media messages original creator, date, time and place
- Impact :** Prevention of spreading of wrong information and its consequences



## Gujarat Urja Vikas Nigam (GUVNL)

<b>Problem ID:</b>	PID209
<b>Challenge Title</b>	: Multipurpose Operating Rod for Lineman
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	<p>: Existing FRP road has a low strength especially lifting at full length. Operating rod part failure is observed as per filed report, can't be used for multiple purposes. As a general rule, the tensile strength of an existing FRP rod material polyester resin tensile strength be around 20 percent weaker than the same bond made with epoxy resin. Moreover, epoxy is very resistant to wear, cracking, peeling, corrosion, and damage from chemical and environmental degradation. Hence, the fiberglass operating rod of epoxy resin is the most water-resistant, durable, and longest-lasting resin available and has superior electrical properties.</p> <p>Our sticks have a very high resistance to failure due to water absorption or delamination.</p> <ul style="list-style-type: none"> <li>• Conventional fiberglass construction uses a woven mat. This creates pockets and voids where dirt and moisture can collect. It is desirable to use non-woven fiberglass is unidirectional which creates a smoother surface.</li> <li>• There is no universal end fitting adaptor in the existing operating rod utilized by the utility.</li> <li>• Using the universal end fitting adaptor, the operating rod can be utilized for multipurpose as follows:             <ul style="list-style-type: none"> <li>○ Switch/DO fuse operations</li> <li>○ Rod with earthing clamp</li> <li>○ Conductor lifting</li> <li>○ Creeper removal</li> </ul> </li> </ul> <p>Uses of this Adaptor-</p> <ul style="list-style-type: none"> <li>• Remove tree limbs</li> <li>• Clear vegetation at pole base / transformer structure</li> <li>• Remove vacant birds' nests</li> <li>• Lift phases</li> </ul>
<b>Users</b>	: Line staff of power distribution companies
<b>Expected Outcomes Impact</b>	: <ul style="list-style-type: none"> <li>• Line staff can do multiple operations with a single operating rod</li> <li>• Easiness in creeper removal</li> <li>• Improved quality of the rod</li> <li>• Increases operation efficiency</li> <li>• Increases power reliability</li> </ul>

<b>Problem ID:</b>	PID210
<b>Challenge Title</b>	: MCCB with Remote Operation Facility (Smart MCCB) for Power Distribution Network
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	<p>: The distribution transformer is the major critical equipment at the end of the power system. The failure of the distribution transformer affects various consumer connected to it. Also, the transformer replacement duration is quite high. Hence, it is necessary to have adequate protection for distribution transformers. Traditionally, the pole/plinth-mounted distribution transformer is protected by a Kit Kat-type fuse box. However, there are various limitations of Kit Kat fuses.</p> <p>The MCCB type protection offers adequate protection for a low voltage line and transformer. However, if MCCB gets tripped then there is no built-in facility to generate alert or warning, and it takes time to make it ON. Moreover, an additional metering arrangement is required to know the transformer LV side parameters. Additionally, there is no auto reclosure facility inside the MCCB which is desirable to improve power reliability during transient trippings.</p> <p>Instead of a conventional type fuse or MCCB, an MCCB having a bidirectional communication facility, auto reclosure facility, and add-on metering facility increases power system reliability, and customer satisfaction, and offers adequate protection to low voltage network and transformer.</p>
<b>Users</b>	: Power distribution utility, commercial/industrial/residential consumers.
<b>Expected Outcomes</b>	<p>: </p> <ul style="list-style-type: none"> <li>• Improved transformer protection</li> <li>• Improved power system reliability</li> <li>• Alert/notification in case of a power outage</li> <li>• Alert/notification in case of any abnormal conditions</li> <li>• Remote operations</li> <li>• Remote setting of the threshold values</li> </ul>
<b>Impact</b>	<p>: </p> <ul style="list-style-type: none"> <li>• Improved protection</li> <li>• Improved customer satisfaction</li> <li>• Improved operation efficiency</li> </ul>

<b>Problem ID:</b>	PID211
<b>Challenge Title</b>	: Que management system for DISCOM Offices
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	<p>: It is a regular scene at government and even private offices to find a large number of people standing in long queues waiting for their turns to come, so Queues can be frustrating for your customers,</p> <p>The majority of times customers rushed non- relevant staff to the office for the inquiry or complaint submission. This increases Dissatisfaction among consumers as well as the Efficiency of staff also gets reduced.</p> <p>An efficient queue management system is the one that not only minimizes the customers’ waiting time in lines, but also empowers the staff to serve the customers more efficiently.</p> <p>Kicks/Mobile based or other advanced queue management systems can solve the limitations.</p>
<b>Users</b>	: Government/Private Offices/hospitals, etc.
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• Proper system for appointment, allocation &amp; direction</li> <li>• Faster processing</li> <li>• Reduces wait time</li> <li>• Relief from long queues</li> <li>• Real-time performance monitoring</li> <li>• Time-saving for both companies and customers</li> </ul>
<b>Impact</b>	: <ul style="list-style-type: none"> <li>• Workforce efficiency will improve.</li> <li>• Better management of consumers will increase consumer satisfaction</li> <li>• Improved productivity &amp; operational efficiencies</li> </ul>

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<b>Problem ID:</b>	PID212
<b>Challenge Title</b>	: Lineman Tool Vest
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	: For line maintenance/power restoration work, lineman climb on a pole or any structure. There are many activities in which various tools are required like conductor stringing, fabrication fixing, etc.  At present, non-standard practices are being carried out by line staff for handling various tools in the absence of a standard tool handling toolkit.  The limitations can be solved by introducing a Vest for handling tools. Vest for tools consists of an array of pockets of various sizes and depths to hold a multitude of tools.
<b>Users</b>	: Line staff of DISCOMs
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• When it comes to keeping all tools close to hand when working on an electric line or transformer structure, tool vests can be extremely helpful accessories.</li><li>• Wearing work tool vests on-site can offer the wearer.</li><li>• Many advantages in terms of utility, increased work efficiency, safety, and comfort.</li></ul>
<b>Impact</b>	: <ul style="list-style-type: none"><li>• Increased work safety</li><li>• Improved working methodology</li><li>• Improved working Efficiency</li></ul>

<b>Problem ID:</b>	PID213
<b>Challenge Title</b>	: The high voltage detecting helmet with audio and LED illumination
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	<p>: Working on a High Voltage/Low Voltage Line, there is a risk of electrical hazards, especially electrical shock.</p> <p>DISCOM line staff must pay special attention to electrical hazards because they work on electrical circuits. Coming in contact with an electrical voltage can cause current to flow through the body, resulting in electrical shock and burns. Serious injury or even death may occur.</p> <p>Sometimes, due to lack of attention or overconfidence line staff climb on wrong nearby Live feeders without confirmation whether the line is dead or not, which further results in fatal/non-fatal accidents. Also, sometimes due to communication misinterpretation among line staff, accidents occurred to the accidental touch of line. Also, during working in the night time, line staff has to carry a torchlight along with the tools while working on a pole. Holding a touch while working with electric lines is very difficult.</p> <p>The problem can be resolved by a personal safety head helmet with multiple facilities listed below-</p> <ul style="list-style-type: none"> <li>• Voltage proximity sensors: Voltage detecting facility with an audio and visual alert</li> <li>• Detachable LED strip for 360-degree visibility at the working area.</li> </ul>
<b>Users</b>	: Line staff of DISCOMS/workers working with electricity
<b>Expected Outcomes</b>	<p>: • Voltage proximity audio and visual alert to line staff which increases individual safety.</p> <p>• A better and safe working environment during the night</p>
<b>Impact</b>	<p>: • This will provide better electrical safety to individual line staff.</p> <p>• Increased safety in the working environment boosts the confidence level of line staff.</p>

<b>Problem ID:</b>	PID214
<b>Challenge Title</b>	: LED work light for Lineman
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	<p>: The line staff of DISCOM works day and night to ensure 24*7 electricity to end consumers. Restoring power after interruptions and outages is one of your primary roles as a utility provider.</p> <p>While dealing with these issues has been a feature of utility operations from the very beginning, recent years have brought new technologically empowered methods to improve the speed and effectiveness of power outage restoration.</p> <p>While working at night, utility line staff required illumination for proper and speedy work. At present, LED torches are available but have a very narrow beam.</p> <p>Portable LED light with high lumens, wide beam, adjustable, Lithium ion-type chargeable can address the problem.</p>
<b>Users</b>	: Line staff of DISCOMS
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• Proper illumination in the work area</li> <li>• Easy operation and handling</li> </ul>
<b>Impact</b>	: <ul style="list-style-type: none"> <li>• Increased operational efficiency</li> <li>• Increased speed of work</li> <li>• Reduced power restoration time</li> </ul>

<b>Problem ID:</b>	PID215
<b>Challenge Title</b>	: Plug & Play Type transformer energy auditing device
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	<p>: As per prevailing practice, transformer energy audit carried out using external Metering setup consists of phase-wise ring-type tap wound current transformers, one energy meter, and SMC box enclosure.</p> <p>The transformer metering setup is connected during or after the installation of the distribution transformer. Because of the ring-type current transformer, whenever replacement of current transformer required, whole LV service cable detached from LV pole and for that power shutdown required. Ultimately resulted in prolonged replacement work, utility revenue loss, and consumer dissatisfaction.</p> <p>Also, during transformer replacement activity, Due to the lengthy process of connecting DT metering set up, DT metering setup remaining unconnected, and an energy audit of transformer affected.</p> <p>In this era of smart technology, IoT sensors, split- core type current sensors are widely available. Split- core type current can easily detachable from cable and for replacement of any component of metering setup, cable detachment from transformer or LT pole is not required. Hence, there is a need for a Plug and play type distribution transformer Metering setup for easy installation, easy maintenance, and increase utilization factor of it.</p> <p>Plug and play type metering setup installation shall be Possible without LV power interruption. The installation of metering shall be easy and speedy. Also, the Metering setup shall be compatible with bidirectional communication facilities such as IoT based DCU or Modem.</p>
<b>Users</b>	: Pan India power distribution companies
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• Easy installation of DT metering setup</li> <li>• No power cut required</li> </ul>
<b>Impact</b>	: <ul style="list-style-type: none"> <li>• Improve power supply reliability</li> <li>• Increase customer satisfaction</li> <li>• Line staff work efficiency also improves</li> </ul>

<b>Problem ID:</b>	PID216
<b>Challenge Title</b>	: Battery/ Petroleum fuel operated telescopic tree branches cutter (Pole chainsaw)
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	<p>: Trees growing through, or close to, power lines are dangerous because they create a potential path for electricity to travel to the ground which resulted in a frequent power outage. Sometimes, people that come into contact with this path (by touching, climbing, trimming, or cutting down the trees) put themselves at serious risk of being electrocuted or receiving significant electrical burns.</p> <p>Also, trees near power lines are a serious fire risk in dry weather conditions; leaves or branches touching lines can catch fire, Therefore, tree trimming is a regular and frequent activity in dense tree area of DISCOM, However, at present tree trimming is carryout out by chopping axe or pruning cutter.</p> <p>The time taken for tree trimming by prevailing practice is long and sometimes required climbing on the tree which is very difficult in monsoon season. Because of the prevailing practices of tree trimming for power restoration work /maintenance activities are time-consuming, the power restoration time increased and work efficiency also gets reduced.</p> <p>Pole chainsaw type tree trimmer which can work on lithium-ion battery or petroleum fuel, is the possible solution to overcome the limitations. Using a pole chainsaw type cutter, inaccessible tree branches also can be trimmed from ground level.</p> <p>The weight and vibrations of the Pole chainsaw shall be less.</p> <p>The telescopic length of the cutter shall be at least 2 feet.</p>
<b>Users</b>	: Line staff of DISCOM
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• Speedy tree trimming</li> <li>• Reduction in power outage time</li> <li>• Easy and safe operation</li> </ul>
<b>Impact</b>	: <ul style="list-style-type: none"> <li>• Power reliability increases</li> <li>• Work efficiency improves</li> <li>• Work safety increases.</li> </ul>



<b>Problem ID:</b>	PID217
<b>Challenge Title</b>	: Phase Identification Tool For Hv And Lv Overhead And Underground Lines
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	<p>: Long over-head lines can easily have mislabelled or uncertain phasing. This can result in substation problems such as delays in construction and wrong phase sequence adversely affect motorized load.</p> <p>It's common for underground cables to be mislabelled or absence of phase-wise cable color coding. This causes confusion during outages. Also, when two circuits need to be looped together, the labelling must be right. It's inconvenient to de-energize a circuit to determine to phase.</p> <p>Especially when a single-phase load is supplied by aerial bunched cable and when a utility wants to optimize load balance to reduce losses, it's essential to know which phase is which, so loads can be transferred correctly.</p> <p>It's common to have confused phasing through three-phase transformers. It's important to determine the phasing to avoid trial-and-error transformer connections.</p> <p>Besides the issues associated with load balance and system optimization, inaccurate phase labelling can result in equipment damage and injury of personnel.</p> <p>A product that can Identified Phase type (i.e., R, Y, B) in Low voltage or High voltage Networks can be very useful to overcome the problem.</p>
<b>Users</b>	: DISCOMs and PVT Utility
<b>Expected Outcomes</b>	<ul style="list-style-type: none"> <li>: • Phase identification in LV and HV system</li> <li>• An easy method for phase identification reduces process time compared to the manual method.</li> </ul>
<b>Impact</b>	<ul style="list-style-type: none"> <li>: • Increase in work efficiency</li> <li>• Increase in work safety</li> <li>• Increase in work accuracy (For e.x., transformer load balancing)</li> </ul>

**Problem ID:** PID218

**Challenge Title :** Universal modem for 1-Ph meter

**Name of the Department :** Gujarat Urja Vikas Nigam (GUVNL)

**Challenge Description with context :** In Gujarat DISCOMs, lakhs of 1-Ph static utility energy meters are deployed. At present, all the static 1-Ph meters are using their different protocols for meter communication. If the universal protocol can be developed which can be able to communicate with all makes of single-phase meters, then this can be further deployed in the field for communication as per DISCOMs needs

Ease of deployment of AMR facility in 1-ph meter, reduction in meter reading costs, etc

**Users :** DISCOMs, consumers

**Expected Outcomes :** Development of Universal modem for 1-Ph meters

**Impact :** Benefits to consumers, utility, and power system as a whole.

**Problem ID:** PID219

**Challenge Title :** Earthing rod for short all the three conductor with fabrication

**Name of the Department :** Gujarat Urja Vikas Nigam (GUVNL)

**Challenge Description with context :** At present line staff of DISCOMs going for maintenance of HT/LT line, they are facing difficulty for electrically shorting and earthed with existing earthing at that location to optimize the protection and safety to the line staff.

What exact problem is being solved?

Developing a portable type three-phase line shorting copper cable connected to clamp having pressurized spring action to hold the wires for 3-phase to short circuit line conductors and then earthed by connected to existing earthing.

**Users :** DISCOMs

**Expected Outcomes :** To optimize the safety of liner staff

**Impact :** Reduction in departmental accident

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<b>Problem ID:</b>	PID220
<b>Challenge Title</b>	: Dustproof Coating/ Glass On Solar Panel
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	: Gujarat is SPV enriched state. The installations done in the SRTPV system in Gujarat is highest amongst all states of India. Solar production is quite significant at the same time; it is also affected adversely by various soiling factors. The soiling loss due to dust, bird-dirts, etc. is affecting the SPV generation. This by and large caused loss of millions of units. If the cost-effective solution to avoid the loss due to soiling can be developed, then these small savings in each panel can save millions of units in a nation. Improved efficiency of SPV system
<b>Users</b>	: Consumers of DISCOMs and many other stakeholders
<b>Expected Outcomes</b>	: New dustproof materials
<b>Impact</b>	: Benefits to consumers, utility, and power system as a whole.

**Problem ID:** PID221

**Challenge Title :** Converting non-communicable FPI to communicable FPI

**Name of the Department :** Gujarat Urja Vikas Nigam (GUVNL)

**Challenge Description with context :** The communicable FPI is available in the market but the cost of the same is quite high, due to the same the FPI is not widely used in the field. To make the widespread use of FPI, it is required that the cost of FPI should be brought down. The communicable module consists of an RF-based chip to be retrofitted to existing non-communicable FPI. The same should be able to communicate with the Gateway/DCU via RF (LoRa may be used here), the master device will collect the data of all FPIs and send it to the server.

The data of the faulty location should be seen in the mobile app as well as on the dashboard. The required parameters like identification of the type of fault, etc. need to be identified and shown. Improvement in the reliability of the overall system, as the time spent for identification of fault in lengthy lines is reduced considerably.

**Users :** DISCOMs

**Expected Outcomes :** Cost-effective communicable FPIs

**Impact :** Benefits to consumers, utility, and power system as a whole.

**Problem ID:** PID212

**Challenge Title :** Pole Climbing Device (Universal)

**Name of the Department :** Gujarat Urja Vikas Nigam (GUVNL)

**Challenge Description with context :** To work on PSC/RSJ pole, the line staff person has to climb the pole. Sometimes due to age effect or heavy body weight, it becomes difficult to climb the pole. So some simple, safe, and universal device is required to develop to be helpful to line staff for climbing the pole. Some simple, safe, and universal device is required to develop to be helpful to line staff for climbing the pole. It should be easy to carry, wear and use for a long time without trouble.

**Users :** DISCOMs

**Expected Outcomes :** Safe and comfortable solution for pole climbing.

**Impact :** A handy device increase the work efficiency of a staff and in turn improve the system.

<b>Problem ID:</b>	PID223
<b>Challenge Title</b>	: Depth/Distance Sensing Instrument
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	: In absence of proper supervision, the quality of many line works like erection of earth pit, installation of new lines, and installation of pole lacks the quality. Also, after the erection of such assets, it is quite difficult to check whether the work has been erected as per proper standard or not.  By deploying the accurate depth/line sensing instrument, the aforesaid issue can be resolved. The cross-checking of the erected line work can be made easy with help of such instruments.  Improve the quality of works and thereby, reduce the outage duration and cost for O&M.
<b>Users</b>	: DISCOMs
<b>Expected Outcomes</b>	: Development of cost-effective depth/distance sensing instrument for measuring the depth/distance of assets of power system.
<b>Impact</b>	: Benefits to consumers, utility, and power system as a whole

<b>Problem ID:</b>	PID224
<b>Challenge Title</b>	: Cost-effective insulation paint
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	: There is no reliable product like insulating paint required for coating the MS pole, fabrication, and other material to insulate and to avoid accidents.  Any product like insulating paint which can be directly applied on the surface & makes an integral part of the surface. It should create a microcrystalline bond with the surface making the coat an integral part of the surface.  It should have a very long life due to weather repellent properties.  It should have very easy, effective & economical use. It should be safe and fire retardant and eco-friendly.
<b>Users</b>	: DISCOMs/ Transcos
<b>Expected Outcomes</b>	: Safe, reliable, and cost-effective solution for huge requirements.
<b>Impact</b>	: Benefits to utility and power system as a whole

<b>Problem ID:</b>	PID225
<b>Challenge Title</b>	: New Design of LA for HV distribution system
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	<p>: A lightning arrester is a device used on electrical power systems and telecommunications systems to protect the insulation and conductors of the system from the damaging effects of lightning. The typical lightning arrester has a high- voltage terminal and a ground terminal. When a lightning surge (or switching surge, which is very similar) travels along the power line to the arrester, the current from the surge is diverted through the arrester, in most cases to earth.</p> <p>Usually, metal oxide (Zinc Oxide) type of Lightning Arrester (LA) is used for protection of distribution system/equipment's from overvoltage. But it is observed that the line staff of the DISCOMs does not like this protective equipment because it creates a lot of problems in finding out the line fault when the line underwent the fault due to the fault of the LA. Due to the fault in LA, it is short-circuited inside the housing and earthed.</p> <p>As there is no LA disconnect or provided the faulty LA remains in the circuit of the feeder which does not allow the line 'ON'.</p> <p>Hence, it is suggested to install LA with disconnect in series with LA so that once the LA fails due to any reason, it will be cut off from the earthing through the disconnect.</p> <p>It should not draw any current during normal operating conditions, i.e., it sparks-over voltage must be above the normal or abnormal power frequency that may occur in the system.</p> <p>It should conduct only during over voltages and having low power loss under normal operating conditions.</p> <p>It should have high energy handling capability.</p> <p>It should have high reliability and long life.</p>
<b>Users</b>	: DISCOMs/ Transcos
<b>Expected Outcomes</b>	: As a huge quantity is required for the power system, it should be a costeffective and reliable solution for the protection of the power system against overvoltage.
<b>Impact</b>	: Benefits to consumers, utility, and power system as a whole.

<b>Problem ID:</b>	PID226
<b>Challenge Title</b>	: Universal Smart Electric Vehicle (EV) charging infrastructure
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	: At present, various EV manufacturers are using different connectors for their car charging. This not only differs in the connector size but also charging speed, power converter specifications, and many other technical parameters.  If the Universal charging station is developed such as it can be connected with all EVs without losing their specific features such as fast charge, etc. then it can be deployed in the field quite effectively.  Resolving issue associated with EV's like range anxiety and interoperability.
<b>Users</b>	: DISCOMs, Consumers
<b>Expected Outcomes</b>	: Development of Universal smart Electric Vehicle charging infrastructure.
<b>Impact</b>	: Benefits to consumers and utility

<b>Problem ID:</b>	PID227
<b>Challenge Title</b>	: Consumer complaint tracking, assigning, and monitoring mechanism
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	: As the technology progresses, the use of Information Technology for consumer satisfaction is the need of the time.  In DISCOMs, whenever there is any fault, the consumer registers his complaint to complain center and from the work task for corrective action is assigned to a specific workforce. However, from the registration of the complaint to the closure of the complaint, there is no tracing of status available to consumers.  The platform provided by some of the successful start-ups like Ola, Swiggy can be taken as a reference to provide the consumer information regarding their current status of the complaint.
<b>Users</b>	: Consumers of DISCOMs and DISCOMs
<b>Expected Outcomes</b>	: Due to information available at consumer's fingertips, consumer satisfaction will increase. The utility will efficiently able to manage the assets.
<b>Impact</b>	: Benefits to consumers, utility, and power system as a whole

<b>Problem ID:</b>	PID228
<b>Challenge Title</b>	: Overhead/Underground line fault detector (Give distance)
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	<p>: As the size and complexity of distribution networks is increasing, consequently, when an outage occurs on this dynamically changing grid, it is difficult and time consuming to pinpoint the location of the outage. In order to overcome this problem, fault passage indicators (FPIs) with IoT/AI facilities are installed at strategic locations on feeders at the branching points. FPI is a device that provides a remote and local visual indication of the occurrence of fault even after the isolation of the line. While the technology of FPI is established for fast identification of fault location, based on the statuses of multiple FPIs received at the utility control center. At present, if any fault occurs on the HT line, it is difficult to identify the location of the fault, and hence patrolling is required to be done on a complete line which takes a long time to restore the power supply.</p> <p>But if a line fault detector/FPI with IoT/AI facility is used at various locations on the line, it will give the fault location and type of fault immediately to the user on his mobile/ web. This will reduce power supply interruption time and benefit to all stakeholders like consumers, utility, state, and the country.</p> <p>In modern-day power systems, in order to restore the network from an emergency state to normalcy, outage management plays a major role. This process involves identifying fault location, fault isolation and service restoration, sending outage alerts etc. Outage Management Systems collect information from different sources as trouble calls, Advanced Metering Infrastructures (AMI), estimation and prediction data, etc. to perform the necessary operations on the modules mentioned in the OMS.</p> <p>To design an efficient and robust automatic fault detection and location system for overhead and underground power transmission lines.</p>
<b>Users</b>	: Discoms/ Transcos
<b>Expected Outcomes</b>	<ul style="list-style-type: none"> <li>: • To reduce response time needed to rectify and save expensive transformers from damage or theft which usually occurs during longer power outages.</li> <li>• To increase the productivity of technical crews since the time needed to locate faults will be minimized.</li> <li>• To ensure stability and reliability of the power supply system in the country to boost economic growth.</li> </ul>
<b>Impact</b>	: Benefits to consumers, utility, and power system as a whole.



<b>Problem ID:</b>	PID229
<b>Challenge Title :</b>	Public Feedback Information And Suggestion For Power Utility Systems
<b>Name of the Department :</b>	Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context :</b>	<p>Gujarat has a large electric power network. Many lines and poles are available everywhere in Gujarat. It is not easy to reach every location of the network for maintenance activity.</p> <p>Gathering good ideas from the public also give us the opportunity to increase consumer satisfaction.</p>
<b>Users :</b>	Electricity utility consumer
<b>Expected Outcomes :</b>	<ul style="list-style-type: none"> <li>• Maintenance activity location is easily identified.</li> <li>• Safety and accident chances are reduced or maybe eliminated before happening.</li> <li>• Get innovative ideas/suggestions from consumers.</li> <li>• Give better facilities to the consumers.</li> <li>• It is helpful for planning.</li> </ul>
<b>Impact :</b>	<ul style="list-style-type: none"> <li>• Public satisfaction towards company development.</li> <li>• Company performance also improves.</li> </ul>

<b>Problem ID:</b>	PID230
<b>Challenge Title :</b>	Real-Time Centralized Monitoring Of Utility Vehicle Tracking Systems
<b>Name of the Department :</b>	Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context :</b>	<p>Gujarat Power utilities have so many vehicles available in various field activities. There is no mechanism to check the vehicle's performance and its uses.</p>
<b>Users :</b>	Power Utilities offices
<b>Expected Outcomes :</b>	<p>Centralized vehicle tracking and monitoring system. which helps to improve the performance of the vehicle provider and services.</p> <p>It would be helpful to utilities, to cross-check the vehicle-related issues</p> <ul style="list-style-type: none"> <li>• Field Service Management</li> <li>• Stolen vehicle recovery</li> <li>• Kilometres savings</li> </ul>

- Decreasing accident risk
- Evolution of the contractor performance
- Monitoring the vehicle traveling details
- Access through the internet and SMS simultaneously
- Alert if the vehicles move out of the designated boundary.
- Over speed alarm
- Movement alert
- History record playback

**Impact** : Saving of money as well as kilometres. Performance of vehicle contractor improve

**Problem ID:** PID231

**Challenge Title** : Require tool for tracking the LTMD/HT/Any other consumer installation Checking monitoring systems .

**Name of the Department** : Gujarat Urja Vikas Nigam (GUVNL)

**Challenge Description with context** : There is no tool available for power engineers that one helpful to them for identification of the checking location. Every field office has large nos. of consumers. Also, as per the category of the consumer, engineers have to check the installation checking in a particular time period.

**Users** : Power utility Checking Officers

**Expected Outcomes** : Easily get the data from the tool for which connection is required for the purpose of checking.

Engineers easily get the list of locations for checking.

- LTMD/HT connection maybe check in the stipulated time period.
- Digital data of the checking is developed.
- History record is easily available.

**Impact** : Engineers can easily track the consumer and check their losses/revenue of the company

**Problem ID:** PID232

**Challenge Title :** Flexible Thin Material Hand Gloves For Hv

**Name of the Department :** Gujarat Urja Vikas Nigam (GUVNL)

**Challenge Description with context :** Existing hand gloves are very difficult to work due to some flexibility issues.

**Users :** Line Staff of power utilities

**Expected Outcomes :**

- Line staff easily works with safety
- Reduction in accidents.
- Increased safety of line staff.
- Line staff works with confidence.

**Impact :** Increased performance of utility

**Problem ID:** PID233

**Challenge Title :** Adjustable And Flexible Ladder Usable For 2 Wheelers

**Name of the Department :** Gujarat Urja Vikas Nigam (GUVNL)

**Challenge Description with context :** Most utilities' staff work without the ladder and support. The minimum pole height is 8 meters. They climb the pole without support.

Some staff avoid climbing the pole (maybe some age factor, Health issue, new employee). Chances of accidents are more too.

Also, at some locations, ladder vehicle is not able to reach.

**Users :** Line staff of power utilities

**Expected Outcomes :**

- Increased safety of lines staff.
- Utilization of all line staff is possible.
- Reduced accidents.
- Increased work speed.

**Impact :** Utility performance improves for various new line/maintenance activities with safety

<b>Problem ID:</b>	PID234
<b>Challenge Title</b>	: Low Loss Conductor
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	<p>: In today's era, where urbanization &amp; industrialization is at its peak, there is a need to transmit an uninterrupted power supply so as to bridge the gap between demand &amp; supply.</p> <p>Normally, conventional conductors like ACSR (Aluminium Conductor Steel Reinforced) and AAAC are widely used in the construction of transmission lines but due to certain limitations of these conventional conductors, it is unable to cater the load growth and thereby, making the distribution line 'Overloaded'.</p> <p>Now, AL-59 Conductors are also used in some of the portion of the transmission and distribution utilizes.</p>
<b>Users</b>	: Power Utilities
<b>Expected Outcomes</b>	<ul style="list-style-type: none"> <li>: • Higher current carrying capacity &amp; thus higher power transfer capacity using smaller size conductor thus reducing material cost.</li> <li>• Low power loss in terms of Net Power Transfer at maximum operating temperature.</li> <li>• The line with more power when compared to conventional conductors.</li> <li>• Less weight thus leads to almost comparable sag with the use of light weight tower structures thus reducing project cost.</li> <li>• Excellent corrosion resistant because of reduction in inbuilt stresses during heat treatment.</li> <li>• Commercial benefits due to lower power loss and higher power transfer capacity. Impact Utilities losses and project cost will be going to reduce.</li> </ul>
<b>Impact</b>	: Increased efficiency and minimize the losses

<b>Problem ID:</b>	PID235
<b>Challenge Title</b>	: Tractor for multiple use like pole erection, digging, tree cutting, lifting the manpower etc
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	<p>: The overhead electric lines are laid on various types of supports like PSC poles, girders, rail poles, cement and spun poles etc. It is observed that in most of the cases, the electric line poles get tilted with facing the first period of the monsoon or windy rains and the lines with tilted poles seem shabby, unsafe, and unreliable.</p> <p>Once the pole gets tilted, the stringing of the conductor gets loose, the clearance between the conductor becomes non-uniform and nonstandard, which also leads to consequences like interphase fault, snapping of the conductor, accidents, power supply interruptions and sustained faults, etc. The authorities have been making remarks for such poor workmanship and showing their concern, also, every often.</p> <p>While making an actual field study on the subject and analyzing the reasons, it is learnt that when the lines are laid manually, either by departmental staff or by the contractor, the pole pits are excavated manually and poles are also erected manually. As all the activities including excavation of pits are done manually, the pit size is not possible to keep exactly to the size of the pole.</p> <p>The bigger size of pole pit is excavated and as a result, the bonding of refilled soil surrounding the pole gets weakened, which leads to tilting of the pole, when the pole is, either horizontally stressed with winds, rainwater flow effect, or due to waterlogging.</p>
<b>Users</b>	: Power utilities
<b>Expected Outcomes</b>	<p>: The overhead electric lines are laid on various types of supports like PSC poles, girders, rail poles, cement and spun poles etc. It is observed that in most of the cases, the electric line poles get tilted with facing the first period of the monsoon or windy rains and the lines with tilted poles seem shabby, unsafe, and unreliable.</p> <p>Once the pole gets tilted, the stringing of the conductor gets loose, the clearance between the conductor becomes non-uniform and nonstandard, which also leads to consequences like interphase fault, snapping of the conductor, accidents, power supply interruptions and sustained faults, etc. The authorities have been making remarks for such poor workmanship and showing their concern, also, every often.</p> <p>While making an actual field study on the subject and analyzing the reasons, it is learnt that when the lines are laid manually, either by departmental staff or by the contractor, the pole pits are excavated</p>

manually and poles are also erected manually. As all the activities including excavation of pits are done manually, the pit size is not possible to keep exactly to the size of the pole.

The bigger size of pole pit is excavated and as a result, the bonding of refilled soil surrounding the pole gets weakened, which leads to tilting of the pole, when the pole is, either horizontally stressed with winds, rainwater flow effect, or due to waterlogging.

**Impact** : Power utilities

**Problem ID:** PID236

**Challenge Title** : FRP Pole Without Pin Insulator And Any Hardware

**Name of the Department** : Gujarat Urja Vikas Nigam (GUVNL)

**Challenge Description with context** : Supporting structure is required to support the transmission lines and distribution lines. The supporting structure consists of the poles, cross arms, guying, channels, and wires etc.

Supporting structure should be such that it is having enough mechanical strength to withstand the weight of the lines. Selection of material for manufacturing of poles, their accessories, and towers is important.

Material should be such that it having good tensile strength, non-toxic and good life span.

Traditional materials used since the last 7 decades are wood, steel, and concrete. Since last few years Fiber-reinforced polymer (FRP) gaining importance due to certain advantages over traditional materials

**Users** : Power utility Checking Officers

**Expected Outcomes** :

- Fabrication and Design
- Electrical Conductivity
- Thermal Properties
- Weight
- Corrosion, Rot, and Insect Resistance
- Stiffness
- Resilience

**Impact** : Utility performance improve for various new line/Maintenance activity with safety

<b>Problem ID:</b>	PID237
<b>Challenge Title</b>	: New PSC Pole design
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	<p>: Supporting structure is required to support the transmission lines and distribution lines. The supporting structure consists of the poles, cross arms, guying, Channels, and wires etc. Supporting structure should be such that it is having enough mechanical strength to withstand the weight of the lines.</p> <p>Election of material for manufacturing of poles, their accessories, and towers is important. Material should be such that it having good tensile strength, non-toxic and good life span. Traditional materials used since the last 7 decades are wood, steel, and concrete.</p> <p>There is a problem in the existing PSC pole about the Man Power Standing over there. Also some level issue of Mechanical strength of the pole. Also require to consider in the design of the various fabrication materials provided at the poles. During transportation also, some of the poles are broken.</p>
<b>Users</b>	: Power utilities
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• Safety of manpower</li> <li>• Reduce Accident</li> <li>• Easy to install.</li> <li>• Damage of pole ration reduce</li> </ul>
<b>Impact</b>	: Utility performance improves for various new line/Maintenance activities with safety.

**Problem ID:** PID238

**Challenge Title :** Consumer power availability device ( like if any home power supply cuts off automatically SDN knows the power failure of consumer)

**Name of the Department :** Gujarat Urja Vikas Nigam (GUVNL)

**Challenge Description with context :** There is no mechanism to check each and every consumer level power availability. Also, not possible to identify the single complaint and mass level complaints at the field office level. Sometimes consumer is also not possible to approach the field offices

**Users :** Power utilities

**Expected Outcomes :**

- Consumer satisfaction.
- Accurate power reliability parameter calculate.
- Complaint tracking and monitoring perfectly.

**Impact :** Utility performance improve with consumer satisfaction

**Problem ID:** PID239

**Challenge Title :** Vigilance Checking Drive- Utility of Smart Vehicle

**Name of the Department :** Gujarat Urja Vikas Nigam (GUVNL)

**Challenge Description with context :** For the day-to-day vigilance activity, required special vehicles with utilities for vigilance team which mitigates difficulties during checking activities. So, it required vehicles with standard design to cope up the checking drive. It will be equipped with video recording for officers to check and as proof for theft.

**Users :** GUVNL officers and management

**Expected Outcomes :** Capture theft related activities with the video recording proof and required documentation. Also identification of location for maintenance at a times.

**Impact :** Improve Vigilance activity with facility to maintenance at a place and time.



**Problem ID:** PID240

**Challenge Title :** Pole Movement Monitoring

**Name of the Department :** Gujarat Urja Vikas Nigam (GUVNL)

**Challenge Description with context :** Huge quantities of Costlier Poles are supplied by DISCOMs and transported from store to location. It required identification methodology and also monitoring process for Poles movement. Also it required supplier wise quality and failure analysis.

**Users :** DISCOMs channel and management

**Expected Outcomes :** Development of Poles monitoring system with history

**Impact :** Tracking of Pole movement with its quality.

**Problem ID:** PID241

**Challenge Title :** Compact and touch proof MSP/FSP/Busbar with earthing facility for underground system

**Name of the Department :** Gujarat Urja Vikas Nigam (GUVNL)

**Challenge Description with context :** Whenever power needs to be controlled, monitored, distributed in outdoor application, LT feeder pillar and LT distribution box are used extensively for safety and protection. The panels are either power coated CRCA Sheet steel/Stainless Steel or SMC/FRP with IP class of protection to ensure no ingress of water, dust, or vermin with canopy on top.

These are lager spaced and live and required low loss of power with safety.

Chances of accident of short circuit with small insects and animals. There is no earthing facilities and chances of cable faults.

Also chances of theft is there.

**Users :** Power utilizers and GUVNL service provider staffs

**Expected Outcomes :** Shock proof panel and no lively part come in contact to person, switching on/off operation without accident. Ease of safety in operation for utility working staff persons. Also cost effective with minimal time of fault restoration.

**Impact :** Benefits to consumers and safety to staff personals.

**Problem ID:** PID242

**Challenge Title :** Device to test the ELCB/MCB Working

**Name of the Department :** Gujarat Urja Vikas Nigam (GUVNL)

**Challenge Description with context :** To check proper working of ELCB/MCB during live circuit cause accident to field staffs/utility workers.  
It should be user friendly for the consumer also.

**Users :** Electric inspector/supervisors and consumers.

**Expected Outcomes :** Testing device is user friendly to check working of the ELCB/MCB

**Impact :** Reduce accidental hazards.

**Problem ID:** PID243

**Challenge Title :** Power Generation Through Steps

**Name of the Department :** Gujarat Urja Vikas Nigam (GUVNL)

**Challenge Description with context :** Utilization of foot energy into useful means by converting it in populated mass. It opens the new channel of power generation

**Users :** Common public places, Government offices, Institutes, Tourists places.

**Expected Outcomes :** Power can be convert, store and use in routine work.

**Impact :** Fulfilled the need for power consumption.

<b>Problem ID:</b>	PID244
<b>Challenge Title</b>	: Battery-operated conductor stringing device
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	: During the erection of electric lines, the sagging of the conductor plays a very important role. If proper stringing of the conductor is not done, then it creates chances of faults.  During maintenance if skilled man power is not for proper stringing then it is hazardous.
<b>Users</b>	: Electric inspector/supervisors/labours
<b>Expected Outcomes</b>	: Quality work with safety of line staff.
<b>Impact</b>	: Reduce accidents and maintenance costs.

<b>Problem ID:</b>	PID245
<b>Challenge Title</b>	: A Quick Estimation of New Connection Through Mobile Application
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	: New connections are in demand to solve in least time with proper documentation and feasibility for requirements. Using GIS (Geographical Information System) and GPS (Global Positioning System) to calculate possible link node networks for each registered project. Analysing the distribution network around the potential work for the managements, staffs and utility consumers.
<b>Users</b>	: All power utilities consumers
<b>Expected Outcomes</b>	: Applicants get immediately generated estimation for new connection through e-services and ease of doing business.
<b>Impact</b>	: Benefits to Power utility consumers and ease of doing for employers and employees.

**Problem ID:** PID046

**Challenge Title :** GPS based mobile application for meter reading with tracing the route of meter reader.

**Name of the Department :** Gujarat Urja Vikas Nigam (GUVNL)

**Challenge Description with context :** As a revenue generation, DISCOM's meter reading is the key task. Any loopholes and irregularity of the out sourced of reading affects the revenue collection. Required to increase meter reading efficiency and solve the consumers' grievances regarding it.

**Users :** Consumers of DISCOMs and DISCOMs

**Expected Outcomes :** Increase efficiency through Mobile App.

**Impact :** Output will be increased.

**Problem ID:** PID247

**Challenge Title :** Communication System Between Consumers And Utility Offices For Power Interruption.

**Name of the Department :** Gujarat Urja Vikas Nigam (GUVNL)

**Challenge Description with context :** Delay in power interruption intimation cause consumers' dissatisfaction as well as decrease in revenue generation for employer. Proper channel would be required to pass on order from Consumer Care Centre to staff for solving grievances. Restoration of power within time limit is a challenge.

**Users :** Consumers of DISCOMs and DISCOMs, & Consumers.

**Expected Outcomes :** Define and design information and feedback system preferably as a mobile application which shall be useful to handle the situation during the process of restoration of power supply.

**Impact :** Saving time and money also increase satisfaction of the consumers.

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<b>Problem ID:</b>	PID248
<b>Challenge Title :</b>	Tariff Benefit To Consumers At The Time Of Excess Power Generation In System
<b>Name of the Department :</b>	Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context :</b>	<p>There are different prices for every power generator with respect to time and location. There are instances where low-cost power is available but actual demand is not available. To meet this, tariff benefit pass to the consumers in their bill by shifting their use of load in low-cost power generation period. (TOD-Time of Day Billing)</p> <p>Central level of generation monitoring and requirement of demand. The meter should be capable to measured energy and transfer 15 min interval data to a central server.</p> <p>Consumers will get tariff benefits for shifting their non-critical load in a low tariff period. Utility broadcast information of low tariff period. By implementing the above practice, we can able to reduce our peak demand and make flatten the demand curve.</p>
<b>Users :</b>	Utility and consumers
<b>Expected Outcomes :</b>	There will be web & mobile base mechanism which easily pass information to consumers for use of power in low tariff period and available surplus power in the grid. Also, consumers will be benefitted from demand charges.
<b>Impact :</b>	All interested consumers who want dynamic tariff benefits.

<b>Problem ID:</b>	PID249
<b>Challenge Title</b>	: Live Line Detector With Communication Support
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	: The live line detector should be able to indicate whether the line is ON or not. The same, when installed on the pole should be able to display whether the line ON or off by seeing the LED from the remote end.  The detector should be self-powered with a small solar panel and battery. The device should have the communication module fitted with it such that it should be able to send the data regarding power availability to the server. Exact calculation of reliability indices up to consumer end and improvement in safety.
<b>Users</b>	: DISCOMs
<b>Expected Outcomes</b>	: Cost-effective communicable live line indicator.
<b>Impact</b>	: Benefits to consumers, utility, and power system as a whole
<b>Problem ID:</b>	PID250
<b>Challenge Title</b>	: Line Clear (LC) Monitoring System
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	: Need to take LC is very common and frequent for line staff for power line maintenance and other work online. It is very important to follow guidelines for asking LC and Issuing LC for the safety of line staff and avoid electrical accidents.  For this either line staff has to go to Substation or ask on mobile/phone which is time-consuming and need some vehicle. Also, to ask on mobile /phone may leads to some misunderstanding or confusion. This is not considered safe.  Develop a mobile application which can be helpful to line staff and management also. It should be reliable, easy to use, record maintaining, and secure. It should be based on the selection of the name of s/s, name of the feeder by using the employee number as ID.
<b>Users</b>	: DISCOMs/ Transcos
<b>Expected Outcomes</b>	: Easy and quick power restoring work, increase power reliability.
<b>Impact</b>	: Benefits to consumers, utility, and power system as a whole.

<b>Problem ID:</b>	PID251
<b>Challenge Title</b>	: Load Balancing Transformer
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	: To balance current on transformer is a big challenge for utilities. When 1-ph connections are provided to the user it is not all the time measured and hence the unbalanced loading occurs at the transformer centre between the phases. This unbalances further causes an increase in neutral current, increase in harmonics content, increase in losses, and de-rate the transformer.  If some innovative load balancing transformer can be designed, that will resolve many of the dictated issues.  Reduction in neutral current, harmonics content, losses, and de-rating of the transformer.
<b>Users</b>	: DISCOMs
<b>Expected Outcomes</b>	: Development of Load balancing transformer.
<b>Impact</b>	: Benefits to consumers, utility, and power system as a whole

<b>Problem ID:</b>	PID252
<b>Challenge Title</b>	: Mobile application for material testing and quality check
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	<p>: DISCOMs possesses many assets like poles, transformers, wires, cables, RMU, etc. Apart from the same, there are many works which are assigned to contractors on a contract basis. The quality check of all these assets and work is quite important. It is required to inspect all these items and works while doing the audit.</p> <p>Over and above the routine work assigned to the staff of DISCOMs, they have to look after/ do inspection of all these assets and works going on under their area. Due to the same, the proper quality check of each and every material/ process is not ensured.</p> <p>To overcome the same, one mobile app is needed to be designed in which the photos, videos of all the work done can be uploaded with the concern Geo-location and the same can be verified by the concerned staff of DISCOMs and if required, the rectification/modifications according to specifications may be suggested.</p> <p>Improved work quality and improved quality, saving in the time of staff of DISCOMs, Proper inspection without human interventions</p>
<b>Users</b>	: Consumers of DISCOMs and DISCOMs
<b>Expected Outcomes</b>	: Mobile application mentioning quality check of all system
<b>Impact</b>	: Benefits to consumers, utility, and power system as a whole



<b>Problem ID:</b>	PID253
<b>Challenge Title</b>	: New design of Pin insulator (no need to Binding)
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	: For any electric line conductor is hold on the pin insulators. The conductor is tied to the insulator on the top groove in straight line positions and side groove in angle positions by annealed binding wire of the same material as that of the conductor. Sometimes this conductor and insulator binding fails and the conductor comes out of the pin insulator's groove.  Develop the new design for a pin insulator that can hold the line conductor without the need of binding by a separate piece of conductor.
<b>Users</b>	: DISCOMs
<b>Expected Outcomes</b>	: Reduced time and enhanced reliability of conductor attachment to insulator
<b>Impact</b>	: Reduction in line fault, damages to line etc
<b>Problem ID:</b>	PID254
<b>Challenge Title</b>	: Remote current measuring device
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	: To balance current on transformer is a big challenge for utilities. When 1-ph connections are provided to the user it is not all the time measured and hence the unbalanced loading occurs at the transformer centre between the phases. This unbalances further causes an increase in neutral current, increase in harmonics content, increase in losses, and de-rate the transformer.  To balance the load on any line, if some remotely measurable current sensor is developed, in which the current can be sense in line by standing below the line, the load can be balanced accordingly.Reduction in neutral current, harmonics content, losses, and de-rating of the transformer.
<b>Users</b>	: DISCOMs
<b>Expected Outcomes</b>	: Development of cost-effective remote current measuring device.
<b>Impact</b>	: Benefits to consumers, utility, and power system as a whole.

<b>Problem ID:</b>	PID255
<b>Challenge Title</b>	: Transformer Tracking System
<b>Name of the Department</b>	: Gujarat Urja Vikas Nigam (GUVNL)
<b>Challenge Description with context</b>	<p>: Transformer (Tr) is one of the costliest and huge quantity items for Discom. It is moving item for store. The transformer has an identity of its nameplate showing its make, serial number, type, and other details.</p> <p>TAMS is to be managed in two directions, so required two types of Bar Codes. (1) Transformer Centre Location-wise (2) Transformer Unit wise details</p> <p>An Assets Management related soft were is required to be developed and use real-time use.</p> <p>When a transformer unit fails at a transformer center location, it is required to be replaced and sent to repair either within the Guarantee period (GP) or out of the guarantee period (OGP). The failed TR is replaced by other healthy Tr taken from Divisional Store. Thus, at this location, Tr is changed. So, it requires to change the Tr details for this location from its barcode.</p> <p>At the same time, the Tr is put into service at a different location than the previous one. So, it requires to change its location place history by Location barcode details.</p> <p>When Tr unit fails, first check and confirm either supplier GP or repairer GP or OGP and accordingly sent for repairing. From the history, the Guarantee period can be observed precisely and costs can be reduced.</p> <p>At repairer, inspection is carried out and approval is given by CA if it is economical to repair. if it is repaired for more than 5 times, losses may be high, and advised to declare scrap instead of repair.</p> <p>Accounting of repairing cost and life of Tr unit is possible.</p>
<b>Users</b>	: DISCOMs/ Transcos
<b>Expected Outcomes</b>	: Transformer accounting system, Tr failure data, repairing cost data information etc
<b>Impact</b>	: Benefits to Consumers, utility, and power system as a whole.

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## National Thermal Power Corporation Limited (NTPC)

**Problem ID:** PID256

**Challenge Title :** Economical Wearable hands-free technology for remote assisted maintenance

**Name of the Department :** National Thermal Power Corporation Limited (NTPC)

**Challenge Description with context :** Expert assistance and guidance is to be provided to field workers by subject matter experts sitting in remote locations using state of the art communication technology. The technology should be hands-free and wearable by the worker without creating any hindrance to his work. The equipment should be able to send and receive phone calls, surrounding the audio, video, and data (as documents and drawings, etc) for the worker to see and interact with.

**Users :** Field-workers at job-sites (especially in difficult to access locations)

**Expected Outcomes :** Using mobility, GPS tracking and other IoT related solutions for the establishment of a real-time connection with experts sitting at remote locations. AI to notify the type of problem and possible solutions and platform to provide remote training exercise for the less-experienced workers at the job-site.

**Impact :** Decrease in downtime of detecting and rectifying technical problems. Increase in productivity and improved maintenance as well as Increasing the awareness and skill of the worker.

<b>Problem ID:</b>	PID257
<b>Challenge Title</b>	: Remote communications for Safe working environment
<b>Name of the Department</b>	: National Thermal Power Corporation Limited (NTPC)
<b>Challenge Description with context</b>	: : Developing Wearable IoT devices for detecting real-time presence inside a prohibited Zone and vital health signs and status of the worker.  Monitoring of the worker's vitals, warn on exposure to toxic chemicals, and proximity to dangers and give the safety alerts or notify them to take the safety measures and reach out for help if injured. The device should be able to detect environmental conditions (like fire, chemical leakage, etc) and anomalies/failures in machinery/equipment so that prompt action can be taken.
<b>Users</b>	: Workers engaged in plant activities
<b>Expected Outcomes</b>	: Using health detection sensors and AI to identify sudden health issues, injuries caused, sudden environmental changes, harmful incidents and send notification for help while warning everyone on the incident
<b>Impact</b>	: Better safety, reduced casualties or deaths related to dangerous tasks to be carried out in prohibited areas. Immediate warnings on incidents and happenings in the plant area.

<b>Problem ID:</b>	PID258
<b>Challenge Title</b>	: Safety Precaution Monitoring System
<b>Name of the Department</b>	: National Thermal Power Corporation Limited (NTPC)
<b>Challenge Description with context</b>	<p>: Difficult to monitor whether all personnel including workers are adhering to safety precautions during erection, commissioning and maintenance activities</p> <p>It is difficult to ensure worker in a large project are adhering to safety practices and policies. Even though the locations are monitored by CCTV cameras, it is difficult to continuously monitor 100s of cameras to detect such violations.</p> <p>An online system should leverage the power of AI and ML to continuously monitor work areas and determine whether the workers are wearing safety kits and following instructions as specified.</p> <p>Not adhering to safety precautions are the primary cause of fatal/non-fatal accidents in industries.</p>
<b>Users</b>	: Power Plant management
<b>Expected Outcomes</b>	<p>: Economical video analytics software which processes CCTV feed from the entire facility to detect, flag and alert concerned executives about safety violations.</p> <p>Eg : People without PPE, not using lifeline rope, not wearing helmet, encroaching in prohibited areas, presence in isolated areas, mass gatherings as required, etc. Provision to automatically alert the concerned safety control room/ authorities with a minimum of false alarms</p>
<b>Impact</b>	: Reduce the number of fatal/ nonfatal accidents

**Problem ID:** PID259

**Challenge Title :** Mobile Application to Analyse the Health of Heavy Machinery Using Sound

**Name of the Department :** National Thermal Power Corporation Limited (NTPC)

**Challenge Description with context :** Thermal power plants have a lot of heavy equipment like motors, pumps, valves, heat exchangers etc. Different parts of the equipment will malfunction over time finally resulting in an outage. The sound of equipment will change during the starting of an abnormality and experienced people are able to identify it by listening. A cost-effective and scalable detection system by analysing sound can solve the problem.

**Users :** Power Plant management

**Expected Outcomes :** A mobile-based software that can identify various types of malfunction in equipment by analysing the sound. If the mobile application can be installed in all power plant personnel smartphones, a scalable preliminary abnormality detection and diagnosis system can be built.

**Impact :** Prevent plant and equipment outage, improve reliability, increase profitability

**Problem ID:** PID260

**Challenge Title :** Portable Rechargeable Motorised Actuator

**Name of the Department :** National Thermal Power Corporation Limited (NTPC)

**Challenge Description with context :** Industries have big manual valves in different sizes which are difficult to operate manually and requires multiple people to operate. These valves are not fitted with expensive motorised actuators since they are not operated frequently. A simple mechanical device called F-ROD is used by personnel to operate this valve which possesses several safety risks

Industries have several big manual valves which are difficult to operate.

**Users :** Personnel who are operating big manual valves during commissioning and routine operation.

**Expected Outcomes :** A cheap portable rechargeable motorised actuator which can operate any size & type manual valve in an Industry

**Impact :** Reduce manual effort, Reduce cost and improve safety

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<b>Problem ID:</b>	PID261
<b>Challenge Title :</b>	A Mobile-Based Software To Capture Real-Time Photos And Create A Repository
<b>Name of the Department :</b>	National Thermal Power Corporation Limited (NTPC)
<b>Challenge Description with context :</b>	<p>Difficulty for senior management to visually inspect equipment/systems spread across a large area of a power plant</p> <p>Thermal power plants have equipment/systems spread across a large area. This equipment/systems are generally visited and monitored by semi-skilled manpower. Often its difficult to evaluate the actual site condition by communicating with semi-skilled manpower</p>
<b>Users :</b>	Operation and maintenance executives in a power plant
<b>Expected Outcomes :</b>	<p>A mobile-based software where semi-skilled manpower can visit a particular area and take photos in a smartphone. These photos should be available in a common library which can be accessed by executives. There should be provision to easily identify how a particular area has improved/worsened over time. Since the power plant is a protected area, the security of these photos has to be ensured by a secure system. The system should be capable of handling large volumes of photos</p>
<b>Impact :</b>	Increase efficiency, reduce emergencies, improve safety

- Problem ID:** PID262
- Challenge Title :** Robots for performing a non-destructive examination of boiler tubes to reduce the time involved in ultrasonic tube inspection.
- Name of the Department :** National Thermal Power Corporation Limited (NTPC)
- Challenge Description with context :** Performing NDE of boiler tubes by hand is slow and difficult enough to make it a major undertaking that requires several days of work, not just for the inspection itself but also for the time to set up and take down the necessary scaffolding.: Gecko Robotics has introduced two different robotic boiler tube inspections for water walls as well as for LTSH/Economiser.
- This system can significantly reduce the time and expense involved in ultrasonic tube inspections. In the case of waterwall, the robot climbs the tube wall in a vertical direction without the need for scaffolding and produces more precise and accurate data than handheld scanners.
- In Economiser/LTSH tubes, the robot is placed at the top of the tubes which travels in horizontal as well as in vertical direction to measure the thickness of the tubes. The gap between the two tubes is 50-90 mm, the length of coils is 2-5 m and the number of tubes in each coil is approx.
- Users :** Boiler-inspecting engineers
- Expected Outcomes :** Reduced time and more efficient inspections
- Impact :** Robots can navigate faults more closely and give accurate information after inspection.
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- Problem ID:** PID263
- Challenge Title :** Extracting high-grade metals like gold, silver, copper and palladium from e-waste and separating it for re-sale/re-use.
- Name of the Department :** National Thermal Power Corporation Limited (NTPC)
- Challenge Description with context :** The high-grade metals like gold, silver, copper and palladium in the e-waste can be separated for re-sale in conditions that are totally safe.
- Users :** E-waste generators (industrial segment)
- Expected Outcomes :** Efficient and cost-effective way of recovering these high-grade metals from E-waste
- Impact :** Neutralizing the impact this e-waste create on the environment, and also creating value for the generators and collectors of this E-waste.



<b>Problem ID:</b>	PID264
<b>Challenge Title</b>	: Continuous Health Monitoring of Civil Structures Ageing
<b>Name of the Department</b>	: National Thermal Power Corporation Limited (NTPC)
<b>Challenge Description with context</b>	<p>: The structures of NTPC are ageing and their safety and healthiness is matter of concern. The Non Destructive Testing (NDT) techniques are basically targeted at damaged location, after the damage has already occurred, thereby putting the structure's stability at doubt and its more of damage mitigation rather than prevention.</p> <p>Whereas a Structural Health Monitoring (SHM) system would involve continuous monitoring of structural parameters like Mode Shapes, Frequencies etc. compared to baseline signature , and any deviation / shift from the nascent signature would give an alarm of any impending damage envisaged to the structure much in advance, whereby its prevention and mitigation can be initiated for ex. any minor internal crack in TG Deck/ TDBFP foundation (subjected to dynamic forces) can be easily detected and treated even before it surfaces, thereby leading to ZERO machine downtime attributable to shaft mis-alignments etc.</p>
<b>Users</b>	: NTPC Stations
<b>Expected Outcomes</b>	: Holistic solution on Structural Health Monitoring specific for NTPC
<b>Impact</b>	: Will greatly support the cause of Industry 4.0. This system is a need of the hour and can potentially save huge sums by accurate predictions in advance preventing costly structural failures.

**Problem ID:** PID265

**Challenge Title :** Flood Warning and Forecasting System

**Name of the Department :** National Thermal Power Corporation Limited (NTPC)

**Challenge Description with context :** Hydropower projects situated at Uttarakhand / Himachal, typically in the Himalayan region are subject to serious natural calamities due to various factors ranging from climate change to sub-surface tectonic activities leading to torrential rains as a result of cloud bursts, glacial movement leading to GLOF / LLOF / debris flow etc. Accurate monitoring and early prediction of such events can help avoid many catastrophes and loss of life and property.

**Users :** NTPC Hydro Power Plants

**Expected Outcomes :** A sustainable Flood Forecasting solution for NTPC

**Impact :** This system is a need of the hour for Hydro Power Projects specially located in Uttarakhand as run of river projects for saving precious life and property.

**Problem ID:** PID266

**Challenge Title :** 3-D mapping/modelling of the problem area of projects.

**Name of the Department :** National Thermal Power Corporation Limited (NTPC)

**Challenge Description with context :** Planning/Modification of layout/schemes and routing of piping/cable trays for the retrofitting jobs and in few cases during erection stages are difficult in old plants and in given already erected facilities conditions require site visits and faces issues due to non-availability of drawings and in few cases non-approachability of areas.

**Users :** Project Engineering, Erection and Maintenance

**Expected Outcomes :** Development of a low-cost mobile application dedicated to NTPC which uses mobile phone cameras (as latest phones have good camera qualities) for scanning/photography and converting to the 3-D model of the portion of the plant wherever issues arise for helping engineering and clear understanding to all

**Impact :** Clarity on the problem area, Time reduction in solution and lesser need of site visits.

**Problem ID:** PID267

**Challenge Title :** Detection of the healthiness of tubes of various equipment of Power Plant.

**Name of the Department :** National Thermal Power Corporation Limited (NTPC)

**Challenge Description with context :** Detection of the exact problem area of tubes for different equipment is a tedious task and is also time-consuming. Unattended chocking and leakages etc. reduce the performance of the equipment and thereby affects the Efficiency of the cycle and deteriorates the Heat rate.

**Users :** Operation and Maintenance.

**Expected Outcomes :** Development of low-cost micro/nano-robots with camera and cleaning system (if possible) which we can insert in the heaters, condenser tubes etc. for mapping the internal conditions of them and cleaning. This shall help in reducing the identification of the problem area and shutdown/maintenance period of the equipment.

**Impact :** Reduction in the Maintenance time of equipment. Detection of fault in a precise way for deciding the correct and effective maintenance procedure to be followed.

**Problem ID:** PID268

**Challenge Title :** Development of Biomass Torrefaction Technology

**Name of the Department :** National Thermal Power Corporation Limited (NTPC)

**Challenge Description with context :** Torrefaction technology enhances the quality of biomass and makes it suitable to be utilised in coal-fired power plants in higher ratios. Cost competitive and indigenous torrefaction technology is need of the hour in wake of the national mission on biomass co-firing and has great potential in the Indian market.

**Users :** Pellet manufacturers supply pellets to Gencos

**Expected Outcomes :** Cost competitive and indigenous Torrefaction Technology

**Impact :** This will enable the achievement of biomass co-firing in a higher ratio to support the goal of the the national mission on biomass co-firing

**Problem ID:** PID269

**Challenge Title :** Study Of The Techno-Commercial Impact Of Cycling Of The Thermal Power Plant And Its Software Simulation

**Name of the Department :** National Thermal Power Corporation Limited (NTPC)

**Challenge Description with context :** The components higher VRE scenario entails the need for flexible operation of thermal plants connected to the grid. This leads to cycling/two shifting of thermal plants and cause increased wear and tear in machine/ plant. The effect appears in later years after prolong cyclic operation. In such a case, if we are not proactive, making a profit shall be a matter of luck. Analysing its techno-commercial impact is necessary to remain profitable in the long term. Hence, an analytical tool is required for the assessment of the techno-commercial impact of the cyclic operation

**Users :** Project Engineering Division

**Expected Outcomes :** Simulation software for analysis of the techno-commercial impact of cyclic operation

**Impact :** This analysis shall help to assess the impact of cyclic operation and enable a basis for policy advocacy for the inclusion of cyclic cost components the that earth by is lightweight earthy in tariff.

**Problem ID:** PID270

**Challenge Title :** Unified Market for Coal Ash

**Name of the Department :** National Thermal Power Corporation Limited (NTPC)

**Challenge Description with context :** Facilitating coal Ash export to neighbouring countries and overseas, developing unified market for Coal ash in India, ash as a by-product from its current status of a waste.

Load centre plants cannot meet demand for ash due to schedule restrictions at pit head local market cannot absorb the supply

**Users :** Cement industries, construction Materials like light weight aggregates, Metal extraction industries

**Expected Outcomes :** Coal ash can be rewarding as a by-product the extraction of Alumina, Silica, Iron hydroxide and Rare earths can be hugely rewarding.

**Impact :** Neutralizing the impact these e-waste create on environment, and also creating value for the generators and collectors of these E-waste.

## India Tobacco Company Limited (ITC)

<b>Problem ID:</b>	PID271
<b>Challenge Title</b>	: Development of a low-cost drip irrigation system for sustaining small farmers' profitability. (Suitable for Wheat & Potato).
<b>Name of the Industry Challenge Description with context</b>	: India Tobacco Company Limited (ITC)  : India has the largest irrigation network in the world yet the irrigation efficiency is not more than 40 percent. In absence of new irrigation projects, bringing more area under irrigation would mostly rely on the efficient use of water. In this context, micro-irrigation (through drip or sprinkler irrigation) could play a key role in higher productivity and increased water use efficiency besides fulfilling sustainability mandates with an economy in use and higher crop productivity.  Adoption of this might help in raising the irrigated area, productivity of crops and water use efficiency. Additionally, drip-fertigation, where fertilizer is applied through an efficient irrigation system (drip method), nutrient use efficiency could be as high as 90% compared to 40-60 % in conventional methods.  Although drip irrigation is an acceptable technology by the Indians farmers, its rate of adoption is sluggish in annual crops due to the involvement of initial high capital cost and flexibility of fixed set up using for multiple crops.
<b>Users</b>	: Agri-Businesses
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• Low-cost drip system suitable across production environment and flexibility for using across multiple crops.</li> <li>• Enhanced yield &amp; quality, water use, and nutrient use efficiency through fertigation</li> <li>• Reduced cost of cultivation and improved profitability.</li> </ul>
<b>Impact</b>	: <ul style="list-style-type: none"> <li>• Enhanced crop productivity along with quality raw material supply meeting the sustainability goals with more crop per drop.</li> <li>• Improvement in socio-economic status of small and marginal farmers.</li> </ul>

<b>Problem ID:</b>	PID272
<b>Challenge Title</b>	: Develop sensors and smart nutrient delivery system (Nanotechnology-based input) for reducing the input costs with enhanced farm productivity along with quality. (Wheat & Potato)
<b>Name of the Industry</b>	: India Tobacco Company Limited (ITC)
<b>Challenge Description with context</b>	<p>: India is an agrarian economy with agriculture supporting 60% of our population. Indian agriculture is highly dependent on human labour and good rainfall. While most developed economies have mechanized farming and reduced dependency on rains through state interventions and good planning.</p> <p>The sustainability of the current agricultural production system is also under threat due to the overexploitation of natural resources.</p> <p>This stagnant state of affairs could be effectively addressed by introducing modern technologies viz., use of sensors for precise &amp; effective scheduling of inputs as per crop demand coupled with use of modern nanotechnology-based inputs for further reduction in input cost by improved nutrient use efficiency.</p> <p>Technology revolution in India is already catching and there is also a growing opportunity in the agriculture sector that stands to improve lives, make India a true leader in Climatesmart agriculture and revolutionize the way farmers plant, fertilize and harvest crops.</p>
<b>Users</b>	: Agri-Business
<b>Expected Outcomes</b>	<ul style="list-style-type: none"> <li>: • Customized solutions of sensors that record a variety of growing conditions on the farm and nanotechnology-based inputs for optimizing the inputs as per crop demand.</li> <li>• Climate-smart precision production farming options for realizing higher yield and quality with reduced cost of inputs.</li> <li>• Optimizing farmers daily tasks by automating processes.</li> <li>• Getting real-time alerts about crop conditions to make adjustments to reach optimal growth conditions.</li> </ul>
<b>Impact</b>	<ul style="list-style-type: none"> <li>: • Quality raw material availability at competitive cost.</li> <li>• Help farmers grow more and grow better with more crop per unit of input.</li> </ul>

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<b>Problem ID:</b>	PID273
<b>Challenge Title :</b>	i-SMART Research Scholar
<b>Name of the Industry Challenge Description with context :</b>	<p>India Tobacco Company Limited (ITC)</p> <p>A significant amount of scientific research gets updated every day in the public domain, which makes the process of reading, analyzing, and interpreting - complex and almost impossible to collect salient points from all of the relevant papers.</p> <p>The objective is to develop an AI-based tool with high accuracy that takes keywords as input, web-scrapes all the related research documents, summarizes in a finite number of lines, and groups together similar ones. In case of buying a research paper, the tool should recommend which ones to buy.</p> <p>The tool should also identify critique points (major findings/inadequacies) and develop comments on the document; it should also create a profile of the author basis web-scraping and ranking topics of the author's research in domains.</p> <p>The software/research tool should empower/find quickly &amp; accurately and should be able to evaluate a large number of data (irrespective of format/source like public domain information, publishers website, blogs, pdf, word, HTML, XML, excel, jpeg, ppt, videos, audio files etc).</p>
<b>Users :</b>	Scientists and technologists at ITC Life Sciences and Technology Centre.
<b>Expected Outcomes :</b>	<p>A desktop-based UI with options to upload keywords, documents, etc. and</p> <ul style="list-style-type: none"><li>• Display summary</li><li>• Classification to be based on “impact factor” of journal- High to low</li><li>• Give critique points (major confirmed findings, inadequacies, insufficiencies and limitations, document peer-reviewed or boardreviewed, etc.) and generate a critique score</li><li>• Identify related research documents based on similar keywords, coauthors, similar journals, topics, etc., get the document through web scraping, and repeat the process</li><li>• Create authors' profile- domain-wise, journal-wise clusters of research papers, give a rating based on “impact” and “science citations received”</li></ul>

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- The tool should be able to classify/sort out the results based on ranking/type. For example:
    - Main subject or central topic / near-subject [(i) Nutrition, (ii) Nutrition+diabetic, (iii) Nutrition+diabetic+functional food likewise]
    - Sentiment/emotion wise (based on positive/negative sentiments / independently expressed opinions among customers/participants Survey kind of results/comments deeper analysis)
    - Publisher wise (top publisher - based on journal ranking)
    - Publication wise (top publication - based on impact factor)
    - Author wise (based on citation / h index)
    - Category wise (Journal article, book chapter, proceedings, white paper, patent, conference presentation, blog, etc),
    - Publication year-wise
    - Publication affiliation wise (Organisation/University)
    - Type of publication (HTML, pdf, word, excel, video, audio, image, ppt etc.)

Also, the tool should help to remove duplication and automated clustering of near-duplicates to give scientists a high-level sense of the data landscape.

**Impact**

- : Significant increment in processing capability of research papers from ~100's in a month to 1000's daily.



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<b>Problem ID:</b>	PID274
<b>Challenge Title :</b>	Smart drones for monitoring people on factory campuses
<b>Name of the Industry Challenge Description with context :</b>	India Tobacco Company Limited (ITC)  AI is venturing into identifying abnormal behavioural patterns by analyzing footage from drones in real-time.  We could reimagine the future with all our campuses being secured through the use of highly precise drones that can traverse fixed paths and identify outsiders, abnormal behaviours like standing for a long time at one place, health emergencies, littering around, etc. and generate alerts at a central security station.  The drone could communicate with the person under observation and fly stationary at a safe distance to ensure execution of changes suggested.
<b>Users :</b>	Security departments at all campuses
<b>Expected Outcomes :</b>	A drone prototype that would traverse predefined paths at specified frequencies, analyze the footage in real-time, identify outsiders, abnormal activities, and send alerts to the central security system with high accuracy and precision on multiple types of events.
<b>Impact :</b>	Augmenting security personnel for higher and smarter security monitoring.

<b>Problem ID:</b>	PID275
<b>Challenge Title</b>	: Sustainable Alternative Packaging Solution For Foods As Well As Goods
<b>Name of the Industry Challenge Description with context</b>	: India Tobacco Company Limited (ITC)  : Primary packing material (laminate) that comes in contact directly with the product is one of the largest consumed raw materials in the FMCG industry. They perform a crucial role in protecting the shelf life of products while also offering an opportunity for brand engagement.  However, post-use littering by consumers causes a serious solid-waste management problem. Focus on environment friendly & sustainable packaging materials has been accelerated worldwide. We can envisage stricter norms and regulations on current plastic materials in the not so distant future.  This poses an existential crisis like problem for all FMCG companies since they are heavily dependent on such plastics due to their low cost, wide availability, customizability, and also easy machinability to match the scale of operations & product volumes.  Hence, there is a need to develop alternative solutions that would still offer the shelf life protection for FMCG goods while being cost-effective and replicable  Alternative packaging solutions for foods & other packaged goods to increase sustainability & regulatory compliance in the wake of restrictions on plastics
<b>Users</b>	: All FMCG industries
<b>Expected Outcomes</b>	: Identification of easily recyclable alternatives that also serve the following purposes: <ul style="list-style-type: none"> <li>• Shelf life protection</li> <li>• Replicate imagery used on current packing material by various brands</li> <li>• Machinability with existing Packing machines &amp; technology</li> <li>• Recycling without combustion</li> </ul>
<b>Impact</b>	: Building a cost-effective manufacturing process for the same material. : Huge carbon footprint & greenhouse gas emissions reductions can be realized if the alternative is developed.

<b>Problem ID:</b>	PID276
<b>Challenge Name of the Industry Challenge Description with context</b>	<p><b>Title :</b> Optimized Quality Testing Time Mechanism</p> <p><b>the :</b> India Tobacco Company Limited (ITC)</p> <p><b>with :</b> Reduction in Quality testing time for key Raw Material- Packaging Material (RM/PM)</p> <p>Large-scale manufacturers usually have multiple consignments of major RM such as maida, oil, sugar, leavening agents, emulsifiers, cocoa powder, skimmed Milk powder, laminate, CFCs etc., delivered at high frequencies.</p> <p>Several tests are done to ensure that the incoming RM/PM meets the strict norms.</p> <p>However, many of these tests end up taking a lot of time and increases the loading/unloading costs associated with the trucks.</p> <p>Hence, there is a need to revamp testing methodologies for quick testing &amp; unloading times while ensuring the food safety norms are not compromised.</p>
<b>Users</b>	: Food Business
<b>Expected Outcomes</b>	<p>: Create an index taking into account the testing time per material and the no. of consignments of that RM per week.</p> <p>Perform a Pareto analysis on this index to identify which tests on which RM have the most impact on truck unloading times.</p> <p>Develop Test kits using alternate testing/methodology to reduce testing time for the same.</p>
<b>Impact</b>	: Faster unloading times as well as quality may be achieved.

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## Toy Innovation Challenge

<b>Problem ID:</b>	PID277
<b>Challenge Title :</b>	Cultivating values through toys
<b>Name of the Industry Challenge Description with context :</b>	Toy Innovation Challenge Through this challenge, toys should express the values of Indian culture. For example, <ul style="list-style-type: none"><li>• Atithi Devo Bhava</li><li>• Matru Devo Bhava</li><li>• Pitru Devo Bhava</li><li>• Acharya Devo Bhava</li><li>• Rashtra Devo Bhava</li></ul>
<b>Users :</b>	Children ranging from 5 years to 15 years
<b>Expected Outcomes :</b>	<ul style="list-style-type: none"><li>• Improves family values</li><li>• Improves culture values</li><li>• Enhancement of Nationalism</li><li>• Education values will increase</li><li>• Increase in values of respect of elders</li></ul>
<b>Impact :</b>	“Vasudev Kutumbkam” values are achieved.

<b>Problem ID:</b>	PID278
<b>Challenge Title :</b>	Create Toys That Promote Physical Fitness And A Holistic Personality Development.
<b>Name of the Industry Challenge Description with context :</b>	<p>Toy Innovation Challenge</p> <p>Toys are adding a physical component to the use of new technology. For example, there are now trampolines that are equipped with tablets to give the equipment a fitness-focused twist. Another example is the Lumo Play system, which uses a projector to turn any room into an interactive interface. For example,</p> <ul style="list-style-type: none"> <li>• Energy burning toys</li> <li>• Dumbbells</li> <li>• Jump ropes</li> <li>• One-Legged Skip Jump Ropes Sports Rotation Ball for Fitness Exercise</li> <li>• Hula-Hoops (Rings)</li> <li>• Archery</li> <li>• Gilol</li> <li>• Stunt boards toys</li> <li>• Balance practicing toys</li> <li>• Kinetic spelling games</li> </ul>
<b>Users :</b>	Children ranging from 5 years to 15 years
<b>Expected Outcomes :</b>	<ul style="list-style-type: none"> <li>• Kids need to move their body</li> <li>• Physical activity is important for kids to develop motor skills and also boosts their confidence.</li> <li>• It can also help improve focus and concentration</li> <li>• Social interaction with other</li> </ul>
<b>Impact :</b>	<ul style="list-style-type: none"> <li>• Physical fitness as well as mental health of kids will improve.</li> <li>• Sportsmen's spirit will increase</li> </ul>

<b>Problem ID:</b>	PID279
<b>Challenge Title</b>	: Agriculture and Framing equipment toys
<b>Name of the Industry Challenge Description with context</b>	: Toy Innovation Challenge  : Farm toys are popular among children of various ages. Somehow, animals and farms hold a special place in children’s hearts, they can spend hours playing pretend games with farmyard toys that have animals, tractors etc.  In addition to being fun, pretend play with cool farm toys, such as children’s wooden farmyard, creates the perfect opportunity for kids to learn about common animals by imitating the animal sound and the different movements commonly associated with those specific animals.  As an important role in promoting their development, the right toys can also help curb your child’s imagination through play. Experts explain that different toys can help children achieve and improve necessary skills through play by their design Farming tools <ul style="list-style-type: none"> <li>• Tractor</li> <li>• Rakes</li> <li>• Farm Set</li> <li>• Animals for farming</li> </ul>
<b>Users</b>	: Children ranging from 5 years to 15 years
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• Very young children can benefit from wooden farm magnets to improve hand-eye coordination and fine motor skills.</li> <li>• Magnets provide children a learning element to discover what type of surfaces and objects they will stick to and what will not.</li> <li>• A skill full activity can keep a child entertained for long period.</li> </ul>
<b>Impact</b>	: <ul style="list-style-type: none"> <li>• Encouraging children’s development is essential to their growth and farm toys like these make it effortless.</li> <li>• Children love to play with different types of toys and these are great variety to boost children’s imagination and skills.</li> </ul>

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<b>Problem ID:</b>	PID280
<b>Challenge Title :</b>	Teaching/Learning yoga through toys (models)
<b>Name of the Industry Challenge Description with context :</b>	Toy Innovation Challenge  Yoga and mindfulness offer psychological benefits for children as well. A growing body of research has already shown that yoga can improve focus, memory, self-esteem, academic performance, and classroom behaviour, and can even reduce anxiety and stress in children. Toys to show different posters of yoga, showing body flexibility, strength, Surya Namaskar, Tadasana etc.
<b>Users :</b>	Children ranging from 5 years to 15 years
<b>Expected Outcomes :</b>	Through yoga toys child can imagine different yoga postures and do practice.
<b>Impact :</b>	A regular yoga practice can help increase your level of flexibility, range of motion, and muscle strength and improve your posture.  Yoga may help you manage the effects of certain chronic health conditions, including cancer and chronic pain.  Yoga may even improve your quality of sleep

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<b>Problem ID:</b>	PID281
<b>Challenge Title</b>	: Toys to narrate local folk tales and fables like “Panchtantra”
<b>Name of the Industry Challenge</b>	: Toy Innovation Challenge
<b>Description with context</b>	: The “Panchatantra” ("Five Treatises") is an ancient Indian collection of interrelated animal fables in Sanskrit verse and prose, arranged within a frame story. <ul style="list-style-type: none"><li>• Storytelling kits like “Panchtantra” story (includes characters)</li><li>• Board games (first listen to story then play and something)</li><li>• Toys to show the moral of the stories.</li></ul>
<b>Users</b>	: Children ranging from 5 years to 15 years
<b>Expected Outcomes</b>	: Through this storytelling, the concentration will increase, honesty, will power, human values, family values, ethics will increase.
<b>Impact</b>	: <ul style="list-style-type: none"><li>• Through this storytelling skills will increase.</li><li>• Concentration will increase.</li><li>• Honesty, will power, human values, family values, ethics will increase.</li></ul>



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**Problem ID:** PID282

**Challenge Title :** Best from Waste

**Name of the Industry Challenge Description with context :** Toy Innovation Challenge

**Challenge Description with context :** The best thing a child can do with toys is- Break it! Instead of readymade toys if we give items that are non-use and encourage them to create toys. For example,

- Sock snowman idea
- Ice-cream stick bookmarks idea
- Ice-cream stick fighter plane idea
- CD coasters idea
- CD hovercraft
- Pencil Levitation
- Vase from bottle idea
- Car from bottles etc.

**Users :** Children ranging from 5 years to 15 years

**Expected Outcomes :** There could be several things made from waste materials at home. And these crafts can also help your kids in their classroom projects. Hence the best out of waste craft ideas are most suitable to reuse waste materials and decorate your house.

**Impact :**

- Generation and increase of creativity.
- Decision power will increase.
- Imagination skill as well as thinking process will improve.

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<b>Problem ID:</b>	PID283
<b>Challenge Title</b>	: Development of toys that reflect Indian culture and ethos as souvenirs
<b>Name of the Industry Challenge Description with context</b>	: Toy Innovation Challenge : Toys across the country reflect the cultural diversity of the country, dance, heritage, tourism, places, monuments etc. For example, <ul style="list-style-type: none"><li>• Toys for Indian dress tradition of different states</li><li>• Toys shows different food culture</li><li>• Toys shows different rituals,</li><li>• Jewellery</li><li>• Dance culture</li><li>• Puppets region wise</li><li>• Terracotta toys</li><li>• Wooden toys</li><li>• Paper toys</li></ul>
<b>Users</b>	: Children in the age group of 5 to 15 years
<b>Expected Outcomes</b>	: Kids will learn values of Indian culture and heritage, diversity in culture, values, traditions, rituals etc.
<b>Impact</b>	: This will increase the self-esteem to be Bharatiya. Life skills will increase

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<b>Problem ID:</b>	PID284
<b>Challenge Title :</b>	Make Spiritual/Economic/ Political/Social/Scientific Toys
<b>Name of the Industry Challenge Description with context :</b>	Toy Innovation Challenge This challenge is to make toys which can explain the following points Spiritual, Economic, Political, Social, Scientific For example... <ul style="list-style-type: none"><li>• 1st Bharatiya satellite-made (Arya Bhatt)</li><li>• 1st nuclear test</li><li>• Bharat sent a man in Space (Rakesh Sharma)</li><li>• Noble laureates in Bharat</li><li>• Olympic Gold medalist</li><li>• Mission Marsh</li><li>• Mission Chandrayan</li><li>• War victory (heroes, places)</li><li>• Integration of all states in one nation</li><li>• Scientific innovations etc</li></ul>
<b>Users :</b>	Children in the age group of 5 to 15 years
<b>Expected Outcomes :</b>	Increase values of Indian ethics and civilization
<b>Impact :</b>	These toys increase principled morals in kids, scientific developments, and extraordinary achievements in all fields.

<b>Problem ID:</b>	PID285
<b>Challenge Title :</b>	Create Toys of National icons to mark their birth anniversaries as well as toys depicting important forthcoming events
<b>Name of the Industry Challenge Description with context :</b>	<p>Toy Innovation Challenge</p> <p>Create Toys of National icons to mark their birth anniversaries as well as toys depicting important forthcoming events</p> <p>These toys should describe about heroes who have values in our Bharat and those who sacrifice themselves and their families for transforming our country.</p>
<b>Users :</b>	Children in the age group of 8 to 18 years
<b>Expected Outcomes :</b>	<p>Their principles and thoughts to improve child development, holistic development, positive role models boost young people's motivation by modeling a guide to achieving success. For example, they likely have- an ability to inspire others, a clear set of values, a commitment to community, an acceptance of others, and an ability to overcome obstacles.</p> <p>Role models show young people how to live with integrity, optimism, hope, determination, and compassion.</p> <p>They play an essential part in a child's positive development, Demonstrate confidence and leadership.</p> <p>Don't be afraid to be unique, Communicate and interact with everyone, Show respect and concern for others. Be knowledgeable and well rounded. Have humility and willingness to admit mistakes.</p>
<b>Impact :</b>	Development of nationalism in a positive manner, These national icons become role models for children in their overall development and their career.

<b>Problem ID:</b>	PID286
<b>Challenge Title</b>	: Toys as a medium to further the spirit of “Ek Bharat, Shrestha Bharat”.
<b>Name of the Industry Challenge Description with context</b>	: Toy Innovation Challenge : Toys displaying different cultures are the heart of Bharat as One Nation. These toys should show how different cultures are like structures of different languages generating the same meaning. Make toys to speak different languages and their meanings or different kind of applications which can translate any language to any other one.
<b>Users</b>	: Children in the age group of 8 to 18 years
<b>Expected Outcomes</b>	: Children can learn different languages spoken in Bharat and can learn meaning, emotions etc
<b>Impact</b>	: Children become rich in multi-linguistic traditions and through cultural exchange they can understand the importance of culture of our country i.e. Bharatiyata.

<b>Problem ID:</b>	PID287
<b>Challenge Title</b>	: Toys representing India’s heritage and culture
<b>Name of the Industry Challenge Description with context</b>	: Toy Innovation Challenge : India has a rich legacy in toy-making. Historically, Indian toys date back to 5000 years. The excavated toys and dolls found in Harappa and Mohenjo-Daro included small carts, dancing women, etc. India has a rich culture of storytelling through its toys. Our ancestors have been preserving this culture by making toys that show a perspective of life. The religious influence also led to a different set of toys depicting stories from epics like Ramayana and Mahabharata. For example, Wooden toys, Board games, dolls, Thanjavur, Ghugg etc.
<b>Users</b>	: Children in the age group of 8 to 18 years
<b>Expected Outcomes</b>	: Toys should be very safe to play, environmental friendly, economical.
<b>Impact</b>	: These toys educate the child on basic social, physiological, mental, and emotional development.

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<b>Problem ID:</b>	PID288
<b>Challenge Title</b>	: Develop online games using IT tools
<b>Name of the Industry Challenge Description with context</b>	: Toy Innovation Challenge : Game shows on the great history of Bharat. Games to show culture of Bharat. Games should be based on Bharatiya theme like Maharabharat, Ramayan, Panchtantra.
<b>Users</b>	: Children in the age group of 8 to 18 years
<b>Expected Outcomes</b>	: While playing games, children are able to learn about brief history and Ek Bharat Shresth Bharat.
<b>Impact</b>	: These games increase the awareness of our history to educate the child on basic physiological, mental and emotional development.

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## **BVG Life Sciences Limited**

<b>Problem ID:</b>	PID289
<b>Challenge Title</b>	: Herbal treatment for Polycystic ovary syndrome (PCOS)
<b>Name of the Industry</b>	: BVG Life Sciences Limited
<b>Challenge Description with context</b>	: Polycystic ovary syndrome (PCOS) is a condition in which women face a hormonal imbalance causing irregularity in reproductive physiology which may lead to mental and health stress. As irregularity in physiology and ovulation hinders conceiving increase the level of stress thus further affecting the hormonal balance.  First and foremost, treatment for this condition is to restore normal reproductive physiology. Ayurvedic literature includes formulation for restoring the balance and enhancing ovulation.  Selection and scientific evaluation of suitable formulations is required to obtain a herbal cure for the treatment of PCOS.
<b>Users</b>	: Women facing PCOS/Hormonal imbalance disorder
<b>Expected Outcomes</b>	: A safer and effective treatment of PCOS
<b>Impact</b>	: Treatment for PCOS using herbal medications will be economical in comparison to in vitro techniques and will save patients from further mental and emotional stress.

<b>Problem ID:</b>	PID290
<b>Challenge Title</b>	: Development of Herbal Antiseptic Wound Closure Spray
<b>Name of the Industry</b>	: BVG Life Sciences Limited
<b>Challenge Description with context</b>	<p>: Cuts and wound closing is a major issue in first aid and minor surgical procedures. Paramedical staff and hospital staff require attention and skillful care of wounds along with cumbersome materials for disinfection and wound closure.</p> <p>A medicated spray based containing ayurvedic/antiseptic medications with or without medicated sprays of (tissue glues/superglues) will provide a better alternative for providing rapid first aid therapy.</p> <p>Rapid wound closure will be helpful not only in the prevention of infection along-with major blood loss in injuries due to calamities, accidents, sports injury, and soldierly duties.</p> <p>Development of spray based formulation will help in better wound closure with less surgery/suture marks over site along with easy application.</p>
<b>Users</b>	: Patients
<b>Expected Outcomes</b>	: Wound closure/healing spray
<b>Impact</b>	: A rapid wound closure/healing spray will be helpful in rapid first aid kits at accident sites or areas with fewer medical facilities.



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<b>Problem ID:</b>	PID291
<b>Challenge Title :</b>	Development and formulation of Ayurvedic blood-thinning agents/Thrombolytic agents
<b>Name of the Industry Challenge Description with context :</b>	<p>BVG Life Sciences Limited</p> <p>Blood clotting is a natural protective mechanism for homeostasis, but in certain situations, it can cause severe health problems such as stroke, heart attack, pulmonary embolism etc.</p> <p>Regularly used clot-dissolving agents used have drawbacks such as increased chances of internal bleeding, thrombocytopenia, and other safety issues.</p> <p>Currently used medicines are naturally derived but we still need an effective and safer herb/ayurvedic formulation for effective and safer management of clotting/thrombus. So Pharmacologically evaluation of Agents for thrombolytic activity is required.</p>
<b>Users :</b>	Patients with cardiac, stroke, and other clot-related disorders
<b>Expected Outcomes :</b>	To develop effective and safer ayurvedic formulation of thrombus/clot treatment.
<b>Impact :</b>	Effective management for clot/thrombus treatment in disease areas such as CVD and stroke.

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<b>Problem ID:</b>	PID292
<b>Challenge Title :</b>	Nano formulations of vitamin D/E
<b>Name of the :</b>	BVG Life Sciences Limited
<b>Industry Challenge Description with context :</b>	<p>Vitamin D and E are obtained from biological sources and formulated into soft gel capsules. These are fat-soluble vitamins hence generally formulated using oil as a vehicle in soft gel capsules.</p> <p>Nano formulations are being used to enhance the solubility of poorly water-soluble drugs to obtain formulations that are water-soluble or water-based. This results in better taste masking along with reduced dose incorporation of active ingredients.</p> <p>Nano formulation also helps in enhancing the stability of Vitamin D and E in dosage form.</p>
<b>Users :</b>	Patients and Industry
<b>Expected Outcomes :</b>	Nano formulation based vitamin E dosage form.
<b>Impact :</b>	Nano-based dosage form will lead to enhancement of solubility, reduction of drug loading, and taste masking

<b>Problem ID:</b>	PID293
<b>Challenge Title</b>	: Ayurvedic formulations for effective management of Alzheimer's disease
<b>Name of the Industry Challenge Description with context</b>	: BVG Life Sciences Limited  Alzheimer's disease is a disorder of cognitive and behavioural impairment. Accumulation of abnormal proteins such as amyloid in and around brain cells is considered as one major source behind the impairment of cognitive impairment.  In recent years, various synthetic molecules and herbal extracts have been studied in chemical or surgically induced animal models of Alzheimer. However, still these studies were not sufficient in providing any leading molecule/therapy for Alzheimer.  These studies were limited to single molecule or single plant extract whereas, in Ayurveda, a mixture of different plants have been used for memory enhancement and disease treatment. Mixtures of different drugs may show a synergistic effect and could be more beneficial in comparison to single drugs alone. Pharmacological evaluation of using animal models of Alzheimer's disease will help in the development of formulations for effective management.
<b>Users</b>	: Senior and super senior citizens with age-related dementia.
<b>Expected Outcomes</b>	: Ayurvedic tonic/formulation specifically for elder.
<b>Impact</b>	: Effective management of Alzheimer's will help in better quality of life for patients along with their confidence enhancement for independent life

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<b>Problem ID:</b>	PID294
<b>Challenge Title</b>	: Modern dosage form of Kwath
<b>Name of the Industry</b>	: BVG Life Sciences Limited
<b>Challenge Description with context</b>	: Kwath (also known as kashyam) is ayurvedic preparations prepared by extracting the coarse powder drug using water as a vehicle. For preparing the kwath the powdered drug/drugs either soaked in water overnight or boiled in water.  A major challenge for the preparation kwath is to achieve correct temperature and time for kwath kalpana. In a common house, it would be very difficult to achieve and standardize the process every time, which may lead to inappropriate preparation affecting the efficacy of the product.  Designing and developing new dosage forms with proper characterization and standardization of kwaths (Mahamanjisthadi, Maharasnadi-used for joint pain and Osteoarthritis) as tablet/capsule will be a better alternative to traditional practices.
<b>Users</b>	: Patients and the Pharma industry
<b>Expected Outcomes</b>	: Development of modern dosage form of kwath (Kshyam)
<b>Impact</b>	: With the modern dosage form design of kwath, a standardized product will be made available to the common public in a more useful manner in turn helpful to society.

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<b>Problem ID:</b>	PID295
<b>Challenge Title :</b>	Ayurveda for de-addiction
<b>Name of the Industry Challenge Description with context :</b>	<p>BVG Life Sciences Limited</p> <p>Addiction to banned substances/tobacco/alcohol or any chemical is a major health and economic issue in today's life. It is a biopsychosocial disorder. In this condition, people have an intense focus on the use of particular substances to such an extent that it impairs the day to day life activity along with socioeconomic stress to family members.</p> <p>Deaddiction therapy which is currently used is reliant on the use of substances of abuse and needs special permission with special facilities (De-addiction centre). Which is itself challenging due to chances of misuse and relapse when one is out of centre. An ayurvedic alternative of herbal products such as valerian, chamomile and berberis etc. in modern dosage forms may be helpful in getting better alternatives/medium for drug de-addiction.</p>
<b>Users :</b>	Patients
<b>Expected Outcomes Impact :</b>	<p>A herbal/ayurvedic formulation for Management of lipoma.</p> <p>Society is benefited.</p>

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<b>Problem ID:</b>	PID296
<b>Challenge Title</b>	: Ayurvedic mood stabilizer/antidepressants
<b>Name of the Industry</b>	: BVG Life Sciences Limited
<b>Challenge Description with context</b>	: Depression /schizophrenia is a mental disorder whose root cause is still not clear. It affects a person's daily life and does not have a defined set of symptoms for diagnosis. Globally, 264 million people of all age groups are suffering from depression. Depression leads to suicidal behaviour in persons which is the second leading cause of death worldwide.  For the management of depression drugs that are used are habit-forming or show withdrawal symptoms. Herbal medications for such conditions are listed in ayurvedic literature.  Screening of these need to be carried out to generate evidence for their efficacy and safety using in vivo and clinical studies.
<b>Users</b>	: Patients of depression/schizophrenia
<b>Expected Outcomes</b>	: A herbal formulations for effective management of depression
<b>Impact</b>	: Depression is a disorder that involves major emotional stress during the disease phase and social distress during the treatment, which may lead to discontinuation of therapy. Herbal treatment might be more acceptable and useful in the management of this condition.

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<b>Problem ID:</b>	PID297
<b>Challenge Title</b>	: Pulmonary delivery of herbal drugs for Asthma/Bronchitis
<b>Name of the Industry</b>	: BVG Life Sciences Limited
<b>Challenge Description with context</b>	: Asthma/ Bronchitis are major issues in the current scenario due to increasing pollution related health hazards along with occupation-related problems.  Within the last decade, there has been an increase in the cases of pulmonary related disorder. Few plant-based products used in respiratory illness is also increasing. Still, most of these products provide only symptomatic treatment. In Ayurveda, various formulations or products have been described for respiratory ailments in the form of inhalation therapy.  Conversion of these formulations into modern pulmonary delivery dosage forms will help in providing a treatment for a respiratory ailment.
<b>Users</b>	: Public and industries
<b>Expected Outcomes</b>	: Novel drug dosage form for pulmonary dosage form
<b>Impact</b>	: Pulmonary delivery of formulations for respiratory ailments.

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<b>Problem ID:</b>	PID298
<b>Challenge Title</b>	: Ayurvedic/Herbal formulations for treatment of Lipoma
<b>Name of the Industry</b>	: BVG Life Sciences Limited
<b>Challenge Description with context</b>	: Lipoma is a growth of fatty tissue that develops under the skin which is classified as benign growth.  Lipoma is generally treated either via surgery or liposuction. In other treatments, steroid injections are used to control the growth of lipoma. Surgical and steroidal treatments have limitations such as cost, special setup, and safety issues along with the cosmetic issues. Also, lipoma can show reoccurrences.  An ayurvedic/herbal treatment for control/cure of lipoma needs to be developed which can be used by patients at the bedside. Such type of formulations will provide therapy for large populations who are not able to afford the surgical therapy due to cost and cosmetic reasons.
<b>Users</b>	: Patients
<b>Expected Outcomes</b>	: A herbal/ayurvedic formulation for Management of lipoma.
<b>Impact</b>	: Low cost treatment available to the patients.



<b>Problem ID:</b>	PID299
<b>Challenge Title</b>	: Test Strips for Heavy Metal Identification
<b>Name of the Industry</b>	: BVG Life Sciences Limited
<b>Challenge Description with context</b>	<p>: Any metal (or metalloid) species may be considered a "contaminant" if it occurs where it is unwanted, or in a form or concentration that causes a detrimental human or environmental effect. Metals/metalloids include Lead, Cadmium, Mercury, Arsenic, Chromium, Copper, Selenium, Nickel, Silver, and Zinc. Excessive levels of these metals/metalloids can be damaging to humans. Various case studies and reports of heavy metal induced health hazards have been reported despite the stringent Regulatory guidelines/control over the limit of heavy metals in formulation/nutraceuticals.</p> <p>Regulatory guidelines of various countries have strict norms for the control of heavy metals levels in formulations, Which builds a hurdle in export of the ayurvedic products. Currently, methods used for analysis/detection of Heavy metals in raw material /formulations involve tedious and expansive methodology/instruments. Most ayurvedic and herbal drug manufacturers do not have access to such facilities and are dependent on other facility providers for the same. A rapid and bench side method for detection of heavy metals will be helpful not only in rapid identification of impurities, quality control but also will be time-saving and economical for Ayurvedic and herbal industries.</p>
<b>Users</b>	: Ayurvedic herbal and food industry and consumers
<b>Expected Outcomes</b>	: To develop a rapid and reliable strip-based test for detection of heavy metals
<b>Impact</b>	: Inexpensive testing methods for heavy metal analysis will not only help in raising the quality of products but it will also reduce the chances of related health hazards to users.

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<b>Problem ID:</b>	PID300
<b>Challenge Title :</b>	Development and validation of Ayurvedic preparation for as treatment of Epilepsy
<b>Name of the Industry Challenge Description with context :</b>	BVG Life Sciences Limited  Epilepsy is well known and studied neurological disorder showing abnormal brain activity with seizures and periods of uncommon behaviour. As per the reports of WHO 70% of people do not receive any treatment for these conditions due to non-availability of treatment or economic issues. Currently used allopathic medicines have limitations such as drug-associated adverse effects and they show relapse of seizures after discontinuation. In Ayurveda literature, there are various references to preparation for treatment of epilepsy (Apsmara) or epilepsy like conditions (insanity/unmad) e.g. Brahmighritham, Brihad Panchagavya Ghrita, MansamritaGutika, Sarswatarista. But these formulations are considered under non-pharmacological treatments of epilepsy, due to the non-availability of robust scientific evidence. Generating Pharmacological evidence along with the standardized methods of preparation will not only provide strength but also will lead to an effective and affordable treatment of epilepsy.
<b>Users :</b>	Patients
<b>Expected Outcomes Impact :</b>	Pharmacologically validated formulation for epilepsy.  A validated herbal formulation will be helpful in the treatment of patients who are not getting treatment.

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<b>Problem ID:</b>	PID301
<b>Challenge Title :</b>	Ayurvedic formulations/extracts in treatment/management of viral/hemorrhagic fever
<b>Name of the Industry :</b>	BVG Life Sciences Limited
<b>Challenge Description with context :</b>	Hemorrhagic fever is an illness caused by infection of different viruses of families of viruses Arenaviridae, Bunyaviridae, Filoviridae, and Flaviviridae (Dengue virus, yellow fever virus). Majorly they are RNA viruses with recent outbreaks of zoonotic transmissions and pandemic like situations. Symptoms of these infections mainly include fever, illness with muscle ache at early stages of infections, and haematological disorders at later stages. For most hemorrhagic fevers there is no specific treatment. Currently used treatment is only supportive care using intravenous fluids or oral rehydration solutions along with antipyretic and antiretroviral drugs. Apart from these only vector control measures are advised. In various ayurvedic books, a special section is dedicated to the treatment of fever “jawardhikar” with many formulations in different conditions/types of fever. Development and evaluation of modern dosage forms of such formulations/combinations will be helpful in finding treatments for haemorrhagic fever and associated complications.
<b>Users :</b>	Patients
<b>Expected Outcomes :</b>	Scientific screening of formulas given in ayurvedic medicines for finding a cure for hemorrhagic fever.
<b>Impact :</b>	In recent two years, viral disease outbreaks have shown a dramatic rise in new strains of viruses and especially with haemorrhagic complications.

<b>Problem ID:</b>	PID302
<b>Challenge Title :</b>	Ayurvedic formulations for effective management of Parkinson's disease
<b>Name of the Industry Challenge Description with context :</b>	BVG Life Sciences Limited  Parkinson's disease is one of the nervous system disorders in which the locomotor activity of a patient is affected. It is considered a progressive disease that is chronic and worsens over time if not managed effectively. Various medications are being used for effective management of Parkinson's but due to geriatric conditions, their therapeutic level management and safety ratio is unpredictable. Modern medicine interacts with food and changes in diet habits due to age factors and other medical conditions can affect the body adversely. Ayurvedic or herbal formulation can achieve therapeutic efficacy. Ayurvedic drugs/herbs as a part of food/along with a diet plan ("pathya") can provide a better way to manage Parkinson's with fewer chances of drug-food interactions. Evaluation of ayurvedic formulations in the "medhya" section of Ayurveda along with the advised food habits can lead to effective management of Parkinson's disease.
<b>Users :</b>	Geriatric patients who need special care.
<b>Expected Outcomes :</b>	A herbal alternative from Ayurveda will provide a better and easy mode of managing quality of life.
<b>Impact :</b>	Enhancement of quality of life will have a positive impact on the overall health of patients.

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<b>Problem ID:</b>	PID303
<b>Challenge Title :</b>	Novel dosage formulation for Gastritis/Hyperacidity
<b>Name of the Industry Challenge Description with context :</b>	BVG Life Sciences Limited  One of the most common diseases seen in today’s world is gastritis or commonly known as acidity. Various drugs have been used for the treatment of acidity but they have their own limitations and drawbacks (Recent incident of Ranitidine). Various drugs/medicines (e.g. Antibiotics) when used for treatment in various conditions increase gastric acid production and cause discomfort. Herbal formulations with action for combating acidity will be a good treatment as it will be safer and cost-effective. Ayurvedic texts contain references for such formulations under the title “Amlapitta dosh” but very few have been scientifically evaluated and being used. Various different ayurvedic formulations are available as churna for acidity. Churna doesn’t have any flavours, bulk dose, ease of use hence lack patient compliance. Granules or drop based ayurvedic formulation will enhance the patient compliance and acceptability of the formulation
<b>Users :</b>	Patients
<b>Expected Outcomes :</b>	A better formulation with enhanced appearance and stability will increase the drug compliance
<b>Impact :</b>	Novel formulations of churna will enhance the patient’s compliance and acceptability.

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<b>Problem ID:</b>	PID304
<b>Challenge Title</b>	: Herbal remedy for memory enhancing/Focused attention/ADHD
<b>Name of the Industry</b>	: BVG Life Sciences Limited
<b>Challenge Description with context</b>	: In recent years with the increasing use of gadgets and techniques, we are facing issues with focus/concentration. In the century of the internet or “Online Brain” we are becoming dependent on it for every small piece of information. Although, research has proven that the young generation is better at multitasking with the ability to process information faster but facing issues with works that involve focus and concentration resulting in easy distraction and loss of focus on learning/result achievement. Focused attention is required as it assists in study, improves memory, and helps in focusing and finishing a job or goal. Similarly, children and adults having ADHD (Attention Deficit Hyperactivity Disorder) face similar issues of focused attention. Various formulations in Ayurveda are described for memory enhancement in “medhya varg” of formulations. Pharmacological evaluation of such drugs/formulations need to be carried out. These formulations can provide solutions for memory enhancement/issues of focused attention/ADHD.
<b>Users</b>	: Children and teenagers
<b>Expected Outcomes</b>	: Any method or mode of increasing the ability to concentrate/focus will improve the result oriented approach.
<b>Impact</b>	: A herbal remedy for Memory enhancement/ Focused attention/ADHD will be useful worldwide.

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<b>Problem ID:</b>	PID305
<b>Challenge Title :</b>	Herbal Treatments/formulations for Burns (Agnidaha)
<b>Name of the Industry Challenge Description with context :</b>	BVG Life Sciences Limited  Burn or injuries caused by burning is one of the major treatment concerns in recent years. Industrialization and the use of various chemical-based products in daily life results in increasing cases of burn and fire accidents. Currently, major therapy for burn injuries involves fluid replacement, painkillers with topical applications. In ayurvedic books, preparations for topical applications and oral have been described for the treatment of burn wounds. Scientific evaluation or validation of the efficacy of such products will be helpful in generating a good alternative for patients. Therapy of patients with burns requires care and most patients fill emotional and social trauma due to cumbersome methods/treatment. Suitable treatment with self-application dosage form (spray-based) will help in the prevention of such trauma to patients and will be helpful in the care of patients.
<b>Users :</b>	Patient with burn injuries
<b>Expected Outcomes :</b>	Scientific evaluation for ayurvedic formulations for burn wounds.
<b>Impact :</b>	Ayurvedic formulations for treatment for burn wounds.

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<b>Problem ID:</b>	PID306
<b>Challenge Title</b>	: Ayurvedic formulation in prevention and cure of Mastitis
<b>Name of the</b>	: BVG Life Sciences Limited
<b>Industry</b>	
<b>Challenge Description with context</b>	: Bacterial infections during lactation pose medical and emotional problems of mothers. These infections result in loss in the production of milk and damage to tissue. The situation may get more severe if the infection spreads into the blood or treatment is delayed. Treatment using antibiotics can be done but the choice of suitable antibiotics with good efficacy and without side effects to mother and child is still a problem for farmers/veterinarians. Ayurvedic formulations can provide a better alternative for the treatment of mastitis, as herbal drugs have no side effects and various herbs are antibiotic in nature. Screening of such drugs for anti-mastitic activity with novel dosage forms is required to provide a suitable solution.
<b>Users</b>	: Lactating cattle's /dairy industry
<b>Expected Outcomes</b>	: A herbal formulations for the control and cure of mastitis
<b>Impact</b>	: A cure/controlling formulation of mastitis will not only help in the prevention of mental and emotional trauma to mothers along with relief from disease but it will help in preventing economic burden if used in the veterinary area.



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<b>Problem ID:</b>	PID307
<b>Challenge Title :</b>	Herbal Preservatives An Interminable Requirement
<b>Name of the Industry Challenge Description with context :</b>	BVG Life Sciences Limited Preservatives are the agent used in various products to prevent microbial growth and decomposition. Generally used preservatives in herbal/Ayurveda formulations are chemical-based. Although various herbal antioxidants are also used as preservatives in various formulations. There is a need for new/herbal preservatives for various end-users. Herbal preservatives having antioxidants with pharmacological action will be an added advantage in formulation in synergistic action. Screening of herbal agents for herbal preservatives useful for varied pH range (2.0 to 13.0), stability of formulations etc. will be helpful in generating a range of herbal preservatives.
<b>Users :</b>	Ayurveda, Pharma and Food industry
<b>Expected Outcomes :</b>	Herbal preservatives will be a better alternative for chemical alternatives
<b>Impact :</b>	Herbal preservatives are the agent used in various products to prevent microbial growth and decomposition which can prove a better alternative against chemicals.

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<b>Problem ID:</b>	PID308
<b>Challenge Title</b>	: Insomnia A New World Nightmare
<b>Name of the</b>	: BVG Life Sciences Limited
<b>Industry</b>	
<b>Challenge Description with context</b>	: Insomnia is the condition in which a person has trouble falling asleep or staying asleep irrespective of the opportunity for full night sleep. It affects every aspect of life such as impairment in decision making, reduced work performance, and has a negative impact on normal life. With the increased use of gadgets, more number of persons are showing symptoms of insomnia. The major reasons behind insomnia are considered as stress and modern medicine-based treatment include the use of anti-stress agents. Anti-stress agents are sometimes habit-forming in nature and very difficult to reduce their usage by patients. An ayurvedic treatment of insomnia will be advantageous as it will not be habitforming as well as it is easy to reduce the dose and usage of such medications. Plants have been used for calming and soothing effects which can help in relieving stress. Such plants or ayurvedic formulations (such as mamsyadi kwatha/manas mitra vataka etc.) need to be evaluated for their efficacy along with standardization.
<b>Users</b>	: General public having a sleep disorder.
<b>Expected Outcomes</b>	: To achieve better quality of life by eliminating insomnia and stress.
<b>Impact</b>	: With increased use of tech gadgets and stress in life improper sleep leads to more stress with worsening of quality of life.

## Collector Office, Ahmedabad

<b>Problem ID:</b>	PID309
<b>Challenge Title</b>	: Human resource management
<b>Name of the Office</b>	: Collector Office, Ahmedabad
<b>Challenge Description with context</b>	<p>: Create and maintain a consolidated , highly secure employee database for Government organization. Data( Vacant post, filled post, duration of particular employee on particular post, experience of employee on different subjects based his job profile to particular table work) can easily available during transfer, and appointment in different post of revenue offices in district.</p> <p>As we know that all records of employee is managed by manually process in revenue department. It is difficult task for gathering data of employee's in short time. Online data of employee's as mention above availability will be helpful for further process. So It may be helpful to collector during transfer and posting order of class III level employee in district.</p>
<b>Users</b>	<p>: End user employee can add his current and past experience details in system along with experiences of his/her working of subjects in different tables of department. Senior officer can fill all vacant and availability of different post as per instruction given by higher authority. Collector should be view, download in different format, and analyze filled/vacant post on different subjects.</p>
<b>Expected Outcomes</b>	<p>: System should be records data with security. System must contains adding information, managing information, validate and approval mechanism of employee's fill data. Credentials mechanism is available in system for managing vacant and available post .Collector should view all uploaded data, analyze, and search by different criteria as per his/her need. So It may be helpful to collector during transfer and posting order of class III level employee in district.</p>
<b>Impact</b>	<p>: It can be replicate in whole state collectorate offices.</p> <p>Time saving.</p> <p>Paperless system so record keeping is easy.</p> <p>Monitoring current status of employee's experience.</p> <p>Increased Responsiveness.</p> <p>Easily find out expertise employee in each subject of department with experience.</p> <p>Easily data available to authenticate officials.</p>

<b>Problem ID:</b>	PID310
<b>Challenge Title</b>	: Meeting Management System
<b>Name of the Office</b>	: Collector Office, Ahmedabad
<b>Challenge Description with context</b>	<p>: It may be a tool regarding meeting/video conference held at collector office under chairmanship of collector sir or any other officers. It may grow tired of ineffective and unproductive meetings. With this tool meetings become more effective and organized in a click. Share the agenda with your team, assign task and make sure everyone has the correct information. Participants get summarized information in their inbox before the meeting and can add their own agenda items and attachments. Take notes, add decision and assign actions in real time. those responsible for an action gets an instance notification with personal to-do-list send to their inbox. Action item that are delegated during the meeting are gathered in personal to-do-list that simplifies follow-up thru mail reminders and push notification.</p> <p>To make sure that no task gets left behind of meeting management system. System need to send you daily remainder of task until your assignment task of his/her is completed. Share the agenda with your team, assign task and make sure everyone has the correct information. When is time for your next meeting everyone officials can easily access task assigned and notes from previous meetings along with manage current meeting data.</p>
<b>Users</b>	: Collector office officials as PA of collector, internal staffs etc. can logged in this system using credentials. Higher officials can check their schedule, invites appropriate officials as per meeting agenda.
<b>Expected Outcomes</b>	: Meeting can be organized in a smooth way and can review past meeting agenda and ATR easily. Management system should contain facilities as notification /alert mechanism, sharing agenda details, assign task, searching and filtering of assigned work. Officials can register others officials with appropriate rights.
<b>Impact</b>	: It can be replicate in whole state collectorate offices. Collector office can distribute this system to different internal departments of it. Each department may use this system as per it need .official can get reminder,manage task list as per he/she need. Overall system will be helpful to official for preparation of meeting agenda.

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<b>Problem ID:</b>	PID311
<b>Challenge Title</b>	: SARFAESI(The Securitisation and Reconstruction of Financial Assets and Enforcement of Securities Interest Act) Act case management system
<b>Name of the Office</b>	: Collector Office, Ahmedabad
<b>Challenge Description with context</b>	: Develop IT based solution for case management system such a way that to maintain record of applicant, petitioner and respondents with all attributes required for case management. Case management mechanism, board list, hearing status with SMS facilities should be available. Process will be automated to certain extent by monitoring cases and will be helpful in analysis too.  To provide for a central database of security interests created on property rights. Online data availability of financial assets will be helpful to petitioner and respondents for further process smoothly. Reminder dates of different cases will not be remember as facilities will be added in system. Different user can view case related document when he/she required. Cases under SARFAESI Act to be dispose effectively in time limit.
<b>Users</b>	: Applicant, respondents, petitioner ,Collector office DC branch officials
<b>Expected Outcomes</b>	: System should be able to manage all data of applicant; petitioner and respondents.SMS facilities should be available for reminders of different user before actual date come. System should be analysis data (searching by different criteria, sorting etc.) as per need and generate report of it.. Official can view, monitoring current status of cases at any time and revert back to sender if needed.
<b>Impact</b>	: It can be replicate in whole state offices. It will easy the work of particular branch Increased Responsiveness. Provide security on property assets. reminder and notification mechanism will help in faster process of work.

<b>Problem ID:</b>	PID312
<b>Challenge Title</b>	: Visitor management
<b>Name of the Office</b>	: Collector Office, Ahmedabad
<b>Challenge Description with context</b>	<p>: As a district collector offices are entrusted with wide range of duties in the jurisdiction of the district, as a district magistrate &amp; district collector. In the view collector sir has been decided 2 days in a week i.e. Monday and Thursday ( From 11:00 to 1:00 ,days and time should be customize)as public day to meet public or citizen of his district based solution for that problem. so Collector sir can review/follow up the progress of their grievances. The office can give appropriate compliance to them for their grievances.</p> <p>In the view of the above we are requesting you to develop some IT based solution for that so collector sir can regular review , follow up the process of their grievance in all parameters ,view status of current problem status of citizen and send notification to appropriate department with documents if necessary. The official can give appropriate compliance to them for their grievances with documents if necessary.</p>
<b>Users</b>	<p>: Visitor has to give his/her basic personal details, contractual /permanent staff of officials adds details of visitor's details in system. Authorized person must add different department details and official's details in system. Officials can give reply of problem statement to them . Collector sir should be monitor whole process of problem of visitor and give order to appropriate department if necessary.</p>
<b>Expected Outcomes</b>	<p>: Collector office can give appropriate compliance to them for their grievances. System should provide facilities as searching by different criteria's, report generation in different formats, monitoring status problem of visitor. Higher authenticate person should monitor and manage whole system and give appropriate instruction to respective department of it whenever he/she need .</p>
<b>Impact</b>	<p>: It can be replicate in whole state collectorate offices. Monitoring current status of citizen's grievance or Continuous performance monitoring. Time and cost saving. Speedy resolution of citizen complaints Increased Responsiveness. Various Reports for quick analyzing and grievance status check.</p>

## Collector Office, Amreli

<b>Problem ID:</b>	PID313
<b>Challenge Title</b>	: Application of Artificial Intelligence in Human Resource Management.
<b>Name of the Office</b>	: Collector Office, Amreli
<b>Challenge Description with context</b>	<p>: Human resource has always remained the core function of every organization. The purpose behind adopting artificial intelligence is strengthening and improving the productivity and efficiency of human resource to meet the core objectives of every government organization. Provides easy statistics on staff performance, utilization of resources and finance.</p> <p>Artificial Intelligence (AI) helps employees in decision-making, better predictions.</p> <p>AI helps the employees to establish strong interaction with public in routine administrative work.</p>
<b>Users</b>	<p>: Government Offices, Industries, Corporate Houses and Companies</p> <p>Provides easy statistics on staff performance, utilization of resources and finance, decision-making, better predictions, strong interaction with public in routine administrative work, cost saving mechanism, to create more flexible, employee centered mechanism.</p>
<b>Expected Outcomes</b>	<p>: </p> <ul style="list-style-type: none"> <li>• Personalized employee experiences</li> <li>• Cognitive -supporting decision-making</li> <li>• Automation of 'repetitive and low productive tasks</li> <li>• Provides easy statistics on staff performance</li> <li>• Utilization of resources and finance</li> <li>• Decision-making, better predictions</li> <li>• Strong interaction with public in routine administrative work</li> <li>• Cost saving mechanism</li> <li>• To create more flexible</li> <li>• Employee centered mechanism.</li> </ul>
<b>Impact</b>	<p>: </p> <ul style="list-style-type: none"> <li>• Provides easy statistics on staff performance, utilization of resources and finance.</li> <li>• Artificial Intelligence (AI) helps employees in decision-making, better predictions.</li> <li>• AI helps the employees to establish strong interaction with public in routine administrative work.</li> <li>• AI helps the employees in developing cost saving mechanism while framing the strategy of upcoming projects.</li> <li>• The use of AI in government organization helps as to create more flexible, employee centered mechanism.</li> </ul>

<b>Problem ID:</b>	PID314
<b>Challenge Title</b>	: Block chain Technology for Smart and Secured Governance.
<b>Name of the Office</b>	: Collector Office, Amreli
<b>Challenge Description with context</b>	<p>: Blockchain is a technology that allows us to store and use information in a distributed database, with a full guarantee of preserving information in its original form.</p> <p>This technology helps government organizations to deal with fraud and errors as well as reduce the cost of paperwork and ensures transparency of transactions.</p> <p>A blockchain based digital government can protect data, regulate the processes, and reduce fraud in the routine activities while simultaneously increasing trust and accountability.</p> <p>On a blockchain based government model, individuals, business houses and government share information in a secured format. This structure eliminates a single point of failure and protects the sensitive data of citizens and government. Reduces the labor intensive processes. Increases trust in government and online civic systems.</p> <p>This technology will prove helpful in various government aspects such as digital payments, land registration, supply chain traceability, corporate registrations, taxation, identity management etc.</p>
<b>Users</b>	<p>: Government Offices and allied organizations, Employees, Survey teams of the government.</p> <p>For e – registries the issues relating to reliability and security of the data are successfully solved by blockchain, as the properties of decentralized database ensures the confidentiality, integrity and availability of information.</p>
<b>Expected Outcomes</b>	<p>: </p> <ul style="list-style-type: none"> <li>• Block chain technology provides immutable record storage that can help government organizations to store information without any tampering.</li> <li>• With authentication, only certain personals would have access to sensitive information.</li> <li>• It also offers greater efficiency for governments by getting rid of third parties.</li> <li>• Not only business, but the routine government activities relating to public centric services are moving to virtual dimensions.</li> </ul>
<b>Impact</b>	<p>: </p> <ul style="list-style-type: none"> <li>• Highly motivated employees with challenging tasks can achieve individual and collective goals effectively.</li> </ul>



<b>Problem ID:</b>	PID315
<b>Challenge Title</b>	: Digital Profiles Of Farmers With Unique Farmer Id And A Common Database.
<b>Name of the Office</b>	: Collector Office, Amreli
<b>Challenge Description with context</b>	<p>: The main objective here is to create an individual digital profile of every farmer of the state and to create a common database for advancing agriculture.</p> <p>After the registration of the farmers on the basis of the core relevant documents like:</p> <ul style="list-style-type: none"> <li>• Personal information.</li> <li>• Communication details.</li> <li>• Farm location and details.</li> <li>• Field Information. (Size of field, soil condition, land title, crop history, type of irrigation source etc.)</li> <li>• Yield information (intercropping, yields, weather data, post harvest –storage and sales, harvesting techniques used etc.)</li> <li>• Financial instruments (Account ownership, payments and cash transfers availed )</li> <li>• Credit (whether credit accessed, loan size, use of loan.)</li> <li>• Insurance (risk covered and period, cost, details of insurance company, fields- livestock covered etc.)</li> <li>• Qualification (trainings attended, certifications received )</li> <li>• Business Information – agribusiness linkages, cooperative memberships, sales prices, markets farmers are linked to etc.</li> </ul> <p>And on the bases of all these data a digital profile of every farmer can be generated and a unique ID can be given to every farmer after linking their Aadhar card and bank details.</p> <p>Only government departments and the farmers individually will have the access to view their details. The data so collected will be stored in secured database of the government in the form of blockchain technology or big data.</p> <p>The farmers can make their digital profiles by visiting the common service centers or the Jan seva kendras.</p>
<b>Users</b>	: Government Offices, Various policy framing Departments of the govt., the Farmers themselves etc. Business Information – agribusiness linkages, cooperative memberships, sales prices, markets farmers are linked to etc.
<b>Expected Outcomes</b>	<p>: Online platform which,</p> <ul style="list-style-type: none"> <li>• Increases the transparency of the mechanism of government scheme and increases its effectiveness.</li> </ul>

### Impact

- Provides easy and quick assistance to farmers from the technical experts.
- The farmers can get a quick alert and update about new schemes and subsidies.
- Field Information. (Size of field, soil condition, land title, crop history, type of irrigation source etc.)
- Yield information (intercropping, yields, weather data, post harvest storage and sales, harvesting techniques used etc.)
- Helps the farmers to get easy access to new government schemes which are agro – centered and avail their benefits.
- Mobile enabled digital profiles can help farmers comply with traceability and certification requirements in agricultural schemes, bank loans, govt. subsidies etc.
- Data is made available for decades to capture crop conditions and weather trends and is used to target programs and services to farmers and day to day management.
- Helps the policy makers to study the trend and pattern of the modern day agricultural requirements and frame a strategy as per the requirements.
- Helps the government to allocate the funds in the budget to modernize agriculture.
- Digitizing the main cash inflow of agricultural households (the agri payments) and moving physical cash into digital wallets in rural areas which re-establish a communication channel between bank and rural families.

<b>Problem ID:</b>	PID316
<b>Challenge Title</b>	: Evaluation of transparency in the Direct Benefit Money Transfer through a Monitoring App.
<b>Name of the Office</b>	: Collector Office, Amreli
<b>Challenge Description with context</b>	<p>: It is very much important to use the technological innovations for monitoring the effectiveness and efficiency of the administrative implementation of the social protection programs. A randomized evaluation with the help of the app can be conducted in order to overcome the delay in payments and failures through direct benefit transfer.</p> <p>Public administration mainly faces challenges in ensuring that benefits are transferred to the beneficiary in the prescribed time limit but in the absence of easily accessible information, govt. officials may stand limited in their ability to monitor social protection payment implementation, including correctly identifying the sources and reasons of payment delays and determining whom to hold accountable.</p>
<b>Users</b>	<p>: Government offices, beneficiaries, survey departments etc.</p> <p>Here, after defining our government services and identifying their beneficiaries we need to develop a mechanism to provide the citizens with the said benefits and then monitor and evaluate the mechanism on continuous basis to serve more people.</p>
<b>Expected Outcomes</b>	<p>: </p> <ul style="list-style-type: none"> <li>• This app provides us a mobile based and system authenticated monitoring platform for tracing the wage/benefit payment.</li> <li>• This app tracks when each step in the payment process occurs and generates real time information on delayed payments linked to information on employees responsible for each administrative step.</li> <li>• This app is linked to the internal monitoring dashboard of the governments so the supervising officer can keep a watch over the reasons of delay.</li> </ul>
<b>Impact</b>	<p>: The monitoring app will be so programmed that :</p> <ol style="list-style-type: none"> <li>1. First of all, it will focus on the entry/registration of the beneficiary on the basis of the criteria set.</li> <li>2. Then the app will list out all the benefits available to the person enrolled as per his/her eligibility.</li> <li>3. The app will verify and authenticate the details and documents of the beneficiary.</li> <li>4. A final approval in terms of benefit to the beneficiary in the form of direct benefit transfer.</li> </ol>

Here, after defining our government services and identifying their beneficiaries we need to develop a mechanism to provide the citizens with the said benefits and then monitor and evaluate the mechanism on continuous basis to serve more people.

The reasons for delay in DBT transfer can be easily identified.

<b>Problem ID:</b>	PID317
<b>Challenge Title</b>	: Improving Solid Waste Management in the District.
<b>Name of the Office</b>	: Collector Office, Amreli
<b>Challenge Description with context</b>	: Solid waste management is one of the basic essential services provided by the district governing bodies. But studies show that only 60-70 %of the waste is collected and only 25% is treated. So it becomes necessary to develop an innovative solution for the solid waste collection and management to make the surroundings and environment clean and for this we need to develop a mechanism based on the application of technology which will bring efficiency and effectiveness in the same.  A mechanism is developed to collect the waste which involves the aspects like:  Geo- mapping of bins, collection points, dumping points and yards:  For this, a comprehensive database is to be developed after the field survey and GIS mapping. This database will include information like – all routes, vehicles assigned for the route with GPS device and IDs, details of collection points with location of the bins and dumping site associated with it, drivers assigned, schedule designed.  Installing GPS vehicle trackers in the waste collection vehicles:  All these waste collecting vehicles require a route planning and real time monitoring for ensuring their effectiveness. This will help the supervisors to track the no. of trips and the routes followed and the actual visits made.  Biometric Attendance System:  The monitoring team by initiating a field attendance system can easily get data from the Biometric based attendance device, which will ensure the presence of field staff with biometric identification and authentication.  This will help the monitoring team to: <ul style="list-style-type: none"><li>• Maintain their detailed employee records.</li><li>• Track their working hours based on their check-in and check-out time.</li><li>• Ensure their field presence.</li></ul>

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- Improves their efficiency and accountability.
  - Increases transparency in payment of wages.
- Users** : Government Offices, allied organizations, citizens, Industries and Corporate houses.
- Geo- mapping of bins, collection points, dumping points and yards
- Installing GPS vehicle trackers in the waste collection vehicles
- Biometric Attendance System
- Expected Outcomes** :
- A live dashboard monitors and manages the waste collection bins.
  - Real time GPS tracking of the waste collecting vehicles.
  - Ensures complete coverage of door-to-door and community collections by the vehicles.
  - Pre-defined and divided routes leading to reduction in time, saves fuel and can serve more locations.
  - Real time tracking is possible for the missed garbage collection points.
  - This mechanism also records history of vehicle routes, attended sites and other details.
- Impact** :
- Use of this technology reduces the human intervention in the monitoring processes.
  - Dynamic management of the routes and vehicles through an automated tracking system.
  - Reduces the no. of complaints in the regards of irregularity in waste collection.
  - The District governing body can easily monitor and track the activities of field staff through the biometric attendance management system.

<b>Problem ID:</b>	PID318
<b>Challenge Title</b>	: Inspection of public services and development works based on geo-tagging.
<b>Name of the Office</b>	: Collector Office, Amreli
<b>Challenge Description with context</b>	<p>: Here the inspection of any of the flagship programme /scheme and development work will be based on collecting the images and videos along with other relevant data at various stages and after that geo-tagging of the work done with GPS coordinates on the bases of inspection details is generated and presented in the report.</p> <p>The Inspection covers all the social development programmes like Aanganwadi centers (ICDS), Mid day meal, Fair Price Shops, MGNREGA, CHC and PHC health centers, ongoing construction work of C.C. Roads, Aawas (houses), and toilets under the Swachh Bharat Mission etc.</p> <p>A device with pre installed inspection software will be given to the inspection officer after their randomization. Then an order of inspection by the higher authority will be sent to the inspection officer through e-mail or message.</p> <p>After receiving the order the concerned officer fills up the required information in the inspection report authenticates it by geo- tagging and then submits it to the ordering authority.</p> <p>Inspection of most of the ongoing projects and social development programmes is carried out in specified time avoiding delay.And because of completion of projects in desired time period the payment for the same has become speedy, easy and transparent.</p> <p>Government employee of any branch or department can randomly assigned for the inspection of any project or public service centre in the district. This type of randomized and surprise evaluation and inspection reduces a chance of false report submission.</p>
<b>Users</b>	: Government Offices, Allied Research organizations, Survey Agencies of the Government.The district administration and all other concerned departments can easily monitor the progress and actual picture of the situation which helps in taking timely and efficient decisions.
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• The quality and progress of the work done can be easily checked and verified.</li> <li>• Saves time and cost of inspection.</li> <li>• Quality and accuracy in the public work can be assured.</li> </ul>

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- Real time inspection reports based on geo-tagging helps the district authorities in making decisions regarding allocation of funds and resources.
  - Government employee of any branch or department can randomly assigned for the inspection of any project or public service centre in the district. This type of randomized and surprise evaluation and inspection reduces a chance of false report submission.

### Impact

- : • An authenticated Inspection report provides opportunity to make result and progress oriented decision making by the district authority.
- Duplication of the development work is avoided.
- The district administration and all other concerned departments can easily monitor the progress and actual picture of the situation which helps in taking timely and efficient decisions.

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<b>Problem ID:</b>	PID319
<b>Challenge Title</b>	: Post Disaster Drone Survey.
<b>Name of the Office</b>	: Collector Office, Amreli
<b>Challenge Description with context</b>	<p>: Aerial views are significantly helpful in large scale disaster zones and Drones as per their characteristics are agile, fast and robust, empowers the response teams with substantial help without costing excess on manned flight operations. As Drones are autonomously flown, they can access hard to reach areas and perform data gathering tasks that are impossible or unsafe for humans.</p> <p>As Drones are autonomously flown, they can access hard to reach areas and perform data gathering tasks that are impossible or unsafe for humans.</p> <p>They can provide needed aerial data in areas considered too hazardous for people on the ground or for manned aircraft operation, such as sites with nuclear radiation contamination or in close proximity to wildfires.</p> <p>The use of Drones nowadays is very good for cost effectiveness and it has no negative impact on environment.</p> <p>In advance of an emergency, drones are able to assist with risk assessment, mapping, and planning.</p>
<b>Users</b>	<p>: Government Offices, NDRF teams, Survey teams etc.</p> <p>For getting first hand images of the areas hit by disaster in the crucial first few hours.</p> <p>Rescue teams to find disaster affected victims faster.</p> <p>To deliver food items and medical supplies promptly.</p>
<b>Expected Outcomes Impact</b>	<p>: Efficient design of a drone for hazardous areas</p> <p>: In an emergency, drones are able to assist with risk assessment, mapping, and planning. Drones can even relay Wi-Fi, radio communications and cellular phone service. The real time acquisition of aerial imagery after a disaster will allow for the rapid deployment of personnel to assess damage and save lives.</p>



<b>Problem ID:</b>	PID320
<b>Challenge Title</b>	: Prayaas Portal: A One Stop solution for all Government Services.
<b>Name of the Office</b>	: Collector Office, Amreli
<b>Challenge Description with context</b>	<p>: Establishment of Prayaas Portal can become a more citizen friendly approach of the state government for providing G2C services to citizens. The Portal will be programmed with the regional language along with Hindi and English so that every citizen can easily access it without technical assistance.</p> <p>This enhances the accountability, transparency and responsiveness of district administration towards citizens needs.</p> <p>This is not only limited to availing government services. The citizens can even register themselves for any of the benefits available based on the listed services and their eligibility and can get update alerts through mobile phone connectivity.</p> <p>The use of Prayaas Portal reduces the costs of availing services, in other words citizens can spend their time effectively towards other activities, rather than standing in long queues or travel physically to multiple government departments for simple transactions or information required.</p> <p>Reduces excessive paperwork and documentation.</p> <p>The Prayaas Portal will reach out to a broader part of population to extend the reach of government service and make it faster and user friendly.</p>
<b>Users</b>	: Citizens of the district, government departments and allied survey organizations.
<b>Expected Outcomes</b>	<p>: This provides an electronic medium for information and services delivery to the population of the district.</p> <p>Reduces the wastage of time, money and resources of the citizens to access the information and avail services from the government.</p> <p>Efficient and effective service delivery of the listed services.</p> <p>This is a citizen centered approach so it saves the time of citizens as they don't have to provide same basic documents to the system every time they avail the benefit their documents will be already stored in the government database when they had initially registered themselves for the first time which will help in further authentication.</p>

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**Impact**

: One stop solution for multiple services. The Prayaas Portal will serve as a single window to multiple government departments and multiple types of transactions for e.g. Information about various govt. schemes, documents required for the same, online complaint and grievance redressal enquiries on status updates of various applications submitted.

Increases the access to all government services and creates a base for social inclusion.

An easily accessible Prayaas Portal can be used easily by all classes of society especially the deprived segments such as senior citizens, BPL households, the illiterate etc. This ensures great benefit in terms of offering a channel of interaction between the citizen and the government.

After registering themselves in the system on the bases of their age and personal information a list of government schemes will appear for which they are eligible.

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<b>Problem ID:</b>	PID321
<b>Challenge Title</b>	: Rotation of Employees in different branches of Government Offices to enhance their knowledge and efficiency.
<b>Name of the Office</b>	: Collector Office, Amreli
<b>Challenge Description with context</b>	<p>: Rotation of employees in a government organization is a well defined activity to explore the hidden potential of an employee. It is a scheduled exchange of employees in different branches within the same office.</p> <p>A mechanism must be developed in the office where some days of a month are selected and the employees are given a choice to reshuffle themselves to a branch of their choice and interest.</p> <p>Here, rotation of employees is not a synonym for their transfer.</p> <p>The employees get exposure to all the ongoing projects, nature of work of different branches, process of performing different tasks.</p> <p>During employee shortage it creates flexibility in assigning different job to the employees.</p> <p>It increases the employee knowledge, skills, and confidence in performing various tasks.</p> <p>It helps in increasing the employee's career growth and reduces boredom arising out of routine repetitive tasks.</p>
<b>Users</b>	: Government Offices, Industries, Corporate Houses and Companies.
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• Online platform need which contains departmental project information and employees information. It increases the employee knowledge, skills, and confidence in performing various tasks.</li><li>• It helps in increasing the employee's career growth and reduces boredom arising out of routine repetitive tasks.</li><li>• It maximizes the strengths of the employees by creating opportunities.</li><li>• Helps in identifying the right person for the right job.</li><li>• Highly motivated employees with challenging tasks can achieve individual and collective goals effectively.</li></ul>
<b>Impact</b>	: Helps in identifying the right person for the right job.

<b>Problem ID:</b>	PID322
<b>Challenge Title</b>	: Smart Street lighting solutions.
<b>Name of the Office</b>	: Collector Office, Amreli
<b>Challenge Description with context</b>	<p>: The street lights turn on automatically according to a surrounding light intensity. Control of the street light intensity is based on the movements of people or vehicles. In case of emergency like fire or accidents the lamps increase brightness to the maximum level thereby the safety of people is enhanced. The smart street lights will be programmed on the basis of motion sensors which will automatically adjust the light in the presence of humans and vehicles.</p> <p>This basically works on the principle of “Secured Circle Of Light” that is as soon as a sensor detects human presence, the neighboring lights brighten up to a pre – defined level. Whether it is a pedestrian, a cyclist or a driver, they will be surrounded in a safe, secured and warm circle of light. By adopting this aspect, we can prevent the excessive waste of electricity that occurs when the lights burn for nobody, without affecting the citizens’ comfort. The smart light pole will also have a panic button installed in it. So when pressed in emergency an immediate message will go to the emergency response centre and the person in need will be served with a prompt response.</p>
<b>Users</b>	: Government Offices street lighting , Industries street lighting, Corporate Houses street lighting ,Companies street lighting, citizens street lighting, Road side street lighting, Society street lighting
<b>Expected Outcomes</b>	<ul style="list-style-type: none"> <li>: • Smart street lights indicate available parking spots, e.g. by changing color, flashing or by providing other visual signals.</li> <li>• In case of a road accident at night, the smart lights brighten the scene for helpers and provide visual clues to alert other drivers and pedestrians to the danger, e.g. by flashing a few hundred meters before the crash site.</li> <li>• The real time data regarding the lamp failure, power outage, power factor alert etc. is immediately available to the light operators in the monitoring and control room which helps them to provide us with a consistent power supply without any obstacle.</li> </ul>
<b>Impact</b>	<ul style="list-style-type: none"> <li>: • The utility providers can use connected street lights to reduce power consumption by remotely adjusting usage.</li> <li>• Connected street lights can also house traffic cameras and sensors that can provide data to a traffic management system.</li> <li>• The programming of lighting can be planned on the bases of calendar and upcoming events and festivals.</li> </ul>

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- By setting the right light levels depending on the time and street specifics, the cities can beautifully balance between energy usage and citizen comfort.
  - Automatic failure alerts and notifications helps in achieving swifter response to repair or replacement of a failed lamp, thereby avoiding dark streets for a longer period.
  - Develops an wireless mesh network which provides the additional benefits of:
    - Digital signage
    - Traffic control
    - Weather sensors
    - EV charging
    - Smart parking
  - Security cameras

### Collector Office, Bharuch

- Problem ID:** PID323
- Challenge Title :** Handheld device for surveying land of district
- Name of the Office :** Collector Office, Bharuch
- Challenge Description with context :** Dlr Office, Bharuch is using DGPS(Differential GPS) system for surveying the land of district. The device is giving accurate measures, but because of its bigger size and weight transportation vehicle and man power is also required. In some locations even vehicles is not able to reach, so requires human efforts to carry it to site. Department wants an alternate solution which gives similar accuracy while having smaller form factor.
- Students need to design device using proper hardware and software which will give accurate GPS coordinates and helps to do different activities related to surveying.
- Users :** Surveyor, Superintendent Land Records cum consolidation officer (SLR)
- Expected Outcomes :** A Handheld device having appropriate hardware and software to do surveying.
- Impact :** Time and cost saving, reduced man power.
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- Problem ID:** PID324
- Challenge Title :** Online appointment booking system for getting government documents
- Name of the Office :** Collector Office, Bharuch
- Challenge Description with context :** The collector office has Jan Seva Kendra which provides facility to citizens for getting new government authorized documents like category certificates, Non creamy layer certificates, Ration card, new Adhaar card issuance or updating the existing. Every working day many applicants want to apply for this certificates, but at the end of the day they may are not satisfied from the service given because time management is not possible without some smart digital solution.
- Students need to design a secure digital solution for online slot booking system for issuance of different government authorized documents at Jan Seva Kendra.
- Users :** Admin, General citizen.
- Expected Outcomes :** A well designed secure digital solution to be developed for issuance of documents to citizens at Jan Seva Kendra.
- Impact :** Jan Seva Kendra Services can be more convenient and satisfactory for citizens. As well as data can be stored digitally also.

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<b>Problem ID:</b>	PID325
<b>Challenge Title</b>	: Paperless Office Administration System
<b>Name of the Office</b>	: Collector Office, Bharuch
<b>Challenge Description with context</b>	<p>: In the collector office meetings are being held for regular basis on different subjects, Which involves officers of different departments. These meetings requires officers to submit relevant data compiled in their offices duly signed by officers and need to be presented and submitted to collector or meeting's chair person in hardcopy. In today's information technology era this documents can be submitted in electronic form while taking care of security and authenticity.</p> <p>Students need to design a secure digital solution which can make paperless office administration system. Officers can submit data to the chair person in electronic form which maintaining integrity, secrecy and authenticity. The system should also be helpful for officer to present data in meeting.</p>
<b>Users</b>	: Chair Person, Various departmental officers.
<b>Expected Outcomes</b>	: Data analysis can be done before meeting only rather than during a meeting or after meeting. Effective conclusion can be made in less time due to time saving for data compilation.
<b>Impact</b>	: <ul style="list-style-type: none"><li>• Time saving</li><li>• Paperless system so record keeping is easy</li><li>• Less man power required</li><li>• Data is available anywhere any time.</li></ul>

### Collector Office, Bhavnagar

<b>Problem ID:</b>	PID326
<b>Challenge Title</b>	: Civic Services
<b>Name of the Office</b>	: Collector Office, Bhavnagar
<b>Challenge Description with context</b>	: Various civic services such as Income certificate, Non-creamy layer certificate, EWS certificate etc are given by authority based on what information has produced by applicant. Many times this information might be wrong. Authority could not determine applicants financial capacity in time bound manner. Should develop Artificial Intelligence based system , which can determine output by questionnaires. Such as Electricity bill amount, CIBIL score, Land holding, Education qualification, Profession etc.,,,
<b>Users</b>	: Average 200000 in each district.
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• Speedy Work</li> <li>• Authenticity</li> <li>• Public Database</li> </ul>
<b>Impact</b>	: <ul style="list-style-type: none"> <li>• Good governance</li> <li>• Integrity</li> </ul>

<b>Problem ID:</b>	PID327
<b>Challenge Title</b>	: Desk Management
<b>Name of the Office</b>	: Collector Office, Bhavnagar
<b>Challenge Description with context</b>	: Government offices have full of work. Public servant are confused what to do, which is priority, lots of application from citizen, lots of instruction from superior, most of files are labeled top priority. Artificial Intelligence based integrated system can be developed in which system will make priority list of task. Each task will be completed in certain time.
<b>Users</b>	: Average 5000 employee in each district
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• Develop efficiency</li> <li>• Controlling and monitoring</li> <li>• Daily target and daily work</li> <li>• Identify class of work</li> </ul>
<b>Impact</b>	: Good governance corporate culture



<b>Problem ID:</b>	PID328
<b>Challenge Title</b>	: Detecting drowsy driver
<b>Name of the Office</b>	: Collector Office, Bhavnagar
<b>Challenge Description with context</b>	: One of major cause of fatal accident is driver falling asleep while driving a vehicle. It has been observed that before falling asleep driver becomes drowsy and drives vehicle in particular type of driving pattern.
<b>Users</b>	: Any Citizen
<b>Expected Outcomes</b>	: There are tools to detect eye movement and definite type of driving patterns. Using combination of such technologies Drowsy driver system needs to be developed.
<b>Impact</b>	: Life of citizens become safe by due to this cause.

<b>Problem ID:</b>	PID329
<b>Challenge Title</b>	: Development of Low cost proximity sensors
<b>Name of the Office</b>	: Collector Office, Bhavnagar
<b>Challenge Description with context</b>	: In RTO pole sensors r used on Automated Driving Test Track-ADTT. Tests are conducted on ADTT. Pole sensors are positioned on extremes of track. Applicant of driving test needs drive vehicle in the track. If vehicle collides with any of the pole, it is detected by the sensors within the pole and signal is sent to master controller. one impact equal to one foul.  These sensors r very fragile and costlier (@ rs 6000/piece).Quite often vehicles break the sensors, so, their replacement cost is very high. There are @ 50 to 80 sensors in one track and total 5 track in one locations. so there is very high capital and operational cost of ADTT. Neet is to develop low cost and effective efficient surdier pole sensors.
<b>Users</b>	: Saves government money, time, man-power etc
<b>Expected Outcomes</b>	: Develop low cost sensors
<b>Impact</b>	: Optimize system

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<b>Problem ID:</b>	PID330
<b>Challenge Title</b>	: I-khedut Crop Insurance Tracking System
<b>Name of the Office</b>	: Collector Office, Bhavnagar
<b>Challenge Description with context</b>	: Insured farmers need to go from pillar to post for knowing the status of crop insurance applications and claims Farmers will be able to track the status about their crop insurance claims.
<b>Users</b>	: Farmers at large
<b>Expected Outcomes</b>	: At present farmers are being registered for PMBY on I-Khedut portal either by farmers themselves or through the crop loan financing bank. In claiming crop insurance farmer need to visit personally insurance office or at agriculture dept and still there are less chances of getting a reliable information on first visit due most of data remains either with inaccessible s/w or the cpc of the insurance company at distant places. A system if developed, to update the status of insur claims online in I-khedut portal by the insur compy and farmer be given access to the I-khedut portal for the purpose of verifying the status of his own claim/application it will lead large satisfaction farming community at large.
<b>Impact</b>	: Farmers will be more open to enrol for the crop insurance scheme leading to their own financial security. It will ultimately lead a great satisfaction at the end of farmer and will reduce risk of financing institute.

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<b>Problem ID:</b>	PID331
<b>Challenge Title</b>	: AI based Crop Health Advice System
<b>Name of the Office</b>	: Collector Office, Bhavnagar
<b>Challenge Description with context</b>	: Even after thorough efforts of various extension channels farmers are still not fully trained to identify various pest, diseases and physiological disorder and stress in crops. They are largely dependent on agro input dealers for advice on crop health and better farm production who too have different interests than the farmer.  On farm real time advice for best quality production of farm products will be available to the farmers without influence of any vested interest of any intermediaries.
<b>Users</b>	: Farmers at large.
<b>Expected Outcomes</b>	: A mobile app with AI like that of a google lenses which can identify and analyse the image as shot by the camera on the field and give voice guidance in vernacular language about the problem and its available solutions in the proximity as per the recommendations of state agriculture university will make the farmer self dependent for better and personalized best agriculture practices advice.
<b>Impact</b>	: It will increase the quality and quantity of farm produces, curtail vested interests from the channel from taking undue advantages and will increase the financial welfare of the farmers at large.

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<b>Problem ID:</b>	PID332
<b>Challenge Title</b>	: RTO Application Monitoring System
<b>Name of the Office</b>	: Collector Office, Bhavnagar
<b>Challenge Description with context</b>	: In RTO various types of applications are submitted. Each application submitted at different counter. Applicant should get computerized acknowledgement with time, place, person accepting application and application description. Also there is need to digitally scan and maintain inventory of application. Order application by date and time needs to be maintained.  Proper organization and monitoring of applications coming to RTO Office. <ul style="list-style-type: none"><li>• Applicant gets acknowledgement</li><li>• Necessary checklist is printed</li><li>• Daywise user-wise data is made available.</li><li>• Implementation of RCPS Act is made possible</li></ul>
<b>Users</b>	: Motoring Public
<b>Expected Outcomes</b>	: Precise Monitoring of Application Disposal
<b>Impact</b>	: Zero application Pendency.

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<b>Problem ID:</b>	PID322
<b>Challenge Title</b>	: Forecast and alarm of Flood situation
<b>Name of the Office</b>	: Collector Office, Bhavnagar
<b>Challenge Description with context</b>	: During Raining season villagers are not aware of flood situations will cause of human / house / goods / roads / trees etc damages. Based on past data and current geographic / local situations, flood forecast can be predicted and alarm to villagers to shift safe location in time.  During the raining season – heavy rainfall, dam water level flood situations shall arise and damages house and goods.  Flood situation can be forecast for a village based on data of geography, past rainfall, past flood, nearby water body data etc.  Forecast information can be intimate to villagers, Sarpanch, Talati, Taluka/District officials through SMS alert, Email etc.  Solution can be a MobileApp, Website with Gujarati / English language support with SMS integration
<b>Users</b>	: Every Citizen of nation as well as Government Officials administrators in various sectors whosoever concern with above problem statement likes  Sarpanch, Talati, Taluka / District officials through SMS alert, Email etc.
<b>Expected Outcomes</b>	: Flood situation forecast alert to villagers, Government Officials administrators in various sectors whosoever concern with above problem statement likes Sarpanch, Talati, Taluka / District officials through SMS alert, Email etc.  Solution can be a MobileApp,  Website with Gujarati / English language support with SMS integration
<b>Impact</b>	: By way of solutions of this problem statement, it will be beneficiary and very much effective in the minimization of the losses due to Flood like- citizen of nation / house / goods / roads / trees etc.

**Problem ID:** PID334

**Challenge Title :** High beam detection using mobile device

**Name of the Office :** Collector Office, Bhavnagar

**Challenge Description with context :** During night driving glare from headlights and traffic lights can impair ability to drive vehicles at night. It can also momentarily blind the driver of oncoming vehicle. Major reason behind this is High intensity lights. No such handy and easy tools are available to measure intensity of such lights.

Most of the android devices have brightness sensors. Which measures the ambient light and accordingly adjusts the brightness of device screen. Using same capability if small utility can be developed to measure intensity of Headlights, same can be used by Enforcement officer during enforcement drive and challan such vehicles

**Users :** Enforcement Officer

**Expected Outcomes :** Reduction in serious accidents

**Impact :** Safe Roads

**Problem ID:** PID335

**Challenge Title :** Large Discrepancy in Cultivated area under various crops during a season.

**Name of the Office :** Collector Office, Bhavnagar

**Challenge Description with context :** The cultivated area under various crops during a particular season sourced from various channels have large discrepancy.

Acreage under various crops during a particular season is of vital importance for formation of more accurate Food Security policies, Financial policies affecting inflation and Exim policies in advance. At present three sources of cultivated area under various crops are Namuna no. 12 of revenue records maintained by patwaris, sowing report by eye estimation by agriculture department and crop insurance coverage by financing banks. Rarely do they match each other because of various flaws in each of the reporting channels

**Users :** Farmers as well as patwaris.

**Expected Outcomes :** A mobile app can be developed whereby a farmer/volunteer can upload an image of a field from the spot itself in the month of August for Kharif season and December for Rabi Season when the sown crop is at an easily identifiable condition from the photo. The GPS coordinates of the image location should automatically fetched by the app. The image should be directed to the patwaris along with

necessary data for approval/disapproval so as to directly update in Namuna 12 of revenue record. Crop identification from the image as well as location identification from the co-ordinates(may be with acceptable range of error) will lead to more accurate data of crop cultivation during a particular season.

- Impact** :
1. Farmer will be able to report his cultivated crop in his land from his field itself.
  2. Drudgery of patwari for gathering and updating information in revenue record will decrease and accuracy of the record will increase.
  3. The patwari can be used by the farmer as a Data once approved by certificate of cultivation of a particular crop for various official purpose such as MSP procurement, schematic subsidy application etc.
  4. More accurate data of cultivated area mostly self declared by the alongwith acceptable proof in advance will give a more reliable farmer base for formation and implementation of various government policies.
  5. Unexpected gult or short supply of various farms produces at last minute will be avoided and large variations in market price can be tackeded with larger efficiency to protect interest of domestic consumers as well as producers.
  6. Stability in market price will lead to larger satisfaction of farming community, consumers and will increase social and financial welfare of society as a whole.

- Problem ID:** PID336
- Challenge Title** : Poor internet connectivity for Digital Seva Setu Programme
- Name of the Office** : Collector Office, Bhavnagar
- Challenge Description with context** : In DIGITAL SEVA SETU numbers of person are taking parts to solve their issue but due to internet connectivity issue people are not getting their solution at time so the purpose of DIGITAL SEVA SETU not completed
- Optimization in System
- Users** : Public (all citizens)
- Expected Outcomes** : People will encourage him/her self to modify/edit required documents by this program as it happens without wasting human hours.
- Impact** : Digitization of India is getting more and more hence by arranging this program people will trust more on digital india

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<b>Problem ID:</b>	PID337
<b>Challenge Title</b>	: Providing Suitable Govt.Schemes Details though Chatbot / MobileApp / Website
<b>Name of the Office</b>	: Collector Office, Bhavnagar
<b>Challenge Description with context</b>	<p>: Government has many citizen centric benefit schemes. Many citizens are now fully aware of all schemes and also not knowing which are eligible. Such stack holders are mainly illiterate / village based / poor public.</p> <p>Challenge is to provide scheme details to citizen by providing digital solution through mobile app and chatbot.</p> <p>Digital solution may ask questions to citizen like – age, gender, income, marital status (widow), caste, educational qualification, Village/ taluka /district etc.</p> <p>Based on citizen inputs, suitable/eligible scheme are filtered and provides such scheme details.</p> <p>Scheme detail includes - Benefit given, how to apply, documents needed, which office (office address ,contact no,email etc) to contact etc.</p> <p>Solution can be a MobileApp, Chatbot, Website with Gujarati / English language support through Text and Voice input/output.</p>
<b>Users</b>	: Every Citizen, Govt. Officials
<b>Expected Outcomes</b>	: Suitable scheme selection with complete scheme details based on user input.
<b>Impact</b>	: Maximum reach to public, maximizing schemes usage



<b>Problem ID:</b>	PID338
<b>Challenge Title</b>	: Traditional Red Tapism
<b>Name of the Office</b>	: Collector Office, Bhavnagar
<b>Challenge Description with context</b>	: A single application is passes through many branches, offices. It is very difficult for higher authority to know current status of that application and what remarks has given by various offices during the journey of the application and it is time consuming process. Even applicant is dont know where it is with out going concern offices.
<b>Users</b>	: Average 200000 in each district
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• Speedy work</li> <li>• Transparency</li> <li>• controlled monitoring</li> <li>• Sustainable</li> </ul>
<b>Impact</b>	: Good governance

<b>Problem ID:</b>	PID339
<b>Challenge Title</b>	: Unbiased survey of loss assessment due to any natural calamity
<b>Name of the Office</b>	: Collector Office, Bhavnagar
<b>Challenge Description with context</b>	: In recent times there are frequent instances requiring loss assessment in fix properties or field crops for official use by the state government for various purpose  A large amount of human and financial resources are used for purpose by the state administration. The employees involved in the assessment also undergo mental harassment and physical risks at the time of such loss assessments. Even after the completion of the survey the allegations of improper survey and loss assessment rise form various stake holders of society.  Loss assessment surveys of housing properties/Live stock/Field crops has been done almost every year by the state administration since 2015 in more than one district of Gujarat every year . a loss assessment exercise along with acceptable evidences will be available culling out all the vested interests from the process and increasing the accuracy of assessment and reliability of the data.`
<b>Users</b>	: employees/officers.
<b>Expected Outcomes</b>	: A mobile app for survey and loss assessment for various purpose where images best describing the magnitude of the loss can be uploaded from the spot of the survey for record purpose. GPS co-ordinates of the spot to be automatically fetched by the app.

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Additional details pertaining to the spot of the survey can be fed manually in the fields provided. After the completion of the exercise the data can be directly printed in prescribed format if required for record purpose.

**Impact**

- : The following benefits are expected from the project:
1. Survey and loss assessment staff will not be compelled to travel along with filled up forms and blank stationary on foot while on duty.
  2. Work will not get affected in the absence of prescribed stationary.
  3. No hand written work will prevent any unauthorized alterations in the data and also will give a more asthetic look to the office record.
  4. Required number of copies can be directly printed from the soft copy so no need of photocopies.
  5. Record can be retained in compact digital format instead of bunches of degradable assessment reports on paper.
  6. Easier to share for various official purpose such as audit, RTI etc. as and when the need arise.
  7. Undue drain of financial resources of government can be prevented.
  8. Saving of paper and stationery will not only decrease administrative expenses but also help protect the environment.

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## **Collector Office, Chhotaudepur**

<b>Problem ID:</b>	PID340
<b>Challenge Title</b>	: Absence of digitalisation of Office Help desk.
<b>Name of the Office</b>	: Collector Office, Chhotaudepur
<b>Challenge Description with context</b>	: In Most of offices under this department Help desk counter is not available. So visitors have to suffer. Also, due to less man power sometime even if help desk is available, it remains unattended Creating Digital Help Desk either through <ul style="list-style-type: none"><li>• KIOSK</li><li>• Website</li><li>• Mobile application</li></ul>
<b>Users</b>	: Visitors/ Citizens/ Office staff
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• This will help visitors in saving their time and will get proper guidance for their work.</li><li>• Reduce time of office staff which would increase work efficiency.</li></ul>
<b>Impact</b>	: This will helpful to citizen and office staff both. Better time management can be acheived.

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<b>Problem ID:</b>	PID341
<b>Challenge Title</b>	: To provide training to the staff related to Online Work
<b>Name of the Office</b>	: Collector Office, Chhotaudepur
<b>Challenge Description with context</b>	: The online portals of various Government Organizations are updated on daily basis. The staff of this office is unable to cope up with this updating as they do not have the basic skills of computer operation. They are not aware of the latest versions of various online portals. <ul style="list-style-type: none"><li>• Provide online training to the all staff members regarding the regular updates of their online portals.</li><li>• Develop training tab in each portal which can guide the staff about the new updates &amp; how to work with the new features of the portal.</li><li>• Communicate through any means regarding the updates in the portal</li></ul>
<b>Users</b>	: Employees / Staff
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• Redesigning the online portals which shall assist the staff to work.</li><li>• Mail / SMS to staff when new updates available in portal with sort of description</li></ul>
<b>Impact</b>	: Staff shall be regularly updated with new features of web portals which would improve the efficiency of their work

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<b>Problem ID:</b>	PID342
<b>Challenge Title</b>	: Transfer and Tracking module in RFMS of Revenue Department
<b>Name of the Office</b>	: Collector Office, Chhotaudepur
<b>Challenge Description with context</b>	: The work of Revenue department is connected with other state departments. The RFMS portal does not have options to transfer the files to other department. So the progress work of one department is not able to tracked by other department.  Integration of Transfer and Tracking module in RFMS portal which can allow transfer of revenue department files from one to other departments.
<b>Users</b>	: Employees / Staff / other department
<b>Expected Outcomes</b>	: Addition of new module in web portal regarding transfer of revenue department files to other departments. & also provide track of these files in portal..
<b>Impact</b>	: Exact work progress in other departments can be tracked and work can be completed within time limit.

## Collector Office, Gandhinagar

- Problem ID:** PID343
- Challenge Title :** Access control system of individual cells in grid(table) format
- Name of the Office :** Collector Office, Gandhinagar
- Challenge Description with context :** Collector Office, Gandhinagar district is collecting majority of their data in grid format (table like excel) from their various district level centers. In this scenario, they are facing problems with access control of individual cells.
- They wanted a software in which they can assign specific cells of tables to specific users and these cells in tables must only be filled by assigned users. This software must be data encrypted end to end (i.e. Only users should be able to view data).
- This software should be secure and easy to use.
- Collector office, Gandhinagar is using google drive which is proprietary software of Google. In this google is able to read all the data stored in drive. Also data is stored in google server which is out of control of the office.
- This problem can be solved with a secured data collection software in which data is stored in office's (government) Server. In this scenario, google can read data also it can use this data according to company policy.
- Users :** Collector office, Gandhinagar and their various district centers. It can be used for various operations handled by Collector office, Gandhinagar like mid day meal, land acquisition, elections, revenue etc.
- Expected Outcomes :** As data is stored in government's own server it is secure. Also government has source code of this software so they can modify the software according to their requirements.
- Also users can assign cells of the tables according to their requirements which can reduce confusions among users which cells is to be filled by them. Also as data is stored in database, various viewing forms can be designed. Also this data can be used for statistical analysis.
- Impact :** Major concern in sharing the table to multiple use is that one user can edit/delete other users filled data. Through access control of individual cells data can only be filled or edited/deleted by assigned users. Also as software is custom built, its source code is with us and it can be modified as per requirement of users.

<b>Problem ID:</b>	PID344
<b>Challenge Title</b>	: Secure Data Collection Software
<b>Name of the Office</b>	: Collector Office, Gandhinagar
<b>Challenge Description with context</b>	: Collector Office, Gandhinagar district is collecting data using google drive from their various district level centers. In this scenario, they are facing problems with data security and data formats.  They wanted a software in which they can design various forms and these forms must only be filled by assigned users. This software must be data encrypted end to end (i.e. Only users should be able to view data).  This software should be secure and easy to use.
<b>Users</b>	: Collector office, Gandhinagar and their various district centers. It can be used for various operations handled by Collector office, Gandhinagar like mid day meal, land acquisition, elections, revenue etc.
<b>Expected Outcomes</b>	: As data is stored in government's own server it is secure. Also government has source code of this software so they can modify the software according to their requirements.  Also users can design their own forms according to their requirements which can reduce confusions.  Also as data is stored in database, various viewing forms can be designed. Also this data can be used for statistical analysis.
<b>Impact</b>	: As data security and data format is improves, it helps Collector office, Gandhinagar to work more efficiently improving overall quality, time management. Data security is big issue in today's world, so every office today wants to store their data in their own servers with custom build software. Also as software is custom built, its source code is with us and it can be modified as per requirement of users. Data interpretation can easily be done through various statistical analysis.

**Collector Office, Godhra**

<b>Problem ID:</b>	PID345
<b>Challenge Title</b>	: Self-Employment Awareness System
<b>Name of the Office</b>	: Collector Office, Godhra
<b>Challenge Description with context</b>	<p>: Students are not properly aware about self employment so less use of government scheme regarding student start up and innovation. less number of student aware so less no of employment possible.</p> <p>According to current prospect self employment must need due to less no.of entrepreneur employment not possible due to this life style also better.</p> <p>More awareness possible through in diploma,degree,and any technical school by the visiting entrepreneur visit,or any self employment place visit.more benefit can be share through it</p> <p>More number of scheme is requires and more awareness through social media.from more entrepreneur this leads more self employment possible,that will helps lot to build the nation.</p> <p>Mobile app and seminar,visit are the source for the outcome.</p>
<b>Users</b>	<p>: General public/student of district of any state.</p> <p>Maximum number of student from start age,build their entrepreneurship in their mind from childhood.</p> <p>More number of technical school requirement need .</p>
<b>Expected Outcomes</b>	<p>: More student possible to being entrepreneur and maximum person can get their wages from their self employment business. Maximum entrepreneur more awareness possible through in diploma,degree,and any technical school by the visiting entrepreneur visit,or any self employment place visit.more benefit can be share through it</p> <p>More number of scheme is requires and more awareness through social media.</p> <p>From more entrepreneur this leads more self employment possible,that will helps lot to build the nation.</p>
<b>Impact</b>	<p>: More awareness leads to society and needy person.maximum number of student from start age,build their entrepreneurship in their mind from childhood.</p> <p>More number of technical school requirement need .</p> <p>According to current prospect, self employment is prime need due to less no.of entrepreneur employment.</p>



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## Collector Office, Jamnagar

- Problem ID:** PID346
- Challenge Title :** Real Time Disaster Alert System
- Name of the Office :** Collector Office, Jamnagar
- Challenge Description with context :** For coastal districts of Gujarat a mobile application is required which resolves issues related to Cyclone and other dangers warning. The application must be easily accessible through mobile phones with user-friendly interface and it must provide warning and alerts during coastal disasters such as cyclones, high tidal waves, Tsunami, etc. so that the citizens can be evacuated to safe places.
- The application must also provide information regarding safe places, shelters and control room contact information with locations. The application must be linked to the mobile network companies so that the users can receive warning when they are in the vicinity of the company tower. The application must be spread widely through links sent through SMS and other mediums.
- It is difficult for the authorities to reach the public in timely manner during emergency situations such as cyclones, tsunamis, high tidal waves, etc. in the coastal areas. In such situations it is highly crucial to alert the residents of these regions so that they can be evacuated in time and loss of lives and property can be avoided.
- Users :** This system can be used by the authorities to send alerts to the public directly through app or through SMS which can be sent to them through the nearby mobile networks operating in the region. The users can also be provided with a mobile application through which they can be made aware regarding critical situations.
- Expected Outcomes :** A complete system that is useful during emergency and disastrous situations near the coastal areas. The system must work in real-time and provide information immediately to all the users when there is a disastrous situation especially near the coastal areas. The system must be location-based which provides the real-time location of people in distress or stranded in dangerous regions during the calamity so that the authorities can undertake immediate rescue operations. The download link of the application must be spread widely through SMS and other mediums.
- Impact :** This app/system will be extremely useful to the authorities in spreading awareness and sending alerts to the people in distress or stranded in dangerous areas during a natural calamity in the coastal regions. By using this system it will be possible to reduce or prevent loss of human lives when there is a disaster in the coastal regions.

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### Collector Office, Mahisagar

<b>Problem ID:</b>	PID347
<b>Challenge Title</b>	: Employment registration awareness
<b>Name of the Office</b>	: Collector Office, Mahisagar
<b>Challenge Description with context</b>	: College and university require to provide their placement data of passout to employment office for record At university exit employment registration possible that data is more precise According to employment office require vacancies student more aware about their registration
<b>Users</b>	: General public(student of district)
<b>Expected Outcomes</b>	: Various web portal, employment office, newspaper
<b>Impact</b>	: More precise and impactful analysis possible

### Collector Office, Morbi

<b>Problem ID:</b>	PID348
<b>Challenge Title</b>	: ANY ROR/Printing facility(PAID) anyror.gujarat.gov.in
<b>Name of the Office</b>	: Collector Office, Morbi
<b>Challenge Description with context</b>	: Currently anyror providing facility to view land records online. But if someone required print then he/she needs to visit JANSEVA kendra than after paying fees, he/she will get hard copy.  If anyror provide facility to print land records information with paying fees digitally than we can provide digitally signed copy
<b>Users</b>	: Public
<b>Expected Outcomes</b>	: 1. Reduce travelling time 2. Increase revenue 3. Anytime/Anywhere facility
<b>Impact</b>	: No. of people visiting and staying in lines will be decreased

<b>Problem ID:</b>	PID349
<b>Challenge Title</b>	: Dg/payment for services common service portal.
<b>Name of the Office</b>	: Collector Office, Morbi
<b>Challenge Description with context</b>	: Currently in digital Gujarat common service portal, applicant need to pay services fees and it can be paid through debit/credit/IB but no facility of BHIM app payment.  If service fees could be paid through BHIM, then that would be great for students and public
<b>Users</b>	: Public, students, businessman
<b>Expected Outcomes</b>	: 1. Service delivery volume will be increased. 2. No. of digital transaction will be increased.
<b>Impact</b>	: Easy procedure, so no. of service volume will be increased.

<b>Problem ID:</b>	PID350
<b>Challenge Title</b>	: Digital Gujarat Common Service Portal(CSP) document help
<b>Name of the Office</b>	: Collector Office, Morbi
<b>Challenge Description with context</b>	: CSP is a single window service delivery system for basic services like certificates, ration card, permissions etc. In the current system there is no documents guiding system. The proposed system can provide better output and numbers of services could be increased.  Service wise required documents guide needs to provide to the users.
<b>Users</b>	: Public, students, businessman , etc.
<b>Expected Outcomes</b>	: <ol style="list-style-type: none"><li>1. No of service will be delivered more</li><li>2. Rejection ration will be decreased</li><li>3. Revenue will be increased</li><li>4. No. of transaction of digital payment will be increased.</li></ol>
<b>Impact</b>	: It will be more beneficial. Applicant do not required to visit offices. Full process will be executed without papers.
<b>Problem ID:</b>	PID351
<b>Challenge Title</b>	: IORA- farmer varification in the service delivery module
<b>Name of the Office</b>	: Collector Office, Morbi
<b>Challenge Description with context</b>	: In the IORA application process module, there is a facility to verify land details by using WEB-BHULEKHA but there is no digital facility to verify farmer. Its time consuming procedure and which delays the delivery of services.  In the IORA process module, there must be a facility to verify the farmer information using WEB-BHULEKHA software.
<b>Users</b>	: Mamlatdar
<b>Expected Outcomes</b>	: <ol style="list-style-type: none"><li>1. Speedy service delivery</li><li>2. Less efforts to verify</li><li>3. Proper and exact verification by using system</li></ol>
<b>Impact</b>	: Service delivery time will be reduced. Clarity/safety of work will be improved.

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<b>Problem ID:</b>	PID352
<b>Challenge Title</b>	: Modification/Updation of Data on Collector portal (CP)
<b>Name of the Office</b>	: Collector Office, Morbi
<b>Challenge Description with context</b>	: Currently CP is live for monthly/quarterly/half yearly figures, deadline to submit data is 9th of every month. Problem is even if we have submitted data before 9th. We are not able to edit the data.  Edit/modify data facility needs to be provided till the 9th of every month even after submitting data.
<b>Users</b>	: Revenue offices
<b>Expected Outcomes</b>	: 1. Clarify in works 2. Proper and exact output
<b>Impact</b>	: Clarity and effect of the work will be increased. Accuracy of the data will be increased.

### Collector Office, Panchmahal

- Problem ID:** PID353
- Challenge Title :** Green Plantation Monitoring System
- Name of the Office :** Collector Office, Panchmahal
- Challenge Description with context :** Traditionally on independence or any special day or to celebrate state event, plantation is done and also on any chief guest arrival, plantation is done on road corridor but after plantation no buddy interested to monitor and watering the plant and cutting grass which makes this worthless.
- Problem can be solved through proper monitoring system and well planned watering arrangement, any parts of green plantation are growing extra that will require to cut down through proper monitoring system
- Proper team can provide effective way to watered, fertilized them and cutting it. More green are can be provide that leads more oxygen. Monitoring system leads effective rate of growing plantation and maintaining also possible in smart way
- Users :** General public of district
- Society, government office and the forest region, private property all the place well monitoring system are required to sustain long life though proper green plantation.
- Expected Outcomes :** Targetted monitoring system will help to maintain the quantity of living plant possible from plantation day. Proper team can provide effective way to watered, fertilized them and cutting it. more green are can be provide that leads more oxygen.
- Monitoring system leads effective rate of growing plantation and maintaining also possible in smart way maximum number of green plant live that help us to live smart, healthy and prosperous life.
- Impact :** More green area leads more oxygen. Monitoring system leads effective rate of growing plantation and maintaining also possible in smart way maximum number of green plant live that help us to live smart, healthy and prosperous life. that will more smart way to maintain carbon rate for upcoming future, in future day by day temperature are raising and that affect lots to us so need green plantation required.

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<b>Problem ID:</b>	PID354
<b>Challenge Title</b>	: Single window system for migrated employees/peoples
<b>Name of the Office</b>	: Collector Office, Panchmahal
<b>Challenge Description with context</b>	<p>: Recent condition the migration frequently possible in states so the people stuck in that case for documentation work like their needy document,house ,i card and more. So for that single window system is require for the migrated people and employee. All are aware for that and maintain online basis so that no hurdle is going and maintain properly.</p> <p>This problem can be solved through the one central desk and remaining through the nearest office in any city,from that all are problem can be solved.for that one application is required and that document verified through their adhar details and specific document verify through nearest office. All are aware for that and maintain online basis so that no hurdle is going and maintain properly. In that single window system are more useful for the quick and easy access for it.</p>
<b>Users</b>	: All people who's migration frequently possible in states so the people stuck in that case for documentation work like their needy document,house ,i card and more. So for that single window system is require for the migrated people and employee.
<b>Expected Outcomes</b>	: This problem can be solved through the one central desk and remaining through the nearest office in any city,from that all are problem can be solved.for that one application is required and that document verified through their adhar details and specific document verify through nearest office. All are aware for that and maintain online basis so that no hurdle is going and maintain properly. In that single window system are more useful for the quick and easy access for it.
<b>Impact</b>	: Through this maximum problem can be solved through the one central desk and remaining through the nearest office in any city,from that all are problem can be solved.for that one application is required and that document verified through their adhar details and specific document verify through nearest office.

**Collector Office, Patan**

<b>Problem ID:</b>	PID355
<b>Challenge Title</b>	: Establishing effective and speedy communication during calamity
<b>Name of the Office</b>	: Collector Office, Patan
<b>Challenge Description with context</b>	<p>: One of the most important, and oftentimes overlooked, parts of any highly efficient disaster response is effective information exchange between information sources, emergency managers and those impacted by the disaster or emergency event.</p> <p>Communication during and immediately after a disaster situation is an important. component of response and recovery, in that it connects affected people, families, and communities with first responders, support systems, and other family. members.</p> <p>An important component of an emergency management program is the communications plan. ... Emergency managers aim to ensure an organization will be able to respond promptly, accurately and confidently during any emergency and continue this level of response in the hours and days that follow an incident.</p> <p>Communication among the responding agencies is crucial because managing any disaster or emergency event is complicated and multi-faceted duty. ... It leads to working on the emergencies without defined mission thus make people act with no mission . Self-dispatching also gives the protocol not to be followed.</p>
<b>Users</b>	: Children, youth, volunteers, affected, management, authority, volunteers etc
<b>Expected Outcomes</b>	<p>: Disaster management efforts aim to reduce or avoid the potential losses from hazards, assure prompt and appropriate assistance to the victims of a disaster, and achieve a rapid and effective recovery. It is crucial that hospitals remain safe and functional during and after disasters</p> <p>Reduces Danger – Knowing the steps to take during a disaster – whether flooding, tornadoes, earthquakes or another crisis – can greatly reduce the danger and distress your family may face. to protect yourself and your loved ones.</p>
<b>Impact</b>	<p>: Keep a Corded Phone at Home. ,Have Car Chargers Handy. Make an Emergency Contact List.,Create an Emergency Plan. Text and Use Social Media. ,Forward Your Home Phone. ,Conserve Your Phone's Battery Life.one of the above means can be effectively implemented by making frame work of communication</p>



- Problem ID:** PID356
- Challenge Title :** Mechanism to deliver early assistance to victims during disaster
- Name of the Office :** Collector Office, Patan
- Challenge Description with context :** Disaster response is the second phase of the disaster management cycle. It consists of a number of elements, for example; warning/evacuation, search and rescue, providing immediate assistance, assessing damage, continuing assistance and the immediate restoration or construction of infrastructure (i.e. provisional storm drains or diversion dams).The aim of emergency response is to provide immediate assistance to maintain life, improve health and support the morale of the affected population. Such assistance may range from providing specific but limited aid, such as assisting refugees with transport, temporary shelter, and food, to establishing semi-permanent settlement in camps and other locations. It also may involve initial repairs to damaged or diversion to infrastructure.
- The focus in the response phase is on putting people safe, prevent need disasters and meeting the basic needs of the people until more permanent and sustainable solutions can be found. The main responsibility to address these needs and respond to a disaster lies with the government or governments in whose territory the disaster has occurred. In addition, Humanitarian organizations are often strongly present in this phase of the disaster management cycle, particularly in countries where the government lacks the resources to respond adequately to the needs.
- Users :** Particularly during a disaster, it is important to have alternative strategies available. Providing communication as part of a disaster plan, as well as utilizing ham radio, social networking sites and emergency alert systems, are alternative ways to communicate during a disaster.
- Children, youth, volunteers, affected, management, authority, volunteers etc
- Expected Outcomes :** Digital technologies are increasingly being used in humanitarian action, they have shown to improve the health and recovery of populations affected by both natural and man-made disasters. They are used in humanitarian response to facilitate and coordinate aid in various stages including preparedness, response, and recovery from emergencies. More specifically, mobile health (mHealth), which is defined as the use of communication devices such as mobile phones for the purpose of health services information

**Impact** : Managing an effective and influential response requires cooperation, which is also facilitated through mechanism. A retrospective study demonstrated that applying mechanism can lead to up to 15% decrease of unnecessary hospital transfers during disasters. In addition, they provide field hospital administrators with real-time census information essential for planning, resource allocation, inter-facility patient transfers, and inter-agency collaboration

**Problem ID:** PID357

**Challenge Title** : Water Purifier's Waste Water Reused

**Name of the Office** : Collector Office, Patan

**Challenge Description with context** : The rejects from RO are generally not diverted to 2nd treatment unit and hence the salinity (i.e. TDS) of final concentrate effluent is just a bit higher than normal.

RO reject/RO concentrate can be used for any non-drinking and non-cooking purposes. The usage may range from utensil cleaning, flushing, floor mopping, gardening (not so good in the long run or can be good for salt resistance species) etc.

As this water is really not dirty (in terms of quality), it's just that its hardness/mineral content is different. It is okay to feed this to a nearby rainwater harvesting system.

**Users** : 1. Employees of Office with specified roles as below  
2. Administrator  
3. Inward /Outward Officer  
4. Department Officer

Employees of Office with specified roles as below

1. Administrator
2. Inward /Outward Officer
3. Department Officer

**Expected Outcomes** : The easiest way would be to drop the reject pipe in a bucket. But if your daily drinking water requirement is 20 litres then on an average your RO water purifier would generate around 60 litres of waste water.

Assuming you are using a bucket of 15 litres, you would need to empty the bucket 4 times in a day. And the biggest pain is keeping a check on the bucket, so it does not overflow.

This may not be practical for a lot of users.

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If you are one of those then worry not because we have a better solution for people like you.

You can extend the RO waste pipe and drop it in a big tank placed outside your kitchen. This stored water can later be re-used for one of the several ways listed below.

You can use a small submersible pump (like the ones used in water coolers) for taking water from this tank. All you have to do is drop the submersible pump in the tank and connect it to a power source.

You can then use a water pipe connected to the outlet of the pump to draw water from the tank without using any bucket or container. A bigger tank also means that you do not have to worry about the water overflow, as would be the case if you were using a bucket in place of a big tank.

The bucket, container or tank used for storing Reverse Osmosis waste water should have a wide opening so you can easily clean the deposits at regular intervals.

### Impact

- : Rs- Recycle, Reuse waste water All these issues force the RO system to work at a higher pressure, which in turn causes consumption of more power and costs, and also reduces the life of the membrane. So in order to have an optimum condition, proper pre-treatment of the feed water is required. Another problem that can occur while treating some wastewaters through your RO system is calcium phosphate scaling. Scaling is quite an irksome issue and can only be reduced by using an antiscalant or changing the operating conditions to lessen the input of phosphate in the feed.

### Collector Office, Porbandar

<b>Problem ID:</b>	PID358
<b>Challenge Title</b>	: Webportal/Application/Social Media for awareness and publication of collector "JAHERNAMA"
<b>Name of the Office</b>	: Collector Office, Porbandar
<b>Challenge Description with context</b>	: As per law and order condition , the DM publishes Jahernama for civilian but the civilian are not much aware regarding same. There should be online mechanism based on which collector office can publish a jahernama to make awareness among the civilians.
<b>Users</b>	: Civilians
<b>Expected Outcomes</b>	: Bulk messaging services in Gujarati language
<b>Impact</b>	: Civilians will be aware with jahernama. Smooth handling of law and order conditions

<b>Problem ID:</b>	PID359
<b>Challenge Title</b>	: Develop an app for creating awareness to public for process and documents of jan seva kendra
<b>Name of the Office</b>	: Collector Office, Porbandar
<b>Challenge Description with context</b>	: People are not aware of the process and documents required for different jan seva kendra activity. They are visiting so many times due to lack of awareness. The major problem associated with the centre is that civilians are not actually aware of a supplementary document.  There should be mobile app (in Gujarati language) based on which civilian can understand actual flow diagram of procedure to be follow during particular activity at jan seva kendra. Major solution should be in the form of app that civilian does not have standard documents then he/she can be aware with supplement documents of that standard one.
<b>Users</b>	: People at large
<b>Expected Outcomes</b>	: User design and user friendly mobile app in gujarati language.
<b>Impact</b>	: The impact of it civilian as well as offices of JSK will work smoother and reduce time duration for each and every activity.

**Problem ID:** PID360

**Challenge Title :** Digital platform based inquiry guidelines at the collector office

**Name of the Office :** Collector Office, Porbandar

**Challenge Description with context :** Many people visiting collector office for various purposes but they don't know where to go and whom to meet for their particular purpose so develop and digital advisory guideline or like inquiry platform for people

Develop an app for people regarding location and functioning of various offices working under collector office.

**Users :** People who are planing to visit collector office

**Expected Outcomes :** Mobile app

**Impact :** People will get to know about functioning of various collector office and their location

**Problem ID:** PID361

**Challenge Title :** Digital Token system for Jan seva Kendra

**Name of the Office :** Collector Office, Porbandar

**Challenge Description with context :** At JSK, civilians needs to waiting in a long queue. All aged public didn't have such a stamina to stay in queue.

There should be token system using which civilians do not need to wait in a queue.

**Users :** Civilians

**Expected Outcomes :** There should be digital token issue system based on which civilians can issue token by themselves.

**Impact :** Reduce queue at center. Old age people can comfortable take benefit of JSK.

<b>Problem ID:</b>	PID362
<b>Challenge Title</b>	: E-Callahan formation and tracking System
<b>Name of the Office</b>	: Collector Office, Porbandar
<b>Challenge Description with context</b>	: Manual process done for the generation of the e-challan need to be digitalized using IFMS software details. Bar coded e-Challan generation using software
<b>Users</b>	: Revenue officials/bank officials /treasure
<b>Expected Outcomes</b>	: Online e challan generation and tracking. Online verification of e-challan
<b>Impact</b>	: Decrease the chances of fraud ,time saving and accuracy,transparency in the system

<b>Problem ID:</b>	PID363
<b>Challenge Title</b>	: Linking of birth and death registration platform with revenue platform
<b>Name of the Office</b>	: Collector Office, Porbandar
<b>Challenge Description with context</b>	: Gram panchayat Online record of birth/Death registration need to link with the online platform of district revenue department. Develop framework and linkage mechanism to link both on a single platform.
<b>Users</b>	: Revenue department
<b>Expected Outcomes</b>	: Heir ship process will be smoother due to availability of land holder death information.
<b>Impact</b>	: Easy and smoother transfer of heirship and timesavy.

<b>Problem ID:</b>	PID364
<b>Challenge Title</b>	: Linking of mobile number with Aadhar for 7/12/8.
<b>Name of the Office</b>	: Collector Office, Porbandar
<b>Challenge Description with context</b>	: Revenue Department didn't have such a facility to inform farmers regarding activity related to there 7/12/8. The revenue department is not able to track multiple ownership of the land of the farmer.  There should be mechanism, based on which revenue department can inform to farmer for activity related to 7/12/8.
<b>Users</b>	: Revenue Department
<b>Expected Outcomes</b>	: Digital platform should be there based on which revenue department can track and inform the farmers
<b>Impact</b>	: Proper information sharing with revenue department regarding land

<b>Problem ID:</b>	PID365
<b>Challenge Title</b>	: Mapping of revenue and Google map using Geo tagging Technique
<b>Name of the Office</b>	: Collector office, porbandar
<b>Challenge Description with context</b>	: Revenue Department has done online survey of the land of farmer but this online survey is not linked with google map.  Need to do mapping of the revenue department with google map
<b>Users</b>	: Farmer/landholder
<b>Expected Outcomes</b>	: Geotagging mapping of revenue and google map on a single platform will help landholder to know survey number anytime, anyplace.
<b>Impact</b>	: Farmer and revenue department will be able to locate the location and survey number actually. Cross verification by revenue department will be smoother

**Problem ID:** PID366  
**Challenge Title** : Online appointment platform for Jan Seva Kendra  
**Name of the Office** : Collector Office, Porbandar  
**Challenge Description with context** : People who wants to visit Jan Seva Kendra for any purpose can take online appointment.  
 Online platform/app should be developed for appointment of Jan Seva Kendra regarding various services  
**Users** : People at large  
**Expected Outcomes** : Well defined mobile app  
**Impact** : Reduce rush at Jan Seva Kendra and also time saving for people

**Problem ID:** PID367  
**Challenge Title** : Online police verification of newly recruited employees in government jobs  
**Name of the Office** : Collector Office, Porbandar  
**Challenge Description with context** : Applicant and different government are handling documents and process and manually which is time consuming and promoting corruption.  
 There should be single online platform from which applicant /govt department can apply for police verification and track status of application.  
**Users** : Applicants and government departments  
**Expected Outcomes** : Online weblink for application and tracking police verification process  
**Impact** : Smoother, paperless and corruption free process



**Problem ID:** PID368

**Challenge Title :** Online Updation Of Ration Card

**Name of the Office :** Collector Office, Porbandar

**Challenge Description with context :** Existing system is to much tedious and time consuming so need to develop an online updation of ration card like Adhar Card Portal.  
Develop online platform to update ration card i.e., adding/canceling of name etc.same like adhar card

**Users :** People at large

**Expected Outcomes :** Online platform for rationcard updation centre

**Impact :** It will reduce the burden on Jan Seva Kendra as well as for people in terms of time and money.

**Problem ID:** PID369

**Challenge Title :** Single window clearance for new shop/firm/enterprise

**Name of the Office :** Collector Office, Porbandar

**Challenge Description with context :** For new enterprise/shop, the owner of enterprise/shop needs to apply in supply department of government. This process of approval is quite complex and time-consuming. They have to visit so many times for a various application , verification and approvals.  
If any shopkeeper /Entrepreneur wants to start new enterprise ,he/she do not need to visit collector office again and again and in place of it he/she can apply online with all necessary documents mentioned in the portal where need to upload this and apply for the approval from the collector office. For this online single window clearance platform(website/application) need to develop.

**Users :** Any person who intend to start new firm/shop/enterprise

**Expected Outcomes :** A well-defined application/web portal including the customized option for various approval and necessary guidelines with respect to the new opening of shop/ firm/ enterprise where he can upload all necessary documents for the required purpose.

**Impact :** When a new entrepreneur applies on this single window application/web portal he will be able to track the status of the application online and need not visit collector office, again and again. A transparent and effective system will be developed which will be less time consuming and cost-effective.

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<b>Problem ID:</b>	PID370
<b>Challenge Title</b>	: Multiple Entry Detection System for Government House Scheme
<b>Name of the Office</b>	: Collector Office, Porbandar
<b>Challenge Description with context</b>	: Beneficiary are applying multiple times from various places for the same scheme to avail multiple benefits. Develop a tracking mechanism to detect multiple entries
<b>Users</b>	: R&b
<b>Expected Outcomes</b>	: Well defined digital tracking mechanism to track unique identification entry
<b>Impact</b>	: To avoid multiple benefits to single user

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## **Collector Office, Rajkot**

<b>Problem ID:</b>	PID371
<b>Challenge Title</b>	: Collector Dash Board
<b>Name of the Office</b>	: Collector Office, Rajkot
<b>Challenge Description with context</b>	: Complaint raised and solved is not shown to authority, therefore online management system for complaint registration and redressal system is the need.  Those who wish to meet Collector has to raise ticket for meeting and if necessary collector can divert the query to other concern department and that query will be red flagged if not solved.  Transparent system for grievance redressal management.
<b>Users</b>	: Admin and public
<b>Expected Outcomes</b>	: Fast addressing and solving problems of people
<b>Impact</b>	: Transparent system

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## Collector Office, Sabarkantha

<b>Problem ID:</b>	PID372
<b>Challenge Title</b>	: Mobile app for library
<b>Name of the Office</b>	: Collector Office, Sabarkantha
<b>Challenge Description with context</b>	: Citizens of Himmatnagar are regularly visit library and obtaining memberships also. Library needs an application that manage library members and day to day library administration work like issue, request or paid fees and fine.  Himmatnagar library needs an application which can be used to request for and new books or journals etc. in the community library. Members can send the requests for any new books or journals to library through application. Librarian can also send the request for new book or journals to other community or higher authorities. Members can also request to issue new books and can give feedback.
<b>Users</b>	: Librarian, Members
<b>Expected Outcomes</b>	: Easy and smooth function of library
<b>Impact</b>	: Beneficial to society

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## Collector Office, Surat

**Problem ID:** PID373

**Challenge Title** : Automation of meeting schedule of important district functionaries. i.e., Collector, DDO, Municipal-Commissioner, CP, SP, etc.

**Name of the Office** : Collector Office, Surat

**Challenge Description with context** : Collector, District Development Officer (DDO), Municipal Commissioner, Police Commissioner (CP), Superintendents of Police (SP), are the main-chair person of more than 100 committees. All these committees are meeting at the prescribed time, such as annually, six-monthly, three-monthly, or monthly or on the event basis (rainfall [according to the Indian Meteorological Department, the probable date of rains in Gujarat is 15 June], festival basis, epidemic).

When the secretary of any committee comes to the main-chair person for the execution of the meeting, he/she finds that the meeting of this committee is yet to be conducted.

Hence in the emergency meeting has to be arranged. Due to less time, meeting agenda is not drafted properly, and problems of no / less documentation, improper preparation occurs.

If all these meetings-scheduled have been put into the data software, and e-mail/notification is available from this data software system well in time, meetings will be arranged properly. The secretaries of the committees will get the alert messages for conducting the meeting as per the schedule i.e., Before the months / fifteen days/weeks, then the secretaries of the committees will get enough time to prepare and inform all committee members in advance.

"Students are making software or app for the automation of meeting schedules of important district functionaries":-

In a government office, there are lots of committees. These committees' main-chair persons are Collector, District Development Officer (DDO), Municipal Commissioner, Police Commissioner (CP), and Superintendents of Police (SP). These committees' meeting schedule for time to time. Sometimes, due to lots of work in some offices, these committees meet did not schedule from time to time. When the secretary of any committee comes to the main-chair person for the execution of the meeting, he/she finds that the reception of this committee is yet to be conducted.

So Students are expected for developing software or app for the automation of meeting schedules for government offices. It will be a great help to these committees' main-chairperson or secretary of the committee to prepare for an advance by using this software or app.

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- Users** : Government District offices i.e., Collector, DDO, Municipal-Commissioner, Commissioner of Police (CP), Superintendent of Police (SP), etc.
- Expected Outcomes** : "No meetings scheduled can be left":-  
The outcome of this problem solution should be provided computer software or an app-based solution for government offices like Collector, District Development Officer (DDO), Municipal Commissioner, Police Commissioner (CP), and Superintendents of Police (SP). Using this computer software or app-based application, they will be planning their committees' meetings proper planning in advance.
- Impact** : "All committees'-meetings conducted as per schedule with effective agenda implementation using computer-software or app":-  
If this problem solved, then it will be much useful for government offices like Collector, District Development Officer (DDO), Municipal Commissioner, Police Commissioner (CP), and Superintendents of Police (SP). In these offices committees', it will be a great help to these committees' main-chairperson or secretary of the committee to prepare for an advance by using this software or app.

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<b>Problem ID:</b>	PID374
<b>Challenge Title</b>	: Automotive Surveillance system for Government Properties.
<b>Name of the Office</b>	: Collector Office, Surat
<b>Challenge Description with context</b>	<p>: Unauthorized occupation of the state government property such as land/house by illegal occupiers. In these lands, buildings are built by illegal occupants and sold to the people, and people start using them for living and livelihood.</p> <p>By the time a government official inspects the government land or place, it becomes challenging for the officer to get these properties vacant, and the officers are at risk of being killed by those who occupy it illegally. Currently, technologies such as Google-map / ISRO earth-Bhuvan, update photos of the government properties or space every 6-month or once in a year. The people are living or using these buildings illegally, and moving them from these places requires the judicial process, Which is very complicated and time-consuming.</p> <p>If a government official can look at government property from his own office regularly, then before the land or property is acquired illegally, the government official can take action against illegal land or property occupiers. (NO use of CCTV).</p>
<b>Users</b>	: Government offices and Government officers.
<b>Expected Outcomes</b>	: The outcome of this problem solution should be provide,if a government official can look at government property from his own office regularly, then before the land or property is acquired illegally, the government official can take action against illegal land or property occupiers. (NO use of CCTV).
<b>Impact</b>	: If the problem solved, then it be great useful for government offices' officers can look at government property from his own office regularly, then before the land or property is acquired illegally, the government official can take action against illegal land or property occupiers. (NO use of CCTV).

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<b>Problem ID:</b>	PID375
<b>Challenge Title</b>	: District wise groundwater level table reports.
<b>Name of the Office</b>	: Collector Office, Surat
<b>Challenge Description with context</b>	<p>: Water is used extensively in the textile and chemical industries in Surat district. Due to the extensive amount of water used by these industries. A parallel business started to supply water to these industries. This water is provided by illegal to these industries. These illicit water suppliers use ground water to supplies these industries. Because of this, underground water is being transported to the textile and chemical industries by illegal suppliers of water. So that illicit water suppliers have an impact on the volume of underground water by such activities.</p> <p>We do not have a clue as to the current situation or the condition of this underground water level per month. If, in such a case, a monthly report of the underground water volume of the entire district or taluka can be-obtained or used, as a reference, using the borewell we have or the source of different water sources.</p> <p>They are mapping the district-Taluka wise groundwater level table reports/charts.</p> <p>Government agencies currently have no idea of groundwater levels in their area, either local or district levels. If groundwater level mapping available with the government- agencies, either local or district,</p> <ol style="list-style-type: none"><li>1) It may be used adequately for summer days.</li><li>2) The government- agencies, either local or district, found that illicit water suppliers use groundwater to supply industries at that time. The government agencies find illicit water suppliers and make a band on illegal suppliers of groundwater.</li></ol> <p>So students are making, project for monthly base mapping the district-Taluka wise groundwater level table reports/charts automatically.</p>
<b>Users</b>	: People and governments at a time of shortage of water days during summer.
<b>Expected Outcomes</b>	<p>: Software system is expected which should provides mapping of groundwater level in a particular area, either local of district levels. This groundwater level may be used for summer days by local or district government agencies. Or government agencies band on illegal groundwater suppliers.</p> <p>In future governments may plan that in that area we have this much amount of groundwater level that may use for people.</p>



**Impact** : If this problem solved, then it will be great useful To planning the groundwater level increase at the district and local places by government agencies. Or these agencies used this mapping area during summer days to provide water to people. Or government agencies band on illegal groundwater suppliers.

**Problem ID:** PID376  
**Challenge Title** : Automated Alerts System for Land Lease Renewal of Government Revenue Department

**Name of the Office** : Collector Office, Surat

**Challenge Description with context** : In the Revenue Department of the Government, many of the lands were-leased out during or after the British rule. The land-lease period is 100/50 years. Earlier, we used to give this land-lease on paper. At present, we do not have a system that can inform the person or organization that your land-lease has been expired.

When a person or organization holding this land-lease requests a renewal of the land-lease, we find out that the government had given such a land-lease at that time, and we are going to search all the data for leased-land.

Currently, the data on the revenue department of the government is computerized. If all this data is made available to the software and only the software informs that the lease of this land is expired or going to expire soon.

For example: - If the lease of land is to be completed in the July-2020, then the Revenue Department may notify the person or organization before 4-months that the lease of the land you have will be expired soon. If you are interested, then you have to renew your lease or surrender if not interested.

**Users** : Government Revenue Department.

**Expected Outcomes** : "Automated alerts for land lease renewal dates":-

The outcome of this problem solution should be provided computer software or an app-based solution for government revenue office for government lands were-leased out during or after the British rule. The land-lease period is 100/50 years. Earlier, we used to give this land-lease on paper. At present, we do not have a system that can inform the person or organization that your land-lease has been-expired.

When a person or organization holding this land-lease requests a renewal of the land-lease, we find out that the government had given such a land-lease at that time, and we are going to search all the data for leased-land.

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Currently, the data on the revenue department of the government is computerized. If all this data is made available to the software and only the software informs that the lease of this land is expired or going to expire soon.

For example: - If the lease of land is to be-completed in the July-2020, then the Revenue Department may notify the person or organization before 4-months that the lease of the land you have will be expired soon. If you are interested, then you have to renew your lease or surrender if not interested.

### Impact

: "All Automated alerts for land lease renewal implementation using computer-software or app":-

If this problem solved, then it will be exceedingly useful for the government revenue department. Example:- If the lease of government land is to be completed in the July-2020, then the Revenue Department may notify the person or organization before 4-months that the lease of the land you have will be expired soon. If you are interested, then you have to renew your lease or surrender if not interested.

<b>Problem ID:</b>	PID377
<b>Challenge Title</b>	: Efficient Certificate Issuing System
<b>Name of the Office</b>	: Collector Office, Surat
<b>Challenge Description with context</b>	<p>: Government process reengineering for various services of revenue department to reduce response time for. 1) Cast Certificate, 2) Income Certificate,</p> <p>People are going for a caste certificate, income certificate, or Mutation Entry (property's name transfer) in government offices such as the Mamlatdar office / Panchayat office or Civic center.</p> <p>A person has to gather different evidence to do this thing. After this, the working hours in the government office are from 3 days to 7 days for issuing these types of certificates.</p> <p>If issuing a certificate time of government office is reduced, it can be beneficial to the people.</p> <p>Some examples are;</p> <ol style="list-style-type: none"> <li>1) If a student wants to cast a certificate for him/her, for evidence-proof, he/she will submit his/her parent cast certificate in the government office. On the parent cast certificate, he/she will get own cast certificate. This procedure requires 3 days to 7 days. So if his/her parent's digital serial number of computerized cast certificate is available in the database, then on that basis, he/she will get a cast certificate in one day.</li> <li>2) The time for obtaining a "Non-Creamy Layer Certificate" in the Government office is currently seven days. The main evidence-proof required for this is the caste certificate and the income certificate of parents, which has already been issued by the government office. Digital serial number of computerized cast certificate and the income certificate is available in the database. On that electronic data basis, the student can be given a "Non-Creamy Layer Certificate" in only one day.</li> </ol>
<b>Users</b>	: People, Government officers
<b>Expected Outcomes</b>	: Government process reengineering for various services of revenue department and reduce response time. 1) Cast Certificate, 2) Income Certificate, 3) Mutation entry.
<b>Impact</b>	: If this problem solved, then it will be great useful for people and government

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<b>Problem ID:</b>	PID378
<b>Challenge Title</b>	: New Low-cost and small space rainwater harvesting techniques for existing urban structures.
<b>Name of the Office</b>	: Collector Office, Surat
<b>Challenge Description with context</b>	<p>: Presently, according to the law of the Government, rainwater harvesting is compulsory in the new building-construction. As there is more space in the villages, rainwater harvesting facilities can be easily-developed, Where in the city area, due to lack of space, it is unknown that whether rainwater harvesting is implemented or not.</p> <p>In the existing building-structure, if new low cost and small space rainwater harvesting techniques can be-constructed/designed/implemented, it is a lot of benefit to the people and the environment.</p> <p>“To design new Low-cost and small space rainwater harvesting techniques for existing urban building-structures”:-</p> <p>As much amount of groundwater taken by peoples, not much amount of rainwater goes into the ground. In the future, water may be a big crisis for humankind.</p> <p>So to provide/design the new Low-cost and small space rainwater harvesting techniques for existing urban building-structures.</p>
<b>Users</b>	: People, Government officers.
<b>Expected Outcomes</b>	: The outcome of this problem solution should be provided low cost and small space new design. This unique design may use for the present building structure to plan the rainwater harvesting system, this rain harvesting water used by the people in their needy days. Or the groundwater level may increase.
<b>Impact</b>	: “To use maximum rainwater”:- If this problem solved, then it will be exceedingly useful for the Government to encourage the people to rainwater harvesting systems. Using these groundwater levels may increase in that area or district. The people who live in the city area may use this design to plan their rainwater harvesting system.

<b>Problem ID:</b>	PID379
<b>Challenge Title</b>	: To increase the distance of operating automated drone-camera base surveillance for illegal mining.
<b>Name of the Office</b>	: Collector Office, Surat
<b>Challenge Description with context</b>	<p>: The Government receives royalties in the form of revenue from legally sand-mining and Minerals-mining. However, when all these items are illegally-mined, there is a financial loss to the Government, and irreversible losses to the environment.</p> <p>At present, drone cameras are used by the Government to prevent illegal mining. The drone-operator has to operate a drone camera from a very short distance to an actual mining site. So the lives of drone operators are at risk from illegal mining business-person.</p> <p>"Students are making the operating distance of this drone-camera can be-increased; the following problems are solved.</p> <ol style="list-style-type: none"> <li>1) The mining mafias will be fear-full and prevent illegal mining.</li> <li>2) The person's life-operating the drone camera will be safe.</li> <li>3) Revenue of Government will be-increased.</li> </ol> <p>Presently drone-camera based system available for a very short distance by drone-operator. So Students are expected to implement such a hardware system from the transmitter and receiver side, i.e., a circuit like RF antenna, power capacity to increase the operation of drone-camera from a very far distance.</p>
<b>Users</b>	: Government District offices, Government Mining departments, Police departments.
<b>Expected Outcomes</b>	<p>: "Increase the operating distance of drone-cameras":-</p> <p>The outcome of this problem solution should be provided in a hardware based circuitry system to increase the operating distance of drone-cameras, i.e., use of RF System at the transmitter and receiver side, GSM modules, etc.</p>
<b>Impact</b>	<p>: If this problem solved, then it will be much useful by the Government offices like District offices, Government Mining departments, Police departments, etc.</p> <p>They used this significant distance drone-camera for an acute condition, and also drone operator life may be safe if this device used by the Mining department. In the Police department, this useful for an emergency condition.</p>

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<b>Problem ID:</b>	PID380
<b>Challenge Title</b>	: Scheme Based Report Generation of Beneficiaries
<b>Name of the Office</b>	: Collector Office, Surat
<b>Challenge Description with context</b>	: Use the potentially available database to potential beneficiaries of 1) National Old age Pension Scheme, 2) Widow Pension Scheme.  State government offices collect data from many people. Examples of data, such as elections, health, agriculture, etc., apart from this database, some database is usable.  Using this database, such as finding a family that has only women and their children, their homeowner has died, and the family goes to the Government and says that you are "eligible for a widow pension plan." Thus, the beneficiaries of the government scheme can be given to the actual beneficiaries.  The Government has to enter the age at the time of any scheme form. And the data in this form is stored in the government data computer. If a person is over 60 years of age and is on the list of Social Economy Sensex-BPL, then that person is eligible for the National Old Age Pension Scheme, the Government tells the person. Thus, the actual beneficiary will have the maximum benefit of the Government's scheme.
<b>Users</b>	: Concerned Government Department and Needy People.
<b>Expected Outcomes</b>	: "The actual beneficiary will have the maximum benefit of the Government's scheme".
<b>Impact</b>	: "True governance for the needy people":-

## Collector Office, Surendranagar

<b>Problem ID:</b>	PID381
<b>Challenge Title</b>	: Past Record Keeping System
<b>Name of the Office</b>	: Collector Office, Surendranagar
<b>Challenge Description with context</b>	<p>: This office has some issues related to Past Record Keeping System and it will solved if some techniques can developed to convert them in digital form.</p> <p>Old records are very tedious to find because of old papers becomes weak by passing time. Papers get affected by dust so if some records like land, survey, technical works of dams, canals under jurisdiction of irrigation department needs to find, staff have to go through tedious process of unfolding old files and past years.</p> <p>Record maintenance in a proper way. Records contain information that is needed for the day to day work of government. Their purpose is to provide reliable evidence of, and information about, 'who, what, when, and why' something happened.</p> <p>In some cases, the requirement to keep certain records is clearly defined by law, regulation or professional practice. More often, recordkeeping is a matter of policy and good business practice, developed over time and "built into" work processes, to ensure that the organisation can refer to records of past transactions in order to perform subsequent actions;</p> <p>produce evidence of financial or contractual obligations, to avoid dispute or protect against legal liability;</p> <p>draw on evidence of past events to make informed decisions for the present and future; and</p> <p>account for its actions and decisions when required to do so.</p> <p>The records of government also help to protect individual rights and entitlements, safeguard the public interest, and contribute to the historical record of Manitobans' personal and collective experience.</p>
<b>Users</b>	: administrators and office clerical staff.
<b>Expected Outcomes</b>	<p>: By proper software solution, It will maintain the integrity of the records. Linked</p> <p>Records can be easily located and retrieved</p> <p>Access to records is controlled and authorized. The most appropriate methods of capturing and maintaining records are used</p> <p>Records are systematically retained for pre-defined periods of time and disposed of according to approved records schedules.</p>

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Information about the records kept by the organization is maintained for internal and public uses.

Records management actions - including retention and disposal of records -- are documented for audit and accountability purposes.

**Impact**

: Creating and sticking to a plan to manage all the critical and necessary records for your office is vital to improving workflow, increasing productivity, and reducing the time and effort it takes to find and re-file them.

O ensure that you're making a sound decision on which records management system to use, it's best to think about the resources invested and the returns and improvements that will be made once the new system is implemented.



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<b>Problem ID:</b>	PID382
<b>Challenge Title</b>	: Smoothing the flow of centrifugal pump by removal of Debris (up to 15 mm) from Flowing Water
<b>Name of the Office</b>	: Collector Office, Surendranagar
<b>Challenge Description with context</b>	: Debris and unwanted waste i.e grass, coconut caps, crop waste stuck into trash rack while input water comes into the volute casing of centrifugal pump if debris stuck to the trash rack interrupt input flow of water and ultimately less amount of water is delivered. These are to be cleaned and removed properly and frequently. Removal process can be done but it seems very lengthy, tedious and difficult by machines too.
<b>Users</b>	: Farmers and civilian
<b>Expected Outcomes</b>	: Flowing process of water will be smooth and ultimately electricity will be saved. Water will be delivered to significant numbers of civilians and farmers to satisfy their daily needs their standard of living will be high and GDP growth will be increased. Ultimately this will prove a booster medicine to our Indian economy
<b>Impact</b>	: This pumping station situated at Dhanki near by Lakhter (Surendranagar). This unique pumping station is very large in construction which increases the canal water head so that gravitational advantage can be achieved and this water is to be supplied to the dam named DHOLIDHAJA in Surendranagar further supplied to Saurashtra and Kutch. Stress will be removed of those who work hard to supply the targeted amount of water to the beneficiaries. Ultimate impact of this project would be to inculcate idea of automation in government machineries. This idea of solving problems in government organization will provide good opportunities for our emerging diploma engineering students. Their aspiring minds will be habituated to find the solution of such problem in their daily lives

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### Collector Office, Valsad

<b>Problem ID:</b>	PID383
<b>Challenge Title</b>	: Rules and Regulation Awareness Platform for Young Engineer and admin staff.
<b>Name of the Office</b>	: Collector Office, Valsad
<b>Challenge Description with context</b>	: Staff are getting retired and new staff are being recruited where old GR's by elaws have to be learn by the staff.  There are various GR's and by laws to be followed while executing work as managing staff and duties assigning to them. Now a day's old GR's and by law's which are to be implemented is not known to the newly staff..
<b>Users</b>	: Officer and Staff
<b>Expected Outcomes</b>	: Online Platform for getting the knowledge about laws for good administration as per the law..
<b>Impact</b>	: Good administration.

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<b>Problem ID:</b>	PID384
<b>Challenge Title</b>	: To identify illegal encroachment in a territory
<b>Name of the Office</b>	: Collector Office, Valsad
<b>Challenge Description with context</b>	<p>: An encroachment upon a street or a highway is a fixture such as a wall or a fence which illegally intrudes into a highway or encloses a portion of it, disseminating its width or area which becomes a major problem for the government when it comes to widening or expansion of those highways and resolving this issue is very tedious job. So a system is required which assess such encroachments and stops them as soon as it starts.</p> <ul style="list-style-type: none"><li>• A clear cur solution which indicates encroachments on government lands as soon as any encroachment activity initiates on such land using GIS/GPS based platforms.</li><li>• Developing a portal where any citizen can make an online complain of such encroachment.</li><li>• A GIS/GPS based tool which can easily identify illegal encroachment activities.</li></ul>
<b>Users</b>	: Citizens,Government officials
<b>Expected Outcomes</b>	: 100% transparency Quick & Authentic system for Land measurement and their boundaries
<b>Impact</b>	: Terminate all illegal encroachments as soon as it starts. Boost up infrastructural development

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## DDO Office, Ahmedabad

<b>Problem ID:</b>	PID385
<b>Challenge Title</b>	: 14th finance commission Sanction
<b>Name of the Office</b>	: DDO Office, Ahmedabad
<b>Challenge Description with context</b>	: For any work to be done in village, grampanchayat makes a “tharav”. Engineer goes there to check site and makes blue print of the work to be done. TDO check all documents, verifies if grampanchayat has the money for work or not , any other verification of process. If all found ok, TDO permits for the work.  Offline process should be converted to online. Gram panchayat should be able to uploads “tharav” for particular work with its documents and available amount of money for that work. Engineer will review site, check property and make blue prints and upload it with necessary documents. Now TDO will review all documents, view /change and give permission for work if everything found ok. After completion of work panchayat should be able to upload photographs ,bills and other necessary documents.
<b>Users</b>	: Gram panchayat,engineers,TDO. All levels of users will have their own interface according to their rights. Work permission file can be seen by owner with the updated status(at which level file is at current point of time).
<b>Expected Outcomes</b>	: Transparency and work speed will improve. Whole process must be digitalized. At all level facilities like upload document, mark status, move application forward and backward should be given. On TDO’s dashboard ongoing works should be there. TDO should have reports of past and future work. He should be able to do sorting and searching. After completion of work panchayat should be able to upload photograph and bills.
<b>Impact</b>	: Offline process can be converted to online. Useful for Panchayat offices. Duplication of work can be avoided. Transparency and work speed will improve. monitoring and control will be easy.

<b>Problem ID:</b>	PID386
<b>Challenge Title</b>	: Appointment and grievance management system
<b>Name of the Office</b>	: DDO Office, Ahmedabad
<b>Challenge Description with context</b>	: DDO and other high level's officials have reserved days when they meet citizens. On those day citizens may have to wait for long. After the meeting there is no way for official that citizens' concern is addressed or not. Same is for citizen.  End user should be able to take appointments with appropriate reasons and selected days and time with all listed officials of the office. Same way they can complain. If officials receives complaints which is not related to their department they can forward to respective department. Dashboard for DDO with all complaints, its status, officer's name who is looking after that complain etc. DDO should be able to forward complaints to respective departments if he receives any. Progress of work can be monitored.
<b>Users</b>	: Officials of panchayat and citizens. All users should be able to get report of any work assigned to them, can be able to change assigned work status. Same should be reflected on higher level user's report. Users can be able to view their appointment list.
<b>Expected Outcomes</b>	: Citizens should not have to wait long for their meeting with officials as they will be provided receipt with time and date of appointment. Citizens should be able to register their grievances with appropriate reason. Officials should be able to view all matters in which citizens have addressed them. They may be able to forward complains to other officials if it does not come under their scope .
<b>Impact</b>	: Citizens will not have to wait long to meet officials. So it will be easy to manage public in office also. Officials can plan their day according to the numbers of appointments. All the complains with its status will be easy to monitor. Statistic of resolved issues will be handy.

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<b>Problem ID:</b>	PID387
<b>Challenge Title</b>	: Automatic street light control
<b>Name of the Office</b>	: DDO Office, Ahmedabad
<b>Challenge Description with context</b>	: Street lights are controlled manually. According to weather condition timing of street light being on is also changed. Sometimes in winter, even if it is so dark lights are not there. And sometimes in day light lights are on. So this is power waste. For faulty lights someone has to complain.  Create web based or application for Day light saving of street lights based on different weather conditions. Light should get on and off according to availability of natural light (i.e. in monsoon if it gets dark suddenly street lights must get on). Faulty lights, working lights should be shown on dashboard. Officials should be able to assign Faulty lights' maintenance work to some subordinate. Complaints assigned to higher authority with status must be shown on dash board with numbers.
<b>Users</b>	: Engineers ,officials of panchayat,officials of nagarpalika, . All user will have their dashboard.. Engineers can view assigned work. Higher authorities can assign work. If there is any ongoing work of street light,that must be shown on dashboard.
<b>Expected Outcomes</b>	: Power saving and utilization of street lights in uncertain weather. Street light must get on automatically according to the weather condition. Engineers can view assigned work. Higher authorities can assign work. If there is any ongoing work of street light, that must be shown on dashboard.
<b>Impact</b>	: Useful for Panchayat offices and nagarpalika. Power can be saved. Easy to monitor and control. Convenience for citizens. Ongoing work can be monitored.

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<b>Problem ID:</b>	PID388
<b>Challenge Title</b>	: Building Use (BU) Permission Online Portal for Panchayat and Nagarpalika
<b>Name of the Office</b>	: DDO Office, Ahmedabad
<b>Challenge Description with context</b>	: Create website/application awarding building permission based on various criteria of ,commercial, industrial and other purposes with respect to development index of the consult area.(Panchayat and Nagarpalika). Building use permission is right now offline process for panchayat and nagarpalika. Application of Building use permission goes thru so many levels. At each stage application status gets changed and applicant must know about it.  For Panchayat and nagarpalika offline process converted to online so that timeliness and transparency can be imposed. Applicant can apply for building use permission with all necessary documents . Application propagates thru hierarchy i.e inspector,engineer,planner so on... at every stage status of application needs to be updated. Each level gets facility to move application forward, backward or can return.
<b>Users</b>	: Town planner, inspector, Planning Assistance etc. every stage at which application can possibly go is a user in the system. According to their role in the process rights and facilities can be given.
<b>Expected Outcomes</b>	: Online building use permission will save lot of time of end users. End users can check their application status online. At every level all necessary documents can be viewed and/or uploaded. With appropriate status application complete cycle within time limit. Higher authority can check all application status like how many application are still pending or status of each application.
<b>Impact</b>	: Process gets smoother and faster. It is easy managed & monitor. It can be replicate in whole state for building usage permission. Less paperwork. More transparency. Proposed solution may affect large number of users .Monitoring and control will be easy to do. Very accurate statistical data can be derived.

<b>Problem ID:</b>	PID389
<b>Challenge Title</b>	: Court matter, RTI, panchayat Act, ACB departmental inquiries management system
<b>Name of the Office</b>	: DDO Office, Ahmedabad
<b>Challenge Description with context</b>	<p>: Types-- Court cases,RIT,Panchayat Act, ACB departmental inquirees. These are the matters which takes long time to get closed. It requires special attention as very much probability to be forgotten under so many ongoing work chain. Also these are not the matters officials can afford to forget. So there is necessity for a system which keeps records of all matters with all important documents handy and gives remainder for dates and any cation that needs to be taken on specific time.</p> <p>Type of matter(as above mentioned) with all attributes such as respective department, description, entered date, court date etc. should be managed with necessary documents. There should be provision for uploading documents time to time when they gets produced). Alert system for different types of matter should be available in such way that notification available before three days(can be customized) and last remainder before 24 hours.</p>
<b>Users</b>	: DDO, Officials and their staff. If an official is involve( directly or indirectly), on his dashboard all matters with documents, status , previous dates history ,upcoming dates, etc should be displayed.
<b>Expected Outcomes</b>	: System will be help officials to take actions on time. All matters with its type,staring date, next date, people involved, documents produced till date etc must be shown on officials dashboard . Remainders(SMS or Notification) as officials' customization before any event . DDO can view all pending and ongoing matters.
<b>Impact</b>	: Useful for officials. All matters will be taken care on time, so that will avoid unnecessary conflict. officials will be more prepared as notification system will remind them before date. All related documents will be handy.



<b>Problem ID:</b>	PID390
<b>Challenge Title</b>	: Panchayat Tax collection
<b>Name of the Office</b>	: DDO Office, Ahmedabad
<b>Challenge Description with context</b>	: Create website/application for tax collection in all village panchayat with respect to area and population of village panchayat. It includes different types of tax as drainage tax, light tax, water tax, property tax sentinel tax, special tax on water. Tax payer should be logon into system; he/she can view different remaining tax details. There should be available payment mechanism for pay remaining different type of tax and generate receipt of it. Sarpanch should be able to see all remaining taxes with facility of advanced search and sorting along with generate report of it. Talati should be able to manage/change parameters by viewing necessary proof .There should be facility of message alert for all tax payers such that they get 4 notifications(can be customized) before financial year .Last notification must be on 15th march of the year.  Department can review tax collection process on various levels and take actions accordingly. In Offline process monitoring and actual facts and numbers might not get available. Digitized platform forms basis for quick analysis also. Transparency will be there in whole process. Paper work will be less. Notification and remainder module will help end users to pay their dues on time.
<b>Users</b>	: Hierarchy of users End users--->Sarpanch--->Talati.  End users are tax payers who can pay remaining different type of tax . Sarpanch will have view and sorting rights. Talati is like administrator who can manage parameters based on valid proof.
<b>Expected Outcomes</b>	: Offline process can converted into online tax collection process. End users must be able to view their tax statements,can request for property modification with all necessary proofs, can get receipt,can see their previous tax statements etc. Sarpanch can view the end users of his village. Talati should be able to manage/change parameters of tax payer with necessary proof.
<b>Impact</b>	: It can be replicate in whole state DDO offices. Less paperwork. More transparency. Notification and remainder module will help end users to pay their dues on time. Proposed solution may affect large number of users .Monitoring and control will be easy to do. Very accurate statistical data can be derived.

<b>Problem ID:</b>	PID391
<b>Challenge Title</b>	: Property tax collection
<b>Name of the Office</b>	: DDO Office, Ahmedabad
<b>Challenge Description with context</b>	<p>: Create a website/application for building assessment, carpet area ,tax assessment ,property tax. Retrieval of remaining taxes over a period of last 25 years. Sarpanch shoul be able to see all remaining taxeswith facility of advanced search and sorting. Talati should be able to manage property (property’s right,property info,property tax)with necessary proof.There should be facility of message alert for all tax payers such that they get 4 notifications(can be customized) before financial year .Last notification must be on 15th march of the year.</p> <p>Department can review tax collection process on various levels and take actions accordingly. In Offline process monitoring and actual facts and numbers might not get available. Digitized platform forms basis for quick analysis also. Transparency will be there in whole process. Paper work will be less. Notification and remainder module will help end users to pay their dues on time.</p>
<b>Users</b>	: Hierarchy of users End users--->Sarpanch--->Talati.End users are tax payers. Sarpanch will have view and sorting rights. Talati is like administrator who can manage property rights etc.
<b>Expected Outcomes</b>	: Offline process can converted into online tax collection process. End users must be able to view their tax statements,can request for property modification with all necessary proofs, can get receipt,can see their previous tax statements etc. Sarpanch can view the end users of his village. Talati should be able to manage property (property’s right,property info,property tax)with necessary proof.
<b>Impact</b>	: It can be replicate in whole state DC branch collectorate offices. Less paperwork. More transparency. Notification and remainder module will help end users to pay their dues on time. Proposed solution may affect large number of users .Monitoring and control will be easy to do. Very accurate statistical data can be derived.

<b>Problem ID:</b>	PID392
<b>Challenge Title</b>	: Water and drainage distribution system
<b>Name of the Office</b>	: DDO Office, Ahmedabad
<b>Challenge Description with context</b>	<p>: Water pipe line and drainage work is done by contractors. It may possible that for same work ,under different grant section money get released .That means duplication of work. There is no track records of already completed work, ongoing work, work status etc. When permission is given it should be based on necessity and public demand.</p> <p>Create a website/application GIS(Geographic Information System) platform for laying water pipelines and gutter drainage lines based on necessity and demand of people. Exclude unnecessary duplication of work with respect to already completed work i.e if a→b location work is done then b-&gt;a location work must not be permitted. And add an attribute which reflects source of grant or money, so that grant should not be released for same work more than once.Each village work must be geo-graphically mapped with actual points. Search ,filter,sort facilities for officials should be available.</p>
<b>Users</b>	<p>: TDO, engineers,panchayat officials etc . Permission request for work initiated by panchayat official ,engineers visits that place and enters actual co-ordinates of pipe or work in the system. TDO reviews the request and grant permission if every criteria is fulfilled.</p>
<b>Expected Outcomes</b>	<p>: Permission request for work initiated by panchayat official ,engineers visits that place and enters actual co-ordinates of pipe or work in the system. TDO reviews the request and grant permission if every criteria is fulfilled. As all pipes are geo-graphically mapped so previous work with completion date , ongoing work reports etc should be generated. Citizens' request should be seen by all higher authorities.</p>
<b>Impact</b>	<p>: Useful for Panchayat offices. Duplication of work can be avoided. Transparency and work speed will improve. Work will be done on public demand i.e citizen can request for pipeline and drainage. All pipe lines and drainage will be geo-graphically mapped so monitoring and control will be easy.</p>

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## DDO Office, Amreli

<b>Problem ID:</b>	PID393
<b>Challenge Title</b>	: Field Visit Report and Follow Up System
<b>Name of the Office</b>	: DDO Office, Amreli
<b>Challenge Description with context</b>	: Many officers in the department are field officers and frequently visit interior villages and various facilities of government like health centers, anganwadis, primary schools etc. They also come across various issues faced by people, their grievances and various demands. During these site visits, officers generally note down their observation in diary and give suitable directions to concerned staff. But monitoring remains a major challenge as there is no proper mechanism to ensure the follow up on the directions given during these site visits. Only if the officer reminds the concerned staff about the issues, its progress can be known. Thus it becomes difficult to take the issues to logical end.  It is proposed to have a system ( preferably online portal, having capability of dealing with gujarati fonts) in which every department head/branch head is enrolled as a user. Each field officer can upload his field visit report. For each observation / instruction contained in the field report, there should be facility to assign responsible field officer/department head/branch head. This responsible person should be able to give feedback and action taken report on the instruction given or work assigned to them. Alert and work reminder should also be generated periodically. The office head should be able to monitor each activity like field reports uploaded and actions taken by responsible person to monitor overall work.
<b>Users</b>	: Field Officers, department head and branch head at district level
<b>Expected Outcomes</b>	: Better record keeping, time and effort saving, better monitoring.
<b>Impact</b>	: Faster resolution of ground level issues to their logical end.

<b>Problem ID:</b>	PID394
<b>Challenge Title</b>	: Finding Eligibility for Government Schemes
<b>Name of the Office</b>	: DDO Office, Amreli
<b>Challenge Description with context</b>	: Government runs hundreds of Schemes for all strata of society under various department. At present, one has to study about all schemes to find out whether he/she is eligible for particular scheme or not. it becomes inefficient & time consuming process to go through all schemes. And it is also possible that one may be left out if he/she doesn't know about any scheme. It is proposed to have a system (Online web portal and Mobile App), where authority from all government department update their schemes/policies with all distinctive criteria. Applicant will open such portal/App, sort out filter (Criteria which are suitable like gender age, caste income, profession etc.) Applicant will see schemes, only where he/she is eligible. Also it will alert applicant for last date for application.
<b>Users</b>	: All concerned departments and beneficiaries.
<b>Expected Outcomes</b>	: Easy process to find out eligibility of scheme
<b>Impact</b>	: Less time consumption for people & department, more beneficiaries can be covered in government schemes.

<b>Problem ID:</b>	PID395
<b>Challenge Title</b>	: Flood Monitoring system
<b>Name of the Office</b>	: DDO Office, Amreli
<b>Challenge Description with context</b>	: Flood is the natural calamity which causes large devastation of human life, animals and crops apart from land and other properties. At cause ways connecting two villages or two different land mass across the river or water channel, the water level is high during flood or after heavy rain. It is difficult to cross the river or water channel during this time and many vehicles and people are stuck on both the sides of such causeway. Sometimes people  Lose their lives also while crossing such river or water channel along the causeway monitoring of water level at different locations of river is one major challenge. There is no proper way to find river flow and water level and to relay the data from critical locations to central flood monitoring system. There is also no proper mechanism to alert people living in the area around such rivers as well.  It is proposed to have a system having electronic devices with IT system to measure flow and water level at different locations of river and relay the data to central monitoring system. The system should be able to alert people around cause way either through siren or red light

or any other suitable mechanism. If the data fetched is real time then the information regarding road blockage or other safety tips may also be disseminated to other people as well.

**Users** : Disaster management learn, District flood monitoring authority. Local people.

**Expected Outcomes** : Advance warning and alert, real time flood monitoring.

**Impact** : Better travel management during heavy rain , Reduction in loss of life.

**Problem ID:** PID396

**Challenge Title** : Letter/Application Tracking and Monitoring System

**Name of the Office** : DDO Office, Amreli

**Challenge Description with context** : In DDO office and sub ordinate offices, formal communication is done through letters. Apart from that, large number of applications are also received from people and elected members. Each of these is entered manually in inward and outward registers. These letters and applications are also handled by different employees and officers within the office as per prescribed office procedure. It is difficult to track these letters and applications within the office and also difficult to know the pendency in different offices.

It is proposed to have system in which all department/office work destinations will be pre enrolled. When any new letter come to department, system operator should be able to enter the details of letter/application and the unique number should be generated for this letter/application. When he/she sends this physical letter/application to other office or concerned employee of the same office for further processing, he/she should be also be able to transfer its details as entered in his/her system. Head of the office should be able to locate and also to see the pendency at different levels within the office.

**Users** : DDO Office, Taluka offices

**Expected Outcomes** : Central monitoring of each letter can be established, that will help for better record keeping, time& effort saving, better communication.

**Impact** : Faster disposal of letters and applications.

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<b>Problem ID:</b>	PID397
<b>Challenge Title</b>	: Minitue of Meeting Management system
<b>Name of the Office</b>	: DDO Office, Amreli
<b>Challenge Description with context</b>	<p>: Many meetings are held on monthly basis which involve officers from different departments depending upon subject of the meeting. At present, minutes of meetings are recorded physically and then distributed to members of the meeting after some time period. The follow up on the issues discussed is taken up only in the next meeting. Thus there is not proper mechanism to remind about the tasks given to responsible officers during the time between two meetings and hence many a times the issues are stretched without being properly dealt with and without any logical conclusion within time limit.</p> <p>It is proposed to have a system ( preferably online portal, having capability of dealing with Gujarati fonts) in which every department head/branch head is enrolled as a user. The agenda of the meeting can be uploaded and can be circulated to concerned member of the meeting before actual meeting . The minutes of the meeting should also be uploaded after the meeting is over. For each instruction given in the meeting as per the minutes of the meeting, there should be facility to assign responsible meeting member/department head/branch head. This responsible person should be able to give feedback and action taken report on the instruction given or work assigned to them. Alert and work reminder should also be generated periodically.</p> <p>The chairperson who conducted meeting should be able to monitor each activity like minutes of meeting uploaded and actions taken by responsible person to monitor overall execution. It should be the overall meeting management tool starting from planning the meeting , issuing agenda, uploading discussion points, assignment of task and follow up with periodic reminders.</p>
<b>Users</b>	: Members of concerned meeting , department head and branch head at district level.
<b>Expected Outcomes</b>	: Better record keeping, time and effort saving, better monitoring.
<b>Impact</b>	: Faster resolution of issues to their logical end and efficient work flow management.

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<b>Problem ID:</b>	PID398
<b>Challenge Title</b>	: Training assessment& monitoring portal
<b>Name of the Office</b>	: DDO Office, Amreli
<b>Challenge Description with context</b>	: After each election, we have to train each elected person ( Sarpanch, ward members, etc) for government rules, regulation, schemes, policies and their role in administration. Such training are repetitive and periodic. At present,details of only no of training conducted & no. of persons present are obtained. There is no mechanism to assess effectiveness of training conducted & need of further training.  It is proposed to have a system (Online web portal and Mobile App), where all such elected person will be enrolled. Training calendar will be designed. User need to apply from available training list by own ID. Central authority will assign elected person to specific training as per need. After training, feedback and exam will be conducted on same portal. All training modules will also be uploaded on portal, so later on anyone can revise it. Central authority should be able to monitor.
<b>Users</b>	: All needy training applicants and central authority.
<b>Expected Outcomes</b>	: Better management of training, evaluation after each training, future planning..
<b>Impact</b>	: Effective use of government resources & capacity building of elected members.



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<b>Problem ID:</b>	PID399
<b>Challenge Title</b>	: Village level online house tax collection system
<b>Name of the Office</b>	: DDO Office, Amreli
<b>Challenge Description with context</b>	<p>: We have proper house tax collection system for urban area. But for rural area, many people live out of village Whenever such tax collection bill is generated, it become difficult for us to convey message to each house owner. That lead to communication gap and less tax collection each year. Also we want to monitor for all villages under our office, how much tax has been collected and remained pending for long duration.</p> <p>It is proposed to have a system(online web portal and mobile app), where all such owner details will be entered. Each year, when such bill is generated, message and e-mail should be generated for each one and delivered to them. It is planned to make system like GEB bill collection system, where user should be also able to pay their dues from anywhere. Alerts and warning should also be generated after due date. Central authority should be able to monitor how much tax collected and remained pending for long duration for each village.</p>
<b>Users</b>	: All house owner at villages and tax collecting authority.All house owner at villages and tax collecting authority. All house owner at villages and tax collecting authority. All house owner at villages and tax collecting authority.
<b>Expected Outcomes</b>	: Better communication and harassment free tax collection
<b>Impact</b>	: Better communication and harassment free tax collection.

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## DDO Office, Arvalli

<b>Problem ID:</b>	PID400
<b>Challenge Title</b>	: Daily sheets and History logs of office staff
<b>Name of the Office</b>	: DDO Office, Arvalli
<b>Challenge Description with context</b>	<p>: In the absence of concerned staff particular work gets disturbed and sometimes it stops because of unawareness of work condition by alternate staff taking position of absent staff.</p> <p>If it is possible to track the history of work of absent staff the alternate staff can easily understand the work nature and may execute the work and this will stop delaying work.</p> <p>Moreover daily updating of details of work will update the Concerned staff regarding any work taken under by office.</p> <ul style="list-style-type: none"><li>• Daily routing sheets</li><li>• Work History</li><li>• Progress chart</li><li>• Alternate arrangement of work</li><li>• Set reminder of work or meeting</li><li>• Allocation of work criteria wise</li></ul>
<b>Users</b>	: Maximum usability: Officers, Admin : Executive Engineer
<b>Expected Outcomes</b>	<ul style="list-style-type: none"><li>• Easy Summarize work sheet</li><li>• Classify work scenario</li><li>• Prepare daily sheets easily</li><li>• Nothing is memorized</li><li>• Less paper work</li><li>• Alternate load setting easily and traceable</li><li>• Give reminder messages timely</li></ul> <p>Students are supposed to build the software solution for maintaining the track of daily sheets and history and alternate work allocation in case of absentism of a particular officer.</p>
<b>Impact</b>	: Performance based work and improvement of progress graph is definitely increase after develop such type of application.

<b>Problem ID:</b>	PID401
<b>Challenge Title</b>	: Employee seating assessment
<b>Name of the Office</b>	: DDO Office, Arvalli
<b>Challenge Description with context</b>	<p>: Departmental head officer knows that my team member is present in office but it is very hard for officer to justify whether his/her team member is available on his/her working desk or Not. And If team member is not present on working desk officer may asked the reason for that and by the analysis of data officer may come to know the efficiency of team member.</p> <p>Live attendance: Employee's presence in office is important but after the presence how many hours does he/she spend on his/her own working desk is hard to justify by Head officer.</p> <p>Dealing with public: Public dealing officers must require their presence on concern desk but sometimes they do not present on their desk on working hours.</p> <p>Interruption in work: Public suffer for their problem in office because of concern officer is absent or alternate arrangement is not done.</p>
<b>Users</b>	: Team members(sub officer) of any department , Admin, Head of department (chief officer)
<b>Expected Outcomes</b>	<p>: No Pending work: In Public sector maximum work is pending due to concern officer is not available on desk.</p> <p>Fast solution:Even many time small work/problem takes more time for completion.</p> <p>Unity/Team work: Create communication gap between head officer and team members.</p> <p>Performance : Performance level is increased because of constant monitoring</p> <p>Students are supposed to build an app for tracking the particular officer and its presence</p>
<b>Impact</b>	: Trust of Public in government institution will increase. Timely completion of work/problem of general public. General public and other colleagues of absentee will also be aware of the alternate arrangement.

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## DDO Office, Bharuch

<b>Problem ID:</b>	PID402
<b>Challenge Title</b>	: Employee Management System
<b>Name of the Office</b>	: DDO Office, Bharuch
<b>Challenge Description with context</b>	: Employee Management System will digitally store all the records of the employee of the concerned office. The employee records like personal details, joining records, transfer records, promotion records, salary and increment details, service history etc. will be managed digitally.  At present, all the records of the employee are maintained manually. The system is less effective to keep the up to date records of the employee. This process is time consuming and error-prone. Digital record keeping will make it more reliable, transparent and effective.
<b>Users</b>	: DDO Office administrator
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• Easy tracking of employees records</li><li>• Employee management can be improved</li><li>• Long term records can be maintained.</li><li>• Service history can be easily tracked</li></ul>
<b>Impact</b>	: <ul style="list-style-type: none"><li>• Easy management of employee records</li><li>• Time saving</li><li>• Transparency in record keeping.</li><li>• Long term preservation of records</li></ul>

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<b>Problem ID:</b>	PID403
<b>Challenge Title</b>	: Mobile Attendance System with location
<b>Name of the Office</b>	: DDO Office, Bharuch
<b>Challenge Description with context</b>	<p>: Mobile Attendance System will keep the records of attendance of each employee of the office. This system will make it easier to keep the track of entry and exit timings of the employee. To make it more effective the location tracking can be included. Leave management can be improved and maintained digitally. The system can be developed as web application as well as mobile application.</p> <p>At present, all the records of the attendance of the employee is maintained manually. The system is less effective to keep the attendance records of the employee. Record keeping of the attendance and leave records are digital which makes it possible to maintain records for long term and transparent.</p>
<b>Users</b>	: DDO Office Administrator
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• Easy tracking of employees with location</li><li>• Leave management can be improved</li><li>• Long term records can be maintained.</li><li>• Improvement in efficiency of work</li></ul>
<b>Impact</b>	: <ul style="list-style-type: none"><li>• Easy management of employee attendance.</li><li>• Time saving</li><li>• Easier leave management</li><li>• Easier attendance monitoring</li><li>• Efficiency improvement</li></ul>

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<b>Problem ID:</b>	PID404
<b>Challenge Title</b>	: Online File Tracking System
<b>Name of the Office</b>	: DDO Office, Bharuch
<b>Challenge Description with context</b>	: Online File Tracking System includes the tracking of each and every file received at DDO office. It evaluates the time taken by each respective table/section to process the file. The higher authorities can view the status of file by viewing the records. The system can be developed in generalized manner which includes web application as well as mobile application which shows the digital records of the status of the files.  At present, all the records of files are being maintained manually. The tracking process becomes more difficult and time consuming. It is difficult to trace the exact status of the files. So the online file tracking system will overcome the problems which are currently presents in the systems and improve the efficiency of the work.
<b>Users</b>	: DDO Office administrator  Intermediate roles
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• Easy tracking of files</li><li>• Improvement in efficiency of work</li><li>• Responsibility allocation</li><li>• Evaluation of time taken to process the file.</li><li>• Evaluation of time taken to process the file at each section.</li></ul>
<b>Impact</b>	: <ul style="list-style-type: none"><li>• Easy management of files</li><li>• Time saving</li><li>• Efficiency improvement</li></ul>

## DDO Office, Kachchh

<b>Problem ID:</b>	PID405
<b>Challenge Title</b>	: App for Animal helpline treatment through mobile van
<b>Name of the Office</b>	: DDO Office, Kachchh
<b>Challenge Description with context</b>	<p>: Mobile van for animal helpline facility is being implemented in kutch district. Info related to animal care taker name of veterinary officer, disease and treatment of animal; time to inform; medicine given; pictures of doctor doing the treatment has been kept on manually basis which is time consuming and cumbersome</p> <p>Real time info is being available.</p> <p>Monitoring of impact of this facility.</p> <p>Need to develop app so that veterinary officer can send information as attached in annexure-1 from the spot of treatment with geo tagged and time stamped photos.</p> <p>Along with the prescription given; what will be the next steps; next visit and other manual flow information. This application should have an mobile application which should be available with the doctor.</p>
<b>Users</b>	: veterinary officer
<b>Expected Outcomes</b>	<p>: Evaluate disease and treatment (show related previous cases and more details about disease)</p> <p>Monitoring &amp; supervise this facility (show open cases till date; cases under solution; completed cases)</p> <p>Study if such area where particular disease happens (show the map which displays the affected areas with the disease and contact details of working officers in that areas)</p>
<b>Impact</b>	<p>: Faster &amp; easier facility with daily reporting ( like number of cases opened today, no of cases handled; no of cases completed with rating of work done)</p> <p>One can access the field from portal for study (study can be done for disease around the area and a prominent solution can be given)</p> <p>Information easily available of beneficiary for evaluation</p>

<b>Problem ID:</b>	PID406
<b>Challenge Title</b>	: Collection of various information from village/ block
<b>Name of the Office</b>	: DDO Office, Kachchh
<b>Challenge Description with context</b>	<p>: So many government schemes is implemented for socio-economic development. for the status of effective implementation, collection of various information is required. moreover for the monitoring purpose, daily progress has to be collected from village or blocks. like kishan vikas or gram panchayat development</p> <p>Monitoring system will become effective ( No of open cases; under solution; closed cases)</p> <p>Real time information, which was directly given by concern. (Quick response of information via electronic media rather than manual hand written paper documents)</p> <p>Saving time, minimize duplication and flow become direct.</p> <p>Direct and real monitoring system can be developed even feedback analysis should be done</p> <p>Storage of data should be done</p>
<b>Users</b>	: Village level officials
<b>Expected Outcomes</b>	<p>: Strengthening monitoring system, direct information from user, real time data and speedy receiving system</p> <p>Day to day analysis (analysis of document requested; no of officer filled the data; no of data is pending with contact details of concerned officer)</p> <p>Data storing and analysis (Analysis of previous data for taking statistical decisions)</p>
<b>Impact</b>	<p>: Information will be provided to government in time (which will improve the governance and facilities to the public)</p> <p>trend of data/ information will be available (better statistical analysis for taking decisions)</p> <p>Flow of information will be provided directly to the head quarter (quick access to the data from the root person directly to the higher authority will be available)</p>



<b>Problem ID:</b>	PID407
<b>Challenge Title</b>	: Work flow of development works
<b>Name of the Office</b>	: DDO Office, Kachchh
<b>Challenge Description with context</b>	<p>: Many development work is going on at village level from various schemes of government, in the flow of work, different sections are given to the different offices of government. it is difficult to know where the work has taken more time for the completion. also the status of work is difficult to know from various department, because so many civil work is running at various levels</p> <ul style="list-style-type: none"> <li>• Status of the work can be seen directly to the concerned higher authority ( like office of ddo)</li> <li>• Minimize the time for completion of work conducted by r&amp;b or panchayat ( like paper work stucked in pipeline of authorities)</li> <li>• All details of work can be seen for a scenario</li> </ul> <p>Like constructing a road in a village. The proposal has to be created which has details of land acquisition and other information, which has to pass thru passing the plan from higher authority and then given for tendering purposes till the construction of the road. Thus to know the current status of each work. It is difficult to know by manual means.</p>
<b>Users</b>	: Village/ Block level officers
<b>Expected Outcomes</b>	<p>: Minimize the time taken for completing the desired work ( if the dashboard is available where the no of current works are visible; no of works which are in critical conditions such as due date is near)</p> <p>Various permissions is to be given in time (by knowing where the file is pending or query raised)</p> <p>Monitoring of work becomes easy</p>
<b>Impact</b>	<p>: Complete details of work can be made available and in a running time status of the work is seen.</p> <p>Monitor and supervise the desire work at level like district, taluka and village.</p> <p>This will boost the complete development of the district, as so many works by R &amp; B are stucked due to minor queries and can be easily solved,</p>

## DDO Office, Mahisagar

<b>Problem ID:</b>	PID408
<b>Challenge Title</b>	: Monitoring of consumable items in Aganwadi (ICDS LEVEL)
<b>Name of the Office</b>	: DDO Office, Mahisagar
<b>Challenge Description with context</b>	: Government provide all consumable items to aaganwadi for the kid as well as for pregnancy women under the scheme of government.but all are used or not and any consumption having quality issue can easy to find out through monitoring,recnet condition is that no monitoring system working for considering that data .  Any specific application required for that and that application only access through pregnancy women own.she find that consumable or not and remark it in their phone application.and for kid their parents able to feed the data for food which received or not .  Application will under control and monitoring under the district level and continuous follow up is also necessary.
<b>Users</b>	: General user of any district and specially kid of anaganwadi and pregnet women.
<b>Expected Outcomes</b>	: This monitoring system leads more proper way and specify their source delivery or not.  Clear way to identify and monitoring the stock.specific application required for that and that application only access through pregnancy women own.she find that consumable or not and remark it in their phone application.and for kid their parents able to feed the data for food which received or not .  Application will under control and monitoring under the district level and continuous follow up is also necessary.
<b>Impact</b>	: No misleading possible and no buffer stock possible at aangawadi Continuous data gathering system that better result obtained. All stock are used or not and any consumption having quality issue can easy to find out through monitoring,recnet condition is that no monitoring system working for considering that data

## DDO Office, Navsari

<b>Problem ID:</b>	PID409
<b>Challenge Title</b>	: Effective Deficiency Management of Official staff
<b>Name of the Office</b>	: DDO Office, Navsari
<b>Challenge Description with context</b>	: The post for senior and junior clerk is available. Senior clerk expenses are incurred in animal husbandary, but is working in revenue department. Looking at the work load senior clerk duty should be assigned in animal husbandary department is necessary.  Senior clerk should be assigned to the department and veterinary officer and veterinary inspector recruitment should be done and appointed.  Create a system in which Deficiency of staff can be managed effectively
<b>Users</b>	: Animal husbandary Department  Animal Hospitals  Animal Primary Health Centre
<b>Expected Outcomes</b>	: Administrative work will be simplified. Presence of Veterinary doctor and Veterinary inspector will be beneficial to pastoralist.
<b>Impact</b>	: Effect of Animal husbandary in district will be good.

<b>Problem ID:</b>	PID410
<b>Challenge Title</b>	: System for providing information for solving doubt of online works
<b>Name of the Office</b>	: DDO Office, Navsari
<b>Challenge Description with context</b>	: Online information is not provided to office, only applicants are informed after registering through ifms module regarding e payment information.  For faster works, updation of ifms module is required.  Provide system for providing information for solving doubt of online works
<b>Users</b>	: District panchayat office
<b>Expected Outcomes</b>	: Faster work
<b>Impact</b>	: Faster work and impactful information.

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<b>Problem ID:</b>	PID411
<b>Challenge Title</b>	: Pachayati Law/Circular Display Information System
<b>Name of the Office</b>	: DDO Office, Navsari
<b>Challenge Description with context</b>	: Training given by sird gujarat, only information regarding administration and accounting works in panchayati works are given to the officer and employees for cost of lakhs of rupees but in case of misconduct, what should be done is not explained in training given by sird gujarat. Information can be made online
<b>Users</b>	: Officers employees talati cum mantri
<b>Expected Outcomes</b>	: Officer related to panchayati raj will become more responsible.
<b>Impact</b>	: Panchayati raj works will get improvised.

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<b>Problem ID:</b>	PID412
<b>Challenge Title</b>	: Payment of scholarship aid through D.B.T
<b>Name of the Office</b>	: DDO Office, Navsari
<b>Challenge Description with context</b>	: At present department of social welfare gives scholarship aid to students through D.B.T. but in other scheme first the grant is received in PLA and deposited in DDO and bills are made and the payment is done by making cheques of beneficiary who have applied in other schemes of gujarat government for scholarship of students.  scholarship aid for the different scheme in gujarat government is done by D.B.T. instead of cheques and in panchayat grant is allotted by IFMS and bills are made accordingly.this leads to the reduction in maintaining received and outgoing registers for the grant of different schlorship of government, which ultimately savings of papers and hence contributing in sustainability even records can be checked electronically within a minute.
<b>Users</b>	: The users of the schemes include schools, private and government colleges who can apply for the scheme of their students. even students are also directly abale to check their scholrship status and if they found any they can solve on their own.
<b>Expected Outcomes</b>	: Payment through D.B.T. is deposited directly in applicants account. The grant received through IFMS and making of bills will reduced the time.students are also directly able to check their scholrship status and if they found any they can solve on their own.they do not need to visit of the social welfare in their district and no need to carry the paper work . every thing has to be done electronically.
<b>Impact</b>	: Since the process is done electronically via D.B.T.transfer the hassle of making cheques , distributing cheques, depositing cheques , mantaning the register of the beneficiary of the scheme is eliminated, which ultimately result in saving of man hours, papers.Payment through D.B.T. is deposited directly in applicants account.

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<b>Problem ID:</b>	PID413
<b>Challenge Title</b>	: Recruiting junior clerk class 3 by out sourcing.
<b>Name of the Office</b>	: DDO Office, Navsari
<b>Challenge Description with context</b>	: As post of junior clerk class 3 is 50 percent empty as per accepted revenue, so permission should be given to fill this post by outsourcing until government will not recruit it. Online processing of Recruiting junior clerk class 3 by out sourcing. Problem related to shortage of staff can be solved .
<b>Users</b>	: Applicants
<b>Expected Outcomes</b>	: Works can be completed during time limits
<b>Impact</b>	: Administrative works will be completed speedily.

### DDO Office, Palanpur

<b>Problem ID:</b>	PID414
<b>Challenge Title</b>	: Automated DDO Office Staff attendance System
<b>Name of the Office</b>	: DDO Office, Palanpur
<b>Challenge Description with context</b>	: Attendance of staff is only on paper, Digital attendance system is desired.  A Simple Digital Attendance System can be developed in which, DDO Staff have to do nothing and their attendance can be automatically logged using their registered mobile when they come to or leave DDO Office.
<b>Users</b>	: DDO Office Staff
<b>Expected Outcomes</b>	: Digital Record Keeping of Staff Attendance will help in smart governance.
<b>Impact</b>	: DDO Dashboard can include this data.

<b>Problem ID:</b>	PID415
<b>Challenge Title</b>	: Automated Talati Attendance System
<b>Name of the Office</b>	: DDO Office, Palanpur
<b>Challenge Description with context</b>	: Earlier corporation has proposed an attendance system called e-TAS for Talati attendance. But it was complex to handle and hence Talati Union has declined to use that attendance system.  An Alternate Simple Attendance System can be developed in which, Talatis have to do nothing and their attendance can be automatically logged using their register mobile.
<b>Users</b>	: Talati & DDO office
<b>Expected Outcomes</b>	: Simplified Attendance system will make digital attendance of talatis possible.
<b>Impact</b>	: Regular reporting of Talati attendance to DDO Office.

**Problem ID:** PID416

**Challenge Title :** Circular Storage & Management System.

**Name of the Office :** DDO Office, Palanpur

**Challenge Description with context :** Many Info and Work flows from DDO Office to Level UP and Level Down Offices by means of Circulars. This Circulars Generally Comes by Mails/Posts. But to look for specific circular received from/ Sent to other department on particular date, is messy process.

Circulars Storage and Management System should be developed which automatically arranged circulars date wise and dept. Wise. Also, it can be categorized.

**Users :** DDO Office and all its stakeholders.

**Expected Outcomes :** Searching for specific circular will become easy through online system.

**Impact :** Information Management will improve.

**Problem ID:** PID417

**Challenge Title :** Duplication Detecation and Avoidance of (Pradhanmantri/ Mukhyamantri/ Indira/ Sardar) Aawas Yojana Beneficieray.

**Name of the Office :** DDO Office, Palanpur

**Challenge Description with context :** Govt offers Housing at discount rates to poor under various schemes named (Pradhanmantri/ Mukhyamantri/ Indira/ Sardar) Aawas Yojana. But No Common Database is available and hence same family gets benefit of the scheme under other schemes. This stops reach of scheme to needed beneficiary.

If a common database of Scheme beneficiery is made, this will help in performing Duplication Detection and Avoidance of (Pradhanmantri/ Mukhyamantri/ Indira/ Sardar) Aawas Yojana Beneficieray.

**Users :** DDO Office Staff and Common Public.

**Expected Outcomes :** No More Duplicate allocation of Housing.

**Impact :** The Scheme will reach to needy people.



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<b>Problem ID:</b>	PID418
<b>Challenge Title</b>	: File Tracking System
<b>Name of the Office</b>	: DDO Office, Palanpur
<b>Challenge Description with context</b>	: Currently Files need to be transferred from one dept to another with lots of added paper used and also, proper tracking is lacking. This whole files Forwarding System can be made online, which allows to add needed comments and forwarding in paperless manner. Also, file tracking will be easier through online platform.
<b>Users</b>	: DDO Office Staff
<b>Expected Outcomes</b>	: Reduces Unnecessary Paper Wastage.
<b>Impact</b>	: Efficient FoF System will also help cope with climate change by saving Paper and hence by saving Trees. Also, status of file on a particular table can be track easily.

<b>Problem ID:</b>	PID419
<b>Challenge Title</b>	: Gram/Taluka Panchayat WebSite
<b>Name of the Office</b>	: DDO Office, Palanpur
<b>Challenge Description with context</b>	: Website is not there A Web Site of Gram/Taluka Panchayat can be developed which contains details of staff, services and related information.
<b>Users</b>	: DDO office staff, gram panchayat staff & common public
<b>Expected Outcomes</b>	: Many important information can be managed and shared using this kind of website.
<b>Impact</b>	: Awareness among Common public related to services offered by Gram Panchayat

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<b>Problem ID:</b>	PID420
<b>Challenge Title</b>	: Gujarati Optical Character Recognition System.
<b>Name of the Office</b>	: DDO Office, Palanpur
<b>Challenge Description with context</b>	: Not a Single OCR Software or website available to convert Scanned images of Gujarati Typed Pages to Word or Text Files and hence manual typing of those info is the only option left, which is time consuming  IF an OCR system which converts gujarat language hardcopy text to softcopy in word or Text format, it will save hours of unnecessary typing.
<b>Users</b>	: All office staff of any Govt. Office
<b>Expected Outcomes</b>	: Any hard copied filed page written in gujarati can be converted to word within minutes
<b>Impact</b>	: All available Hard copy files of any dept. can be digitized to use of digital tools.

<b>Problem ID:</b>	PID421
<b>Challenge Title</b>	: HardCopy Files Tracking
<b>Name of the Office</b>	: DDO Office, Palanpur
<b>Challenge Description with context</b>	: To find a file among a bunch of Files in many available cupboard is a messy task.  To Simplify this an file tracking system should be developed which keeps track of files and shows it on smart cupboard.
<b>Users</b>	: All office staff of any Govt. Office
<b>Expected Outcomes</b>	: No more missing files and time consuming file search procedures.
<b>Impact</b>	: Properly managed smart file and cupboard system will improve daily work.

**Problem ID:** PID422

**Challenge Title :** Pending Work Followup and Reminder System.

**Name of the Office :** DDO Office, Palanpur

**Challenge Description with context :** In DDO Office, Officers need to give reminders to Subordinate TP/DP Offices. But due to their Busy schedules they sometimes forget to take followup of activities assigned to TP/DP Offices. This delays the overall Work.  
  
System which gives Reminders and takes followup of assigned tasks periodically, can be developed.

**Users :** DDO Office Staff and TP/DP Offices

**Expected Outcomes :** Timely execution of work and follow ups through online reminder and followup system.

**Impact :** Overall Work Throughput will increase.

**Problem ID:** PID423

**Challenge Title :** RTI Due date Reminder system.

**Name of the Office :** DDO Office, Palanpur

**Challenge Description with context :** Currently there are no reminders provided when RTI is about to reach its due date to revert back, and hence penalty is fined on office even if all the data is available with dept.  
  
A System to provide reminders to relevant staff responsible of reverting to RTI application can be developed.

**Users :** Any government office staffs

**Expected Outcomes :** No more Missed due dates of RTI application response

**Impact :** Efficient implementation of RTI Act.

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<b>Problem ID:</b>	PID424
<b>Challenge Title</b>	: Taluka Panchayat WebSite
<b>Name of the Office</b>	: DDO Office, Palanpur
<b>Challenge Description with context</b>	: No WebSite is available of Taluka Panchayats. A Web Site of Taluka Panchayat can be developed which contains details of staff, services and related information.This website can include forum, were citizens can use this forum for seeking satisfactory solutions.
<b>Users</b>	: DDO Office Staff, Taluka Panchayat Staff & Common Public
<b>Expected Outcomes</b>	: Many important information can be managed and shared using this kind of website.
<b>Impact</b>	: awareness among Common public related to services offered by Taluka Panchayat

## DDO Office, Panchmahal

<b>Problem ID:</b>	PID425
<b>Challenge Title</b>	: Wastage water harvesting system monitoring
<b>Name of the Office</b>	: DDO Office, Panchmahal
<b>Challenge Description with context</b>	<p>: Water is prime source of life, every drop of water is needed for sustain life. during rainy season maximum water can available to us but remaining season less or inefficient water. for that purpose wastage of water to being reduce is necessary. For that wastage water harvesting system monitoring required</p> <p>Wastage of water harm to us in long life span so that need to harvest for future life, for that wastage of water to reduce by</p> <ol style="list-style-type: none"> <li>1. During rainy season roof water collection through water sump.</li> <li>2. Rainy season maximum water is flow in drainage line that will wastage</li> <li>3. Conveyance pipes and gutters</li> <li>4. Under ground storage systems</li> <li>5. Recharge systems</li> </ol> <p>A simple method to avoid contamination would be to harvest rainwater and use it for drinking and cooking purposes. This method is being taken up on a large scale in affected areas in India and Bangladesh.</p>
<b>Users</b>	<p>: General public use the water and that will need to focus on harvesting the wastage of water and maintain the water level for</p> <p>Drinking, cooking, personal washing, washing cloths, cleaning home, growing food (domestic use), waste disposal (sanitation), crop production and livestock, gardens and recreation.</p>
<b>Expected Outcomes Impact</b>	<p>: System for Water Harvesting Monitoring</p> <p>: Recent stage water is prime source of life, every drop of water is needed for sustain life. during rainy season maximum water can available to us but remaining season less or inefficient water. for that purpose wastage of water to being reduce is necessary .for that wastage water harvesting system monitoring required</p> <p>This will help to use seasonal water storage and maintain water level in dry season</p>

<b>Problem ID:</b>	PID426
<b>Challenge Title</b>	: Waste handling monitoring
<b>Name of the Office</b>	: DDO Office, Panchmahal
<b>Challenge Description with context</b>	<p>: Recent stage all states are facing such type of waste collection issue, after waste collection any how but after that waste handling are not properly done that way many diseases are happen</p> <p>Waste handling separate wet and solid waste separate right now but that monitoring system like CCTV camera or any other application that direct shows the waste handling are properly done or not</p> <p>Waste handling monitoring system require because of whole dustbin are fill up with waste after that more number of waste are overflow due to not handling as soon as possible due to that other waste are overflow on road or society area that leads pollution and that leads to disease</p> <p>CCTV fitment on waste dustbin to clear indication status of waste fill.</p> <p>Waste handling tractor or any other equipment having GPS for tracing out the waste handling are properly done or not.</p>
<b>Users</b>	<p>: General public of the states, district</p> <p>Public are use maximum waste collection system in city are .in city are not possible to dump the waste and not possible to throw the waste anywhere that maximum use of it.</p>
<b>Expected Outcomes</b>	<p>: Waste handling monitoring system require because of whole dustbin are fill up with waste after that more number of waste are overflow due to not handling as soon as possible due to that other waste are overflow on road or society area that leads pollution and that leads to disease . CCTV fitment on waste dustbin to clear indication status of waste fill.</p> <p>Waste handling tractor or any other equipment having GPS for tracing out the waste handling are properly done or not.</p>
<b>Impact</b>	<p>: CCTV fitment on waste dustbin to clear indication status of waste fill. Waste handling tractor or any other equipment having GPS for tracing out the waste handling are properly done or not. Waste handling separate wet and solid waste separate right now but that monitoring system like CCTV camera or any other application that direct shows the waste handling are properly done or not</p>

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## DDO Office, Patan

**Problem ID:** PID427

**Challenge Title** : Dead Stock Management System

**Name of the Office** : DDO Office, Patan

**Challenge Description with context** : Dead stock Management system helps to manage dead stock. It is Time consuming in traditional paper base system. It will be used to maintain dead stock records. Employee, Administrator and store keeper will use this software or app. Prior Computer knowledge is required. This software can be in English/Gujrati or in both,

Using computer based or app based framework makes the job of keeping information on dead stock easy. Message will be sent to the employee for authorization of various operations. It is possible to do editing in the records. system can produce different reports and may have search options to ease the job. Reports can be in English/Gujrati. As Gujrati language is used in traditional system. It can be used in new system

**Users** : Employee, Administrator and store keeper. Store keeper keeps track of all the records. He maintains Dead stock register. Administrator is the main authority. All dead stock related documents are verified by store keeper

**Expected Outcomes** : It will make record management easy. Paper based record work also decreases. It is possible to do editing in the records. system can produce different reports and may have search options to ease the job. Reports can be in English/Gujarati. Gujarati language is used in traditional system. It can be used in new system. New system will be fast, easy to use and more important user friendly. Help menu should be there in the software for its easy access.

**Impact** : Record management will be easy and fast. Less manpower is requirement. Gujrati language is used in traditional system. It can be used in new system. New system will be fast, easy to use and more important user friendly. Help menu should be there in the software for its easy access. Paper based record work also decreases. It is possible to do editing in the records. system can produce different reports and may have search options to ease the job

<b>Problem ID:</b>	PID428
<b>Challenge Title</b>	: Develop and maintain Inward/Outward Registry by software
<b>Name of the Office</b>	: DDO Office, Patan
<b>Challenge Description with context</b>	<p>: Inward/Outward management system which facilitate document deliver to the respective department through clerk table. Acknowledgement provided by registry for each post and mail is important. Through outward of post from clerk table to the respective branch will get notification of file received icon which will reflect to the clerk office of registry</p> <p>The Inward Outward Register System which is designed to work for various branch offices which are sending &amp; receiving daily courier/post physical mail. This application can take care of Inward &amp; Outward flow and also the reporting part at clerk office. From this office even applicant can also get the notification of post received at the office. Applicant person can send document through post and he/she receive notification from office</p>
<b>Users</b>	<p>: Applicant of respective sending person / Person who are living outside of city and want to send documents to the office for his/her ongoing application. Clerical staff who is maintaining hardcopy of muster which is converted into softcopy and all record maintain for lifetime which is useful for any further inquiry</p> <p>Clerk office, DDO, Patan</p>
<b>Expected Outcomes</b>	<p>: For ongoing process: As documents reach the respective department on time from registry office, pending work can start by respective officer with receiving by documents. So in time applicant can get the solution of his / her application. Successive instructions to the department clerk specified the creation of inward/outward register with communication of other relevant branches.</p> <p>For new process: Clerks can forward direct to the respective department with reference to the higher authority</p>
<b>Impact</b>	<p>: Registry carries out record keeping of department for the variant application/ post/ mails/ orders etc. and Maintain daily to monthly record and analyses of registered data at the registry office. Recorded data at registry office on software can further be utilized by authority for official action.</p>



<b>Problem ID:</b>	PID429
<b>Challenge Title</b>	: Develop File tracking by higher authorities
<b>Name of the Office</b>	: DDO Office, Patan
<b>Challenge Description with context</b>	<p>: File tracking system computerizes the file, store it in digital format.create a file, upload/download documents, move it for approval to authorities.</p> <p>File Tracking System (FTS) is a web based application which helps in tracking the movement of files and receipts. The application enables the users to maintain a consistent watch over the movement of various important documents in the process of decision-making in time.</p> <p>With File tracking system applicant can show the actual status of file position. DDO can see the file status at particular table and what exact time taken to clear the file and proceed for further action. Higher authorities can make a contact with the respective person who are working on the same for further action like audit/analyzing/reporting at his/her level regarding file. All kind of modification can be done by higher authority with respect to concern officers who were working on the same file.</p>
<b>Users</b>	<p>: Employee of DDO officespatan: DDO/ TDO(Higher Authority)patan Higher Authority of respective department with credential. File tracking Restrictions to unauthorized person.</p> <p>Credential for web application is given to officer for response of file clearance</p> <p>DDO, Patan</p>
<b>Expected Outcomes</b>	<p>: File tracking system is step towards paperless system. Users can noting on the file. Unbiased approach for file and receipts movement. Officers who are working on file can make comments on it and it will be reflect to the DDO so higher authority can take appropriate action on it.</p> <p>Higher authority monitor the actual status and file clearing time at particular head.</p> <p>So control data integrity and user access possiible</p>
<b>Impact</b>	<p>: Movement of file observed by higher authority so he/she can make an official feedback on it. Illegal approach of file movement not possible and so reference or corrupt deal will not be possible. Auto alert for any crucial effect and the pending files for higher authority. File handling will become easy and go for paperless work. Registered data on software regarding file can be utilized for further reference.</p>

<b>Problem ID:</b>	PID430
<b>Challenge Title</b>	: Develop online complaint Register for DDO
<b>Name of the Office</b>	: DDO Office, Patan
<b>Challenge Description with context</b>	<p>: To develop an online complaint register for people under DDO/ TDO/ Talati. Complaint can be registered by any person of village/city under the district on subject Like: complaint Register for Encroachment, Corruption, land acquired, Attendance, Cleanliness, water pipe leakage, rain water harvesting application, street light and many more</p> <p>Ex. Common people of village registered online complaint of land acquired to the talati. Applicant people get unique id for it and based on this he/she can track his/her complaint status. With this DDO and TDO sir/madam can see the status of complaint and time for execution of applicant complaint.</p> <p>Ex. Talati sir corruption complaint can also registered with same process but maintain in such a way TDO and DDO sir receive the complaint.</p>
<b>Users</b>	<p>: Employee of DDO offices: DDO/ TDO /Talati/ Common person of district</p> <p>Applicant of respective sending person / Person who are living outside of city and want to complaint against Encroachment, Corruption, land acquired, Attendance, Cleanliness etc. to the office of DDO.</p>
<b>Expected Outcomes</b>	<p>: We need to have such digital solution which provide the reports about how many complaints received from village &amp; districts, types of complaints along with the resolution of the complaints at all levels regarding. Summary of the districts should be provided so that it can be given to DDO online or manual mode. Complaint solved in time without any reference priority and applicant get effective output of his /her complaint</p>
<b>Impact</b>	<p>: Smooth process to get solution of complaint registered by person against Encroachment, Corruption, land acquired, Attendance, Cleanliness etc. Organizer can keep the records of all kind of complaint data for analysis of online complaint and in future it will be modify to reduce the same rate. DDO to the TDO to the Talati to the Village person easily keep track of complaint and feedback report.</p>

<b>Problem ID:</b>	PID431
<b>Challenge Title</b>	: Developing Affordable Micro irrigation in Agriculture
<b>Name of the Office</b>	: DDO Office, Patan
<b>Challenge Description with context</b>	<p>: Today in most of the farm fields' water is used more than its requirement due to inadequate facilities, illiteracy or lack of water-saving resources. It is sometimes costly to afford technology/agriculture equipment for remote location farmers. So focus must be laid on appropriate utilization of water as per requirement.</p> <p>Surface irrigation is preferred if the irrigation water contains much sediment. The sediments may clog the drip or sprinkler irrigation systems. If the irrigation water contains dissolved salts, drip irrigation is particularly suitable, as less water is applied to the soil than with surface methods</p> <p>Affordable water saving mechanism should be developed through micro irrigation concept or other suitable means which would minimize unnecessary water loss without sacrificing yield of crop</p>
<b>Users</b>	<p>: Irrigation is usually used in areas where rainfall is irregular or dry times or drought is expected. Modern irrigation systems use reservoirs, tanks, and wells to supply water for crops.</p> <p>Farmers (economically / geographically challenged)</p>
<b>Expected Outcomes</b>	<p>: The four methods of irrigation are:</p> <p>Surface.</p> <p>Sprinkler.</p> <p>Drip/trickle.</p> <p>Subsurface.</p> <p>Micro-irrigation is the slow, frequent application of water directly to relatively small areas. Water is generally ran through low-pressure, flexible plastic tubing. A leading advantage of micro-irrigation is that non-beneficial evaporation is greatly reduced when compared to sprinkler irrigation. Minimal loss of water waste and promote innovative techniques for cultivation</p>
<b>Impact</b>	<p>: It works by exposing the roots to a direct supply of water. This method is facilitated by the use of drip emitters, which release water in a slow and steady fashion. ... Drip emitters are connected to a water source by a feeder hose. Another version of drip irrigation uses a hose that has drip emitters built into it. Large class of farmers may be benefited</p>

<b>Problem ID:</b>	PID432
<b>Challenge Title</b>	: Mitigate migration of farmers from rural to urban area
<b>Name of the Office</b>	: DDO Office, Patan
<b>Challenge Description with context</b>	<p>: Farmers are the major participants in rural development process and their willingness to settle in urban areas directly affects the implementation of rural revitalization strategy.</p> <p>The main influencing factors are found to be age, occupation, number of non-agricultural workers in the family, household cultivated land area, annual household income, house building materials, degree of satisfaction with social pension, homestead and contracted land subsidies, income constraints, and other constraints.</p> <p>In most rural areas, the impact of rural-urban migration is a rapid deterioration of the rural economy leading to chronic poverty and food insecurity.</p> <p>The provision of social amenities such as water, electricity, cinemas, roads and telephones in rural areas will go a long way in reducing the rate at which youth move to Urban areas.</p>
<b>Users</b>	<p>: People affiliated to below cited problem, agriculture and farmer community The poor economic conditions and lack of employment opportunities in villages are the main push factors that drift the rural population to the urban areas. The rural areas, which are less developed, have poor agricultural conditions and greater population pressure on land, push the surplus population to urban centers</p>
<b>Expected Outcomes</b>	<p>: Increased investment in rural continuing education, improve farmers' education levels, increase their human capitals, mechanism to protect the rights and interests of farmers who withdraw from the homestead and contracted land system. would minimize farmers' withdrawal from homestead and contracted land systemsome policy insights can be obtained to promote the implementation of new urbanization and rural revitalization strategies.</p>
<b>Impact</b>	<p>: Institutions and constraints have different rules in the migration willingness of different groups of farmers. The influence of institutions on farmers' willingness to migrate to urban areas was greater in the youth group (versus middle-aged/aged group), the low education group (versus high education group), the agricultural production group (versus non-agricultural group), the group without non-agricultural workers (versus group with non-agricultural workers) and the low income group (versus high income group). The influence of constraints on farmers' willingness to migrate to urban areas won't be greater in the middle-aged/aged group if resources are ensured</p>

<b>Problem ID:</b>	PID433
<b>Challenge Title</b>	: Weather Forecasting System for agriculture
<b>Name of the Office</b>	: DDO Office, Patan
<b>Challenge Description with context</b>	<p>: Indian farming community is in great need to have access to weather information to plan and manage their crops and their livelihoods.</p> <p>Applying pest and disease control is important to protect the farm and crops from the insects. Weather forecast helps the farmers to know when to apply the pests and chemicals to avoid the crop wastage. By some estimates, up to 40 percent of the world's food supply is already lost due to pests.</p> <p>Considering the growing acceptance of farmers for the internet and mobile based services Farmers need weather forecasts for a variety of reasons, including: Spring - need to know current soil temperature and forecast air temps to understand if the soil temp is going to remain stable, decrease or increase. ... Crops will grow and pollinate at certain rates based on accumulated sunlight, temperatures, etc</p>
<b>Users</b>	<p>: Farmers community as the most accurate source of weather forecasts and warnings in the world It includes weather observations of every field to provide information on current crop growing conditions. Weather monitoring offers a set of measurement options to provide useful information about soil and crop conditions, some of which are: Air and soil temperature.</p>
<b>Expected Outcomes</b>	<p>: Climatology and Weather Forecasting is important since it helps determine future climate expectations. Through the use of latitude, one can determine the likelihood of snow and hail reaching the surface. You can also be able to identify the thermal energy from the sun that is accessible to a region.</p> <p>Being able to predict and forecast the weather also allows for data to be gathered to build up a more detailed picture of a nation's climate, and trends within it. precipitation, barometric pressure, temperature, and relative humidity detectors in one instrument.</p>
<b>Impact</b>	<p>: Weather forecast definitely helps farmers on many fronts such as helping them make informed decisions to get the best from their investments and hard work. The losses in the crop production can be reduced by adopting proper crop management practices with the help of timely and accurate weather forecasts</p> <p>Agrometeorology is the study of weather and use of weather and climate information to enhance or expand agricultural crops and/or to increase crop production so it should be spread</p>

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## DDO Office, Porbandar

<b>Problem ID:</b>	PID434
<b>Challenge Title</b>	: To provide online platform for establishing and maintaining the visitors and employee records.
<b>Name of the Office</b>	: DDO Office, Porbandar
<b>Challenge Description with context</b>	: The system needs to maintain various records of all the employees and visitors of government offices. It will help all government departments to keep record of every employee and visitors etc. It is difficult to find the past records of employees and visitors.
<b>Users</b>	: Government
<b>Expected Outcomes</b>	: Systematic Record Keeping
<b>Impact</b>	: Flexibility to track the record

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## **DDO Office, Rajkot**

<b>Problem ID:</b>	PID435
<b>Challenge Title</b>	: Electronic Establishment Branch
<b>Name of the Office</b>	: DDO Office, Rajkot
<b>Challenge Description with context</b>	: This system needs to maintain various records of all the employees of government offices in an electronic form. It will help all government departments to keep record of every employee details, employee recruitment, transfer and promotions of employees, employee retirement, etc.  At present the recruitment and retirement, transfer and promotion details, employee details are maintained manually in form of various hard copy files and documents. The same can be maintained in electronic form so that details of all the employees of government offices can be managed at a glance.
<b>Users</b>	: Establishment branch officers and clerks who need to maintain the records of employees
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• Easy Record keeping of employees</li><li>• Maintenance of Employee Recruitment</li><li>• Details of Transfer/Promotion of employee</li><li>• Manage retirement details</li></ul>
<b>Impact</b>	: <ul style="list-style-type: none"><li>• Suitable for any government organization's establishment branch.</li><li>• Streamlines your processes.</li><li>• Saves time and money.</li><li>• Making the organization efficient.</li></ul>

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<b>Problem ID:</b>	PID436
<b>Challenge Title</b>	: File Tracking System
<b>Name of the Office</b>	: DDO Office, Rajkot
<b>Challenge Description with context</b>	: File Tracking System is to provide flexibility to government departments to track and maintain huge amount of pending files. This system will help all government departments to keep track of every file. The proposed system need to process files in hierarchy and proper action should be taken and necessary permissions are given for the requested files. Sometimes we have to take concern of different departments into consideration.  At present, the DDO offices include work related to the development like five year plans and local development works, Panchayat Samitis, Local bodies and Panchayats. All the files are maintained manually and send from one officer to next as per level and category wise.
<b>Users</b>	: District Development Officer and various Panchayat Officers will get benefit of the system
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• Easy File Tracking</li><li>• Restricted Access</li><li>• Person Independent Processes</li><li>• Senior Management Control</li><li>• Web Access Manager</li></ul>
<b>Impact</b>	: <ul style="list-style-type: none"><li>• Suitable for any government organization.</li><li>• Streamlines your processes.</li><li>• Saves time and money.</li><li>• Making the organization efficient.</li></ul>



<b>Problem ID:</b>	PID437
<b>Challenge Title</b>	: Online Annual Contract Management System
<b>Name of the Office</b>	: DDO Office, Rajkot
<b>Challenge Description with context</b>	: Renewal of AMC, follow-up of various after sales services requires manual reminders and manual record keeping.  Creating a software or a website to manage and monitor the complete activities of Annual Maintenance Contract and Service calls. Addition of various contracts related data with their terms, searching, retrieving contracts by categories, departments, etc. Notification related to renewal, scheduled service can also be added to the system, Reports regarding payment, due services, renewal can be integrated in the system.
<b>Users</b>	: <ul style="list-style-type: none"> <li>• Admin</li> <li>• Contractor</li> <li>• Users</li> </ul>
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• Automated reminder of AMC work.</li> <li>• Effective maintenance of AMC data.</li> </ul>
<b>Impact</b>	: AMC equipment's and services are managed timely.
<b>Problem ID:</b>	PID438
<b>Challenge Title</b>	: Online Dead Stock Management System
<b>Name of the Office</b>	: DDO Office, Rajkot
<b>Challenge Description with context</b>	: Maintenance of information regarding dead stock using paperwork is very difficult as it incurs time. Paperless dead stock management system is required. <ul style="list-style-type: none"> <li>• Using Web based or Application based system makes the task of maintaining dead stock information easy.</li> <li>• Addition, modification and deletion of dead stock can be done efficiently.</li> <li>• System can generate various reports, and can have search option to ease the work.</li> <li>• Notification can also be sent to user for notifying various operation.</li> </ul>
<b>Users</b>	: <ul style="list-style-type: none"> <li>• Admin</li> <li>• User (Employee, Warehouse Keeper)</li> </ul>
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• All the Manual record of dead stock can be made centralized with software or web based platform.</li> <li>• Error free and effective dead stock data management.</li> </ul>
<b>Impact</b>	: Automation in dead stock management will make the system more efficient and reliable.

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<b>Problem ID:</b>	PID439
<b>Challenge Title</b>	: Online Mid Day Meal System for Aanganwadi
<b>Name of the Office</b>	: DDO Office, Rajkot
<b>Challenge Description with context</b>	: All Aanganwadi centers can create demand of different resources to higher authorities and all inventory system of aanganwadi's are centralized at one point.  There are 53029 Aanganwadi centres in 336 blocks are running over Gujarat. They are working for improving the nutritional and health status in terms of physical, social and psychology of children.  Aanganwadi offices should be able to generate demand of their required resources online and all the inventory provided to them. They should also be able to keep record of how much resources are provided to which beneficiaries with how much amount by which karmachari. All such records can be easily maintained and viewed by higher authorities through web portal
<b>Users</b>	: Aanganwadi worker, Admin Staff, Higher Authority Officers
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• System should be able to generate demand of resources from aanganwadi panel of web portal.</li><li>• If new aanganwadi centers are created then it must be added by Admin panel.</li><li>• All Inventory data at Aanganwadi centers must be managed by the portal.</li><li>• Resources available at the offices are distributed to beneficiaries in different forms. This record must be able to be kept on the portal.</li></ul>
<b>Impact</b>	: Aanganwadi Inventory can be managed online and beneficiary records can be found from one point of website. It will make work faster, reliable and accurate.

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<b>Problem ID:</b>	PID440
<b>Challenge Title</b>	: Online Talati Attendance And Location Tracking System
<b>Name of the Office</b>	: DDO Office, Rajkot
<b>Challenge Description with context</b>	<p>: Currently Talati's attendance is marked manually. So it can be made online by Aadhar enabled Finger Print Biometric System. Once they logged in into the system, their field work can be tracked and recorded by their location updation facility in the system through their mobile number.</p> <p>All Talati's attendance can be automated with different kinds of report generation facilities and their live location's can be traced for the field work assigned to them.</p>
<b>Users</b>	: Talati , Office Admin Staff , Officers, DDO Offices at District Level.
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• System must be able to mark Daily Attendance using Finger Print Based Aadhar Enabled Biometric Device.</li><li>• System must be able to update mobile location as per talati's Physical location Changes.</li><li>• System must be able to handle expected errors for the functionalities of the website.</li></ul>
<b>Impact</b>	: All Talati's attendance can be saved on server which results into reliable record managing system and work of the officer's can be made regular through location tracking system.

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## DDO Office, Surendranagar

<b>Problem ID:</b>	PID441
<b>Challenge Title</b>	: Mobile Attendance System for DDO Office
<b>Name of the Office</b>	: DDO Office, Surendranagar
<b>Challenge Description with context</b>	<p>: One of the major problems in developing countries is the absenteeism/irregularities of government officials. As the presence of officials on time directly impacts productivity and efficiency which cannot be monitored with manual attendance. The traditional method of marking attendance involves manual registers which result in time theft and involves the high possibility of human errors. Paper-based attendance marking consumes more time.</p> <p>To address the problems of manual attendance of employee to its best, a solution is proposed by developing a mobile application that will ease the process and provide additional functionalities to effectively maintain and track the data of employee.</p>
<b>Users</b>	: Employees of Municipal Office with specified roles as below <ol style="list-style-type: none"><li>1. Administrator</li><li>2. Department Officer</li></ol>
<b>Expected Outcomes</b>	: A digital web based solution which allows the municipal office to overcome the problems of manual system and ease processing and boost the efficiency of work.
<b>Impact</b>	: <ul style="list-style-type: none"><li>• Transparent System</li><li>• Saves time , cost and efforts</li><li>• On hand availability of status of each employee</li></ul>

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<b>Problem ID:</b>	PID442
<b>Challenge Title</b>	: Web Application for Tracking of RTI Applications received by DDO office
<b>Name of the Office</b>	: DDO Office, Surendranagar
<b>Challenge Description with context</b>	<p>: DDO office, Surendranagar is currently using a paper based system for processing of RTI Applications received by Office. The office receives RTI applications from various sources, records it into the register maintained and later forwards it to the concerned department under the DDO Office. The process involves supporting staffs, requires stationeries, time consuming. At times it becomes difficult to track the status of the RTI applications received and analyze RTI Applications like Number of RTI Applications received by each department, Number of Pending Applications, Number of Answered Applications.</p> <p>To address the problems of manual processing of RTI Applications to its best, a solution is proposed by developing a Web application that will ease the process and provide additional functionalities to effectively communicate maintain and track the process along with features like on hand analysis of RTI applications received by DDO Office. The time, cost and man hours required for the above mentioned process must be reduced and the information maintained must be easily accessible for analysis purpose.</p>
<b>Users</b>	: Employees of DDO office with specified roles as below
	<ol style="list-style-type: none"><li>1. Administrator</li><li>2. RTI Nodal Officer ( Who receives RTI Applications and Dispatches it to concerned Department)</li><li>3. Department RTI Officer ( Who processes the RTI Applications received by Department)</li></ol>
<b>Expected Outcomes</b>	: A web based application which allows the DDO office to overcome the problems of manual system and ease processing, tracking and analysing the RTI applications received by various departments of DDO Office.
<b>Impact</b>	: Transparent System Saves time , cost and efforts

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## DDO Office, Vadodara

- Problem ID:** PID443
- Challenge Title :** Face reader at Anganwadi/ primary school for the actual presence of students
- Name of the Office :** DDO Office, Vadodara
- Challenge Description with context :** There are anganwadis and primary schools at the remote places, which have very poor presence of the children. The actual presence of the students is not conveyed by the staff from the remote places. It is difficult to get the accurate idea about the whole system. The data, in most cases, is exaggerated.
- The data of actual students from the remote anganwadi/ primary school is not available. The actual present students, in most cases, is less than the data sent by the school. There is no medium through which the data can be verified. The face reader attendance system/ application interface will give the exact number of students daily. The system will bring more transparency in the school administration.
- Users :** All the anganwadis and the primary school will be the administrator in the system. All the students from the remote place schools/ anganwadis will be the end user of the system. The parents can also be added in the system.
- Expected Outcomes :** The education system at the remote places will be more transparent through the actual data of the present students. It will also enable the government to take the steps at remote places to improve the education system. This will enforce the teaching staff to become more vigilant. Their input to the system will increase and eventually the whole system will improve as more and more students are expected to remain present.
- Impact :** The government will have clear picture of the education system at the remote places. This will enable government to take various steps to improve the education system. The efficiency of the staff will improve as more students are required to remain present daily. Overall the education system will improve.

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<b>Problem ID:</b>	PID444
<b>Challenge Title</b>	: Online Web portal for Government and Private company job placement
<b>Name of the Office</b>	: DDO Office, Vadodara
<b>Challenge Description with context</b>	: The pass-out students know about the government vacancies through portal like "OJAS". However, there is no portal for private companies. They select the candidates through different medium like their own website, newspaper etc. Hence, the students don't know about the exact requirement of the industries. There should be a common portal for both government and private companies.
<b>Users</b>	: All the government companies, private companies and pass-out students. Both the unemployed students and working students can take advantage of the system. The private companies will get the better employees.
<b>Expected Outcomes</b>	: The system will provide the interface between the students, seeking the job and the employers from government and the private industries. The system will be more transparent as the government will have the proper picture of the job data. Due to increased competition, the employees will try hard to succeed. The competition will also enable the better candidates to be selected so that the actual productivity will increase.
<b>Impact</b>	: The government will have more accurate picture of employment through the portal. It will give the overall idea to the government about the different phases of various companies through their requirements. The better candidates will be selected and the overall productivity will increase drastically.

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## **DDO Office, Valsad**

<b>Problem ID:</b>	PID445
<b>Challenge Title</b>	: Offline payment method for various schemes of E-Samajkalyan Portal
<b>Name of the Office</b>	: DDO Office, Valsad
<b>Challenge Description with context</b>	: In district panchayat, social welfare branch, all grants for beneficiary are first deposited in DDO of PLA account. Thereafter grants are paid to beneficiary by manual process. It makes process time consumable and lot of paper work is required to be done. So that many issues arise due to offline processes.  If all payments are payable through IFMS directly and not through PLA account, above problem will be solved and flow of process will also become smooth.
<b>Users</b>	: Citizen of Gujarat Social Justice & Empowerment Department
<b>Expected Outcomes</b>	: Online payment in E-Samajkalyan portal of following schemes 1) Dr. Ambedkar Awas Yojana 2) Kuvarbai nu mameru Yojana 3) Satya Harishchandra Yojana
<b>Impact</b>	: 1) Fast payment process. 2) Easy monitoring of transactions and audits. 3) Reduction in paper work. 4) Less time consuming.



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<b>Problem ID:</b>	PID446
<b>Challenge Title</b>	: Pre matric scholarship report generation and payment scrutiny problem
<b>Name of the Office</b>	: DDO Office, Valsad
<b>Challenge Description with context</b>	: There is no provision of generation of report after approving the scholarship application from principal's side. Due to this there occurs data mismatch and errors in send and approved application .Also not possible to view the payment status of approved application ,which causes problem in verifying scrutiny of students who got payment of scholarship  Provision for generation of approved application's report  Provision for viewing payment status of approved application  Number and Name of students benefited from scholarship schemes should be displayed or visible on web page
<b>Users</b>	: Social Welfare department  Principals of Schools and concerned offices  Students
<b>Expected Outcomes</b>	: Able to view their application and status  Should be able to generate report & payment status and amount data any time
<b>Impact</b>	: Reduce confusion among students regarding their scholarship payment and amount of money received Give exact data of benefited students and applied students Reduce the repeated payment and duplication application Less burden to concerned authorities about students queries regarding payment of scholarship

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## **DDO Office, Waghai**

<b>Problem ID:</b>	PID447
<b>Challenge Title</b>	: Issuance of caste certificate
<b>Name of the Office</b>	: DDO Office, Waghai
<b>Challenge Description with context</b>	: Applicants do not have sufficient evidences for caste certificate For caste certificate, the applicant's school leaving certificate or the nearest relatives are required which is not fulfilled in most cases
<b>Users</b>	: Officers of social welfare office and poor families of schedule caste
<b>Expected Outcomes</b>	: This office provides many schemes to the poor families of schedule caste but without caste certificate they are not able to get benefit
<b>Impact</b>	: Without caste certificate the poor families do not get benefit of government schemes and the target of schemes of strengthening of pors is not achieved.

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## Amdavad Municipal Corporation

**Problem ID:** PID448

**Challenge Title** : Attendance of employees in distributed offices of AMC with dashboard view.

**Name of the Office** : Amdavad Municipal Corporation

**Challenge Description with context** : Existing paper based method is time consuming and distracting to both employees as well as govt officers. It is also prone to human errors. We propose a face recognition based smart attendance system. Employee attendance can be made more robust. This also the reduces the administrative work of govt officers. The attendance data can be stored on cloud for further processing.

To become an efficient manager, you have to track your employees working hours and oversee the employees' performance like when they are working, which employees are working and when to anticipate scheduled time off. This is because the cost of absenteeism can impact greater than the cost of remuneration and other benefits.

**Users** : Any institute like Govt. offices, AMC office etc.

**Expected Outcomes** : Managing employees is obviously a repetitive and tedious task which is not a good sign for a manager. To make things easier for a manager, the use of an effective and automated attendance management software definitely moves the needle on.

**Impact** : Managing employees is obviously a repetitive and tedious task which is not a good sign for a manager. To make things easier for a manager, the use of an effective and automated attendance management software definitely moves the needle on.

<b>Problem ID:</b>	PID449
<b>Challenge Title</b>	: Bill Management System for Societies
<b>Name of the Office</b>	: Amdavad Municipal Corporation
<b>Challenge Description with context</b>	<p>: Bill Management System has automated functionality for calculating monthly maintenance and member can be able to view all societies bill/status on their own account. The society management system allows members to login with their own account and gets updated with society happening. Society management system provides a dashboard according to the user role. Admin can see the due payments, payment history, etc. resident can see about payment history, complaints, etc.</p> <p>The existing system for society is based on the traditional way of keeping records and details on paper and registers. Access of these details and paper are not granted to any society member in the absence of the authority. The existing system is manual so it is time consuming and tedious. It needs more manpower to handle the whole existing system. Just to call a society meeting a person has to go door to door to inform all members.</p>
<b>Users</b>	<p>: AMC official can see the due payments, payment history, upload bills, etc. Society members can see their payment history, can complaints regarding any issue etc. Admin can create new users, can broadcast society news/message.</p>
<b>Expected Outcomes</b>	<p>: Bill Management System has automated functionality for calculating monthly maintenance and member can be able to view all societies bill/status on their own account. The society management system allows members to login with their own account and gets updated with society happening. Society management system provides a dashboard according to the user role. Admin can see the due payments, payment history, etc. resident can see about payment history, complaints, etc.</p>
<b>Impact</b>	<p>: Bill Management System has automated functionality for calculating monthly maintenance and member can be able to view all societies bill/status on their own account. The society management system allows members to login with their own account and gets updated with society happening. Society management system provides a dashboard according to the user role. Admin can see the due payments, payment history, etc. resident can see about payment history, complaints, etc.</p>

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<b>Problem ID:</b>	PID450
<b>Challenge Title</b>	: Cleanliness Automation using machine Learning
<b>Name of the Office</b>	: Amdavad Municipal Corporation
<b>Challenge Description with context</b>	<p>: Here, we are targeting complete automation of garbage collection system which includes identification of garbage from CCTV camera footage. This is the critical task where knowledge of image processing and machine learning will be applied. Participants are expected to have a database of images of garbage to train their model.</p> <p>We have seen many a times that the garbage thrown on the streets gets uncollected for many days which is the source of many problems and leads to many health related issues. Here, we are assuming that CCTV has been employed at every street and we want an algorithm that can detect the garbage and determine the location of the same and notify the respective authorities. Authorities are expected to take immediate actions.</p>
<b>Users</b>	: Users for this application will be Municipal Corporations, employees of municipal corporation. Citizens are not involved as the input will be collected from CCTV footage. So, only authorities of municipal corporation or private cleaning agencies will become the users.
<b>Expected Outcomes</b>	: The complete automation of garbage collection. Live Input from CCTV camera (during competition participants can have still images to train and test their model) ----> Identification of garbage ---> Obtain the location of the garbage (Here, Participants can use any simple algorithm) ----> Send this location information with time to the respective authorities.
<b>Impact</b>	: Undeniably this would help in achieving the targets of "Swachh Bharat" mission if it gets implemented in all cities across the country

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<b>Problem ID:</b>	PID451
<b>Challenge Title</b>	: Decision Making System or complain management system
<b>Name of the Office</b>	: Amdavad Municipal Corporation
<b>Challenge Description with context</b>	: The complaint filed by user will go to the concerned authority and complete tracking of the complaint is possible. Admin, concern authorities and users can see the complaint status.  To solve problem on time proper system is needed to register the complaint on time and also make sure that it is reached to correct authorities to take action on that. Here we need mobile plus web based solution by which user can register complaint or problem or issue related to food quality in particular restaurant. If same complaints received by other users, admin can merge the issue and assign it to a specific department for action.  Once complaint is resolved or action is taken admin can select to show reply to all or to a specific user. User identity is anonymous for other users but login is required if s/he wants to file complaint. Verification of user is must required by OTP/Email.
<b>Users</b>	: Admin can control the system , AMC officers will see the complete process , common public can file complaints, login in the system, and view the actions taken. Admin can also remove the complaints if he/she finds that complaint is irrelevant.
<b>Expected Outcomes</b>	: Our main outcome should be complete Decision making system or complaint management solution to AMC office and common people with accurate result
<b>Impact</b>	: Right complaint will goes to right authority and solved on time.

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<b>Problem ID:</b>	PID452
<b>Challenge Title</b>	: Email Security System or securing mail
<b>Name of the Office</b>	: Amdavad Municipal Corporation
<b>Challenge Description with context</b>	<p>: With the constant development of information technology, the role of cybersecurity is getting ever bigger. While it's impossible to imagine the modern world without constant communications over networks, almost all valuable data that's a target for attacks is stored in various forms on servers. Not to mention that the stability of your whole system depends on servers. This is why servers are attractive targets for malicious attacks.</p> <p>Security for an email server is particularly important because email is one of the most popular means of communication and doing business. And for businesses, in particular, loss of confidential information can result in large financial losses. It's also important for a server to run stably so that users are able to access it at any time.</p>
<b>Users</b>	: Admin, Govt. officers, AMC employee.
<b>Expected Outcomes</b>	: Complete securing mechanism for E-mail Servers.
<b>Impact</b>	: we can nullify data loss, problems with stability and other troubles, we need to adhere to general recommendations on how to set up an email server and monitor its security in order to detect and immediately fix any vulnerabilities.

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<b>Problem ID:</b>	PID453
<b>Challenge Title</b>	: File Tracking System at AMC office
<b>Name of the Office</b>	: Amdavad Municipal Corporation
<b>Challenge Description with context</b>	: File Tracking System at AMC offices -To get the current status of any file for any government organisation as, now a days what is the status of any file is very much important to handle the situation smoothly, this project file tracking system can easily able to handle this kind of problem, we can provide the exact status for file generated, general public or any client can be able to see the status of the file
<b>Users</b>	: Any Government Institutions or organisation can be able to use this software for their daily task to get the current and latest status of the file. Admin Users can change the status of the file.
<b>Expected Outcomes</b>	: File Tracking System at AMC office -To get the current status of any file for any government organisation as, now a days what is the status of any file is very much important to handle the situation smoothly, this project file tracking system can easily able to handle this kind of problem, we can provide the exact status for file generated, general public or any client can be able to see the status of the file
<b>Impact</b>	: File Tracking System at AMC office -To get the current status of any file for any government organisation as, now a days what is the status of any file is very much important to handle the situation smoothly, this project file tracking system can easily able to handle this kind of problem, we can provide the exact status for file generated, general public or any client can be able to see the status of the file



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<b>Problem ID:</b>	PID454
<b>Challenge Title</b>	: Human Interacted Wireless Smart Road Hoarding Board (Smart Board)
<b>Name of the Office</b>	: Amdavad Municipal Corporation
<b>Challenge Description with context</b>	<p>: This smart board device should display notices to the people. It should fetch the data from any website, excel file, text file, blue tooth, Wi-Fi or similar devices. It should be able to display and buffer multiple notices at the same time. AMC officials should be able to manage the time duration and schedule to display the content to people. This smart road hoarding board use to display critical information, warning to people and also used as an advertisement for revenue generation.</p> <p>Normally we see notice boards at our offices, schools or colleges with some black or green kinds of colors on which we need to write stuff by chinks or markers. At maximum we can stick printed notices to them which is also not good for the environment as we need papers repeatedly every time we get some new thing to display on it. Moreover if we need to show some notice in color photos or videos format it is not possible with current means. This problem is being solved by the solution.</p>
<b>Users</b>	: The users for this solutions will be mainly AMC offices to display useful information to people on road and some crowded area (public places) specially when the critical time or emergency situation by government . other offices like Post offices, Police station , railway stations, bus stations etc.
<b>Expected Outcomes</b>	: The outcomes for this solution will be that Government or corporation will have an easy means of interacting with their Citizens/People. It is a mass media product so larger masses will be able to be addressed by some easy interface of board product. User will have capability to easily put any kind of video, photo, scrolling notices to the notice boards. Also it will be connected to IoT cloud so control will be from around the world.
<b>Impact</b>	: Larger crowd will be addressed easily by the solution. Mediator agencies to display ads on notice boards will be eliminated so there will be big savings in terms of money. Time is also a good factor this solution will address. It will make easy updation of notices by owner of the product in which updation will take minutes. So time will also be saved a lot by this product. People will also see videos in the notices which will be a big plus

<b>Problem ID:</b>	PID455
<b>Challenge Title</b>	: Lighting management System in Hospital, Govt Library or Govt Offices
<b>Name of the Office</b>	: Amdavad Municipal Corporation
<b>Challenge Description with context</b>	<p>: To reduce the Energy losses in govt offices with effective control. All govt offices are engage with different operations and needs. Based on that, different lighting requirements for the various types of activities is expected and it is difficult to come up with a general recommendation for light control system.</p> <p>Reduce the Energy wastage in govt offices using lighting system. There are number of sensors are used in offices like occupancy sensors, motion sensors and many others. Effective control and on/off with on/off control is very desirable. Advance senseless control techniques, IOT based techniques can be used to replace an existing solution. The desire solution if has form, feature, application, then it will be very helpful to industry, society and nation.</p>
<b>Users</b>	: Any Government Institutions as well as private organisation can be able to use this software for their day to day task to get the current and latest status of the file. Admin Users can change the status of the file
<b>Expected Outcomes</b>	<p>: Students will be familiar while working in some of the below mentioned areas. Lighting control measures in commercial, industrial, and other nonresidential facilities include:</p> <ul style="list-style-type: none"> <li>• Sweep controls/energy management systems that shut off lighting at a set time, typically after normal operating hours</li> <li>• Lighting occupancy sensors (OS) that turn lights on or off, based on space occupancy conditions</li> <li>• Dimming control systems:               <ol style="list-style-type: none"> <li>1. Stepped dimming systems, such as dual ballasts (inboard/outboard)</li> <li>2. Dual ballast high/low high-intensity discharge (HID)</li> <li>3. Continuous daylight dimming systems.</li> </ol> </li> </ul>
<b>Impact</b>	: There are many reasons why owners should consider energy efficiency, from the clear environmental and financial benefits of cutting energy use to potential improvements in mental and physical health. In fact, energy efficiency has become one of the common features that prospective homeowners look for when purchasing a home.

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<b>Problem ID:</b>	PID456
<b>Challenge Title</b>	: Online food with Quality Checks
<b>Name of the Office</b>	: Amdavad Municipal Corporation
<b>Challenge Description with context</b>	: Regular and surprise quality check mechanism is challenging part of system. It is easy to simulate the system for good/bad quality food. But this is practical challenge, to hire trusted party/ staff for regular quality check and surprise check maintain record in database.  Trusted, Quality Food Delivery system is being developed. All associated vendor will be agreed to routine and surprised check of food being delivered. People will be relieved of thinking that 'what will be the quality of food is being delivered?'. Always guaranteed, standard with bench marked food will be delivered. People will know each minor ingredient are added to food he/ she is ordering. Bad vendor will be blacklisted.
<b>Users</b>	: General public is ultimate user of system. All vendor who want to deliver a good quality of food. A trusted third party or a qualified staff who is responsible quality check will be the user of the system.
<b>Expected Outcomes</b>	: Trusted, Quality Food Delivery system will be developed. All associated vendor will be go through routine and surprised check of food being delivered. People will be relieved of thinking that 'what will be the quality of food is being delivered?'. Always guaranteed, standard with bench marked food will be delivered. People will know each minor ingredient are added to food he/ she is ordering. Bad vendor will be blacklisted.
<b>Impact</b>	: General public will always ordered a food with good quality. People will stay healthy. There will be no cases of mass food poisoning. (it may happen sometime) Always food with known ingredients will be delivered. so people will understand the benefits and harms from each minor ingredients (like kind of oil is being used to cook a food). There will be healthy competition in market to deliver a good quality food

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<b>Problem ID:</b>	PID457
<b>Challenge Title</b>	: Smart Garbage Monitoring System Using Internet of Things (IOT)
<b>Name of the Office</b>	: Amdavad Municipal Corporation
<b>Challenge Description with context</b>	<p>: One of the main concerns with our environment has been solid waste management which impacts the health and environment of our society. The detection, monitoring and management of wastes is one of the primary problems of the present era. The traditional way of manually monitoring the wastes in waste bins is a cumbersome process and utilizes more human effort, time and cost which can easily be avoided with our present technologies.</p> <p>This is our need, a method in which waste management is automated. This is our IoT Garbage Monitoring system, an innovative way that will help to keep the cities clean and healthy. What system does is it gives a real time indicator of the garbage level in a trashcan at any given time. Using that data we can then optimize waste collection routes and ultimately reduce fuel consumption. It allows trash collectors to plan their daily/weekly pick up schedule. The amount of trash, in other words let's say if your bin is half full you don't really need to empty it. Our thresh, or maximum amount that we permit of trash, is 75% of the bin. (You could alter the thresh according to your preference.)</p>
<b>Users</b>	: The users for this solutions will be mainly AMC offices to display useful information to dashboard of Garbage Monitoring system and manage the collection system.
<b>Expected Outcomes</b>	<p>: Notification on Phone or dashboard as filled the dustbin. On the application alligned three LEDs one on top of the other. Green which ranges from 0 to 25% full, Orange from 25 to 65% and Red from 65 to 100%.</p> <p>After having put 10% of trash and closing the bin we have the green LED that comes on the other two stay off.</p>
<b>Impact</b>	: Help clean your community, home or even surroundings, taking us a step closer to a better way of living.

## Bhavnagar Municipal Corporation

<b>Problem ID:</b>	PID458
<b>Challenge Title</b>	: Automated Measurement for Billing of Under Ground line network
<b>Name of the Office</b>	: Bhavnagar Municipal Corporation
<b>Challenge Description with context</b>	: Manual measurement of under ground drainage or water etc line network, length and depth ,physical checking by measuring tape for bill making is time consuming process.  Software technology as an alternative can save time, money , man-power etc.
<b>Users</b>	: Administrator of system
<b>Expected Outcomes</b>	: Software to be developed for billing automation for an effective administration
<b>Impact</b>	: Effective and efficient administration

<b>Problem ID:</b>	PID459
<b>Challenge Title</b>	: Satellite Image viewer for under ground line network ARC-GIS
<b>Name of the Office</b>	: Bhavnagar Municipal Corporation
<b>Challenge Description with context</b>	: Satellite Image viewer for under ground line network treasure, software of agency, ARC-GIS, huge costlier to MNC budget.  Alternative GIS software development for line network treasure for cost minimization
<b>Users</b>	: MNC Budgetary plan improves by low cost software development.
<b>Expected Outcomes</b>	: Alternative software/es for division of whole work by more numbers of software for cost-cutting.
<b>Impact</b>	: Optimize GIS

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## Gandhinagar Municipal Corporation

- Problem ID:** PID460
- Challenge Title :** Appointment management for Government officers
- Name of the Office :** Gandhinagar Municipal Corporation
- Challenge Description with context :** Citizens can get appointment of government officers for their problems. Currently, they can directly visit concerned department and get the appointment through Personal Assistant (PA) of concerned officers. User may have to face following problems: Wait for longer time due to higher number of appointees, Unavailability of officer due to meetings, conference or any other reasons.
- To minimize the waiting time for appointees. Time is most important resource for everyone. Hence, this problem of waiting in the queue for the appointment should be minimized. It may save various resources like money, time. It helps government officers as well as citizens to check about their time schedule of meetings. It helps to manage time of both citizens and government officers.
- Hence, the proposed solution must reduce the waiting time for the citizens in the queue.
- Users :** All Citizens who have queries/problems related to concerned departments. They can directly get appointment to the officers and can get the appointment without any problems. Citizens can directly go for meeting during allotted time slots only.
- Expected Outcomes :** Citizens do not have to waste valuable time to meet concerned officers for their problems/queries. Proposed system must reduce waiting time for the appointees. Government officers may also get aware about the schedule of appointees. Hence, it would create a trustworthiness between government and users(citizens). It would help for smoothness of problem solving process also. Hence, proposed solution is very helpful for government as well as citizens.
- Impact :** Problems/queries can be resolved faster. Proposed solution would impact all citizens of the city/state/country who seek advice/problem solutions for their queries. All people including citizens and government sector employees can save their time. Government officers can also manage their own schedule for the work in advance as they know the number of appointees in advance.

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<b>Problem ID:</b>	PID461
<b>Challenge Title</b>	: Awareness of Employees regarding Updated GR.
<b>Name of the Office</b>	: Gandhinagar Municipal Corporation
<b>Challenge Description with context</b>	: Municipality indulge in dealing with people, contractor and various government and private organizations. There is possibilities in missing out any recent updation of a GR and hence taken decision is not as per updated GR. Sometimes it takes long time to reach the information regarding updated GR to the end users. So solution of such problem is needed for that no significant time of municipality officer/employees is consume and they are updated with GR. So the decision making become easier with updated rules.
<b>Users</b>	: All employees of various department of Gandhinagar municipal corporation such as account department, tax department, establishment department, medical department, fire and safety department, Public work department etc. Even citizen may get benefit by proposed solution.
<b>Expected Outcomes</b>	: Objective is to update employees of various departments of municipal corporation such as account department, fire department, and health department, veterinary department, tax collection department, hydraulic department, light cell bridge cell, zonal department and etc regarding GR of respective departments in an easier and faster way on regular basis. So Design a system by which the employee can immediately get updated GR. So the repeated work can be minimized. This will save various resources of end users like money and time.
<b>Impact</b>	: By this solution the work of the municipality departmental employee become easy and more efficient. The repetition of the work can be minimized. All tasks can be done faster. Various resource and time can be saved. It rules out any negligence due to lack of awareness about updated GR. Public can also get benefits of it. If it is solved so the decision making become easier with updated rules. And it make municipality decision making easier for common public. So solution of such problem is needed.

<b>Problem ID:</b>	PID462
<b>Challenge Title</b>	: Develop online Grant register
<b>Name of the Office</b>	: Gandhinagar Municipal Corporation
<b>Challenge Description with context</b>	<p>: In today's scenario grant register is maintained manually in the account department for the utilization of the various grants. Municipality is dealing with large number of activities for which various grants is sanctioned. This grants is being used in lots of places. In the register, person need to enter the utilization of grant data manually respective projects which will sometimes lead to mismatch in account due to over spending the amount. If the online system for the register is develop than this can be minimizes. By this the transparent system can develop.</p> <p>The management of manual grant register lead to so many problem. The mismatch of the amount is taking place in the register. Sometime the spent amount may increase compare to sanctioned amount which caused so many technical problem. The person handling this money related issue may face some problem in their job. If it is solved it help to various department of municipality such as account department, fire department, and health department, veterinary department, tax collection department, hydraulic department, light cell bridge cell, zonal department and etc .</p>
<b>Users</b>	: Account Section of various department of municipal corporation.
<b>Expected Outcomes</b>	: Development of online grant register for utilization of grant which will show the sanctioned amount and utilized amount for respective project clearly. In the system it is clearly mentioned how much amount is spend and how much amount is pending. So no mismatch in spent amount and granted amount. The transparent system can be developed.it is to be complete grant tracking system for municipality various department such as account department, fire department, and health department, veterinary department, tax collection department, hydraulic department, light cell bridge cell, zonal department and etc.
<b>Impact</b>	: Transparency can be developed regarding financial matter. So only sanctioned grant may utilized no more amount get utilized. It limited to various department of municipality such as fire department, and health department, veterinary department, tax collection department, hydraulic department, light cell bridge cell, zonal department and etc to spend money for various work.



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<b>Problem ID:</b>	PID463
<b>Challenge Title</b>	: Digital - Minutes of Meeting
<b>Name of the Office</b>	: Gandhinagar Municipal Corporation
<b>Challenge Description with context</b>	: Various Government departments of the gujarat state have to arrange meetings on various topics or agendas on regular basis. These meetings are recorded currently in hardcopy which is called as Minutes of Meeting (MOM) in books. Digital MOM can be used to solve various problems like quick reference of previous minutes for reference purposes.  Digital record of MoM shared between various departments can solve many problems in administration and make administration user-friendly.
<b>Users</b>	: All employees of different departments of Gandhinagar Municipal Corporation such as Account Department, Tax Department, Establishment Section, Medical Department etc. Even citizens may get benefit by proposed solution.
<b>Expected Outcomes</b>	: MoM should be easily accessible and tracked when needed. Software should also be able to schedule the meetings.  Proposed solution majorly helps employees of government who can access MoM, even in absence of relevant department officers and help of other departments.  Digitalization will save the environment also.  Single access point for officers make administration easy.  Digital record of MoM can solve many problems in administration and make governance digital.
<b>Impact</b>	: Officers could access MoM quickly and easily without requirement of any department. Offices can easily keep track and maintain MoM by proposed solutions.  Proposed solution may affect large number of users including government officers and citizens.  Our goal of Digital India can be achieved by Digital MOM.

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<b>Problem ID:</b>	PID464
<b>Challenge Title</b>	: Digital Registry
<b>Name of the Office</b>	: Gandhinagar Municipal Corporation
<b>Challenge Description with context</b>	: Various Government departments move documents from department to department on regular basis.  These documents are recorded currently in Hardcopy. They are registered in inward outward registers i.e. documents coming in the department is marked in inward register and going out from the department is registered in outward department.  Digital registry can solve various problems.  Digital record of inward outward shared between various departments can solve many problems in administration and make administration user-friendly.
<b>Users</b>	: All employees of different departments of Gandhinagar Municipal Corporation such as Account Department, Tax Department, Establishment Section, Medical Department etc. Even citizens may get benefit by proposed solution.
<b>Expected Outcomes</b>	: Trails of inward outward documents should be easily accessible and tracked when needed.  Software should also be able to implement the hierarchy of the office and able to assign the document to respected on duty officer.  Proposed solution majorly helps employees of government who can access registry, even in absence of relevant department officers and help of other departments.  Digitalization will save the environment also.  Single access point for officers make administration easy.  Digital record of registry can solve many problems in administration and make governance digital.
<b>Impact</b>	: Officers could access registry fastly and easily without requirement of any department. Offices can easily keep track and maintain registry by proposed solutions.  Proposed solution may affect large number of users including government officers and citizens.  Our goal of Digital India can be achieved by Digital registry.

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<b>Problem ID:</b>	PID465
<b>Challenge Title</b>	: File tracking and maintain(Hard copy)
<b>Name of the Office</b>	: Gandhinagar Municipal Corporation
<b>Challenge Description with context</b>	<p>: Various government departments maintain files and related documents in hard copy format. That file may be circulated over various departments for various purposes like verification, to add additional information/data by relevant department, authentication, signature and certification. And finally return back to original department. In this process, file may be lost, can't keep track of file, file may not be accessible due to various reasons like unavailability of concerned officer, file may not be forwarded.</p> <p>File may be lost file by department while transferring from one department over another departments of various offices of Gandhinagar Municipal Corporation, Transferred Document/file with original attached documents may be not available whenever needed by government officer in absence of concerned officer, File could not be tracked between different departments where it is exactly located. Hence, tracking issue happens.</p>
<b>Users</b>	: All employees of different departments of Gandhinagar Municipal Corporation such as Account Department, Tax Department, Establishment Section, Medical Department etc. Even citizens may get benefit by proposed solution.
<b>Expected Outcomes</b>	<p>: File should be easily accessible and tracked when needed.</p> <p>Proposed solution majorly helps employees of government and citizens who will get their document procedure to be completed even in absence of relevant department officers. Because government officer can access file directly without help of other department officers. They can verify, authenticate and approve it without depending on relevant departments.</p>
<b>Impact</b>	: Citizens could expect faster file/document processing to be done by government officers as compared to traditional method of processing. Government can easily keep track and maintain documents/file by proposed solutions. Proposed solution may affect large number of users including government officers and citizens.

<b>Problem ID:</b>	PID466
<b>Challenge Title</b>	: Helpdesk for citizens
<b>Name of the Office</b>	: Gandhinagar Municipal Corporation
<b>Challenge Description with context</b>	<p>: Various citizens visit Gandhinagar Municipal Corporation for their problems/queries. They do not aware about the procedure to be followed, relevant departments and officers for their solution. Hence, they ask any random officers at different offices about their problems. It would waste their own as well as government employee's valuable time. Therefore, there is a need to develop a solution which can guide citizens about their problems and queries.</p> <p>To give guidance/help to citizens for their problems/queries. People who visit different government offices may educated or uneducated as well. Help desk must solve all queries to solve problems, the step by step procedure to solve queries. Queries/problems includes How to get aadhar card registered? Where is it done? Who is the authority person to issue it? etc. It is important to be noted down that proposed solution must help illiterate person also. Illiterate person must be very comfortable to use provided solution.</p>
<b>Users</b>	<p>: Citizens, Government employees. Many times educated persons also get confused about standard procedures to be followed to solve their queries. Hence, users of proposed solution may be educated/uneducated person from the villages, city or any state.</p>
<b>Expected Outcomes</b>	<p>: Citizens get proper guidance, Government employee would not get disturbed. Proposed system would help standards steps to be followed by people to solve their problems/queries. Sometimes, people at the main entrance gate of the building would not know whom to meet and where to go. They may not understand the instructions written somewhere on the notice board due to language barrier or due to illiteracy.</p>
<b>Impact</b>	<p>: Citizens can easily solve their problems by getting proper guidance. Proposed system would impact to large community of users. It may include government officers, all citizens including old aged person, women or young generations. Government officer may sometimes get irritated if they get asked for the queries as they have some assigned task and they would get disturbed.</p>

<b>Problem ID:</b>	PID467
<b>Challenge Title</b>	: Online system for NPS CPF account opening.
<b>Name of the Office</b>	: Gandhinagar Municipal Corporation
<b>Challenge Description with context</b>	<p>: Going with traditional offline system of NPS and CPF account opening has lots of issues. It is Time consuming process to fill so many hand written forms. Even after joining to the new government department it will take long time to open the account. If the offline Form has any query that message takes long time to reach to the concerned person. After that the entire process need to repeat. So this will waste the time and resources of the department as well as the government employee time. Therefor to minimize this problem there is a need to develop an online system to open the NPS and CPF account.</p> <p>If the offline Form has any query that message takes long time to reach to the concerned person this is also the reason behind the delay in account opening. Sometimes due to this the employee need to deposit the employee side contribution into their NPS account after opening which is tedious time consuming process. If it is solved it help to employee of municipality. And for newly joint employee it become too easy to open NPS-CPF account.</p>
<b>Users</b>	: Newly joined employees of various department of Gandhinagar municipal corporation such as account department, tax department, establishment department, medical department, fire and safety department, public work department, hydraulic department, light cell,bridge cell department ,veterinary department, health department and etc.
<b>Expected Outcomes</b>	: Development of robust online portal to facilitate NPS CPF forms filling, Processing and approving. This portal also guide the user how to fill the form so the error may get minimize. The delay in the account opening process can also get minimized. This system will save the time of employee of various departments of municipal corporation such as account department, fire department, and health department, veterinary department, tax collection department, hydraulic department, light cell bridge cell, zonal department and etc and various resources of the person related to this process.
<b>Impact</b>	: This system will impact to the newly joined employee of municipality department such as municipal corporation such as account department, fire department, and health department, veterinary department, tax collection department, hydraulic department, light cell bridge cell, zonal department and etc . This will save the time and resource of the person. Online system may reduce the paper work. Which will be a step towards go green movement of the government.

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<b>Problem ID:</b>	PID468
<b>Challenge Title</b>	: Staff Training Management
<b>Name of the Office</b>	: Gandhinagar Municipal Corporation
<b>Challenge Description with context</b>	: Currently, recruited staff may get posted at various departments based on requirements. They may get transfer over different departments/branches based on work requirements. It will be difficult to train such staff to work appropriately for different types of work. Therefore, there is a need to train such employees by providing them training like administrative, technical and professional in advance.  Employee should get posted based on their undergone training. Problem for department and office is that when employee will move from one department to another department by requirement of office, It is difficult to employee to set with departmental work and also difficult to department. Any senior employee or officer to teach each and every procedure that followed by department to employee who transfer from other department.
<b>Users</b>	: Government Employee, Department Head, Clerks, Account Officers etc. All these users get trained through proposed solution. Hence, it is very easy to track trained government employees out of many employees.
<b>Expected Outcomes</b>	: Only professionally trained staff must allocate the duty/work. Proposed solution would help head of department to put into service from their staff. As there are many employees who may not undergone through all the training. Hence, they keep track of employees/staff who need the training and who have successfully completed the training. The aim is to assign the task only professionally trained employees instead of untrained employee.
<b>Impact</b>	: Work can be efficiently completed, Trained staff. As trained staff deployed at the site would affect large number of users and works. All tasks may be done very faster and efficiently. Time is another constraint for any given task. Hence, trained employee could complete given task faster as they do not have to waste time to understand the given task.

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## **Jamnagar Municipal Corporation**

<b>Problem ID:</b>	PID469
<b>Challenge Title</b>	: Commissioner Dashboard
<b>Name of the Office</b>	: Jamnagar Municipal Corporation
<b>Challenge Description with context</b>	: A dashboard which helps commissioner to get all data on his screen JMC Commissioner should be able to see various statistical data on his screen related to revenue, water , distribution, SWM Collection, Health Profile of City, Rainfall statistics etc.
<b>Users</b>	: Municipal Commissioner
<b>Expected Outcomes</b>	: All important detail in just one click on screen
<b>Impact</b>	: Accountability of all the JMC departments
<b>Problem ID:</b>	PID470
<b>Challenge Title</b>	: Document Management System for JMC
<b>Name of the Office</b>	: Jamnagar Municipal Corporation
<b>Challenge Description with context</b>	: Managing files with their descriptions and tracking the location of files. Currently, it is too tedious and time-consuming as it is mostly on paper. File Tracking and speedy movement of file
<b>Users</b>	: Employees of JMC
<b>Expected Outcomes</b>	: Transparency and Speed in file movement
<b>Impact</b>	: Accountability, Transparency

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**Problem ID:** PID471  
**Challenge Title** : Donation App  
**Name of the Office** : Jamnagar Municipal Corporation  
**Challenge Description with context** : An app accepting donation from citizens for various programs like food and amenities for Night Shelters, Fodders for Cows, Skill development of women etc  
Donation from citizens  
**Users** : Citizens  
**Expected Outcomes** : Fund Increase  
**Impact** : Citizens will get satisfaction by donating in right direction

**Problem ID:** PID472  
**Challenge Title** : E-Library  
**Name of the Office** : Jamnagar Municipal Corporation  
**Challenge Description with context** : An app with various e-books for students and other citizens  
Portal sharing various important and knowledge-worthy books for students and citizens. Also should contain e-copy of Previous years papers for SSC and HSC students.  
**Users** : Student and other Citizens  
**Expected Outcomes** : Increase in Knowledge and Easily available Learning Resources  
**Impact** : Helpful to students and other citizens



<b>Problem ID:</b>	PID473
<b>Challenge Title</b>	: Fire Safety Awareness App
<b>Name of the Office</b>	: Jamnagar Municipal Corporation
<b>Challenge Description with context</b>	: Currently, the public is not much aware regarding rules for prevention of fires at public places. So it is necessary to build a system that spreads awareness and also provide an alarm system through which immediate steps can be taken in case a there is a fire at public places.  Spreading of Awareness regarding Fire Safety at public places
<b>Users</b>	: Citizens and Fire Department Personnel
<b>Expected Outcomes</b>	: Prevention of Fire and Immediate Action in case of Fire at Public Places
<b>Impact</b>	: Reduction of Material Loss and Casualties
<b>Problem ID:</b>	PID474
<b>Challenge Title</b>	: Pressure Monitoring System in Water Distribution System
<b>Name of the Office</b>	: Jamnagar Municipal Corporation
<b>Challenge Description with context</b>	: It has been observed that there is a difference in the pressure of water stream at the Valve Point and the Tail-end (User end) due to water leakage or other reasons. A system is required which measures the pressure at both the ends and also identify the reason if there is a difference of pressure.  Identify reason for difference in pressure among the nodes of a water distribution system
<b>Users</b>	: JMC Employees
<b>Expected Outcomes</b>	: Detection of fault in the water distribution pipelines
<b>Impact</b>	: Reduction in Loss of Water provided by the Corporation

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<b>Problem ID:</b>	PID475
<b>Challenge Title</b>	: Record Maintenance and Plan Completion Application Reminder through SMS
<b>Name of the Office</b>	: Jamnagar Municipal Corporation
<b>Challenge Description with context</b>	: The Town Planning Department of JMC issues permission for plan in the regularization work in the city. After the construction is completed, the constructor/owner has to apply for a completion certificate, but the owner never cares to for the completion certificate within the required period. The predefined period for application for completion certificate is 1 year after completion of construction. It is required to build a system for reminding the owner/constructor for applying to get Completion Certificate before the expiry of the above-mentioned duration. An SMS system can be installed which automatically sends reminder to the owner/constructor.
<b>Users</b>	: Jamnagar Municipal Corporation (JMC) Town Planning Department Staff maintains the records of the Plan Passed and Visit dates and other details. The owner/constructors gets reminder for applying for Completion Certificate through the system.
<b>Expected Outcomes</b>	: By using this system it becomes easier for the Town Planning Department officials to track the construction going on in the city area. It must also help in maintaining the records of the Plan Passed and Plan Completion of the Construction works in the city. The owner/constructor is also reminded of the dates for application and is saved from paying extra penalty. A cost-effective system is required for the above-mentioned problem.
<b>Impact</b>	: It positively affects the governance of the Town Planning Department by making the system of Plan Passing and Plan Completion smooth and helps them to maintain the records in a convenient way so as to reduce the amount of man-hours and resources used in the management of the several construction works going on in the urban area.

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<b>Problem ID:</b>	PID476
<b>Challenge Title</b>	: Resource Locator
<b>Name of the Office</b>	: Jamnagar Municipal Corporation
<b>Challenge Description with context</b>	: An app that locates various public related resources provided by corporation like UHC, garden, Sport Complex, Community Hall, Public Toilets Dustbin etc. GPS based app for citizens to locate various corporation resources
<b>Users</b>	: Citizens
<b>Expected Outcomes</b>	: Easy search of corporation resources
<b>Impact</b>	: Better use of Corporation Resources
<b>Problem ID:</b>	PID477
<b>Challenge Title</b>	: Scheme Portal
<b>Name of the Office</b>	: Jamnagar Municipal Corporation
<b>Challenge Description with context</b>	: A Scheme Portal which can run on Corporation KIOSK which displays various schemes for different group of citizens of Jamnagar Various scheme like Amrutam Card, Vatsalya Card etc details with required documents from citizens
<b>Users</b>	: Citizens of Jamnagar
<b>Expected Outcomes</b>	: Awareness among citizens
<b>Impact</b>	: More outreach of various schemes to citizens

<b>Problem ID:</b>	PID478
<b>Challenge Title</b>	: Solid Waste Collection Monitoring System
<b>Name of the Office</b>	: Jamnagar Municipal Corporation
<b>Challenge Description with context</b>	<p>: At the JMC Solid Waste Collection and Disposal Department, an application is required which checks the collection of Solid Waste Material by the Solid Waste collection employee and monitors the regular collection of waste. The application must have the following characteristics:</p> <ol style="list-style-type: none"> <li>1. App must be simple and lightweighted.</li> <li>2. Simple User Interface.</li> <li>3. Complaint should be tracked through location and data must be processed and analysed location-wise or ward-wise.</li> <li>4. Collection van must be trackable through location-based services.</li> </ol> <p>Currently there is no online or real-time system that can be used by the citizens for tracking the schedule of door-to-door solid waste collection facility provided by the Jamnagar Municipal Corporation. In view of this, it is difficult for the public to dispose daily solid waste produced in homes and offices. Also it is difficult for the authorities to keep track of the Solid Waste Collection Van and monitor the regular collection of the waste from the dense urban areas.</p>
<b>Users</b>	: Authorities who can keep track of the Collection Vans and make sure the vans collect waste door-to-door as per the predefined schedule. Waste Collection Employees who can report to the authorities and provide real-time information regarding the waste collection ward-wise. Citizens who can view the schedule and their updates and also register grievances if any.
<b>Expected Outcomes</b>	: A system that monitors in real-time the waste collection from dense urban areas and provides a simple interface for the users so that with their help the activity of waste collection can be performed smoothly and cleanliness can be maintained on regular basis which in turn ensures good health and well-being of the citizens. The system must also be robust and should be able to be implemented at low cost.
<b>Impact</b>	: Through this system the problem of waste collection will be solved and it will help in creating clean cities and urban areas which are more prone to spreading of diseases due to high population density. The Solid Waste Management Department of JMC should also benefit as it makes the governance of staff and resources easier by providing a robust system.

<b>Problem ID:</b>	PID479
<b>Challenge Title</b>	: Water Distribution Schedule Management App
<b>Name of the Office</b>	: Jamnagar Municipal Corporation
<b>Challenge Description with context</b>	: In the current system, the schedule of the water distribution by the Corporation is published in daily newspapers which does not take into account the delay in the distribution due to unforeseen circumstances. As a result, citizens contact the Water Works Department through phone calls which require additional staff. It is required to build a system through which the beneficiaries can view the updates in the schedule of water distribution in real time.  Real Time Scheduling of Water Distribution
<b>Users</b>	: Citizens
<b>Expected Outcomes</b>	: Use of resources can be reduced.
<b>Impact</b>	: Cost-effective
<b>Problem ID:</b>	PID480
<b>Challenge Title</b>	: Water Distribution Valve Alert System
<b>Name of the Office</b>	: Jamnagar Municipal Corporation
<b>Challenge Description with context</b>	: At present, there is no detection system for detecting the opening and closing of valve for water distribution. A system is required which automatically records when the valve is opened or closed and provides data at the controlling station in real time.  Detection of Opening or Closing of Valve for Water Distribution to the citizens
<b>Users</b>	: JMC Employees
<b>Expected Outcomes</b>	: Real-time Monitoring of Water Distribution
<b>Impact</b>	: Accountability and Remedial Action

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<b>Problem ID:</b>	PID481
<b>Challenge Title</b>	: Water Turbidity Removal/Reduction System
<b>Name of the Office</b>	: Jamnagar Municipal Corporation
<b>Challenge Description with context</b>	: During peak monsoon season, there is high amount of turbidity in the water when it reaches the Filter Plant which is very difficult to remove in short time. A solution is required to remove turbidity from water in short period of time without affecting the water distribution system. Solution of following is needed: 1. Quick response to remove it in short duration. 2. Solution must be cheap, practical and technically viable. 3. Design filter plant components to remove turbidity before the filtration process starts.
<b>Users</b>	: Jamnagar Municipal Corporation (JMC) Commissioner Office Water Works Department Employees for Filtered Water Distribution (Plant Operating Staff, Civil and Environmental Engineers , Laymen , Technical Supporting Staff)
<b>Expected Outcomes</b>	: The level of turbidity (suspended particulates in unfiltered water) must be reduced within short time before it reaches the filtering plant. The solution must also be cost-effective in terms of money and other resources. The system must be easily implemented for large amount of water and easy to use. There must be an in-built mechanism for measuring the level of turbidity at different checkpoints before it reaches the filtering plant.
<b>Impact</b>	: It impacts greatly the health and well-being of the citizens as usable water is distributed to them. It also reduces the cost of maintaining the filter plant as the level of turbidity is reduced before the water reaches the filter plant. It also increases the life span of the components of the water plant because semi-filtered water reaches the water plant reducing the load on the filter plant and its machines.

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## Junagadh Municipal Corporation

<b>Problem ID:</b>	PID482
<b>Challenge Title</b>	: Bridge Information System
<b>Name of the Office</b>	: Junagadh Municipal Corporation
<b>Challenge Description with context</b>	: Develop a digital system in which information related to bridge can be collected and various details related to bridge like width, height contractor details, grant, costing etc can be known with the help of high resolution of image of bridge.  The data and information related to bridge should be updated periodically.
<b>Users</b>	: Building and city survey department of Junagadh Municipal Corporation, other municipal corporation and municipality located in Gujarat state may take benefit of this road information system.  PWD department and Irrigation department can also get benefited.
<b>Expected Outcomes</b>	: Expected to develop software in which information related to all city bridges can be collected as well as updated periodically by clicking on image of bridge.  Develop a digital system in which information related to bridge can be collected and various details related to bridge like width, height contractor details, grant, costing etc can be known with the help of high resolution of image of bridge.
<b>Impact</b>	: After Implementing this software the productivity of organization will improve. The total time takes to collect all the bridge information will decrease and total time spent in the process of costing, tendering etc will be reduced.  Efficiency and Productivity of organization will improve. Total time spent in clerical work will reduce

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<b>Problem ID:</b>	PID483
<b>Challenge Title</b>	: Building Assets Information System
<b>Name of the Office</b>	: Junagadh Municipal Corporation
<b>Challenge Description with context</b>	: Develop a digital system in which information related to buildings and other assets of Junagadh Municipal Corporation can be collected and various details related to buildings and other assets total Sq feet area, contractor details, grant, total costing etc can be known with the help of high resolution of image of building assets.  The data and information related to buildings should be updated periodically.
<b>Users</b>	: Building and city survey department, Junagadh Municipal Corporation, other municipal corporation and municipality located in Gujarat state may take benefit of this Building and asset information system.
<b>Expected Outcomes</b>	: Expected to develop software in which information related to all building assets can be collected as well as updated periodically by clicking on building image.  Develop a digital system in which information related to buildings and other assets of Junagadh Municipal Corporation can be collected and various details related to buildings and other assets total Sq feet area, contractor details, grant, total costing etc can be known with the help of high resolution of image of building assets.  The data and information related to buildings should be updated periodically.
<b>Impact</b>	: After Implementing this software the productivity of organization will improve. The total time takes to collect building and other asset information will decrease and total time spent in the process of costing, tendering etc will be reduced. Productivity of organization will improve. Total time spent in clerical work will reduce.



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<b>Problem ID:</b>	PID484
<b>Challenge Title</b>	: Develop Decision Support (D.S.S) system for management of water supply system
<b>Name of the Office</b>	: Junagadh Municipal Corporation
<b>Challenge Description with context</b>	: There is uncertainty in water supply system, it is a needed to develop proper scheduling, monitoring and controlling system of water supply. So distribution of water supply will be smoothly. There must be no line loses and wastage of water.  To design a system which can automatically manage, control and schedule the water supply, as per current situation it is very difficult and complicated to identify leakages in pipe line at various location.  It is necessary to identify the leakages in specific area and to minimize the flow of unaccounted non revenue water.
<b>Users</b>	: Water Works department of Junagadh Municipal corporation, other municipal corporation and municipality located in Gujarat state may take benefit of this DSS ( Decision Support System).  Public water works department and Irrigation department can also get benefited.
<b>Expected Outcomes</b>	: Expected to develop software in which the information and data related to water supply system can be displayed on screen and design a system that can perform the location wise monitoring and controlling of water supply.
<b>Impact</b>	: After implement this software proper monitoring, handling and controlling of water will perform smoothly. Wastage and leakage of water can be reduced. Productivity of organization will improve. Requirement of total man power will reduce. Requirement of maintenance and repairing work will be reduced. Fault will be easily identified.

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<b>Problem ID:</b>	PID485
<b>Challenge Title</b>	: Drainage information and management system
<b>Name of the Office</b>	: Junagadh Municipal Corporation
<b>Challenge Description with context</b>	: Develop a digital system in which information related to Drainage of Junagadh Municipal Corporation can be collected and various details related to drainage like man hole, last maintenance work performed, total length, total area, contractor details, grant, total costing etc can be known with the help of high resolution of image of Drainage.  The data and information related to Drainage should be updated periodically
<b>Users</b>	: Building and construction department, Water works department Junagadh Municipal Corporation, other municipal corporation and municipality located in Gujarat state may take benefit of Drainage information and management system
<b>Expected Outcomes</b>	: Expected to develop software in which information related to Drainage can be collected as well as updated periodically by clicking on image of Drainage.  Develop a digital system in which information related to Drainage of Junagadh Municipal Corporation can be collected and various details related to drainage like man hole, last maintenance work performed, total length, total area, contractor details, grant, total costing etc can be known with the help of high resolution of image of Drainage.
<b>Impact</b>	: After Implementing this software the productivity of organization will improve. The total time takes to collect information related to Drainage will decrease and total time spent in the process of costing, tendering etc will be reduced. Efficiency and Productivity of organization will improve. Total time spent in clerical work will reduce

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<b>Problem ID:</b>	PID486
<b>Challenge Title</b>	: Pipe line information and management system
<b>Name of the Office</b>	: Junagadh Municipal Corporation
<b>Challenge Description with context</b>	: Develop a digital system in which information related to pipe lines of Junagadh Municipal Corporation can be collected and various details related to pipe line like size, diameter, type and identity of pipe line ex. HDPE/DI/GI/MS/AC Pressure/2225, date of installation, last maintenance work performed, total length, total area, contractor details, grant, total costing etc can be known with the help of GIS system.  The data and information related to pipe lines, pumping station and water treatment plant should be updated periodically.
<b>Users</b>	: Water Works department of Junagadh Municipal corporation, other municipal corporation and municipality located in Gujarat state may take benefit of this Pipe line information and management system.  Irrigation department can also get benefited.
<b>Expected Outcomes</b>	: Expected to develop software in which information related to pipe line, Pumping station and water treatment plant can be collected as well as updated periodically in GIS system of Municipal Corporation.  Develop a digital system in which information related to pipe lines of Junagadh Municipal Corporation can be collected and various details related to pipe line like size, diameter, type and identity of pipe line ex. HDPE/DI/GI/MS/AC Pressure/2225, date of installation, last maintenance work performed, total length, total area, contractor details, grant, total costing etc can be known with the help of GIS system.  The data and information related to pipe lines, pumping station and water treatment plant should be updated periodically.
<b>Impact</b>	: After Implementing this software the productivity of organization will improve. The total time takes to collect information related to pipe lines, pumping stations and WTP will decrease and total time spent in the process of costing, tendering etc will be reduced. Efficiency and Productivity of organization will improve. Total time spent in clerical work will reduce.

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<b>Problem ID:</b>	PID487
<b>Challenge Title</b>	: Road Information System
<b>Name of the Office</b>	: Junagadh Municipal Corporation
<b>Challenge Description with context</b>	: Develop a digital system in which information related to roads can be collected and various details related to roads like width, surface, contractor details, grant, costing etc can be known with the help of high resolution of image of roads.  The data and information related to road should be updated periodically.
<b>Users</b>	: Building and city survey department, Junagadh Municipal Corporation of Junagadh Municipal corporation, other municipal corporation and municipality located in Gujarat state may take benefit of this Road Management system.  Public water works department and Road and building department can also get benefited.
<b>Expected Outcomes</b>	: Expected to develop software in which information related to all city roads can be collected as well as updated periodically by clicking on road image.  Develop a digital system in which information related to roads can be collected and various details related to roads like width, surface, contractor details, grant, costing etc can be known with the help of high resolution of image of roads. The data and information related to road should be updated periodically.
<b>Impact</b>	: After Implementing this software the productivity of organization will improve. The total time takes to collect all the road information will decrease and total time spent in the process of costing, tendering etc will be reduced.  Productivity and efficiency of organization will improve. Total administrative time will be reduced.

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<b>Problem ID:</b>	PID488
<b>Challenge Title</b>	: Street Light information and Management system
<b>Name of the Office</b>	: Junagadh Municipal Corporation
<b>Challenge Description with context</b>	: Develop a digital system in which information related to all street lights of Junagadh city can be collected and various details related to street lights like location of street light, total load, phase,details of control units, installation year, warranty period of light, last maintenance work performed, contractor details, grant, total costing etc can be known with on GIS system of municipal corporation.  The data and information related to street lights should be updated periodically.
<b>Users</b>	: Street Light Department Department, Junagadh Municipal Corporation , other municipal corporation and municipality located in Gujarat state may take benefit of this Street Light information and Management system
<b>Expected Outcomes</b>	: Develop a digital system in which information related to all street lights of Junagadh city can be collected and various details related to street lights like location of street light, total load, phase,details of control units, installation year, warranty period of light, last maintenance work performed, contractor details, grant, total costing etc can be known with on GIS system of municipal corporation.The data and information related to street lights should be updated periodically.
<b>Impact</b>	: After Implementing this software the productivity of organization will improve.The total time takes to collect information related to street lights will decrease and total time spent in the process of costing, tendering etc will be reduced.

## Surat Municipal Corporation

<b>Problem ID:</b>	PID489
<b>Challenge Title</b>	: Identify missed area for Health care service provision
<b>Name of the Office</b>	: Surat Municipal Corporation
<b>Challenge Description with context</b>	: There are 51 urban Health Facilities Providing Health care services to citizen of Surat city but main hurdle is identifying missed area for service provision because of lack geo-fencing/GIS mapping of each health facilities catering area so Provide solution for the same. We can have easy solution for GEO fencing.
<b>Users</b>	: SMC and citizen of SMC
<b>Expected Outcomes</b>	: We want this hurdle to be overcome so that it will be helpful to all citizens of SMC to have better healthcare facilities at nearby their home.
<b>Impact</b>	: Solution of this problem will help to Provide Health care services to all citizen of Surat city at nearest location to their home which are currently missed area for service provision because of lack geo-fencing/GIS mapping of each health facilities catering area,

<b>Problem ID:</b>	PID490
<b>Challenge Title</b>	: Illegal plastic consumption anonymously
<b>Name of the Office</b>	: Surat Municipal Corporation
<b>Challenge Description with context</b>	: Surat city is in Progress of becoming a Plastic Free city But main hurdle is creating awareness among consumer and producer of alternative equipment. We would like to have an online platform where such people can meet and co-ordinate and also a mechanism to notify SMC about illegal plastic consumption anonymously.
<b>Users</b>	: SMC and all citizen of surat
<b>Expected Outcomes</b>	: The outcome of this problem solution should be an online platform which will be made available to Surat and other cities.
<b>Impact</b>	: If this problem is solved than it will be useful to make our environment clean and plastic free.

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<b>Problem ID:</b>	PID491
<b>Challenge Title</b>	: Management of Desludge System
<b>Name of the Office</b>	: Surat Municipal Corporation
<b>Challenge Description with context</b>	: Surat Municipal Corporation has well established system for desludging & cleaning the sewer line through mechanized equipment's. Participants are expected to provide smart solution to enhance the management of this equipment's including its allocation, tracking and timely cleaning of sewer line for effective utilization of mechanized equipment's.
<b>Users</b>	: SMC
<b>Expected Outcomes</b>	: Management of equipment's including its allocation, tracking and timely cleaning of sewer line for effective utilization of mechanized equipment's.
<b>Impact</b>	: Well managed Desludge System

<b>Problem ID:</b>	PID492
<b>Challenge Title</b>	: Mobile app for public transport
<b>Name of the Office</b>	: Surat Municipal Corporation
<b>Challenge Description with context</b>	: To offer citizens/commuters the mobile app that enables them, to identify <ul style="list-style-type: none"> <li>• Bus availability from Point to A to B</li> <li>• Estimated travel time and cost</li> <li>• Sharing the bus travel information within a group to enable board same bus</li> </ul> <p>More people will use public transport.</p> <p>After Solving this problem many facilities will be available on app like bus availability from Point to A to B, estimated travel time and cost, sharing the bus travel information within a group to enable board same bus .</p>
<b>Users</b>	: Citizen of Surat
<b>Expected Outcomes</b>	: More people will use public transport
<b>Impact</b>	: Reduce traffic and pollution.

<b>Problem ID:</b>	PID493
<b>Challenge Title</b>	: Mobile App to Explore Surat
<b>Name of the Office</b>	: Surat Municipal Corporation
<b>Challenge Description with context</b>	: An app that lists important city locations/area of Interest (Mall, Auditorium, Zoo, Cinema, etc.) and helps to plan travel to one or multiple locations using the city bus / BRT service along with fare details <p>Increase tourism</p>
<b>Users</b>	: For all tourist and citizen of Surat
<b>Expected Outcomes</b>	: Easy guide for Surat tour.
<b>Impact</b>	: More people visit famous places of Surat.



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<b>Problem ID:</b>	PID494
<b>Challenge Title</b>	: Online alert for drainage line choking & manhole overflowing.
<b>Name of the Office</b>	: Surat Municipal Corporation
<b>Challenge Description with context</b>	: We want to have a system to sense water level at manhole in the area and notify / alert when overflowing. At many places we have overflowing manhole problems as right now it is not possible to sense water level at particular manhole. So we want to have a system which can sense water level at manhole in the area and alert us (municipal corporation) about high level so that timely action can be taken to prevent such overflows and keep our city clean.
<b>Users</b>	: SMC User
<b>Expected Outcomes</b>	: Alert for drainage line choking & manhole overflowing to take immediate action.
<b>Impact</b>	: Solve drainage line choking & manhole overflowing problems.
<b>Problem ID:</b>	PID495
<b>Challenge Title</b>	: Overflowing of Drainage line
<b>Name of the Office</b>	: Surat Municipal Corporation
<b>Challenge Description with context</b>	: Many times Overflowing of sewer line occurs due to the choking of sewer line and many other reasons. The participants are expected to provide a solution for real time tracking and alert system once manhole level rises and starts overflowing.  Stop Overflowing of sewer line
<b>Users</b>	: SMC and citizen of Surat
<b>Expected Outcomes</b>	: Stop Overflowing of sewer line
<b>Impact</b>	: Clean and healthy Surat

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<b>Problem ID:</b>	PID496
<b>Challenge Title</b>	: Pay & Park Facility Locator
<b>Name of the Office</b>	: Surat Municipal Corporation
<b>Challenge Description with context</b>	: SMC has created multilevel and open parking facilities. It is required to have a mobile app which enables citizens to locate nearest parking location. For the multilevel parking, the parking slots for the four wheelers are fixed and the entry and exit is under controlled environment, for such MLP lots, a back end app can be designed for the operator which will enable to mark entry and exit of four wheeler. This information will help the citizen to check the parking space availability as well.  Help the citizen to check the parking space availability.
<b>Users</b>	: Citizen of Surat
<b>Expected Outcomes</b>	: Citizen can locate nearest parking location.
<b>Impact</b>	: Reduce traffic and parking problems.

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<b>Problem ID:</b>	PID497
<b>Challenge Title</b>	: Satellite imagery-based detection of unauthorized constructions.
<b>Name of the Office</b>	: Surat Municipal Corporation
<b>Challenge Description with context</b>	<p>: The government allows people to construct their building, with survey numbers and lat-long. If there is construction in the middle of this lat-long, then the government has no problem. But if building development goes beyond this lat-long, it's called illegal construction. Often people seem to live in such illegal-plan buildings.</p> <p>Government offices like the SMC (Surat Municipal Corporation) / Suda (Surat Development Authority) have to go through the judicial process when they go to demolish the illegal construction that is contrary to such a plan, which is a very complicated and time-consuming process. Thus, it is a waste of government machinery and time to break up this illegal construction.</p> <p>If illegal construction begins against such a sanctioned plan, the SMC (Surat Municipal Corporation) / Suda (Surat Development Authority) will be immediately informed and can be stopped by the people directly.</p> <p>Thus, the valuable assets of our country can be saved.</p>
<b>Users</b>	: People, Government officers like.....SMC (Surat Municipal Corporation) / Suda (Surat Development Authority).
<b>Expected Outcomes</b>	: Satellite based Image Processing system for SMC (Surat Municipal Corporation) / Suda (Surat Development Authority), officers to view building construction or any structure from their desk. Before an illegal building construction or any structure happens, the government-officer can stop it by law. So time and use of machinery cost will be minimum.
<b>Impact</b>	: The people who live from SMC (Surat Municipal Corporation) / Suda (Surat Development Authority) know that SMC (Surat Municipal Corporation) / Suda (Surat Development Authority), officers will do steps in advance to demolish their building-construction or any structures. So in the future, no one will do these types of illegal activities.

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<b>Problem ID:</b>	PID498
<b>Challenge Title</b>	: Sensor based Water Logging Alerts
<b>Name of the Office</b>	: Surat Municipal Corporation
<b>Challenge Description with context</b>	: Water logging at critical areas within city disrupts the life of commuter. It is important to know such water logging event and notify the commuter to adopt alternate route. So we want to have some sensor based water logging alert system which will also show alternate route to commuters. There should be an app like map which shows location of waterlogged area in city and also show alternate route to the commuters.  We want to have a Sensor based Water Logging Alerts system which can alert commuter about waterlogging and also suggest alternate route to them. Water logging at critical areas within city disrupts the life of commuter
<b>Users</b>	: SMC and citizen of surat  If this system is developed then it will be very helpful to SMC and citizens of Surat. The system will be also very useful to other cities. Sensor based Water Logging Alerts system which can alert commuter about waterlogging and also suggest alternate route to them. Water logging at critical areas within city disrupts the life of commuter. It is important to know such water logging event and notify the commuter to adopt alternate route.
<b>Expected Outcomes</b>	: There should be a sensor based water logging alert system which will alert commuters about waterlogging on their way to destination and if waterlogging is severe then suggest alternate route to the commuters. This will be helpful for traffic management of city also. This will be helpful to avoid traffic jam due to waterlogging. Water logging at critical areas within city disrupts the life of commuter. It is important to know such water logging event and notify the commuter to adopt alternate route.
<b>Impact</b>	: If this system is developed then it will help commuters to save their time and also save fuel consumption. Sensor based water logging alert system which will alert commuters about waterlogging on their way to destination and if waterlogging is severe then suggest alternate route to the commuters. It is important to know such water logging event and notify the commuter to adopt alternate route.

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<b>Problem ID:</b>	PID499
<b>Challenge Title</b>	: Sewage meters
<b>Name of the Office</b>	: Surat Municipal Corporation
<b>Challenge Description with context</b>	: The total quantity of sewage generation can not be predicted and confirmed as the householders uses extra water through boring, storage rain water etc. It is also important to prevent ground water depletion and prevent unauthorisedbore wells.  To overcome this problem the possibility of placing “sewage meters” can be explored. This can be at individual house level or apartment/society/complex level. Utilising the data from water meter and sewage meter, the application should be able to help identify the abnormalities to take corrective measures.
<b>Users</b>	: SMC and citizen of Surat.  “sewage meters” will be very useful to measure the sewage generation from households .The total quantity of sewage generation will be predicted and confirmed as the householders uses extra water through boring, storage rain water etc.
<b>Expected Outcomes</b>	: The application should be able to help identify the abnormalities to take corrective measures.The total quantity of sewage generation should be predicted and confirmed as the householders uses extra water through boring, storage rain water etc. It is also important to prevent ground water depletion and prevent unauthorisedbore wells.This can be at individual house level or apartment/society/complex level. Utilising the data from water meter and sewage meter, the application should be able to help identify the abnormalities to take corrective measures.
<b>Impact</b>	: If this problem is solved then it will enable us to control sewage generation and process. The application will help identify the abnormalities to take corrective measures.We will be able to predict the quantity of sewage generation and confirmed as the householders uses extra water through boring, storage rain water etc. It is also important to prevent ground water depletion and prevent unauthorisedbore wells.

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<b>Problem ID:</b>	PID500
<b>Challenge Title</b>	: Solution for identification of ingress of Industrial Waste In Domestic Sewerage System
<b>Name of the Office</b>	: Surat Municipal Corporation
<b>Challenge Description with context</b>	: As the Sewage Treatment is a biological treatment, treatment process get adversely affected by the ingress of industrial waste in sewerage system.  There may be many locations, where partly treated / untreated industrial waste is discharged by industrial units in to the sewerage system. The participants are expected to provide a solution for real time tracking and alert system for illegal discharge of industrial waste.  Solution for real time tracking and alert system for illegal discharge of industrial waste.
<b>Users</b>	: SMC
<b>Expected Outcomes</b>	: Real time tracking and alert system for illegal discharge of industrial waste.  There may be many locations, where partly treated / untreated industrial waste is discharged by industrial units in to the sewerage system. The sewage treatment is a biological treatment, this process get badly affected by chemical waste or other kind of waste from industrial system. So we want to have a solution for real time tracking and alert system for illegal discharge of industrial waste. The real time tracking alert system will alert via app notification/email/sms etc.
<b>Impact</b>	: Stop illegal discharge of industrial waste In Domestic Sewerage System.  If this problem is solved then SMC will have real time tracking and alert system for illegal discharge of industrial waste. And SMC can take action on such industries. In this way it will help this system to keep our environment clean. If this problem is solved then it will also be useful for other cities.

<b>Problem ID:</b>	PID501
<b>Challenge Title</b>	: Storm Drainage Outlet Gates Operation
<b>Name of the Office</b>	: Surat Municipal Corporation
<b>Challenge Description with context</b>	: Total 48 nos. of storm outlets are draining storm water into Tapi river. The alert should be received to the concerned authority so that gates of outlets are timely closed whenever level of Tapi river is going to rise due to heavy rain or discharge from Ukai dam.  Stop flood situation
<b>Users</b>	: SMC and citizen of Surat
<b>Expected Outcomes</b>	: Prevent flood
<b>Impact</b>	: Stop flood situation in Surat
<b>Problem ID:</b>	PID502
<b>Challenge Title</b>	: System to alert Water Logging
<b>Name of the Office</b>	: Surat Municipal Corporation
<b>Challenge Description with context</b>	: SMC has a storm water drainage system in different areas, but some of the areas face problems of water logging if rainfall intensity is very high. An application along with simulation capability can be developed which can map the historic rainfall data and water logging data and can generate alert for potential water logging.  Generate alert for potential water logging.
<b>Users</b>	: SMC and citizen of Surat
<b>Expected Outcomes</b>	: Prevent water logging
<b>Impact</b>	: Clean and healthy Surat

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<b>Problem ID:</b>	PID503
<b>Challenge Title</b>	: Traffic congestion analysis with real-time data for Bus arrival to optimized time
<b>Name of the Office</b>	: Surat Municipal Corporation
<b>Challenge Description with context</b>	: Traffic congestion analysis with real-time data so that Bus arrival time can be determined. For this, system should collect data from real time traffic using sensors/camera/GPS of vehicle.  Save time of traveller.  Based on the congestion analysis traveller can save time and choose alternate route
<b>Users</b>	: Citizen of Surat
<b>Expected Outcomes</b>	: Bus arrival time can be optimized
<b>Impact</b>	: Increase public transport facility.



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## Vadodara Municipal Corporation

- Problem ID:** PID504
- Challenge Title :** AI based Bus route suggestion system
- Name of the Office :** Vadodara Municipal Corporation
- Challenge Description with context :** Any commuter who is not having knowledge of English or Gujarati and needs to go from one location to another within the city finds it difficult to know which bus to board. The bus route suggestion app shall suggest how a commuter can go from one location by feeding the origination and the destination. The app shall inform the alternative routes and the shortest route, or direct route number with changeover bus stops.
- The bus route suggestion app shall suggest how a commuter can go from one location by feeding the origination and the destination. It shall also share the information about the time of the next two buses that shall arrive at a designated bus stop for a defined route chosen by the user. VMC has also started a heritage bus and the bus route will also inform the various places of heritage importance and how to reach there. It will also inform how to reach to any convention or fair and the information like timing and availability of various special bus services for the same.
- Users :** The IT department and the traffic department will be the administrator of the application. All the citizens and the commuters / travelers to the city will be the end users of the application. The interface will help both the parties.
- Expected Outcomes :** This system will help a traveler, coming to the city for the first time, immensely. The people will not be cheated by the private transport like rickshaws and taxis. This will also reduce the unnecessary time delay by the travelers. It will also help in better utilization of the transportation facility of the city. The improved user experience will help in the image of the city. This will help both the parties.
- Impact :** This is a right step in the direction of making a city into "Smart City ". This method will result in saving of money from the travelers, who are cheated by the rickshaws and taxis frequently. This will also help in better utilization of the transportation facility, resulting in increase in financial output.

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<b>Problem ID:</b>	PID505
<b>Challenge Title</b>	: AI based tools to determine patterns in issues like garbage, Traffic, crime etc.
<b>Name of the Office</b>	: Vadodara Municipal Corporation
<b>Challenge Description with context</b>	<p>: All the issues related to garbage, traffic, crime, water etc follow a certain time based pattern. e.g People throw garbage at a particular point at certain time. There is traffic congestion at certain time at a place. The crime like chain snapping takes place during certain time. AI based tools should be available to monitor and decipher the pattern.</p> <p>As discussed above, there is a particular time pattern in the issues mentioned above. The AI based tools will be useful in determining the pattern in advance. This will result in time based specific monitoring of the issues and the government will be ready to face the issue in advance. The tools would establish the proper time based pattern at particular time in advance and help the government to tackle the issue.</p>
<b>Users</b>	: All the departments, related to the issues of Garbage collection, traffic, crime etc will be the administrator while all the citizens will be the end user of the system. The AI based tools will bridge between the two.
<b>Expected Outcomes</b>	: The government will be able to anticipate the issues in advance and it will be ready as soon as the problem appears. This will reduce the problems as the garbage throwing can be monitored, the police will be more vigilant in particular area at particular time, effectively reducing the crime rate. The traffic congestion will be less during peak hours at certain time due to advanced planning. The management would be easier.
<b>Impact</b>	: This will help to make a city 'Smart city' as the solutions are prepared in advance as soon as the problems appear. The city will be cleaner through proper garbage management. Also, the citizens will be happy after reduction in traffic congestion and crime rate. This will improve the overall life of the citizens.

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<b>Problem ID:</b>	PID506
<b>Challenge Title</b>	: Automated Traffic management system
<b>Name of the Office</b>	: Vadodara Municipal Corporation
<b>Challenge Description with context</b>	<p>: In many parts of the city there is a lack of designated parking spaces. It is occasionally seen that parking is being done by commuters on both the sides of an already narrow road. This leads to chocking of traffic in roads connecting main roads. There is a lot of chaos and difficulty is experienced by city dwellers on weekends for having parking facility near multiplexes, Malls and Key Markets.</p> <p>VMC requires automated parking management systems which can be used by citizens to find the available parking spots in the city/nearby area and pay parking bill for the available spots. The system should be capable of having providing information to the commuters about the available parking spaces in real time and also allow them to book their parking slots before they start from home.. The parking lot should also be capable to indicating the number of empty parking slots for commuters who drive into the Zonal &amp; Central Bus depot without having any prior reservation. The app should also be integrated with parking management system available with major malls, multiplexes, parks, convention centers and designated parking near no vehicle entry markets.</p>
<b>Users</b>	: The traffic department along with the IT department will be the administrator of the application. All the citizens and the commuters from the surrounding will be the end user of the system. The system will provide the interface between the two.
<b>Expected Outcomes</b>	<p>: This system is a plan to establish Zonal and Central Bus Depots with multilevel parking system and the process occurs in real-time to inform users about available vacant spaces. This will reduce the traffic congestion and help in improving of the transportation in the city.</p> <p>This will also help all the citizens and the commuters, giving the idea about the parking facility. It will reduce burden on traffic department drastically.</p>
<b>Impact</b>	: This will help in making a city "Smart City" as it effectively reduces the traffic congestion. This will also reduce the time delays caused by the traffic congestion resulting in saving of Men hours. This system will reduce the burden on the traffic department, which will utilize their resources to handle other situations.

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<b>Problem ID:</b>	PID507
<b>Challenge Title</b>	: Common platform to reach all the citizens of the city
<b>Name of the Office</b>	: Vadodara Municipal Corporation
<b>Challenge Description with context</b>	: There is VMC application through which the people share their grievances to VMC. However, there is no communication other way around. The Corporation wants to reach all the citizens, when some important messages are required to be conveyed. e.g during flood situation, riots or any natural calamities, this communication serves the important purpose.  Traditional mediums like Newspaper, TV are not sufficient to pass out the message during emergency condition. The mobile based platform should serve the purpose of urgent communication effectively. The people will get the real news and updates and rumors will be curtailed. The communication platform will also help during festival seasons, seasonal diseases etc. The communication will be swift and accurate.
<b>Users</b>	: IT department will work as the administrator of the mobile based interface. All the citizens of the city will be the end users. All the communication will be from one end to other department. Other departments of VMC will also be able to spread the messages to the citizens.
<b>Expected Outcomes</b>	: The platform will serve the communication effectively without time delays. The government will also be able the spreading of rumors during riots, floods etc. The time delay will reduce significantly and the people will be able to get the true information from the resources itself. The medium will also save the financial expenditure as the running cost of the system is very less. The citizens' life will also improve.
<b>Impact</b>	: It will help both the parties in the system. The government will be able to convey the messages and the citizens would also be able to get the necessary information quickly and effectively. Unnecessary time delay will be reduced and the expenditure of the government will reduce considerably. It's a win-win situation for both the parties.

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<b>Problem ID:</b>	PID508
<b>Challenge Title</b>	: Facility to corporation staff to report daily work from field site.
<b>Name of the Office</b>	: Vadodara Municipal Corporation
<b>Challenge Description with context</b>	: Corporation field staff, who usually report to duty on site, find it difficult to report their daily attendance and work progress to their department heads because of which staff attendance and status of work goes unreported. They have to report to the office at 10.30 and then they have to go to the field site, resulting in considerable time delay.  There is a lot of staff, who work in the field throughout the delay. They have to report to the main office and then go to the field, resulting in time delay. There should be a mobile application through which they can mark their presence from the field and they are not required to report to the office without any emergency. This will result in effective monitoring of the projects going under the VMC.
<b>Users</b>	: The IT department will be the administrator of the mobile based application while all the field staff from the various departments of VMC will be the end users, who can mark their presence from the field.
<b>Expected Outcomes</b>	: This will allow the flexibility to the staff of directly reporting from the field. This will reduce the time delay for the staff and result in effective monitoring of the on going project. This will also help the staff to focus more on the work and efficiency of the staff will improve drastically. Time saved will be utilized effectively in monitoring of the project. The work experience will improve for staff.
<b>Impact</b>	: This system will improve the work experience for the staff and enable them to accomplish their targets effectively within the stipulated time delay. It will reduce the travelling of the staff and the better utilization of the time. This will also help government as time bound projects are regularly monitored from the field.

<b>Problem ID:</b>	PID509
<b>Challenge Title</b>	: Location of Underground Utilities and Frequent Digging on roads
<b>Name of the Office</b>	: Vadodara Muncipal Corporation
<b>Challenge Description with context</b>	<p>: Underground utilities like water, drainage, power, etc. in the city are either not mapped or their actual location has not been identified/updated. Thereby, it takes a long time to troubleshoot any problem in any of the utility. This creates considerable inconvenience to public/citizens and motorists.</p> <p>A common issue is that of repeated digging up of a particular site on a public road by various departments as a result of lack of information or unawareness on their part of work being carried out by other departments. lack of information/unawareness about locations of underground utilities leads to duplication of utilities and, many a times, damage to existing underground utilities. There should be mobile based application connecting all the departments who update their work and hence the duplication of the work is effectively avoided.</p>
<b>Users</b>	: The IT department will be the administrator of the application, while the head of all the other departments will be the end users, who would share the upcoming/running project under them. This will reduce the duplication of the work.
<b>Expected Outcomes</b>	: The duplication of the work is avoided and the inconvenience to the the people is drastically reduced. This will enable all the departments to work in synchronism as the information between them is effectively shared through the platform. The civil work of the VMC will reduce considerably as the frequent patch up of the road is avoided due to application. This will result in cost saving to the government.
<b>Impact</b>	: Overall, it will improve the management of various department of VMC. It will reduce inconvenience to the citizens of the city and also duplication of work is avoided. This will result in over all reduction of financial saving of the government. It's a win-win situation for all the concerned parties.

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<b>Problem ID:</b>	PID510
<b>Challenge Title</b>	: Mobile based daily project updation
<b>Name of the Office</b>	: Vadodara Muncipal Corporation
<b>Challenge Description with context</b>	<p>: There are number of projects going under VMC at any time of the year. Actual monitoring of all the projects on daily based, is a difficult task. There should be a mobile application through which the contractors will update the daily progress of the project. The field persons from the department will verify the information.</p> <p>There are lots of projects going on under the VMC. This requires regular monitoring of the project to make sure that the timely completion of the project. Manual monitoring of all the projects on daily basis a difficult task. The mobile application will allow the contractors and the other parties to update the progress report daily through photos, videos etc. This will result in effective monitoring of all the projects.</p>
<b>Users</b>	: Various departments will be the intermediate party while the IT department will be the administration of the application. All the concerned contractors and other parties will be the end users of the system. This interface will provide the smooth communication among all parties.
<b>Expected Outcomes</b>	: This will result in timely completion of the projects. In case any problems arise during he execution of the project, they will be effectively addressed due to daily monitoring. This will reduce the unnecessary time delay. As the communication is transparent, the progress of the project will be effectively monitored. The projects will be completed in time limit and it will also help the contractors.
<b>Impact</b>	: The monitoring process becomes faster and smoother. The problems will be immediately addressed and unnecessary time delays will be reduced. This will reduce the financial burden on contractors as the projects are completed within the time limit. VMC will be able to gauge the quality of work directly.

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<b>Problem ID:</b>	PID511
<b>Challenge Title</b>	: Mobile based internal communication system for all staff of VMC
<b>Name of the Office</b>	: Vadodara Muncipal Corporation
<b>Challenge Description with context</b>	<p>: There are number of departments in VMC,with total staff of 4000. It is required to communicated among the staff frequently.There are certain forms to be filled, official communication between certain departments. However, there is not a single platform through which they can communicate with each other.</p> <p>There is almost 4000 staff who communicate with each other through traditional medium like paper, mobile calls etc. This causes some time delay in execution of the work and the problem is severe in certain time based work. The mobile application will bring all the staff under a common umbrella, allowing easy communication among them. The paper trail will be easier process. The communication will be fast and less time consuming.</p>
<b>Users</b>	: The mobile application will be provided by the IT department of VMC, which will work as an administrator. All the 4000 odd staff will be the end user of the system increasing the effectiveness of the communication.
<b>Expected Outcomes</b>	: The communication becomes faster and it also reduces the time delay. The integration of the issues will reduce the unnecessary time delay. The paper communication will reduce and hence this method will environmental friendly. The people from the other departments will be in the loop and the grievance will be effectively addressed. Overall the management becomes smoother through this app based interface.
<b>Impact</b>	: Overall, communication will be faster and the management becomes faster and the time delays are reduced. The working of the departments will be synchronized through the channel. This app will help in reducing the unnecessary time delays and hence the time bound will be completed in the stipulated time.



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<b>Problem ID:</b>	PID512
<b>Challenge Title</b>	: Multiple common toilet locator
<b>Name of the Office</b>	: Vadodara Municipal Corporation
<b>Challenge Description with context</b>	: Citizens and travelers come to the city for various purposes and while on the move need to have access to toilet facilities. Since, more and more Toilet Blocks shall be added the location and the facilities available at the Multiple Common Toilet need to be informed to the citizens. This is necessary to improve the hygiene.  The citizens and travelers require the information about the common toilet in the near vicinity. There is a need to have a Geo-tagging of the Multiple Common Toilet Blocks to promote the availability of hygienic toilet facilities to the citizens of the city as well as to the travelers visiting the city including those who come to the city to attend various functions, events and for heritage tourism.
<b>Users</b>	: The health department along with the IT department will be the administrator of the mobile based platform. The citizens of the city and the travelers from the outside will be the end user of the system.
<b>Expected Outcomes</b>	: This will help the citizens to locate the nearby toilet quickly. This will help in improving the cleanliness and the hygiene of the city. This will improve the image of the city in case of travelers. If the application allows feedback, it will enable the government to improve the existing facility. This will be a good step towards "Swachchh Bharat". The city will be cleaner and improve its rank at national level in cleanliness.
<b>Impact</b>	: Overall, hygiene level of the city is improved drastically as the citizens use the common toilet effectively. The application will help in locating the common toilet, resulting in better cleanliness level of the city. It's a win-win situation for both government and the citizens using the application.

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<b>Problem ID:</b>	PID513
<b>Challenge Title</b>	: Source augmentation for Vadodara city up to year 2048
<b>Name of the Office</b>	: Vadodara Municipal Corporation
<b>Challenge Description with context</b>	: <p>The city has different supply system in for the different parts of the city. Considering the shortage of water in southern area of city, Rapid development and increase in the area of city, it is necessary to augment new water source for the city. To meet the future water demand up to year 2048. This requires planning and execution for the long term goal.</p> <p>To meet the future requirement of the water, a suitable network should be planned. It is planned to augment 300 MLD water (stage wise) from river Mahi by constructing intake well, WTP at sindhrot and laying transmission line from source to Vadodara city. The first stage considers 100 MLD of water out of 300 MLD. This will enable the VMC to meet the future requirement of the water from the southern zone.</p>
<b>Users</b>	: Water supply project arm of the VMC will be the administrator of the project while all the citizens in the southern part of the city will be the end users of the system. This is done considering the future requirement of the city.
<b>Expected Outcomes</b>	: It will handle the current shortfall of water and it will also enable to meet the future requirements of water for the southern part of the city like Manjalpur, GIDC, Tarsali, Makarpura, Jambuva etc. It will improve the water distribution network as the current overload on the existing water distribution system is reduced effectively. This will result in the proper utilization of the available resources.
<b>Impact</b>	: The people will get the water at good pressure throughout the year due to better water management of the system. This will help in curtailing the various supply side issues due to less rain in monsoon. The resources are better utilized, resulting in the overall gain of the system. It's a right step in the direction of "Smart City".

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<b>Problem ID:</b>	PID514
<b>Challenge Title</b>	: Water Distribution Management in crisis
<b>Name of the Office</b>	: Vadodara Municipal Corporation
<b>Challenge Description with context</b>	: There arises the scarcity of water in the certain areas of the city due to the failure of the machine/pump or leakage of the feeder line. The situation goes out of control if the problem persists for longer duration. This will cause inconvenience to the citizens.  The improved water management system is required during crisis. The feeder line monitoring and water management is done using SCADA. There should be pressure transmitter and Electro-magnetic flow meters installed to identify the leakages. If there is any leakage / failure taking place, the repairing work should be completed in 24 hours. The overall system makes sure that the water is available to the citizens even during crisis.
<b>Users</b>	: Vadodara Municipal Corporation's engineers will be the administrative of the system while the citizens of the city will be the end users of the system. The system will make sure that any problem is resolved in shortest possible duration.
<b>Expected Outcomes</b>	: As the SCADA system helps to identify the leakages of the feeder line, this will result in the fault detection easy job. This method will also reduce the time delay for the repairing. In the end, the citizens will be the gainers as the effective management is done from the supply end even during the emergency / crisis situation. The automatic system will reduce the manual work in the process, increasing the efficiency of the system.
<b>Impact</b>	: The water distribution system will be improved drastically as the leakages and water wastes are controlled effectively. The restoration time in case of the fault will also reduce considerably. This will make the system more efficient as the problems are resolved quickly. The citizens will not face any hardship even during the crisis period.

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## Rajkot Municipal Corporation

<b>Problem ID:</b>	PID515
<b>Challenge Title</b>	: Biometric Based Attendance System
<b>Name of the Office</b>	: Rajkot Municipal Corporation
<b>Challenge Description with context</b>	: RMC want to improve the attendance management of employees. Implementation of bio metric figure print sensors / eye retina scanner / face recognition machines will record all administrative employee attendance and their movement. RFID Smart cards may also serve the objective of attendance recording.  Below minimum features should be supported: <ol style="list-style-type: none"><li>1. Shift management</li><li>2. SMS Notifications in case of no attendance</li><li>3. Support for attendance of mobile resources</li><li>4. In time and Out time recording</li></ol>
<b>Users</b>	: Administrators -->overall management and monitoring the attendance, Employees -->can mark in and mark out their attendance
<b>Expected Outcomes</b>	: Management can get the attendance data of staff for the further process.
<b>Impact</b>	: Overall attendance system will be improved with the use of bio metric system and will also improve efficiency.

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<b>Problem ID:</b>	PID516
<b>Challenge Title</b>	: Develop automatic fare collection system for city bus services
<b>Name of the Office</b>	: Rajkot Municipal Corporation
<b>Challenge Description with context</b>	: Currently RMTS bus service works on manual ticket issuing system. Due to manual system travelers face problems like money change, bus timings, lots of human resources etc. RMC wants the automatic fare collection system which by improves speed and the flexibility of payment itself.  Below minimum features must be solved by proposed system: <ol style="list-style-type: none"><li>1. Electronic payment must be done by customer</li><li>2. Bus timing and bus route must be displayed on application so that customer can select it.</li><li>3. Electronic maintenance of full trip by conductor.</li></ol>
<b>Users</b>	: Conductor--> can issue ticket and must be able to accept digital payment, Traveler or customer--> can select bus route from the list and book e ticket, can do digital payment, Admin--> can view overall trip and manage routes and system.
<b>Expected Outcomes</b>	: The main aim of this project is to design an automatic fare collection application for the RMTS using the programming. The Data base which can store data about the customer and information. E-ticket can be seen in registered mobile and as well as on e-mail address.
<b>Impact</b>	: Electronic ticketing in public transportation is gaining momentum worldwide. It will be beneficial to passengers and public transportation operators through time savings, increased travel convenience, more flexible ticketing, lower administrative costs, and better marketing information.

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<b>Problem ID:</b>	PID517
<b>Challenge Title</b>	: Mobile app to request a book in library
<b>Name of the Office</b>	: Rajkot Municipal Corporation
<b>Challenge Description with context</b>	: Currently RMC has many community libraries running in Rajkot. Citizens of rajkot are regularly visiting them and also many citizens are obtaining memberships also. RMC needs an application which can be used to request for and new books or journals etc. in the community library.  RMC needs an application which can be used to request for and new books or journals etc. in the community library. Members can send the requests for any new books or journals to library through application. Librarian can also send the request for new book or journals to other community or higher authorities. Members can also request to issue new books and can give feedback.
<b>Users</b>	: Librarian--> can view requests from the members and also view feedback, can update stocks, send request to higher authorities or other librarians.  Members--> can request new books and journals through app, can give feed back, raise issue request, can view book availability etc.
<b>Expected Outcomes</b>	: App for librarian and members of library through which above mentioned functions can be achieved.
<b>Impact</b>	: Beneficial to society and through this app overall awareness regarding library will be spread in the community. Use of library will be increased.

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<b>Problem ID:</b>	PID518
<b>Challenge Title</b>	: SMART App for donating food, books and cloths etc.
<b>Name of the Office</b>	: Rajkot Municipal Corporation
<b>Challenge Description with context</b>	: RMC wants citizens of Rajkot to share their old cloths, books and food to the needy people. For this purpose an application is required to be designed by the participants through which these facilities can be provided.  Application must provide: <ol style="list-style-type: none"><li>1. Citizens can share details regarding old clothes and books.</li><li>2. Citizens can also post whether they want to provide food.</li><li>3. Admin can verify the details posted by citizen and provide proper guidance to the needy persons.</li><li>4. Needy persons can see the details posted in application and contact the provider.</li></ol>
<b>Users</b>	: Admin:Can overall monitor the app and verify the data posted, Citizens can download the app and post the details of book, cloths and food items etc., Needy person can view the details and can contact the administrator or providers.
<b>Expected Outcomes</b>	: Smart citizen app will be used by citizens of rajkot to donate the items such as food, books, cloths, toys etc. to needy in the city of Rajkot.
<b>Impact</b>	: It will very effective solution to avoid the waste of food during the functions and parties. It will also provide old items to the needy people.

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<b>Problem ID:</b>	PID519
<b>Challenge Title</b>	: Visitor management systems and online portal for tourists places
<b>Name of the Office</b>	: Rajkot Municipal Corporation
<b>Challenge Description with context</b>	: RMC intends to deploy visitor management system and online portal for tourist places in the city of Rajkot. Proposed solution gives insight so that rmc can do proper capacity planning.  There are so many tourist places in the Rajkot. Rmc wants to make an application that can manage how many visitors have visited the place per day, week etc., and this system will also provide the detailed insights of prominent tourist places to the visitors.
<b>Users</b>	: Admin can add new places, can update places or delete existing places, Visitors can get the information related to the different places in the rajkot and also get how many visitors are currently there at the place.
<b>Expected Outcomes</b>	: App for RMC admins and visitors for proper maintenance of tourist places in the rajkot.
<b>Impact</b>	: By knowing number of visitors at different tourists places RMC will use this data for capacity building and future planning. It will also give proper insight details of popular tourists places of Rajkot.



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<b>Problem ID:</b>	PID520
<b>Challenge Title</b>	: Plastic Waste Material Management
<b>Name of the Office</b>	: Rajkot Municipal Corporation
<b>Challenge Description with context</b>	: Plastic to Diesel convertor
<b>Users</b>	: Public/ Government transport vehicle, Industrial transport vehicle, oil industry,
<b>Expected Outcomes</b>	: Clean atmosphere, remove Environment pollution
<b>Impact</b>	: Remove the plastic waste

### **Mamlatdar Office, Dwarka**

<b>Problem ID:</b>	PID521
<b>Challenge Title</b>	: Affordable pakka house for salt workers & downtroddens (Shelter portable)
<b>Name of the Office</b>	: Mamlatdar Office, Dwarka
<b>Challenge Description with context</b>	: For the salt workers working in remote area and also for the downtrodden an alternate of pakka house at an affordable rate/cost at the same time is should be portable and giving them all weather protection  To extend them shelter to live their life with improved dignity
<b>Users</b>	: Salt workers & downtrodden
<b>Expected Outcomes</b>	: Affordable & portable shelter to safeguard them in all weather
<b>Impact</b>	: Enhanced/Improved life style

<b>Problem ID:</b>	PID522
<b>Challenge Title</b>	: Bore water's salinity reduction
<b>Name of the Department / Office / Industry</b>	: Mamlatdar Office, Dwarka
<b>Challenge Description with context</b>	: The extracted water through bore in this area has high TDS and salinity, because of coastal area - solution to this issue is expected  High TDS and salinity in bore water too be reduced to enhance hygiene
<b>Users</b>	: General public
<b>Expected Outcomes</b>	: Remedial measures /techniques to mitigate this issues are expected
<b>Impact</b>	: To address shortage of drinking water.

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**Problem ID:** PID523  
**Challenge Title** : Collection of garbage from narrow streets  
**Name of the Office** : Mamlatdar Office, Dwarka  
**Challenge Description with context** : Garbage Collection from the narrow street has become difficult  
Suggest method for the ease in garbage collection from such areas  
**Users** : Residents/occupants  
**Expected Outcomes** : Regular garbage collection ease  
**Impact** : Cleanliness

**Problem ID:** PID524  
**Challenge Title** : Comfort Enhancement fo the pilgrims  
**Name of the Office** : Mamlatdar Office, Dwarka  
**Challenge Description with context** : IOT based techniques /GUI based applications to enhance comfort of pilgrims. They would feel being cared and in the hands of safe administration  
IOT based model for overall comfort of pilgrims  
**Users** : Pilgrims  
**Expected Outcomes** : Affordable stay/food/Darshan ease logistical support/special arrangement and support for aged/disabled pilgrims  
**Impact** : Attract Tourism

**Problem ID:** PID525  
**Challenge Title** : Food grain bag stock verification inventory control system  
**Name of the Office** : Mamlatdar Office, Dwarka  
**Challenge Description with context** : Low cost inventory system to track bags and billings  
 Food grains stock verification and tracking of missing bags be the issue  
**Users** : Farmers & Stockist  
**Expected Outcomes** : Low cost inventory control system and tracing system  
**Impact** : Safety & Securing ease

**Problem ID:** PID526  
**Challenge Title** : Recycling of flowers offered at the temple  
**Name of the Office** : Mamlatdar Office, Dwarka  
**Challenge Description with context** : Flowers offered at to altar of temple are dumped and leaves that area stinking  
 Recycling of flowers and tailoring out usable products for selling should be the desirable out come of suggested solution  
 Recycling of flowers offered and revenue generation  
**Users** : Public  
**Expected Outcomes** : Revenue generation & Cleanliness should be maintained  
**Impact** : Clean environment & revenue generation

<b>Problem ID:</b>	PID527
<b>Challenge Title</b>	: Reduction in Air/Noise pollution in chhakado Rikshows
<b>Name of the Office</b>	: Mamlatdar Office, Dwarka
<b>Challenge Description with context</b>	: "Chhakdo Rikshows" have been most common mean of transportation in this area. These Rikshows puff off polluted air alongwith substential noise  To reduce Air/Noise pollution emission by it
<b>Users</b>	: General Public & goods transportation
<b>Expected Outcomes</b>	: Reduction in Air & Noise pollution through attachments
<b>Impact</b>	: Avoid mental fatigue through noise and less polluted air
<b>Problem ID:</b>	PID528
<b>Challenge Title</b>	: Sea water intrusion in Okha
<b>Name of the Office</b>	: Mamlatdar Office, Dwarka
<b>Challenge Description with context</b>	: Sea water intrusion in okha being a typical geographical issue. It erodes coastal area and increase salinity in land and water  Intrusion of sea water causing land erosion and increase salinity in drinking water
<b>Users</b>	: Residents
<b>Expected Outcomes</b>	: Land is to safeguard against intrusion of sea water
<b>Impact</b>	: It would address agricultural and drinking water issues
<b>Problem ID:</b>	PID5209
<b>Challenge Title</b>	: To mitigate corrosive effect in costal area
<b>Name of the Office</b>	: Mamlatdar Office, Dwarka
<b>Challenge Description with context</b>	: In the Coastal area people face problems in their M.S. Steel structure and eventually the life span of the item is Curtailed  Material/Method to find solution to this effect
<b>Users</b>	: Habit-ants of coastal area
<b>Expected Outcomes</b>	: Low cost methods to cope up with this problem
<b>Impact</b>	: Society would appreciate /benefitted

### Mamlatdar Office, Palanpur

- Problem ID:** PID530
- Challenge Title :** "Vidhwa Sahay" Data Management and Form Generation
- Name of the Office :** Mamlatdar Office, Palanpur
- Challenge Description with context :** Right now, In Mamlatdar Office, when someone approaches for Vidhava sahay yojana, Office Staff have to generate forms manually in each and every steps separately, and along with that they need to enter the same data again and again in different formats to generate few simple forms.
- We propose a solution in the form of software or Web application, that manages all the data of Applicant from beginning to end of process life cycle. So we never have to enter the same data again and again. Every forms of the scheme can be generated from the software with just one click and confirmation.
- Users :** Vidhva sahay yojana applicant and mamaltdar office
- Expected Outcomes :** Hassle free Vidhva sahay Yojana Processing.
- Impact :** Faster process, time saving
- 
- Problem ID:** PID531
- Challenge Title :** Digital Code of Criminal Procedure (CRPC)
- Name of the Office :** Mamlatdar Office, Palanpur
- Challenge Description with context :** Currently Code of Criminal Procedure (CrPC) Register and Ila related data is maintained in hard copy in becomes messy to deal with in long term. If Digital CrPc is maintained, the procedures associated with it's maintenance and searching will become easy.
- Users :** Mamlatdar office Staff and other CrPC Users
- Expected Outcomes :** Efficient management of CrPC Records.
- Impact :** Faster Search of Criminal Records

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<b>Problem ID:</b>	PID532
<b>Challenge Title</b>	: Web Application for Annapoorna Yojana Processing
<b>Name of the Office</b>	: Mamlatdar Office, Palanpur
<b>Challenge Description with context</b>	: Currently Eligible Candidate have to visit Mamlatdar office and Manually Apply for the Yojana, and all the data collected is then transferred from Hardcopy of form to MS Word and MS Excel as per need to generate and process forms at different levels. This repeated and unnecessary work, makes processing Application slower.  Instead, A Web Portal can be provided to candidates where they can digitally apply and all the needed data is once collected and stored in database. This database is then used to generate needed forms and individual levels of Yojana Processing. labharthi duplication in this yojana will also reduce.
<b>Users</b>	: Mamlatdar office Staff and Annapoorna Yojana Labharthi
<b>Expected Outcomes</b>	: Number of Applications processed per day will increase drastically.
<b>Impact</b>	: Reach of The Yojana will increase

**Mamlatdar Office, Botad**

**Problem ID:** PID533  
**Challenge Title :** Delivery issue by post office for distributing various documents  
**Name of the Office :** Mamlatdar Office, Botad  
**Challenge Description with context :** Proper tracking/delivery of documents delivered by post office.  
 Proper tracking of delivery by post office through software  
**Users :** Citizens  
**Expected Outcomes :** Software System  
**Impact :** Any applicant status given information about situation and stay in which offices not delivery problem arises and know the status of application in post office

**Problem ID:** PID534  
**Challenge Title :** Issue of E-Ticket for GSRTC Bus Service and Real Time Tracking  
**Name of the Office :** Mamlatdar Office,Botad  
**Challenge Description with context :** Accurate Tracking of buses using google maps is missing. Also, contact and bus details are not furnished accurately. Passengers will be given accurate bus information along with the real time bus tracking.  
**Users :** Passengers  
**Expected Outcomes :** Passengers will be given Correct information at the time of journey through Mobile App/Web App  
**Impact :** Public will prefer more GSRTC travelling instead of private vehicles



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<b>Problem ID:</b>	PID535
<b>Challenge Title</b>	: A System to improve Ration Card Updation
<b>Name of the Office</b>	: Mamlatdar Office,Botad
<b>Challenge Description with context</b>	: Applicant can't submit the hard copy of ration card in mamalatdar office because of not clear instruction given in digital Gujarat portal which results in delay for correction of ration card Provide proper instruction regarding ration card submission on digital Gujarat portal during online application
<b>Users</b>	: Ration card applicant and mamaltdar office
<b>Expected Outcomes</b>	: Process becomes faster regarding ration card correction/ modification
<b>Impact</b>	: Faster process, time saving

### Nagarpalika Bharuch

- Problem ID:** PID536
- Challenge Title :** Online Birth and death Registration System
- Name of the Office :** Nagarpalika Bharuch
- Challenge Description with context :** Registration of Births and Deaths is compulsory. Births mean live birth and still birth. Birth and death events to be registered by the Registrar at the place of occurrence and within her / his jurisdiction. In current system, citizens need to fill up the prescribed form in hardcopy and submit it to registrar in person. Some digital solution need to be developed for this procedure.
- Students need to design a digital solution for birth and death registration process.
- Users :** Registrar of Birth and death, general citizen.
- Expected Outcomes :** A well designed secure digital solution to be developed for birth and death registration process.
- Impact :** Reduce processing time, Digitize the Birth and death data
- 
- Problem ID:** PID537
- Challenge Title :** Online Marriage Registration System
- Name of the Office :** Nagarpalika Bharuch
- Challenge Description with context :** A marriage certificate is a recognized document that helps in obtaining passport, visas and PAN card.
- Further, a marriage certificate is required to claim bank deposits and life insurances. Currently an applicant has to submit the marriage registration form in hard copy to Registrar of Marriage. Some digital solution is required to make this process online.
- Students need to design a digital solution for Marriage registration process.
- Users :** Registrar of Marriage, general citizen.
- Expected Outcomes :** A well defined secure digital solution to be developed for Marriage registration process.
- Impact :** Reduce processing time, Digitize the Marriage registration data

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<b>Problem ID:</b>	PID538
<b>Challenge Title</b>	: Online Property Registration and Assessment System
<b>Name of the Office</b>	: Nagarpalika Bharuch
<b>Challenge Description with context</b>	: Current system needs a citizen needs to register the new property or to get copy of property assessment in property assessment (akarni) system in hard copy form. The solution can be provided to digitize this process with proper security features.  Students need to design a digital solution for property registration and assessment process.
<b>Users</b>	: Chief Officer, general citizen.
<b>Expected Outcomes</b>	: A well designed digital solution to be developed for property registration and assessment process.
<b>Impact</b>	: Reduce processing time, Digitize the property registration and assessment data

<b>Problem ID:</b>	PID539
<b>Challenge Title</b>	: Sewage Water Management and treatment System
<b>Name of the Office</b>	: Nagarpalika Bharuch
<b>Challenge Description with context</b>	<p>: The banks of river Narmada being situated in Bharuch city, gets contaminated by wastewater produced through physical, chemical and biological process by industrial wastewater , household sewage and other miscellaneous drainage system.</p> <p>The main aim is to reduce the pollution of the river Narmada. The idea of conveying sewage to the waste water treatment plant can be adopted wherein water can get separated from waste.</p> <p>Moreover water and waste collected separately can be used for different purpose of agriculture by producing fertilizers from collected waste.</p> <p>Above and all, we are left in the quest of which is affecting more? Lack of infrastructure or lack of social etiquettes.</p> <p>Students are required to understand the sewage system of Bharuch and probably come up with the sustainable, economical and socially acceptable solution. Sewage treatment is the process of removing contaminants from municipal wastewater and produce treated wastewater that is safe enough for release into the environment.</p>
<b>Users</b>	<p>: All citizens</p> <p>Government Officials</p>
<b>Expected Outcomes</b>	<p>: Reduce contamination of river.</p> <p>Reproduction of water by treatment.</p> <p>Producing fertilizers from collected waste.</p>
<b>Impact</b>	<p>: Reduced River pollution,</p> <p>Reuse of natural resources.</p>

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<b>Problem ID:</b>	PID540
<b>Challenge Title</b>	: Smart Traffic Management System
<b>Name of the Office</b>	: Nagarpalika Bharuch
<b>Challenge Description with context</b>	<p>: In Bharuch day by day the pollution is increasing at very high rate. Also Bharuch being the main city admits many small villages, it entertains the people of the villages to come to Bharuch for jobs, medical facilities, banking facilities , shopping and other purposes. This makes the city very crowded especially during the peak hours of work i.e , morning and evening. All the main roads of city are already planned and cannot be expanded more. The main problem in Bharuch city due to above problem is traffic and which leads to various other problems like wastage of time &amp; fuel , air pollution, noise pollution and many more. As per chief officer of Bharuch nagarpalika there is not effective traffic management system in the entire city which adds on to the ongoing traffic chaos. (Example: Road from station to Pachbatti)</p> <p>A city like Bharuch is very crowded because it admits many small villages. Traffic is a major issue during pick hours, due to limitations roads cannot be modified beyond some extent. In today's information technology era many cities are going towards Smart City project. So some information technology based smart solution must be developed to control traffic in city.</p>
<b>Users</b>	: All citizens Government Officials
<b>Expected Outcomes</b>	: Students need to design a good traffic control system with new technologies which give permanent, long life solution to the traffic problem of the city. It's a good opportunity for students to study the issue and design the system for providing a noise free and less polluted Bharuch city.
<b>Impact</b>	: Saving of fuel and travelling time Less noise and air pollution

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## Nagarpalika Himatnagar

<b>Problem ID:</b>	PID541
<b>Challenge Title</b>	: AI based Dustbin
<b>Name of the Office</b>	: Nagarpalika Himatnagar
<b>Challenge Description with context</b>	: Many time dustbins are not clean by any reason. After that it will harmful for health, even make pollution Some remote area or hidden place is not remember to check or clean Take awareness or give exact condition of each dustbin to chief officer of municipality department. Cleaning dustbin using sensor based technic and its give position and current condition of dustbin through massage or photographs
<b>Users</b>	: Admin : municipal chief officer Sub admin : concern officers team Sweeper
<b>Expected Outcomes</b>	: Each and every dustbin is operated through AI based. Current condition and position is easily mapped Set reminder if problem not solved Give message to concern sweeper
<b>Impact</b>	: Reducing pollution Improve trust between public and concern department Daily result analysis of cleanliness

**Problem ID:** PID542

**Challenge Title :** Cost Effective Method to reduce TDS level from Water

**Name of the Office :** Nagarpalika Himatnagar

**Challenge Description with context :** More TDS is harmful for human body, to reduce TDS level from water requires RO treatment but it is costly process.  
Reduce TDS level from water by using some cost effective method.

**Users :** Municipality, citizens.

**Expected Outcomes :** Citizens will get good water quality.

**Impact :** It will impact on budget and health of citizens.

**Problem ID:** PID543

**Challenge Title :** City bus live tracking through mobile application

**Name of the Office :** Nagarpalika Himatnagar

**Challenge Description with context :** Many times citizens has to wait too long for bus on specific route because they have no idea where exactly the bus. City Buses required to attained stop ontime and wait for specific time, but it was observed that either bus did not stop or did not wait for given time. GPS based oberavation and data ollecting system will allow to operate and maintain time table effectively.  
Municipality and citizens can track city bus on specific route via mobile application.

**Users :** Municipality (Admin), citizens.

**Expected Outcomes :** Buses will run on time and citizens can track buses on specific route.

**Impact :** Citizens time will save and staff will run buses on time.

<b>Problem ID:</b>	PID544
<b>Challenge Title</b>	: Dead animal removal from residential or working premises.
<b>Name of the Office</b>	: Nagarpalika Himatnagar
<b>Challenge Description with context</b>	: Many times animal being dead near residential or working area, after complaining many times to the authorized person at municipality no one is coming to remove dead body of animal and citizens has to suffer a lot.  Create a smart system using current technology hence this process can be done quickly without failing.
<b>Users</b>	: Admin,Citizen,worker
<b>Expected Outcomes</b>	: System assigns a person who is responsible to complete this task in time limit without fail.
<b>Impact</b>	: Dead animal removal process will be done fast and citizens will not suffer with this kind of issues.

<b>Problem ID:</b>	PID545
<b>Challenge Title</b>	: Door to door garbage collection
<b>Name of the Office</b>	: Nagarpalika Himatnagar
<b>Challenge Description with context</b>	: Garbage collection staffs are not coming to collect garbage in some areas although staffs are reporting that they have gone through all places which are allocated.  Create a smart system using current technology so staff can't cheat or bluff.
<b>Users</b>	: Admin,Citizen,staff
<b>Expected Outcomes</b>	: Garbage should collect regularly in all area of city without fail.
<b>Impact</b>	: Garbage collection staff will not bluff or cheat to the citizen and reporting officer of his/her department.



**Problem ID:** PID546  
**Challenge Title** : Identify location of leakage or location of mixing sewage water with drinking water pipelines in underground network.  
**Name of the Office** : Nagarpalika Himatnagar  
**Challenge Description with context** : Sewage water and drinking water pipelines networks are overlapping in many areas due to this reason if leakage of pipelines occurs then drinking water is mixing with sewage water in underground network.  
 Found area where leakage or mixing of water happens  
**Users** : Municipality, citizens.  
**Expected Outcomes** : Citizens will get good water quality.  
**Impact** : Water wastage can stop.

**Problem ID:** PID547  
**Challenge Title** : Identifying nuisance through smart CCTV surveillance in the city.  
**Name of the Office** : Nagarpalika Himatnagar  
**Challenge Description with context** : Culprit throwing garbage illegally at public places example like river, garden, near school and colleges or near residential area or near any building, this activity should be monitored with the help of artificial intelligence and culprit should be punished.  
 CCTV surveillance should work smartly using concept of artificial intelligence which can identify a person who is making nuisance, capture photos of that person and send to authority that can identify person and warned or punished him/her.  
**Users** : Municipal corporation of city, Cleaning and maintenance department of any building.  
**Expected Outcomes** : Clean and neat premises using smart CCTV surveillance.  
**Impact** : Citizen will keep their premises clean and neat and will not make any nuisance at public place.

**Problem ID:** PID548  
**Challenge Title :** Overhead water tank automation  
**Name of the Office :** Nagarpalika Himatnagar  
**Challenge Description with context :** Many times tank is full or empty but operator doesn't have any idea about the water tank status, this leads to suffer citizens in case of empty water tank and sometimes water is wasted in case of overflow the water tank.  
 Water tank operators comes to know about the tank is being empty or full at sitting head office using current latest technology.  
**Users :** Water tank operator, municipality  
**Expected Outcomes :** IoT Based Solution  
**Impact :** Beneficial to citizens of city.

**Problem ID:** PID549  
**Challenge Title :** Sanitation Staff Tracking System.  
**Name of the Office :** Nagarpalika Himatnagar  
**Challenge Description with context :** Sanitation staffs are not coming regularly in some areas for cleaning without any reason and reporting that they have gone through all places which are allocated.  
 Create a smart system using current technology so staff can't cheat or bluff.  
**Users :** Admin, Citizen, worker  
**Expected Outcomes :** Sanitation staff will visit regularly in all area of city without fail.  
**Impact :** Sanitation staff will not bluff or cheat to the citizen and reporting officer of his/her department.

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<b>Problem ID:</b>	PID550
<b>Challenge Title</b>	: Water pressure problem in tap from overhead water tank.
<b>Name of the Office</b>	: Nagarpalika Himatnagar
<b>Challenge Description with context</b>	: During summer season citizens are not getting proper pressure in tap water from overhead water tank due to more demand of water, many citizens are using electric motors with tap to get more pressure hence others has to suffer with low pressure of water in tap.  All citizens should get proper pressure amount of water in tap so no one has to suffer.
<b>Users</b>	: municipality
<b>Expected Outcomes</b>	: IoT BasedSolution
<b>Impact</b>	: Beneficial to citizens of city.

### Nagarpalika Porbandar

- Problem ID:** PID551
- Challenge Title :** Accounting Software
- Name of the Office :** Nagarpalika Porbandar
- Challenge Description with context :** In porbandar Nagapalika salary and other account related are made by excel sheet. So they face lots of difficulty to maintain such large amount data. In Accounting activity, data must accurate and correct. Generation of different kind of reports are also time consuming like yearly report , monthly report , employee wise report etc.
- Developing a software for Accounting Work will ease process for maintaining large amount data. All work currently done using excel will done with software. All data related to employee of porbandar nagarpalika maintain easily and always accurate and correct. Also no chance of mistake in work related to salary.
- Users :** In Porbandar nagarpalika, a person who handling work related to accounting department i.e. Account Officer
- Expected Outcomes :** Accounting work done through software. Every employee record are accurate, correct and manage easily. Different kind of report like monthly report , yearly report , employee wise report etc. Will be generate by single click which save lot of time.
- Impact :** Using Accounting software data are available all time, save lot of time for different report generation.
- 
- Problem ID:** PID552
- Challenge Title :** Problem Related to treatment and dumping of solid waste
- Name of the Office :** Nagarpalika Porbandar
- Challenge Description with context :** Improper disposal of municipal solid waste can create unsanitary conditions, and these conditions in turn can lead to pollution of the environment
- Proper Dumping method should used
- Users :** Citizens
- Expected Outcomes :** Reduce Pollution
- Impact :** Improvement Cleanliness and hygienic condition

<b>Problem ID:</b>	PID553
<b>Challenge Title</b>	: Problems of Dealing with the solid waste near the source of generation and temporary collection points
<b>Name of the Office</b>	: Nagarpalika Porbandar
<b>Challenge Description with context</b>	: Two thirds of the solid waste generated is not collected.As a result, the uncollected waste, which is often also mixed with human and animal excreta, is dumped in-indiscriminately in the streets.  Integrated solid waste management system
<b>Users</b>	: Citizens
<b>Expected Outcomes</b>	: Cooperation and collective responsibility on reporting illegal dumping
<b>Impact</b>	: Improved Health
<b>Problem ID:</b>	PID554
<b>Challenge Title</b>	: Problems of water supply in rural areas and small communities.
<b>Name of the Office</b>	: Nagarpalika Porbandar
<b>Challenge Description with context</b>	: Many area are too remote and cannot be economically supplied and have to rely on more local sources.  Water management as monitoring of water supply
<b>Users</b>	: Rural Communities
<b>Expected Outcomes</b>	: Proper Treatment for water supply in rural areas
<b>Impact</b>	: Reliability of water supply systems

<b>Problem ID:</b>	PID555
<b>Challenge Title</b>	: System to Separate Biodegradable and Non Biodegradable Waste
<b>Name of the Office</b>	: Nagarpalika Porbandar
<b>Challenge Description with context</b>	: Waste materials can be classified as biodegradable and non-biodegradable. Risk and threats related to waste disposal can be easily avoided by the knowledge of types of wastes.  Proper separation of both the waste
<b>Users</b>	: General Public
<b>Expected Outcomes</b>	: A proper treatment of wastes by classfying them using Image processing or any other technique(s).
<b>Impact</b>	: Rs- Recycle, Reuse Solid waste
<b>Problem ID:</b>	PID556
<b>Challenge Title</b>	: To develop an intelligent system to access real time information of the Street Lights
<b>Name of the Office</b>	: Nagarpalika Porbandar
<b>Challenge Description with context</b>	: The manual maintenance of the lighting system is needed to be completely eliminated.  To develop real time system for tracking the status of the street lights.
<b>Users</b>	: Employee of Nagarpalika
<b>Expected Outcomes</b>	: The real time information of the street light(ON/OFF Status ) can be accessed from anytime, anywhere through internet.
<b>Impact</b>	: Maintenance of work can be done quickly

<b>Problem ID:</b>	PID557
<b>Challenge Title</b>	: Web Application for Data Management
<b>Name of the Office</b>	: Nagarpalika Porbandar
<b>Challenge Description with context</b>	: In Engineering Department of porbandar Nagar Palika , works on various schemes of Gujarat Government . To implement of such schemes they have to process step like tendering after that they give contract. they also record starting date of work start , progress of work and completion date of work. Total costing for that particular work are also maintain. All such work are currently done manually. Many work are in progress parallel. Searching for particular detail is very difficult.  All Record Digitization so record related information get easily. Grant wise record maintain to keep track of grant. Work progress report also maintain to know status of work.
<b>Users</b>	: Administrator, Engineering Work Department and Related department of porbandar nagar palika
<b>Expected Outcomes</b>	: Overcome problem of manual work related to Engineering Department of porbandar nagarpalika.  All Record Digitization Grant Wise Record maintainance. Work Progress Report Generation.
<b>Impact</b>	: Time Saving , On hand all Record , Grant wise record and work progress report
<b>Problem ID:</b>	PID558
<b>Challenge Title</b>	: Web Application for Inward/outward Application
<b>Name of the Office</b>	: Nagarpalika Porbandar
<b>Challenge Description with context</b>	: By developing web application for inward/outward application will ease process of application handling, tracking of application and also applicant can know about status of application.
<b>Users</b>	: Inward/outward Officer, office department, Applicant
<b>Expected Outcomes</b>	: No manual process of handling application Application can track easily Application should know about status of application
<b>Impact</b>	: Save time Availability of application status any time

### **Nagarpalika Surendranagar-Dudhrej-Vadhvan**

<b>Problem ID:</b>	PID559
<b>Challenge Title</b>	: Mobile App for general Public to Submit their complain regarding streetlights. New application and feedback for optimal use of energy.
<b>Name of the Office</b>	: Nagarpalika Surendranagar-Dudhrej-Vadhvan
<b>Challenge Description with context</b>	: At present no app are available feedback for not working service streetlight.No online platform for complain for streetlight and for new electrification.  Suggestion for power interruption prone locations and unsafe location with its photo image and Geo-location through Mobile App.  This will promote better utilization of resource and avoid corruptions in such project.  Name of User Mobile No, address to be registered by user.  Utility wiring is open and unsafe can be inform to authority by mobile app.  Miss use of government /utility material.  Administrative help to authority  New connection application to be submitted by public easily.
<b>Users</b>	: This APP is used by government and contractors for the purpose of tendering and work order of electrical installation project all over the nation.
<b>Expected Outcomes</b>	: Android /IOS/Windows base Mobile App base application is better than offline practice and also improve speed of project with safety and accurately. it can be use platform for general public for feedback of work progress online and easy way so improve quality of work and also provide malformation of unsafe work progress .
<b>Impact</b>	: If the problem is being solved as stated in above statement it will very beneficial to government agencies like R&B, Nagarpalika, Railways etc. as purchase and installation of such material become easy. Materials which are included in project will always have cost predefined by government of India, So that improve utilization of streetlight and safety operation with show actual condition monitoring by service providing agency .



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<b>Problem ID:</b>	PID560
<b>Challenge Title</b>	: Web Application for Tracking of Inward/Outward Applications
<b>Name of the Office</b>	: Nagarpalika Surendranagar-Dudhrej-Vadhvan
<b>Challenge Description with context</b>	<p>: The processing of Inward letters of an organization involves manual entry of its details into register, identifying the concerned department, taking remarks of the concerned authority, forwarding the Inward letter to concerned department or person and maintaining the receipt, which is done manually and is also similar for processing the Outward letters. The process of Inward and Outward letters at Municipal Office, Wadhwan till date is manual, involves supporting staffs, requires stationery, time consuming, delay in the communication and reach out to intended recipients, difficult to track.</p> <p>To address the problems of manual processing of Inward-Outward letters to its best, a solution is proposed by developing a Web application that will ease the process and provide additional functionalities to effectively communicate, maintain and track the process.</p>
<b>Users</b>	: Employees of Municipal Office with specified roles as below <ol style="list-style-type: none"><li>1. Administrator</li><li>2. Inward /Outward Officer</li><li>3. Department Officer</li></ol>
<b>Expected Outcomes</b>	: A digital web based solution which allows the municipal office to overcome the problems of manual system and ease processing, tracking and analyzing the communication between various departments of municipal office and outside agencies / people.
<b>Impact</b>	: <ul style="list-style-type: none"><li>• Transparent System</li><li>• Saves time , cost and efforts</li><li>• On hand availability of status of each applications received by municipal office</li></ul>

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## **PGVCL, Dwarka**

<b>Problem ID:</b>	PID561
<b>Challenge Title</b>	: Maintenance System for Flashover on Insulation in Coastal Area
<b>Name of the Office</b>	: PGVCL, Dwarka
<b>Challenge Description with context</b>	: As the moisture + Salinity be there, deposition of layer on insulation lead to frequent flash over Method/Material measures to minimize these frequent faults
<b>Users</b>	: Electricity customers
<b>Expected Outcomes</b>	: Device mechanism apart from pre- monsoon maintenance/cleaning to address the issue
<b>Impact</b>	: Reliability of power supply for the customers

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## Prant Office, Dwarka

<b>Problem ID:</b>	PID562
<b>Challenge Title</b>	: Acute Parking issues in City
<b>Name of the Office</b>	: Prant Office, Dwarka
<b>Challenge Description with context</b>	<p>: With the advent of technology and human population, there have aroused many problems and one of these issues includes traffic issues. People have many vehicles but the place or the street is not big enough to manage such traffic. Jams on the road and stuck people on the way is a common and normal scenario of present times. There is a need to develop a technique to reduce this particular problem.</p> <p>Dwarka being a pilgrimage place faces many problems. One of those acute problems is parking problem along with traffic congestion. It has spread its branches like a banyan tree in all directions. People do not have an accurate parking management and mainly for the pilgrimage cities. There are acute parking issues in the city Dwarka around the temple of Lord Krishna. Local plus pilgrims' vehicles very often create deadlocks for the commuters and the pilgrims face dire issues along with the people trying to manage this traffic.</p>
<b>Users</b>	: ENTIRE PUBLIC
<b>Expected Outcomes</b>	<p>: The challenge is to develop a strategy to have planned Parking.</p> <p>The specific attention needs to be given to the traffic issues in narrow streets</p> <p>The basic output expected is to develop techniques to lessen the burden of traffic police, smooth traffic and avoiding acute parking.</p>
<b>Impact</b>	<p>: The strategy not only reduce the Parking issues but also develop a traffic sense in users.</p> <p>The problems in the in narrow streets would be solved.</p> <p>These would be a sense of safety at the both levels: vehicles and the drivers.</p> <p>There would be a solution to the problems of locals related to transportation.</p> <p>This technique will help the government for better execution of traffic rules.</p>

<b>Problem ID:</b>	PID563
<b>Challenge Title</b>	: Availability of affordable hi-Tech farming equipment
<b>Name of the Office</b>	: Prant Office, Dwarka
<b>Challenge Description with context</b>	<p>: High-tech farming mainly refers to agricultural operations involving the latest technologies. It uses farming technology to increase yields, ensures high quality (usually pesticide-free) and realizes increased market value. India being an agricultural country, it is very necessary to make our farmers aware for the recent trends and technologies for the better productions and development of the nation.</p> <p>Talking of the coastline area farmers, being economically less sound and facing the issue of lack of proper knowledge, the labour of the people are not rewarded adequately. There is a need to supply hi-Tech farming equipment to these people which needs to be affordable and user-friendly to make their production of better quality and with fewer efforts. The human efforts needs to be reduced and making effective use of modern science and technologies the farming needs to be taken to a higher level.</p>
<b>Users</b>	: FARMERS
<b>Expected Outcomes</b>	<p>: The first step is to make farmers aware regarding new farming techniques.</p> <p>Secondly, there needs to be a way out to provide them with the possible equipment.</p> <p>The next desired step is to make them aware of the use of these.</p> <p>The outcome expected here is on improving the productivity.</p> <p>The need is obviously to decrease the human efforts and make farming more productive.</p>
<b>Impact</b>	<p>: This would help to make farmers aware regarding new farming techniques.</p> <p>There would be a way to equip these farmers with the possible modern farming equipment.</p> <p>By using these modern techniques, the farmers would be able to increase their productivity.</p> <p>The obvious result of modernization is to decrease the human efforts and make farming more productive.</p>

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<b>Problem ID:</b>	PID564
<b>Challenge Title</b>	: Comfort Enhancement for the pilgrims
<b>Name of the Office</b>	: Prant Office, Dwarka
<b>Challenge Description with context</b>	<p>: India being the country with high morals and many places to attract people around the world, tourism is one of the leading department in India. More than visitors, we have pilgrims coming from and out of our country and to make their visit comfortable and convenient is the basic requirement not only to make their visit memorable but also to increase the revenue generation from this particular field.</p> <p>Dwarka being a place frequently visited by many including Indian and foreign pilgrims, a technique needs to be there to make their pilgrimage comfortable and convenient. There needs to be an IOT based technique/GUI based applications to enhance comfort of pilgrims. They would feel being cared with the facilities like digital pre-tagging of pilgrims' baggage, advanced information about the building and the room to stay as well as the transportation details for travel and so on.</p>
<b>Users</b>	: Pilgrims
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• The target is to develop sytem/techniques to make things smooth at every juncture for the pilgrims.</li><li>• The first step being the proper guidance regarding safety.</li><li>• The facility included can be of making their stay comfortable and convenient.</li><li>• The inclusion of some easy health care to the pilgrims.</li><li>• There should be a complete package of a data base to make visit to Dwarka handy and easy.</li></ul>
<b>Impact</b>	: <ul style="list-style-type: none"><li>• This would result into the development of a few techniques to make things smooth for the pilgrims.</li><li>• There would be a sense of security in the mind of pilgrims vising for the first time.</li><li>• There would be a way out for comfortable and convenient stay for all.</li><li>• An easy and quick way to health care for the pilgrims.</li></ul>

<b>Problem ID:</b>	PID565
<b>Challenge Title</b>	: Cyclone Alert System for public
<b>Name of the Office</b>	: Prant Office, Dwarka
<b>Challenge Description with context</b>	<p>: Coastal area nowadays are becoming cyclone prone. Cyclone is a swirling atmospheric disturbance, in which strong wind blow in a circle and rotate in the same direction as rotation of the Earth. The general public, the coastal residents and fishermen are warned through State Government officials and broadcast of warnings. In order to alert general public mechanism needs to be derived to safeguard them against the ill effect of cyclone attack.</p> <p>Dwarka and the connecting places are highly prone to cyclone and majority of public are connected to the occupation related to sea. There is always a kind of danger on their lives and officials are always on high alert for any issues. The general public, the coastal residents and fishermen are warned through State Government officials and broadcast of warnings. In order to alert general public mechanism needs to be derived to safeguard them against the ill effect of cyclone attack.</p>
<b>Users</b>	: "Life saving app for the public"
<b>Expected Outcomes</b>	<ul style="list-style-type: none"> <li>: • The target is to develop a reliable technique to make life easy for people including fisherman and commoners.</li> <li>• It needs to make things easier for people as well as officers.</li> <li>• The alert system must make people aware regarding their own safety.</li> <li>• There should be a facility to covers larger mass without much advanced technology required on both the ends: administrative and end users.</li> </ul>
<b>Impact</b>	<ul style="list-style-type: none"> <li>: • As a result there would be a reliable technique to make life easy for people including fisherman and commoners.</li> <li>• This system will work at minute levels making things easier for people as well as officers.</li> <li>• This particular alert system will make people aware regarding the measures to be taken for their own safety.</li> <li>• This typical system would aim to cover larger mass without much advanced technology required.</li> </ul>

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<b>Problem ID:</b>	PID566
<b>Challenge Title</b>	: Drainage issues in thickly populated areas
<b>Name of the Office</b>	: Prant Office, Dwarka
<b>Challenge Description with context</b>	<p>: Different drainage problems, including puddling, pooling, saturated soil and even undirected downspout water, can destroy landscaping and turn a place into a swamp. It creates moisture and mold problems and can damage foundations. It creates an unhealthy environment for the residents specifically when the population is over at a place. Such issues create a big challenge for a good governance.</p> <p>Drainage is a serious concern when comes to places like Dwarka as not only people living in the town are going to face the issues but also the pilgrims from and out of India are going to be the victim. Danced population is one of the basic reason for such issues and tourist places turn out to be worst at such situations. A dire requirement has occurred for a quick, practical and affordable solution of this particular issue as it not only affects the health department but also might affect tourist industry and would result into financial loss of people as well as government.</p>
<b>Users</b>	: Public
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• The basic need is to keep city clean.</li><li>• The target is to reduce health issues popping out because of lack of cleanliness.</li><li>• A system needs to be developed to make Dwarka more attractive for tourists and pilgrims.</li><li>• The purpose is to create a healthy environment for the residents.</li><li>• The demand of the times is to develop a technique for quick and easy disposal of unnecessary things.</li><li>• Students are expected to develop software solution to trace this drainage problems</li></ul>
<b>Impact</b>	: <ul style="list-style-type: none"><li>• It would turn out to be an easy way to keep city clean.</li><li>• The obvious result would be less health issues popping out because of lack of cleanliness.</li><li>• That would definitely make Dwarka more attractive for tourists and pilgrims.</li><li>• Aside the tourist and pilgrims, it would surely create a healthy environment for the residents.</li><li>• A technique for quick and easy disposal of unnecessary things is definitely a welcome thing</li></ul>

<b>Problem ID:</b>	PID567
<b>Challenge Title</b>	: Drinking water shortage in Khambhalia
<b>Name of the Office</b>	: Prant Office, Dwarka
<b>Challenge Description with context</b>	<p>: India has the largest coastal line as it's surrounded by sea from 3 sides. Most villages in the coastal districts are reeling under severe drinking water scarcity. Situation is grim in villages of Khambhalia and Dwarka. Water is connected to every forms of life on earth. As a basic need, an adequate, reliable, clean, accessible, acceptable and safe drinking water supply has to be available.</p> <p>Drinking water is a problem in most of the coastal areas and situation is grim in villages of Khambhalia and Dwarka as the problem doesn't end at the problem of pure water but it enhances at the level of availability as the far off villages lake connections. The challenge here is at two levels where first one needs to seek an affordable and practical solution for purification along with an option to make it available to far off villages so that the medical issues emerging from unsafe drinking water consumption can be avoided.</p>
<b>Users</b>	: Public
<b>Expected Outcomes</b>	<ul style="list-style-type: none"> <li>: • It is very necessary to solve the issue of drinking water scarcity as drinking water is one of the basic needs for human.</li> <li>• The target is to develop techniques of water purification as pure water is basic need for healthy human survival.</li> <li>• After purification the next stage is to find ways to supply this water to the far villages.</li> <li>• The thing to keep in mind is the issues of affordability.</li> </ul>
<b>Impact</b>	<ul style="list-style-type: none"> <li>: • It approaches to solve the basic human need of safe and hygienic drinking water.</li> <li>• The solution would bring an easy and effective way of water purification.</li> <li>• This would help the government to supply the purified water to the far villages.</li> <li>• Here the technique would not only target purification but also focus on affordability aspect to cut short the financial issues.</li> </ul>



<b>Problem ID:</b>	PID568
<b>Challenge Title</b>	: Food grain bag stock verification inventory control system
<b>Name of the Office</b>	: Prant Office, Dwarka
<b>Challenge Description with context</b>	<p>: Inventory control of food grains is an important component of macro planning of any nation. India being a country where many people face the issue of poverty and food shortage, food grain stocks control has become quite essential in the present times. Simultaneously, it is indeed necessary to use statistical methods in this particular field as food is basic human need that is inevitable.</p> <p>The challenge here is to create a technique to meet the requirement of tracking the food bags at various junctures along with easy billing facilities with the conditions of affordability and practicality. If such process is not monitored properly, it creates more options of corruption and it not only results in food wastage but also creates problems at larger level. The dissatisfaction of people at this level is not proper for any governance and this system needs to be developed with the use of latest technology to make it effective and error free.</p>
<b>Users</b>	: Farmers & Stockist
<b>Expected Outcomes</b>	<p>: Develop techniques of easy billing, stock checking and resource management.</p> <p>It is necessary to make an easy tracking technique.</p> <p>The basic target is to resolve the issue of food wastage along with the basic need to control corruption with the possibility of finding out the exact place of mishap. Also, needs secure and affordable transportation of grain.</p>
<b>Impact</b>	<p>: It would help in the process of billing making it easier.</p> <p>An effective stock check and resource management would be possible.</p> <p>It would be an easy tracking technique.</p> <p>A solution to resolve the issue of food wastage along with an effective way to control corruption with the possibility of finding out the exact place of mishap.</p> <p>It would make the transportation of grain easy, affordable and secure.</p>

<b>Problem ID:</b>	PID569
<b>Challenge Title</b>	: Health issues of the salt workers
<b>Name of the Office</b>	: Prant Office, Dwarka
<b>Challenge Description with context</b>	<p>: Working in salt industry exposes the working population to direct contact with inhalable salt dust, salt crystals as well as concentrated brine, physical stress of hard manual labor, direct bright sunlight and glare due to sunlight reflected by salt crystals and brine surface. Most common symptoms observed among salt workers were those pertaining to eyes. Ulcers on skin, headache, giddiness, muscular pain, joint pain and general weakness.</p> <p>Places around Dwarka being the hub of Tata chemicals there are large number of people who works with salt industries. Working in salt industry exposes the working population to direct contact with many problematic aspects of natural and artificial things that creates unhealthy ambience for them. The challenge is to guard them against such issues with possible solutions including awareness and availability of medicines or some regular treatments that can enhance their immunity and make their lives better.</p>
<b>Users</b>	: Salt workers
<b>Expected Outcomes</b>	<p>: The target is to solve the health issues of salt workers to make them more efficient.</p> <p>A possibility can be there with the option of making them aware regarding precautions.</p> <p>A possible solution can be found to reduce the effect of atmosphere and ambience on them.</p> <p>There can be some possibility to secure their body from the mal-effects of working environment.</p>
<b>Impact</b>	<p>: This would definitely make them more efficient.</p> <p>Making them aware regarding precautions is best possible thing to do.</p> <p>There might come up a few options to reduce the effect of atmosphere and ambience on them.</p> <p>A possible solution might come up to secure their body from the mal-effects of working environment.</p> <p>It would help these workers to lead a healthy life.</p>

<b>Problem ID:</b>	PID570
<b>Challenge Title</b>	: Storage of food grains, protecting from weather
<b>Name of the Office</b>	: Prant Office, Dwarka
<b>Challenge Description with context</b>	<p>: The fundamental requirements of every grain storage methods or structures are to secure the grains from insect, rodents and prevent spoilage of the grains by the activities of the microorganisms. While the grain stays dry and cool, most of these living organisms remain in a suspended state or at a low level of activity. Dwarka being a coastal place, this issue is even more critical compared to other places.</p> <p>Dwarka and other coastal line areas have the issue of moisture which is the leading reason of difficulties and issues in food storage. Storage of food turns out to be a bigger challenge when the scarcity of food is added to it. The expectation here is to understand the issues of the coastal line places and the problems related to humidity and other things. With these issues in mind, one needs to develop a technique to meet the requirement at affordable rates for the benefit of farmers and at larger level, benefit of nation.</p>
<b>Users</b>	: Mankind
<b>Expected Outcomes</b>	<p>: The basic target here is to increase the capacity of food storage.</p> <p>It is necessary to develop techniques to meet the weather challenges. Such techniques should be able to elongate the span of food storage. It is to save food from insects and other spoiling organisms. This would aim at making storage easy and cheaper. This would make grains affordable to most in the case of scarcity.</p>
<b>Impact</b>	<p>: This would make grains affordable to most and can be utilized in scarcity.</p> <p>With the easy storage facilities, the grain would be cheaper and that would benefit to the lower class people.</p> <p>It would help the authorities to preserve grain for longer period. There would be less impact of weather, specifically places like Dwarka that is facing the problem of humidity.</p>

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## Regional Transport Office, Bhavnagar

<b>Problem ID:</b>	PID571
<b>Challenge Title</b>	: Mobile load cell
<b>Name of the Office</b>	: Regional Transport Office, Bhavnagar
<b>Challenge Description with context</b>	: Overweight trucks damage public roads and are danger from the point of view of Road safety. During enforcement on Roads, it is difficult to calculate Actual laden weight of the vehicle. Many times weigh-bridges are not nearby. It is also not convenient for officer as well as driver to travel to nearby weigh bridge. Challenge is to weigh truck anywhere on the roads  Development of Mobile load cells to measure actual laden weight of vehicles anywhere. This will be very useful for flying squads on Enforcement duty. It will help reduce problem of overloading on roads.
<b>Users</b>	: Enforcement officers
<b>Expected Outcomes</b>	: Faster solution and time savings
<b>Impact</b>	: Low and accurate operations of ADTT

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## Regional Transport Office, Valsad

<b>Problem ID:</b>	PID572
<b>Challenge Title</b>	: Leave Management System
<b>Name of the Office</b>	: Regional Transport Office, Valsad
<b>Challenge Description with context</b>	: There are six Bus depots under this office, 163 kinds of various posts of employees in this office. All kind of leave record of all employee maintain in this office in their service book manually. There are various types of leave for class 1 to class 4 employees. Thus a system/portal or web based software can be developed which can be automatically maintain their leave record and also employee can apply for leave online <ul style="list-style-type: none"><li>• A portal can be developed which includes apply for leave and verification of leave by authority.</li><li>• Developing a portal which maintain record according to leave taken by employee.</li></ul>
<b>Users</b>	: <ul style="list-style-type: none"><li>• All employee</li><li>• Government officials</li></ul>
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• Easy to manage and access to see their leave balance.</li><li>• Employee can apply for various leave online from any place.</li></ul>
<b>Impact</b>	: <ul style="list-style-type: none"><li>• Paper work will be reduced and proper record will be maintained.</li></ul>

## Regional Transport Office, Surendranagar

<b>Problem ID:</b>	PID573
<b>Challenge Title</b>	: Problems with e-Payment for Sarathi Services
<b>Name of the Office</b>	: Regional Transport Office,Surendranagar
<b>Challenge Description with context</b>	<p>: Sarathi and Vahan are the two flagship applications of Ministry of Road Transport &amp; Highways (MoRTH).</p> <p>Sarathi-on-Web facilitates public to submit applications for LL &amp; DL related transactions through this mode. The application data is in turn transferred to the remote RTO/DTOs of the states for further processing of the request (submitted thru ONLINE) at the local RTO/DTO Office.</p> <p>For all these services E-payment system is used, which faces errors frequently and thus delays the process</p> <p>Controlled by cyber treasury e-payment service on sarathi fails frequently. The payment page takes around 30 minutes to refresh.</p> <p>Money deducted from applicant's bank account sometimes does not reflect on sarathi servers in time. Sometimes it takes more than 24 hours</p> <p>As government for a cashless and a convenient system, majority regional transport offices have stopped offline payment method for all the services.</p>
<b>Users</b>	<p>: Administrators -&gt; Regional Transport Office Inspectors and assistant inspectors across the state</p> <p>End users -&gt; Public who files applications for Learner's License &amp; Driver's License related transactions</p>
<b>Expected Outcomes</b>	<p>: </p> <ul style="list-style-type: none"> <li>• Safe and reliable e-payment service that does not fail frequently.</li> <li>• Secure transactions and money deducted from applicant's bank account will reflect in sarathi servers within acceptable time gap.</li> </ul>
<b>Impact</b>	: Effectiveness in system trust of citizen on system reduced unnecessary delays

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## S P Office Patan

**Problem ID:** PID574

**Challenge Title** : Check authenticity of news on social media

**Name of the Office** : S P Office Patan

**Challenge Description with context** : On social media like, facebook/ instagram/ telegram/ media news reader etc. more than above mentioned sources are available to spread out the information on social media. Many times the impact of news available on such media are very useful and possible to spread it out through group in social media among the people in short time and aware them about the situation. But It may be possible, the information or news shared among the social media may not be true or 100% pure. Such wrong information may be forwarded in one group will be shared by other group and so on, so all those persons get the wrong information/news and will react on it. The impact of fake news will create wrong impact on society as well on the nation. So It is a good practice if such news can be verify on social media online with same application and prevent further effect.

The news which has not been verified and if found it is not true, It must be rumors. Fake news and alternative facts have dominated the news cycle of late. We need a system such that match the news with it authentic website or other trusted sources and Proposed alternative facts also notify. It may possible to provide such facility on social media app like whatsapp / telegram / instagram etc to check authenticity of news directly. Ex. Some of the context in message want to verify by the person, the click button of verify is available on app which identify the body context and give relevant official website to identify the authenticity of that news or else any other methods can also use which is suggested by you for the same.

**Users** : People who are using social media sites as news reader. person who are using messenger applications like whatsapp/ telegram/ instagram etc. Police members can also used it as he/she is also part of group from messenger app, so he/she can get the information / news on his/her mobile through application, so it is possible to he/she directly mentioned in the group about news authenticity by checking it.

**Expected Outcomes** : An application which provide the news authenticity. Try to make it possible to use such application with merger with other social media sites directly. So it is possible to check authenticity directly on it with application. It may also possible to add such graphical presentation of such groups activity who are spreading fake news and give ratings of the group. Based on the ratings of such group, such information may shared with cyber cell and so further action can be taken in positive outcome.

- Impact** : Based on verified news , people will check it directly and identify the authenticity of news.
- Problem ID:** PID575
- Challenge Title** : Develop Automatic Detection system for Fake Social Media Profile
- Name of the Office** : S P Office Patan
- Challenge Description with context** : Social media providers are trying to detect malicious users and based on attribute similarity, similarity of friend networks, profile analysis for scalable defense system which puts fake accounts and generating artificial forged accounts to create a fake profile.
- Social medias have suffered from a wide range of threats, safety by developing tools and algorithms for fake profile identification
- To developed a machine learning solution to improve social media safety and detect fake profiles. A framework with which automatic detection of fake profiles is possible and is efficient user’s example number of posts, number of followers, profiles. They apply trained machine learning technique for real/fake social media accounts classification Security, Online Social Bots, Fake profiles, Facebook Immune System, Cyber law.
- Users** : All users which are connected directly and indirectly connected with social media services followers, person profiles, media, hackers, service provider, various government department social media accounts classification Security, Online Social Bots, Fake profiles, Facebook Immune System, Cyber law
- Expected Outcomes** : Social media are semi-automatic or automatic computer programs that replicate the human behavior and personal details of person. These are used mostly by hackers now-a-days to attack online social media. These are mostly used for advertising, campaigning purposes and to steal users personal data in a large scale. Various approaches and techniques for the detection of cloned profiles which it can be detect. Also User will be blocked from the social media and the blocked users cannot create new accounts which are referred from the computer IP system
- Impact** : The Impact of the solutions of Automatic Detection system for Fake Social Media Profile to increase the security and privacy of social network of users In addition, also developed and deployed an Immune System, which aims to detecting fake profiles in online social networks based on anomalies in a fake profile



<b>Problem ID:</b>	PID576
<b>Challenge Title</b>	: Digitization of summons and warrants
<b>Name of the Office</b>	: S P Office Patan
<b>Challenge Description with context</b>	<p>: A warrant of capture is issued by the court, in consonance with the criminal law in India, which approves the capture and confinement of a denounced/guilty party. A warrant is issued when an individual who is summoned by the court neglects or fails to turn up before it.</p> <p>A capture warrant is eitherailable or non-ailable. It might be in composed shape and should bear the seal of the Court. It should likewise bear the marks of the directing officer of the Court. Further, it might determine the way of the offence, the name of the criminal, name of the judge and date.</p> <p>Digitization has made the delivery of following services possible: fast tracking and retrieval of case status, enhanced data storage, categorization and tagging of cases, fast disposal of pending cases, transparency, less scope for maneuvering, and better court management .</p>
<b>Users</b>	<p>: Administrator will work at court office under higher authority who will post warrant or summon under directive of court. Even Police official can also use this application to track data of criminals and to check their status</p>
<b>Expected Outcomes</b>	<p>: Court Process can be served through smart phones. eSummons software application for use through smart phones. This is a most welcome feature which is surely going to curb all the delays involved in the process service. By using this option, courts will be able to digitally track the service of electronic process which is generated and published through . Once the summons are auto generated they are uploaded and published through CIS and the draft of the process is generated. With this digital generation of process the next stage of tracking the service of summons becomes possible</p>
<b>Impact</b>	<p>: Tracking the service of summons becomes possible</p> <p>Fast Summon Process</p> <p>Workload reduction</p> <p>Use of Latest Technology</p> <p>Better Management as comparative to conventional system</p> <p>Better identification and verification of user</p> <p>Fast document collection With this digital generation of process the next stage of tracking the service of summons becomes possible</p>

<b>Problem ID:</b>	PID577
<b>Challenge Title</b>	: Payment of e-challan digitization at state level and fine deposited in government treasury
<b>Name of the Office</b>	: S P Office Patan
<b>Challenge Description with context</b>	: Citizen can make the payment any time of the day. On-line payment of single challan form facilitates minimum fields of the challan to be filled. Instant online receipts for payment made and instant online banks transaction number becomes available. a person needs to have a online bank account with the identified banks by the government to make the online payment. E-challan is the customized challan format approved by government  Payments can be accepted through internet and accounted by bank to treasuries for all departments. Accordingly e-challan software accessible through internet provides the interface to the citizen to fill the e-form as per requirements and leads to the selected bank's gate way. The user need to provide his/her user id and password to log in, verify the particulars filled in e-form, fill the amount and confirm the payment to complete the transaction. The hard copy of the e-challan is provided through bank's interface, which can be saved or printed and provided to the department, concerned as is done with the regular challan. Further, the soft copy of the e-challan will be sent to the e-mail id provided by the payee in the e-form for necessary record.
<b>Users</b>	: End user will be a citizen who use e-challan software to fill challan online. Government Treasury will be adminitrator who look after all the trasaction. User name and password will be provided to citizen after their verification
<b>Expected Outcomes</b>	: It will help citizens login securely and that too at their convenience. It will also settle violation notices with proof of payment in their daily routine. The new system is expected to result in improved prosecution and will help to build better safety standards .e-Challan has recently replaced the physical pieces of paper. It also reduce delay in challan collection process. Man power work is also reduced
<b>Impact</b>	: If you will not pay your e-challan: First, a constable will visit at the registered address to collect the challan. Second, if the e-challan is still not paid then the person who is guilty will get summon from the court and will be called to give clarification to the judge on breaking the law. Third, if the person still refuses to attend the court session and to pay the e-challan, then his licence will be suspended. Challan has recently replaced the physical pieces of paper. it also reduce delay in challan collection process. man power work is also reduced

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<b>Problem ID:</b>	PID578
<b>Challenge Title</b>	: Promotion of public transport or use alternative transportation to reduce traffic issues.
<b>Name of the Office</b>	: S P Office Patan
<b>Challenge Description with context</b>	<p>: Now days, separated family culture is our major social problem. It leads to personal / individual vehicle demands. It raised our living standard which is good for our nation but on the other hand, it is one of the reasons for creating unnecessary traffic. There is awareness in the public but because of the ignorant mindset of public. Traffic is increasing day by day with no proper reason. This leads to accident and loss of precious human life mostly in urban areas and also increases carbon level.</p> <p>There are number of available transport facilities like City bus, BRTS (Bus Rapid Transit System) in city. Which have partially solved traffic problem but there is still scope for improvement when it comes the matter of traffic on road. Transport facilities i.e. to minimize traffic on road by making use of public transport. Even some private companies like UBER, OLA etc have started pool services to solve traffic problem to some extent.</p>
<b>Users</b>	: All the population in urban habitation like men, women, senior citizen and new born baby etc. They will be the responsible for creating trip in urban area. They will also take help from various service providers like school bus, private office vehicles, rickshaw, taxi, two wheeler etc.
<b>Expected Outcomes</b>	: We will be able to create the awareness among the urban population to reducing traffic on road by promoting the public transport system in place of their own / personal vehicles. This will definitely reduce our traffic problems in addition to accident created by traffic. It will make our environment pollution free i.e. reducing Air and Noise pollution. This will also be helpful in increasing capacity of road and saving travel time.
<b>Impact</b>	: Entire world is facing traffic problem, it may be under developed, developing or developed city. Latest trend have given increase to personal vehicle rather than making use of public transport service or/and pooling / sharing vehicle facility. If we promote public transport which is mostly followed at metros and mega cities. It will also result in hassle free transport service. It leads to good health of travelers.

<b>Problem ID:</b>	PID579
<b>Challenge Title</b>	: Relieve of Imprisoner or Accused intimation convey to S.P.Office
<b>Name of the Office</b>	: S P Office Patan
<b>Challenge Description with context</b>	<p>: Warrants for the release or remission of sentences of prisoners confined in prison and for the release of prisoners on bail and intimations of payment of fines sent to prison authorities should always be prepared in the vernacular of the officer issuing the order and should be signed in full by such an officer and sealed with the seal of his court. They should be sent to the prison authorities through an official messenger of the court or through the agency of the post and not through the friends or relatives of prisoners. When an under trial prisoner is discharged or released from the court, an endorsement to that effect will be made by the court in the prescribed form. On receipt of such intimation, entries in the appropriate columns of the under trial register should be made. There is no online entry process .</p> <p>There should a software which do entry for each prisoner under trial or who got punishment. Prisoner's whole data should be enter in the software. When a Prisoner is going to be relieved from jail that information should be entered in the software. And then intimation to S.P Office will be sent. So that Police got information about Prisoner . Otherwise Police do not get information about Prisoner (He/She is in Jail or Out of Jail)</p>
<b>Users</b>	: Jail Superintendent will work as administrator he enter whole detail of the Prisoner. Jail staff can enter detail about the prisoner . only Jail superintendent can enter relieve information of Prisoner.
<b>Expected Outcomes</b>	<p>: Communication between Jail and Police station is improved and fast. Police station get information about Prisoner in less time as compared to earlier paper based system.</p> <p>Police station and jail office can communicate with each other fast and chances of error are less. Police can make records of prisoner easily and can track prisoner . Prisoner database tracking is fast . Prisoner records can be easily find out when required</p>
<b>Impact</b>	: Police station work process will be easy. in spite of paper base database they have computerized database to handle prisoner data. Even they can find out data from database within short span of time. Their time and Man power working is saved. They can use that time and man power in other work. They can update their database easily

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### Government Science College,Ahwa,Dang

<b>Problem ID:</b>	PID580
<b>Challenge Title</b>	: Insitute Certificate Issuance System .
<b>Name of the Office</b>	: Government Science College,Ahwa,Dang
<b>Challenge Description with context</b>	: Pass out students who are either doing their higher studies or employed in different cities/villages have issues when they need assistance from their college as they cannot come personally.As college is situated in remote area.They need to apply for trial and character certificates even for migration certificate,too.Online database must be developed where students can direct apply and get whatever certificates are needed.  Students can get college services remotely.
<b>Users</b>	: All pass out students
<b>Expected Outcomes</b>	: Web portal with payment gateway facility.
<b>Impact</b>	: Students and parents have no need to spend time and money.

### Gujarat Knowledge Society / State PMU of SSIP 2.0

<b>Problem ID:</b>	: PID581
<b>Challenge Title</b>	: Smart Ranking Framework for Innovations and Start-ups
<b>Name of the Office</b>	: Gujarat Knowledge Society / State PMU of SSIP 2.0
<b>Challenge Description with context</b>	: The ranking framework should keep track of the progress made by the innovator/educational institution under SSIP 2.0. The system should derive the KPIs and on the basis of these KPIs, a smart system should be built in such a way that the analysis can be derived through relative achievements of the peers.
<b>Users</b>	: The State PMU would use the solution for ranking of Start-ups and Innovators of the State.
<b>Expected Outcomes</b>	: The educational institutions and eligible beneficiaries of SSIP 2.0 would be awarded based on their performance. This performance analysis would be carried out through the provided solution
<b>Impact</b>	: Promotes healthy competition amongst the innovators and educational institutions. Transparency in ranking would create a strong and trustworthy eco-system

<b>Problem ID:</b>	: PID582
<b>Challenge Title</b>	: Mind-to-Market journey tracking system for Start-ups
<b>Name of the Office</b>	: Gujarat Knowledge Society / State PMU of SSIP 2.0
<b>Challenge Description with context</b>	: The SSIP 2.0 provides financial and mentoring support to the beneficiaries. The idea generated in one's mind would be nurtured towards the creation of a marketable product. There can be success and failures at any stage of the journey from idea to product. The system should keep track of the progress of this development cycle with underutilization/over utilization of financial and other resources. The system should help predicting the critical points during the entire journey so that the precautionary measures may be put in place.
<b>Users</b>	: PMUs and State PMU
<b>Expected Outcomes</b>	: Generation of an MIS which can be useful for necessary action in some specific domain problem to minimize the failures. Right mentoring/financial support may be provided to the deserving beneficiaries.
<b>Impact</b>	: Greater success rate of successful Start-ups from the PoCs.

<b>Problem ID:</b>	: PID583
<b>Challenge Title</b>	: e-Market place for Start-ups
<b>Name of the Office</b>	: Gujarat Knowledge Society / State PMU of SSIP 2.0
<b>Challenge Description with context</b>	: There is a need for an indigenous marketplace for all the registered Start-ups. The concept is similar to Government e-Marketplace (GeM), but the system should incorporate the provisions of the State and Central governments.
<b>Users</b>	: Any purchaser of the State / Country
<b>Expected Outcomes</b>	: The procurements from Start-ups should be hassle free and paperless.
<b>Impact</b>	: Grater transparency can be achieved in procurement process

<b>Problem ID:</b>	: PID584
<b>Challenge Title</b>	: Per capita cost calculator for an incubator
<b>Name of the Department / Office / Industry</b>	: Gujarat Knowledge Society / State PMU of SSIP 2.0
<b>Name of the Office</b>	: The SSIP 2.0 provides support to universities and institutions of the State to create an incubator within the campus. There can be tangible and intangible resources available in an incubator. The students/beneficiaries of the SSIP 2.0 may use the resources of the incubator. There should be a mechanism to measure cost of each resource of an incubator per student/beneficiary.
<b>Users</b>	: All incubators of the State/Country
<b>Expected Outcomes</b>	: The system should be able to measure per capita cost of an innovation through measuring the utilization of resources of the incubator and create a network of resources of other incubators within the State/Country. Any incubatee should be measured in terms of the total cost involved in his/her product development with regards to the utilization of resources of an incubator.
<b>Impact</b>	: Optimum utilization of resources.

- Problem ID:** : PID585
- Challenge Title** : Smart allocator of resources for incubators within the State
- Name of the Office** : Gujarat Knowledge Society / State PMU of SSIP 2.0
- Challenge Description with context** : The SSIP 2.0 provides support to universities and institutions of the State to create an incubator within the campus. There can be tangible and intangible resources available in an incubator. The students/beneficiaries of the SSIP 2.0 may use the resources of the incubator. There should be a smart mechanism to monitor the usage of each resource of an incubator per student/beneficiary so that the optimum utilization of the resources can be achieved. The system should allocate/deallocate resources to innovator based on the performance, utilization time and other factors.
- Users** : All incubators of the State/Country
- Expected Outcomes** : Dashboard should continuously display the utilization of all resources. Any attempt to utilize a resource beyond a threshold limit should be denied.
- Impact** : All the resources would be utilized in a perfect manner. This would ensure to avoid underutilization and overutilization of resources by any innovator
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- Problem ID:** : PID586
- Challenge Title** : Creation of video film from photos, clips, event report with AV effect and subtitles
- Name of the Office** : Gujarat Knowledge Society / State PMU of SSIP 2.0
- Challenge Description with context** : The inputs of the system may be in the form of pictures, video clips, text scripts, audio clips etc. There should be an intelligent system that can integrate all these inputs to create a AV film with subtitles (may be in multilingual) and narration.
- Users** : Any organization/industry/institute/individual
- Expected Outcomes** : A comprehensive AV film from a variety of inputs
- Impact** : Time saving and uniform creation of AV film



<b>Problem ID:</b>	: PID587
<b>Challenge Title</b>	: Feedback and sentimental analysis through social media
<b>Name of the Department / Office / Industry</b>	: Gujarat Knowledge Society / State PMU of SSIP 2.0
<b>Challenge Description with context</b>	: Any project or scheme needs to be analyzed through a feedback mechanism. Now a days, the social media is a widespread platform to reach the end users/beneficiary of any project/scheme. The comments, emojis, symbols, words should be analyzed to find out the sentiment of the user/beneficiary
<b>Users</b>	: Any organization/institute
<b>Expected Outcomes</b>	: The feedback provided on social media should be accurately processed and analyzed
<b>Impact</b>	: Automatic, accurate and timely analysis of the feedback

<b>Problem ID:</b>	: PID588
<b>Challenge Title</b>	: Incentivization of faculty and industry mentors
<b>Name of the Office</b>	: Gujarat Knowledge Society / State PMU of SSIP 2.0
<b>Challenge Description with context</b>	: The SSIP 2.0 is a policy which enables any person up to the age of 35 years to nurture his/her innovative idea into a successful product. There is a provision to allocate faculty and industry mentors to the student teams. There should be a provision of incentives these mentors. This incentive should not be in the form of financial benefit rather their efforts towards the development of the product should be incentivized such that they may get benefit for their career/technical development
<b>Users</b>	: Gujarat Knowledge Society / State PMU of SSIP 2.0
<b>Expected Outcomes</b>	: Incentivization scheme for SSIP 2.0 to promote mentoring
<b>Impact</b>	: Faculty and industry mentors would be encouraged

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<b>Problem ID:</b>	: PID689
<b>Challenge Title</b>	: Develop digital platform for collaborating different incubation centres.
<b>Name of the Office</b>	: Gujarat Knowledge Society / State PMU of SSIP 2.0
<b>Challenge Description with context</b>	: Government of Gujarat took very effective initiations for developing useful incubation centers across different universities of the state. These incubation centers are very useful to early-stage startups. All the incubation centers have some unique way to help the startups. So, it is required to develop some effective digital platform for collaborating different incubation centres.
<b>Users</b>	: All the state incubation centers and early stage startups
<b>Expected Outcomes</b>	: Effective working of incubation centres
<b>Impact</b>	: Develop interconnected incubation network

- Problem ID:** : PID590
- Challenge Title** : Collection and Display Success Story of Startup of Gujarat State.
- Name of the Office** : Gujarat Knowledge Society / State PMU of SSIP 2.0
- Challenge Description with context** : Many student startups are arising from different part of the state, and they are facing many hurdles during their grow. It is very interesting to collect, store and motivate as success stories when required. It is very essential to provide a platform to all the student startups to share their success stories. The success stories should display to all other student startups for the inspiration.
- Users** : SSIP Officers, Startup, Incubators, Education Instittion
- Expected Outcomes** : Web Application with admin and startup login.  
Provide custom success story share  
Collection of Success story form startup and Education Instittion,Incubator
- Impact** : It helps government to fetch success story of startup
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- Problem ID:** : PID591
- Challenge Title** : Stakeholder Networking Mobile application for SSIP
- Name of the Office** : Gujarat Knowledge Society / State PMU of SSIP 2.0
- Challenge Description with context** : As we know that SSIP is very strong platform to motivate student startups. It has different stakeholders like universities, institute, schools, industries, students, and research scholars. It is very necessary to develop mobile application to connect all the stakeholders effectively. Mobile application though which stackholders can chat, email, share message etc.
- Users** : All the stake holders : universities, institute, schools, industries, students, and research scholars.
- Expected Outcomes** : Provide effective bridge among all the stakeholders.  
Mobile application though which stackholders chat email,share message
- Impact** : SSIP stackholders take maximum benefits by networking with each other and growth of statup ecosystem increased

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<b>Problem ID:</b>	: PID592
<b>Challenge Title</b>	: Online Blockchain based certificate generation and validation system for government organization.
<b>Name of the office</b>	: Gujarat Knowledge Society / State PMU of SSIP 2.0
<b>Challenge Description with context</b>	: Currently large no of training programs is organized, and certificates are provided. There is no mechanism to validate digital certificate.so create a system in which custom digital certificate generate. User can store certificate in digital locker system other organization will validate certificate. Use opensource software and blockchain technology.
<b>Users</b>	: Government Office, Student, Industry, Institutes
<b>Expected Outcomes</b>	: Blockchain Based Certificate generation and validation Certificate can be added in Digital Loker System
<b>Impact</b>	: Digital certificate validation become simpler

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## **Government Engineering College, Bhavnagar**

- Problem ID:** PID593
- Challenge Title** : NARI-(Women safety application)
- Name of the Office** : Government Engineering College, Bhavnagar
- Challenge Description with context** : In today's world, as we all see the crime which is happening to most women, 85% of crimes are happening to women. So just like it is important to know self-defense, it is also important for women to provide their safety applications. There are many problems like we all know that most of the women are working in night and morning shifts their safety is most important, as most of the ladies travelled at late night. So, it's necessary to remain alert and safe. Nowadays, many women carry their smartphones and it is a boon for them. Hence it is necessary to have at least one personal safety application installed. And here we come with a solution namely NARI – WOMEN SAFETY APPLICATION.
- Features:**
- This application provides a sense of security to the users using this app. In this application, we have Save Our Soul (SOS) features. This feature enables the victim to send an emergency message along with the current location to their guardians.
- The second feature is about tracking the location of the users for their own safety purpose. While tracking the location, we can even send the message to the guardians whether we are reaching the destination or not. We have implemented this feature with the help of the Geofence Library.
- There is also a fake call feature in it where the user gets a fake call screen on his/her smartphone and can escape any situation by making a false excuse.
- The Safe/Unsafe feature is used to see the nearby locations and check whether they are safe or unsafe for that time. Here, we are planning to make this feature more efficient by also taking the data of several crimes occurring in a particular area and then defining it as safe or unsafe for that time. It will be in our future versions of the application.
- Users** : Girls/Women, Guardians, Victims, Senior citizens.
- Expected Outcomes** : To make the citizens of India feel more Safe and Secure. This Application can provide peace of mind and immediate communication in the time of Emergency. Nari Application provides functionality like Shake Detection, Location Tracking, Destination Reached Message, Fake Call, and Safe and Unsafe Location using these features users

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can easily identify the safe & unsafe locations even the application can directly send the Message to the emergency contact number. (Like Destination Reached Message "I reached Safely" or When Shaking Features Activated).

- Impact** :
1. Crime Rate will be reduced.
  2. Fast communication without direct action or involvement. (with the help of SOS features and Destination Reached Message).
  3. Create a Secure Environment.

**Problem ID:** PID594

**Challenge Title** : Enigma 2.0 - Confidential Communication System

**Name of the Office** : Government Engineering College, Bhavnagar

**Challenge Description with context** : It is a System Which is used to communicate secretly without the knowledge of a third party ( like ISP , other government agencies ) . which use tor network and VPN.

The system is created in a virtual portal or software environment by using virtualization protocol like HTTP and openVPN are used in communication systems.

Data packets are encrypted in every layer / server.End system / user use virtual environment to access web.

- Users** :
- Government Organization
  - Soldier
  - Army Secret Agencies

- Expected Outcomes** :
- Secret Communication
  - Share Important Information
  - Secure Connection Between Organization
  - Persistent Data

- Impact** : Prevent Confidential data or information against illegal organizations in critical situations.

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<b>Problem ID:</b>	PID595
<b>Challenge Title</b>	: Data Prevention in web3
<b>Name of the Office</b>	: Government Engineering College, Bhavnagar
<b>Challenge Description with context</b>	<p>: In this project, I will try to create consensus algorithms that prevent blockchain from 51% attack. As we know blockchain is used in many DeFi (decentralized finance) development for storing data or computing smart contracts.</p> <p>If somehow a group of people change blockchain data then that makes blockchain data corrupt then the whole concept of blockchain will be futile.</p> <p>Using 51% attack, an attacker changes blockchain data for his/her personal monetary gain. To prevent 51% attack, I create consensus algorithms that are based on RelationBlock, Timestamp, Merkle Root.</p> <p>Objective of Project:</p> <ul style="list-style-type: none"><li>• Prevent 51% Attack which means:</li><li>• Prevent from Double Spending Problem</li><li>• Prevent from Reverse Transaction</li><li>• Prevent from Blockchain Network Slow Down.</li></ul>
<b>Users</b>	: <ul style="list-style-type: none"><li>• Web3 developers</li><li>• DeFi Projects</li><li>• Private or Public Organizations for Security Purpose</li></ul>
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• Prevent Data leak from Blockchain</li><li>• Make Secure Blockchain for Regular Use</li><li>• Protect User Data</li></ul>
<b>Impact</b>	: <ul style="list-style-type: none"><li>• Blockchain Technology</li><li>• Web3</li><li>• Decentralized Finance</li></ul>

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<b>Problem ID:</b>	PID596
<b>Challenge Title</b>	: Waste Detector in Indoor Area
<b>Name of the Office</b>	: Government Engineering College, Bhavnagar
<b>Challenge Description with context</b>	: Waste management is one of the significant problems throughout the world. Contemporaneous methods find it difficult to manage the volume of solid waste generated by the growing urban population. This project is aim to implement a system that detect the waste into an indoor environment at the ideation stage. Afterwards, our main aim is to develop a robot that will use our ideation prototype and collect the garbage/trashes at the indoor premises where robot is stand.
<b>Users</b>	: <ul style="list-style-type: none"><li>• Local authority</li><li>• Public place owners</li><li>• Any people</li></ul>
<b>Expected Outcomes</b>	: Once the garbage is detected the system calculates the position of the garbage by the use of the camera only. Finally, a robotic arm controlled by the microcontroller is used to pick up the garbage and places it in the bin.
<b>Impact</b>	: <ul style="list-style-type: none"><li>• Enhance civic sense</li><li>• Reduces human efforts</li><li>• Keep surrounding clean</li></ul>



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## Government Engineering College Dahod

<b>Problem ID:</b>	PID597
<b>Challenge Title</b>	: Solar Tile
<b>Name of the Office</b>	: Government Engineering College Dahod
<b>Challenge Description with context</b>	: To fulfil the requirement of electricity and to make a product work multifunctional based on the house sanitary and to evolve the construction industry with solar based products.
<b>Users</b>	: Industrial, Residential, Commercial.
<b>Expected Outcomes</b>	: Will provide electricity and a protective surface for floorings.
<b>Impact</b>	: Our motive is to change the view of people around the world for the solar based products and make them feel as comfortable to use the solar tile as they were using normal ceramic tiles we want to make the tile such cost efficient that people would give first priority to the solar tile.

<b>Problem ID:</b>	PID598
<b>Challenge Title</b>	: Energy saving in the electricity of college campus
<b>Name of the Office</b>	: Government Engineering College Dahod
<b>Challenge Description with context</b>	: The lightings and fans of classrooms needs to be switched off timely. Sometimes it remains unattended and after college hours it is switched off. The Street lights are manually switched on/off. So the utilities existing in the campus needs to be automated either with sensors or time. The utility is expected to be made completely automated. The whole lighting system should be able to be centrally monitored.
<b>Users</b>	: Government Engineering College Campus.
<b>Expected Outcomes</b>	: There are chances to save the energy at most of 2 to 4 % of the total consumption. The operation of the utilities must be operated automatically by light sensors and time reference.
<b>Impact</b>	: The green campus will be motivating for the users of the campus. It will make a social and economical habits in the faculties and students, ultimately it will lead to the individual family and society.

<b>Problem ID:</b>	PID599
<b>Challenge Title</b>	: Student Placement Android App
<b>Name of the Office</b>	: Government Engineering College Dahod
<b>Challenge Description with context</b>	: For an academic Institute, it is required to encourage and submit the student's data to the prospective company (As per demand) so every time faculty gathers the students required data and submit to the company. Instead of this if we have an app where already all the information of the students is available and stored locally in the phone and they will select whether to apply for the company or not. Thus the purpose of the application is to store the information and the faculties can easily manage it.
<b>Users</b>	: Academic institutions, Universities
<b>Expected Outcomes</b>	: Ease of placement activities
<b>Impact</b>	: Convenient process of placement will improve the industry, academia and students communication which may result in higher placement

<b>Problem ID:</b>	PID600
<b>Challenge Title</b>	: Device to facilitate laying of fibers in-between plastic layers for 3D printing process
<b>Name of the Office</b>	: Government Engineering College Dahod
<b>Challenge Description with context</b>	: It is difficult to manufacture composite materials in FDM process used for 3D printing. If a device can be designed which will facilitate the process with laying of fiber layers in-between consecutive layers of plastics it would be possible to manufacture the composites on 3D printers.
<b>Users</b>	: Manufacturing industries, Architectural firms
<b>Expected Outcomes</b>	: The composite materials with better strength can be manufactured in 3D printers.
<b>Impact</b>	: Huge scope of improved strength material, especially composites, to use in machine applications

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**Government Engineering College, Sector-28, Gandhinagar**

<b>Problem ID:</b>	PID601
<b>Challenge Title</b>	: To measure, monitor and control water levels in underground and overhead tanks
<b>Name of the Office</b>	: Government Engineering College, Sector-28, Gandhinagar
<b>Challenge Description with context</b>	: There are 9 blocks in our institutes which are spread across 25 acres of area. There is not proper measurement, monitoring and control of water levels in underground and overhead tanks and because of that many times it happens that water overflows and gets wasted. To prevent wastage of water, such overflowing of tanks must be prevented and therefore a system has to be designed which can measure, monitor and control the water level in all underground and overhead tanks.
<b>Users</b>	: All stake holders of GEC Gandhinagar
<b>Expected Outcomes</b>	: Timely ON/OFF of valves  Timely ON/OFF of motors and pumps  Proper water distribution without overflow and wastage of water
<b>Impact</b>	: Proper operation of valves, motors and pumps can improve their utilization with less wear and tear.  Wastage of water can be prevented Electrical energy conservation is also possible

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<b>Problem ID:</b>	PID602
<b>Challenge Title</b>	: IoT-based automated beach cleaning system - Unmanned Aircraft Systems for Indian beaches.
<b>Name of the Office</b>	: Government Engineering College, Sector-28, Gandhinagar
<b>Challenge Description with context</b>	: Indian beaches are now attracting more people post-pandemic. But the tendency to visit the beaches is unfortunately turned into a curse for the beaches. Development of Unmanned Aircraft Systems to inspect and for surveillance to mitigate this worse effect.
<b>Users</b>	: Private house owners, Hotel owners, Local municipality, NGOs, Govt's sanitation department - which are working for cleaning the beaches/famous rivers/ large static water bodies.
<b>Expected Outcomes</b>	: Inspection and Surveillance, reduce repetitive labour tasks, clean the areas which are hard to reach, clean the things which are hazardous, and recognize and pick the bottles, Cans & other litter.  Centralized control of automated ecosystem
<b>Impact</b>	: Reduction in labour-intensive tasks, Automated clean beaches, prevention of polluted areas

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<b>Problem ID:</b>	PID603
<b>Challenge Title</b>	: Student Innovation Library & Internship Exchange
<b>Name of the Office</b>	: Government Engineering College, Sector-28, Gandhinagar
<b>Challenge Description with context</b>	: Ideas focused on the intelligent use of resources for transforming and advancements of technology with combining the artificial intelligence to explore more various sources and get valuable insights (Library). An Online Internship Exchange platform that can be a win-win model, where in college/cell can get short term resources for various entrepreneurial services like Business Plan Preparation Assistants, Training Co-coordinator Assistant, Conduct Field – Online – Surveys, Data gathering both from primary and secondary resources, Research Assistants that can help college/cell to develop effective and efficient programs and services. Need: A bespoke Application development viz Entrepreneurship Internship Exchange for Hiring, Deployment, Performance Tracking, Assignment Allocation to be developed.
<b>Users</b>	: Students, Start-up Enthusiast, Academician
<b>Expected Outcomes</b>	: Use of resources for transforming and advancements of technology with combining the artificial intelligence to explore more various sources and get valuable insights
<b>Impact</b>	: Students know about resources & they used it for their start-up & research Journey as well for internship perspective

<b>Problem ID:</b>	PID604
<b>Challenge Title</b>	: Item pickup system for the open network for digital commerce (ONDC)
<b>Name of the Office</b>	: Government Engineering College, Sector-28, Gandhinagar
<b>Challenge Description with context</b>	: Various E-commerce competitors in the Indian market are able to quickly package and ship numerous items to the end-users from a well-established network of the demand-supply chain. To compete with them in a “well-unstructured” environment – which is still a difficult challenge, develop automated warehouses across the Indian geography to minimize the laborious task to find, locate and pick the items. The objective consists of a fully automated system that is able to locate, pick, pack, and successfully move towards the intended carrier/containers for dispatch.
<b>Users</b>	: Sellers who are listed on ONDC, Warehouse owners, Distributor Hub Owners
<b>Expected Outcomes</b>	: Automated Product recognition -> safe movement of the product from the shelf to table -> task planning & Execution (quality & process compliant management, packing, labelling and move towards carrier/containers) -> Detection and Recovery of Error -> Review the executed task and incorporate the challenges into the next turn. Efficiency would solely depend on the successful item movement end-to-end in a specified time.  Centralized control of automated ecosystem
<b>Impact</b>	: Reduction in labour cost. Optimizing the time duration from pickup to dispatch by lessening time and error.

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## Government Engineering College Patan

- Problem ID:** PID605
- Challenge Title** : IoT enabled low-cost solar desalination device for household applications
- Name of the Office** : Government Engineering College Patan
- Challenge Description with context** : Solar Desalination is a technique to convert the saline water into the potable water by applications of solar energy. Distillate output of the solar desalination device is lower because it only depends on the solar energy. Also performance prediction as well as continuous monitoring is also considered as big issue also. So sustainable solution is required to fabricate the low cost IoT enabled solar desalination device. Also 20 to 25 litre water with less than 3 years of energy payback time is a main challenge too.
- Users** : House hold potable water provider, industry, School, college
- Expected Outcomes** : Maximum water present in the earth surface is saline water. Also solar desalination converts the saline water into potable water by applications of solar energy. If solution is appropriately implemented then it will be revolution in the water industry and it will be the best solution for the potable water provider for house like Reverse osmosis (RO) system.
- Impact** : It can be sustainable solution of potable water provider like RO (reverse osmosis) system and it can be replaced too. It will be replaced by RO system in houses for potable water provider.

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## Government Engineering College, Rajkot

<b>Problem ID:</b>	PID606
<b>Challenge Title</b>	: Health Monitoring of Structure
<b>Name of the Office</b>	: Government Engineering College, Rajkot
<b>Challenge Description with context</b>	: Distress can occur in critical members of structures subjected to functional loading. This needs to be checked to avoid critical condition. If a device that can give runtime information about any distress in a structural member, large scale maintenance and catastrophe can be avoided.
<b>Users</b>	: Structures subjected to heavy functional loading.
<b>Expected Outcomes</b>	: In certain circumstances the loading on a structure can be controlled in case any distress is observed.
<b>Impact</b>	: Failure and maintenance can be avoided



**Problem ID:** PID607

**Challenge Title :** To develop a device to track existing drainage lines along with flow direction

**Name of the Office :** Government Engineering College, Rajkot

**Challenge Description with context :** The study aims to develop a device which enables to locate underground drainage lines along with flow direction in dry, partially full and full state. It should also provide depth of the drainage line.

**Users :** Government, semi-government and private organization working in field of operation and management of drainage lines

**Expected Outcomes :** Route diagram of underground drainage network along with flow direction and its depth

**Impact :** It will make operation of existing drainage network easier to control and maintain.

**Problem ID:** : PID608

**Challenge Title :** Design of Rainwater Harvesting system in GEC, Rajkot

**Name of the Office :** Government Engineering College, Rajkot

**Challenge Description with context :** During summer season due to less availability of water institute have to depend on outside water. That water tanker charges more to provide facility and that may occurring so many problems like water may not available for all the day in washrooms, for gardening and cleaning purpose. Rainwater harvesting is the storing of rainwater during the monsoon season for the purpose of using it during periods of water scarcity like summer season. Rain water, which comes for free, can be collected and stored, instead of letting it run off, it could be an alternative to back up the main water supply especially during dry season.

**Users :** Students, Staff (Teaching, Non-teaching staff), Canteen users, Outsider who visit college campus for various purpose like admission, Industry person, Parents etc.

**Expected Outcomes :**

- It can reduce mains water supply during summer.
- The system is easy to install, operate and maintain.
- Can be used for several non-drinking purposes.

**Impact :**

- It can save money on water bill.

Reduces rainwater runoff.

### Government Engineering College Valsad

<b>Problem ID:</b>	PID609
<b>Challenge Title</b>	: Folding and tracking mechanism for rooftop/farm solar panels.
<b>Name of the Office</b>	: Government Engineering College Valsad
<b>Challenge Description with context</b>	: To develop the portable stand, that must be capable to carry 3 to 6 kW rooftop solar plant. The ability of the required mechanism is that it can fold automatically the panels when sun off and automatically unfold when sun raise, in addition it must track the sun path for individual solar panel.
<b>Users</b>	: Solar energy companies and all the installed rooftop plants.
<b>Expected Outcomes</b>	: The solution will provide the flexibility to the users about installation. Solar tracking will increase the pick power generation duration.
<b>Impact</b>	: Innovative solutions can be patentable, that can impact on the Solar industry of India

<b>Problem ID:</b>	PID610
<b>Challenge Title</b>	: Flow meter for variable refrigerant in refrigeration system
<b>Name of the Office</b>	: Government Engineering College Valsad
<b>Challenge Description with context</b>	: To develop the refrigerant flow measuring sensor economically.
<b>Users</b>	: Automobile testing laboratory and research.
<b>Expected Outcomes</b>	: The probability of developing energy efficient refrigeration system.
<b>Impact</b>	: Innovative solutions can be helpful in developing energy efficient refrigeration system

**Problem ID:** PID611

**Challenge Title** : Design a compact, handy and easy to carry hydration bag/bottle for long distance solo runner for hydration

**Name of the Office** : Government Engineering College, Valsad

**Challenge Description with context** : Generally, in long distance running, runner has to carry bulky hydration equipment's for proper hydration while running which often create difficulty to carry with runner. Design a water bottle/bag which easy and comfortable to carry with runner.

**Users** : Long distance runner

**Expected Outcomes** : Hydration bottle/bag with compact size and comfortable to carry

**Impact** : Comfortable long distance running with proper hydration gears

**Problem ID:** PID612

**Challenge Title** : Reduction of ac fan noise at high speed of fan in car by redesigning car ac vents

**Name of the Office** : Government Engineering College Valsad

**Challenge Description with context** : At high speed of ac fan in car very high noise is produced. This can be reduced by redesigning car ac vents.

**Users** : All common man who uses car

**Expected Outcomes** : Reduction of car ac fan noise, which will increase comfort of car users.

**Impact** : Increase comfort of car users

**Problem ID:** PID613

**Challenge Title** : Elliptical Bike with Washing drum

**Name of the Office** : Government Engineering College Valsad

**Challenge Description with context** : Design and fabrication of an Elliptical exercise bike having washing drum as a flywheel which performs dual works as exercise for fitness as well as washing the clothes.

**Users** : Hostel students, public exercise parks

**Expected Outcomes** : Capacity up to 5KG of cloths can be washed with minimum amount of water within 20min. by burning of Approximate 200Kcal of user.

**Impact** : Fitness, cleanliness

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<b>Problem ID:</b>	PID614
<b>Challenge Title</b>	: To develop the instant cloth drying system.
<b>Name of the Office</b>	: Government Engineering College Valsad
<b>Challenge Description with context</b>	: To develop the cloth drying machine, that must be work in energy efficient with or without sun.
<b>Users</b>	: Laundry technology, machinery developing industry and research & development.
<b>Expected Outcomes</b>	: The patentability of the result and common human problems can be solved.
<b>Impact</b>	: Innovative solutions can be helpful in developing energy efficient cloth drying technology

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**Government Polytechnic, Ahmedabad.**

<b>Problem ID:</b>	PID615
<b>Challenge Title</b>	: Smart Plant Weather Station
<b>Name of the Office</b>	: Government Polytechnic, Ahmedabad.
<b>Challenge Description with context</b>	: Here we are building a IoT based Smart Plant Weather Station using ESP8266 Node MCU Module and DHT11 Sensor and soil moisture sensor modules. It will not only automatically irrigate the water based on the moisture level in the soil but also send the Data to Thing Speak Server to keep track of the land condition.
<b>Users</b>	: Farmers, Home, Nursery, Any other areas which contains plants
<b>Expected Outcomes</b>	: Should Automatically irrigate the water based on the moisture level in the soil and send data to thingspeak Server to keep track of land condition.
<b>Impact</b>	: It will help the plant growth to be efficient and automatic irrigation will be done based on soil moisture.

### Government Polytechnic For Girls, Ahmedabad

**Problem ID:** : PID616

**Challenge Title** : Chatbot for GTU

**Name of the office** : Government Polytechnic For Girls, Ahmedabad

**Challenge Description with context** : Create a single point solution for course, admission examination and other important issue. Many students do not regularly visit website for important updates and miss their important task like enrolment fees, exam fees payment. This chat bot will give quick reply for results, fees payments and latest circular when student enter the enrolment number. After entering enrolment number bot will give option for different issue and will reply on their selection.

**Users** : Students

**Expected Outcomes** : Many issue will solved by chatbot.

**Impact** : Student will get instant help regarding academic problems and timely aware about latest circulars.

**Problem ID:** : PID617

**Challenge Title** : Invoice Generation by capturing meter image using smart phone

**Name of the office** : Government Polytechnic For Girls, Ahmedabad

**Challenge Description with context** : Currently industry person goes to consumer place for meter reading and generates invoice. Sometimes consumer blame that person not read meter properly. So In this proposed system consumer will simply click image of meter and invoice will be generated by processing various details from image like consumer no/service number and meter reading.

**Users** : Consumers(Gas and electricity)

**Expected Outcomes** : Consumers will able to generate invoice themselves and timely pay bills.

**Impact** : Fast invoice generation and reduce paper usage.

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## Government Polytechnic Gandhinagar

<b>Problem ID:</b>	PID618
<b>Challenge Title</b>	: PHY Layer security for Multi User NOMA Based UAV network.
<b>Name of the Office</b>	: Government Polytechnic Gandhinagar
<b>Challenge Description with context</b>	: In order to improve the real time performance of UAV communication in 5G networks, physical layer techniques are of much concern as they affect the applications of UAVs significantly. The security aspects of NOMA based UAV communication network have always been a challenge in a wireless communication network because it is not as robust as wired communication due to severe fading and varying SNR scenario. In case of Muti User Drone network where Master drone assisted by a set of trusted authorised drones, the PHY Security and authentication is required to be addressed.
<b>Users</b>	: Multi-UAV Operations in government, industry, and research community
<b>Expected Outcomes</b>	: Optimised PHY security in Multiuser Drone communication network for mission critical applications.
<b>Impact</b>	: Multiuser Drone networks can be applied for defence, surveillance and other mission critical Realtime applications.

<b>Problem ID:</b>	: PID619
<b>Challenge Title</b>	: Application for the Admission Prediction in Diploma Based on Merit Marks
<b>Name of the Office</b>	: Government Polytechnic Gandhinagar
<b>Challenge Description with context</b>	: The prototype application will predict where the student can get the admission based on scored marks in SSC Examination. Application may display following modules. (Both English and Gujarati Language) <ol style="list-style-type: none"><li>1. The Schedule/Calendar for the Admission</li><li>2. The list of Government Institute (when clicked redirects to respective institute website)</li><li>3. The list of the Self Finance Institute (when clicked redirects to respective institute website)</li><li>4. The list of the Government Grant In aided Institute (when clicked redirects to respective institute website)</li><li>5. Display list of institute based on the Program/Branch</li><li>6. Display previous year cut off marks as well as merit rank for given branch</li></ol>

7. Predict the admission of the student based on his merit rank and or merit marks
8. Display city wise/location wise institutes
9. Announcement/Notices/GR display board

**Users** : Students, Parents

**Expected Outcomes** : An Android Application

**Impact** : This will help all the parent as well as students to select the location based program/branch for his/her further studies

**Problem ID:** : PID620

**Challenge Title** : Smartphone based Rash Driving Model

**Name of the Office** : Government Polytechnic Gandhinagar

**Challenge Description with context** : The prototype application will demonstrate how a mobile phone sensors can be used to detect Rash Driving use cases. The application will detect speeding, abrupt lane change etc.

**Users** : Two wheelers Drivers.

**Expected Outcomes** : An android application based framework for detecting Rash Driving.

**Impact** : This will help in better traffic Management.



- Problem ID:** : PID621
- Challenge Title** : Student Application for the Institutes
- Name of the Office** : Government Polytechnic Gandhinagar
- Challenge Description with context** : Students get the admission in the different institutes and many information required to furnish to the institute as well as many information required to be given the students.  
This prototype application demonstrate how this application become bridge between students, parents and the institutes.
- Users** : Two wheelers Drivers.
- Expected Outcomes** : Android Application having minimum following modules.
1. Reporting of a New Student
  2. Announcements of different information from the institute
  3. Hostel Form
  4. Different certificate request to Students Section
  5. Fees Payment
- And others which are useful for the students, parents and the institute.
- Impact** : This will ease the communication to students, parents and institutes.
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- Problem ID:** : PID622
- Challenge Title** : Student Heuristic Development Portal
- Name of the Office** : Government Polytechnic Gandhinagar
- Challenge Description with context** : Currently there is no system available for keeping academic and personal record of students along with their Strength, Weakness, Opportunities, Threats and their participation in curricular and co-curricular activities, for deciding which subject or Career path will be appropriate for them, their intuition will likely be drawn toward the path that they envision most satisfying, suitable and interesting.
- Users** : Students, Mentor, HoDs, Academicians and employers. etc
- Expected Outcomes** : System to make judgements quickly and efficiently for appropriate career path
- Impact** : Hassle free & Paperless process of student counselling for higher education institutes and industry

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## **Government Polytechnic, Himatnagar**

<b>Problem ID:</b>	PID623
<b>Challenge Title</b>	: Accounting Software (for Government system)
<b>Name of the Office</b>	: Government Polytechnic, Himatnagar
<b>Challenge Description with context</b>	: Software that can perform All accounting work (Eg. DA difference calculation, Arrear calculation, Income tax calculation, HPL and LWP calculation, No of Working days etc.)
<b>Users</b>	: All Government polytechnic and Government Engineering Colleges
<b>Expected Outcomes</b>	: Ease of accounting which minimize human errors
<b>Impact</b>	: Accurate account work within time limit

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## Government Polytechnic Dahod

<b>Problem ID:</b>	PID624
<b>Challenge Title</b>	: Sinkhole Monitoring System
<b>Name of the Office</b>	: Government Polytechnic Dahod
<b>Challenge Description with context</b>	: There is a need for a method to predict the sinkhole occurrence in city area. Develop the system, which predict the occurrence of sinkholes due to drainage line collapse or other underground works in raining season. The shape of the collapse cavity is assumed to be conical if the top of cavity reached or extend beyond the base of weathering the sinkhole development is likely.
<b>Users</b>	: Municipality
<b>Expected Outcomes</b>	: Road maintenance cost will reduce due to early detection of sinkhole
<b>Impact</b>	: Road and building department

<b>Problem ID:</b>	: PID625
<b>Challenge Title</b>	: To provide clean drinking water in rural areas
<b>Name of the Office</b>	: Government Polytechnic Dahod
<b>Challenge Description with context</b>	: In India several people die due to water bound diseases they even don't have enough money, electricity and other resources to get clean water. In such condition we should have a water purifier that not only clean the water from suspended impurity and pathogenic bacteria but also available in portable condition.
<b>Users</b>	: Entire Rural Population
<b>Expected Outcomes</b>	: People from rural areas will consume pure water.
<b>Impact</b>	: Water Purification Brand Industries

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<b>Problem ID:</b>	: PID626
<b>Challenge Title</b>	: Road Sign Indicator in Vehicle
<b>Name of the Office</b>	: Government Polytechnic Dahod
<b>Challenge Description with context</b>	: If driver have prior information about road signed board for that are already posted along upcoming road while riding the vehicle, driver can adjust the vehicle speed accordingly and their save time and fuel. The information in the form of audio or visual display or both.
<b>Users</b>	: Driver of any kind of Vehicle
<b>Expected Outcomes</b>	: Live information like “ <b>bump ahead</b> ”, “ <b>pedestrian road crossing</b> ”, “ <b>dangerous turn</b> ”, will be available in the form of audio or visual display
<b>Impact</b>	: Automobile industry

## C U Shah Polytechnic Surendranagar.

<b>Problem ID:</b>	PID627
<b>Challenge Title</b>	: Problem of corrosion in vehicle body/chassis parts in moisture prone area. (Near sea shore or/ heavy rainfall area)
<b>Name of the Office</b>	: C U Shah Government Polytechnic, Surendranagar
<b>Challenge Description with context</b>	: Corrosion is a long-term problem for car manufacturers, not least because a number of factors - some of which are out of the control of OEMs - contribute to the issue. Crucial parts such as brake and suspension components can be susceptible to corrosion, and as these are critical to safety on the road, manufacturers and suppliers continue to develop sophisticated corrosion prevention technologies.
<b>Users</b>	: All Vehicle users
<b>Expected Outcomes</b>	: Possible solution to control rust and corrosion in crucial parts, increasing overall service life of vehicle and parts
<b>Impact</b>	: The study found that the automotive industry had made savings of 52 % annually in 1999 compared to 1975, adding that the success was because ‘corrosion prevention decisions were made at the highest level’.

<b>Problem ID:</b>	PID628
<b>Challenge Title</b>	: Utilization of ceramic industrial waste in concrete construction.
<b>Name of the Office</b>	: C U Shah Polytechnic Surendranagar.
<b>Challenge Description with context</b>	: Utilization of cement concrete construction in infrastructure and industry is increased day by day and due to which carbon emission is increased which results in increase in pollution in environment. Hence the utilization of waste material produced in various industries will result in reduction in use of cement concrete construction.
<b>Users</b>	: Construction industry
<b>Expected Outcomes</b>	: Use of various waste produced from industry and consume less amount of cement in construction.
<b>Impact</b>	: Decrease in pollution in environment and reduce carbon emission.

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<b>Problem ID:</b>	PID629
<b>Challenge Title</b>	: Sign Language to Text Converter
<b>Name of the Office</b>	: C. U. Shah Polytechnic Surendranagar Gujarat
<b>Challenge Description with context</b>	: Communicating with a specially challenged individual who can't speak or hear is fairly tough, especially when you don't recognize of sign of a sign language. So to ease this difficulty, we can design Gesture Language Translator device that converts sign language into a textual data. This Project will be based on an ML model that can recognize the different sign language gestures for accurate translation. And we can freely express our self with specially challenged individual in very effective manner.
<b>Users</b>	: A person who want to understand and learn sign language.
<b>Expected Outcomes</b>	: A person can easily communicate with the person with speech or hearing disability.
<b>Impact</b>	: In any hassle situation using this interface we can understand the sign language and provide help to needy.

<b>Problem ID:</b>	PID630
<b>Challenge Title</b>	: Problem of over heating a battery and cause of battery damages EX. Battery blast
<b>Name of the Office</b>	: C U Shah Government Polytechnic, Surendranagar
<b>Challenge Description with context</b>	: Battery is a main part of EV, mostly Li-ion battery is used, but a limitation of Li-ion battery that if it will over charges then it will release ventage gas which is inflammable gas, so if temp. will contact with that gas, then it will explode. Also it will over heat and reduces the battery life.
<b>Users</b>	: All EV users
<b>Expected Outcomes</b>	: Possible solution to control over heating or over charging of battery, so it must used a circuit which will control the overcharging like BES(Battery Management System)
<b>Impact</b>	: The study found that the EV industry had made savings of 90% prevention of battery against overcharging also made a cooling system which maintain a temperature of battery.

<b>Problem ID:</b>	PID631
<b>Challenge Title</b>	: Fuel Theft Monitoring System
<b>Name of the Office</b>	: C U Shah Government Polytechnic, Surendranagar
<b>Challenge Description with context</b>	: The price of fuel is increasing day by day so in this if fuel theft happens then it will be economical loss to vehicle user. Fraud during fuel filling at fuel gas station is a most common thing nowadays. Common man could not easily understand this fuel theft.
<b>Users</b>	: Every vehicle user
<b>Expected Outcomes</b>	: Design a user-friendly device which measures the quantity of fuel being filled in a vehicle in a real time.
<b>Impact</b>	: It will reduce fraud during refiling at fuel gas station.

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## Government Polytechnic, Palanpur

- Problem ID:** : PID632
- Challenge Title** : Radiations from mobile phone antenna causes health threat
- Name of the Office** : Government Polytechnic, Palanpur
- Challenge Description with context** : The parts of the head or body nearest to the antenna can absorb radiation energy and convert it to heat, which may cause damage to brain cells. The antennas in mobile phones, including smartphones, emit radiofrequency. The radiation emanating from the mobile has a serious impact on human health, including body and mind. Radiofrequency (RF) emits radiation (non-ionizing "radio waves" such as microwaves). The parts of the head or body nearest to the antenna can absorb this energy and convert it to heat. The heat may cause damage to brain cells in our body.
- Users** : All living creatures including mankind
- Expected Outcomes** : Overall Solution to health related issues at world wide
- Impact** : Life span of humans as well as living creatures can be expanded with environment where all can live life happily



### Government Polytechnic Valsad

<b>Problem ID:</b>	PID633
<b>Challenge Title</b>	: Valorisation of a vegetable food waste
<b>Name of the Office</b>	: Government Polytechnic Valsad
<b>Challenge Description with context</b>	: Scarcity of vegetable and its quality around the world impact on nutrients in human being. Through valorisation methodology this scarcity of nutrients can be reduced as well as waste regeneration will be less.
<b>Users</b>	: Pharmaceutical Industries
<b>Expected Outcomes</b>	: Development of a novel method for waste valorisation Optimization of a process Economical Viability
<b>Impact</b>	: Reduce waste generation at a post processing level

<b>Problem ID:</b>	PID634
<b>Challenge Title</b>	: Valorisation of a fruit waste
<b>Name of the Office</b>	: Government Polytechnic Valsad
<b>Challenge Description with context</b>	: Fruit waste collection Drying Valorisation methods application Optimisation analysis for compound identification Application in pharmaceutical industry
<b>Users</b>	: Pharmaceutical Industries
<b>Expected Outcomes</b>	: Development of efficient process for valorisation of fruit waste Optimization of a process parameters Check Economical Viability
<b>Impact</b>	: Effective process and optimization of a parameter Reduce waste generation and improve nutraceuticals availability

**Problem ID:** PID635

**Challenge Title** : Model for Plastic waste management in Society and offices

**Name of the Office** : Government Polytechnic Valsad

**Challenge Description with context** : Recycling of plastic waste has a great potential. We need to increase collection of plastic waste & its recycling capacity. There is a great potential for economic gain with reduction in pollution

**Users** : Society and offices

**Expected Outcomes** : Efficient management to recycle plastic with economic balance

**Impact** : Reduce environment pollution  
Opportunity to develop business model for recycling plastic

**Problem ID:** PID636

**Challenge Title** : The sulphur trioxide scrubbed from flue gas and resultant effluent is corrosive and when discharged create pollution

**Name of the Office** : Government Polytechnic Valsad

**Challenge Description with context** : During production of benzene sulphonic acid  $\text{SO}_3$  is generally scrubbed with water and alkaline material which cause corrosion and material loss.

**Users** : benzene sulphonic acid manufacturing industry

**Expected Outcomes** : Valuable by product formation and zero material loss

**Impact** : Corrosion Prevention , Zero material loss

### R C Technical Institute Ahmedabad

<b>Problem ID:</b>	PID637
<b>Challenge Title</b>	: Keyword extraction from text
<b>Name of the Office</b>	: R C Technical Institute Ahmedabad
<b>Challenge Description with context</b>	: Most systems are relying on data mining and keywords are important search criteria. Searching text data from huge dataset is challenging in terms of performance.
<b>Users</b>	: Most business applications' users
<b>Expected Outcomes</b>	: Keyword search library/procedure for database
<b>Impact</b>	: India needs its own search engine dedicated to all Indian considering national data security and future economy.

<b>Problem ID:</b>	PID638
<b>Challenge Title</b>	: My Celebration – My Tree
<b>Name of the Office</b>	: R C Technical Institute Ahmedabad
<b>Challenge Description with context</b>	: A Mobile App to donate, plant a Tree on celebratory occasions like Birthday, Anniversary etc.
<b>Users</b>	: General Public, AMC/City Plantation Team, Industry Organization Team
<b>Expected Outcomes</b>	: A Mobile app for General public through which they can book to plant a tree. AMC / City Plantation team to Track requirements Industry Organization team to manage funds and Plantation requirements General Public to track their tagged tree status Selfie with my tree feature
<b>Impact</b>	: Green cover of Ahmedabad City will improve.

**K.D.Polytechnic, Patan**

**Problem ID:** : PID639

**Challenge Title** : Affordable accommodation facility for labours works on construction site

**Name of the Office** : K.D.Polytechnic, Patan

**Challenge Description with context** : Accommodation fits for all season like, summer, winter and monsoon.  
Proper sanitation facility.  
Temporary structure.

**Users** : Labours works on construction site

**Expected Outcomes** : Innovative solution from conventional tents  
Easy to install and remove

**Impact** : Improved quality of living  
  
Improve health quality  
Increases efficiency of worker

**Problem ID:** : PID640

**Challenge Title** : College Computer Network working Model

**Name of the Office** : K.D.Polytechnic Patan

**Challenge Description with context** : This project helps us to understand the actual working of networking in the college network. Android Based app and A Common display Panel can be used to check working of network. Panel can display which switch is working. It can be useful in detecting fault in Network.

**Users** : Faculty, Network Administrator

**Expected Outcomes** : Easy Network Handling

**Impact** : Fault detection is easy

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### L. E. College (Diploma) - Morbi

<b>Problem ID:</b>	PID641
<b>Challenge Title</b>	: Leakages in slabs of apartments
<b>Name of the Office</b>	: L. E. College (Diploma) - Morbi
<b>Challenge Description with context</b>	: To meet the demand of housing, construction of apartments is today's need. After few years of construction of apartments, leakages can occur from slabs (may be due to rain water or from toilets). These leakages damage the walls, columns, beams and slabs. This reduces durability of buildings & also leads to various defects occurring due to dampness.
<b>Users</b>	: Whole society
<b>Expected Outcomes</b>	: If this problem is solved, increased durability of buildings & relieve from problems due to dampness will be a benefit to its occupants
<b>Impact</b>	: Saving in maintenance cost. Saving in construction material will be a benefit to the environment.

<b>Problem ID:</b>	PID642
<b>Challenge Title</b>	: Voltage fluctuation in electrical power distribution system
<b>Name of the Office</b>	: L. E. College (Diploma) - Morbi
<b>Challenge Description with context</b>	: In a secondary distribution, due to voltage fluctuation damage a home appliances like ceiling fan, computer etc.
<b>Users</b>	: Whole society
<b>Expected Outcomes</b>	: Stable voltage
<b>Impact</b>	: More age of consumer appliances.

**Problem ID:** PID643

**Challenge Title** : Data Analytics for New Branch and New Course at Institute

**Name of the Office** : L. E. College (Diploma) - Morbi

**Challenge Description with context** : When a student comes at institute for inquiry of different courses, he/she will fill up a form regarding their basic and educational background and interest for different courses available at institute. Institute wants to find the student interest and location for their new branch opening and new course launching.

**Users** : Industry owner, Industry staff

**Expected Outcomes** : Web based application / Mobile Application which contains

Input - Digital inquiry form

Output – Chart or table showing data analytics for the below search:  
 (1) which area’s students actual register for the course after inquiry?  
 (2) Students of which educational background join the most in animation courses?  
 (3) In which duration, student prefer to do animation course along with their studies?  
 (4) Which course students find the most challenging and they don’t opt for the course with reason? Etc.

**Impact** : Institute can predict their plan for new branch and new course openings for the specific students.

**Problem ID:** PID644

**Challenge Title** : Issue of Void and porosity in Plastic pipe during extrusion process.

**Name of the Office** : L. E. College (Diploma) - Morbi

**Challenge Description with context** : With regard to extrusion, entrapped air in the feed section of the screw and polymer degradation is the main culprits behind voids.

**Users** : Polymer extrusion industries

**Expected Outcomes** : Proper techniques or material parameter that can control void or porosity in plastic extrusion process.

**Impact** : Proper solution of this defect can increase productivity and quality of extruded plastic products.

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<b>Problem ID:</b>	PID645
<b>Challenge Title</b>	: Driving License Controlled Smart Vehicle
<b>Name of the Office</b>	: L. E. College (Diploma) - Morbi
<b>Challenge Description with context</b>	: As per RTO rule, driving a vehicle without license is an offense and manually it is very difficult to check everyone who is not holding license and driving vehicle. Every year many accidents happen and people dead in road accident More people have died in road accidents than in all the wars India has fought. And it is really scary to drive on the roads when nobody observes traffic rules. Access to the vehicle must be prevented for the person who is not holding driving license. Many awareness programs on road safety arranged for different age group especially for youths, but still we didn't find any remarkable positive result. So there must be some system developed which can automatically prevent the access to the vehicle that is not eligible for driving and not bearing a license and thus cannot be accessible for a vehicle thief.
<b>Users</b>	: State Govt. RTO office, Traffic Police & Citizens
<b>Expected Outcomes</b>	: Deaths due to Road accidents can be reduced by Preventing access to vehicle from a person without license and other than actual user of that vehicle. Much more complexity of detecting persons without license by RTO can be simplified. RTO as well as Police can quickly and easily detect Identity of person met with an accident.
<b>Impact</b>	: State Govt. RTO office, Traffic Police & Citizens can benefitted with this system.

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## L. D. College of Engineering, Ahmedabad

<b>Problem ID:</b>	PID646
<b>Challenge Title</b>	: Arsenic free potable water for rural and remote locations
<b>Name of the Office</b>	: L. D. College of Engineering, Ahmedabad
<b>Challenge Description with context</b>	: Many of rural and remote locations lacks proper drinking water supply system and the ground water available has often arsenic impurities which causes severe health issues. The purpose of this problem is to create an economical solution to make the ground water free from arsenic (additionally, removing other heavy metals/ hazardous impurities will be a plus point), so as to have disease free youth and people of rural.
<b>Users</b>	: People residing in rural areas, visitors to remote locations
<b>Expected Outcomes</b>	: Arsenic free water will reduce many human health issues, also the arsenic separated from ground water will be stored and discarded safely to avoid recontamination with ground water.
<b>Impact</b>	: One of the major health issue due to arsenic is cancer, and people in rural area are very lack of information related cancer as well as the treatment, hence life people in rural area would be safer.



## Vishwakarma Government Engineering College, Chandkheda

- Problem ID:** : PID647
- Challenge Title** : Emergency Alert System during two-wheeler accidents
- Name of the Office** : Vishwakarma Government Engineering College, Chandkheda
- Challenge Description with context** : Majority of the cell-phone users have passwords or pattern lock on their mobiles. Hence, during an accident, people who are near the accident site are not able to inform the relatives of the person who suffered the accident by using his/her cell phone in which the phone numbers of his/her relatives are stored. Hence, a device should be fitted in two-wheeler which continuously detects the orientation of two-wheeler and if any disorientation is detected the relatives should automatically receive message about the same.
- Users** : People who are regularly commuting from their home to work place on two-wheelers
- Expected Outcomes** : Once, the relatives receive the message about the disorientation of two-wheeler, they can call the person who suffered the accident. The phone can be picked by anyone who is near the accident site from which location details can be obtained. This will help the relatives to reach the accident site quickly.
- Impact** : This mechanism will help a lot in saving lives as two-wheeler accidents are very frequent in our country, particularly in metro cities
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- Problem ID:** : PID648
- Challenge Title** : Bioplastics: An alternative to plastic
- Name of the Office** : Vishwakarma Government Engineering College, Chandkheda
- Challenge Description with context** : Though bioplastic is way better than conventional plastic then also it is not in use as conventional plastic due to its high price and lack of awareness.
- Users** : Pharmacy ,Sanitary products,Agriculture
- Expected Outcomes** : Achieving to make bioplastics with natural raw materials at a lower price.
- Impact** : Green environment , Reducing carbon footprint, Reducing landfill waste

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<b>Problem ID:</b>	PID649
<b>Challenge Title</b>	: Solution statement to establish zero waste society, disposal management
<b>Name of the Office</b>	: Vishwakarma Government Engineering College, Chandkheda
<b>Challenge Description with context</b>	: Due to lack of awareness, there is mis-management of waste in our surrounding and society, which is impacting the health of the people and also impacting our environment by causing global warming, greenhouse effect, water clogging etc. So here we are supposed to manage these wastes in proper way to get rid of these issues. So here we are with solution which will deal with these wastes in a better way. We are having automatic dustbins which will sense the object.
<b>Users</b>	: Society which will include Sweepers, municipal Corporation bodies, common people, industrialist, etc...
<b>Expected Outcomes Impact</b>	: A clean and green society with zero waste.  : It will soon help us to gain the zero waste society and the non-biodegradable substance can be used to make artefacts which will be one of the mode of business. As the sensor enabled bins will automatically open and close and the container will be taken close to that and once the bin is filled there will be waste level indicator which will send the message to driver of the respective bin. The driver will come at the location of bin and will take the waste, thereafter the waste will be reused, recycled and remanufactured and will send back to society in different forms. So the society will remain clean as zero waste society.

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<b>Problem ID:</b>	: PID50
<b>Challenge Title</b>	: New Voter Recommendation System for BLO for Addition or Deletion of voter in Electoral Rolls
<b>Name of the Office</b>	: Vishwakarma Government Engineering College, Chandkheda
<b>Challenge Description with context</b>	<p>: Every year program for new voter registration and deletion of death person is arrange by election commission. BLO visit house to house and collecting this information and registration and deletion of voter is done and new Electoral Rolls is published.</p> <p>There is birth registration and death registration are maintain at government office. There are difficulties arise when BLO needs to find the voter of their part.</p> <p>This system will collect person information from government office and provide list of voters to BLO based on address.</p>
<b>Users</b>	: Booth Level Officer (BLO), Sector Officer, ERO ,ARO
<b>Expected Outcomes</b>	: A Web Application which provides list of voters based on birthday and list of based on death information for Electoral Rolls
<b>Impact</b>	: Electoral Rolls updation work will done smoothly.

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## Admission Committee for Professional Diploma Courses (ACPDC), Gujarat

<b>Problem ID:</b>	: PID651
<b>Challenge Title</b>	: Find same students having name in different orders and different prefix and suffix.
<b>Name of the Office</b>	: Admission Committee for Professional Diploma Courses (ACPDC), Gujarat
<b>Challenge Description with context</b>	: At ACPDC thousands of students apply for diploma admission. Some students knowingly or unknowingly register for multiple times. Only one application of student can be permitted for admission. To avoid multiple registrations ACPDC don't allow students with same name, father's name, mother's name etc already. To bypass this, Students may use suffix like 'bhai', 'kumar' or use space and other characters in names. Problem to be solved is to find these students even if he use different name like 'xyz' to 'xyzbhai' or 'xyz' to 'x yz'.
<b>Users</b>	: ACPDC
<b>Expected Outcomes</b>	: Students having multiple registrations are to be identified and their latest (last) application number to be kept alive. All other applications to be marked as "DR"(Duplicate)
<b>Impact</b>	: It helps ACPDC to identify students admitting in more than one seats. If these students to be identified, more students can get admission in institute and branch of their choice.

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<b>Problem ID:</b>	: PID652
<b>Challenge Title</b>	: Fetch students marks from scan copy of marksheet using Optical Character Recognition(OCR).
<b>Name of the Office</b>	: Admission Committee for Professional Diploma Courses (ACPDC), Gujarat
<b>Challenge Description with context</b>	: At ACPDC thousands of students apply for diploma admission. Students upload scan copy of marksheet for verification. These marksheets are in pdf format. These marksheet contents are to be converted to data which can be fed to database using OCR. Students Maths, Science, English, Total Obtained marks and Total Maximum marks to be fetched from scan coy of marksheet and entered into database.
<b>Users</b>	: ACPDC
<b>Expected Outcomes</b>	: Students scan copy marksheet's details are fetched from scan copy and entered into database columns of Maths, Science, English, Total Obtained marks and Total Maximum marks
<b>Impact</b>	: It helps ACPDC to fetch useful data of marksheet into database directly.

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## Gujarat National Law University, Gandhinagar

- Problem ID:** : PID653
- Challenge Title** : Availability of Court Proceedings Records
- Name of the Office** : Gujarat National Law University, Gandhinagar
- Challenge Description with context** : The litigants in the court are presenting their case through advocates. Many times, they have to travel at different places where the legal proceedings are going on. They are not able to get updates on what has happened in the courts and what documents have been presented before the court by the opposite parties and because of this, they have to rely on the advocates. If the advocate is not ethically and morally correct, the clients will end up being dominated or cheated by them as they cannot approach other advocate also who genuinely want to help them. Court records are available only on filing application for obtaining certified copies and that too after a wait of 15 to 20 days. Huge amount of money is also required to be given towards photocopy charges for the papers of party's own litigation and because of this, the timely representation before the court is not possible which results in delay in justice and multiple adjournments in the matter which ultimately increases pendency of matters before the court.
- Users** : All litigants before various courts
- Expected Outcomes** : Quick access to court proceedings and court records to the parties
- Impact** : Reduction of time spend for accessing proceedings

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<b>Problem ID:</b>	: PID654
<b>Challenge Title</b>	: Updates on Government Gazettes and Notifications
<b>Name of the Office</b>	: Gujarat National Law University, Gandhinagar
<b>Challenge Description with context</b>	: In many matters including land revenue, non-agricultural permissions, draft and final town planning schemes declaration etc., the Government comes with various notifications, resolutions etc. Many times, some changes are made in policies due to High Court or Supreme Court Judgments also. These kind of updates are published by the media in newspapers for the day or two and thereafter, they are not easily available in normal and simplified manner. This system creates many confusions as any new development is not reaching to all stakeholders immediately and many times, old process and system keeps prevailing in spite of Government's decision for the changes in it and this creates a big problem for obtaining justice in many matters where the person is supposed to obtain any right or benefits from the Government office but there is no updates before such authority. A system which immediately intimate all the general public about such updates are need of the hour
<b>Users</b>	: All beneficiaries and stakeholders of many government schemes or policies
<b>Expected Outcomes</b>	: Quick access to government notifications and orders or changes relating to many government department in easy and simplified manner
<b>Impact</b>	: Reduction of time spend by stakeholders

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<b>Problem ID:</b>	: PID655
<b>Challenge Title</b>	: Jurisdiction of Police Stations and Criminal Courts
<b>Name of the Office</b>	: Gujarat National Law University, Gandhinagar
<b>Challenge Description with context</b>	: Whenever any crime takes place, the person needs to report the same before the police station or criminal court having jurisdiction to try such offences. The criminal law along with many notifications and judgments of various have fixed the jurisdiction of concerned police station and courts however, this information is not easily available for general public and it crates lots of issues at the time of reporting crimes. Many police stations simply denies the parties to register such cases in order to show less pending work and finally this notion results in denial of justice to the parties. The general public must have access to all minute and to the point information about all the jurisdictional boundaries of local police station with clarification that what crimes can be reported to what authority in easy an simplified manner which will empower the common public to obtain justice and also rebuilt faith in the legal system which ultimately help the government to eliminate the crimes in the society. Also there is no direct system which help a person to know the disposal of cases by concern police station.
<b>Users</b>	: All victims of crime
<b>Expected Outcomes</b>	: Clear and easy understanding with regard to jurisdiction of police station and criminal court and database of concerned police stations about disposal of matter by them
<b>Impact</b>	: Helps to all stakeholders



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<b>Problem ID:</b>	: PID656
<b>Challenge Title</b>	: Land Title Certificate
<b>Name of the Office</b>	: Gujarat National Law University, Gandhinagar
<b>Challenge Description with context</b>	: In case of sale or purchase of land or immovable property, the title certificate is required to be obtained before the final transaction takes place. Banks and Financial institutions largely rely on such title certificates to check the real ownership of the person selling the property. Today, there is very complex procedure to check the title of any property. An advocate has to rush many land records which may be more than 30 years old to check whether entire sequence of the transactions are legal or not. Sometimes, the land or property may also be a part of acquisition by government or it may be a part of any future development and any transaction for such property may create multiple issues for the stakeholders concerned. The system of title clearance of property is also presumptive wherein a simple public notice in newspaper is also given for inviting objections and in case of no objection, it is presumed that the title towards such property is clear and transactions are made. Subsequently, litigations are also made in respect of such properties and parties have no option other than spending money in litigation. A system to ascertain clear title of the property is need of the hour where any government department can itself grant such certificate based on records registered with them rather than asking any advocate or solicitor to issue such certificate.
<b>Users</b>	: Persons who are willing to obtain title clearance certificate for property of land or building.
<b>Expected Outcomes</b>	: Clear and easy title clearance certificate from the authorised government department to ascertain that the property is clear and marketable for any transaction.
<b>Impact</b>	: Reduction of time spend by stakeholders

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<b>Problem ID:</b>	: PID657
<b>Challenge Title</b>	: Understanding the Material Facts of the cases through audio visual aids / Animation
<b>Name of the Office</b>	: Gujarat National Law University, Gandhinagar
<b>Challenge Description with context</b>	: It has been noticed in some cases that the Judges are not able to Understand / Comprehend the facts of the case clearly when a lot of technicalities are involved in the case, for example: When a case involves multiple time revision of tax rates, When the case involves too much accounting details or When the facts in issue are so intricate that even Advocates are not able to explain the facts of the case clearly to judges which leads to confusion and inordinate delay in further proceedings and hence delay in rendering the judicial decision
<b>Users</b>	: Petitioner, Respondent and Judges
<b>Expected Outcomes</b>	: Quicker disposal of cases and Efficiency in Judicial decisions.
<b>Impact</b>	: Clear Understanding of Facts of the case by the Judges resulting in reduced errors in Judicial decisions.

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**Problem ID:** : PI7658

**Challenge Title** : Non-availability of advance legal research tool for tier 2 and tier 3 city legal professionals

**Name of the Office** : Gujarat National Law University, Gandhinagar

**Challenge Description with context** : Legal research is an important task for every legal professional. Unfortunately, the availability of such tools is enjoyed by a very limited number of professionals. The legal professionals based in tier 2 and tier 3 cities are not able to use heavy-priced tools and what is available to their recourse is not based on industry standards.

**Users** : Lawyers, judges

**Expected Outcomes** : With ease in availability of legal research tools, the reference to case-laws and other secondary authoritative texts becomes accessible.

**Impact** : It will help in effective justice delivery mechanism. The arguments, orders made in the trial courts will be more authoritative. The knowledge resources available to the users will impact the overall legal services sector.

**Problem ID:** : PID659

**Challenge Title** : Opportunities for young legal professionals limited to the sector/geographical areas they belong to

**Name of the Office** : Gujarat National Law University, Gandhinagar

**Challenge Description with context** : Generally, a young legal professional after he joins the professions gets associated with a lawyer's office or law firm and learns/earns from the limited opportunities available through the said office/firm. However, a labour lawyer in a taluka court in Gujarat is equally resourceful for a client in taluka court in Rajasthan. If these

**Users** : Young lawyers, litigants

**Expected Outcomes** : It will provide young professionals with more opportunities and the litigants will be benefitted with services of such professionals on economic fees.

**Impact** : It will make legal services more accessible and economic, giving more work exposure to young professionals.

**Problem ID:** : PID660

**Challenge Title** : Backlog of cases due to pending cases especially of minor nature

**Name of the Office** : Gujarat National Law University, Gandhinagar

**Challenge Description with context** : There are a number of pending cases in the indian judicial system, many of which are of minor issues faced by the public, incidents like small accidents or road rage, or speeding ticket etc.

**Users** : Judicial system, common public, governments

**Expected Outcomes** : Solutions revolving around the use of judicial trainees to preside upon the cases

**Impact** : Would greatly reduce the burden on the existing judges and courts

**Problem ID:** : PID661

**Challenge Title** : Digitalizing Justice

**Name of the Office** : Gujarat National Law University, Gandhinagar

**Challenge Description with context** : When general public goes out for their legal work they tend to avoid it mostly or prefer paying hefty amounts of bribe to have their work done, and so some of the front desk work men do not work speedy for common man and expect some cash. But when we digitalise these areas and add AI to do tasks. Like an automated petrol pump, in the same way, for example you want your registry done fast but the person responsible doesn't do it, so if we have it digitalised, you can automatically generate it there. Just like you get boarding pass at the airport. The usages are endless.

**Users** : General public

**Expected Outcomes** :

1. No way for malpractice
2. Timely progress of work
3. No human error, hence no harassment

**Impact** :

1. General public places faith in justice system again.
2. Legal remedy isn't a burden but a right now.
3. Legal remedy becomes easily available and at affordable prices.

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<b>Problem ID:</b>	: PID662
<b>Challenge Title</b>	: Processing bail orders instantaneously
<b>Name of the Office</b>	: Gujarat National Law University, Gandhinagar
<b>Challenge Description with context</b>	: There have been various cases where an inmate is granted bail but due to verification and other reasons, the inmate remains in custody and is not released. The idea is to make the verification of orders and release instantaneous, that the moment the order of bail is granted, the inmate should be released within the next one hour because personal liberty of every person is of utmost importance.
<b>Users</b>	: Police Officials and Court Clerks
<b>Expected Outcomes</b>	: Immediate release of prisoners/inmates who have been granted bail.
<b>Impact</b>	: Will ensure speedy justice, save costs and affect millions of people in securing personal liberty at the earliest.

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<b>Problem ID:</b>	: PID663
<b>Challenge Title</b>	: Developing affordable and time-bound Alternative Dispute Resolution Services for the masses
<b>Name of the Office</b>	: Gujarat National Law University, Gandhinagar
<b>Challenge Description with context</b>	: In a world where advanced nations such as the USA have settlement rates for civil disputes well above 80%, dispute resolution for common Indians is stuck between the unholy triad of an overburdened judiciary, unmoderated (and often unfair) settlements and a general social taboo around being involved with courts of law/police. However, Indians are much more open to settle their disputes in presence of elders/experts while maintaining non-disclosure. There is thus a massive scope for private endeavours for providing time bound, cost effective and fruitful alternative dispute resolution services in India for civil disputes; both small and large. By cutting costs, customising rules and optimising the overall as per the requirements of the client base, ADR may become the saviour for innumerable Indians who hesitate to access justice due to the tedious nature of its procedures. Regional Legal experts/professionals as well as traditional/customary law may be well integrated in resolution of relevant disputes.
<b>Users</b>	: <ol style="list-style-type: none"><li>1) Companies</li><li>2) Small Businesses</li><li>3) Landowners and Tenants</li><li>4) Moneylenders and Borrowers</li><li>5) Family Disputes</li><li>6) Social Disputes</li><li>7) Parties stuck with longstanding disputes in court</li></ol>
<b>Expected Outcomes</b>	: <ol style="list-style-type: none"><li>1) Reduction of the existing burden over judiciary</li><li>2) Reduction of costs for dispute resolution</li><li>3) Ensuring time bound and conclusive resolution of disputes</li><li>4) Increasing access to justice</li><li>5) Creating jobs for regional advocates and legal experts</li></ol>
<b>Impact</b>	: <ol style="list-style-type: none"><li>1) Creation of a Greenfield legal ecosystem in the grassroots</li><li>2) Efficient and pocket friendly dispute resolution</li><li>3) Increased social harmony</li><li>4) Better ease of doing business</li></ol>

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<b>Problem ID:</b>	: PID664
<b>Challenge Title</b>	: Establishment of more government funded Legal Aid Clinics (LACs)
<b>Name of the Office</b>	: Gujarat National Law University, Gandhinagar
<b>Challenge Description with context</b>	<p>: Even though there are existing LACs working presently in our nation, these are small in number (<a href="#">around 30, out of which 8 are in Gujarat</a>) and not that well known. Moreover, all these clinics are not funded by the government. Thus, steps should be taken to make the rural population aware about these clinics which provide free legal assistance to them. More funds should be earmarked for these clinics and more such clinics should be set up by the state government for better reach throughout the state.</p> <p>State/District Legal Services Authority have more of an administrative function and managing these LACs and thus such LACs are set up so that they can focus on the field work and provide legal assistance.</p>
<b>Users</b>	: Rural population of the state, community service workers, legal industry, District/State Legal Services Authority
<b>Expected Outcomes</b>	<p>: Because of informed legal assistance given to the rural population of the state, the scope for mistakes and blunders would decrease drastically.</p> <p>Speedy and effective justice to the rural population of the state.</p> <p>Establishment of more LACs would make the task of the District/State Legal Services Authority easier as they would be able to focus on their administrative function and legal assistance would be provided by these LACs itself.</p>
<b>Impact</b>	<p>: Because of such reduced mistakes and errors, the legal industry would be relieved of the burden of correcting them, and would be able to focus on speedy and effective justice.</p> <p>The objective of Article 14 of the Indian Constitution – ‘Equality before Law’ would be fulfilled as now even the rural population would have similar legal assistance as the urban population.</p>

<b>Problem ID:</b>	: PID665
<b>Challenge Title</b>	: Lack of a common portal for the recruiters and the interested applicants
<b>Name of the Office</b>	: Gujarat National Law University, Gandhinagar
<b>Challenge Description with context</b>	: It has been observed that students studying in various fields (here law) find it difficult to find internships either due to their background, lack of awareness or other issues. The firms which are mandated to have interns in various capacity for practical hands-on experience find it difficult to choose the right intern. Having a common portal mandated by either the government or a governing body created by law would allow the firms to have a one stop solution for recruiting and likewise for students who need not worry about being recruited to a law firm.
<b>Users</b>	: Firms/companies and Students of various universities across the country
<b>Expected Outcomes</b>	: Smooth communication between the two mentioned parties above
<b>Impact</b>	: Reduces time and saves money for the recruiters of law firms when finding interns. Would remove the discrimination and biasness in the selection process hence making it more transparent and faster.

<b>Problem ID:</b>	: PID666
<b>Challenge Title</b>	: Justice delayed is justice denied
<b>Name of the Office</b>	: Gujarat National Law University, Gandhinagar
<b>Challenge Description with context</b>	: There are many instances in india where the justice has been delayed, recently been the Nirbhaya Case which was headed by a three- judge bench where all four men were convicted and punished after seven years of brutal crime. Also, the crime rate in india is high due to the backlog of cases pending with the courts. Due to this people loses hope in the justice system.
<b>Users</b>	: Law student, Society.
<b>Expected Outcomes</b>	: May this people regain their hope in justice system and the justice is delivered on time.
<b>Impact</b>	: It will help maintain trust in legal proceedings as the justice will be delivered on time.



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<b>Problem ID:</b>	: PID667
<b>Challenge Title</b>	: Accessibility of court records
<b>Name of the Office</b>	: Gujarat National Law University, Gandhinagar
<b>Challenge Description with context</b>	: The Indian legal system has been functioning since a long period of time and has accumulated a plethora of debate in the process. With the absence of digitalisation in the past times the documents and evidence submitted are lost in the vast sea of data and hence not easily accessible for prompt and efficient usage in the current court cases.
<b>Users</b>	: The Indian judiciary and its beneficiaries that is the society at large
<b>Expected Outcomes</b>	: A streamlined database of the necessary information and documents that would facilitate efficient functioning of courts.
<b>Impact</b>	: Help in speedier judgements of cases and better handling of evidence. Also allow judges to refer to the basis of precedents.

<b>Problem ID:</b>	: PID668
<b>Challenge Title</b>	: Class- action lawsuits
<b>Name of the Office</b>	: Gujarat National Law University, Gandhinagar
<b>Challenge Description with context</b>	: With the dynamic business environment, there have been many cases where a number of customers have filed cases, but it being comparatively less in number there have been no steps taken by the firms unlike in the US having dispute redressal committee. Also, there online platforms generally hide the negative comments and various agreement clauses.
<b>Users</b>	: Corporate lawyers, customers, businesses
<b>Expected Outcomes</b>	: Will reduce the discrepancies when it comes to solving out customers problems
<b>Impact</b>	: It will help maintain more trust in the legal proceedings and keep a check on business workings and consumer protection.

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<b>Problem ID:</b>	: PID669
<b>Challenge Title</b>	: Regarding filing/Submission and presentation of documents before the Hon'ble judge.
<b>Name of the Office</b>	: Gujarat National Law University.
<b>Challenge Description with context</b>	: It has been observed that the young lawyers generally don't have a clue regarding how the documents need to be filed in the registry and in what order they are supposed to be presented in front of the Hon'ble Judge, which at times result in the wastage of the precious time of the Hon'ble court and they (lawyers) also get reprimanded for their callous approach. It is also observed that some judges follow a very hardline approach, which at times result in the adjournment of issue and causes undue hardship to the client (financially as well as mentally).
<b>Users</b>	: Legal Practitioners.
<b>Expected Outcomes</b>	: It wastes the time of the court, and causes undue hardship to the client. It also creates hardships for young lawyers who are trying to survive in this competitive environment, and their lack of knowledge might lead to loss in briefs (Work ). In cases where there is an adjournment of a case, it also adds up to the backlog of cases, which already is a daunting problem to our Indian court system.
<b>Impact</b>	: If this problem is solved, it will save a lot of time for the court. This in a way might help in reduction of backlog of cases and will also help the young and budding lawyers who are not very much aware of the system by giving them a chance to learn and will reduce their workload.

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<b>Problem ID:</b>	: PID670
<b>Challenge Title</b>	: Safeguarding disaster management communication through HAM Radio
<b>Name of the Office</b>	: Gujarat National Law University
<b>Challenge Description with context</b>	: Natural disasters strike us when we least expect it and henceforth it becomes a necessity to ensure that we have the right legal and technical safeguards in place in the event of one for disaster resilient infrastructure. Most buildings, offices, universities and other institutions are completely reliant on cellular communication via mobile towers or cabled internet for their communications purposes. Both of which are highly susceptible to the risk of unavailability in the event of a natural disaster. In this view, it becomes pertinent to have alternative communication systems that can convey emergency messages to the rescue departments without delay. SOL: This is where HAM/Amateur radio comes into the picture. It can serve as a sure way to communicate in the event of an emergency instantaneously and for this the adequate policy, legal, statutory and financial backing must be ensured.
<b>Users</b>	: Universities, Public Spaces, Malls, Schools, Parks, Coastal regions, Mountainous Regions, Armed Forces, NDRF etc
<b>Expected Outcomes</b>	: Sleeker, Faster, Effective and Efficient Disaster Management Communication; Could also disseminate relevant information to other HAM users on Disaster Management.
<b>Impact</b>	: Cheap, effective and swift communication channel for emergencies which will ensure greater success of rescue operations. Awareness of HAM and Radio technology and its uses among the masses.

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<b>Problem ID:</b>	: PID671
<b>Challenge Title</b>	: Problems with Judicial Infrastructure and resulting prolonged trials
<b>Name of the Office</b>	: Gujarat National Law University
<b>Challenge Description with context</b>	: Chief Justice Ramana, in his speech at the event, highlighted that the improvement and maintenance of judicial infrastructure is still being carried out in an ad-hoc and unplanned manner. The Indian judiciary's infrastructure has not kept pace with the sheer number of litigations instituted every year. A point cemented by the fact that the total sanctioned strength of judicial officers in the country is 24,280, but the number of court halls available is just 20,143, including 620 rented halls. Also, there are only 17,800 residential units, including 3,988 rented ones, for the judicial officers. As much as 26% of the court complexes do not have separate ladies toilets and 16% do not have gents toilets. Only 32% of the courtrooms have separate record rooms and only 51% of the court complexes have a library. Only 5% of the court complexes have basic medical facilities and, only 51% of the court complexes have a library. While the pandemic has forced most of the courts to adopt a hybrid system — physical and videoconferencing mode — of hearing, only 27% of the courtrooms have a computer placed on the judge's dais with video conferencing facility
<b>Users</b>	: Judiciary
<b>Expected Outcomes</b>	: Improvement of Judicial infrastructure
<b>Impact</b>	: Can reduce the number of cases

**Problem ID:** : PID672  
**Challenge Title** : Case Hearing System  
**Name of the Office** : Gujarat National Law University  
**Challenge Description with context** : Many at times we have observed that advocates have to rush from one courtroom to another to appear for their hearings. And in worst cases, they miss their number because display board is updated a bit late in high courts. Display board is even absent in lower courts.  
**Users** : Advocates and parties to the case  
**Expected Outcomes** : Rush will be less in courtroom and there will be efficiency in proceedings . Much time will be saved of advocates, judges and parties to cases.  
**Impact** : This will be helpful in solving the problem of backlog of cases and delay in justice at large.

**Problem ID:** : PID673  
**Challenge Title** : Complexities in Justice Delivery System  
**Name of the Office** : Gujarat National Law University, Gandhinagar  
**Challenge Description with context** : When we look down upon the ground level, district court is a place having the highest case pendency ratio. One of the crucial reason being unawareness regarding procedure and legal complexities involved there in among common people. They feel themselves completely clueless and have to spend a lot of time, energy and money to get the justice served (even for the simplest reason). They have to follow exactly what their lawyer suggests them, without having their own thought. Often a times they are also victimised by prevalent corruption and being fooled by their own lawyers and case end up favouring the opposite; which is completely unfair for the weaker section of the society. People start loosing faith in judicial system so if not possible for major criminal cases then atleast for petty civil cases, complexities should be reduced.  
**Users** :  
**Expected Outcomes** : Justice can be delivered comparatively easier. Case pendency can be dealt with and faith in Indian Judiciary System can be maintained.  
**Impact** :

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<b>Problem ID:</b>	: PID674
<b>Challenge Title</b>	: Lack of specificity of time frame for speakers in antidefection laws
<b>Name of the Office</b>	: Gujarat National Law University, Gandhinagar
<b>Challenge Description with context</b>	: A lot of issues are either decide speedily in case of any political powers influence or are decided with a delay if in layman's favour and here the meaning of speakers time frame is that of the one who pronounces the judgement and there is no specific time frame in the law which defines so making it easier for criminals having high power to do any act and get rid of the proceeding creating a hindrance in the path of justice which is in need to removed
<b>Users</b>	: All the citizens of India those are abided by this law and all the professionals either in legal domain or associated with it
<b>Expected Outcomes</b>	: There would be a specified time frame for the speaker to speak which would be without any influence of power upon him who CNN would naturally yield to better justice powers in his hands
<b>Impact</b>	: This time frame would ensure that within whom the power is bestowed upon is not misusing it under the pressure of any political power and would help the justice in favour of the victim by treating even a politician in line with a laymen

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<b>Problem ID:</b>	: PID675
<b>Challenge Title</b>	: Lack of awareness of IP laws amongst legal startups
<b>Name of the Office</b>	: Gujarat National Law University, Gandhinagar
<b>Challenge Description with context</b>	: A lot of good startup idea givers who aren't able to implement those is because of the fact that there is lack of IP awareness on their part which would otherwise have saved their idea for making a good startup and since a lot of start-ups are bussing around with governments promoting them through findings it now becomes inevitable for them to be aware of the IP rights available to them
<b>Users</b>	: Startup or the ones about to start a startup
<b>Expected Outcomes</b>	: Legal issues wrt IP would be resolved speedily as most of the matters are concerned on the lack of awareness part on the person suing wrt the rights available
<b>Impact</b>	: People starting own startup would be aware of their IP rights and would be able to protect it and can also claim the reliefs under it for any loss or breach that has occurred to them One can protect their ideas from being copied and pasted and owned by some other person

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<b>Problem ID:</b>	: PID676
<b>Challenge Title</b>	: Circumvention of anti-defection laws through power politics.
<b>Name of the Office</b>	: Gujarat National Law University, Gandhinagar
<b>Challenge Description with context</b>	: A lot of politicians by virtue of their power are violating the said law and are also freed from the clutches of punishments which has caused a huge number of cases wrt the laws which is concerned and to make the politician in pat with the laymen it becomes inevitable to impose such laws on them more stringently
<b>Users</b>	: The citizens of India as well as people attached to legal domain
<b>Expected Outcomes</b>	: The anti-defection laws would be stringent enough with more clarity to ensure that the political power does not affect the judiciary in making sure to do good the wrong that has been suffered and that the politician would not be by virtue of their power in position to comprehend the laws as per their own wish
<b>Impact</b>	: The laws of implemented in this way would curb the powers exercised by the politician on the judiciary to save them from the clutches of the law and would provide appropriate punishment equivalent to that of a laymen to them to ensure non repentance of the crime



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<b>Problem ID:</b>	: PID677
<b>Challenge Title</b>	: Gaps and ambiguities in the purpose of the poorly drafted laws
<b>Name of the Office</b>	: Gujarat National Law University, Gandhinagar
<b>Challenge Description with context</b>	: The new laws and some of the earlier laws are having issue wrt the ambiguity in its purpose which enlarges the gap when a laymen tries to understand it as it provides either no meaning at all or provides dual meaning as to a single statute creating a delay in the process of awarding punishment and providing justice
<b>Users</b>	: People abided by the law that is the citizens of India as well as people in legal domain be it lawyers or consultants
<b>Expected Outcomes</b>	: The ambiguity would be removed and the speedy disposal of matters with the court would be possible with due respect to the rights of the person so arriving to the court
<b>Impact</b>	: It's impact would be far reaching as people would be then clear as to what a particular law is wishing to convey to them and what should be done by them assuring that they duly abide by it

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## DGVCL, Gujarat

<b>Problem ID:</b>	PID6678
<b>Challenge Title</b>	: Fault location Detection in Distribution side
<b>Name of the Office</b>	: DGVCL, Gujarat
<b>Challenge Description with context</b>	: 11KV line mini. grid is too complex in rural areas and also there is no digital fault detection system. In distribution system line man has to petrol whole line for detecting fault.
<b>Users</b>	: All Stakeholder of electricity companies.
<b>Expected Outcomes</b>	: Improve System, Reliable Energy, Improve Quality of Power
<b>Impact</b>	: Fault clearing process is faster

## GETCO

- Problem ID:** : PID679
- Challenge Title** : Electric Power Transmission line tower design
- Name of the Office** : GETCO
- Challenge Description with context** : Today main problem during erection of transmission tower is occupation of land, because for high transmission voltage level more land is require.
- Users** : Transmission company GETCO.
- Expected Outcomes** : Design of tower such do it occupy less lend area and give good strength as require.
- Impact** : With such new design it will become easy to erect new transmission network

- Problem ID:** : PID680
- Challenge Title** : 11kV breaker having no redundancy
- Name of the Office** : GETCO
- Challenge Description with context** : When 11 kV breakers operate due to fault other feeders are being disconnected.



- Users** : GETCO and Other transmission companies.
- Expected Outcomes** : Ring Main unit installation for radial feeder from other substation
- Impact** : By using ring main unit we can supply uninterrupted power to remaining feeders.

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- Problem ID:** : PID681
- Challenge Title** : Lightning arrester blasts due to lightning
- Name of the Office** : GETCO
- Challenge Description with context** : LA used in transmission to protect transmission line from lightning and high voltage surges but due to high voltages sometimes it blast and transmission line and all substation equipments remains unprotected.



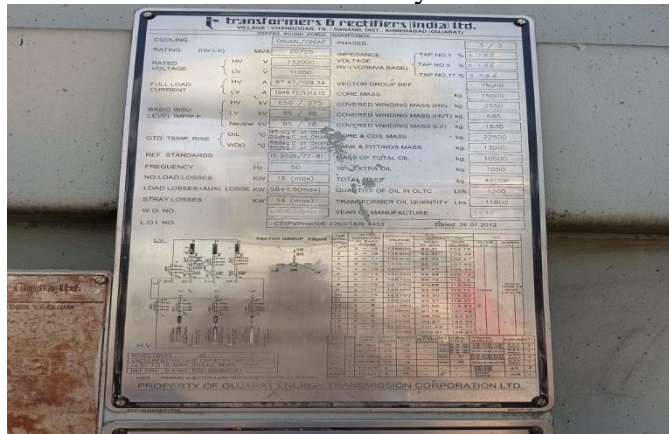
- Users** : GETCO and other transmission companies
- Expected Outcomes** : To find exact problem of lightning arrester blast.  
Solve blasting of lightning arrester.
- Impact** : By overcome this problem we can save cost of lightning arrester maintenance required, also we have better power transfer stability and huge saving in main hours.

- Problem ID:** : PID682  
**Challenge Title** : Auxiliary consumption is high in substation  
**Name of the Office** : GETCO  
**Challenge Description with context** : Lighting load in substation, battery charging, etc. Consume power



- Users** : GETCO and other transmission companies  
**Expected Outcomes** : Reduce power consumption of substation  
**Impact** : By using solar panel we can supply power to substation auxiliary consumption.

- Problem ID:** : PID683
- Challenge Title** : Power loss in substation due to light loading condition
- Name of the Office** : GETCO
- Challenge Description with context** : Due to light loading condition power loss occurs in transformer because core loss remains constant at any load.



- Users** : GETCO and other transmission companies
- Expected Outcomes** : Reduce power loss in transformer at light loading condition.
- Impact** : We can achieve high energy efficiency of transformer by disconnecting HV side.

## The Smart City Ahmedabad Development Ltd

- Problem ID:** : PID684
- Challenge Title** : Property Tax Collection
- Name of the Office** : The Smart City Ahmedabad Development Ltd
- Challenge Description with context** : Property Tax and Professional Tax collection are the two main sources of revenue via e-governance. However less than 1/3rd of all collections in Ahmedabad happen online. Can we increase this via a digital solution?
- Revenue Collection needs to be improved. Most people prefer to pay the tax due via cash or cheque via civic centers in person. This is a case of technology adoption and incentive creation. What more maybe done for this from a technology perspective.
- Users** : Citizens
- Expected Outcomes** : Better revenue collection
- Impact** : Better revenue collection
- 
- Problem ID:** : PID685
- Challenge Title** : Statutory information interchange with citizens
- Name of the Office** : The Smart City Ahmedabad Development Ltd
- Challenge Description with context** : Basic statutory information needs to be provided to citizens by law, however most of this information is scattered across websites and web portals of different departments. Can we improve access to this information?
- Data sharing with citizens needs to be improved. Right to information act 2005 requires the administration to maintain all records in a catalogued manner which facilitates the access to all records that are appropriate to the citizens. How can we provide better access to key records and information on work being done by the administration to the citizens via technology.
- Users** : Citizens and Administration
- Expected Outcomes** : More visibility
- Impact** : Better citizen trust

**Problem ID:** : PID686

**Challenge Title** : Data Sharing between departments

**Name of the Office** : The Smart City Ahmedabad Development Ltd

**Challenge Description with context** : Inter-departmental data sharing and overall city related data is not available readily for sharing within departments. Can we improve this?

Easier and effective data sharing between departments is the need of the hour. Currently there are several departments especially road works, engineering and solid waste management operate in a relatively siloed manner. Therefore, interfering in each other's work pattern. Can there be a common portal which informs the other department of the works being conducted by one department. Thereby making sure that the work of one department does not interfere with the other.

**Users** : Administrative departments

**Expected Outcomes** : Easy data availability

**Impact** : Better cohesiveness and coordination between departments

**Problem ID:** : PID687

**Challenge Title** : Digitization of documents

**Name of the Office** : The Smart City Ahmedabad Development Ltd

**Challenge Description with context** : Currently most documents are not digitized and are in paper format, some are digitized however they are poor replicas of the originals. This results in extensive dependency on physical documents. Can this be improved? How can a standard DMS be adopted to work within the system of the city administration?

Better digital representation of documents

**Users** : Citizens and departments

**Expected Outcomes** : Better documentation

**Impact** : Easier access to data for departments and citizens



**Problem ID:** : PID688

**Challenge Title** : Verification of documents

**Name of the Office** : The Smart City Ahmedabad Development Ltd

**Challenge Description with context** : Documents are not digitally signed in many departments leading to an issue with basic security and verification of documents. With physical documents and physical signatures with relatively little replication, the dependency on physical files is tremendous. Can this be reduced through some technology intervention which is easy to use at the same time is simple to execute so that it does not overburden the clerical staff in the departments.

Document verification and authenticity is extremely important. There needs to be better security

**Users** : Administration and Citizens

**Expected Outcomes** : Better veracity of documents

**Impact** : Digital documents or physical documents will be verifiable leading to better coordination

**Problem ID:** : PID689

**Challenge Title** : Citizen Grievance Redressal

**Name of the Office** : The Smart City Ahmedabad Development Ltd

**Challenge Description with context** : Currently we have a citizen grievance redressal system which escalates complaints based on a matrix, however work done on-ground may differ from what is stated, leading to miscommunication to the citizen. Is there a digital way to check on the work done on-ground by personal apart from physical inspection?

Better citizen service and better monitoring of work done on ground

**Users** : Citizens and relevant departments

**Expected Outcomes** : Better coordination between departments and performance-based delivery

**Impact** : Better municipal services

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<b>Problem ID:</b>	: PID690
<b>Challenge Title</b>	: Work monitoring based on stated SLA's
<b>Name of the Office</b>	: The Smart City Ahmedabad Development Ltd
<b>Challenge Description with context</b>	: How can contract related SLA's for work done be monitored effectively especially for civil or repair work or solid waste collection using innovative use of technology? Currently several projects are working without effective data sharing and data handling by the project vendors. This results in issues when penalties are to be applied to the vendors for work delays. Is there a way whereby the SLA's of any project can be mapped onto an online portal and automatic tracking of SLA's is provided so that penalization of the vendors for non-execution is smooth.  Currently expect for ad-hoc excel based monitoring, there is no common project monitoring platform. Leading to delays and little project mapping
<b>Users</b>	: Departments
<b>Expected Outcomes</b>	: Better project management
<b>Impact</b>	: Easier monitoring of SLA's

<b>Problem ID:</b>	: PID691
<b>Challenge Title</b>	: Citizen data privacy
<b>Name of the Office</b>	: The Smart City Ahmedabad Development Ltd
<b>Challenge Description with context</b>	<p>: Citizen data privacy is of great concern one of the reasons why citizens refrain from sharing data with government websites is the lack of security, how can we improve this scenario?</p> <p>How do we ensure that all data collected through various government sites is secure and is not fraudulently used. The bill also allows citizens to seek correction of inaccurate data or not allow the administration gathering of personal information and key personal data. Despite this the administration through its various projects is gathering multitudes of personal and verifiable data from its citizens without any consent. Can we provide the citizen a way to access his personal data gathered by the city administration and thereby ask for their consent on the same.</p>
<b>Users</b>	: Citizens
<b>Expected Outcomes</b>	: Better data security
<b>Impact</b>	: Better data security and user trust on the system
<b>Problem ID:</b>	: PID692
<b>Challenge Title</b>	: Improving usability of e-governance platforms
<b>Name of the Office</b>	: The Smart City Ahmedabad Development Ltd
<b>Challenge Description with context</b>	<p>: How can we improve the usability and reach of a e-governance platform providing services to citizens, even incentive schemes have failed to get citizens to use such platforms with most people preferring paper based physical transactions, how to improve it?</p> <p>Current usage trends of e-governance platforms is quite low, in the best of cases only 20-30% of all transactions come through online. How do we improve this through use of technology.</p>
<b>Users</b>	: Citizens
<b>Expected Outcomes</b>	: Better usage of e-gov platforms
<b>Impact</b>	: Easier access to municipal facilities for citizens

**Problem ID:** : PID693

**Challenge Title** : Provision of digital services to vernacular speakers

**Name of the Office** : The Smart City Ahmedabad Development Ltd

**Challenge Description with context** : Literacy rate in India is approx. 65% in rural India and 79% in urban India, of these the users of the English language are very limited majority of the users are that of the vernacular languages. How do we then propose to provide access to people of all literacy levels to existing and proposed e-gov solutions. Is there a way to educate the masses of the use of technology so that the city administration can get closer to the citizens on-ground issues and solve them.

A high percentage of speakers are of a vernacular language, usually applications are designed for users of English language, this leaves a large chunk of people unserved

**Users** : Citizens

**Expected Outcomes** : Better usage of e-gov systems and services

**Impact** : Further access to e-governance systems

**Problem ID:** : PID694

**Challenge Title** : Better provision of genuine online services

**Name of the Office** : The Smart City Ahmedabad Development Ltd

**Challenge Description with context** : When we talk of e-governance it is usually via an app or websites with payment integration for services or data provision. However, are these systems genuinely accessible to people. The smartphone penetration in India is only 27% of the population and internet users only 32%. Currently Therefore, how can we make these services more accessible? Is it possible to reach the masses via say use of e-kiosks or some other innovative solution which does not require a smartphone ownership and digital literacy on part of the citizen.

Lack of access to e-services to people without internet connection or smartphones/digital device

**Users** : Citizens

**Expected Outcomes** : Better availability of e-gov services

**Impact** : Better service availability and reach©

- Problem ID:** : PID695
- Challenge Title** : Online Services for different Municipal Certificates
- Name of the Office** : The Smart City Ahmedabad Development Ltd
- Challenge Description with context** : Basic services like Birth, Death and Marriage registration while in most places these details are accessible post registration. New certificates can also be issued easily post registration. However, first time registration is itself a tedious manual document-based task. Can this be digitized to improve services. there an elegant solution to the same?
- Can we register for services or request services online with the complete process mapped out without unnecessary paperwork, to make it more efficient?
- Users** : Citizens
- Expected Outcomes** : Citizens will get better online services experience
- Impact** : Service provision and ease of use will improve
- 
- Problem ID:** : PID696
- Challenge Title** : Geo-tagged AI based citizen complaint raising
- Name of the Office** : The Smart City Ahmedabad Development Ltd
- Challenge Description with context** : Is there a elegant solution for citizens to complain about basic facilities such as street light, bad roads, garbage collection etc, based on geo-tagging location mapping, feature recognition, so that the citizen would not need to fill in lengthy details about the issue. Currently we have a grievance redressal helpline, but that too necessitates that people call on a number and register their complaints. There may be issues with respect to information interchange with the operator hearing something else and raising a wrong complaint. Also citizens do not have full control and access to who will solve their issues on the ground, this leads to grievance to the citizens, can this be improved.
- Grievance redressal for citizens will be simpler
- Users** : Citizens
- Expected Outcomes** : Better grievance redressal
- Impact** : Citizens trust will be better on the corporation

- Problem ID:** : PID697
- Challenge Title** : E-challan payment
- Name of the Office** : The Smart City Ahmedabad Development Ltd
- Challenge Description with context** : Currently only 30-35% of all e-challans generated for traffic are being paid by the errant public. Can this be improved through a digital solution. The police generate several lakh challan everyday however due to manpower limitation they issue only a few thousand challans each day. This results in non-issuance of challan and thereby results in revenue loss, since older challans can always be disputed. Therefore, currently only 30% citizens actually end up paying challans that are issued to them. Is there a way to digitally improve challan generation and collection on part of the city police?
- Better e-challan collection
- Users** : City Traffic Police
- Expected Outcomes** : Higher collections
- Impact** : Better traffic law following
- 
- Problem ID:** : PID698
- Challenge Title** : SOS provision of violent crime
- Name of the Office** : The Smart City Ahmedabad Development Ltd
- Challenge Description with context** : Currently the cameras deployed in the city are based for non-AI surveillance which will allow for checks only post event. However, is there a solution to provide SOS services (police, ambulance, fire) coordinated while the event (eg: riots, kidnapping, violent crime) is happening on-ground
- SOS provision against crime
- Users** : Citizens and First responders
- Expected Outcomes** : Better SOS provisioning
- Impact** : Safer citizens

- Problem ID:** : PID699
- Challenge Title** : Legal Monetization of data
- Name of the Office** : The Smart City Ahmedabad Development Ltd
- Challenge Description with context** : The city administration collects huge amounts of disparate data from various sources. Can this data be monetized without hampering the privacy of the citizens. Even if it cannot be monetized can it be collected in a data portal for general and scholarly use.
- Access and Monetization of data
- Users** : Citizens and scholars
- Expected Outcomes** : Easier access to city data
- Impact** : Better data access leads to better planning, possible monetization will bring revenues
- 
- Problem ID:** : PID700
- Challenge Title** : Road status through mobile app
- Name of the Office** : The Smart City Ahmedabad Development Ltd
- Challenge Description with context** : One of the major challenges of the citizen is the status of the roads and non-mending of existing potholes. Is there a way to create an application that when run will capture the pothole data which can then be mapped and then provided to the relevant authorities for rectification.
- Can we have access to pothole related road status through mobile app
- Users** : Citizens and Civic Administration
- Expected Outcomes** : Better mapping of road situation and targeted deployment of resources
- Impact** : Better utilization of resources

**Problem ID:** : PID701

**Challenge Title** : Medical data sharing for planning

**Name of the Office** : The Smart City Ahmedabad Development Ltd

**Challenge Description with context** : Currently there are many patients admitted to government hospitals similarly there are several health-related interventions that are done by the municipality. However, these are mostly siloed operations with very little visibility during running these schemes. Is there a way whereby medical disease related data can be captured at source in order to define intervention objectives. Can there be a coordinated response to medical outbreaks like the current coronavirus outbreak so that it can be nipped in the bud and measures can be taken against such issues.

Health related interventions can be better monitored, and resources better deployed

**Users** : Administration

**Expected Outcomes** : Better planning for health-related interventions

**Impact** : Better resource deployment

**Problem ID:** : PID702

**Challenge Title** : Student learning data mapping

**Name of the Office** : The Smart City Ahmedabad Development Ltd

**Challenge Description with context** : Currently most municipal schools are operating in the paper and blackboard model. While there is an intervention planned for smart schools, it is based on provision of digital learning devices and limited to standards 6-8, is there a better solution so that student learning can be mapped, and accordingly tailored training can be provided to specific students. There might be several students that require special training and services, how may we map such students and provide these facilities to them.

Better student learning curve being mapped accordingly study plans developed

**Users** : Students and teachers of Municipal schools

**Expected Outcomes** : Better student management

**Impact** : Student learning data management



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<b>Problem ID:</b>	: PID703
<b>Challenge Title</b>	: Better provision of economic grant to citizens in need
<b>Name of the Office</b>	: The Smart City Ahmedabad Development Ltd
<b>Challenge Description with context</b>	: NITI Aayog recently reported that 28% of 31 lakh accounts of maternity benefits were credited to the wrong accounts. 1 out of 3 Aadhar based payments were credited to the wrong account in PMMVY. They also stated that only 60% were aware of the credit that the accounts had received money. This has a ripple effect on the city administration that needs to implement these services, is there a digital intervention that will improve this. Better provision of economic grants.
<b>Users</b>	: Citizens and Administration
<b>Expected Outcomes</b>	: Correct provision of economic grant to the right people
<b>Impact</b>	: Better citizen grant provisioning

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### Ajarakh Dyeing Unit, Dhamadka

<b>Problem ID:</b>	PID704
<b>Challenge Title</b>	: Improve the Dying Process in Kutch District (Excess Iron in the Water)
<b>Name of the Industry</b>	: Ajarakh Dyeing Unit, Dhamadka
<b>Challenge Description with context</b>	: Due to worsening of groundwater, excess iron is found after 2001 Kutch earthquake. Excess iron in ground water creates a black dot when fabric is washed as a part of dying process. This spoils the whole fabric.
<b>Users</b>	: All Garment users
<b>Expected Outcomes</b>	: Such water resources plant should be established which can reduce the iron in ground water.
<b>Impact</b>	: Dyed fabric will not get black spot while dying process. And a clear beautiful dye fabric we will get.

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## **BrainyBeam Technologies Pvt. Ltd**

<b>Problem ID:</b>	PID705
<b>Challenge Title</b>	: Mentor- An education support portal for the remote location
<b>Name of the Industry</b>	: BrainyBeam Technologies Pvt. Ltd
<b>Challenge Description with context</b>	: An online education portal is a service, platform, or site that focuses on information about educational fields, communication between individuals or groups interested in sharing study knowledge, ideas, knowledge of events conducted in different institutions. And mainly in this educational portal there is seamless integration with all the educational resources in order to greater communication with beginner to expert. Simply we can specify this educational portal as knowledge or information bridge from where it's user can pass and reach to their ultimate educational destination and if they stuck in the way somewhere, they can get help as possible as fast.
<b>Users</b>	: Students, Industry expert, Lecturers, Domain Experts, Research Scholars, Admin
<b>Expected Outcomes</b>	: With the help of this application Students are able to find the appropriate mentors who are willing to help them in solving the problems or guide them in the particular domain.
<b>Impact</b>	: With the help of this application students are easily able to find the domain experts even of they are living in a remote location or there is an unavailability of the expert in that particular geographical location.

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### CESS Automation, Ahmedabad

<b>Problem ID:</b>	PID706
<b>Challenge Title</b>	: Sudden Blast in variable frequency Drive
<b>Name of the Industry</b>	: CESS Automation, Ahmedabad
<b>Challenge Description with context</b>	: When operating any induction motors with variable frequency drive, sudden blast observes at the time of switching on low tension supply.
<b>Users</b>	: Industries
<b>Expected Outcomes</b>	: Problem solution
<b>Impact</b>	: Change the manufacturing process

<b>Problem ID:</b>	PID707
<b>Challenge Title</b>	: Operation cycle of Variable frequency drive disturbs.
<b>Name of the Industry</b>	: CESS Automation, Ahmedabad
<b>Challenge Description with context</b>	: In case of variable frequency drive form any application, when connected to a load to supply power , many times it is observed that operation cycle (timing for particular process to complete) disturbs(either elongates or contracts). So quality of product disturbs.
<b>Users</b>	: Industries
<b>Expected Outcomes</b>	: Problem solution
<b>Impact</b>	: Change the manufacturing process

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## **Dipti Glass work**

<b>Problem ID:</b>	PID708
<b>Challenge Title</b>	: Marketing and Digital Marketing Strategies for Effective market penetration
<b>Name of the Industry</b>	: Dipti Glass work
<b>Challenge Description with context</b>	: To resolve the problem at a entry level in convincing the customers to buy products instead of existing vendors. The pinch point of the Industry is how the newly emerging company can penetrate the market effectively and sustain in the market.
<b>Users</b>	: All new emerging Industries
<b>Expected Outcomes</b>	: The newly emerging businesses and start-ups will establish and scale up in market.
<b>Impact</b>	: Industries facing similar issues will have an effective solution of market penetration.

## Nilkanth Dental Care Hospital

<b>Problem ID:</b>	PID709
<b>Challenge Title</b>	: Accuracy challenge with the APEX Locator in dental treatment.
<b>Name of the Industry</b>	: Nilkanth Dental Care Hospital
<b>Challenge Description with context</b>	: The final part of our teeth is called the apex. Cleaning is necessary after several dental procedures in order to prepare for the next step. It must be cleaned thoroughly to prevent the development of additional dental issues. We can determine whether the apex was successfully cleared or not by using an APEX locator. But because of its poor accuracy, we must use X-rays to check the apex (called IOPA). Both patients and doctors receive significant X-ray doses as a result of this. To avoid using X-ray technology, we wish to make the APEX locator's reading on the display more accurate.
<b>Users</b>	: Dentist
<b>Expected Outcomes</b>	: APEX Locator produces superior outcomes when it is accurate and can do it without using X-ray technology.
<b>Impact</b>	: Avoiding X-ray use helps both patients and clinicians reduce their exposure to excessive doses of X-rays.

<b>Problem ID:</b>	PID710
<b>Challenge Title</b>	: Humming problem generated in RLC filter in Solar charge controller
<b>Name of the Industry</b>	: Nilkanth Dental Care Hospital
<b>Challenge Description with context</b>	: While using solar LED during night time, we are getting continuous humming issue. Due to this problem sometimes coil gets burn due to excess hit. Also, it can be blasted.
<b>Users</b>	: <ul style="list-style-type: none"> <li>• Solar LED users,</li> <li>• Domestic and industrial users.</li> </ul>
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• We can protect circuit from blast.</li> <li>• Battery life and backup can be improved.</li> <li>• System efficiency can be improved.</li> <li>• Overall performance can be improved.</li> </ul>
<b>Impact</b>	: <ul style="list-style-type: none"> <li>• Will enhance the safety feature in the system</li> <li>• Will increase adaptability in domestic and industrial applications.</li> </ul>

## Kirtan Technologies.

<b>Problem ID:</b>	: PID711
<b>Challenge Title</b>	: IoT Controlled Sprinklers Control system for Solar Systems
<b>Name of the Industry</b>	: Kirtan Technologies.
<b>Challenge Description with context</b>	: Need to have one Sprinklers Control system which have Followings: <ul style="list-style-type: none"> <li>• Multi-Port Solenoid Control System (Up to 16)</li> <li>• Motor Protection</li> <li>• Water Level Sensors Input.</li> <li>• Mobile App Controlled</li> <li>• WiFi / GSM</li> <li>• Network synced RTC</li> <li>• Programmable Week Days</li> <li>• Start Time Programmed</li> <li>• Dry Day Calendar Support</li> <li>• Online Weather Control</li> <li>• Setting for skipping if rain.</li> </ul>
<b>Users</b>	: Anyone with Solar Rooftop System
<b>Expected Outcomes</b>	: Automation of solar washing system
<b>Impact</b>	: Water can be conserved. Maximum Solar energy can be extracted. Alert on mobile for Errors.
<b>Problem ID:</b>	: PID712
<b>Challenge Title</b>	: Asset tracking over Bluetooth Mesh network
<b>Name of the office</b>	: Kirtan Technologies
<b>Challenge Description with context</b>	: Design of the Hardware modules to support Bluetooth Mesh network. Firmware for the Bluetooth Mesh network ,Hardware for Asset tag having Bluetooth radio.(BLE-Beacon) The asset tracker requires location information. The bluetooth-ble based mesh network can provide this information for the small scale network. Further this is a very low power solution compared to GPS based solution.
<b>Users</b>	: Industry, Scientists, Application Enables, Warehouse holders, Farmers (Animal tracking), Wild animal monitoring
<b>Expected Outcomes</b>	: Design of the Bluetooth -BLE module hardware Design of the BLE-Beacon Tags Design of the firmware to support bluetooth-ble Mesh.
<b>Impact</b>	: Low power asset tracking in remote or no-coverage area

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<b>Problem ID:</b>	: PID713
<b>Challenge Title</b>	: Low-cost HMI
<b>Name of the office</b>	: Kirtan Technologies
<b>Challenge Description with context</b>	: Design of Low-Cost HMI using TFT capacitive multi-touch screen and Low cost micro-controller. 2. Providing 32-mbyte storage 3. Modbus Master or Modbus Slave over RS-485. 4. Minimize production cost Modbus is de-facto open-source machine communication protocol. If we provide Low-cost HMI over modbus, many machine manufactures can be benefited. Currently, capacitive touch based HMI are too costly for small machine manufacturers.
<b>Users</b>	: Industry, Scientists, Application Enablers, Machine Manufactures.
<b>Expected Outcomes</b>	: Designing the Hardware with Capacitive multi-touch HMI solution Firmware
<b>Impact</b>	: Enable cost-effective solution for small scale machine manufacturers



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### Maruti infracreation Pvt. Ltd.

<b>Problem ID:</b>	PID714
<b>Challenge Title</b>	: Storm Water Management (Underpass at Ahmedabad-Mehsana-Palanpur road (SH-41) Modhera circle, Mehsana.)
<b>Name of the Industry</b>	: Maruti infracreation Pvt. Ltd.
<b>Challenge Description with context</b>	: The Drainage is main problem in all underpasses in different condition when the water enters the underpass. It may be due to rain or any other circumstances. It is entrapped in it and takes so much time to drain the water. It causes mobility problem in the underpass at that time. Because of this traffic problem, users choose long run.
<b>Users</b>	: Public transport, private vehicles, commercial vehicle, Transport vehicle, etc.
<b>Expected Outcomes</b>	: Possible solution- Surrounding topography, Road gradient, population data, rainfall data of previous year, sewer network analysis and improvement in pump capacity is to be studied to solve this problem. Also, vacuum sewerage system, kerb drain system, improvement in sewer network is the most important possible solution for fight against storm water.
<b>Impact</b>	: It creates traffic congestion in other roads which makes travel slower than usual. Emergency Services are affected.

## Keni construction

<b>Problem ID:</b>	PID715
<b>Challenge Title</b>	: To solve the problem in disposal of concrete waste material
<b>Name of the Industry Challenge Description with context</b>	: Keni construction  : Demolition of existing building creates a lot of construction waste. This construction waste consists of different materials like concrete, bricks, and reinforcement bars. The disposal of this waste is done at the dumping site. The degradation of this materials is not possible in the shorten period of time because it will take more time to degrade. Currently, there is not solution of reusing this construction waste. It is necessary to consider this problem on priority Basis.
<b>Users</b>	: This can be useful to the engineers. This can be useful to contractor. This can be useful to society. This can be useful to road & building department. This can be useful to students. This can be useful to public work department. This can be Useful to the people.
<b>Expected Outcomes</b>	: By solving this problem of construction waste disposal, we can reuse this concrete as a dumping material in filling of ground to improve the soil properties. We can reuse the construction waste by separating the aggregates from the construction concrete waste, which can thereby used in concreting work again. We can reuse construction concrete waste for construction of approach road for different construction project. We can reuse construction concrete Waste as base layer for construction of road.
<b>Impact</b>	: The development progress in construction industries have the great effects to the environmental especially in environmental change and waste produced. One of the causes of the construction waste is natural resources use exceeding what is required in construction process. Construction material waste refers to the materials from the construction location that cannot be used for construction purposes and must be removed for any reasons. Beside effects on the cost, Construction waste also affects to the environmental.

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**Power control Limited, Gundlav Valsad.**

<b>Problem ID:</b>	PID716
<b>Challenge Title</b>	: Distribution transformer Protection
<b>Name of the Industry</b>	: Power control Limited, Gundlav Valsad.
<b>Challenge Description with context</b>	: In distribution transformer only fuses are provided for protection. It is needed to strengthen protection while fitting appropriate relay and protection system with taking care of consumer leakage current and improvement of power factor. The distribution transformer relay protection and coordination should be updated considering V2G and G2V operation of Electrical Vehicle. Ring Mains system should also be corrected looking EV Penetration into grid.
<b>Users</b>	: Power system operation Engineers
<b>Expected Outcomes</b>	: The bidirectional relay and ringmain system upgradation will help the future protection system and Generation, Distribution and Transmission based companies
<b>Impact</b>	: Whole protection system upgradation with welcoming new technology of EV penetration into Indian power grid.

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### D. B. Engineer, Surat

<b>Problem ID:</b>	: PID717
<b>Challenge Title</b>	: Condensate willer utilisation
<b>Name of the Industry</b>	: D .B. Engineers, Surat
<b>Challenge Description with context</b>	: So, every refrigeration system has condensate water as a by-product, that are many much water are being wasted. so we can get enue waeey to use it for different purpose.
<b>Users</b>	: Any kind of refrigeration system
<b>Expected Outcomes</b>	: To utilize water for further uses and benefits
<b>Impact</b>	: To save watsted water that can be used it

<b>Problem ID:</b>	: PID718
<b>Challenge Title</b>	: To make a light weight O.D.U compare to current O.D.U
<b>Name of the Industry</b>	: D. B. Engineers, Surat
<b>Challenge Description with context</b>	: Today's outdoor units are heavy, so it is hard to installation. there is high accidental during installation so that makes costing of Outdoor unit high.
<b>Users</b>	: All type of HVAC systems, Commerical, Residential.
<b>Expected Outcomes</b>	: Reduce accident ,also reducing cost and material wastage
<b>Impact</b>	: Easy to install and transport

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## **NITREX**

- Problem ID:** PID719
- Challenge Title** : Online attendance or presence monitoring system.
- Name of the Industry** : NITREX
- Challenge Description with context** : In our Industry thumb impression is used to monitor attendance of Industry persons. We are looking for a better solution where the attendance can be monitored more effectively, and time and motion study analysis can be also done effectively. The monthly attendance record can be generated automatically from daily records and management concept time and motion study can be effectively implemented. With IOT based or any other system the attendance should be displayed in mobile of authority.
- Users** : Institution, Industry etc.
- Expected Outcomes** : Effective supervision process will be built up for best outcomes.
- Impact** : A real Implementation of time and motion study concept of management.

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## **Believer Renewal Energy**

<b>Problem ID:</b>	PID720
<b>Challenge Title</b>	: Renewable energy dissemination app in regional language
<b>Name of the Industry</b>	: Believer Renewal Energy
<b>Challenge Description with context</b>	: Ministry of New and Renewable Energy (MNRE) is providing different schemes for the farmers. Develop a app to provide this information in regional languages to the farmers. So farmers can take advantage of the schemes.
<b>Users</b>	: Farmers
<b>Expected Outcomes</b>	: Renewable energy dissemination app in regional language
<b>Impact</b>	: Outreach of scheme will increase and farmers get benefits

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## ELLO Design - Furniture Design & Manufacturing

- Problem ID:** : PID721
- Challenge Title** : Workspace organisers made out of manufacturing waste
- Name of the Industry** : ELLO Design - Furniture Design & Manufacturing
- Challenge Description with context** : Industrial manufacture of furniture results in wastage of materials. This wastage ranges between 5 upon the design and the raw material used to manufacture the furniture. The raw material typically comprises solid and engineered wood procured in sections and sheets, respectively.  
The goal is to design and manufacture organisers that could be made out of the wastage that emerges from this process and could be put into daily use.
- Users** : The targeted users are students and office workers who spend a time between 2 - 8 hours of their daily time on their work desks and making organisers which ease their activities during this time.
- Expected Outcomes** : The outcomes could range from organisers, stands and accessories that aid the workspace.
- Impact** : This challenge could reduce the end wastage generated by a manufacturing facility. This shall also reduce the new material that could have otherwise been used in the manufacture of the accessories. This shall also help in crafting more designed products which are designed to aid workspaces.

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## Navi Energy Surat

<b>Problem ID:</b>	PID722
<b>Challenge Title</b>	: Smart and effective operation and control of Solar PV Plants
<b>Name of the Industry</b>	: Navi Energy Surat
<b>Challenge Description with context</b>	: <p>The effective operation of photovoltaic systems depends on many factors and parameters that must be continuously monitored. These factors make it very difficult to predict the amount of radiation that will reach photovoltaic panels and can be converted into electricity. Therefore, to optimize the operating point of a photovoltaic power plant, it is necessary to track the changes in these quantities. IoT systems may help in controlling and managing a power plant, storage, and energy flow to the power grid.</p> <p>The applications of IoT in renewable energy production involve sensors that are attached to the generation, transmission, and distribution equipment. These devices help companies monitor and control the working of the equipment remotely in real-time. It causes a reduction in operational costs and lowers our dependence on the already limited fossil fuels. The use of renewable energy resources already provides several perks over conventional ones. The implementation of IoT helps to avail of these clean energy sources to a further extent. We expect the solution in above domain with cost economy, efficiently and effectively.</p>
<b>Users</b>	: Residential, Commercial, Industrial etc
<b>Expected Outcomes</b>	: IOT based Make in India based solution with appropriate cost and effective and efficient working will enhance energy efficiency.
<b>Impact</b>	: Energy efficiency enhancement with effective monitoring and control



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## Vaani Engineering Works, Vapi

<b>Problem ID:</b>	PID723
<b>Challenge Title</b>	: Conventional tool with all properties of special tool used for CNC
<b>Name of the Industry</b>	: Vaani Engineering Works, Vapi
<b>Challenge Description with context</b>	: We are using CNC machine for making mould of injection moulding from different material. The material used for mould is hardened. We have to do initial sizing of mould on Lathe machine followed by final machining on CNC. The customized tools are available for CNC as an option to lathe machine but due to its very high cost, these CNC tooling are not economical compare to conventional lathe roughing operation. Give solution which may incorporate custom make or conventional tool for initial sizing of mould which are economical compare to conventional lathe. This can reduce the machine change over time and increase the productivity.
<b>Users</b>	: All Mould manufacturing industry.
<b>Expected Outcomes</b>	: Design conventional CNC tool with require strength.
<b>Impact</b>	: Customized tools are very costly which will increase the final cost of the product. On the same way if sizing is done on lathe, then it will increase overall cost and time of manufacturing the mould. If we get the conventional tooling with same properties as special tooling then it will beneficial to industry.

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**Kachhua Solutions Pvt Ltd.**

<b>Problem ID:</b>	PID724
<b>Challenge Title</b>	: Voice Translation Portal
<b>Name of the Industry</b>	: Kachhua Solutions Pvt Ltd.
<b>Challenge Description with context</b>	: To develop an portal which takes mic audio as input and realtime translates it to text to later create chosen language translated audio file as output.
<b>Users</b>	: Any Educationalist or Content creator
<b>Expected Outcomes</b>	: First creation of video or audio content in regional and international language.
<b>Impact</b>	: Will enhance the safety feature in the system Will increase adaptability in domestic and industrial applications.

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## **Gajanand IT Solutions**

**Problem ID:** PID725

**Challenge Title** : Auto Ambulance

**Name of the Industry** : Gajanand IT Solutions

**Challenge Description with context** : It is the 21st century and we are still managing ambulances on phone calls, we can automate it with Android App and use GPS to track.

**Users** : Patient, People, Doctor

**Expected Outcomes** : Any one can search available ambulance near by him/her and call for emergency.

**Impact** : Reduce damage on emergency

## Teksun Microsys Private Limited

<b>Problem ID:</b>	PID726
<b>Challenge Title</b>	: Monitoring crop health by NDVI camera.
<b>Name of the Industry</b>	: Teksun Microsys Private Limited
<b>Challenge Description with context</b>	: NDVI camera monitors the crop health by capturing the image from farm. Once image have uploaded to the web app, it will automatically process into NDVI Database which will provide the insights of farming area. Explore different types of Camera and Camera filters. Image processing of camera, separate images, merge required image for NDVI processing. Calculate NDVI image and index. This device helps you to evaluating soil productivity and analyzing plant health.
<b>Users</b>	: Farmers and agricultural industry
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"> <li>• Project help farmers to get maximum output from the farm by proper analysis of the farm.</li> <li>• We get better quality of crop, farmers can save their time and also increase crop yield.</li> <li>• The Farmers and agricultural industry, the users are informed about everything before harvest.</li> <li>• Geographic location, plant population, soil fertility is monitored. Benefits to both, the farmers and the environment.</li> </ul>
<b>Impact</b>	: <ul style="list-style-type: none"> <li>• Offers broad benefits to both, the farmers and the environment by minimizing the use of sprays, fertilizers, wastage of water. Increasing the yield from crops</li> <li>• Our Crop Health Monitoring keeps monitoring the state of the crops. It helps a farmer to improve the farm's conditions.</li> <li>• Get alert every time in case of any abnormalities. This enables the farmer to make well-informed agricultural decisions.</li> <li>• Zoning lets you know high productivity zones and find the weak points in the area that need special treatment.</li> <li>• It helps farmers and growers to monitor both the crop rotation patterns and the current vegetation rates.</li> </ul>

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<b>Problem ID:</b>	PID727
<b>Challenge Title</b>	: Geofencing for farming, agriculture, school bus and fisherman rescue
<b>Name of the Industry</b>	: Teksun Microsys Private Limited,
<b>Challenge Description with context</b>	<p>: GPS technology can be programmed to create landmarks and geofencing around specific geographic locations. This information can be used to zone specific areas of a farm to provide information regarding crop yields and we can be used to determine how well a particular crop is or isn't performing. Information regarding the nutrient quality of the soil, the amount of fertilizer the crop is using, and any treatments it has undergone for pests can be recorded and used for future planting.</p> <p>GPS tracking and monitoring devices can simplify agricultural and farming tasks such as: Cultivating, Fertilizing, Pest Control, Harvesting.</p> <p>Geo-fencing can help you differentiate between cultivated fields. You can set each crop field up with a uniquely colored geo-fencing. This is useful in tracking crop yields and crop rotation. It can also help you track activities performed on these crop fields—if they have been harvested, undergone pest control, or if they are ready for plowing.</p> <p>If authorities want students to commute to and from the school by the school bus, they must take full responsibility for the children's safety. This is where it becomes imperative for the buses to have tracking systems. GPS technology enables fleet managers to stay updated on the real-time positions of all the buses. Geo-fencing takes fleet management one step further.</p> <p>In child safety module, nowadays child safety is very important. By this application parent can track child location and when child will enter into college campus and when child will leave from college campus, parent will get notification according to that.</p> <p>Fishermen go for fishing near international border like India-Pakistan border. Sometimes fishermen cross international border and patrolling international county's agencies arrest them and they kept into prison for many years. For avoiding this problem, proposed application help to continuously track moving location of fisherman and alert to fisherman before some predefined distance from international border.</p>
<b>Users</b>	: Farmers, Agriculture Industry, School Bus Security and Fishing Industry.
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• Target Specific Areas Needing Crop Dusting</li><li>• Geo-fencing and Landmarks Used to Monitor Crops</li><li>• Track Performance of Vehicles</li></ul>

- Save Fuel
- Instant Alerts
- Security of Assets
- Easier Fleet Management
- Control Driving Speeds
- Simpler Scheduling of Pick Ups and Drops
- Makes it Easier for Schools to Ensure Children’s Safety
- The absence of a physical boundary and lack of proper demarcation leaves small fishing boats and trawlers susceptible to illegally crossing territorial waters.
- To officially determine the maritime boundary between the two nations

Most local fishermen possess no navigational tools and are unable or incapable of determine their location by longitudes or latitudes.

### Impact

- It’s tough to manually calculate the area ploughed, cultivated, fertilized, harvested or worked upon. With automation, we ensure precise calculations and discard discrepancies in data.
- Real-time visibility increases the security of valuable equipment and vehicles on the field.
- Get real-time visibility of vehicles, equipment, and workers on one platform. Monitor their movement remotely. Fetch the exact lat-long of their location along with status and work reports.
- Geo-fencing plays a crucial role in defining a virtual secure zone for assets. Other use cases include - separating lands, fencing off areas that shall not be encroached, or leaving alone the area where cattle graze.
- Having students travel by school bus is convenient for parents and it makes it easier for the school to manage traffic outside its gates. To encourage parents to send their children to school by bus, schools must be able to reassure parents of their student’s safety while they commute. GPS tracking and geo-fencing helps schools do this without adding to the workload of fleet managers.

This can be done by geo-fencing concept of location-based service. If fisherman carries Smartphone with GPS service, he can track location continuously. By keeping location of fisherman as centre of geo-fence, one circle will be created. Suppose radius of geo-fence is 10 Km, when user will be 10 Km far from international border, at that time circle of geo-fence will coincide border and trigger will fire so fisherman will get notification or alert which will indicate “You are moving towards international border, Be safe”.

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**Sunlight Infra Energy Pvt. Ltd.**

<b>Problem ID:</b>	PID728
<b>Challenge Title</b>	: Inverter mal functioning
<b>Name of the Industry</b>	: Sunlight Infra Energy Pvt. Ltd.
<b>Challenge Description with context</b>	: During bad weather, Inverter unable to supply power as per requirement. Also problem of harmonic contents in supply.
<b>Users</b>	: Residential and Industrial
<b>Expected Outcomes</b>	: Non intermittent and good quality power generation and supply.
<b>Impact</b>	: Reliable electrical power.

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### **Pratibha Engineering Services Pvt. Ltd.**

<b>Problem ID:</b>	PID729
<b>Challenge Title</b>	: Frequent tripping of one phase out of 3 phase.
<b>Name of the Industry</b>	: Pratibha Engineering Services Pvt. Ltd.
<b>Challenge Description with context</b>	: Due to heavy and variation in load , there is frequent tripping of one phase out of 3 phases occurs which creates undesirable system for use.
<b>Users</b>	: Industrial and Commercial
<b>Expected Outcomes</b>	: Reliable Power Supply.
<b>Impact</b>	: Safety of Electrical appliances and replacement cost reduces.



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## Vertical Transportation Industry

<b>Problem ID:</b>	PID730
<b>Challenge Title</b>	: Automated Fault Diagnosis and Resolution Circuit
<b>Name of the Industry</b>	: Vertical Transportation Industry
<b>Challenge Description with context</b>	: Elevators have a frequent breakdown and could take hours for a field technician to diagnose such fault. We are looking to develop a programmable circuit which can find and rectify plausible faults automatically.
<b>Users</b>	: Solvo Elevators Private Limited
<b>Expected Outcomes</b>	: Almost negligible time in fault finding and elevators can become more efficient.
<b>Impact</b>	: Industry revolutionising technology. Almost Zero Breakdowns

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### NIVIDATA Consultancy, Ahmedabad.

<b>Problem ID:</b>	PID731
<b>Challenge Title</b>	: File Management System
<b>Name of the Industry</b>	: NIVIDATA Consultancy, Ahmedabad.
<b>Challenge Description with context</b>	: A file management system is used to keep track of and organize files. It is a type of software that helps keep track of files on a computer. A file management system has limited features and is made to handle special office documents and records for one person or a group.
<b>Users</b>	: Any office (Government or Non-Government)
<b>Expected Outcomes</b>	: Easy to use and maintain the file records.
<b>Impact</b>	: Will increase the transparency among the users/citizens of the country.

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## Synchroics Pvt Ltd, Vadodara

<b>Problem ID:</b>	PID732
<b>Challenge Title</b>	: Ribboning issue during random winding.
<b>Name of the Industry</b>	: Synchroics Pvt Ltd, Vadodara
<b>Challenge Description with context</b>	: Ribboning (a yarn package defect to be occurring during yarn winding process, in which the yarn coils get laid on the top of the previous yarn coil) is most common problem during Random winding. Attempt to be made in developing new mechanism for random yarn winding to avoid certain traverse ratios during course of package formation to minimize this issue.
<b>Users</b>	: Industries
<b>Expected Outcomes</b>	: Problem solution
<b>Impact</b>	: Change the manufacturing process

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## Megna Electronics, Pune

<b>Problem ID:</b>	PID733
<b>Challenge Title</b>	: Overvoltage Mitigation Techniques for PV Grid
<b>Name of the Industry</b>	: Megna Electronics, Pune
<b>Challenge Description with context</b>	: While integration of renewable energy sources with the single phase grid, overvoltage problem is very common. Due to overvoltage , there are many problems happened related to power quality
<b>Users</b>	: Industries
<b>Expected Outcomes</b>	: Solution for Overvoltage issue.
<b>Impact</b>	: Power quality improvement.

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## **Sopan InfoTech**

<b>Problem ID:</b>	PID734
<b>Challenge Title</b>	: 3D Printing Technology
<b>Name of the Industry</b>	: Sopan InfoTech
<b>Challenge Description with context</b>	: Conventional manufacturing has become a refined and incredibly efficient process over the years. They are a huge issue for the environment. 3D printing may simply be too expensive for a few more years to come, as processes are not developed and modernized enough. For example, metal printers required by big companies can Easily cost tens of thousands of rupees. The process is slow, And costly. The time taken to 3D print depends on the number of layers that need to be printed, and the speed of the printer Itself. Even the best 3D printers can only build between 5 and 40 cm per hour. Our challenge is to reduce cost and time to Manufacturer the component.
<b>Users</b>	: Industry, Research Person, Higher Study institute
<b>Expected Outcomes</b>	: Low cost printing
<b>Impact</b>	: Change the manufacturing process, decrease complication and get better time-to-market.

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## Rungta dying mill

<b>Problem ID:</b>	PID735
<b>Challenge Title</b>	: Hot water generation (A non-conversional way)
<b>Name of the Industry</b>	: Rungta dying mill
<b>Challenge Description with context</b>	: The textile industries are using hot water ranging from 50°C to 65°C for dying and drying of the cloths. The most of the industries are using boiler to fulfil the hot water demand. The space requirement for boiler installation and fuel storage is the biggest concern of small size industry. With increase in fuel cost and inefficient combustion the boiler become most expensive unit for the industry. It also causes the air pollution.
<b>Users</b>	: Textile industry, chemical industry, beverage industry, food industry.
<b>Expected Outcomes</b>	: The hot water must be produced such that it will be available during whole day. The environment is not affected and save the fuel.
<b>Impact</b>	: Reduce the dependency on conventional fuel and save the environment. Also reduce the cost of hot water generation. Saves the floor space in the industry.

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## Venus Equipment Mehsana

<b>Problem ID:</b>	PID736
<b>Challenge Title</b>	: Air stuck issue in 110HP BS IV engine
<b>Name of the Industry</b>	: Venus Equipment Mehsana
<b>Challenge Description with context</b>	: Air flow in 110HP BS IV engine is stuck sometime in flow path and clogging in flow line create problem running in engine and reduce efficiency in engine.
<b>Users</b>	: Construction industry and subsequent process owners.
<b>Expected Outcomes</b>	: Increase efficiency in engine
<b>Impact</b>	: Environment and Energy Saving

<b>Problem ID:</b>	PID737
<b>Challenge Title</b>	: Diesel exhaust fluid issue in BS IV engine
<b>Name of the Industry</b>	: Venus Equipment Mehsana
<b>Challenge Description with context</b>	: Diesel exhausts fluid issue in BS IV engine and reduce efficiency of engine.
<b>Users</b>	: Construction industry and subsequent process owners.
<b>Expected Outcomes</b>	: Increase efficiency in engine
<b>Impact</b>	: Environment and Energy Saving

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## Vaibhav Cement Product

<b>Problem ID:</b>	: PID738
<b>Challenge Title</b>	: Reducing cost of cement product without affecting the strength of properties
<b>Name of the Industry</b>	: Vaibhav Cement Product
<b>Challenge Description with context</b>	: Cost is a main factor of any types of product in construction industries if the cost is low then it is beneficial for society
<b>Users</b>	: Consumers & society
<b>Expected Outcomes</b>	: Without affecting the strength of cost is reduce using byproduct of material in concrete hence the cost of production reduce and strength remain same in cement production
<b>Impact</b>	: Cement consumption is reduce, by product of any material use in concrete hence the environment pollution will be less



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**Austin engineering Co. Ltd.**

<b>Problem ID:</b>	: PID739
<b>Challenge Title</b>	: Inner and outer race run out.
<b>Name of the Industry</b>	: Austin engineering Co. Ltd.
<b>Challenge Description with context</b>	: The maximum axial or radial race wall thickness variation of an inner or outer bearing race. Run out influences the repeatable location variation of rotating components.
<b>Users</b>	: Automobile and concerned industries.
<b>Expected Outcomes</b>	: <ol style="list-style-type: none"><li>1. To reduce run out up to acceptance level.</li><li>2. To ensure smooth running of bearing without noise and vibration during its application.</li></ol>
<b>Impact</b>	: <ol style="list-style-type: none"><li>1. Lower injection rate.</li><li>2. Customer satisfaction.</li><li>3. Financial savings.</li></ol>

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## Leaf Drive IT Solution

<b>Problem ID:</b>	: PID740
<b>Challenge Title</b>	: Extracts Text from Images
<b>Name of the Industry</b>	: Leaf Drive IT Solution
<b>Challenge Description with context</b>	: Detect and retrieve information from images like financial data, reported tables which enable us to detect text, identify sensitive information, Extract financial information from financial documents.
<b>Users</b>	: CA, Wherever Audit Required
<b>Expected Outcomes</b>	: Make an app or software detect and retrieve information from images like financial data, reported tables and save text in given format of table.
<b>Impact</b>	: It will reduce time retrieve information from images, financial data, reported tables.

<b>Problem ID:</b>	: PID741
<b>Challenge Title</b>	: Automatic Speech Recognition (ASR)
<b>Name of the Industry</b>	: Leaf Drive IT Solution
<b>Challenge Description with context</b>	: Automatic Speech Recognition, computer speech recognition, or speech to text, is a capability which enables a program to process human speech into a written format.
<b>Users</b>	: Employees, Manager
<b>Expected Outcomes</b>	: Clarity, Precision, Accuracy
<b>Impact</b>	: Help to write reports, Useful information and reduce the document preparation time.

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## SSM Infotech Ltd

<b>Problem ID:</b>	: PID742
<b>Challenge Title</b>	: Online Virtual Machine Training Platform
<b>Name of the Industry</b>	: SSM Infotech Ltd
<b>Challenge Description with context</b>	: Students take difficult trainings on various technologies. After training they require a platform to gain hands on experience, which can enhance their learning.
<b>Users</b>	: Students, Teachers
<b>Expected Outcomes</b>	: Person who takes training will be able to learn the things more effectively.
<b>Impact</b>	: Trainees will get hands on experience on the technologies learned during training.

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## Spring Digital Print

<b>Problem ID:</b>	: PID743
<b>Challenge Title</b>	: An Efficient Homogeneous Ink Transfer System from paper to fabric
<b>Name of the Industry</b>	: Spring Digital Print
<b>Challenge Description with context</b>	: The light and darkness on paper after fusing. So, same effects printing on any fabric.
<b>Users</b>	: Textile digital printing industry
<b>Expected Outcomes</b>	: After printing, there should not be light and dark patches on paper. The transfer of ink from paper to fabric should be homogeneous.
<b>Impact</b>	: Fabric goes to rejected or second category as far as quality has been concerned. When buyer see from retailors so financial loss happened. If problem solved, then it will impact on digital printing design and financial loss be less.

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## Pashava Energy Private Limited

- Problem ID:** : PID744
- Challenge Title** : Analysis of Requirement of Lightning Arrester for Small Residential Roof Top Solar Power System
- Name of the Industry** : Pashava Energy Private Limited
- Challenge Description with context** : Numbers of Houses in Urban area are installing Residential Roof Top Solar Power Systems across the Gujarat under government subsidy scheme.
- To avail the subsidy benefit under the scheme and as per government tender condition, it is compulsory for all the houses with just three, two or even one stored buildings to fix the Lightning Arrestor to protect the solar system.
- To what extent the Lightning Arrestor will protect the system.....?
- What if it attracts the lightning stike....?
- Is the exiting earthing protection under subsidy scheme capable enough to cater the lightning current...???
- What if the grounded high voltage current returns back to house through adjacent earthing done by DISCOM for power supply...?
- Users** : Residential Roof Top Consumers
- Expected Outcomes** : There should be clear cut provision for Earthing in Indian Electricity Act.
- Impact** : Each Earthing system for lightning Arrestor uses 100 mtr 16 sq mm copper cable. Suppose 3 lakhs consumers have installed Residential Roof Top Solar System across the India, than 3 lakhs x 100 mtr = ..... KM x Rate per copper cable = ..... crores copper imports can be reduced, which will save forex reserve.

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## Casa Tiles (P) LTD

<b>Problem ID:</b>	: PID745
<b>Challenge Title</b>	: Replacement of Zirconia from Body.
<b>Name of the Industry</b>	: Casa Tiles (P) LTD
<b>Challenge Description with context</b>	: Zirconia is used in vitrified body for whiteness of Body. Due to high cost of Zirconia body become costlier. So to decrease body cost it is essential to replace Zirconia to reduce body cost.
<b>Users</b>	: Ceramic Industries.
<b>Expected Outcomes</b>	: Low cost ceramic body.
<b>Impact</b>	: Cost of ceramic tiles can reduce.

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## **Ramdev Solar**

<b>Problem ID:</b>	: PID746
<b>Challenge Title</b>	: Voltage fluctuation in electrical power distribution system
<b>Name of the Industry</b>	: Ramdev Solar
<b>Challenge Description with context</b>	: In a secondary distribution, due to voltage fluctuation damage a home appliance like ceiling fan, computer etc.
<b>Users</b>	: Whole society
<b>Expected Outcomes</b>	: Stable voltage
<b>Impact</b>	: More age of consumer appliances.

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### Arena Animation, Kalawad Road, Rajkot

- Problem ID:** : PID747
- Challenge Title** : Data Analytics for New Branch and New Course at Institute
- Name of the Industry** : Arena Animation, Kalawad Road, Rajkot
- Challenge Description with context** : When a student comes at institute for inquiry of different courses, he/she will fill up a form regarding their basic and educational background and interest for different courses available at institute. Institute wants to find the student interest and location for their new branch opening and new course launching.
- Users** : Industry owner, Industry staff
- Expected Outcomes** : Web based application / Mobile Application which contains  
Input - Digital inquiry form  
Output – Chart or table showing data analytics for the below search:  
(1) which area’s students actual register for the course after inquiry?  
(2) Students of which educational background join the most in animation courses? (3) In which duration, student prefer to do animation course along with their studies? (4) Which course students find the most challenging and they don’t opt for the course with reason? Etc.
- Impact** : Institute can predict their plan for new branch and new course openings for the specific students.



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**Vrundavan Polymer Pvt. Ltd.**

<b>Problem ID:</b>	: PID448
<b>Challenge Title</b>	: Issue of Void and porosity in Plastic pipe during extrusion process.
<b>Name of the Industry</b>	: Vrundavan Polymer Pvt. Ltd.
<b>Challenge Description with context</b>	: With regard to extrusion, entrapped air in the feed section of the screw and polymer degradation is the main culprits behind voids.
<b>Users</b>	: Polymer extrusion industries
<b>Expected Outcomes</b>	: Proper techniques or material parameter that can control void or porosity in plastic extrusion process.
<b>Impact</b>	: Proper solution of this defect can increase productivity and quality of extruded plastic products.

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## Realtech Paint & Chemical Industry

<b>Problem ID:</b>	: PID749
<b>Challenge Title</b>	: Automation in Mixer powder uplift for Ribbon Blender machine
<b>Name of the Industry</b>	: Realtech Paint & Chemical Industry
<b>Challenge Description with context</b>	: Ribbon Blender is a light duty blender mainly used for easy to mix powder components which are pre-processed like dried granules, pre-sieved powders etc. It is a LOW SHEAR mixer and mostly used for SOLID / SOLID Mixing. Solid / Liquid mixing can also be achieved when high shearing force is not desired. For current situation labour has to lift manually to put powder into machine from ground surface to machine hopper. This takes more time, increase man power work, reduction in production, increment in overall cost. Proposed for automatic system can be build up to uplift powder in hooper directly for Ribbon blender machine.
<b>Users</b>	: Labour in industry
<b>Expected Outcomes</b>	: Automation cause Time saving, production can be increased, Reduced man power, Overall cost can be reduced, Labour health
<b>Impact</b>	: Time saving, production can be increased, Reduced man power, Overall cost can be reduced, Labour health

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## Patidar Enterprise

- Problem ID:** : PID750
- Challenge Title** : Automatic PV array cleaning mechanism.
- Name of the Industry** : Patidar Enterprise
- Challenge Description with context** : Facing severe issues regarding cleaning of PV array. So, we are in a requirement of a basic cleaning system that can get a customer free from the tedious work of cleaning them manually.  
Points on focus: The basic requirement is the system designed should be cost effective and should work in every weather conditions. The cleaning system as well as its shadow shouldn't cover any part of the PV module. The dirt and dust deposition on solar photovoltaic module severally hampers the intensity of solar rays falling on the photovoltaic module resulting into reduced power output. Being located on the roof, it is quite inconvenient for user to clean this system regularly. The challenge is to design and develop cost effective and maintenance free residential solar PV array cleaning system which can be easily and conveniently operated by residential user.
- Users** : The solution should be able to cater PV array. The proposed solution can be extremely helpful for residential and commercial purposes. This solution will also be helpful for other Solar PV module manufacturers.
- Expected Outcomes** : The proposed cleaning mechanism should be cost effective, maintenance free and easy to operate in all weather conditions. It should be in a position to cover entire surface area of Solar Photovoltaic system. Moreover, the cleaning mechanism should take care of future expansion in already installed existing Solar Photovoltaic system. To an extent possible, the cleaning mechanism should be adaptable for different size of PV modules.
- Impact** : Increase power generation, Reduce human effort

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## Mahavir Agro Industries

<b>Problem ID:</b>	: PID751
<b>Challenge Title</b>	: To increase Seed Storage Periods
<b>Name of the Industry</b>	: Mahavir Agro Industries
<b>Challenge Description with context</b>	: Storage conditions and duration are important factors affecting germination parameters. Seed vigor is used as a measure of accumulated damage in seed as viability declines. Preservation of seed viability depended on storage condition and duration. Seed deteriorated during storage is one of the basic reasons for low productivity in soybean. Changes that occur in seed during ageing are significant in terms of seed quality among other things, also implies seed longevity. Changes occurring in seed during ageing are very significant with regard to quality and longevity of seed. Seed composition characteristics of oily plants are related to specific processes occurring in seed during storage.
<b>Users</b>	: Farmer. In house. In hotel .
<b>Expected Outcomes</b>	: The purpose of seed storage is to maintain the seed in good physical and physiological condition from harvesting through to planting by the farmer. For most crops, time passes between harvesting and planting; the seed has to be kept somewhere during this period, and storage is therefore necessary.
<b>Impact</b>	: Seed storage using different temperatures and humidity will affect the quality of the seeds during the storage period. Storage using room temperature is very crucial particularly on seeds that have deteriorated during handling process prior to storage. In addition, the rate of seed quality decline is relatively drastic. The use of low temperature and air humidity can keep the viability and vigor of seeds even though it has deteriorated. Thus, the quality of seeds during the storage period is strongly influenced by the quality of the initial seed (before storage), seed moisture content, temperature and humidity during the storage period.

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**Education institute for special Abled person,**

<b>Problem ID:</b>	: PID752
<b>Challenge Title</b>	: Path Darshak for special abled person-Divyang
<b>Name of the Industry</b>	: Education institute for special Abled person,
<b>Challenge Description with context</b>	: The person loses sight by birth and accidently, make them confident for explore the path through special device in common situation also get relevant information of surrounding them so able to take firm decision about movement in different situation
<b>Users</b>	: Blind People-Divyang- Hospitals -were person lost sight accidently Education institute for Divyang for training
<b>Expected Outcomes</b>	: Self-confidence develops among specially abled person
<b>Impact</b>	: Feel goodness for society by special care through technology. Feel normal life in routine movement and avoid accident in dynamic situation. Get alert in difficult situation may leads to collision or accident

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## Ratan Soap Factory

<b>Problem ID:</b>	PID753
<b>Challenge Title</b>	: Development of low cost dish wash thickner
<b>Name of the Industry</b>	: Ratan Soap Factory
<b>Challenge Description with context</b>	: Main problem in dish wash manufacturing is thickness of liquid. Thickener available in market has low percentage of active ingredient. Low cost and high active matter thickener reduce cost of dishwasher.
<b>Users</b>	: Dish Wash manufacturing company
<b>Expected Outcomes</b>	: Development of low cost, environment friendly, biodegradable thickener
<b>Impact</b>	: Reduce cost of dishwasher

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## Ferromatic Pvt. Ltd.

<b>Problem ID:</b>	PID754
<b>Challenge Title</b>	: Manual checking of Robotic wiring in Injection Molding Machine
<b>Name of the Industry</b>	: Ferromatic Pvt. Ltd.
<b>Challenge Description with context</b>	: Checking of so many wires of Robotic mechanism is a time consuming process; human and instrument errors may occur
<b>Users</b>	: Injection Molding Machine Manufacturers
<b>Expected Outcomes</b>	: Development of such device is necessary to test all wires at a time with accuracy
<b>Impact</b>	: Device will reduce the testing time, gives data with accuracy and save human hours.

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## Dhuvaran Thermal Power Plant

<b>Problem ID:</b>	PID755
<b>Challenge Title</b>	: Balancing Base load Power & Renewable
<b>Name of the Industry</b>	: Dhuvaran Thermal Power Plant
<b>Challenge Description with context</b>	: One of the challenges faced by power plant engineer/manager is balancing power with intermittent renewable sources. Now a days more renewable sources are coming in picture due to various government policy in solar, wind, tide etc.
<b>Users</b>	: All Power plant
<b>Expected Outcomes</b>	: The solution can increased a plant operational efficiency by 10%.
<b>Impact</b>	: Improve power factor and Utilization factor Effective Utilization of Power plant can Possible Pollution Control is Possible



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## **ACDC Tech.**

- Problem ID:** PID756
- Challenge Title** : Water Distribution Monitoring and Controlling System using IOT.
- Name of the Industry** : ACDC Tech.
- Challenge Description with context** : Population in urban areas is obviously expanding quickly together with the requirement for comfortable living. With increase in population, urban areas have expanded, water becomes one of the major problems in a city particularly water distribution, interfered with water supply, water protection, water utilization and furthermore the water quality. To overcome water supply related problems proper monitoring and controlling system must be implemented. The develop system should consists of different IoT devices like water pressure sensor, ultrasonic sensor, solid state relay switch, motorized electric water valve, GSM module and micro-controller. This problem Should be focused on the monitoring and controlling of water distribution using IOT based model. A prototype developed to simulate the operation of a water distribution. Also, a web application should be developed as a front-end system for monitoring and controlling the status of various pumping stations.
- Users** : Water Distribution Organization, Municipal Corporation, majorly water Based Industries/Factories
- Expected Outcomes** : It Should be design and develop for low cost reliable and efficient technique to improve water distribution in the community.
- Impact** : Water wastage and leakage will be reduced, and live monitoring of water will be done so that precise use of water can be known.

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## Aarohi Embedded Systems Pvt Ltd

<b>Problem ID:</b>	PID757
<b>Challenge Title</b>	: Smart Braille Display for the Blind & Deaf People
<b>Name of the Industry</b>	: Aarohi Embedded Systems Pvt Ltd
<b>Challenge Description with context</b>	: Refreshable Braille Displays allow people who are deaf or blind to use mobile phones, tablets, computers and other smart devices. Pair these accessories to mobile phone or tablet or other smart devices via Bluetooth. The refreshable braille display will show the text of each app as you browse them and you will be able to enter text on text fields using the 8-key braille keyboard
<b>Users</b>	: Assistive Technology for the Blind & Deaf People
<b>Expected Outcomes</b>	: Refreshable Braille Displays
<b>Impact</b>	: Easy reading for Blind & Deaf People

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## Balief Corporation

- Problem ID:** PID758
- Challenge Title** : IoT enabled compact size Atmospheric water generator
- Name of the Industry** : Balief Corporation
- Challenge Description with context** : An Atmospheric Water Generator (AWG) is a device which is extracts water vapor from the humid air. At present the AWG has several difficulties like low production of water from atmosphere, bigger in size and many more. Therefore, sustainable design of the AWG is required to produce the 20 to 30 litre production per day and compact in size so it can be used for potable water provider. Also, nobody has applied the IoT technique for the performance measurement and prediction too.
- Users** : House hold potable water provider, industry, School, college
- Expected Outcomes** : If compact size and efficient AWG is made then it will be good solution to provide potable water for household applications, industries, schools, colleges etc. Also if it is IoT enabled then it will be controlled and monitored too.
- Impact** : It can be sustainable solution of potable water provider like RO (reverse osmosis) system and it can be replaced too.

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## Plus1 Health IT Systems

<b>Problem ID:</b>	PID759
<b>Challenge Title</b>	: Unique Health ID creation for patients which is to be generated by any HER system and still it remains same.
<b>Name of the Office</b>	: Plus1 Health IT Systems
<b>Challenge Description with context</b>	: There are various different EHR systems used by different hospitals and many times patients is being seen by these different systems and they will need derive patient's complete medical history and without this kind of Unique Health ID this is not possible.
<b>Users</b>	: Hospital users
<b>Expected Outcomes</b>	: Algorithm with code library which can be utilized by any EHR software developer to generate UHID.
<b>Impact</b>	: India needs its own search engine dedicated to all Indian considering national data security and future economy.

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## JS Technology

**Problem ID:** PID760

**Challenge Title** : Smart helmet to lead the rider

**Name of the Industry** : JS Technology

**Challenge Description with context** : A smart helmet is a type of protective headgear used by the rider which makes bike driving safer than before. The main purpose of this helmet is to provide safety for the rider. This can be implemented by using advanced features like alcohol detection, accident identification, location tracking, use as a hands free device, fall detection. This makes it not only a smart helmet but also a feature of a smart bike. It is compulsory to wear the helmet, without which the ignition switch cannot turn ON. An RF Module can be used as wireless link for communication between transmitter and receiver. If the rider is drunk the ignition gets automatically locked, and sends a message to the registered number with his current location. In case of an accident it will send a message through GSM along with location with the help of GPS module. The distinctive utility of project is fall detection; if the rider falls down from the bike it sends a message.

**Users** : Students, Local Workers, Marketing Person etc.

**Expected Outcomes** : The designed Smart helmet ensures the safety of the rider by making it necessary to wear helmet, and also ensures that the rider hasn't consumed alcohol more than the permissible limit

**Impact** : If any of these prime safety rules are violated, the proposed system will prevent the biker from starting the bike. The system also helps in efficient handling of the aftermath of accidents by sending a SMS with the location of the biker to the police station. This ensures that the victims get proper and prompt medical attention, if he/she met with an accident.

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## Equanimous Technologies

<b>Problem ID:</b>	PID761
<b>Challenge Title</b>	: Using Augmented Reality to visualise construction stages on a site.
<b>Name of the Industry</b>	: Equanimous Technologies
<b>Challenge Description with context</b>	: Right now, most of the construction sites use conventional mechanisms to measure the site area and 2D drawings to visualise the building stages and construction procedure.  Using Augmented Reality this process can be made much more intuitive and engaging. Using 3D models augmented at the actual site in original size that helps the workers in the construction process
<b>Users</b>	: Construction contractors and workers
<b>Expected Outcomes</b>	: Augmentation of scaffoldings and other materials on top of the site for assistance in the construction process
<b>Impact</b>	: Enhancing the speed of construction and quick visualisation for the contractor as well as the real estate developer

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## JP Research India Pvt. Ltd.

<b>Problem ID:</b>	PID762
<b>Challenge Title</b>	: Improving road and automotive safety
<b>Name of the Industry</b>	: JP Research India Pvt. Ltd.
<b>Challenge Description with context</b>	: JP Research India Pvt. Ltd. is a traffic safety research firm dedicated to improving road and automotive safety in India using scientific, evidence-based and data-driven techniques. JPRI offers expert services in the field of crash investigation, road safety engineering, data analysis and training. Following are the few points which can be improved. How to check the pre-crash functionality of following components/systems during the inspection of crashed vehicles. Brake line condition and working (How to check whether brakes were working before impact) Originality of airbag (How to check whether fired airbag was installed by OEMs or post market fitted) How to check whether ABS has performed or not during crash (for ABS equipped vehicles)
<b>Users</b>	: Riders, students, citizens etc
<b>Expected Outcomes</b>	: To check whether brakes were working before impact To check whether fired airbag was installed by OEMs or post market fitted To check whether ABS has performed or not during crash (for ABS equipped vehicles)
<b>Impact</b>	: It may improve road and automotive safety

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**smartSense Consulting Solutions Pvt Ltd.**

<b>Problem ID:</b>	PID763
<b>Challenge Title</b>	: Conversational Chatbot for Institutes
<b>Name of the Industry</b>	: smartSense Consulting Solutions Pvt Ltd.
<b>Challenge Description with context</b>	: Create a chatbot for students which allow students to get more information like their academic journey information like admission process, academic process, and placement process. Create an admin panel for data ingestion.
<b>Users</b>	: College Students, College Admin Staff, New Students to are seeking admission to respective college
<b>Expected Outcomes</b>	: Admin User: can ingest data to run the chatbot using the admin panel. New Student: can inquire knowledge related to admission, courses, seats available for course, syllabus, hostel facility, placement process College Student: can inquire all details which are available for New students as well as their marksheets, fees receipts, educational materials, exam schedules etc.
<b>Impact</b>	: Quick and easy access to the knowledge base required for admission, academic and placement process easing management and timeliness.



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## Tandel engineering works, Pardi

<b>Problem ID:</b>	PID764
<b>Challenge Title</b>	: Economical injection mould for small lot size (Less than 100)
<b>Name of the Industry</b>	: Tandel engineering works, Pardi
<b>Challenge Description with context</b>	: Injection mould for thermo plastic articles are generally suitable for lot size greater than ~100000 due to its fabrication cost. Generally the break even analysis is performed to decide lot size according to initial investment put in the mould by the manufacturer. Nowadays due to rapid change in product requirements and short product life cycle, flexibility in product changeover become essential requirement for small scale industries like us. For the said reasons there is a need of mould technology which is suitable for very small lot size and can be produced in smaller span of time is need of current time.
<b>Users</b>	: All Mould manufacturing industry.
<b>Expected Outcomes</b>	: Method and design of economical injection mould
<b>Impact</b>	: This can be a turnkey technological progress for rapid manufacturing technology. Many small-scale industries can be benefit greatly from this.

## SID Consultants

<b>Problem ID:</b>	PID765
<b>Challenge Title</b>	: To make leakage proof expansion & contraction joints in a building.
<b>Name of the Industry</b>	: SID Consultants
<b>Challenge Description with context</b>	<p>: When a material is stressed beyond its tensile or shears strength it cracks. The stresses may be due to external loads or due to restraint impressed against dimensional changes. Moisture movement and temperature variations cause such stresses which are restrained by the building. All building materials are expanding and contract due to change in temperature and variation in moisture content. Most building materials expand when wetted and shrink on drying. If the resulting expansion and contraction movements are restricted partly or wholly by any means, for example, by restraining effect of cross and end walls in large buildings, internal stresses, like tension contraction and compression during expansion, occur in the structure which results in a cracking. Structure may be provided with a number of joints which relieve the stresses by allowing pre-determined sections of the structure to move. Indian standard code prescribes methods of design and installation of such joints. However it is observed that after some age these joints fails and water leakage problems are arises which leads to impair functioning of building including short circuit in electrical installations.</p> <p>So it's essential to device new design and or installation methods for long term solution against failure problems of such joints and long term effective functioning of joints. Permanent solution of this problem is challenging.</p>
<b>Users</b>	: Builders,Contractors,Engineers
<b>Expected Outcomes</b>	: To device new design and installation methods for making leakage proof expansion and contraction joints in a building.
<b>Impact</b>	: The desired solution will result in a saving of cost of frequent repairing and reinstallation of joints. It will also prevent failure of electric installation occurring due to water leakages.

### NiTech Automation

<b>Problem ID:</b>	PID766
<b>Challenge Title</b>	: Development of IR temperature sensor for reflective surface having temperature around 1000degC
<b>Name of the Industry</b>	: NiTech Automation
<b>Challenge Description with context</b>	: Development of <b>low cost</b> IR temperature sensor for reflective surface having temperature around 1000degC with following specifications Infrared temperature sensor Temperature range: upto 1000 degree Celsius Distance: atleast from 100 mm Accuracy: 1% Target sheet dimensions: 150*150 mm Sheet material: aluminium, magnesium, steel and titanium
<b>Users</b>	: Metal industry
<b>Expected Outcomes</b>	: Industrial grade low cost IR sensor for 24x7 operation with above specifications
<b>Impact</b>	: Noncontact temperature sensor for metal industry

<b>Problem ID:</b>	PID767
<b>Challenge Title</b>	: Calculating motor frequency to meet welding speed
<b>Name of the Industry</b>	: NiTech Automation
<b>Challenge Description with context</b>	: Motor is rotating turning rollers with the help of gear box. On the turning rollers, shell to be welded is placed. The shell will have different diameters. Also the welding to be done for different 6 to 7 passes. Now the challenge is to calculate speed of motor and the frequency to be given to the motor to meet the required weld speed for particular weld pass on the particular shell.
<b>Users</b>	: Large fabricators
<b>Expected Outcomes</b>	: Sure shot calculations  PLC program to be implemented
<b>Impact</b>	: Ease to implement such logic in the industry with confidence

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## Virnit Automation

<b>Problem ID:</b>	PID768
<b>Challenge Title</b>	: Reduction in total harmonic distortion in Induction Motors.
<b>Name of the Industry</b>	: Virnit Automation
<b>Challenge Description with context</b>	: Since most of the renewable energy resources produces a DC power in nature the invention of inverter has offered a greet solution to use these DC power as an AC power which the most frequently used by appliance and machinery. In the early decades the inverter used was the conventional two level inverter since the requirement was not as much as essential where the inverter was used to supply small load. However the inverter has attracted a large interest to be used in heavy duty industries and high power application but with the rapid growth in the industry and introducing the higher power application equipment which reaches the megawatt level it is hard to connect a single power semiconductor switch (conventional two level inverter) directly to medium voltage grids, also the two level inverter with higher harmonic distortion which need a complex filtering circuit to get the sinusoidal waveform. Due to this drawbacks of the conventional two level inverter, it recommended to use the multilevel inverter (MLI) which has many advantages compared to single stage inverter like minimum harmonic distortion which produce almost sinusoidal waveform without filtering circuit, also the MLI can operate with high power applications and produce high level output voltage with less switching losses and reduced contents.
<b>Users</b>	: Manufacturing Industries, Textile Industries
<b>Expected Outcomes</b>	: <ul style="list-style-type: none"><li>• Reduced switching losses</li><li>• Less total harmonic distortion</li></ul>
<b>Impact</b>	: Reduced power demand as efficiency of converter will increase.

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## Rohan Dyes and intermediate limited

- Problem ID:** PID769
- Challenge Title** : Decolorize effluents from produce wastewaters in Dye Industry.
- Name of the Industry** : Rohan Dyes and intermediate limited
- Challenge Description with context** : The presence of residual colour in dye application processes produce wastewaters that poses unacceptable environmental risks. Effluents impart colour to water bodies even if present in small quantity.



- Users** : Effluent Treat Plant (ETP)
- Expected Outcomes** : To decolorize waste water
- Impact** : Pollution prevention

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### Namrata Bhuptani -GEDA

<b>Problem ID:</b>	: PID770
<b>Challenge Title</b>	: Mobile Application for the blind students
<b>Name of the Office</b>	: Namrata Bhuptani -GEDA
<b>Challenge Description with context</b>	: Blind students need writers for every examination. Sometimes it happens that they may not find out proper writer for the exams and face difficulties. To resolve this, it is required to develop mobile application which connects interested writers and students. If required mobile application may be prepared as voice command-based operation. Interested writers can register themselves and connect with the students.  Different criteria for the registration of writers may be area, age group, educational qualification etc.
<b>Users</b>	: Blind Students and writers
<b>Expected Outcomes</b>	: Blind students and writers can connect with each other.
<b>Impact</b>	: Blind students can easily identify writers as per the requirement.

<b>Problem ID:</b>	: PID771
<b>Challenge Title</b>	: Walking Aids for Parkinson disease patients
<b>Name of the Office</b>	: Namrata Bhuptani -GEDA
<b>Challenge Description with context</b>	: Parkinson disease patients face difficulties while walking. Due to this disease their body becomes stiff. Device needs to be developed like calipers. Which can be tighten with the legs, generate small jerk in the leg and so that patients can be able to step up their foot.
<b>Users</b>	: Parkinson disease patients
<b>Expected Outcomes</b>	: Development of walking aid.
<b>Impact</b>	: Life of the Parkinson patients will become somehow easy

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**Problem ID:** : PID772  
**Challenge Title** : Mechanism to prevent road accident between two vehicles.  
**Name of the Office** : Namrata Bhuptani -GEDA  
**Challenge Description with context** : When two vehicles running fast with beyond certain limit e.g.40km/h, come closer to each other e.g. distance of 4 to 5 feet only, at that time accident preventive mechanism should be started functioning. It should be worked in a such a way that due to magnetic force or by any other means break of both the car should be activated and speed must be controlled.  
**Users** : All vehicle users  
**Expected Outcomes** : Activation of break and control of speed.  
**Impact** : Prevention of accidents

**Problem ID:** : PID773  
**Challenge Title** : Two-wheeler with shade  
**Name of the Office** : Namrata Bhuptani -GEDA  
**Challenge Description with context** : During summer and rain season two wheeler riders face difficulties due to hot sunny days and rainy days. To avoid this flexible shade can be developed with vehicle to protect the vehicle users from sun and rain. It can be open as and when required (like umbrella) and can be folded if not in use.  
**Users** : All two wheeler vehicles users  
**Expected Outcomes** : Two wheeler with shade  
**Impact** : It will increase the comfort of vehicle users

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## **Infolabz IT Services Pvt. Ltd.**

<b>Problem ID:</b>	: PID774
<b>Challenge Title</b>	: GPS-Based Vehicle Over-Speeding Detection and Direct E-Challan.
<b>Name of the Industry</b>	: Infolabz IT Services Pvt. Ltd.
<b>Challenge Description with context</b>	: As per the Ministry of Road Transport and Highways accidental report of 2020, around 74% of accidents and 69% of deaths were recorded due to over speeding. Though the government has imposed many rules and regulations on over-speeding, people still do not follow them, and thus the results are shown in % above. In order to reduce the number of accidents and deaths, there is a high need for developing a GPS-based mechanism such that it is pre-installed into vehicles to detect the speed as per the speed limits given by the government on different roads. For example, if the speed limit on the SG Highway is 60, then the mechanism should monitor and alarm the user as soon as his speed exceeds 50, and as he crosses 60, an E-challan will be assigned. This will not only reduce accidents but also make people more responsible for following rules.
<b>Users</b>	: Everyone who is driving any type of vehicle, including two-wheelers, four-wheelers, trucks, and so on.
<b>Expected Outcomes</b>	: A mechanism that detects the speed of the vehicle and monitors the speed of the user as per government-given speed limit data. An alarm should be given to the user before exceeding the value, and if he/she exceeds, then an E-Challan should be generated with all the details of the vehicle, the road on which the person was driving, the speed limit of that road, and the challan amount.
<b>Impact</b>	: This will reduce the number of deaths and accidents due to over-speeding. People will become aware of speed limits and be more responsible for following rules.



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## CADILA Pharmaceuticals Ltd.

<b>Problem ID:</b>	: PID775
<b>Challenge Title</b>	: To develop cost effective harmonic filters
<b>Name of the Industry</b>	: CADILA Pharmaceuticals Ltd.
<b>Challenge Description with context</b>	: Many UPS, Variable frequency Drives, soft starters required to install in many applications in continuous plant industries like Pharmaceuticals, chemical, agro, food, textile etc. They are the sources of harmonic generation. Because of harmonics, power quality disturbances, voltage deflection, neutral loading, requirement of higher capacity switchgears, life of switchgear decreases. Also, for neutral loading and unbalancing in the power system occurs and life of distribution devices like transformer will also decrease. Presently in market many devices like active filters, passive filters are available. But it leads to plant modifications and also its not cost effective solution. It also leads to shut down because of retrofication. Hence, task is to find out cost effective harmonic filters.
<b>Users</b>	: Pharmaceuticals, Chemical, Agro, Food, Textile industries and other continuous plant industries.
<b>Expected Outcomes</b>	: Cost effective harmonic filters if possible to install without system modification then it will benefit power system. Reduction in Neutral current, increase in power quality, increase in life of switchgears, cost saving in switchgear cost.
<b>Impact</b>	: Reduction in Neutral current, increase in power quality, increase in life of switchgears, cost saving in switchgear cost. Hence, efficient operation of all continuous plant industries.

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## WebCreta Technologies

<b>Problem ID:</b>	: PID776
<b>Challenge Title</b>	: Restaurant aggregator – To Fetch all orders from the Swiggy, Zomato and other food marketplace (APIs Integration)
<b>Name of the Industry</b>	: WebCreta Technologies
<b>Challenge Description with context</b>	: It's never track all the orders in one screen of different marketplace, live update for all orders. All invoice, sales, accounting. For now there is no solid restaurant aggregator available to fetch the details for order from food application to ERP due to this it's difficult to manage inventory, orders from the different marketplace.
<b>Users</b>	: ERP administrator, System Administrator, ERP Manager, ERP user marketplace, Vendor inventory manager
<b>Expected Outcomes</b>	: Expected outcome will be to use only one system which include rich ERP features list CRM, Sales, Invoicing, Inventory, HR Process and rich user interface. By implementing this there is no need to use different marketplaces to manage orders/inventory/accounting etc.
<b>Impact</b>	: Primary impact will reduce the hurdles to manage the orders, inventory, account in each marketplace and doing import/export and sync to handle all this under single business organization. This makes lot easier to tracking organization growth/sales analysis, manual inventory adjustment, stock for cast, handling individual restaurant operation from single system will use of specific APIs.

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## eInfochips

<b>Problem ID:</b>	: PID777
<b>Challenge Title</b>	: Image Dataset Generator
<b>Name of the office</b>	: eInfochips
<b>Challenge Description with context</b>	: Various image dataset are available online and in open source community. Some specific use cases requires very specific dataset e.g. “Engine Chasis Number”. Engine Chasis number is located below chasis and is often dirty as it is located at bottom part of automobile. Further, its presence is scarce over the internet, thus We wish to create a image dataset generator which can generate engine chasis number of any such number with reasonable amount of distortion overlaid on it.
<b>Users</b>	: Computer Vision Industry.
<b>Expected Outcomes</b>	: A number with reasonable amount of distortion.
<b>Impact</b>	: Image processing work will become faster

<b>Problem ID:</b>	: PID778
<b>Challenge Title</b>	: Noise Reduction in Captured video on edge.
<b>Name of the office</b>	: eInfochips
<b>Challenge Description with context</b>	: Here the noise (for e..g : Glare, blur, bright sports, shades etc) are to be systematically reduced or eliminated. This kind of situation happens in various surveillance camera’s captured video. Such noise imposes challenge in detection and recognition down the line.
<b>Users</b>	: Computer Vision Industry.
<b>Expected Outcomes</b>	: Noise reduced image or Distortion less Image.
<b>Impact</b>	: Image processing work will become faster

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<b>Problem ID:</b>	: PID779
<b>Challenge Title</b>	: Improvements in the speed of JTAG protocol specially in architecture of protocol.
<b>Name of the office</b>	: eInfochips
<b>Challenge Description with context</b>	: JTAG implements standards for on-chip instrumentation in electronic design automation (EDA) as a complementary tool to digital simulation. It specifies the use of a dedicated debug port implementing a serial communications interface for low-overhead access without requiring direct external access to the system address and data buses. If any modification is to be done which can increase the standard speed.  Speed improvement of existing architecture of JTAG protocol which tends to have faster operational and functionality speed and better results.
<b>Users</b>	: Industrial experts in chip designing
<b>Expected Outcomes</b>	: Doubles the speed
<b>Impact</b>	: More convenient protocol design is possible

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<b>Problem ID:</b>	PID780
<b>Challenge Title</b>	: Traffic Clearance for Ambulance/ (or other priority Vehicle) through Artificial Intelligence
<b>Name of the Industry</b>	: eInfochips
<b>Challenge Description with context</b>	: Ambulance Driver will select route to reach hospital. System will automatically control traffic light based on population of vehicle and based on priority on that route. (Controls entire area surrounding route) Other features like Ambulance arrival indication to surrounding vehicle.
<b>Users</b>	: Medical Staff, Ambulance Driver, People, Government
<b>Expected Outcomes</b>	: Reducing Mortality Rate
<b>Impact</b>	: Saving life of people and giving treatment in emergency cases

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## TechSmith Solutions Pvt Ltd

- Problem ID:** : PID781
- Challenge Title** : Access of local hardware through web browser plug and play mode
- Name of the office** : TechSmith Solutions Pvt Ltd
- Challenge Description with context** : Presently any web based applications would not be able use local hardware (except few like printer or camera) resources. We would like to make it possible to use local scanner through web based application.
- Meaning, if web application has Scan Button, and if user presses Scan Button, application should be able to access scanner connected to computer from where this web application is executed. This utility should be browser agnostic.
- It is not possible to use local hardware like scanner in web application due to which the document need to be scanned first in local machine and then to be uploaded. It should be possible directly.
- Through web based application, one shall be able a
- Users** : Several users across platforms; where local hardware resources (in this case scanner) are required to access via cloud hosted applications.
- If given as the API service, it can be attached to any web application and can use any apparatus or hardware
- Expected Outcomes** : An independent function or utility, which allows to access local resource via hosted / web application. This function or utility should be browser independent.
- Hassle free connectivity to range of hardware in healthcare industry to directly input
- Impact** : Encourage more cloud-based applications and thin clients. The web applications can be equipped with more tools.
- Less human interaction and hence, the chances of errors will reduce.
- The medical field can attach all its devices as peripherals with computer

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## Esquire Ideation Pvt. Ltd.

**Problem ID:** : PID782

**Challenge Title** : Standard for estimation of man-hours or man-days for design projects

**Name of the office** : Esquire Ideation Pvt. Ltd.

**Challenge Description with context** : With efforts over number of years, standards have been defined in software and IT industry to estimate man-hours or man-days required for a project. Similar efforts are required to be put in the field of product design and machine design. Development of such standards is very essential to achieve at realistic quote for a design project. A reliable correlation with number of key design dimensions or key components and off-the shelf components is essential to have a reasonably accurate estimate.

The problem of estimating and providing accurate quote for a design project requires a lot of guess work. Any standard procedure developed for this would help make the predictions and quotes accurate

**Users** : Industries providing and availing design services.

**Expected Outcomes** : Standards similar to SEI-CMM and PCMM applicable to Design services.

**Impact** : Standards document, process patents

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## Meditab Software (I) Pvt. Ltd.

- Problem ID:** : PID783
- Challenge Title** : Voice Enabled Issue Management System
- Name of the office** : Meditab Software (I) Pvt. Ltd.
- Challenge Description with context** : Users are not able to get the support they require because they are not able to convey it easily to the support team. And sometimes it's even difficult for the support department to figure out how the issue is coming on the client's system. After sales service is a very crucial for any company. There can be multiple ways like email, phone etc. to provide after sales service. The phone line may be busy due to higher number of calls. And the email is a tedious task to write. Therefore, the above issue management is the need.  
This system will encourage the user to communicate their difficulties using speech which is a natural way. Also, this will help the support team to figure out the issues faced by the clients using the voice-recorded messages along with the relevant screenshots. It would eliminate the long wait of connecting to a calling customer service agent and a tedious task of writing an email to the support team.
- Users** : The users of the system can be any software/application developer who needs to provide the customer service to their users. The system should work like a plug and play system for different applications to use with.
- Expected Outcomes** : There should be a provision in the system to log the issue using speech. It should also take screenshots of their last few steps. After the issue is logged in database, it should go into the support queue and user should get the notification of the issue identification number. It should provide the solution with plug and play facility. The solution may also provide the issue tracking facility also.
- Impact** : Faster and effective way of communication with support in case any bug/issue is found.  
Increased customer satisfaction and gaining the loyalty of customer. Increase the reach of customers by enabling the non-digital natives to work with ease.





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