GOA STATE INNOVATION COUNCIL

ANNUAL REPORT 2021-22

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Annual Report 2021-22



ANNUAL REPORT 2021-22



Minister's Message

The State of Goa places a significant emphasis on Innovation and Startups, and the Goa State Innovation Council has been at the forefront of establishing a hospitable and sustainable ecosystem to achieve these goals. Since its founding, the Council has taken numerous steps to promote innovation and entrepreneurship in the state. Most noticeably, the Virtual Innovation Register (VIR), a special initiative hosted on the Goa State Innovation Council website, <u>www.goastateinnovationcouncil.com</u>.

The VIR is a gateway enabling the innovators, entrepreneurs and thinkers of Goa to pool their imagination, drive, and talents to create business opportunities that are both sustainable and scalable for their own growth and the growth of the State of Goa.

I encourage everyone to take an active role in this movement and help the State of Goa become the innovation capital of the Country.

Shri Atanasio Monserrate Hon'ble Minister for Revenue, Labour and Waste Management

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GOA STATE INNOVATION COUNCIL

www.goastateinnovationcouncil.com

Jose Manuel Noronha Chairman

Chairman's Message

The Goa State Innovation Council (GSInC) has had another outstanding year, and I am pleased to report its continued success. GSINC has surpassed its annual targets in accordance with the vision of our late former Chief Minister, Shri Manohar Parrikar, to make Goa the Innovation capital of the Country.

As the world bravely fought the grim battle with the pandemic, GSInC continued to further its vision of fostering the innovation culture in the state while strictly following the guidelines and safety directives issued to prevent the spread of the COVID virus.

To strengthen the start-up ecosystem in the state of Goa, GSINC launched a number of yielding initiatives at the grassroots level, which included several virtual workshops, training programs, and startup boot camps. The GSInC team also promoted its proprietary tool, the Virtual Innovation Register (VIR), encouraging inventors, entrepreneurs, students, and solopreneurs from Goa to register their business ideas and get mentorship and other support to convert their business idea into a reality. I am proud to share that the VIR has recently been featured in an innovation coffee table book released by the Hon'ble Prime Minister of India, Shri Narendra Modi.

One of the primary goals of GSINC is to kindle innovative thinking and instill an entrepreneurial spirit among the people of Goa. The GSInC team is relentlessly working on building an agile, responsive, and future-ready start-up infrastructure. I am delighted that Goa has made significant progress in this direction this year.

I am optimistic that the initiatives undertaken by GSINC during FY 2021-22 will be expanded upon in the years to come, fostering a strong startup and innovation culture in the state. I wish to place on record the support and assistance received from the Hon'ble Chief Minister, Dr. Pramod Sawant and the Minister for Science and Technology, Shri Atanasio Monserrate in achieving the objectives of the Council.

Shri Jose Manuel Noronha

Department of Science & Technology Government of Goa (O) 0832 222 3117 | (E) chairman@gsic.in Secretariat Don Bosco College of Engineering Fatorda - Margao



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INTRODUCTION

1.1 GENERAL INTRODUCTION

We live in an era of disruption. Path-breaking modes and methods of doing business are the norm, rather than the exception. Technology is evolving at an unprecendented pace and bold insutry leaders are constantly inventing new ways of communicating and doing meaningful business. Startup is the new era in the economy. Startup is slowly evolving to become a major pillar for the growth of the economy.

So to stay in-sync with the changing times, the Government of India's has formulated a new vision to make India self-reliant, and emerge as one of the strongest economies in the world. The focus is on inclusive, sustainable development. These objectives have given rise to the National Innovation Council that seeks to foster the spirit of innovation and entrepreneurship among all classes, groups and communities in India. The Goa State Innovation Council was established by the Directorate of Science and Technology, Government of Goa, under the aegis of National Innovation Council.

The Goa State Innovation Council is responsible for carrying out the National Innovation Council's mandate of inclusive growth and sustainable development in the State of Goa. To achieve this, Goa State Innovation Council engages in organizing various programs and events to spread the awareness about innovation and entrepreneurship among the people of Goa, handhold budding start-ups and innovators in scaling their business ideas and identifying potential ideas and innovations through competitions.

The Council is now actively involved in creating an eco-system on Innovation in the State and has launched its website at the hands of the Hon'ble (former) Chief Minister of Goa on 05.07.2018.

Objectives of the Goa State Innovation Council

- Support the Government to promote innovation in Science and Technology and strengthen the Innovation ecosystem in the State of Goa.
- Organize seminars, workshops, lectures, and symposia on innovation and related areas.
- Identify, encourage and reward young talent in innovation related to Science and Technology.
- Map opportunities for innovation in the State of Goa.
- Assist in identifying and setting up common facility centers for "Robotics and Coding" at educational institutions.
- Create periodic reports on innovations in the State of Goa.
- Create and maintain the Council Web portal which includes monitoring and evaluating the Virtual Innovation Register.
- Organize risk capital and venture capital for young innovators in the State of Goa.
- Identify High Net-worth Individuals (HNI) and Angel Investors (AI) and organize periodic "Pitching Sessions" for the innovators of the State with the HNIs and Als.
- Engage with the Innovation Community to develop ideas and strategies for the growth of Innovation in the State of Goa.
- Connect and develop a closer linkage between National and State Innovation ecosystems.
- To provide financial support for prototyping technology-based innovative projects/ideas under the Virtual Innovation Register (VIR) to make it affordable for students, startups, innovators, research faculty, and entrepreneurs who require necessary support in converting ideas into marketable products.

1.2 THE SECRETARIAT

The Secretariat of Goa State Innovation Council is established at Don Bosco College of Engineering, Fatorda, Goa. Presently, Goa State Innovation Council secretariat employs two personnel whose details are given below:

SR. NO	NAME OF THE EMPLOYEE	DESIGNATION
01	Mr. Sudip Faldesai	Project Officer
02	Mrs. Valencia Fernandes	Secretarial Assistant

Table: 1.2: Name and Designation of Staff employed by GSInC

The Organisational Chart is attached in Annexure I.







CONSTITUTION OF THE COUNCIL

For a council to function properly, it needs a dynamic composition. The reason why we have individuals from all walks of life and experience coming together to help GSInC nurture a scientific and innovative temperament.

2.1 CONSTITUTION OF THE COUNCIL

Chairman:	
	Shri Jose Manuel Noronha
	Chairman
	Goa Public Service Commission
Member:	
	Prof. Sunil Kumar Singh
	Director
	CSIR - National Institute of Oceanography (NIO), Dona Paula, Goa
Member:	
	Prof. Gopal Mugeraya
	Director,
	National Institute of Technology (NIT), Goa
Member:	
	Dr. Vivek B. Kamat
	Director
	Directorate of Technical Education, Goa

Member:	
	Shri. Praveen Volvotkar
	Director
	Department of Information Technology - Government Of Goa
Member:	
	Shri. Bhushan K. Savaikar
	Director
	Directorate of Higher Education, Goa
Member:	
	Dr. R. B. Lohani
	Principal
	Goa Engineering College, Farmagudi, Goa
Member:	
	Prof. Suman Kundu
	Director,
	BITS Pilani K K Birla Goa Campus
Member:	
	Dr. Neena Panandikar
	Principal
	Don Bosco College Of Engineering, Fatorda, Goa
Member:	
	Shri Kastubh Priolkar
	Professor, Department of Physics,
	Goa University
Member:	
	Dr. Sunil Paul
	Assistant Professor
	Indian Institute of Technology (IIT), Goa
Member:	
	Pradeep Morajkar
	Member Secretary
	Member Secretary Goa State Council of Science and Technology, Goa

Member:

Shri D S Prashant
CEO
Forum for Innovation Incubation Research and Entrepreneurship, Fatorda

Member:

Shri Shreedhar Bevara BMR Innovations Andhra Pradesh

Member:

Shri Yashvit Naik CTO, Teknorix Goa Technology Association, Ponda

Member Secretary:

Mr. Levinson Martins Department of Science & Technology & Waste Management, Government of Goa

2.2 The Constitution of the Board

HIL

No. 3-191/2011/STE-DIR/ SCE Office of the Director/Ex-Officio, Jt. Secy (S&T&WM) Dept. of Sci. Tech. & Waste Management . Porvorim - Goa.

Dated: 10/2021

<u>ORDER</u>

- 1. Read Order No. 9/309/2011HE/SInC/1673 dated 4th August 2011.
- 2. Read Order No. 3-191/2011/STE-DIR/702 dated 12th September 2013.
- 3. Read Order No.3-191/2011/STE-DIR/725 dated 18th January 2021.

In supersession of the above referred order, Government is pleased to reconstitute the Goa State Innovation Council (GSInC) comprising the following members:

1.	. Shri Jose Manuel Noronha,	Chairman
	Bagbhat, Raia, Salcete, Goa	
2.	. Director,	Member
	Indian Institute of Technology,	
	Farmagudi, Ponda Goa or his nominee	
3.	. Director,	Member
	National Institute of Technology,	
	Farmagudi, Ponda Goa or his nominee	
4.	. Director,	
	National Institute of Oceanography,	
	Dona Ponda, Goa or his nominee	
5.	. Director,	Member
	Birla Institute of Technology & Science,	
	Zuarinagar, Sancoale or his nominee	
6.	. Director,	Member
	Department of Information Technology,	
	Government of Goa,	
	Altinho, Panaji - Goa.	
7	. Director,	Member
	Directorate of Higher Education,	
	Government of Goa,	
	Porvorim, Goa	
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8. Director,	Member
Directorate of Technical Education,	
Government of Goa,	
Porvorim, Goa.	
9. Principal,	Member
Goa College of Engineering,	
Farmagudi, Ponda, Goa.	
10. Principal,	Member
Don Bosco College of Engineering,	
Fatorda, Goa	
11. Shri Shreedhar Bevara,	Member
CEO,	
BMR Innovations,	
Vishakapatnam, Andhra Pradesh	
12. Shri D.S. Prashant,	Member
CEO,	
Forum for Innovation, Incubation, Research and Er	ntrepreneurship,
Fatorda, Goa.	
13. Shri Kastubh Priolkar,	Member
Professor, Department of Physics,	
Goa University, Taleigao Plateau, Goa	
14. President	Member
Goa Technology Association,	
Ponda, Goa or his nominee	
15. Member Secretary,	Member
Goa State Council for Science and Technology	
Department of Science and Technology,	
Government of Goa,	
Saligao, Bardez - Goa.	
16. Director,	Member Secretary
Department of Science and Technology & Waste	
Management,	
Government of Goa,	(*
Saligao, Bardez - Goa.	N 八

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Following shall be the 'Terms of Reference' for the council:-

- Support the Government to promote innovation in Science and Technology and to strengthen the Innovation ecosystem in the State of Goa.
- 2. Organize seminars, workshops, lectures and symposia on innovation and related areas.
- 3. Identify, encourage and reward young talent in innovation related to Science and Technology.
- 4. Map opportunities for innovation in the State of Goa.
- 5. Assist in identifying and setting up common facility centers for "Robatics and Coding" at educational institutions.
- 6. Create periodic reports on innovations in the State of Goa.
- 7. Create and maintain the Council Web portal which includes monitoring and evaluating the Virtual Innovation Register.
- 8. Organize risk capital and venture capital for young innovators in the State of Goa.
- 9. Identify High Networth Individuals (HNI) and Angel Investors (AI) and organize periodic "Pitching Sessions" for the innovators of the State with the HNIs and AIs.
- 10. Engage with the Innovation Community to develop ideas and strategies for the growth of Innovation in the State of Goa.
- Connect and develop closer linkage between National and State Innovation ecosystems.
- 12. To provide financial support for prototyping technology based innovative projects/ideas under the Virtual Innovation Register (VIR) to make it affordable for students, startups, innovators, research faculty and entrepreneurs who require necessary support in converting ideas into marketable products.

ηC

The Non Official members of the Council shall be paid sitting fees @ Rs.2000/- per sitting. Outstation Members will be paid TA/DA as per prevalent rules in addition to sitting fees.

K.

(Levinson J. Martins) Director (S&T &WM) / Ex-Officio, Jt. Secretary to Government

To, All the Members.

Copy to:

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- 1. P.S. to Secretary for Hon'ble Chief Minister, Government of Goa, Secretariat, Porvorim Goa.
- O.S.D to Hon'ble Minister for Science & Technology & Waste Management, Secretariat, Porvorim Goa.
- P.S. to Chief Secretary, Government of Goa, Secretariat, Porvorim Goa.
 P.A to Secretary, Science & Technology & Waste Management, Government of Goa, Secretariat, Porvorim Goa.
- 5. The Director of Accounts, Panaji Goa.
- 6. Guard File.
- 7. Order File.
- 8. O/c.







MINUTES OF THE MEETING

Meeting Agenda

Purpose:

The 21st Members meeting of Goa State Innovation Council

Objectives:

To follow-up on the decisions of the previous meeting and to discuss on the agenda as mentioned.

Date And Time:

12th Jan 2022 & 9:00 am

Agenda Item	Who
Reading and confirming the minutes of the last meeting	
Introduction to GSInC's Reconstituted members and objectives	Project Officer
Updates on previously conducted events	Project Officer
Discussion on upcoming events	Project Officer
Any other matter with the permission of the Chair	

MINUTES OF THE MEETING OF GOA STATE INNOVATION COUNCIL HELD ON 12.01.2022 AT

9.00 AM. THROUGH ZOOM PLATFORM

The following members were present at the meeting:

1	SHRI JOSE MANUEL NORONHA Chairman, Goa Public Service Commission, Panaji, Goa	Chairman
2	PROF. GOPAL MUGERAYA Director, National Institute of Technology, Farmagudi, Ponda, Goa	Member
3	DR. VIVEK B. KAMAT Director, Directorate of Technical Education, Porvorim, Goa	Member
4	DR. R.B. LOHANI Principal, Goa College of Engineering, Farmagudi, Ponda, Goa	Member
5	DR. NEENA PANANDIKAR Principal, Don Bosco College of Engineering, Fatorda, Goa	Member
6	SHRI SHREEDHAR BEVARA CEO, BMR Innovations, Vishakapatnam, Andhra Pradesh	Member
7	SHRI D S PRASHANT CEO, FiiRE, Goa	Member
8	SHRI KASTUBH PRIOLKAR Professor, Department of Physics, Goa University	Member

9	DR. SUNIL PAUL Assistant Professor, Indian Institute of Technology Goa	Member
10	SHRI YASHVIT NAIK Co-Founder & CTO, Teknorix Systems	Member
11	MR. LEVINSON MARTINS Director, Department of Science and Technology & Waste Management, Saligao, Bardez- Goa	Member Secretary

Shri Sunil Kumar, Mrs. Ankita Anand, Shri Bhushan K. Savaikar, Shri Pradeep Morajkar, Director- BITS Pilani could not attend the meeting and was granted leave of absence. Therefore, the Chairman welcomed the members of the Goa State Innovation Council for the meeting.

1. At the outset, the minutes of the meeting held on 24th October, 2020 were read and confirmed.

2. The Project Officer reported that the Entrepreneurship Development Program was completed for the following mentioned school students.

Sr. No.	Location	School	
1	South Goa	Vidhya Vihar High School, Cortalim, Goa	
2	South Goa	Government High School, Davorlim	
3	South Goa	Government High School Valkini, Sanguem	
4	North Goa	KAG's Panchasheel English School, Panchawadi, Ponda	
5	North Goa	Government High School, Sattari	
6	South Goa	Government High School, Paddi, Barcem	
7	South Goa	Government High School, Colomb Rivona	
8	South Goa	Government High School, Maina, Quepem	
9	North Goa	St. Anthony's High School, Duler, Mapusa	
10	North Goa	Azmane High School, Neura Ilhas - Goa	

The following status report of the Entrepreneurship Development Program was reported:

- 1. Number of Schools Targeted: 10
- 2. Total Number of Student signed up: 57
- 3. Total Number of Companies simulated: 203
- 4. Number of Female participants who successfully simulated a company: 13

3. The status report for the various initiatives of the council for the year 2021-22 were presented:

Sr. No.	Initiatives (2021-22)	No. of Sessions	No. of Participants
1	Sensitisation Workshops on Innovation & Creativity in Schools	35	2076
2	Bootcamps on Innovations, Startups & Prototyping	5	327
3	Prototyping Workshops – Thing Design & Prototype	85	4339
4	Intellectual Property Rights Sessions	3	206
5	Panel Discussion on Innovation, Startups & Prototyping	1	201
6	Faculty Development Program (FDP) on Innovation, Creativity & Prototyping	2	40
7	Financial Literacy Workshop for Schools	3	286
	TOTAL	134	7475
Sr. No.	Initiatives	Projects Supported	
---------	--	--------------------	
1	Ideathon - Affordable Healthcare Technology Innovations Goa	20	
2	Prototyping Grant Scheme	18	
3	Provisional Patent Supported	3	
	Total Project Supported	41	

It was reported that 7475 participants attended from 134 events and initiatives of Goa State Innovation Council. The total number of project supported through the Prototyping Grant Scheme are eighteen and Provisional Patent Fund Scheme are three. It was also reputed that the Ideathon on Affordable Healthcare Technology, Innovation received twenty projects and the winners are mentioned as below: ÷.

First Prize	DEVELOPMENT OF HIGH PROTECTIVE MASK Innovator: Prof. Gaurish Samant	Rs 20,000/-
Second Prize	MRSA - IDENTIFICATION AND TREATMENT Innovator: Dr. Roshan Naik	Rs 10,000/
	MULTI CLIENT OXYGEN MONITORING SYSTEM Innovator: Mr. Shonal Fernandes	Rs 5,000/-
Encouragement Prizes	OXYGEN GENERATION THROUGH PRESSURE SWING ADSORPTION METHOD Innovators: Mr. Keenan Cardozo, Mr. Sahil Chitrapur, Mr. Nirbhay Borkar, Mr. Akshay Batule, Mr. Shahul Ahmed	Rs 5,000/-
	NON-INVASIVE BODY VITALITIES CHECKING SYSTEM Innovators: Mr. Suyog Borker, Ms. Miti Gaunekar, Mr. Adarsh Mishra	Rs 5,000/-
	SANITIZING ROBOT Innovators: Mr. Vivek Khadilkar, Mr. Saeel Kamat, Miss. Drasti Naik, Prof. Mohini Naik Gadekar, Prof. Michelle Araujo	Rs 5,000/-

л	The initiative from	2017 till dat	o wara ran	orted through	the following table	
4.	The initiative nom	ZUIT till uat	e were rep	onteu tinougn	the following table	:.

Sr. No.	Initiatives (2017-2022)	No. of Sessions	No. of Participants
1	Sensitisation Workshops on Innovation & Creativity in Schools	122	9759
2	Bootcamps on Innovations, Startups & Prototyping	66	5228
3	Prototyping Workshops – Thing Design & Prototype	136	10685
4	Intellectual Property Rights Sessions	14	1160
5	Panel Discussion on Innovation, Startups & Prototyping	2	286
6	Faculty Development Program (FDP) on Innovation, Creativity & Prototyping	9	163
7	Financial Literacy Workshop for Schools	15	663
8	Women Centric Workshops	5	735
9	Risk Capital Sessions on Venture Capital	2	992
10	Orientation Program for School Teachers	4	1100
	Total	385	30771

1	Goa's Young Innovators Awards for schools	200
2	Most Innovative Student Project Competition	259
3	Hackathon on Goa Solid Waste Management	14
4	Ideathon - Affordable Healthcare Technology Innovations Goa	20
5	Prototyping Grant Scheme	37
6	Provisional Patent Supported	7
	Total Project Supported	537

It was reported that total of 30,771 participants attended from 385 events and initiatives. The total number of project supported by the Council were 537 through competitions, Healthcare, Ideathon and Schemes of Goa State Innovation Council.

5. The funds status through Grand in Aid received from Government of Goa were presented.

Sr. No.	Amount	Status
1	Rs 5,00,000.00	UC Submitted
2	Rs 20,00,000.00	UC Submitted
3	Rs 5,00,000.00	Received
4	Rs 20,00,000.00	Received

6. The initiative of Innovation Test of the Goa State Innovation Council was presented. The Innovation test is based on the co-competencies of Competency Name, Inventiveness, Self-Inspiration, Interpersonal, Technology Acumen, Problem Solving, Adaptation & Risk Appetite Curiosity, Passion, and Learning.

7. It was reported that the Innovation test was launched on 16th December, 2021 by the Chairman of Goa State Innovation Council, Shri Jose Manuel Noronha in collaboration with Bodhami, a National Award Winning platform based out of Margao, Goa.

8. The proposal for Innovation Library tool kit for the Innovators, Goa Robotic League 2022 and Goa Young Innovators Award 2022 were presented and the Member Secretary mentioned that the election code of conduct was in force due to which the Council cannot take any policy related decisions. All policy related decisions will have to be taken after the election code of conduct.

9. The Member Secretary informed the council members on the formation of a committee for identifying and reporting the Innovation index of IPR, GI, etc for the State's Sustainable Development Goal index.

10. The meeting ended with the vote of thanks.







COMMITTEES AND SUB-COMMITTEES CONSTITUTED BY THE COUNCIL AND THEIR ACTIVITIES

4.1 PROVISIONAL PATENT FILING FINANCIAL ASSISTANCE SCHEME

MINUTES OF THE MEETING FOR THE THIRD TECHNICAL ADVISORY COMMITTEE (TAC) OF GOA STATE INNOVATION COUNCIL HELD ON 11TH MAY 2021 USING ZOOM MEETING APP.

Members present:

1	MR. B S REVANKAR Ex-Director, NITK – STEP, Surathkal, Karnataka	Chairman
2	PROF SUNIL BHAND Dean, Sponsored Research & Consulting, Professor of Chemistry BITS, Pilani - K.K. Birla, Goa	Member
3	MR. DEEPAK PATHANIA Industrial Design, NID Ahmedabad, Goa	Member
4	MR. SUDIP FALDESAI Project Officer, Goa State Innovation Council	Member Secretary

Proceedings:

- 1. At the outset, the Chairman welcomed the members to the Meeting.
- 2. The Minutes of previous meeting were read and confirmed by the members.
- 3. Action taken on proceedings of the previous meeting were presented and discussed.
- 4. During the presentations it was observed that a total of 3 Ideas were present for the evaluation by the Technical Advisory Committee out of 4 invitees. Idea with the Unique Registration Number 378 was suggested for a patent search. The other Ideas with the Unique Registration Number 308 and 344 were directed to revert with Novelty Claims and other supporting documents. Annexure I – List of applications is attached
- It was decided by the committee to schedule the next meeting in the third/fourth week of July 2021.
- 6. The meeting ended with Vote of Thanks by the Chairman.

Annexure II – List of applications

Sr. No.	Unique ID	Idea Titles	Time	Status
1	308	Non-invasive method for detection of excess formalin in fish.	10:00 am	Present
2	344	Covid-19 face mask detection with alert system	10:15 am	Present
3	378	Electronic line fault detection system	10:30 am	Present
4	381	RUGSENS – smart carpet to detect your falls and analyze gait patterns	10:45 am	Absent

4.2 PROTOTYPING FINANCIAL ASSISTANCE SCHEME

MINUTES OF THE MEETING FOR THE THIRD SELECTION COMMITTEE FOR PROTOTYPING GRANT OF GOA STATE INNOVATION COUNCIL HELD ON 12TH MAY 2021 USING ZOOM MEETING APP

Members present:

1	MR. B S REVANKAR Ex-Director, NITK – STEP, Surathkal, Karnataka	Chairman
2	DR NARSINH THAKUR PH.D. Senior Principal Scientist, CSIR – NIO, Goa	Member
4	MR. SUDIP FALDESAI Project Officer, Goa State Innovation Council	Member Secretary

Proceedings:

- 1. At the outset, the Chairman welcomed the members to the Meeting.
- 2. A total number of 13 Ideas with the following Unique Registration Numbers (URN) were invited for the online selection interview of the Prototyping Grant.

The list of applications:

Sr. No.	Unique ID	Idea Titles
1	371 A	Autonomous spraying drone – Object Avoidance
2	371 B	Autonomous spraying drone - Object Detection

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Sr. No.	Unique ID	Idea Titles
3	376	Immobilized microbial beads to remove nitrate contamination in in- dustrial waste water effluents.
4	380	Railway track failure detection system: implementation, maintenance strategies
5	381 A	Oxyresp - Affordable, easy to use at home Oxygen Concentrator Ma- chine. A continuous flow Oxygen Concentrator which can be directly connected to the nasal cannula or face mask
6	381 B	Rugsens – smart carpet to detect your falls and analyze gait patterns
7	386	Remote control vacuum cleaner and sanitizing machine
8	389	Convert waste plastic to energy
9	366	New design and development of assistive care convertible design based patient handling & transfer system
10	378	Electronic line fault detection system

Sr. No.	Unique ID	Idea Titles
11	308	Non-invasive method for detection of excess formalin in fish.
12	349	Conversion of value added products from mixed plastic waste includ- ing multiplayer plastics
13	361	Development of a hand held device to be used by doctors for burn treatment

3. A total of 11 ideas with the following URN were approved by the selection committee based on the eligibility criteria of Novelty, Usefulness, Scalability, Innovative approach & prototyping attempt.

Sr. No.	Unique ID	Idea Titles
1	371 A	Autonomous spraying drone – Object Avoidance
2	371 B	Autonomous spraying drone - Object Detection
3	376	Immobilized microbial beads to remove nitrate contamination in in- dustrial waste water effluents.

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Sr. No.	Unique ID	Idea Titles
4	380	Railway track failure detection system: implementation, maintenance strategies
5	381 A	Oxyresp - Affordable, easy to use at home Oxygen Concentrator Ma- chine. A continuous flow Oxygen Concentrator which can be directly connected to the nasal cannula or face mask
6	386	Remote control vacuum cleaner and sanitizing machine
7	389	Convert waste plastic to energy
8	366	New design and development of assistive care convertible design based patient handling & transfer system
9	378	Electronic line fault detection system
10	308	Non-invasive method for detection of excess formalin in fish.
11	349	Conversion of value added products from mixed plastic waste including multiplayer plastics

The Idea with URN 361 was directed by the chairman to present for the next interview with the innovative approach from the available technologies.

The Idea with URN 381 B was rejected as it did not meet the eligibility criteria of the prototyping grant scheme.

- 4. It was decided by the committee to schedule the next meeting in the third week of July 2021.
- 5. The meeting ended with Vote of Thanks by the Chairman.







UIRTUAL INNOVATION REGISTER

5.1 INTRODUCTION

Every start-up begins with an idea. And ideas are vulnerable. That's because there are more chances of them being killed early in its premature stage because they do seem absurd or unfamiliar. If they survive the ruthless process of evaluation, the chances are they won't get a proper platform that will help them to flourish.

Virtual Innovation Register (VIR) is the platform where anyone can bounce their start-up ideas and get validation from experienced mentors who have significant industry experience. VIR also gives the ideators easy access to sophisticated tools to evaluate the commercial viability of ideas.

Virtual Innovation Register

The Virtual Innovation Register is a unique initiative by GSInC to harvest potential ideas and innovation in a very systematic manner. Keeping in line with the ethos of Digital India, the VIR is an online platform where innovators and entrepreneurs can register their ideas virtually and source the required support to achieve the expected results. VIR will function as an innovation bazaar where young innovators will display prototypes and directly talk to prospective buyers.

Why is VIR Good for Innovators & Businesses?

- Safeguarding unique innovations and ideas
- Validation of idea and support from experts
- Hassle-free digital registration from the comfort of home or office

Innovations and ideas can be registered under VIR in two categories; New Ideas and Startups. While the former allows individuals to submit their innovation and ideas, the latter allows already functioning start-ups to register with VIR and enjoy a host of benefits.

Benefits of Registering New Ideas Under VIR:

- Intellectual Property Rights support
- Support for commercialisation
- Pitching to prospective buyers

Benefits of Registering Your Start-up Under VIR:

- Collaboration with mentors and experts
- Support for raising Funds
- Access to resources (Incubation, Co-Founders, etc.)

The adequate promotion and spreading the awareness about the VIR bore fruits. The VIR saw registrations from 56 start-ups, as well as, submission of 409 new ideas by individuals across all ages and walks of life.

Identified as one of the most significant tools to rope in game-changing entrepreneurial ideas from about anyone in the state, VIR is integrating technology and an iron-will to nurture a strong start-up ecosystem in Goa.

5.2 SCHEME FOR PATENT FILING UNDER VIRTUAL INNOVATION REGISTER (VIR)

The scheme aims to promote awareness and adoption of Intellectual Property Rights amongst the students and innovators. An applicant under this Scheme shall be eligible for support of up to Rs. 10,000 for filing a provisional patent application through the aforesaid patent agents/ firms.

SCHEME FOR PATENT FILING UNDER VIRTUAL INNOVATION REGISTER (VIR)

INTRODUCTION:

Intellectual Property Rights (IPRs) are emerging as a strategic business tool for any Innovators organization to enhance industrial competitiveness.

Innovators, with limited resources and manpower, can sustain in this highly competitive world only through continuous growth and development oriented innovations; for this, it is equally crucial that they protect their IPRs.

The scheme aims to promote awareness and adoption of Intellectual Property Rights amongst the students and innovtaors. Scheme is inclined to nurture and mentor innovative and emerging technologies among Students and assist them in protecting and commercialize it by providing them access to highquality IP services and resources.

OBJECTIVES:

- The objectives of the Policy are as follows, namely:
- to promote academic freedom and safeguard in creation of intellectual property
- to provide a comprehensive single window reference system for all intellectual property rights issues relating to intellectual property generated during academic studies;
- to safeguard the interest of creator of intellectual property and provide fair distribution of returns accruing from the commercialisation of IPR;
- to provide legal support, wherever necessary, to defend and protect the intellectual property rights obtained by the Institute against any infringement/ unauthorised use;
- to create an environment for acquiring new knowledge through innovation and research, compatible with the educational mission of the Institute

ABOUT VIRTUAL INNOVATION REGISTER:

The Virtual Innovation Register (VIR) is a unique initiative of the Goa State Innovation Council to nurture potential ideas and innovation to its highest potential. In line with the ethos of Digital India, the VIR is an online platform where innovators and entrepreneurs can register their ideas virtually and source the required support to achieve the expected results. VIR also functions as an innovation step where young innovators will display prototypes and directly talk to prospective buyers.

Following are the benefits of VIR:

- Safeguarding unique innovations and ideas
- Validation of idea and support from experts
- Hassle-free digital registration from the comfort of home or office
- Incentives amounting to Rs 10,000/- paid to the patent Attorney or Patent Agent from the list of empaneled Patent Attorneys/Agents for filing patent application on behalf of Applicant.

EMPANELMENT OF PATENT AGENTS/ FIRMS FOR FILING PATENTS UNDER VIR:

The Committee duly appointed by the office bearers of the Goa State Innovation Council for Selection of Patent Agents/ Firms scheduled the interviews on 11th Jan 2019 and the committee finalised the following Individuals/ Firm based on the needs of the Goa State Innovation Council:

- 1. Mrs. Shalini Menezes, order no. DBCE/GSInC/2018-19/56
- 2. Adastra IP Pvt Ltd, represented by Mr Sandeep Agarwal, order no. DBCE/GSInC/2018-19/55
- 3. Lawmate.in represented by Ms. Gautami Raiker, order no. DBCE/GSInC/2018-19/54
- 4. Jackfruit Software and Systems Pvt Ltd represented by Mrs. Supriya Ravindra, order no. DBCE/ GSInC/2018-19/53

An applicant under this Scheme shall be eligible for a support of upto Rs. 10,000 for filing provisional patent application through the aforesaid patent agents/ firms. The said fee will be paid directly to the appointed firm for filing the application.

PROCEDURE FOR APPLYING UNDER THE SCHEME:

Below mentioned is the procedure for applying under the Virtual Innovation Register (VIR):

An individual or a registered entity (Partnership/ Limited Liability Partnership/ Private Limited Company) shall submit an application through the portal:

http://goastateinnovationcouncil.com/virtual-innovation-register

An Innovative shall be from the following sectors which are not absolute but include:

- Agri-tech
- Digital media
- Health care tech
- Manufacturing
- ITES

It is mandatory for the applicant to apply under the aforesaid mentioned portal to claim benefits under the Virtual Innovation Register.

SELECTION COMMITTEE FOR SANCTIONING PROJECTS UNDER VIR FOR PROVISIONAL PATENT FILING:

The Goa State Innovation Council shall hold meetings for once in three months basis to approve projects for filing provisional patent application.

Following is the committee for sanctioning the proposals:

- Mr. B S Revankar, Ex-Director, NITK STEP, Surathkal, Karnataka Chairman
- Prof Sunil Bhand, Dean, Sponsored Research & Consulting, Professor, BITS, Pilani, Goa Member
- Mr. Deepak Pathania, Industrial Design, NID Ahmedabad, Goa Member
- Mr. Sudip Faldesai, Project Officer, Goa State Innovation Council Member Secretary

The intimation of decision shall be made to the applicants through email within 30 number of days from the date of meeting.

All decisions regarding selection shall be final and binding.

TENURE OF THE SCHEME:

The scheme shall be valid for a period of 3 years w.e.f. 1st April 2019.

Photograph 5.2: Patent Filing under VIR



An applicant under this scheme shall be eligible for a support of upto **Rs.10,000** for filing provisional patent application through the aforesaid patent agents/ firms.



Manufacturing

ITES

5.3 SCHEME OF FINANCIAL ASSISTANCE FOR PROTOTYPING UNDER VIRTUAL INNOVATION

REGISTER (VIR)

Scheme to provide financial assistance for prototyping technology-based innovative projects/ideas under the Virtual Innovation Register (VIR An applicant under this Scheme shall be eligible for financial assistance of up to Rs. 20,000/- per project.

INTRODUCTION:

- The mandate of GSInC is to augment knowledge and creativity through identification, support and incubation of technologies and traditional practices.
- Students, young entrepreneurs, emerging startups, having innovative ideas with a vision to transform them into scalable products are truly the main driving force behind rapid economic growth, increased productivity, social transformation as it also helps in reshaping and redefining almost every aspect of our lives and environment.
- Scheme to provide Grant In Aid for prototyping technology-based innovative projects/ideas under the Virtual Innovation Register (VIR) to make it affordable for Students, Startups, Innovators, Research Faculty& Entrepreneurs who require the necessary support in converting Ideas into marketable products.

OBJECTIVES:

- The scheme is primarily formulated with the objective to support and finance Students, Startups, Innovators, Research Faculty and Entrepreneurs, having technology based innovative ideas which they wish to translate into working and marketable prototypes/products.
- The scheme aims to encourage innovators to achieve new heights in sustainable technologies by providing grant in aid for prototyping their product/ideas.
- To create a vibrant innovation ecosystem by supporting faster implementation of innovative ideas and converting the same into products/ processes.

ELIGIBILITY CRITERIA FOR AVAILING BENEFITS UNDER THE SCHEME:

- Students, Startups, Innovators, Research Faculty & Entrepreneurs [collectively, "applicant" (s)] may apply under this scheme.
- The applicant must be an Indian Citizen.
- The Applicant may be a final year student working on a college project or a High School or Higher Secondary School student working on a school project participating either in State or National level competitions from the State of Goa.
- The project should relate to hardware or software-based product innovation.
- The proposals preferably in the following focus sectors shall be encouraged: Green technology, Clean energy, Industrially utilizable smart materials, Waste to Wealth, Affordable Healthcare, Water & Sewage Management, Renewable Energy sources, Electric Vehicles, Smart Cities, Agritech, Meditech, Health care tech and Digital media, ITES.
- The proposed innovative idea/ project in the form of a product/solution must be associated either with Academics, Industry or the Government.
- The applicant shall be required to provide a letter of intent (LOI) in case the proposed idea/ project is associated with the Industry or the Government.
- The applicant must be working on a hardware or software-based Product Innovation.
- The applicant must be registered under the Virtual Innovation Register (VIR) as a New Idea.

An applicant under this Scheme shall be eligible for a grant of up to Rs. 20,000/- per project.

THE GRANTS SHALL BE PERMITTED TO BE USED ONLY FOR THE FOLLOWING PURPOSES:

Prototyping Material:

- Grant shall be utilized for purchasing tools and materials required for building the prototype. Academic Projects:
- An individual applying through Educational Institutions will be permitted to use the prototype grant only for academic projects.

PATTERN OF ASSISTANCE OF THE SCHEME:

- Project quotes are required to be submitted to GSInC before the release of the grant.
- The grant shall be disbursed as single installment to the concerned applicant/grantee whose prototyping grant is approved by the duly constituted Advisory Committee of GSInC.
- Copies of bills/invoices generated for purchasing materials and tools for building the prototype must be maintained and submitted to GSInC.
- The entire amount of the grant approved within the same financial year, should be utilized before the month of March of the subsequent year and should be used only for the purpose for which it is sanctioned.

PROCEDURE FOR APPLYING UNDER THE SCHEME:

- The applicant is required to submit an online Application Form which is available on: http:// goastateinnovationcouncil.com/ under the Virtual Innovation Register (VIR) and sign up as a New Idea.
- It is mandatory for the applicant to apply under the afore-mentioned portal to claim benefits under the Virtual Innovation Register.

SELECTION COMMITTEE:

- The Selection Committee of the Goa State Innovation Council shall hold periodic meetings to approve projects for providing Grant In Aid for prototyping of innovative projects.
- The Selection Committee for sanctioning the grant shall consist of a Chairman and two Members who will be appointed by the Chairman of the Goa State Innovation Council. This Committee shall meet as often as required and recommend grants for prototyping to the Council.
- The intimation of decision shall be made to the applicants via email within 7 number of working days from the date of such meeting.
- All decisions regarding selection shall be final and binding.

TENURE OF THE SCHEME:

The scheme shall be valid for a period of 3 years w.e.f. 1st November, 2020.

Photograph 5.3: Prototyping Technology-based Innovative products under VIR



5.4 STATUS REPORT

The Virtual Innovation Register has successfully registered several path-breaking start-up ideas. Out of the total 472 ideas registered on VIR, 56 were from established start-ups and 409 were new ideas. The latter figure, which is significantly higher than the last year's figure of 285, suggests the potential of entrepreneurship in Goa, and is also a reflection of VIR's success in reaching out to people and tapping ideas.



5.5 BENEFICIARIES OF THE PROVISIONAL PATENT GRANT

Title:				
Cake making and baking using 3D Printing				
Innovator Name:				
Everard Leitao				
Contact No:				
+918554919805				
Contact Email:				
Contact Email:				

Introduction:

everard173@gmail.com

3D printing, or additive manufacturing, is the construction of a 3-dimensional object from a CAD model or a digital 3D model. The term "3-D printing" can refer to a lot of methods wherein material is deposited, joined, or solidified under computer control to create a 3D object, with material being delivered together (including liquid molecules or powder grains being fused together), generally layer by layer.

One of the important benefits of 3-D printing is the ability to supply overly complicated shapes or geometries that might be in any other case not possible to assemble by hand, which include hollow elements or parts with internal truss structures to lessen weight.

Since it was introduced, it has the potential to massively disrupt both the manufacturing logistics and inventory management industries, if it can be successfully incorporated into mass production processes. The technology has been used to reduce the lead time in the development of prototypes of parts and devices, and the tooling needed to make them. This is hugely beneficial to small-scale manufacturers because it reduces their costs and the time to market (the amount of time from a product being conceived until its being available for sale), because 3-D printing can create intricate and complex shapes using less material than subtractive manufacturing processes, such as milling, it is used in hydroforming, stamping, injection molding, and other processes.

Support expected in future:

The development of a 3D printer to print cakes requires a lot of modifications to existing printers. Making sure that the materials are food grade is also very important. Making sure that these conditions are met, some financial investment along with a good mentor to help support the project are required.

Photograph 5.5: Cake making and baking using 3D Printing





5.6 BENEFICIARIES OF THE PROTOTYPING GRANT SCHEME

Table 5.6 - List of Beneficiaries of the Prototyping Grant Scheme

File No	Unique Registration Number	Title of the Project
1	308	Non-invasive method for detection of excess formalin in fish.
2	349	Conversion of value added products from mixed plastic waste including multiplayer plastics
3	366	New design and development of assistive care convertible design based patient handling & transfer system
4	371 A	Autonomous spraying drone – Object Avoidance
5	371 B	Autonomous spraying drone - Object Detection
6	376	Immobilized microbial beads to remove nitrate contamination in indus- trial waste water effluents.
7	378	Electronic line fault detection system
8	380	Railway track failure detection system: implementation, maintenance strategies
9	381	Oxyresp - Affordable, easy to use at home Oxygen Concentrator Machine. A continuous flow Oxygen Concentrator which can be directly connected to the nasal cannula or face mask
10	386	Remote control vacuum cleaner and sanitizing machine
11	389	Convert waste plastic to energy
12	149	UV-c disinfectant tunnel

File No	Unique Registration Number	Title of the Project
13	391	Ambulatory Blood Pressure Monitor
14	394	Ceramic Waste
15	402	Developing An Innovative Product From Negative Waste
16	403	Oxygen Concentrator Through Pressure Swing Adsorption Method.
17	404	Sanitizing Robot
18	405	Development Of Oxygen Analyzer And Oxygen Mask
NON-INVASIVE METHOD FOR DETECTION OF EXCESS OFRMALIN IN FISH

Unique Registration Number: 308



Name of Applicant/s:

Shri. B. Pavan Kalyan Shri. Siddhant Kunde Shri. Vaishabh Jalmi



Name of Mentor/s: Dr. Shreyas Simu

Dr. Varsha Turkar



Name of School/College/Startup/Organisation: Don Bosco College of Engineering



Address: Fatorda, Goa



Contact Number:

Pavan Kalyan | 8766473081 Siddhant Kunde |8459464580 Vaishabh Jalmi | 9503055989 Dr. Shreyas Simu | 7795849752 Dr. Varsha Turkar | 9920038965



Contact Email ID:

Pavan Kalyan | kalyanpavan2299@gmail.com Siddhant Kunde | siddhantk8459@gmail.com Vaishabh Jalmi | jalmivaishabh28@gmail.com Dr. Shreyas Simu | shreyas.simu@dbcegoa.ac.in Dr. Varsha Turkar | Varsha.turkar@dbcegoa.ac.in



Project Objective:

1. To classify different fish species using image processing and machine learning techniques.

2. To predict the freshness of fish in terms number of days after catch using image processing and machine learning techniques.

3. To design a non-Invasive hardware/software system to detect presence of formalin in fish and its concentration.

4. To design and develop an end-to-end system on android which performs above three objectives.



Abstract:

Fish is most popularly consumed in coastal areas of India and some hinterlands as well. The demand for fish has been increasing every year. To cater this demand fish has to be transported to many metro cities and tourism dominated areas. Which leads to illegal increase of adulteration of fish using chemicals (formaldehyde) for preservation. This in turn leads to several health issues, and also it is one of the major component that causes cancer. This project presents an approach to analyse the quality of fish. The overall objective is to create a complete system on a mobile phone, with the combination of various software techniques as well as a hardware interface.

Goa State Innovation Council

There are many methods to detect formalin both invasive and non-invasive. One such method is testing through pH strips from formalin detection kit. This kit is difficult for public use. Fish quality analysis system, which is the project outcome will be able to detect artificial formalin on fish. This system is easy to use. The system, consists of HCHO sensor to detect the presence of artificial formalin on fish and uses image processing and machine learning techniques to classify fish into different family types and predict the fish freshness based on number of days after the catch.



Project Outcome/result/findings:

Objective 1 outcome:

Setup for image dataset generation



Photograph: The System for detecting the fish family was successfully developed and the results achieved are tabulated below:



Photograph: Images from the dataset for fish identification. a. Green Chromide, b. Crescent Grunter, c. Gray Mullet, d. Jibra (Local name)

	Classifier Accuracy			
reature Extraction	KNN	Random Forest	Naïve Bayes	Artificial NN
1. GLCM & Discrete Wavelet Transform	72%	86%	73%	77%
2. Histogram of Oriented Gradient	83%	87%	80%	99.64%
3. Speeded-up Robust Feature	97%	100%	100%	97.5%

Objective 2 Outcome:





Photograph: Images from the dataset for fish freshness detection (Indian Mackerel)

Results:

Footure Extraction	Classifier Accuracy			
	KNN	Random Forest	Naïve Bayes	Artificial NN
1. GLCM & Discrete Wavelet Transform	59%	89%	75%	78.83%
2. Histogram of Oriented Gradi- ent	69%	75%	45%	88.17%
3. Speeded-up Robust Feature	78%	83%	78%	91%

Objective 3:

Photograph: The outcome of this objective is to detect formalin present on the fish using formalin sensor.



The formalin detection results are tabulated below:

Sr.no Formalin Concentra- tion (in ppm)	Sensor Values (in ppm)				
	tion (in ppm)	Day1	Day2	Day3	Day4
1.	10ppm	9ppm	7ppm	6ppm	3ppm

Objective 4:

Photograph: The formalin detection on fish using android application was successfully carried out.





Innovative Approach:

Most of methods used for detection of formalin on fish are invasive system. This project aims developed a non-invasive system. Certain testing methods make use of chemical reagent for formalin detection which creates a problem for common people to handle chemicals. This project avoids this drawback as no chemicals are involved. Many times a non-local person is not able to identify a local fish and also not gauge the freshness of fish in terms of days from the catch. This system identifies the type/class/family of fish and also freshness of fish. Finally, there is a requirement for a complete system which will perform all above analysis and give a one stop solution to the fish consumers and retailers.

CONVERSION OF VALUE ADDED PRODUCTS FROM MIXED PLASTIC WASTE INCLUDING MULTIPLAYER PLASTICS

Unique Registration Number: 349



Name of Applicant/s: Ganesh Shantaram Chari



Name of Mentor/s: Dr. Kurinji



Name of School/College/Startup/Organisation: Neshaju Envirotech



Address: Dandoswada, Madrem- Goa 403527



Contact Number: 9590801963

Contact Email ID: varadchari@gmail.com



Project Objective:

Development of Bioleaching based gold extraction from E-waste using bacterial culture.



Abstract:

Electronic waste recycling is integral part of recycling industry of modern society, not only due to its social and economic impact, but also, because it plays a vital role for the future of our planet. In the world, it is estimated that over 1 trillion tons of waste is generated including household and industrial waste.

Electronic waste or E-waste is basically electronic products that are faulty, condemned or have become obsolete and can no longer be used. E-waste includes used computers, televisions, radios, display device, tablets, refrigerators, washing machines, mobile phones, and several other used electronic products. Such materials are better reused or recycled as against allowing them to be buried under the earth which pollutes soil, water and air.

E-waste, needless to say, represents an enormous environmental hazard. However, it also presents huge opportunities for us to take the plunge. According to a recent study by Assocham-Ckinetics, India is the fifth largest e-waste producer and its e-waste generation is expected to annually grow at 30 per cent to touch 5.2 million metric tons (MT) per annum by 2020 as against the present level of 1.8 million metric tons. This, in turn, represents a huge business opportunity in e-waste recycling.



Project Outcome/result/findings:

Developed e-waste recycling using a bioleaching process by:

- 1. Pre-processing of e-waste to obtain mixed metal powder by manual dismantling, segregation, shredding, pulverization, and separation;
- 2. Preparing bacterial mother culture by using source samples of water and soil, isolating the strains of bioleaching interest, and stress-inducing the isolated colonies with metals;
- 3. Bioleaching in a conical flask-based bioreactor under controlled parameters with the

prepared bacterial mother culture to get a gold-laden solution;

- 4. Separation of bioleaching solution from other biomass and gold is obtained using precipitating agents and smelting; and
- 5. Post-processing treatment was carried out to treat waste biomass and disposed of it safely.



Innovative Approach:

Sustainable E-Waste Recycling (Novelty):

Non-working, damaged electronic and electrical devices are segregated, dismantled and recycled using sustainable recycling technologies including dry processes and bioleaching. Techno-mechanical separation processes are incorporated for recycling e-waste to get various metals, plastics, ceramics and glass while carefully stabilizing the hazardous components. Equipments in good working conditions are cleaned and refurbished for re-use. Unlike conventional practises of using acids, cyanides and burning process for extraction of gold, we use sustainable bioleaching process using bacteria to extract gold.

Photograph: Conversion of Value added products from mixed plastic waste including multiplayer plastics



NEW DESIGN AND DEVELOPMENT OF ASSISTIVE CARE CONVERTIBLE DESIGN BASED PATIENT HANDLING & TRANSFER SYSTEM

Unique Registration Number: 366



Name of Applicant/s: Coin Medix Private Limited



Name of Mentor/s: Sarvesh S Bhise



Name of School/College/Startup/Organisation: Coin Medix Private Limited



Address:

S-1, Gokul Appt., Pundalik Nagar, Alto-Betim, Porvorim, Bardez North Goa, 403521



Contact Number: 8080200818/ 7975589682





Project Objective:

Design and Develop a smart intelligent Assistive Care Convertible Tech System for safe handling and transfer of Patients.



Abstract:

- 1. Inter and Intra-hospital Patient Transfers involves lifting and shifting of Patients from one bed/ table/ diagnostics setup/ OR to ICU /General ward and vice versa.
- 2. These results in millions of Patients suffering grave injuries during Handling and Transfer majorly due to lifting.
- 3. Also Caregiver/Nurses 70% of the time suffer from Neck/ back injuries.
- 4. We have designed an Electromechanical Bed System that eliminates need to lift Patients and enables risk free Bed to Bed/ OR/ Diagnostics set-up transfers.
- 5. System design consist of a 3-in-1 Convertible structure which can be used as Bed, Emergency Ward Bed, Transfer Table, Stretcher and also Wheelchair.
- 6. This saves number of hospital equipment needed and other hospital resources.
- 7. Less number of Nurses required for Patient transfer saves resources and time.
- 8. Save costs.
- 9. Eliminates risk of Injury to Patient and Nurses.



Project Outcome/result/findings:

- 1. We have developed fully functional prototype.
- 2. Currently under User and Hospital studies.
- 3. Also Analyzing design for further fine tuning.
- 4. Design finalization, BoM, Manufacturing and other details being worked on.



Innovative Approach:

The System Design has been approved for a Patent grant.

We have combined best of features of multiple systems and converted it into 01 Convertible system design.

Photograph: New design and development of assistive care convertible design based patient handling & transfer system





AUTONOMOUS SPRAYING DRONE – OBJECT AVOIDANCE

Unique Registration Number: 371



Name of Applicant/s:

Ulavan Agritech services (OPC) PVT. LTD.



Address:

Cubicle 10, Forum for Innovation Incubation Research and Entrepreneurship Don Bosco college of engineering, Murida Rd, Fatorda, Margao, Goa 403602



Contact Number: +91 9944545247



Contact Email ID:

aditya.ulavan@gmail.com



Project Objective:

To build a Drones in Goa and open up the job market to local communities, by enabling farmers with Agritech services.



Abstract:

Ulavan Agritech Services (OPC) Pvt.Ltd – UAS, is a smart precision Agritech Service providers that aims to reduce the gap between Agriculture & Technology, by using drone as service at affordable prices. UAS is curently focusing on providing precision spraying service, Digital Land Survey, and crop health monitoring services. By digitizing and including technology in farming sector, we aim to bring transparency in the agricultural services offered, and jobs for locals. Ulavan aims to charge Rs. 1200 – Rs. 1500/- per acre for spraying & Rs. 800/- per acre of crop health report.



Project Outcome/result/findings:

SMART PRECISION DRONE AGRI-TECH SERVICES

IMMOBILIZED MICROBIAL BEADS TO REMOVE NITRATE CONTAMINATION IN INDUSTRIAL WASTE WATER EFFLUENTS

Unique Registration Number: 376



Name of Applicant/s: Dr Roshan R. Naik



Name of Mentor/s: N/A



Name of School/College/Startup/Organisation: N/A



Address:

Sagar Ratna Coop Society, Alto Santa Cruz, 403202 /Sita Niwas, Top cola, Borim, 403401.



Contact Number: 9503152848



Contact Email ID: rosnaik@gmail.com



Project Objective:

Nitrate decontamination of waste water using immobilized microbial beads.



Abstract:

Excessive nitrate concentration due to agriculture or industrial activity contaminates water bodies making them unfit for consumption. Currently available treatment options are limited in their capacity to remove nitrate and are expensive. We have identified bacteria involved in nitrate decontamination which were prepared in immobilized bead form to efficiently remove the nitrate contamination (60%) from fish waste effluent.



Project Outcome/result/findings:

60% efficiency in reducing nitrate in fish waste effluent.



Innovative Approach:

Immobilized microbial beads which are non-toxic and a low cost alternative for nitrate bioremediation.

Photograph: Immobilized microbial beads to remove nitrate contamination in industrial waste water effluents



ELECTRONIC LINE FAULT DETECTION SYSTEM

Unique Registration Number:



Name of Applicant/s:

Vighnesh Nauso Shetye



Name of Mentor/s: Nauso Uttam Shetye

Name of School/College/Startup/Organisation: Dr Keshav Baliram Hedgewar Vidyamandir



Address:

House number 2157 'sukhakarta', Harvalem Housing Board Colony, Harvalem sanquelim, North Goa district, Goa - 403505



Contact Number: 9923273516

Contact Email ID:



vighneshns2008@gmail.com



Project Objective:

Abstract:

Electrical line fault detection system is an iot based smart system to help the electricity department to detect the line faults quickly and efficiently. The system will help to assign the work to the employees of the electricity department or linesmans and will help to resolve the electrical line faults quickly and this will help to ensure smooth supply of electricity to consumers that is both domestic and commercial usages.



Project Outcome/result/findings:

The device was successfully built and it successfully works. On showing it to the officials they said that it would be helpful to them



Innovative Approach:

This device helps in quick and remote detection of line faults because it uses internet of things

Photograph: Electronic line fault detection system



RAILWAY TRACK FAILURE DETECTION SYSTEM: IMPLEMENTATION, MAINTENANCE STRATEGIES

Unique Registration Number: 380



Name of Applicant/s:

Prithvi Amonkar Rehan Khan Saiprasad Parab Raj Sawant Mahesh Naik



Name of Mentor/s: Prof Suraj R Marathe



Name of School/College/Startup/Organisation: Don Bosco College of Engineering Fatorda



Address: Vrindavan Garden Ponda Goa



Contact Number: 9764189629



Contact Email ID:

prithviamonkar@gmail.com



Project Objective:

Objective of our project is to implement Automatic railway Track Failure Detection System using ultrasonic sensor and GPS Module.



Abstract:

Indian Railways is one of the largest networks in the country. Its motto is "the lifeline of the country", and the main transport is completed by the railways of the country. I believe that the railroad is one of the cheapest and safest means of transport, but there are also certain accidents on the railroad. 60% of accidents are caused by rail road failures or the formation of cracks in the road. Today's rail systems involve manual track inspection, which is cumbersome and not entirely effective. However, the detection and correction of track defects are a problem for all railway companies in the world. The objective of this project is to detect railroad track failures using ultrasonic sensor and GPS Module where once the crack is detected by the ultrasonic sensor the location is can be captured by the GPS Module . Track maintenance follows traditional batter packing methods, but in most cases, trackers check for track defects by hitting the rod on the track judging the sound it makes. This method is completely based on experience and is not very accurate. The project also involves the implementation of road maintenance strategies with the help of failure mode effect and analysis To avoid accidents, safety components are more necessary.

Railroad failures must be detected as early as possible to avoid significant loss of life and property caused by the derailment. The project investigation will help maintenance engineers solve railroad track failures and maintenance problems cost-effectively.



Project Outcome/result/findings:

The final prototype model was placed on the track made of aluminium C channel for the purpose of testing the failure on the track. As shown in the figure 1.1. The coordinates of location where crack has been detected were sent to the web App and the location can be seen on map as shown in figure 1.2. Along with Location being shown on the map, the actual values of coordinates can also be Recorded from the web app as shown in figure 1.2. The latitude and longitude Values of the cracks detected during testing are shown in the table below.

Innovative Approach:

The current detection system that is used by the railways is done manually. In our prototype model detection is done automatically with the help of ultrasonic sensor used for detection of failures. Our model does not require to be manually operated as it is motored. Also the advantage is after detection of the failure the exact location can be captured with the help of GPS module and the latitude and longitude and can be noted down which will be useful during the maintenance of tracks.

Photograph: Failure detection model



Photograph: Real time location



Tabl: Coordinates of crack location

CRACK	LATITUDE	LONGITUDE
1	15.51	74.13
2	15.51	74.14

OXYRESP

Unique Registration Number: 381



Name of Applicant/s:

Anit Chand Pramod DS



Name of Mentor/s: Manjunath Mahashetti



Name of School/College/Startup/Organisation: wellCAREx (Un-registered)



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Project Objective:

1. PRESSURE ADBSORBENT SEPARATION OF OXYGEN TO GENERATE >90% OXYGEN CONCENTRATION

2. BUILD A LOW-COST OXYGEN CONCENTRATOR PROTOTYPE FOR HOME USE



Abstract:

The percentage of individuals suffering from lung diseases such as chronic obstructive pulmonary disease (COPD) is increasing. With the outbreak of COVID-19, patients with serious lung infections require immediate and a long-term oxygen supply until hospitalization.

For rural India, we need to quickly address oxygen requirements and aim at using a safe, low-cost, easily available, and replenishable source of oxygen of moderate purity.

- 1. This is possible by building a self-sustaining oxygen concentrator (pressure swing adsorption with multiple molecular sieve technology) capable of delivering oxygen at constant flow rates.
- 2. People who immediately need oxygen for the treatment of hypoxemic conditions can use this within the home setting under the recommendations and guidance of a physician and thus help sustain life until alternate help or hospitalization occurs.
- 3. This will specifically reduce burden at hospitals and clinics, especially in the rural areas where not only the availability of physicians, nurses and healthcare staff is low, but also the number of healthcare centers and hospitals and their reach are relatively lower.

The cost of the Prototype along with necessary testing is as below:

- MATERIALS & MANUFACTURING Rs.1,00,000
- CERTIFICATIONS Rs.5,00,000



Project Outcome/result/findings:

The initial stage of Approach, Design and Procurement of materials were completed, except for a main component. The Bill of Materials (BoM) was duly submitted to GSInc.

A major component called the ZEOLITE Molecular Sieve was purchased vide Voucher number: BCPI/187/20-21 using the funds which were provided by GSInc.

A crucial component called the Pneumatic Solenoid valve (Refer Item # 3 in BoM) was not available in the market with any of the leading vendors.

Other components were made available and constructed, however the circuit and integration of the Prototype could not be completed for the following reasons:

- 1. Non availability of a key pneumatic component (the specific model was still in Beta mode and hence could not procure)
- 2. Team non availability (due to the long wait, the team had to be dismantled)
- 3. Cost of the overall project (overall cost of materials was beyond the stipulated cost of initial prototype)

The Prototype Project currently stands stalled as the Primary objective of the Pressure adsorbent separation could not be fulfilled due to the above stated reasons. We welcome investors and engineers to take over this project and documentation and we can provide any assistance and materials required for this prototype project to be completed.



Innovative Approach:

In the first version, a solution which is low-cost, portable, home-use, high purity, small sized, low on noise and affordable to common households was targeted.

In future versions, a revised model having

- 1. Extensible and replaceable Zeolite Sieves
- 2. Battery Operated
- 3. Environment Adaptable
- 4. Predictive RoX index
- 5. Integrated Oxygen Saturation and Respiratory Rate indicators were planned

REMOTE CONTROL VACUUM CLEANER AND SANITIZING MACHINE

Unique Registration Number: 386



Name of Applicant/s:

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Name of Mentor/s:

Prof. Suneeta Raykar



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Project Objective:

- 1. To make the system accurate enough so that cleaning and sanitizing can be done remotely by hospital staff without coming in contact with patients.
- 2. To make it user friendly so people from all age groups can operate it with same ease when used in areas other than hospitals such as households or office premises.
- 3. To make it lightweight and smaller in size so that it is easy to store and carry whenever required.
- 4. To discard use of external wires to improve its reach without physical boundaries like wires and also improve its appearance.
- 5. To give it an all in one feel by making its components detachable and re attachable from main assembly with same ease so that it would be useful even when only one of the tasks is to be performed.
- 6. To make it multipurpose in use by not restricting it only to spray sanitizers but to also make it able to spray any liquid like soapy mixture , fragrance liquid depending on density of the liquid.
- 7. To also give it a self-responding ability at some extent by using a sensor so as to avoid certain forthcoming obstacles on its own when not made to change its path by the operator.
- 8. To make it low maintenance and economical in its segment as compared to other existing products having similar or some of its features.



Abstract:

- The project is a wireless remote controlled moving vacuum cleaner and sanitizing machine with an ultrasonic sensor for obstacle detection.
- The overall machine can be battery powered or rechargeable. The sanitizer gets sprayed at regular intervals at given angle while the vacuum cleaner can suck in almost every considerable bit coming on its way (metal bits, dirt and non -metallic objects).
- The vacuum cleaner and sanitizing machine both components can be detached and used individually in different places.
- It can be used in any premises, majorly in hospitals, hotels. Even if not for this, it can be still used to clean and spread scent in rooms.
- It's a complete package within itself which is long lasting , user friendly and affordable in its segment.



Project Outcome/result/findings:

The entire model specification in given below in the table :-

Specifications	Value
Overall weight	7.8 kg
Dimensions	63.5cm x 40.64cm x 33cm
Vacuum cleaner weight	2 kg
Sanitising machine weight	2 kg
Remote controlled car weight	3.5 kg

Vacuum cleaner efficiency

- Vacuum cleaner functions efficiently on full charged 12 v battery for 20-25 minutes.
- With increase in battery capacity the working time of vacuum cleaner can be increased. But overall weight should be considered while doing so. With increasing weight on car, the speed can reduce and over increase can damage the gear motor attached to tyres.
- De-attached vacuum cleaner can be used with similar ease.
- Also, with the use of DC-DC boost converter the suction power can be increased.

Sanitising machine efficiency

- Sanitising machine functions efficiently on full charged 12 v battery for 30-35 minutes.
- The distance covered by the sprayer is almost 30-50 cm.
- Due to the fault in power window motor, it does not attain the required rotating speed. It takes up to 9v as input which does not create enough pressure for spraying the liquid. Thus we were incompetent to find the spraying intervals and the actual speed of rotation.



役 Innovative Approach:

- Considering the virus stays in air , it reduces the risk of infection to the cleaning staff in the contaminated areas (hospitals , covid centre).
- Addition of sanitising unit adds to the benefit
- It is detachable hence can be used individually
- Ultrasonic sensors prevent damage due to collision
- Easy to operate and transport and budget friendly

CONVERT WASTE PLASTIC TO ENERGY

Unique Registration Number: 389



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Name of Mentor/s: Mohnish Borker



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Project Objective:

To convert waste plastic to polyfuel which can be used for heating purposes.



Abstract:

Usage of plastics is increasing day by day. Most of which ends up in a landfill for thousands of years. This is a serious threat to the environment and also the water bodies.

The rapid depletion of conventional fossil fuels and day-by-day growth of environmental pollution due to extensive use of fossil fuels have raised concerns over the use of the fossil fuels; and thus, search for alternate renewable and sustainable sources for fuels has started in the last few decades. So we believe in converting waste plastic to polyfuel.

Plastic undergoes pyrolysis at around 300 degree celsius whose fumes can be condensed to liquid (Polyfuel) and used to meet energy needs. A process with a single aim that can solve two problems i.e. reduce the waste generated by the plastic and also to reduce the dependency on the non renewable fossil fuel. This process with a single aim can solve two problems i.e. reduce the waste generated by the plastic and also to reduce the dependency on the non renewable fossil fuel.



Project Outcome/result/findings:

The Flash point and Flame point of HDPE obtained from the test was found out to be 36°C and 38.66°C respectively and that of Polystyrene was found to be 33°C and 33.4°C respectively.

The calculation of Calorific value was done at Sadekar Labs, Panjim and the result of HDPE was 6529.90 Cal/gm and that of Polystyrene was 9962.50 Cal/gm.

A comparison of Flash point, Flame point and Calorific Value of HDPE and Polystyrene along with Petrol and Diesel is shown in the table below.

Properties	Diesel	Petrol HDPE	Polystyrene
Flash Point	52°C	43 °C 36 °C	33 °C
Flame Point	58.85°C	40.85 °C 38.66 °C	33.4 °C
Calorific Value	10000 Cal/gm	9520 Cal/gm 6529.90 Cal/gm	9962.50 Cal/gm



· Innovative Approach:

- We worked on different methods for different problems. Few things are working on are:
 1. Using different catalysts and comparing properties.
 2. Using sand as a layer so char does not stick on walls of the reactor. 3. Blending it with petrol and testing properties.

UV-C DISINFECTANT TUNNEL

Unique Registration Number: 149



Name of Applicant/s: Deepak Kolur



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Project Objective:

UV Tunnel effectively disinfects food products, packaging and tools



Abstract:

UVC integrated in an automated machine that transports items from one side to the other can be a solution for disinfecting large volumes of items. The disinfection tunnels are all custom made. The size of the item, the disinfection rate as well as the machine requirements are key to the machine design.



Project Outcome/result/findings:

Every government in India or abroad are trying their best to fight with the present corona virus crises , by developing efficient cleaning methods , use of dis infection liquids , moping , water jet cleaning wiping etc. But even after some many useful methods there is a 50 percent chance that resistant virus and bacteria still remain on the transport surfaces , plus other newer pathogens enter the transport system through the luggage, plastic bags , cloth bags , card-boxes etc therefore it is a must that at such train stations , airports , bus stations all in coming bags should pass through uv disinfection conveyor , so that in minutes of time bags can be disinfected.



Innovative Approach:

UV light is a form of radiation is classified into three primary types: ultraviolet A (UVA), ultraviolet B (UVB), and ultraviolet C (UVC). The Uv forms are based on the measure of their wavelength, which is measured in nanometers. UV radiation covers a range of wavelengths and is divided into three bands: UVA (315-400nm), UVB (280-315nm) and UVC (<280nm>). The Uvc light radiations are harmful , but if used in a correct way it is useful in numerous ways ,especially when it comes to killing and destroying of unseen bacteria and virus.



Photograph: UV-C disinfectant tunnel



CERAMIC WASTE

Unique Registration Number: 149



Name of Applicant/s:

MR. KAUSHIK S. FAL DESSAI MR. RAVINDRA GURAV MR. SAPNESH B. JANGLI MR. ANVIT A. KELEKAR MR. SAGAR S. LAWANDE



Name of Mentor/s:

Prof. SATYESH KAKODKAR



Name of School/College/Startup/Organisation:

Don Bosco College of Engineering



Address: Fatorda, Goa

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Project Objective:

The objective of study are as follows:

- 1. To examine the effectiveness of using Ceramic Waste Powder (CWP), as partial replacement of cement by studying strength parameters.
- 2. To study the necessity of consumption of the waste material for manufacturing of sustainable concrete for construction. To use locally available material and to reduce the cost of producing concrete.
- 3. To overcome the problems faced by cement industries to a little extent.
- 4. To investigate the compressive strength and split tensile strength of concrete with CWP to that of normal concrete.
- 5. To prepare high strength, eco-friendly and cost effective concrete.



Abstract:

The advancement of concrete technology can reduce the consumption of natural resources, which can be reused and find other alternatives. In India numbers of waste materials are produced by different manufacturing companies, thermal power plant, municipal solid wastes and other wastes. Solid as well as liquid waste management is one of the biggest problems of the whole world. Disposal of waste in to the land causes serious impact on environment. Nowadays large amount of tile powder is generated in tile industries with an impact on environment and humans. By using the replacement materials offers cost reduction, Energy saving sand few hazards in the environment. Concrete is nothing but a combination of aggregates both fine and coarse, Cement and water. Comparing to all other ingredients in concrete, cement is considered to be the expensive material. This is because cement is manufactured using energy-intensive process. Cement is one of the major producers of carbon dioxide, which is the main cause of global warming. During the manufacturing process of cement the formation of clinker can be achieved only by heating the cement at very high temperature. This leads to the release of enormous amounts of carbon in the atmosphere. This was one among the major problems identified for climatic changes. Various research works has been carried out for the cost reduction in construction with some of the locally available materials as the partial or full replacement material for cement. Over the last few decades supplementary materials like fly ash, rice husk, silica fume, eggshell, groundnut shell, etc. are used as a replacing material. These supplementary materials have proven to be successful in meeting the needs of the concrete in construction. Ceramic waste is one of the most active research areas that encompass a number of disciplines including civil engineering and construction materials. Ceramic waste powder is settled by sedimentation and then dumped away which results in environmental pollution, in addition to forming dust in summer and threatening both agriculture and public health. Therefore, utilization of the ceramic waste powder in various sectors especially the construction would help to reduce the cost of concrete and also result in decrease of environmental burden due of recycling of ceramic waste. In this research study the cement will be partially replaced by ceramic waste powder accordingly in the range of 10% 20%, 30% by weight of M30 grade. M30 grade concrete will be prepared using 0.43 water cement ratio considering weight batching.



Project Outcome/result/findings:

The following results were obtained after the testing of materials which are required to prepare the concrete.

Sr. No.	Parameter (%)	Result
1.	Loss of Ignition (L.O.I)	1.80
2.	SO3	0.40
3.	SiO2	60.30
4.	AI2O3	17.60
5.	Fe2O3	4.00
6.	CaO	2.40
7.	MgO	4.20

Table: CHEMICAL COMPOSITIONS OF CERAMIC WASTE



Innovative Approach:

Various tests were conducted to check the properties of the coarse aggregate and some of the tests including the specific gravity, fineness modulus, Initial & Final setting time etc. The Nanu crushed sand was used as the fine aggregate in this study. Various tests were conducted for fine aggregate also to find out the fineness of sand, specific gravity of sand etc. The test for cement was carried out to find the specific gravity, fineness etc. Mix Design of M30 grade concrete was carried out as per IS 10262-2019 and trials were conducted. Bharthi OPC 53 grade cement was used.

Ceramic powder was used as partial cement replacement for making the concrete specimens. Asian paints admixture was used in concrete mix. Concrete Cubes were put for accelerated curing in an accelerated curing tank, 23 hours after casting. Concrete Cubes were kept immersed in a curing tank with water at 100 degree Celsius for 3 hours and later kept immersed in a cool water tank for 2 hours.

Photograph: Ceramic Waste



Photograph: Ceramic Waste



DEVELOPING AN INNOVATIVE PRODUCT FROM NEGATIVE WASTE

Unique Registration Number: 402



Name of Applicant/s: Shreemi Panandikar



Name of Mentor/s: Prof. Gaurish Samant

Dilverline World

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Project Objective:

To make Innovative Products like Table Tops, False ceiling , Partitions by RE-USING the Negative waste which cannot be RECYCLED.



Abstract:

Various Industrial Waste cannot be recycled which poses a Big threat to our Environment and my objective would be to RE USE the same and create A GREEN innovative product which is much more durable, economical and having high aesthetic value. (Refer Word file attached for the overall process and output)



Project Outcome:

3 layers may be necessary to obtain a completely smooth surface which can be called sandwiching in which layer 1 is a clear layer of hardened chemical ,layer 2 is a smaller coat to allow the waste particles to stick to the surface and harden and the third layer would be another clear layer to cover up and produce a finished smooth surface.



Innovative Approach:

Around 2400 trees are cut either in the name of Development or to make various furnitures . This innovation can help Reduce the Burden on Mother Earth by Reusing the Waste which is abundantly available in the environment and Not using Wood for making various Ply furnitures. This product can be a Substitute for Ply tables and create a Revolution in itself.



Photograph: Developing An Innovative Product From Negative Waste

Goa State Innovation Council

SANITIZING ROBOT

Unique Registration Number: 404



Name of Applicant/s:

Vivek Khadilkar Saeel Kamat Drasti Naik



Name of Mentor/s:

Prof. Mohini Naik Prof. Michelle Araujo



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Project Objective:

The objectives are as follows:

- To design and implement a sanitizing robot with greater efficiency, effectiveness, and minimizing manufacturing costs.
- To complement the existing cleanliness and disinfection protocols to maintain high hygiene standards.
- This method of application will allow us to disinfect large areas accurately. Most importantly, the technical staff whose prolonged exposure to highly concentrated chem- icals while working in an entirely safe and risk-free environment.
- To achieve desired results from the task assigned with minimum human involve- ment.
- The main objective is to reduce the risk of infection spread and to lower the burden on healthcare and most important to save human lives.



Abstract:

With such a spike in new variants of COVID cases, health workers are central to the ongoing pandemic response, balancing additional service delivery needs while conserving essential health services. They have a higher infection risk and face fatigue, psycholog- ical distress, and stigma while protecting the greater community. Healthcare systems improve the health service coverage and their acceptability, availability, and quality help to attain a good health standard. Some challenges faced to have health workers may also result from the shortage by the public sector to absorb the supply of health workers due to constraints in budget. As a result, we are confronted with the inconsistency of health worker unemployment occurring with significant unmet health needs. So, it's necessary to lower the infection risk faced by the frontline worker. This creates a major cause to spread the coronavirus. As the frontline workers get infected, it creates a major problem to stop the spread of the virus. Thus, this project proposes the idea of building a 'Sanitizing Robot' which is smart enough to sanitize open spaces, public areas, and large facilities.

Goa State Innovation Council



ት Project Outcome:

The proposed model designed is a Sanitizing Robot which makes use of a robot to sanitize indoors using UV-C Sanitization System and out- doors using spraying system. The user can operate and control both the system using a remote, hence reducing the risk of infection spread, simultaneously lowering the burden on the laborers. Furthermore, saving human lives is possible using this robot

Innovative Approach:

Our proposed model has a dual combination of disinfection methods. In our proposed model we have incorporated both, i.e. Disinfection spraying system and UVC sanitiza- tion system for sanitation giving a choice of preference and flexibility in switching over the kind of methods offered. The proposed model has dual ways of charging the batteries for the bot viz. charger sockets, as well as solar panel power wherein user, can opt for either of the power supply as per need and also considering solar panel as a renewable source of energy and power saving. Simultaneously considering protection from viruses, ensuring effective sanitation without any area left uncovered to prevent mishaps occur- ring due to UVC light knowing the fact it is harmful to humans, the proposed model has a camera attached giving the live video streaming or footage of surroundings. Also, the proposed model has safety lights and a buzzer installed for alertness ensuring no human presence around during the operation premises. Given a task, operating it without hu- man involvement will be done by our proposed model.

Photograph: Sanitizing Robot



Photograph: Sanitizing Robot



A hybrid system is developed on the robot so that the user can charge batteries of the robot using solar or electric energy





DEVELOPMENT OF OXYGEN ANALYZER AND OXYGEN MASK

Unique Registration Number: 405



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Project Objective:

Using indigenously sourced parts to build an oxygen analyzer with lower cost compared to current Analyzer present in the market and to build a real-time monitoring system



Abstract:

Once oxygen is generated by using Pressure swing adsorption method there is need of measuring oxygen percentage or the Oxygen purity which is generated from Oxygen concentrator.

Types of Oxygen Analyzer s present in market PARAMAGNETIC OXYGEN ANALYSER:

Very accurate and highly sensitive. Function continuously without any service breaks. Allow measurement of inspiratory and expiratory oxygen. Affected by water vapor.

GALVANIC OXYGEN ANALYZER:

The galvanic analyzer consisting of a silver lead. Oxygen content in non-aqueous and gaseous streams. Water vapor does not affect. It is depleted by continuous exposure of oxygen. Oxygen sensors are used in medical field as well as automobile industry. It is an electronic device for measuring oxygen level in gas or liquid. Also used for measuring oxygen saturation in blood.

HEPA filter are effective at removing ultra-fine particles It removes 99.7% of particulate measuring 0.3microns A HEPA filter is a mechanical air filter, it works by forcing air through a fine mesh That traps harmful particles like pollen, smoke etc. This combination of pleated sheets and baffles acts as filtration system For the oxygen sensor, a real-time monitoring

system is being developed, in which the oxygen purity reported by the oxygen sensor is shown on the computer/mobile phone.

This is done so that if the oxygen purity continues to decline, the concerned party/ technician/relative can be notified and the appropriate arrangements can be made.



Project Outcome:

With this, we get a low-cost oxygen analyzer compared to what is currently available in the market, lowering the overall cost of the concentrator, as well as this Analyzer can be used for real time data monitoring of the sensor purity



Innovative approach:

Use of envitec sensor to make an oxygen analyzer to develop the system and the real time data monitoring system for getting updates of the purity which hasn't be developed by any organization/institution yet.

Photograph 5.5: Virtual Innovation Register




Photograph 5.6: Chairman addressing the beneficiaries

Photograph 5.7: Beneficiaries of the VIR Schemes



















Photograph: Fr. Kinley presenting a 3D-printed Self-watering vase to the Chairman in presense of Shri. DS Prashant

Goa State Innovation Council

RAPID PROTOTYPING LAB

6.1 Introduction

The journey of building a product is interesting and intricate. It involves various steps to reach the level where it can be pushed to production for the mass audience. Each product has a certain target audience and solves its pain points in some way. To evaluate, whether the product solves its users' problems, an almost working model called a prototype is created and tested with the prospective users and stakeholders.

To achieve this GSInC's Rapid Prototyping Lab established at Don Bosco College of Engineering is the home to a variety of state-of-the-art prototyping equipment for the innovators in Goa. It provides students and innovators with a safe, well-equipped, and knowledgeably staffed environment in which they can explore how traditional, contemporary, and emergent processes of making can inform and advance design. Learners of all backgrounds and capacities can leverage the facility's comprehensive collection of tools and equipment, training and skill-building sessions, and professional staff available to provide support and guidance on the safe and effective use of the resources, as well as design thinking and fabrication strategies. The latest technology and tools, like an advanced 3D Printer and a powerful Laser Cutting Machine, allow innovators to freely tinker around with ideas until they can refine and crystalize them.

The benefits of the Prototyping Lab are:

- Building the Product/Design Proofs
- Saving Cost and Time
- Customizing
- Reducing Design Flaws

Photograph 6.1: Chairman explaining 3D printing technology to the Hon'ble Minister for Science, Technology & Waste Management Shri Babush Monserrate in presence of Fatorda MLA Shri. Vijay Sardessai, Secretary Dr. Tariq Thomas, DST&WM Director Shri. Levinson Martins and Fr. Kinley D'Cruz

Photograph 6.2: Chairman launching the soldering station at the Rapid Prototyping Lab. Soldering station is equipped to handle complicated tasks. The station will be widely used in prototyping, electronics workshops, academic project work and for Startup or industry requirements.

Photograph: Rapid Prototyping Lab visted by Dr. Xiangyang Jiang, Director - Putzmeister Group - India.

Photograph: Rapid Prototyping Lab visted by Sanjeet Hegde Desai, Manager - Business Systems, Google

Photograph: Rapid Prototyping Lab visted by the team of Goa News Hub to shoot their blockbuster series Passay

Photograph: Dr. Neena Panandikar, Principal - Don Bosco College of Engineering presenting a 3D printed vase to Kastubh Priolkar, Professor, Dept of Physics, Goa University at Rapid Prototyping Lab

Photograph: Dr. Neena Panandikar, Principal - Don Bosco College of Engineering presenting a 3D printed vase to Dr. Suman Kundu, Director - BITS Pilani Goa Campus at Rapid Prototyping Lab

Photograph: Rapid Prototyping Lab visted by Giriraj Pai Vernekar, Head - Policy and Research Division, Goa Government

Photograph: Rapid Prototyping Lab visted by Siddesh Naik, President of North Goa Zilla Panchayat

Photograph 6.3: Students from schools and colleges at Rapid Prototyping Lab

Photograph 6.4: Rapid Prototyping Lab

Photograph: Rapid Prototyping Lab

Photograph: Rapid Prototyping Lab

Photograph: Innovators at Rapid Prototyping Lab

Photograph 6.5: Brochure of Rapid Prototyping Lab

Goa State Innovation Council

9060-80W Laser Cutting / Engraving Machine

THE LIST OF

POWER TOOLS Professional Angle Grinder | Circular Saw | Smart Drill Kit

ESSENTIAL TOOLS

Junior Hacksaw Screw Driver Set Micro Chisel Set Plier Set Hammer Set C Clamps Hardened Metric Allen Key Set Combination Spanner Racheting Screwdriver set Baby Vice Clamp Swastik Stainless Steel Adjustable Spanner iastik stainless steel Adjustaure spann Wrench Hot Melt Glue Gun Measuring Tape - 5 meters Digital Tester Digital multimeter Tool Kit & Screwdriver and Socket Set

APPLY /tapid-prototyping-lab

Equipped with the latest technology and tools, like an advanced 3D Printer and a powerful Laser Cutting Machine, the lab allows innovators to freely tinker around with ideas until they can refine them to the point of idealisation.

CRAFT YOUR FIRST LOOK

In Our Rapid **Prototyping Lab**

To develop the spirit of innovation further, Goa State Innovation Council invites Students, Startups, Innovators, Research Faculty & Entrepreneurs to innovate, conceptualise and scientifically shape their ideas.

Our mission is to support prototyping and make it Affordable for Students, Startups, Innovators, Research Faculty & Entrepreneurs who require the necessary support in converting Ideas into scalable products.

We provide access to various prototyping equipment from the Prototyping Lab to individuals with a purpose to convert the Ideas into designs, and their designs into products.

THE BENEFITS OF **PROTOTYPING LAB**

Table 6: List of Equipment

Sr. No.	List of Equipment	Description	Make/ Brand	
Power Tools				
1	Professional Angle Grinder	Bosch GWS 600 Professional Angle Grinder Disc Diameter 100mm Grinding Spindle Thread M 10 No Load Speed (rpm) 12000 rpm Rated power input 660 W Width (millimetre) 263mm Height (millimetre) 95mm Weight (kilograms) 77mm Weight 1.5 kg	BOSCH	
2	Circular Saw	Bosch GKS 7000 Circular Saw Rated Power Input 1,100 W No-Load Speed 5.200 rpm Weight 3.6 kg Saw Blade Bore Diameter 20 mm Saw Blade Diameter 184 mm Cutting Depth (90°) 65 mm Cutting Depth (45°) 47 mm	BOSCH	
3	Smart Drill Kit	Bosch Impact Drill 1G GSB 13 RE Kit, 600 W ,Voltage: 230v Impact Drill GSB 13 RE Kit Voltage 230v No Load Speed 0 - 2800 rpm Item Weight 1.6 kgs Power Consumption 600 W Minimum Order Quantity 1 Piece	BOSCH	
	Essential Tools			
4	JUNIOR HACKSAW	Size: 6 inch	STANLEY	
5	SCREW DRIVER SET	4pc Screw Driver set: PH1x450, PH2x450mm, 5x450mm, 6x450mm, chrome vanadium steel shaft, chrome plated Ergonomically designed ABS plastic grip handle	STANLEY	
6	MICRO CHISEL SET	Set of 12 Tools for Wood-Carving. Quantity: 12 Tools; Size: 13.5 x 1 cm each (approx.); Material: Steel Blades with Wooden Handles	STANLEY	
7	PLIER SET	PLIER SET - Combination Plier, Needle Nose Plier and Lock- in Plier.	STANLEY	

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Sr. No.	List of Equipment	Description	Make/ Brand
8	Hammer set	1 Mallet Hammer, 1 Claw Hammer and 1 Ball peen Ham- mer	STANLEY
9	C clamp	Material: Steel Colour: Red and Silver Dimensions : 4" Package Content: 3 C or G Clamps	STANLEY
10	C clamp	Material: Steel Colour: Red and Silver Dimensions: 8" Package Content: 3 C or G Clamps	STANLEY
11	Hardened Metric Allen Key Set	Hardness: 52 to 56 HRC(Scientifically hardened) The Allen Keys are Precision Drawn for perfect matching of Allen keys with the screw head Black Allen Keys are specially coated and oiled for rust prevention TAPARIA Allen Keys generally Conform to I.S. 3082 2008 Set Size: Set of 9	STANLEY
12	COMBINATION SPANNER	12 PCS COMBINATION SPANNER SET 6-22MM. CHROME VANADIUM STEEL COMBINATION SPANNER SET 6-22 MM CONSIST OF 12 Pcs 6-7-8-9-10-11-12-13-14-17-19- 22	STANLEY
13	30 Pc Racheting Screwdriver set	Package Contains: 30 Pcs, ratcheting screw driver set	STANLEY
14	Baby Vice Clamp	Size (L x B x H): 15.2 cm x 6 cm x 15 cm, Jaw width 60 mm, Jaw opening 70 mm Portable- Can be taken along and used anywhere Net Weight 1.2 KG. Type 60 Mm	STANLEY
15	Swastik Stainless Steel Adjustable Spanner Wrench (8 Inches)	Material: Stainless Steel, Colour: Black Item Dimension: 21 cm x 11 cm x 9 cm Precision marked scale indicate correct jaw opening Heat treated adjustable chrome finish spanner Package Contents: 1 Piece Adjustable Spanner	STANLEY
16	Hot Melt Glue Gun	power input - 220-240V AC, 50Hz	STANLEY
17	Measuring Tape 5meters	Material: Plastic and Aluminium Colour: Grey and Blue Size (L x B x H): Tape: 9 cm x 3 cm x 7 cm; Level: 3 cm x 3 cm x 5 cm Included Components: 1 Spirit Level & 1 Measuring Tape	STANLEY
18	Digital Tester	Direct Detection: 12V - 220V AC/DC live objects through LCD display.	STANLEY

Sr. No.	List of Equipment	Description	Make/ Brand	
19	Digital multimeter	Jaw Size: 50mm or 2.0 inch	STANLEY	
		Tests AC or DC voltage, AC current and resistance Diode check and continuity test ,Data hold Fuse and Diode Protection and Voltage Measurement Includes carry case and 9v battery Multimeter Ammeter tester		
20	46 In 1 Pcs Tool Kit & Screwdriver and Socket Set	1/4 Inch Socket Combination 46Pcs Set Diy Repair Tool Kit Model:2462 is suitable for professionals, technicians. The multi function drilling machine can be used to make holes on walls, concrete, metal, wood and plastic. Fix your picture frames, paintings, hangers, lightings etc. without any hassles.	STANLEY	
	3D Printer Set			
21	Flashforge Adventurer 3 3D Printer	Print Technology Fused Filament Fabrication (FFF), Fused Deposition Modeling (FDM) File Format Supported STL Connectivity USB, Wifi, Ethernet Build Size (L*W*H Inches) 150L x 150W x 150H mm Condition New Weight (Kg) 9kg Filament Diameter 1.75mm Resolution 0.1mm-0.3mm (Adjustable) Automatic Grade/Machine Type Automatic Colour White Extruder Quantity 1 Layer Thickness 0.1mm-0.3mm (Adjustable) Nozzle Temperature 245 degree celcius Operating System Windows 7/10/Mac OS X,Linux Printing Technology Fused Deposition Modelling Technology Fused Deposition Modelling Color White Brand Flashforge Warranty 1 Year Material Polyamide (PLA), Nylon, ABS, Polypropylene (PP) Print Accuracy 0.1mm-0.3mm (Adjustable) Software Supporting FlashPrint Product Dimension 388 x 380 x 405mm Heated Bed Temperature Upto 100 degree celcius	Flash- forge	

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Sr. No.	List of Equipment	Description	Make/ Brand
22	CR10	Printing size - 450X450X470 Molding technology - FDM Printing precision - ±0.1mm Slice thickness - 0.1-0.4mm Nozzle diameter - Standard 0.4mm & 0.8mm Nozzle temperature - ≤250°C Hotbed temperature - ≤100°C Slicing software – Cura, Simplify3D PLA Filament diameter - 1.75mm	Creality
23	Sermoon D1	Printing Size - 280*260*310mm Molding Tech - FDM Slice Thickness - 0.1mm-0.4mm Nozzle Diameter - Standard 0.4mm *7820.4mm Precision - +0.1mm Filament - PLA File Format - STL/OBJ/AMF File Transfer - USB/Storage card Slice Software - Reality Slicer/Cura/Repetier-Host/Simpli- fy3D Bed Temp - <100°C Nozzle Temp - <260°C Speed - <180mm/s,Normal E30-60mm/s	Creality
24	Creality CR10 Max	Printing Size - 250*250*400mm Molding Tech - FDM Slice Thickness - 0.1mm-0.4mm Nozzle Diameter - Standard Precision - +0.1mm Filament - 1.75mm PLA File Format - STL/OBJ/AMF Slice Software - Reality Slicer/Cura/Repetier-Host/ Simplify3D Bed Temp - <100°C Nozzle Temp - <260°C Printing Speed - 120-150mm/s	Creality
25	Creality Ender 3 Pro	Build Size - 220*220*250mm Technology - FDM Nozzle Diameters - 0.4mm	Creality
26	Creality Ender 3 Pro	Max. Nozzle Temp - 255°C Max. Print Bed Temp - 110°C Printing Materials - PLA, TPU, ABS Supported files - STL, OBJ, G-Code Machine size - 440*410*465mm	Creality

Goa State Innovation Council

Sr. No.	List of Equipment	Description	Make/ Brand	
	Desktop Vacuum Forming Machine			
27	Mayku Forming Machine	Products Type - Blister Materials Applicable - HIPS Automation Grade - Semi-Automatic Max Forming Depth - 120-150mm Max Forming Area - 220 by 220mm	Mayku	
	Laser Cutting /Engraving Machine			
28	9060-80W Laser Cutting /Engraving Machine	Laser Type: Hermetic and Detached Co2 Laser Tube Laser Power: 80W Voltage: AC 220V 50Hz Moving System 5 Inch Offline Display, Offline Stepping Motor System Cutting Area: 900 mm X 600 mm Cutting Table: Honeycomb and Aluminous Strip Panel Double Face Working Table Engraving Speed: 50000 mm/min. Repeating: Location Less than 0.05 mm	H-SPACE MACHIN- ERY CO.	

Photograph 6.6: Equipments in Rapid Prototyping Lab

Photograph: Equipments in Rapid Prototyping Lab

Photograph 6.7: Prototypes built at Rapid Prototyping Lab

6.3 List of Prototypes built at Prototyping Lab

The journey of building a product is interesting and intricate. It involves various steps to reach the level where it can be pushed to production for the mass audience. Each product has a certain target audience and solves its pain points in some way. To evaluate, whether the product solves its users' problems, an almost working model called a prototype is created and tested with the prospective users and stakeholders.

To achieve this GSInC's Rapid Prototyping Lab established at Don Bosco College of Engineering is the home to a variety of state-of-the-art prototyping equipment for the innovators in Goa. It provides students and innovators with a safe, well-equipped, and knowledgeably staffed environment in which they can explore how traditional, contemporary, and emergent processes of making can inform and advance design. Learners of all backgrounds and capacities can leverage the facility's comprehensive collection of tools and equipment, training and skill-building sessions, and professional staff available to provide support and guidance on the safe and effective use of the resources, as well as design thinking and fabrication strategies. The latest technology and tools, like an advanced 3D Printer and a powerful Laser Cutting Machine, allow innovators to freely tinker around with ideas until they can refine and crystalize them.

The benefits Prototyping Lab are:

- Building the Product/Design Proofs
- Saving Cost and Time
- Customizing
- Reducing Design Flaws

OXYGEN GENERATION THROUGH PRESSURE SWING ADSORPTION Guide: Prof. Gaurish Samant

The demand for portable oxygen supply for the COVID 19 patients needing oxygen supply has been tremendously increased during this pandemic also leading to black marketing of available devices producing medical oxygen. The available oxygen cylinders have limited portability due to their size and weight that results in restricted mobility of the patients and the cryogenic distillation units which needs a high capital cost and cannot be afforded by medium and small scale hospitals. The available oxygen concentrators are mostly being imported or either assembled in India which comes at a very high cost to the customers pocket and also weren't reliable due to the high moisture content in the coastal region. For a daily demand of 10,000 oxygen concentrators India was just able to produce 90 oxygen concentrators and amid this increasing number of cases of COPD, COVID-19 and Pulmonary lung disease everyday medical companies have amid begun to face the shortages. So there exists a need to develop a low cost oxygen concentrator for personal and medical application having the capability to adapt and operate in the Indian environment. Also there was a need of continuously monitoring the oxygen concentrator's purity remotely.

Pressure swing adsorption method (PSA) a clean technology that uses the differential affinities of various components of an air mixture and separate outs the various components from air through adsorption generally carried out at relatively low pressure. The oxygen produced is having concentration between 90 to 96 percent and flowrate.

varying from 5-20 litres per minute and can be utilised for oxygen therapy. Concentrators working on pressure swing adsorption method occupy very less space and have a high portability having a complete simplicity and automation while in operation. Since the data can be remotely monitored manned attendance during operation is not required. Units working on Pressure swing adsorption can be easily integrated into the existing air system and have a longer operational life and a low operational costs. Goa State Innovation Council

Group Members:

- 1- Sahil Chitrapur
- 2- Keenan Cardozo
- 3- Akshay Batule
- 4- Nirbhay Borkar
- 5- Shahul Ahmed

Photograph: Oxygen Generation through Pressure swing adsorption

DEVELOPMENT OF DRONE FOR PRECISION SPRAYING

Guide: Prof. Gaurish Samant

The idea of spraying pesticides on coconut tree (which is high rised tree). The Precision Spraying Drone aimed to spray pesticides precisely onto the infected part of the coconut tree through the nozzle by mounting a spraying system and using a camera to give real-time images/videos, which can be viewed through the smartphone screen by using an application program.

Group Members:

- 1. Vailan De Souza
- 2. Chris Fernandes
- 3. Reeve Fernandes
- 4. Aaron Fernandes
- 5. Alric Godinho

Photograph: Development of Drone for Precision Spraying

DESIGN AND DEVELOPMENT OF AIR CONDITIONING SYSTEM FOR HEAVY VEHICLES USING PELTIER MODULE POWERED BY SOLAR ENERGY Guide:- Saurabh Raikar

We are developing an air conditioning unit which eliminates the use of compressor by using a "Peltier module". This is mostly designed for the consumer of heavy vehicles which does not have a exclusive AC unit. We have chose this project after conducting a survey, which was most of heavy truck drivers drive around 14 hours daily excluding their breaks per day.

They drive in harsh and extreme hot climates which makes them tired and fatigued which effects the efficiency of driving. Our project centres on providing cool air to the drivers which do not have a AC unit. The system we are making is easy to install and cost effective. The main reason why heavy trucks do not have ac unit is because a normal ac unit will put considerable amount of load on the engine which affects the efficiency and fuel economy of the truck.

For this reason we have decided to make the system electric which is independent which will not put any load on the engine. This project will help in reducing most of this issues and help the drivers in more effective manner.

Leader:-Binay Sharma

Member:-

- 1. Omkar Bhandari
- 2. Abhishek Tari
- 3. Shivam Sawant
- 4. Sanath Bharne
Photograph: Design & Development of Air Conditioning system for heavy vehicles using Peltier Module Powered by Solar Energy





DESIGN AND FABRICATION OF AUTOMATED FOOD GRAIN PACKAGING SYSTEM

Prof. Sanjeel naik

The project is about packing food grains

Leader: Cavell noronha

- 1. Sclive Raikar
- 2. Danjoy D Silva
- 3. Kilbern pereira
- 4. Abliton Remedios



Photograph: Design and fabrication of automated food grain packaging system

DESIGN AND TESTING OF SQUAT ANALYSER FOR POWERLIFTING SPORT Name of Guide: Dr Suraj Marathe

We are developing a device called (squat analyser) that will help the performer with his sitting stage, and won't allow him to half squat.

This is mostly designed for all the powerlifter of different body weight for practice sessions. We have chose this project after conducting a survey, which was mostly answered by national powerlifters and gym owners. They mostly practice without concentrating on their sitting stage so during the competition they struggle to clear their sitting stage and reson they (half squat) which lead to failure of their lift.

Our device will help them during practice session by alerting them when they clear their sitting stage. **Photograph: Design and Testing of**

Member:

- 1. Rushabh Karpe(L)
- 2. Chaitanya Ghosawi
- 3. Sujay Jalmi
- 4. AtharvGhosawi
- 5. krishnakumarGaonkar

Photograph: Design and Testing of Squat Analyser for Powerlifting Sport





CONSTRUCTION OF DRONE INSPIRED BY INSECT BOT

Proect Guide: Pravin Verekar

Group Members

- 1. Rajay Naik (Project leader)
- 2. Delsy Mendes
- 3. Sharath Kumar
- 4. Rudraksh Sardesai
- 5. Pranay Tari



Photograph: Construction of Drone inspired by Insect Bot

AUTOMATIC 2D THERMOCOL CUTTING MACHINE

Project Guide: Mr Sachin Turi

Group members

- 1. Chaittanya haldankar (L)
- 2. Abhishek ghadge
- 3. Pratik kerker
- 4. Anstel Fernandes
- 5. Vishwesh Naik

Photograph: Automatic 2D Thermocol Cutting Machine



DESIGN AND FABRICATION OF EXOSKELETON FOR ASSISTANCE IN WALKING

Project Guide: Dr. Suraj Marathe

We are developing a device called (squat analyser) that will help the performer with his sitting stage, and won't allow him to half squat .This is mostly designed for all the powerlifter of different body weight for practice sessions.We have chose this project after conducting a survey, which was mostly answered by national powerlifters and gym owners.They mostly practice without concentrating on their sitting stage so during the competition they struggle to clear their sitting stage and reson they (half squat) which lead to failure of their lift.Our device will help them during practice session by alerting them when they clear their sitting stage.

Group members:

- 1. Fletcher Antonio D'costa (Leader)
- 2. Higgens Jose Barreto
- 3. Milbert Vaz Alfonso
- 4. Bradley Paulino Savio Rodrigues
- 5. Tushar Zilo Shelke

Photograph: Design and fabrication of exoskeleton for assistance in walking





DESIGN AND FABRICATION OF LAND MINE DETECTION AND SURVILLIANCE ROBOT

Project Guide: Sanjeel Naik

The project deals with designing of robotic vehicle which is capable of detecting landmine ,marking their location and stopping itself to avoid those landmines towards a particular location determined by the user.

It can also use to scout dangerous location before entering for bombs and weapons.

The specific use this type of robot is send supplies to soldiers trapped in hard reaching place with minimal loss of human life.

The purpose of this project is to design landmine detection robot to employ in peace support operations and clearance of landmine in contaminated areas.

Group members:

- 1. Mayuresh Kolvenkar
- 2. Sriyash Gawande
- 3. Abhishek Jangli
- 4. Sankalp Fatarpenkar
- 5. Vallerio Rodrigues

Photograph: Design and fabrication of land mine detection and survilliance robot







MAA ROBOT

This project shall benefit paraplegic children who cannot consume food on their own and depend on others to feed them.



Photograph: Maa Robot









INTELLECTUAL PROPERTY RIGHTS

7.1 Introduction

Inventions are the bedrock of innovation. An invention is a new solution to a technical problem and needs to be safeguarded with Intellectual Property Rights Protection. IPRs protect the interests of inventors whose technologies are truly groundbreaking and commercially successful, by ensuring that an inventor can control the commercial use of their invention.

IPRs are emerging as a strategic business tool for any Innovators organization to enhance industrial competitiveness.

7.2 Intellectual Property Rights Sessions

The first session was conducted on 23.6.2021. The two hour long session was on the topic of Patents & Innovations. The online session started at 3:00 pm and ended at 5:00 pm and was attended by 75 participants.

The second session was conducted on 21.7.2021. The two hour long session was titled Patent Filing and Prosecution - India & Overseas.. The online session started at 3:00 pm and ended at 5:00 pm and was attended by 31 participants.

The third session was conducted on 27.8.2021. The two hour long session was titled Importance of Trademarks and Copyright in Academics & Startup Ecosystem. The online session started at 3:00 pm and ended at 5:00 pm and was attended by 100 participants.

7.3 Status report



Total session conducted





Total no of participants **206**





Photograph: Participants of the session



Goa State Innovation Council







Bootcamps on Innovation, Creativity & Startups in Colleges

8.1 Introduction

The world is changing with the click of a button. And we need to keep updating our skill sets to match this change. Yes, self-learning is one way out, but not the ultimate solution. We need programs that are intensive, and require strict discipline to help students stay abreast of the latest happenings. Taking a cue from this, the Goa State Innovation Council organizes boot camps on innovation that focuses on three key aspects:

- Technology
- Innovation
- Startup

Specifically designed for the college students in Goa, these boot camps are designed to help individuals gain skills in a reasonably short amount of time to increase competency in certain expertise. These camps enhance their career potential and help them become professionals through short, intensive training courses. Our boot camps are designed to provide a more direct path to your goal.

Mentored by lecturers and industry leaders, our boot camps groom students to become tech entrepreneurs. They are exposed to the rigors of launching and scaling up a start-up. Besides focusing on innovation and entrepreneurship, the boot camps also educate the students about the role played by the GSInC in promoting the start-up culture in Goa. One can also learn about the various state government-based schemes available to budding entrepreneurs in Goa. Goa State Innovation Council

Schedule:

Sr. No.	Торіс	Duration
1	Introduction of Goa State Innovation Council & Bootcamp	30 MINS
2	How to be a Tech Startup Entrepreneur?	45 MINS
3	Process of setting up an Enterprise, Ide- ation, Planning, execution, etc.	45 MINS
4	Various Government Funds and Schemes assistance for starting up	45 MINS
5	Q & A	15 MINS

Table: 8.1: Schedule of Bootcamps on Innovations in Colleges

8.2 Status Report

The GSInC organized 11 bootcamps last year. The total student participation was 789, out of which 417 students showed interest to start their own venture.



The graph below depicts the district-wise bootcamp participation of college students from Goa.

GSInC organized 11 bootcamps last year to boost entrepreneurship and innovation in the state. 4 bootcamps were organized in North Goa and 7 in South Goa. We got the unprecedented response from the young generation.

The total of 789 students attended the camps, out of which 375 students participated in North Goa and 414 students attended South Goa bootcamps.



NORTH GOA



Goa State Innovation Council

Bootcamps on Innovation in Institutes

The Goa State Innovation Council team has done a splendid job in organizing bootcamps on innovation across educational institutes in Goa. Recognizing the rapid advancements in technology, these bootcamps focus on grooming youngsters with the necessary skills and help them realize their entrepreneurial dreams.

In all, 17 boot camps were organised across 20 institutes. These institutes include prestigious organizations like IIT Goa, Goa College of Engineering, Agnel Institute of Technology and Design, St. Xavier's College and Don Bosco College of Engineering.

Over 1,561 students who attended these bootcamps were taught to harness the power of innovation. They were encouraged to shape their ideas into successful start-ups. In the duration of 2 to 3 hours, the bootcamps ensured maximum student participation and involved various activities for maximum engagement.

Post-program feedback revealed that as many as 840 students who attended the bootcamps are interested in launching their own startups.

Through the massive reach-out program to engage students from various colleges in Goa, the Goa State Innovation Council team has contributed significantly to spreading awareness about transforming technology-led innovations into tomorrow's successful business enterprises.

Sr. No.	Date	Name of the College	Participants
1	24/08/2021	Shree Rayeshwar Institute of Engineering & Information Technology, Shiroda	40
2	3/11/2021	Agnel Institute of Technology and Design, Assagao	135
3	27/11/2021	Don Bosco College of Engineering, Fatorda	95
4	29/11/2021	Parvatibai Chowgule College Arts And Science, Margao	75
5	30/11/2021	Government College Of Commerce And Economics, Borda	84
6	15/3/2022	Industrial Training Institute Margao	35
7	15/3/2022	Industrial Training Institute Vasco	30
8	17/3/2022	Industrial Training Institute Cacora	55
9	21/3/2022	Industrial Training Institute Mapusa	90
10	21/3/2022	Industrial Training Institute Panaji	85
11	22/3/2022	Industrial Training Institute Bicholim	65

Table 8.2: List of Bootcamps on Innovation in Institutes



Photographs: Bootcamps on Innovation, Creativity & Startups at ITI, Vasco





Photographs: Bootcamps on Innovation, Creativity & Startups at ITI, Margao





Photographs: Bootcamps on Innovation, Creativity & Startups at Govt. College of Economics, Borda





Photographs: Bootcamps on Innovation, Creativity & Startups at Shree Rayeshwar Institute of Engineering & Information Technology





Photographs: Bootcamps on Innovation, Creativity & Startups at ITI, Carcora





Photographs: Bootcamps on Innovation, Creativity & Startups at ITI, Bicholim



Photographs: Bootcamps on Innovation, Creativity & Startups at ITI, Mapusa









Sensitisation Workshops on Innovation in Schools

9.1 Introduction

Science, Technology, Engineering, and Mathematics (STEM) fields are key drivers of innovation, economic growth, and social progress. When coupled with entrepreneurial skills, STEM innovations can turn into high growth companies that offer solutions to pressing societal challenges and create jobs.

The reason why the Goa State Innovation Council has initiated promotion of STEM education in primary and secondary schools.

In today's dynamic world, skills like creativity, collaboration, communication, critical thinking, problem-solving and curiosity are critical, if students want to chart a new road to success. GSInC aims help students imbibe these skills by providing quality learning experiences by creating an ecosystem. 'Thinking beyond curriculum' iis the mantra. And to fulfil this mantra, GSInC has designed a programe and collaborates schools with Incubators and Tinkering labs.

The Goa State Innovation Council has approached big and small, government-run and private schools across Goa. Technology-driven future is the key. And The council is helping school authorities to envision and embrace it. In addition, the Goa State Innovation Council organises multiple workshops on STEM education in Goa that has resulted in the tremendous success of this initiative.

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Goa State Innovation Council

Schedule:

- Introduction to Session & Virtual Innovation Register
- Introduction to Innovation, Creativity & Ideation
- Activity Session on Innovation, Creativity & Prototyping
- Q&A

9.2 Status Report

Workshops Conducted: 41 Total participants: 2383

The Goa State Innovation Council team has achieved remarkable success in conducting sensitization workshops on STEM (Science, Technology, Engineering & Mathematics) by reaching out to more than 2383 students through successful workshops across 41 schools located in various parts of Goa. To achieve consistency and increased reach, the Goa State Innovation Council, like the previous year, identified schools in the vicinity of large cities such as Ponda, Margao, Mapusa, Panjim, as well as, pinpointed the ones situated at far-flung villages like Valpoi, Cujira, Guirim, Aquem and Sirigao. The aim behind such an exercise is to ensure equal opportunities and inclusive development across the state.

The initiative to popularise STEM education is driven by the growth in emerging technologies across the world. Also it is imperative to familiarise students with technology at an early age so they can take advantage of these developments in the future. The Goa State Innovation Council finds it crucial that school students must be exposed to a modern way of teaching, with enough exposure to scientific learning and acquaintance with technology.

The workshops achieve this aim by helping schools adopt the STEM education program and take necessary steps towards creating the required infrastructure to support STEM education.



Table 9: List of Workshops

Date	Name of the School	Time Slot	Participants
06/08/2021	Piety High School, Kulem	11.30 am to 12.30 pm	60
09/08/2021	Govt. High School, Nadora Revorna	09.30 am to 10.30 pm	55
09/08/2021	Our Lady of Mount Carmel High	11.30 am to 12.30 pm	65
	School, Arambol		
10/08/2021	St. Aloysius High School, Mazilwaddo,	11.30 am to 12.30 pm	30
	Benaulim		
10/08/2021	Manovikas English Medium School	02.00 pm to 03.00	20
	(Class VII & VIII)	pm	
11/08/2021	Mae Dos Pobres High School, Nuvem	10.30 am to 11.30 pm	40
11/09/2021	V. D. & S. V. Wagle High School,	12.00 am to 01.00 pm	68
	Mangeshi, Mardol		
11/08/2021	Manovikas English Medium School	02.00 pm to 03.00	20
	(Class IX & X)	pm	
17/08/2021	Our Lady of Desterro School, Vasco	11.30 am to 12.30 pm	50
18/08/2021	Our Lady of Fatima High School,	11.30 am to 12.30 pm	30
	Rivona		
19/08/2021	Mother of Mercy High School,	11.30 am to 12.30 pm	65
	Merces (Class IX)		
19/08/2022	Don Bosco High School, Panaji	11.30 am to 12.30 pm	15
20/08/2021	St. Rock's High School, Velim	09.30 am to 10.30 pm	43
20/08/2021	St. Mary's High School, Varca	11.30 am to 12.30 pm	55
21/08/2021	St. Anthony High School, Duler	09.30 am to 10.30 am	35
21/08/2021	Holy Spirit Institute, Margao	11.30 am to 12.30 pm	85
23/08/2021	Anjuman High School, Vasco	09.30 am to 10.30 am	85

Date	Name of the School	Time Slot	Participants
23/08/2021	Dr. K. B. Hedgewar Shikshan Prasarak	11.30 am to 12.30 pm	96
	Mandal School, Ponda		
24/08/2021	Peter Alvares Memorial High School,	10.30 am to 11.30 am	45
	Morjim		
26/08/2021	Dnyanprasarak Vidyalaya, Mapusa	11.30 am to 12.30 pm	60
27/08/2021	Vidyavikas Academy, Comba, Margao	09.00 am to 10.00 am	25
28/08/2021	Rosary High School Dona Paula	09.30 am to 10.30 pm	57
30/08/2021	Rajmata Padmavati Raje Soundhekar	11.30 am to 12.30 pm	58
	High School, Ramnathi,Bandora,		
	Ponda		
6/9/2021	GHS Vidhyanagar, Aquem, Margao	11.30 am to 12.30 pm	74
07/09/2021	M. E. F's Fatima High School,	10.30 am to 11.30 am	100
	Nagamasjid, Ponda		
07/09/2021	M. E. F's Fatima High School,	11.45 am to 12.45 pm	100
	Nagamasjid, Ponda		
07/09/2021	Rosary High School, Cujira	10.30 am to 11.30 pm	15
27/09/2021	Guardian Angel High School,	9.30 am to 10.30 am	90
	Savordem		
29/09/2021	Government High School Balli	9.30 am to 10.30 am	87
4/10/2021	Viddhya Vruddhi School, Ponda	9.30 am to 10.30 am	84
5/10/2021	Govt High school Ambaulim Quepem	10.30 am to 11.30 am	56
	GOA		
11/10/2021	Regina Martyrum High School,	9.30 am to 10.30 am	73
	Assolna		
23/10/2021	Gurukul Academy School, Ponda	11.30 am to 12.30 pm	59
4/12/2021	Sebastian High School, Loliem	11.30 am to 12.30 pm	76

Date	Name of the School	Time Slot	Participants
31/01/2022	Union High School, Sangeum	09.30 am to 10.30 am	70
07/02/2022	G S Amonkar Vidya Mandir, Mapusa	11.30 am to 12.30 pm	50
10/02/2022	Govt. High School, Mekurem,	11.30 am to 12.30 pm	45
	Bicholim		
11/02/2022	Sacred Heart of Jesus High School,	09.30 am to 10.30 pm	45
	Parra		
16/02/2022	Govt High School, Merces	09.30 am to 10.30 pm	30
18/02/2022	Govt High School, Netorlim, Sanguem	11.30 am to 12.30 pm	78
21/02/2022	Shree Balram School, Canacona	11.30 am to 12.30 pm	89






Faculty Development Program

10.1 Introduction

The term entrepreneurial growth means organization plans to achieve its objective to grow and expand a business by its quality, quantity, and turnover. Entrepreneurial growth can be in terms of innovators, business developers, radicals, expanders, customers etc. In short, entrepreneurial growth is a multi-dimentional growth. And to help young science and technology students understand and imbibe this concept, we need trained minds and a dynamic temperament determined to cultivate a culture of innovation. Keeping this in mind, the GSInC has initiated the Faculty Development Programme (FDP).

These sessions are conducted at:

- Science and Engineering Colleges
- Polytechnic Institutes
- Industrial Training Centres

The topics covered include:

- Entrepreneurship development
- Communication and interpersonal skills
- Creativity
- Problem-solving
- Motivation training
- Being resourceful and industry ready

The training methodology comprises engaging hands-on workshops, analyzing case studies, team exercises and interactions with eminent personalities, entrepreneurs and industry personnel.

Date	Start Time	End Time	Topics	Speakers
	10:00 AM	11:30 AM	How to convert an Idea into an Enterprise?	Mr Abhay Valsangkar
	11:30 AM	1:00 PM	Creativity and Problem Solving + Activity Based Session	Founder, Alter Ego Learning
	1:00 PM	2:00 PM	Lunch break	
18th Nov	2:00 PM	3:30 PM	Establishing Entrepreneurship Cell at Institutes	Mr Amit Singh, Regional Manager, Central India,National Entrepreneurship Network (NEN)
	3:30 PM	5:00 PM	Role of EDI, How to Identify, Select & Support Potential Student Entrepreneurs?	Dr. Satya Ranjan Acharya, Entrepreneurship Development Institute of India (EDII)

Table 10.1: Schedule of the Faculty Development Program

Day	Start Time	End Time	Topics	Speakers
	10:00 AM	12:00 PM	Idea to Prototype Workshop at Rapid Prototyping Lab, GSInC	
19th Nov			Lunch Break	
	2:00 PM	5:00 PM	Idea to Prototype Workshop at Rapid Prototyping Lab, GSInC	

10.2 Status Report

Program Conducted: 1 Total participants: 40

A Faculty Development Program was conducted by the Goa State Innovation Council through an online Zoom meeting App for the faculty of various colleges in the State of Goa in Nov 2020. The event saw a good turnout with 30 teachers from different institutes.

The event was also attended by various eminent personalities. The Keynote Address was delivered by Prof. Raghurama G. - Director BITS Pilani, K.K. Birla Goa. Other dignitaries spoke on turning an idea into an enterprise and opportunity recognition in S & T students.

This was followed by an engaging workshop on Developing Business Models for Tech Startups. The list of speakers at the event were:

Mr Amit Singh

Dr. Satya Ranjan Acharya

Mr Abhay Valsangkar

The objective of the program were as follows:

Training the teachers to be well-equipped with skills that nurture innovation Training teachers to help young minds develop innovative and creative thinking approach Help to make the current scenario of innovation in the state better Equip them to become resource persons and guide and motivate young scientific minds Help students realize startup ecosystem as a career possibility Help students understand the policies and inform them about the activities taken up by the Government of Goa in promoting innovation and creativity.

Table 10.2: List Of Participants of the Faculty Development Program (FDP)

Sr. No.	Name	College
1	Ms. Lily F. Endro	Government College of Commerce, Margao
2	Dr. Maria Fatima De Souza	Government College of Commerce, Margao
3	Prachi Joshi	Dhempe College, Miramar
4	Mrs Ankita Desai	Dhempe College, Miramar
5	Dr. Trupti Jadhav	Dhempe College, Miramar
6	Shilpa Bhonsle	Dhempe College, Miramar
7	Ms. Siddhi U. Parsekar	Dhempe College, Miramar
8	Neha Laxman Shetkar	Dhempe College, Miramar
9	Mrunal Phadke	Dhempe College, Miramar
10	Dr.Cindy DSilva	Dhempe College, Miramar
11	Dr. Kapil Yeshwant Salkar	Dhempe College, Miramar
12	Manoj Ibrampurkar	Dhempe College, Miramar
13	Annie Rajan	Dhempe College, Miramar
14	Shashank N. Mhaldar	Dhempe College, Miramar
15	Radhika Rajendra Nagvenkar	Dhempe College, Miramar
16	Dr. Russell D'Souza	Nirmala Institute of Education Education
17	Mr. Raymond Pereira	Nirmala Institute of Education Education
18	Dr. Sapana V. Pelapkar	Govt. college of Arts, Science & Commerce,
		Khandola
19	Dr. Sapna Gaitonde	Govt. college of Arts, Science & Commerce,
		Khandola
20	Dr. Rajashri Mordekar	Govt. college of Arts, Science & Commerce,
		Khandola

Sr. No.	Name	College
21	Dr. Pratibha V. Bakre	Govt. college of Arts, Science & Commerce,
		Khandola
22	Ms. Ranjana Sawaikar	Govt. college of Arts, Science & Commerce,
		Khandola
23	Ms. Yanita Palkar	Govt. college of Arts, Science & Commerce,
		Khandola
24	Mr. Milton Pires	Govt. college of Arts, Science & Commerce,
		Khandola
25	Ms. Pooja P. Dalvi	Govt. college of Arts, Science & Commerce,
		Khandola
26	Dr. Apurva Narvekar	Govt. college of Arts, Science & Commerce,
		Khandola
27	Mr. Prashant Bhonsle	Govt. College of Arts, Science & Commerce,
		Sanquelim
28	Mr. Khemraj alias Sangam	Govt. College of Arts, Science & Commerce,
	Shet	Sanquelim
29	Pringle Alfanso	Don Bosco College of Engineering, Fatorda
30	Sanford Pereira	Carmel College for Women, Nuvem
31	Chris Antao	Carmel College for Women, Nuvem
32	Jeffrey Viegas	Carmel College for Women, Nuvem
33	Ms. Nita Nachinolkar	S.V.'s Sridora Caculo college
34	Mr. Pranav Samant	S.V.'s Sridora Caculo college
35	Anisha Cotta	Don Bosco College of Engineering, Fatorda
36	Charlotte Facho	Gomantak Ayurveda Mahavidyalaya & Research
		Centre

Sr. No.	Name	College
37	Dr. Mahesh Patil	Gomantak Ayurveda Mahavidyalaya & Research
		Centre
38	Kunal Dhananjay Madhukar	Gomantak Ayurveda Mahavidyalaya & Research
	Borkar	Centre
39	Dr. Vijaykumar Nandvadekar	Gomantak Ayurveda Mahavidyalaya & Research
		Centre
40	Ray D'Sa	Gomantak Ayurveda Mahavidyalaya & Research
		Centre







Woman Centric Workshop

11.1 Introduction

Today's woman is a woman of substance. She is independent and wants to live her life on her terms. She is a highly self-directed person and alive to the sense of her dignity. She has acquired importance in private and public domain of the world of work. Women are rational in approach, careful in handling situations, and want to do things as best as possible.

Today's woman wants to explore her potential to the fullest and make her mark on the world.

We at GSInC respect the spirit of the modern woman and play an crucial role in supporting ambitious women and fostering entrepreneurship amongst them.

GSInC has been organizing regular workshops and seminars for enterprising women in Goa. This initiative aims at giving the creativity and ideation power of women a much-needed boost. The motive is to give them a platform to chase their entrepreneurial dreams.

These workshops equip women to get one notch up and scale their ideas. These workshops help them to help their thoughts evolve into independent undertakings and convert them into flourishing enterprises. In every workshop, we make our participants aware of the various government schemes and funding opportunities to help them in their further endeavors. The workshop includes mentoring, hands-on training, and informative seminars.

Sr. No.	Торіс	Duration
01	Introduction of Goa State Innovation Council & VIR	15 mins
02	Ideation with a focus on Problem-solving, Creativity, Innovation	45 mins
03	Ideation with a focus on Problem-solving, Creativity, Innovation	15 mins
04	How to convert an Idea into an Enterprise?	15 mins
05	Various Government Funds and Schemes assistance for starting up	30 mins

Table 11.1: Schedule of the Women Centric Workshop

10.2 Status Report

Webinars conducted: 2

Total participants: 310

The need of the hour is to create an ecosystem that can help to develop entrepreneurial skills among students. The reason why GSInC organized 2 Women-Centric Webinars. These webinars were attended by 310 participants.

The seminars and activities focused on encouraging women to think out of the box, extend their horizons and dream big. They equipped the aspiring entreprenuers and enabling them to turn their 192

Annual Report 2021-22

dreams into reality. GSInC made the webinar relevant to the changing times with seminars and activities that focussed on problem-solving, innovation and developing ideas into scalable solutions using the available resources and infrastructure of the state. The interactive sessions also touched upon the existing government schemes for women to assist them to procure funds and clearances they need to build their ventures.

Nirmala College BeD	09.3.2022	10 am - 12 pm
Nirmala College BSc	16.3.2022	10 am - 12 pm

Photograph 11: Women-centric Workshop orgainzed in Colleges



Photographs: Women-centric Workshop orgainzed in Colleges





Photographs: Women-centric Workshop orgainzed in Colleges











STEM - Think Design Prototyping Workshops

12.1 Introduction

Every innovator has a tiny voice inside him asking him tons of questions. Will the potential clients really like his product? Does it fulfil their specific needs as the innovator has assumed it would? Will the inovation sustain the dynamic factors that influence consumer preferences?

There is only one way to fend off these uncertainties and validate your ideas and design? Create prototypes.

Prototyping is an experimental process. It is a systematic approach wherein design teams implement ideas into tangible forms from paper to digital. Innovators build prototypes of varying degrees of fidelity to capture design concepts and test on users. With prototypes, they can refine and validate their designs so your brand can release the right products.

The advantages of prototyping:

- The innovators have a solid foundation to move from ideation to improvements
- It helps to give all stakeholders a clear picture of the potential benefits, risks and costs associated with where a prototype might lead
- The innovators can adopt early changes thereby avoiding commitment to a single, falsely-ideal version
- Show the prototype to the target audience and get their feedback to help pinpoint which

elements/variants work best and whether an overhaul is required

- Innovators have a tool to experiment with associated parts of the users' needs and problems therefore, they can get insights into less-obvious areas of the users' world
- Prototyping helps to provide a sense of ownership to all concerned stakeholders—therefore fostering emotional investment in the product's ultimate success
- It helps to Improve time-to-market by minimizing the number of errors to correct before product release

Prototyping is meticulous process. The more information and material and design specifications you have researched and have ready, the faster it will be to complete a product or line. This seamless transformation from idea to prototype needs precision and a supporting ecosystem. GSInC's Think Design Prototyping Workshops make it happen. Conducted at the Prototyping Lab established at Don Bosco College of Engineering, Fatorda, by Goa State Innovation Council, Government of Goa, these workshops provide innovators from all walks of life the necessary infrastructure to transform their ideas into tangible models or prototypes.

These workshops equip the participants with knowledge of the latest technology and tools. It teaches the participants to use advanced 3D Printer and a powerful Laser Cutting Machine available at GSInC's prototyping lab to their advantage. These workshops enable innovators to freely tinker around with ideas until they can refine them to the point of idealization.

GSInC organizes these Prototyping workshops across schools and colleges in Goa to help students innovate, conceptualize and scientifically shape their ideas.

Young minds are ambitionus but confused. Their thoughts are pathbraking, but they need a direction. And their dreams are big, but need to be nurtured.

GSInC is committed to doing just that.

GSInC's mission is to develop and foster the spirit of innovation in the youth of Goa. The Council has constructed a state-of-the-art Prototyping lab which is one of its kind in the state that allows

200

students to think freely and experiment to refine their ideas.

In line with its objectives, GSInC organized several prototyping workshops across the state in 2020-21 to acquaint students with the facilities available in the lab.

The informative and hands-on sessions were held for schools in both the larger and quaint parts of Goa on Robot Building, Laser Engraving, 3D-Printing, etc.

The students thoroughly enjoyed the sessions and learned how to use the equipment in the lab on their own to bridge the gap between ideation and implementation.



Total number of sessions conducted



Total Number of participants



Table	12.1:	List	of	workshops
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Sr No	Date	Time	Session Details	No of participants
1	3.8.2020	3:00 pm - 5:00 pm	3D Printing - Additive Manufacturing for Innovative Product Development	75
2	13.8.2020	3:00 pm - 5:00 pm	Speaker: Mr. Ryan Vaz, Infinyt3D, Goa	37
3	15.8.2020	3:00 pm - 5:00 pm	Prototyping Session - Robotics Plan, Design, & Prototype	43
4	19.8.2020	3:00 pm - 5:00 pm	Speaker: Ms Sunaya Shirodkar, Asier Pvt Ltd, Goa	41
5	21.8.2020	3:00 pm - 5:00 pm	Laser Cutting - Subtractive Manufacturing for Innovative Product Development	76
6	25.8.2020	3:00 pm - 5:00 pm	Speaker: Mr. Rakesh Agarwal, Laser Technologies, Delhi	79

Sr No	Date	Time	Session Details	No of participants
7	29.09.2020	3:00 pm - 5:00 pm	Rapid Prototyping using 3D Printers	254
8	14.10.2020	3:00 pm - 5:00 pm	Speaker: Mr. Ryan Vaz, Infinyt3D, Goa	246
9	20.10.2020	3:00 pm - 5:00 pm	Rapid Prototyping using 3D Printers	221
10	4.11.2020	3:00 pm - 5:00 pm	Speaker: Mr. Ryan Vaz, Infinyt3D, Goa	91
11	6.11.2020	3:00 pm - 5:00 pm	Prototyping Session - Robotics Plan, Design, & Prototype	79
12	13.11.2020	3:00 pm - 5:00 pm	Speaker: Ms Sunaya Shirodkar, Asier Pvt Ltd, Goa	87
13	21.11.2020	3:00 pm - 5:00 pm	Prototyping Session using 3D Printing for Final Year Engineering Students	54

Sr No	Date	Time	Session Details	No of participants
14	23.11.2020	2:00 pm - 4:00 pm	Speaker: Mr. Ketan Naik & Mr. Pranay Dhavaskar, Asier Pvt Ltd, Goa	115
15	4.12.2020	2:00 pm - 4:00 pm	Prototyping Session using Laser Cutting Machine for Final Year Engineering Students	57
16	9.12.2020	2:00 pm - 4:00 pm	Speaker: Mr. Ketan Naik & Mr. Pranay Dhavaskar, Asier Pvt Ltd, Goa	957
17	26.12.2021	2:00 pm - 4:00 pm	Prototyping Session using Laser Cutting Machine	51
18	29.12.2021	2:00 pm - 4:00 pm	Mr. Ryan Vaz, Infinyt3D, Goa	64
19	31.12.2021	2:00 pm - 4:00 pm	Prototyping Session - Image Processing in Defence Industry Debasis	90

Sr No	Date	Time	Session Details	No of participants
20	4.1.2021	2:00 pm - 4:00 pm	Speakers: Mr. Debasis Doki and Mr. Jon Srivastava, Dronile, Bangalore	100
21	7.1.2021	3:00 pm - 5:00 pm	Prototyping Session - Robotics Plan, Design, & Prototype	41
22	8.1.2021	3:00 pm - 5:00 pm	Speaker: Ms Sunaya Shirodkar, Asier Pvt Ltd, Goa	357
23	20.1.2021	3:00 pm - 5:00 pm	Prototyping Session - Image Processing in Defence Industry Debasis	78
24	22.1.2021	3:00 pm - 5:00 pm	Speakers: Mr. Debasis Doki and Mr. Jon Srivastava, Dronile, Bangalore	20
25	4.2.2021	3:00 pm - 5:00 pm	Prototyping Session - Image Processing in Defence Industry Debasis	741

Sr No	Date	Time	Session Details	No of participants
26	5.2.2021	10:00 am to 1:00 pm	Speakers: Mr. Debasis Doki and Mr. Jon Srivastava, Dronile, Bangalore	524
27	11.2.2021	3:00 pm - 5:00 pm	3D Printing - Additive Manufacturing for School students	31
28	18.2.2021	3:00 pm - 5:00 pm	Speaker: Mr. Ryan Vaz, Infinyt3D, Goa	77
29	18.2.2021	3:00 pm - 5:00 pm	Prototyping Session - Robotics for College Students	73
30	20.2.2021	3:00 pm - 5:00 pm	Speaker: Mr. Ketan Naik & Mr. Pranay Dhavaskar, Asier Pvt Ltd, Goa	49
31	23.2.2021	3:00 pm - 5:00 pm	Prototyping Session - Drone Avatiation for College Students	90

Sr No	Date	Time	Session Details	No of participants
32	4.3.2021	3:00 pm - 5:00 pm	Speakers: Mr. Debasis Doki and Mr. Jon Srivastava, Dronile, Bangalore	95
33	9.3.2021	3:00 pm - 5:00 pm	Prototyping Session - Robotics for College Students	100
34	11.3.2021	3:00 pm - 5:00 pm	Speaker: Mr. Ketan Naik & Mr. Pranay Dhavaskar, Asier Pvt Ltd, Goa	56
35	12.3.2021	3:00 pm - 5:00 pm	Prototyping Session - Robotics for School Students	78
36	13.3.2021	3:00 pm - 5:00 pm	Speaker: Mr. Ketan Naik & Mr. Pranay Dhavaskar, Asier Pvt Ltd, Goa	148
37	16.3.2021	3:00 pm - 5:00 pm	Prototyping Session - Robotics Plan, Design, & Prototype	35

Sr No	Date	Time	Session Details	No of participants
38	19.3.2021	3:00 pm - 5:00 pm	Speaker: Mr. Ketan Naik & Mr. Pranay Dhavaskar, Asier Pvt Ltd, Goa	341
39	20.3.2021	3:00 pm - 5:00 pm	Prototyping Session in Missile Technology - Control & Guidance	100
40	20.3.2021	3:00 pm - 5:00 pm	Speakers: Mr. Debasis Doki and Mr. Jon Srivastava, Dronile, Bangalore	172

12.2: Status Report

In all, 40 Think Design Prototyping Workshops were held with total participation of 6023.

The topics included:

- Robot Building
- Laser Cutting
- Engraving
- Drone Building
- 3D printing

The aim of these sessions was to apprise the students of the latest technologies and facilities available for them to prototype their ideas. By learning how to use these tools, the students can work freely in the Prototyping lab to give shape to their ideas and gradually refine them into market-ready models. 208

Photograph 12: Prototyping sessions on STEM





Photographs: Prototyping sessions on STEM







Photographs: Prototyping sessions on STEM












Entrepreneurship and Financial Literacy

13.1 Introduction:

Having a great idea is one thing, but getting it financed is quite another. Lot of times, great ideas don't see the day of light because of the deficiency of Vitamin M. An entrepreneur needs to keep the cash flow going and feed his business. Or else it will either die a pre-mature death or eventually starve out. So it is important for an entrepreneur to develop smart money habits within your startup right from Day One. Sound financial management must be an integral part of one's company's culture.

Then comes the question of launching a startup. Well, it can be an expensive process because there are various startup costs. Business premises, equipment, staff, inventory, software, wages, and security, just to name a few. It is the prerogative to foresee and calculate these costs.

So are there any funding options that an entrepreneur can consider?

The Goa State Innovation Council in association with Kids Finance Initiative had organized an online seminar on Entrepreneurship and Financial literacy. The objective was to equip the students with critical life skills on money management and to build an entrepreneurial mindset.

Financial Literacy Workshop	04/10/2021
Financial Literacy Workshop	06/10/2021
Financial Literacy Workshop	26/10/2021

Goa State Innovation Council







Ideathon for Healthcare Technologies

14.1 Introduction:

Goa State Innovation Council (GSInC) launched the 'IDEATHON' 2021, inviting ideas for affordable technology innovations in the healthcare sector. The comprehensive event would allow participants to give form to their ideas, prototype their technology at the GSInC prototyping lab, seek mentorship support from experts in the field and connect with industry stalwarts.

Open for students, innovators, entrepreneurs and professionals from the state; the IDEATHON contest would seek innovative ideas having the potential to provide access to cost-effective healthcare options to the people of Goa.

"The ongoing pandemic has revealed several lacunas in the global healthcare system. Ensuring swift, effective and affordable healthcare access for the people is of paramount importance. The thought behind organizing the IDEATHON is to harvest ground-breaking technology innovations that could enrich the state's healthcare system. The Goa State Innovation Council has always been at the forefront of identifying and nurturing innovative ideas across fields and spheres. We are excited to source ideas from a wide spectrum of individuals, including students and start-ups," says Shri Jose Manuel Noronha, the Chairman of GSInC.

Goa State Innovation Council

Conceptualized to foster innovation while offering a workshop-like experience to the participants, the IDEATHON offers handholding support to the contestants in the following ways:

- Access to the prototyping lab
- Mentoring by tech-based incubators
- Connect with mentors
- Networking opportunity with industry experts
- Training & workshops Knowledge sessions

The objective of IDEATHON goes beyond scouting ideas to include nurturing and scaling promising technology innovations into successful business entities. GSInC has collaborated with BITS BIRAC for offering insights on healthcare technologies, the leading incubator, FiiRE, for business and commercialisation guidance, and Coin Medix Pvt. Ltd. for technical mentoring.

Besides dedicated mentoring and industry connect opportunities, the winning entries can win cash prizes, too.

A jury of distinguished leaders, experts and professionals will examine the entries, and the select ideas will get an opportunity to present the business pitch.

The submitted ideas were evaluated based on;

- 1. Problem Identification & Ideation
- 2. Innovation
- 3. Sustainability

14.2 Status Report

First Prize: Rs 20,000/-

Title: Development of High Protective Mask Innovators: Prof. Gaurish Samant

Second Prize: Rs 10,000/-

Title: MRSA - Identification and Treatment Innovators: Dr. Roshan Naik

Encouragement Prizes: Rs 5,000/-

Title	: Multi Client Oxygen Monitoring System
-------	---

Innovators : Mr. Shonal Fernandes

Title : Energy from PPE kit and Mask

- Innovators : Mr. Pralesh Kirlosker
- Title : Oxygen Generation through Pressure Swing Adsorption Method
- Innovators : Mr. Keenan Cardozo, Mr. Sahil Chitrapur, Mr. Nirbhay Borkar, Mr. Akshay Batule, Mr.

Shahul Ahmed

Title	: Non-invasive Body Vitalities Checking system
Innovators	: Mr. Suyog Borker, Ms. Miti Gaunekar, Mr. Adarsh Mishra

Title	: Sanitizing Robot
Innovators	: Mr. Vivek Khadilkar, Mr. Saeel kamat, Miss. Drasti Naik, Prof. Mohini Naik Gadekar,
Prof. Michelle	Araujo

List of Applicants Register are attached as Annexure II

Photograph 14.2.1: Invitation letter to schools



GOA STATE INNOVATION COUNCIL

Department of Science & Technology, Government of Goa Secretariat Don Bosco College of Engineering, Fatorda, Margao, Goa - 403602 | (O) 0832 274 3944 | (E) admin@gsic.in www.goastateinnovationcouncil.com

No. DBCE/GSInC/2021-22/08

28/06/2021

To,

The Headmaster/Headmistress

Sub: Ideathon for Healthcare technologies

Dear Sir/Madam

Goa State Innovation Council is organizing Ideathon for Healthcare technologies providing Affordable Healthcare Technology Innovations for Students, Innovators, Entrepreneurs, and Professionals.

The submitted Ideas will be evaluated on the basis of

1. Problem Identification & Ideation

2. Innovation

3. Sustainability

Activities at Ideathon

- 1. Access to Prototyping Lab
- 2. Mentoring by Technology Business Incubators
- 3. Connect with mentors
- 4. Networking opportunity with industry experts
- 5. Training, Workshops & Knowledge sessions

The Students are encouraged to submit their Ideas through online applications by 5^{th} July 2021. The Finals will be held on 30^{th} July 2021.

Apply at: https://goastateinnovationcouncil.com/ideathon-healthcare

Ideathon Brochure is attached.

Yours Sincerely Sudip Faldesai (Project Officer)

Photograph 14.2.2: Invitation letter to colleges



GOA STATE INNOVATION COUNCIL

Department of Science & Technology, Government of Goa Secretariat Don Bosco College of Engineering, Fatorda, Margao, Goa - 403602 | (O) 0832 274 3944 | (E) admin@gsic.in www.goastateinnovationcouncil.com

No. DBCE/GSInC/2021-22/09

28/06/2021

To,

The Principal

Sub: Ideathon for Healthcare technologies

Dear Sir/Madam

Goa State Innovation Council is organizing Ideathon for Healthcare technologies providing Affordable Healthcare Technology Innovations for Students, Innovators, Entrepreneurs, and Professionals.

The submitted Ideas will be evaluated on the basis of

1. Problem Identification & Ideation

2. Innovation

3. Sustainability

Activities at Ideathon

1. Access to Prototyping Lab

2. Mentoring by Technology Business Incubators

3. Connect with mentors

4. Networking opportunity with industry experts

5. Training, Workshops & Knowledge sessions

The Students are encouraged to submit their Ideas through online applications by 5^{th} July 2021. The Finals will be held on 30^{th} July 2021.

Apply at: https://goastateinnovationcouncil.com/ideathon-healthcare

Ideathon Brochure is attached.

Yours Sincerely,

Sudip Faldesai (Project Officer)

Photograph 14.2.3: Invitation poster









Industry Institute Interaction

15.1 Introduction

Institution of Innovation Council of Don Bosco College of Engineering in association with Goa State Innovation Council conducted a Panel Discussion on Innovation and Start-Up Ecosystem enablers at the Regional / State / National Level.

Sr No	Agenda	Time
1	Welcome and Introduction Of IIC DBCE	3.00 pm - 3.05 pm
2	Introduction to the session by Shri Suraj Marathe	3.05 pm - 3.10 pm
3	Welcome note by Shri Sudip Faldesai	3.10 pm - 3.20 pm
4	Session by Ms Divya Kakkar	3.20 pm - 3.30 pm
5	Session by Mr Abhay Valsangkar	3.30 pm - 3.40 pm
6	Session by Mr Scott Knox	3.40 pm - 3.50 pm
7	Questions by Moderator	3.50 pm - 4.00 pm
8	Questions by participants	4.00 pm - 4.10 pm
9	Vote of Thanks	

Table 15.1: Schedule of the Industry Insitute Interaction

Photograph 15: Invitation poster

Institution Innovation Council DON BOSCO COLLEGE OF ENGINEERING







MODERATOR



Mr. Sudip Faldesai Project Officer, GSinC

PANEL DISCUSSION

Innovation and Start up Ecosystem enables from the Region / State / National Level



Mr. Scott B. Knox Senior Architect / Urban Designer

PANELIST



Ms. Divya Kakkar Business Mindset Coach



Mr. Abhay Valsangkar Founder of Alter Ego Learning

Join Zoom Meeting

Coordinator Dr. Varsha Turkar President-DBCE-IIC

Mr. Suraj Marathe

Faculty Coordinator Student Coordinator Ms. Benecia Colaco



3:00 pm to 4:00 pm









Other Activities Matters Dealt With the Council

Goa state Innovation Council's Virtual Innovation Register listed in the E-Coffee Table Book on select priority programmes from prime minister's awards for excellence in public administration 2021 released on 21st April 2022 by Hon'ble Prime Minister Shri Narendra Modi.



Photograph 16.1: E-Coffee Table Book on Cutting-Edge Technology Transformations



Photograph: E-Coffee Table Book on Cutting-Edge Technology Transformations

GOA –

Aspirational entrepreneurs and go-getters of Goa are no more worried about support and handholding.

very innovator's first step to the start-up dream begins with an idea and ideas are vulnerable. A single wrong move in early days of a venture can be detrimental to the growth of the enterprise. Even if they survive, once they go through the ruthless process of evaluation, the chances are they may not get a proper platform that will help them flourish and prosper.





The need was to create a credible and effortless platform to ensure the minds with a budding idea is mentored to grow and create the best results. After a thorough need analysis and brainstorming exercise carried out by the Goa State Innovation Council, it was decided that a platform should be created where such ideas could be documented and presented before persons who could assist in taking these ideas forward through an easily accessible platform.

Photograph: E-Coffee Table Book on Cutting-Edge Technology Transformations



A DIGITAL INNOVATION BAZAAR FOR BUDDING IDEAS TO BLOOM

VIRTUAL INNOVATION REGISTER, GOA

GOA

BIRTH OF AN AUTHENTIC DIGITAL MENTOR PLATFORM

VIR (Virtual Innovation Register) was created and launched by the former Chief Minister of Goa and former Defence Minister of India, late Shri Manohar Parrikar on 05.07.2018. The platform turned out to be a unique initiative by the Goa State Innovation Council to harvest potential ideas and innovation in a very systematic manner. Keeping in line with the ethos of Digital India, the VIR developed as an online platform where innovators and entrepreneurs can register their ideas virtually and source the required support to achieve the expected results. VIR functions as an innovation bazaar where young innovators display prototypes and directly talk to prospective buyers.



FINAL OUTCOMES

- Safeguarding unique innovations and ideas
- Validation of idea and support from experts
- Hassle-free digital registration from the comfort of their home or office
- Intellectual Property Rights (IPR) support
- Support for commercialization by Government
- Pitching made easy and transparent to prospective buyers
- Collaboration with mentors and experts
- Support for raising funds
- Access to global resources for incubation
- Locating and partnering with Co-Founders

SUCCESS STORIES

The Virtual Innovation Register has successfully registered several innovative start-up ideas till date. Out of the total 444 ideas registered on VIR, 54 are from established start-ups and 390 were new ideas of first time innovators.

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Photograph 16.2: Chairman Shri Jose Manual Noronha presented a copy of E-Coffee Table Book to the Hon'ble Minister for Science, Technology & Waste Management Shri Babush Monserrate, DST&WM Director Shri Levinson Martins and Secretary Dr. Tariq Thomas



Photograph 16.3: Press Coverage

Supporting Goans in business ideas



Featured in the Prime Minister's e-coffee book, the virtual innovation register (VIR) of the **Goa State Innovation Council** (GSIC), received acclaim for being among the 12 best innovations of India, finds out **Diana Femandes**

In an honour for the state, the chairman of the Goa State Innovation Council (GSIC), headquartered at the Don Bosco College of Engineering, Fatorda received the Prime Min-ister's award for excellence in public adminis-tration last month.

ister's award for excellence in public adminis-tration last month. Also GSIC's online portal for registration, the Virtual Innovative Register (VIR) got se-lected for publication in the Prime Minister's e-coffee book, Cutting-Edge Transformations, in the Innovation Bazar category. A total of 890 applications from different

states were received, of which 12 innovations including the VIR was selected for publica-tion in the book. The award was presented on Gvil Service Day, April 21. It is a boost to the state government's efforts at promot-ing innovative ideas as well as protecting it. The book says that, VIR is unique initiative of GSIC as it harvests potential ideas and innova-tion in a very systematic manner. It praises the where young innovators display prototypes and directly talk to prospective buyers. With for functioning as an innovation bazaar where young innovators display prototypes and directly talk to prospective buyers. Mit, the VIR developed as an online platform where innovators and entrepreneurs can re-gister their ideas virtually and source the re-ulus," asysthe book. Since it began in 2018, the VIR has re-gistered 444 ideas consisting of 390 individual movative ideas and 54 start-ups. Of the star-ups, saven have received prototyping grants. The PM's avard pushes the council to con-fune to help build ideas. Being featured in the PM's e-coffee table book is truly a great donour. The award should encourage other departments in Goa to do innovative works. states were received, of which 12 innovations

departments in Goa to do innovative works. We hope that the model we have created will

help motivate other states to replicate it. Similnep motivate other states to replicate it. Sami-arfy, we also have a lot to learn from the other states that won other awards," says Noronha. GSIC was set up in 2010 and it. 2016 moved to its current premises. The council allows start ups and innovators get access to resources by way of professors, teachers, prototyping labs and other facilities provided by the engineer-



PATENTING TO PROTECT INNOVATION

The process for applying and receiving a patent is tedious, however patents are necessary as it ensures an innovator's ideas are not stolen. The GSIC's VIR is using this patenting process as a step in ensuring protection of an idea, from the time it is logged in the online registry which serves as IP (Intellectual Property) protection to the time an IPR (Intellectual Property Right) is obtained. Among the benefits provided to idea by the UP per the server of

ideas by the VIR, are the schemes for patent filing and financial assistance for prototyping. Under the patent filing scheme eligible applicants are provided financial support for filing provisional patent applications through aforesaid patent agents or firms. "The council provides a patent

attorney, we have around four, so that the innovator can apply for a patent. We offer a token amount of around Rs. 10,000 as an incentive. This indeed helps protect the idea from being stolen or misused or copied. Many are still in the process. Prototyping grant facilitates building a prototype. The patent scheme is for a product and a process while the prototyping grant

ing college as well as an incubation centre. "The VIR was born from the curiosity of stu-dents who wondered what the purpose of the council was. We saw a lot of children and stu-dents come and ask us what the innovation council does. We also saw students with many ideas and that's when we thought of having an online register where one can stitn the comfort of their home or classroom and can upload an idea, whatever it may be. Once it is registered on the portal, the project officer accesses it and then takes it forward to put them in touch with people from their field," explains Noronha. Once logged into the online register, it then follows a three- step plan starting with a

helps build a product," explains GSIC chairman Jose Manuel Noronha. Sure, the process is a long, tedious and often time- consuming process, and otten time-consuming process, but recommendations have been made at a recently held parliamentary committee meeting in the state to reduce the time period. "Property rights is a big procedure. First, one receives a provisional patent, which takes about a year. The final patent may end up taking more than two to four years. The process of natenting is lengthy and it process of patenting is lengthy and it has to be cut short. Recently there was a parliamentary committee meeting held in the state and I had informed them that time for patenting is too long. It was noted by the committee and said they would look into it. It is too long a time especially for a youngster who has time especially for a youngster with has no patience to wait for up to four or five years for the patent," says Noronha. Some of those that have received provisional patents includes, Barve Technologies for its veterinary device for regulating the body of animals in an accelerated time frame and LaFabrica Craft Pvt Ltd for their design intervention of a paper bag that can carry a weight of upto 10 kilos.

proof of concept to check if the idea is sci-entifically viable, then to prototyping the idea where the efficiency of the product is checked for as well as the scope for commer-cialisation and then to look for seed funding. With more youngsters coming forward with ideas. VIR is helping solve many logistical and technical hurdles they may face. "It may be difficult, for example, for a student from Canacona to come to Margao, and can even be demotivating. VIR is better for them be-cause it gives a very comfortable, conveni-ent mechanism for the idea to be logged into el or at the student's location," adds Noronha. He asys that, the state having nine incubators is also a factor that has they sunger generation excited. "There has been a lot of groundwork, that the council has done by visiting schools, colleges and TIs which has helped to excite the youngsters. There are nine incubators in the state itself and all are funded either by state or central government so children know exacty what an incubation centre is it provides access to people from other fields along with an exchange of ideas. It's an ecosystem of discussion where solutions are derived." The pandemic has not stopped the portal from registering ideas, but like the trend in home delivery systems have increased. CSING. Will however continue in its efforts to bring

home delivery systems have increased. GSInC will however continue in its efforts to bring about generation of new ideas and protect them through its VIR.

Goa State Innovation Council







Finance and Accounts of the Council

Funds received from the Government of Goa

Table 17.1: Grants and Funding account of the Council

Sr. No.	Date	Amount	Order No.
1	28/05/2021	Rs 5,00,000.00	No. 3-191-2011/14-15/STE-DIR/GSInC/Part/142
2	28/05/2021	Rs 20,00,000.00	No. 3-191-2011/14-15/STE-DIR/GSInC/Part/143
3	29/10/2021	Rs 5,00,000.00	No. 3-191-2011/14-15/STE-DIR/GSInC/Part/863
4	17/12/2021	Rs 20,00,000.00	No. 3-191-2011/14-15/STE-DIR/GSInC/Part/1097

Table 17.2: Utilisation Certificate of the Grant

Sr. No.	Receipt No	Amount	Order No.
1	9724	Rs 5,00,000.00	No. 3-191-2011/14-15/STE-DIR/GSInC/Part/142
2	9725	Rs 20,00,000.00	No. 3-191-2011/14-15/STE-DIR/GSInC/Part/143

Goa State Innovation Council Budget

1. Secretariat of Goa State Innovation Council

The grants are utilised for

- i. Salaries for the staff utilised for the purpose of performing functions of the Secretariate for the Goa State Innovation Council
- ii. Stationery, Photocopying and other administrative expenses.
- iii. Expenses towards refreshment during meeting and hire charges for vehicles, etc
- iv. Purchase of Computer, Photocopying machine and other IT related items.
- v. Advertisements, honorarium for members, etc.

Sr. No.	Item of Expenditure	Support per annum (Rs.)
1.	Salary	₹ 6,38,880
2.	Travel	₹ 2,00,000
3.	Marketing and promotion of initiatives of the council	₹ 1,00,000
4.	Networking and meetings, Administrative Expenses, Miscellaneous & Contingencies	₹ 61,120
	TOTAL	₹ 10,00,000

2. Key Initiatives of Goa State Innovation Council

Goa State Innovation Council promotes Innovation in the State through the various initiatives that will help achieve the objectives of the council.

Heads Of Expenditure	Estimat	Estimate (In INR)	
1. Promoting Virtual Innovation Register			
Website Development & Maintenance		₹ 50,000	
Virtual Innovation Register Promotions / Sessions		₹ 1,50,000	
Intellectual Property Rights (IPR) Provisional Specifications (30 nos)	₹ 10,000	₹ 3,00,000	
2. Multi-activity programs to promote innovation			
Boot Camp On Innovation In Institutes (Total 20 Bootcamps) Per Bootcamp	₹ 25,000	₹ 5,00,000	
Faculty Development Program (Total 2 sessions) Training Promotional Expenses And Travelling Mementoes To Jury Organisation Of The Event Food And Beverages Handholding Support Cost	₹ 2,00,000 ₹ 20,000 ₹ 20,000 ₹ 1,40,000 ₹ 20,000	₹ 4,00,000	
Women Centric Workshop (Total 3 sessions) Promotional Expenses And Travelling Mementoes To Jury Recognition To Participants Organisation Of The Event Handholding Support Cost	₹ 50,000 ₹ 10,000 ₹ 10,000 ₹ 10,000 ₹ 10,000	₹ 1,00,000	
Innovation Awareness Camps – Rural (Total 30 Camps) Per Camp	₹ 10,000	₹ 3,00, ,000	
Intellectual Property Rights Training (Total 2 ses- sions) Training Promotional Expenses And Travelling Mementoes To Jury Organisation Of The Event Handholding Support Cost	₹ 50,000 ₹ 10,000 ₹ 10,000 ₹ 10,000 ₹ 10,000	₹ 1,00,000	

Heads Of Expenditure	Estimate (In INR)	
GSInC Prototyping Lab Training Sessions Consumable Equipments Handholding Support Cost	₹ 2,50,000 ₹ 1,50,000 ₹ 1,00,000	₹ 5,00,000
Goa		₹ 1,00,000
3. Competitions to Promote Innovation		
Most Innovative Student projects Competition – BE Prize Money First Prize Second Prize Encouragement Prizes (5 nos) Promotional Expenses And Travelling Mementoes To Jury Organisation Of The Event Miscellaneous / Contingency	₹ 20,000 ₹ 10,000 ₹ 25,000 ₹ 50,000 ₹ 25,000 ₹ 1,50,000 ₹ 20,000	₹ 3,00,000
Most Innovative Student projects Competition – ASC Prize Money First Prize Second Prize Encouragement Prizes (5 nos) Promotional Expenses And Travelling Mementoes To Jury Organisation Of The Event	₹ 10,000 ₹ 5,000 ₹ 10,000 ₹ 10,000 ₹ 10,000 ₹ 50,000	₹ 1,00,000
Miscellaneous		₹ 1,00,000
Goa's Young Innovators Award Prize Money (2 Categories) First Prize (2 nos) Second Prize (2 nos) Third Prizes (2 nos) Promotional Expenses And Travelling Mementoes To Jury Organisation Of The Event Miscellaneous / Contingency	₹ 40,000 ₹ 20,000 ₹ 10,000 ₹ 40,000 ₹ 15,000 ₹ 1,50,000 ₹ 25,000	₹ 3,00,000
Goa's Young Innovators Award School Sensitisation Workshop (Total 40 Sessions)	₹ 10,000	₹ 4,00,000

Heads Of Expenditure	Estimat	e (In INR)
Ideathon Promotional Expenses And Travelling Mementoes To Jury Recognition To Participants Organisation Of The Event Handholding Support Cost	₹ 50,000 ₹ 25,000 ₹ 25,000 ₹ 50,000 ₹ 50,000	₹ 2,00,000
Miscellaneous		₹ 1,00,000
TOTAL		₹ 40,00,000

Goa State Innovation Council







Annexure II

Goa State Innovation Council

Ideathon for Healthcare Technologies 2021

ld No	Title of the Idea
1	Non-invasive Body Vitalities Checking system
2	Sanitizing robot
3	Ambulatory Blood Pressure Monitor
4	PredictX
5	Development Of High Protective Mask
6	Medguard Goa
7	Design & Fabrication of wheelchair cum stretcher
8	1. Repurposing translocator protein (TSPO) targeting drug to combat Methicillin-re- sistant Staphylococcus aureus infection (MRSA).
	2. MRSA identification using their intrinsic catalase activity.
9	Jeevv
10	Posture Sustaining Chair
11	Multi Client Oxygen Monitoring System
12	Energy from PPE kit and Mask
13	Integration of Machine Learning and Bioluminescence Imaging of MR1 gene - A Po- tential Step Toward Universal Cancer Therapy
14	Health-Tech.Care.
15	Low cost prosthetic leg
16	Docs online (Mobile app.)
17	Contactless Automatic Covid Testing booth
18	Drug bank for people
19	Oxygen Generation: Through Pressure Swing Adsorption Method
20	Docnet





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