

## State government departments providing institutional support to startups

### **1. How many State departments provide institutional support to startups? (excludes support from nodal department)**

List of Departments providing Institutional Support to Startups.

1. Department of Higher Education
2. Kerala Police Department
3. Department of Planning & Economic Affairs
4. Department of Agriculture
5. Department of Tourism
6. Department of Finance
7. Department of Industries
8. Department of Electronics & IT
9. Directorate of Sports & Youth Affairs
10. Energy Management Center

### **Details of support offered by each department**

#### **1. Department of Higher Education**

Reboot Kerala Hackathon is an initiative of the Department of Higher Education – Government of Kerala and the Additional Skill Acquisition Program (ASAP).

Reboot Kerala Hackathon 2020 aims to provide students of Higher Education Institutions a platform to solve some of the pressing problems we face in our daily lives, and thus inculcate a culture of product innovation and a mindset of problem-solving. Reboot Kerala Hackathon 2020 aims to bring students to mainstream governance by receiving their solutions for the issues faced by various Government departments.



Government Departments participated are:

1. Agriculture
2. Education
3. Energy
4. Water
5. Environment
6. Healthcare
7. Transportation
8. Tourism
9. Food
10. Disaster Management
11. Revenue and Survey
12. LSGD
13. Social Justice
14. Home Affairs
15. Women and Child
16. Rural Development

Program URL: <https://reboot.asapkerala.gov.in/>

Government order : [Click here](#)

The Problem Statements given for the hackathon are given below:

<b>Sector : Agriculture</b>		
<b>Sl No</b>	<b>Problem Statements</b>	<b>No of Participants</b>
1	Live Stock Data Management System	31
2	Low cost soil parameter monitoring system	102
3	Marketing network of Agriculture commodities beyond geographical limitations	82
4	Prediction and warning system to farmers for disease or pest attack for different agriculture products in various agro climatic zones	92
5	System to Aware and attract the public of Kerala on rooftop vegetable gardening. Also, the build a network to market the produced commodities	135
<b>Sector : Healthcare</b>		
1	A virtual assistant that offers personalized experiences to patients	84
2	An economic, user friendly, advanced and effective medicine consumption reminder	113
3	Analyse, manage the stocks in government hospital pharmacies	60
4	Assess, predict and recommend treatments for children to their parents & caregivers	41
5	Connect families with their loved ones, who were admitted in hospital ICU	56
6	Consumer wearable or other medical devises to predict early stage diseases	47
7	Identify and alert sudden variations in In Patients	62
8	Navigate visitors to various facilities available in Government Medical colleges	69

9	Prediction and reporting of suicidal tendencies among public	67
<b>Sector: Education</b>		
1	A virtual assistant that offers personalized experiences to patient	84
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7	Identify and alert sudden variations in In Patients	62
8	Navigate visitors to various facilities available in Government Medical colleges	69
9	Prediction and reporting of suicidal tendencies among public	47
10	Public awareness on the seasonal epidemics. Also its precautions, indications, initial steps to follow etc. Connect the public to Health Department	59
<b>Sector: Energy</b>		
1	Energy utilization and awareness system for Industrial equipment's	43
2	Energy utilization monitoring and awareness system for domestic appliances	103
3	Inverter parameter Monitoring and efficiency calculating system with information generating system using IoT	39
4	Solar system parameter monitoring and solution generating system using IoT	59

5	User Friendly software solution for energy auditing including solution and report generation	39
<b>Sector: Water</b>		
1	Drinking-Water quality testing and remedy suggestion system using IoT	88
2	Monitoring and alert system of the utilization of water in houses using IoT	113
3	Rainfall measuring and information generating system using IoT	62
4	Rainwater collection and distribution system	143
5	Water usage bill generating a system for KWA using IoT	73
<b>Sector: Environment</b>		
1	Air quality measuring and remedial suggestions generating system using IoT	77
2	Air quality measuring system for pollution due to Vehicles and its remedy	83
3	Developing vehicle speed warning system and wildlife detection systems to avoid wildlife-vehicle collisions	106
4	Garbage volume estimation using multi-view garbage photographs	55
5	Warning and emergency response system to prevent human-elephant conflict through acoustic monitoring of movement of Elephants	72
<b>Sector: Transportation</b>		
1	Automatic accident report System	175
2	Crowd Management System in Buses/ Unreserved Trains etc	97
3	Current Reservation in Running Buses	66
4	Integrated Transport Management System	58
5	Monitor and Running Status of Public & Private Buses	122

6	Most Economic Route for Supply and collection of beneficiaries	40
7	Present/Live/Updated Status of all type of Roads in Kerala	61
8	Smart Crew Management System	51
<b>Sector: Tourism</b>		
1	Connect tourists from outside India with Kerala Government departments like Police and Tourism	81
2	Multilingual application for Tourists	73
3	Optimization of contingency management. Predict interruptions if any, during the travel time at the planned destinations and efficiently mitigate the loss for both the traveller and the Department	27
4	Personalization of the UX (user experience) in Kerala Tourism Website. Tracks customer behaviour, perform a detailed segmentation of the customer to adapt the UX in real time, according to the category to which a user belongs	30
5	Smart Virtual Travel Assistant	62
<b>Sector: Food</b>		
1	Dedicated online platform to submit complaints about foods and related products	97
2	Excessive food listing portal for avoiding food wastage. People can list the availability of excessive food on the website or mobile app. Needed people or organizations can log into the application or website to get the food for old age homes and orphanages	158
3	Supply chain management system for efficient stock tracking	43
4	Thermostat system for evaluating food quality for temperature sensitive food items for authorities	41
<b>Sector: Disaster Management</b>		
1	Disaster Management Volunteers Management System	97
2	Integrated Fire & Rescue Management System	53
3	Macro-level positioning/mapping of shops and rooms, toilet facilities, etc	36

4	Public Water Source Management Systems	56
5	Sudden Climate Change Alarm for Authorities/Life-saving agencies	81
6	Universal application for Disaster victims	57
<b>Sector: Revenue &amp; Survey</b>		
1	A Digital Asset Register for Govt. Agencies	31
2	Smart System for all type of Surveys related to publics	31
3	Smart System for Taxes collection from Villagers	34
<b>Sector: Local Self Government</b>		
1	Applying, Verifying the status and Issuing of various Certificate from Panchayath	45
2	Awareness to public regards of various LSGD schemes	39
3	Checking of eligibility to provide subsidy, Financial help for beneficiaries for various projects by LSGD	30
4	Collection of Building Tax	35
5	Collection of building tax through online	34
6	Smart waste management System	88
7	To develop a application public inform about schemes of LSGD and check eligibility system	33
8	Awareness regarding various schemes under Social Justice	54
9	Portal for complaints	65
<b>Sector: Home Affairs</b>		
1	A browser plugin or tool to identify fake posts and links on social media platforms	43
2	Citizen Identification and criminal records listing tool based on face identification	66
3	Database application for inter-state laborers	63
4	Media matching and discovery tool for online frauds. A system to add images and videos related to a specific case (man missing or online	36

	abuse) to the system for getting real time updates on new appearances on various websites	
5	Road incident reporting system for traffic police to report accidents, road closures, construction, road blocks, traffic blocks etc	75

### Winners of Reboot Hackathon



### REGIONAL HACKATHONS

#### Theme 1: Home Affairs & Tourism

Date : Feb 14, 15,16

Venue: LBSITW, Poojapura

District: Trivandrum

Winning Team & Institution:

SEMI- TKM College of Engineering





Delta Intellec - Amal Jyothi College of Engineering  
F@lc0n - Amrita Vishwa Vidyapeetham

### **Theme 2: Education**

Date : Feb 21, 22, 23

Venue: AKNM Govt Polytechnic, Thirurangadi

District: Malappuram

Winning Team & Institution:

Ex Machina - Mar Athanasius College of Engineering

Tech Mates - ST. THOMAS COLLEGE (Autonomous) THRISSUR

Think! - Amrita Vishwa Vidyapeetham

### **Theme 3: Transportation**

Date : Feb 21, 22, 23

Venue: M Dasan Institute of Technology, Ulliyeri

District: Kozhikode

Winning Team & Institution:

Hackers1721 - Saintgits College of engineering

INNOVATORS - CHRIST COLLEGE OF ENGINEERING

404 - Mangalam College of Engineering

### **Theme 4: Food**

Date : Feb 28, 29 March 1

Venue: Naipunya School of Management

District: Alappuzha

Winning Team & Institution:

HackTechs - Muthoot Institute of Technology and Science

Trojans - ST. JOSEPH'S COLLEGE OF ENGINEERING & TECHNOLOGY, PALAI

SocialFeedie - Jyothi Engineering College

### **Theme 5: Agriculture**

Date : Feb 28, 29 March 1

Venue: Holy Grace Academy of Engineering, Mala, Thrissur

District: Thrissur

Winning Team & Institution:

Ciberon - Amal Jyothi College of Engineering

Alpha - Government Engineering College, Thrissur

Kit\_Kat - Mar Baselios Christian College of Engineering & Technology



### **Theme 6: Water & Environment**

Date : Feb 28, 29 March 1

Venue: Jawaharlal College of Engineering & Technology

District: Palakkad

Winning Team & Institution: Solver-E -

N.S.S COLLEGE OF ENGINEERING

Trojan\_Code - ST. JOSEPH'S COLLEGE OF ENGINEERING & TECHNOLOGY, PALAI

Simplex - Government College of Engineering Kannur

### **Theme 7: Healthcare & Social Justice**

Date : March 6, 7, 8

Venue: Federal Institute of Science and Technology

District: Ernakulam

Winning Team & Institution:

404 : Not Found - Saintgits College of engineering

Wheeler Buddy - Government Engineering College, Thrissur

Invictus - COLLEGE OF ENGINEERING TRIVANDRUM

### **Theme 8: Revenue & Disaster Management**

Date : March 6, 7, 8

Venue: Govt. Polytechnic College, Periya

District: Kasaragode

Winning Team & Institution:

OAKtree - Jyothi Engineering College

PROMETHEANS - COLLEGE OF ENGINEERING TRIVANDRUM

SuperCluster - RAJAGIRI SCHOOL OF ENGINEERING AND TECHNOLOGY

### **Theme 9: LSGD**

Date : August 21, 22, 23

Venue: Virtual Event

Winning Team & Institution:

Coding Pirates - TKM College of Engineering

ANGUP - COLLEGE OF ENGINEERING KIDANGOOR

Early Hustlers - Jyothi Engineering College



### **Theme 10: Energy**

Date : August 7, 8, 9

Venue: Virtual Event

Winning Team & Institution:

Sharewave magnets - Newman College, Thodupuzha

Blitzkrieg - MAR BASELIOS COLLEGE OF ENGINEERING AND TECHNOLOGY

Abhyudaya - Amrita Vishwa Vidyapeetham

### **Theme 11: Grand Finale**

Date : Dec 18, 19, 20

Venue: Virtual Event

Winning Team & Institution:

Ciberon - AMAL JYOTHI COLLEGE OF ENGINEERING

Blitzkrieg - MAR BASELIOS COLLEGE OF ENGINEERING AND TECHNOLOGY

Prometheans - COLLEGE OF ENGINEERING TRIVANDRUM

Video: <https://youtu.be/M-LLaJ9l6rM>

<https://youtu.be/ccQ-sfYRyMk>

## **2. Department of Police**

### **HAC'KP 2020**

Hac'KP is the brainchild of Kerala Police Cyberdome and its flagship virtual international hackathon. This edition of the hackathon focused on providing an online platform for participants to showcase their ideas and flair by collaborating with others. Hac'KP brings diversified minds together under one roof with the goal of creating tailor-made solutions for Kerala Police, in infusing digital technology for better policing

The competition aimed at developing applications within a limited timeframe and testing them beyond their limits. The hackathon has provided immense opportunities for establishing bonds with like-minded individuals, gaining knowledge outside the comfort zone and learning how people can work as a team in achieving a common goal. The objective of Hac'KP was to provide a platform where the programmers, designers and inventors collaborated to code, design and build innovative solutions that help the police force tackle real-world problems in this exponentially growing digital world.



Hac'KP takes its participants on a voyage to experience, experiment and explore solutions to Kerala Police's real-world challenges! The event saw developers from across the industry team up to create innovative solutions to handle tech problems raised by Kerala Police.

Duration of the event: July 7th 2020 to August 15th 2020

Problem Statements:

### **IoT based Perimeter Security**

The concept of securing the perimeter around us, is a practice started from ancient times! Perimeter security, in simple terms is to protect one's boundaries and belongings from intruders or to keep captives contained. Whilst animals have their own instincts to protect their territory boundaries like leaving their marks or using their Pheromones, the concept of perimeter security controls in humans might have started right from when they started possessing land, belongings or other fellow beings!

Human methods for perimeter security started with crude forms like building rock walls and digging dungeons, got evolved massively catering to the pace of which the humankind developed! However, the recent technology boom has changed the phase of perimeter security considerations massively. From persons, barriers and fences, we've advanced much in this domain with the help of technology!

Introduction and use of IoT in securing our perimeters was a phase changer –this has opened up a whole new world of designing and implementing efficient and effective security controls to protect our homes, offices, containment areas, sensitive locations and belongings!

We from Cyberdome understand the importance of IoT based controls in Perimeter Security and use it in our daily activities. Even though we have efficient systems now, we feel we still have a huge room for improvement in this area! At Hac'KP, we invite your creative yet practical ideas to better polish IoT based perimeter security solutions. This can be (i) enhancements to the current solutions or (ii) can be a whole new idea that can help the Police department to enhance their efficiency.

We need your ideas and prototypes to encapsulate the following, but not limited to,

1. Helps the Police department to serve the society effectively.
2. Demonstrate immunity and self-healing capabilities from malicious activities, and
3. should cover the entire life cycle of perimeter security (based on IoT) that includes
  - (i) presence detection

- (ii) identification and verification
- (iii) database of collected information
- (iv) actions based on the learnings
- (v) predictions to help the future.

### **Automated Malware Analysis Tool for Mobile Apps**

Build or implement a tool that can be used to detect mobile application malware and applications that have backdoors.

It's rare to see people who do not use a mobile device these days. Its rise in popularity over the past years has been largely due to its portability, high performance and the jam-packed features it offers in such a small device.

It's hard to imagine how information sharing and communication would have evolved in a world without mobile devices. Innovators are developing new mobile devices with rapid evolution in hardware and software technologies. They're becoming more complex as companies adhere to the performance needs of their users.

Even with multiple brands dominating market shares, only one thing has remained unchanged. The mobile operating systems used. Android and iOS are predominantly used by most companies. But like all information systems, mobile systems are not any less affected by malware attacks. We have seen various high-profile malware attacks over the past few years. Due to the amount of personal information a mobile device holds, malware detection is very important to ensure the protection of data and mitigate attacks.

This can be achieved only through malware detection and our aim is to develop a mobile malware detection tool that can be used to detect mobile application malware and applications that have backdoors.

### **Intelligent Log Analysis**

Cybersecurity is now an every-day issue for Govt organizations/companies. Websites get hacked every day and some of those hacks are fatal to businesses attacked. There is a drastic increase in the investigation of these types of cyber-crimes and has necessitated analysing the logs. This hackathon invites solutions for analysing all type of existing web server platforms such as apache, Nginx, Windows etc. using AI/ML/ any other statistical method to find out attack pattern, suspicious files or shell, attacker IPs etc

### **Proactive Monitoring on Darknet - Darknet Crawling**

Dark Web, the evil twin of the internet, is popularly known for illegal activities. Unlike regular websites, the search engines are not indexing the dark web pages, making it harder to identify the existence. The anonymous nature of dark web sites would always be a challenge for law enforcement agencies. We are looking for a dark web profiling system that crawls the existing dark websites based on the keyword input. The inputs may be something related to the site content or the chat content. The system should index all the possible dark web pages, authenticated and unauthenticated, onion service version 2 and version 3, along with the capability to get the website's snapshot. These details are required to be presented in a structured way with the filtering capability, like a dashboard that can be drilled down to the granular details. There should be an option to integrate this solution with a ticketing system like Service Now or Jira for better tracking. Also, a customized report needs to be exported based on the requirement. The system is required to be built with high security standards.

### **Smart Policing using AI & FR Technology**

Policing is changing worldwide, So are the crimes. Police are in charge of public safety, and is responsible to handle all the challenges that come with that. In recent years, AI has become an integral part of policing globally. Crime prevention and detection are going through transformations.

Effective face recognition system has a great potential in policing and can be deployed in investigation, forensics and crime prevention.

We look forward to innovative and practical implementation of AI and Face recognition which can prove beneficial for police to serve the society better

If you have any ideas that use AI, computer vision or any statistical method which can be used effectively in crime prediction, detection and prevention do participate.

### **Predictive Policing using Bigdata Analysis**

It is said that everything in the universe - big or small, follows some kind of regular or periodical pattern which indicates the existence of a rhythm. This is true with human behavior and resultant effects in the society as well. Similarly, it is proven that criminal activities show a pattern of rhythm and show predictable trends in relationship between common contributing societal factors.

Reliable prediction of possible law and order situation will be a boon to the Law and Order establishments to channelise their available resources in the most effective manner at the right place and time. Technology advancements in the field of big data analysis has enabled



reliable modelling to predict and help prevent potential future crimes with the help of intelligent algorithms. Predictive policing uses these technologies to analyze large sets of data, including historical crime data and trends in societal factors to help decide where to deploy resources or to identify individuals who are purportedly more likely to commit or be a victim of a crime.

We are looking for innovative solutions which can be used by the Police to reliably predict and prevent potential criminal activities leveraging on big data analysis.

### **OSINT Analysis Platform for Effective Policing**

The internet has an ocean of data which is free and available to everyone. These data, scattered over the internet, when collected and properly analysed can give a lot of insight to solve real-world problems.

They can also help police to make better-informed decisions.

OSINT or Open Source Intelligence involves collecting data from public and open sources for intelligence purposes. Data could be in the form of audio, video, image, text etc and maybe available from sources such as social media sites, public-facing servers, articles, newsletters, online discussion groups, blogs, code repositories etc.

As part of this Hackathon, we would like you to provide us with innovative solutions in this area of Open Source Intelligence (OSINT). You would need to create a solution to fetch the complete information about a person when a username, phone number or any unique identifier is provided as the input. This information can be gathered from all available sources on the internet including dark web. These data so gathered should be analysed and correlated to predict possible future threats. In this, you can also include facial recognition and social media matching capabilities to derive meaningful insights. Alerting and ticketing capabilities should also be integrated into this.

As part of this Hackathon, we invite such innovative and thoughtful submissions in the above area that can bring a big change in the way we serve the public and can help in better policing.

### **Policing the Post-COVID World**

The Covid-19 pandemic, as we all know, will redefine the life and lifestyles of people across the globe. It is beyond doubt that there is hardly any aspect in our day to day life that will be left unchanged in a post Covid-19 world. The same holds true with policing also. It is

certain that police need to think beyond traditional policing and adapt with the changes and challenges cropping up at present and in the post-Covid 19 Scenario as well.

In a society struck by a deadly virus, strict maintenance of public order is most essential; so are the other aspects of day to day policing. In this new reality, Police are looking for solutions to overcome some of the challenges thrown up by the pandemic.

Hac'KP envisages to find technology based innovative solutions for the Police to deal with new challenges in maintaining law and order and to effectively manage day to day policing in the Post covid World.



**HAC'KP**  
CODE THE FUTURE OF POLICING

15<sup>TH</sup> AUGUST 2020 | 10 : 00 AM IST

**SHRI. ARIF MOHAMMED KHAN**  
HON'BLE GOVERNOR OF KERALA

**SHRI. PINARAYI VIJAYAN**  
HON'BLE CHIEF MINISTER OF KERALA

**SHRI. LOKNATH BEHERA IPS**  
DGP | STATE POLICE CHIEF | KERALA

**SHRI. MANOJ ABRAHAM IPS**  
ADGP | NODAL OFFICER CYBERDOME

**MR. JIM MANICO**  
MANICO SECURITY

**HAC'KP~2020**  
**VIRTUAL SUMMIT & AWARDS**



Video: <https://youtu.be/sfd2QFxxX8c>

Program URL: <https://hackp.kerala.gov.in/2020/>

### HAC'KP 2021

This edition of the hackathon is not just a competition with multiple goals but also will be a community-based initiative of highly motivated personnel working with a goal to build a single application. Our focus will be to hand pick individuals who has a will to work with us in building a robust solution based on the current requirements of our Police in fighting crimes inside Darknet.





What is  
**Hac'KP 2021**

5<sup>th</sup> Edition of Hackathon  
Organized by Kerala Police

Online platform for showcasing your  
talent and ideas to build solutions that  
can help uncover the DarkWeb.

**HAC'KP**  
Demystifying the DarkWeb

hackp.kerala.gov.in

The poster features a dark background with a grid of three squares (two orange, one white) at the top left. The right side of the poster is a vertical strip with an orange tint, showing a person's hands typing on a laptop keyboard in front of a computer monitor displaying code. A QR code is located in the bottom right of this strip, and the website URL 'hackp.kerala.gov.in' is printed below it.

The final solution is expected to arm the Police in handling the following, and more!

1. Advanced Darknet Search Engine for LEA
2. Intelligent Darknet Monitoring
3. Dissecting Dark Web

Duration: March 15th 2021 to Aug 15, 2021

Problem Statements:

Advanced Darknet Search Engine for LEA

- Gather/Crawl details about all websites, chat rooms, shopping sites, and other information related to Dark Web.
- In-depth analysis of the data collected using AI/ML to correlate and predict suspicious events.

- Search for a specific keyword from the crawled database. Search results need to be filtered to reflect what is most relevant.
- Language-based search using AI/ML is also supported.
- Alerting mechanism for specific keywords that are repeatedly used in chatrooms, market place, and other Darknet sites.
- A facility for searching a keyword in all the available Darknet Search Engines (e.g : notevil, candle, ahima, etc.) and categorize the output based on each Search Engine.

### Intelligent Darknet Monitoring

- Trigger alerts on predefined tags based on the number of occurrences of the tag words.
- A Dashboard with all the collected data alerts triggered and analysis results that would give an executive summary and in-depth analysis reports.
- Time-line search and display status of onion sites – UP/DOWN.
- Nodes list and graphical representation of nodes, including Geolocation.
- Categorization of sites Eg. Drugs sites, Banking, Weapon selling, CSAM, Terrorism, etc.
- Checks the Dark Web for compromised account credentials, stolen personal information, financial data, and other exposed databases.

### Dissecting Dark Web

- A network traffic monitor that can identify traffic from the Tor network.
- An email address based threat scan on Dark Web (e.g : " Have I Been Pwned?" ).
- Identify vulnerabilities available in every dark website.
- Expose IP details of Darknet Sites and users.
- Plotting Darknet Users on map and discover New Hacking Tools and Exploit Kits.
- Uncover new cybercriminal tactics and tools used to automate attacks and test for weaknesses.

Program URL: <https://hackp.kerala.gov.in/>

### **3. Department of Planning and Urban Affairs**

Kerala Development and Innovation Strategic Council(K-DISC) comes under the Department of Planning and Economic Affairs which is a strategic think-tank and advisory body constituted by the Government of Kerala and aims at bringing out path-breaking strategic plans that reflect new directions in technology, product and process innovations, social shaping of technology and creating a healthy and conducive ecosystem for fostering innovations in the State.

In the sphere of development, K-DISC is promoting and initiating new projects in Emerging Technologies such as Blockchain(BC), Internet of Things (IoTs), Machine Learning (ML), Artificial Intelligence (AI) ,Robotics and Process Automation (RPA), Big Data & Analytics, Electric Mobility and other cutting edge technologies soon that would soon enable transparent and cognitive advances in the current functioning of the state and deliver the ultimate benefit to the citizens. K-DISC would facilitate with different government departments that may need any of these technological advances to solve their critical problems and to do a pilot implementation of the technical solution with adequate funding in order to promote innovation

INNOVATION FOR GOVERNMENT (i4G) 2020 is a platform for start-ups in Emerging Technologies like Artificial Intelligence (AI) / Machine Learning (ML), Augmented Reality (AR) / Virtual Reality (VR), Internet of Things (IoT) , etc to showcase their solution to the most relevant buyers and users in the Government of Kerala.

#### EMERGING TECHNOLOGIES IN FOCUS

For the showcase / demonstration at i4G Day 2020, K-DISC is looking for interested Startups with proven and demonstrated products or solutions involving the following Emerging Technologies:

- Blockchain
- Artificial Intelligence (AI) / Machine Learning (ML)
- Big Data & Analytics
- Augmented Reality (AR) / Virtual Reality (VR)
- Internet of Things (IoT)
- Robotics & Process Automation (RPA)
- Electric Mobility (E-Mobility)
- Other cutting-edge Emerging Technologies

Date of the program: January 22, 2020

Program URL: <http://kdisc.kerala.gov.in/index.php/i4g2020>

#### **4. Department of Agriculture**

##### **Vaiga - Agri Hackathon**

VAIGA Agri Hack 2021 is Kerala's largest agricultural hackathon conducted by the Department of Agriculture Development and Farmers Welfare, Government of Kerala as a part of the VAIGA Agricultural Fest, participating school-college students, startups, individuals, farmers, innovationists and general public. Kerala Agricultural Department presents VAIGA Agri Hack 2021 with the aim of seeking effective solutions for the major challenges faced in agriculture/farming, the agricultural governance sector, as well as the youth's participation in agriculture and farming. Major challenges faced by the Kerala agricultural sector are identified and presented as problem statements. School students, higher education students, startups, etc., are given the opportunities to choose these problem statements and work on their effective solutions.

The 36-hours long hackathon was conducted with periodic intervals to ensure safety measures adhering to COVID-19 protocol. The hackathon consisted of both Software and Hardware editions will be categorized into (a) School students (b) College students (c) Professionals / Farmers / Startups / General public. Problem Statements focusing on challenges faced in the agricultural sector, agricultural governance, and the youth's active participation in agriculture will be presented to the contesting teams in Agri Hack. A panel of mentors consisting of agricultural experts, scientists and officers have been formed to provide the teams with expert opinions, mentoring and guidance.



Duration of the event: On Feb 11,12 & 13, 2021

Problem Statements

Open Category

1. IoT based micro environment monitoring and management of greenhouses and open precision farming, automatic irrigation scheduling including mobile app for greenhouse farmers.  
The system should be able to monitor parameters like Temp, RH, Soil temp, Light and soil moisture levels and should provide monitoring of fluctuations, generate alerts, create advisories and should also be able to mitigate hazardous changes automatically.  
The system should be able to schedule irrigations based on soil moisture levels and optimising water use using variable Rate Technology.  
Technologies: Web, Mobile, AI, IoT
2. Field level identification of pest and diseases and generation of legal prescriptions.  
Mobile application which is able to capture images of pest and diseases of various crops and should be able to provide a reliable diagnosis using machine learning algorithms and related datasets. If the farmer or official accepts the diagnosis, the system should be able to give various possible control measures. The interface for

officials should support them to select context specific generic and commercially available pesticides recommended by KAU. Based on this the system should be able to generate prescriptions that can be digitally signed and can be verified later.

Technologies: AI,ML, Mobile,web

3. Identification of maturity indices in crops like banana, jackfruit, mango and vegetables using non destructive methods for grading and packing for industries.

A robotic system which is able to capture the image of the product on a conveyor belt and do the grading and sorting operations automatically for packing.

Technologies: ML,Deep Learning,AI, Robotics

4. Develop an integrated market intelligence system for the Department of Agriculture. Farmer registration and crop cultivation progress monitor with facility for automatic advisories for selected crops in pre determined intervals.Mobile Application for farmers and mobile app and web UI for officials for user designated activities and modules to showcase the availability of marketable commodities with prices across different locations in the state. Registration of traders, buyers and other stake holders with capabilities for raising demands against the available commodities. E-Commerce Platform

Technologies: AI,Web, Mobile

Program URL: <https://vaigaagrihack.in/>

Details of winners:

[https://vaigaagrihack.in/wp-content/uploads/2021/02/Vaiga\\_Agri\\_Hack\\_2021\\_Winners.pdf](https://vaigaagrihack.in/wp-content/uploads/2021/02/Vaiga_Agri_Hack_2021_Winners.pdf)

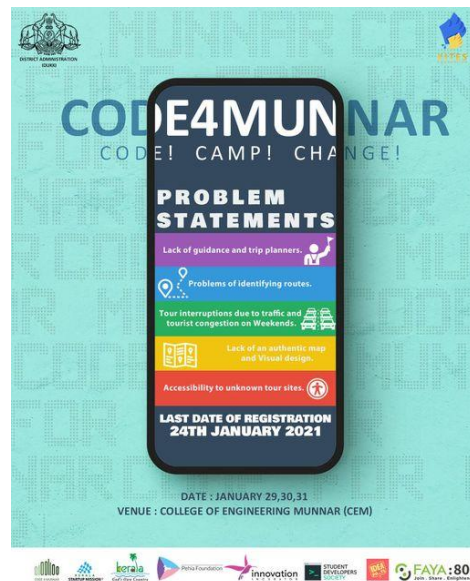
## **5. Department of Tourism**

A three - day Hackathon event organised by KITES Foundation in association with District Administration,Idukki at College of Engineering, Munnar on 29 ,30 & 31st of January,2021

The prime intention of the event was to build the ‘ Hello Munnar’ web application to implement the concept of VIBGYOR TOURISM in Munnar initiated by KITES Foundation. The event was open to the public and around 50 delegates who took part in the Hackathon were monitored by a team of experienced IT Mentors.

Media link

<https://timesofindia.indiatimes.com/city/kochi/vibgyor-to-assist-travellers-in-munnar/articleshow/80617421.cms>



## 6. Department of Finance

With an aim to support the startups In order to cope up with the financial crisis dealt by the startups during the time of the pandemic the Department of Finance had launched few schemes for startups

### 1. Interest subvention scheme for Startups

Under this program 2 loan schemes were introduced by the department for Startups.

- a) Loans to startups without asset security to those who have secured work order from Government Departments/Major Corporates or Institutions. The scheme provides 90% of work order amount as loan upto Rs 10 Crore.
- b) Financial assistance to Rs 1 Crore is provided to startups at the time of expansion of new product prototypes that are related to sustainable development goals of UNO and are also required by Government Departments.

List of beneficiaries are as follows:

Link to Government order

[https://kfc.org/public/assets/common/uploads/download/2020-12-15-5fd86ead78c59-GO\(Ms\)No79-2020-FinDated28-07-2020\\_85.pdf](https://kfc.org/public/assets/common/uploads/download/2020-12-15-5fd86ead78c59-GO(Ms)No79-2020-FinDated28-07-2020_85.pdf)



Chief Minister's Entrepreneurship Development Scheme

[https://kfc.org/public/assets/common/uploads/download/2020-12-15-5fd86e502c475-GO\(Ms\)No78-2020-FinDated27-07-2020\\_85.pdf](https://kfc.org/public/assets/common/uploads/download/2020-12-15-5fd86e502c475-GO(Ms)No78-2020-FinDated27-07-2020_85.pdf)

## **7. Department of Information & Technology**

With an objective to support the startups during the time of the Covid 19 lockdown period the Department has issued orders for IT/ITeS companies providing rent waivers for

<https://kerala.gov.in/documents/10180/ce9f8137-68ed-46ed-aa67-81028ddc1b28>

Government Kerala has an open data system for providing the

Open Data -><https://opendatakerala.org/>

<https://mapathonkeralam.in/>

[https://wiki.openstreetmap.org/wiki/Mapathon\\_Keralam](https://wiki.openstreetmap.org/wiki/Mapathon_Keralam)

## **8. Directorate of Sports & Youth Affairs**

With an objective to support Startups the Directorate of Sports & Youth Affairs has included startups during the Sports Expo 2020 and made them part of the event to explore more opportunities for the startups to get introduced to the various stakeholders of the Directorate of Sports & Youth Affairs.

[Click here to view the Order from the Directorate of Sports & Youth Affairs](#)

The startups participated are :

1. YOS Sports and Entertainment Private Limited
2. Easy Commune Online Solutions Pvt Ltd
3. iCore Pioneer Business Solution Pvt Ltd
4. Athletebit Healthcare Private Ltd
5. Wicked Technology
6. Tilt Labs
7. ACTIVELOGICA LIFE SCIENCE INNOVATIONS PRIVATE LIMITED



## **9. Department of Industries**

With the intention to support the startups and MSMEs in the State during the time of the pandemic the Department of Industries has made several critical interventions.

1. MSME- Exemption from the payment of rent for three months

In the context of COVID-19, Government is pleased to order that all MSME Units who have rented their units in the buildings / premises owned by the Government, Semi- Government, Public Sector Undertakings and Local Self Governments, are exempted from the payment of rent for three months from march, 2020.

The order issued in this regard is given below:

<http://industry.kerala.gov.in/images/GOs/GOs2020/Rent-MSME-Exemption-GO.pdf>

[http://industry.kerala.gov.in/images/GOs/GOs2020/Covid19\\_18\\_04\\_2020.pdf](http://industry.kerala.gov.in/images/GOs/GOs2020/Covid19_18_04_2020.pdf)

2. Special Package Relief in the wake of Covid 19 Pandemic (Vyavasaya Bj)

<http://industry.kerala.gov.in/images/GOs/GOs2020/Bhadratha-GO.PDF>

3. Extending the benefit of Procurement Policy for Self Reliance

The Covid 19 pandemic and the consequent lock down imposed by Government of India has seriously affected the functioning of the Micro Small & Medium Enterprises (MSMEs) sector. Many of the MSMEs have sustained loss of raw material and loss of market sales leading to financial woes. Being one of the largest employer in the State, it has become imperative to handhold them at this time of crisis.

<http://industry.kerala.gov.in/images/downloads/2020/Public-procurement-policy-msme.pdf>

## **10. National Coconut Challenge 2019**

Government of Kerala and the Coconut Development Board, Government of India, jointly organised a two day International Conference and Exposition on Coconut on November 2 and 3, 2019 at the Taj Gateway Kozhikode.

The objective of the Conference and Exposition was to put Kerala on an enhanced and sustained growth path in coconut sector through industry-led growth. The Conference and Exposition were organised by the State Planning Board in collaboration with the Kerala

State Industrial Development Corporation. As part of the event, a National Coconut Challenge was organised by Kerala State Industries Development Corporation (KSIDC) and State Planning Board are jointly organising a National Coconut Challenge as part of the International Conference & Exposition on coconut scheduled on November 2 and 3, 2019.

The Challenge seeks to foster ideas and innovations in the coconut sector (including coconut farming, marketing, process improvement etc.).



#### Date and Location

Date: November 2nd & 3rd

Location : The Gateway Hotel, Calicut

#### Problems Statements

1. Ideas to simplify the task of farmers in the field
2. Ideas to detect and control pest, disease and nutrient deficiency
3. Value addition, product diversification and by-product utilization
4. Procurement and Marketing models of coconut and coconut-based products
5. Ideas for effective utilization of neglected coconut palms

Program URL: <https://startupmission.in/ncc/>

<https://www.thehindu.com/news/national/kerala/start-ups-to-promote-coconut-products-cm/article29864697.ece>

### Winners of National Coconut Challenge

Sl No	Select the problem statement you would like to address	Current Stage of your idea	Title of your idea	Idea Summary	Applicant Name	Prize Money
1	Ideas to simplify the task of farmers in the field	Prototype developed	Kera Harvester	A unmanned device which can harvest coconuts and other essentials. Controlled using a joystick from ground. Very cheap and easily controllable by ordinary person	Joseph, Kanjiraparambil	50,000
2	Ideas to simplify the task of farmers in the field	Prototype developed	Refinement and commercialization of Modified ground pollination technique in coconut	The modified ground pollination technique will reduce the cost incurred in production of coconut hybrids and make the technique farmer friendly.	REGI JACOB, THOMAS	30,000

3	Value addition, product diversification and by-product utilization	Prototype developed	Utilisation of Virgin Coconut Oil production waste to make a nutritious drink	Virgin coconut oil (VCO) is produced by processing slightly fermented coconut milk. The by-product, skimmed coconut milk is disposed of as waste. We propose make value-added products from this waste.	Dr. Syriac Joseph, Palackal	20,000
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### **11. Kerala State Electronics Development Corporation Limited (KSEDC)**

Kerala State Electronics Development Corporation Limited (KSEDC) aka KELTRON’s history is a saga of innovation in electronics. From being a pioneer in 1973, to the role of a trend-setter today, Keltron has been the catalyst for the development of the electronics industry in Kerala.

In five years since inception, Keltron had set up several production centres and engaged more than 5,000 people directly or indirectly for the manufacture of electronic goods.

KELTRON has recently approached Kerala Startup Mission with an intention to give more opportunities for Startups to get involved in their projects.

The technology focus are on:

1. Artificial Intelligence, Machine Learning and IoT
2. Geographical Information System (GIS)

[Click here to read the Letter from Department](#)

Kerala Startup Mission has identified the list of interested startups are as follows:

1. NIVION SYSTEMS PRIVATE LIMITED

2. Troncart Solutions Private Limited
3. GBS PLUS PVT LTD
4. PIXREELS MULTIMEDIA PRIVATE LIMITED
5. Mergious IT Solution Pvt Ltd
6. RIOD LOGIC PRIVATE LIMITED
7. Tenova Systems P Ltd
8. Neona Embedded Labz Pvt Ltd
9. Embright Infotech Private Limited
10. ZOETECH INNOVATIONS LLP
11. Elvicto Technologies
12. Bagmo Private Limited
13. Ronds Innotech
14. VST IOT SOLUTIONS PVT LTD
15. PAN ENVIRON INDIA PVT. LTD.
16. Mobilexion Technologies Private Limited
17. Kingslabs Innovations Pvt Ltd
18. Neonicz Software Solutions Pvt Ltd
19. Trois Infotech Pvt Ltd
20. ACCELERON LABS PRIVATE LIMITED
21. Tranquility IoT & Big Data Solutions
22. V ROBOTICS Passenger Information Systems Private Limited
23. Hardosoft
24. Zartek Technologies

## **12. Department of IT**

### **1. Research Innovation Network Kerala (RINK)**



Innovation and Entrepreneurship are critical to the economic development of any country. Research plays a pivotal role in bringing new inventions and interventions. Countries who are successful in translating the research products into commercial ventures are leading the innovation landscape. Over the years, Kerala has developed a network of scientific infrastructure with a host of dedicated institutions and a pool of scientific manpower. More than 150 research institutions including dedicated research institutions are working in Kerala in the Science and Technology sphere alone. These institutions produce several



innovations and inventions every year. It is above this context, **Kerala Startup Mission (KSUM)**, the nodal organisation for promoting entrepreneurship and Innovation in the State takes initiative to promote Entrepreneurship among Research Fraternity in the state with an initiative called **Research Innovation Network-Kerala (RINK)**.

RINK operates actively to mould a culture of entrepreneurship thus delivering the best motivation for a larger circle of researchers. Utilizing the research potential of Kerala, RINK provides an interdisciplinary work space for research institutions from various industrial sectors.

KSUM has also developed a **Technology Platform** in association with C-DAC Kerala to bring together all stakeholders into a common platform. This enables Researchers and Innovators to explore opportunities available in the entrepreneurship space to take up their inventions to the marketplace.

RINK is guided by the following objectives:

- Facilitate communications between Research Community and Industry
- Promote Translational/Impactful Research
- Encourage synergy between Startups and Research Fraternity
- Strengthen access to cutting edge Research findings
- Connect Investors with Startups and Researchers

RINK aims to aid, assist and transform indigenous solutions, products and technologies into commercially viable products and for that KSUM will identify Industry Leaders who will partner with RINK to run the DEMO DAY. Research Products from a reputed research organisation will be showcasing their products and live interaction in the virtual exhibition will be opened up for the interested stakeholders

RINK envisages to bridge the gap between Translational Research and Entrepreneurship to showcase Research products to the Startups, Industries and Corporates to get accustomed to this concept. On the last Thursdays of every month, KSUM is showcasing technology



products from each of the associated Research Institutions.

More details here - <https://rink.startupmission.in/> (rink@startupmission.in)

## 2. Unite India 2019

With an objective to promote Xtended Reality Technology among the startups and to nurture the skill sets among the people of Kerala, Government of Kerala through Kerala Startup Mission organised Unite India 2019 in partnership with Unity 3D .

The third edition of Unite India developer conference has been hosted in association with



the Government of Kerala. The 2019 edition saw over 1100 delegates participating on Day 1 with sessions conducted on gaming, education, industrial and more. Unity Technologies has successfully concluded its third edition of Unite India annual developer conference that took place in Kochi. The two-day conference was hosted in collaboration with the Government of Kerala and witnessed the participation of over 1100 delegates. During Unite India 2019, Unity announced the new Unity Toolkits that will provide the users with ready-to-use building blocks for industrial use cases. Unity announced its HMI Toolkit, Render Streaming and Immersive Collaboration Toolkit and these will allow the users to extend and modify the toolkits as per the need, whether the users have developed their own Unity components, or they want to connect them with other business systems.

In the keynote session held at Unite India 2019, Arvind Neelakantan, Head of Technology and Evangelism, Indian Subcontinent, Unity Technologies also announced its strategic partnership with Netherlands-based company Unit 040's software platform Perspective for creating digital twins. PERspective enables integration with external formats and systems ranging from Functional Mockup Unit definitions, to Simulink models, to physical control units, and to reflect those behaviours and controls within system models inside Unity.

Arvind Neelakantan, Head of Technology, Unity Technologies said at Unite India 2019 that



real-time is changing everything around us in a true sense. It is changing how businesses are now designing, building and delivering better products more quickly. Moreover, it is changing consumer experiences to a new level altogether with hyper-realistic quality made with Unity.

He added that Unity Technologies is proud to be continuing to partner with the innovators of the world with the sole purpose of serving its users and

customers better in every way.

Unite is Unity's global developer conference hosted in 8 countries and is the prime gathering of Unity developers, artists, publishers, educators, and enthusiasts. Unite India 2019 was organised on 14th and 15th November in Kochi.

Media coverage:

<https://www.financialexpress.com/auto/car-news/unite-india-2019-concludes-in-kochi-unity-technologies-announces-hmi-toolkit-at-two-day-developer-conference/1766717/>

<https://www.digit.in/press-release/software/unite-india-2019-kochi-ends-new-partnerships-announced-51091.html>

Program URL: <https://unity.com/event/unite-india-2019>

Event Video: [https://youtu.be/SOOF\\_Hftmgs](https://youtu.be/SOOF_Hftmgs)