

Development of a Digital Weather Data Dissemination Platform

The **Institute for Climate Change Studies (ICCS)** is an autonomous research institution operating under the Department of Science & Technology, Government of Kerala. ICCS is dedicated to conducting integrated research, providing technical support, and fostering capacity building to address climate change issues and support the formulation of sustainable development policies, plans, and programs at the state level.

Background

Kerala has become increasingly vulnerable to climate-related disasters, with a notable rise in **Extreme Rainfall Events (EREs)**. The devastating floods of 2018 and 2019 underscored the urgent need for a scientifically informed approach to mitigate emerging climate risks. Although the state operates geotagged automated weather stations at various locations, a critical gap remains in delivering timely and actionable weather information to vulnerable communities.

Objective

To address this challenge, ICCS has been tasked by the Science & Technology Department to develop a **Digital Weather Data Dissemination Platform**. This platform will deliver near real-time weather and climate information to users across Kerala via a mobile application (available on Android and iOS) and a web-based platform. By leveraging APIs from the **India Meteorological Department (IMD)** and integrating data from additional government and private sources, the platform aims to ensure accurate and localized weather advisories for enhanced monitoring and decision-making.

Key Features and Requirements

1. Integrated Data Sources

- Utilize APIs from IMD and other government and private organizations.
- Include data from geotagged weather stations and other sources.
- Ensure all data undergoes quality control checks by ICCS before dissemination.

2. Real-Time, Location-Based Services

- Provide real-time weather updates, early warnings, and climate advisories tailored to the user's location.
- Enable a location-based notification system for timely updates.

3. Historical Data Storage

- Develop a backend system to record and store weather data in a time-series format.
 - Facilitate historical data analysis to improve forecasting models.
4. **Data Analytics and Reporting**
- Implement a central platform with robust data analytics and reporting capabilities.
 - Enable real-time alerts and notifications for Super Users via SMS and in-app notifications.
5. **Data Quality Assurance**
- Establish a robust mechanism for data quality checks to ensure accuracy and reliability.
 - Conduct regular audits and validations in collaboration with ICCS.
6. **Collaboration with ICCS**
- Work closely with ICCS to facilitate data dissemination, quality assurance, and scientific research.
 - Leverage ICCS expertise to enhance the platform's reliability and scientific credibility.
7. **Scalability and Flexibility**
- Design a platform that is scalable, flexible, and adaptable to evolving climate-related risks and challenges.
 - Ensure the system can accommodate future upgrades and additional features as needed.

Outcomes

By offering a reliable, user-friendly, and integrated platform, this initiative will:

- Enhance **climate risk management** and disaster mitigation efforts across Kerala.
- Provide vulnerable communities with **timely, actionable weather information** to safeguard lives and livelihoods.
- Support policymakers and stakeholders in making **informed decisions** based on accurate climate data.

The Digital Weather Data Dissemination Platform will serve as a critical tool in Kerala's efforts to address climate-related risks. By integrating real-time data, advanced analytics, and robust quality checks, this platform will ensure comprehensive and actionable insights for effective climate risk management and disaster preparedness. Through this initiative, ICCS aims to

create a sustainable and scientifically informed approach to mitigate the impacts of climate change on Kerala's communities and ecosystems.

The EOI process

Kerala Startup Mission is approached by various Government Departments for the development of mobile and web applications. These requests are met through a facilitation devised by KSUM. Kerala Startup Mission facilitates the entire process by helping departments to finalise technical specifications, circulating the same among startups, initial technical assessment and short listing for the committee to take final decision.

Following are the steps involved:

1. Call for Expression of Interest among startups incubated/registered with KSUM
2. Submission of EOI (in the link provided by KSUM).
3. KSUM to organize interaction with the Department for clarifying doubts and queries of interested startups.
4. Technical Proposals are then obtained from startups who have submitted the interest.
5. Technical proposals are then evaluated.
6. Startups who qualify the technical evaluation are then asked to submit the financial proposal.
7. L1 among the startups is identified by the method of Quality and Cost Based Selection (QCBS) wherein 70% marks for the technical proposal and 30% for the financial proposal.
8. The L1 startup is then recommended to the Department.
9. KSUM ensures that the startup delivers the product to the Department and the Department is satisfied with the work.
10. The payment is made directly by the department to the startup after signing an Agreement.
11. The Department is also expected to do the Security auditing of the application developed by the startup through CERT-K and also to host the application in the State Data Center

Eligibility for Startup to participate in the EOI

The startup has to be registered with Kerala Startup Mission and Startup India.