



भारतीय प्रौद्योगिकी संस्थान (भारतीय खनि विद्यापीठ), धनबाद Indian Institute of Technology (Indian School of Mines), Dhanbad

For Immediate Release: January 13, 2025

PRESS-RELEASE

Integrated River Health Investigation System (IRHIS) Wins 5G & Beyond Hackathon 2023 at India Mobile Congress

The Artificial Intelligence (AI) and Internet of Things (IoT)-based online real-time river health monitoring system, *Integrated River Health Investigation System (IRHIS)*, has been declared the winner of the 5G & Beyond Hackathon 2023. The event, organized by the Department of Telecommunications (DoT) and Telecom Centres of Excellence (TCoE) India, took place during the 7th edition of India Mobile Congress (IMC) at Pragati Maidan, New Delhi, from October 27 to 29, 2023.

Developed by **Prof. S.K. Gupta**, Dean of Students Welfare at IIT (ISM), and his research scholar, **Suyog Gupta**, the innovative IRHIS system impressed a panel of distinguished judges with its groundbreaking solution and practical applications. The system was lauded for its dedication to advancing sustainable development and its relevance to critical missions like Namami Gange.

A Revolutionary Monitoring System

The IRHIS, developed between 2021 and 2023, integrates cutting-edge AI and IoT technologies to provide real-time monitoring of river health. Equipped with safety alarms, video cameras, and advanced sensors, the system delivers early warnings against flooding, theft, and critical pollution incidents. It is designed to provide simultaneous data from multiple monitored locations in intervals ranging from 1 minute to 24 hours, offering a robust dataset for effective riverine ecosystem management.

Speaking about the achievement, Prof. Gupta of Department of Environmental Science and Engineering said, “It is one of the most advanced AI and IoT-based real-time river health monitoring systems, developed to fulfill the Sustainable Development Goal 6 (SDG 6). It holds immense potential for applications in the Namami Gange mission.”

He added, “Equipped with advanced sensors, IRHIS can detect the discharge of toxic materials into rivers in real time. A patent for the system has already been published, reflecting its uniqueness and innovation.”

A Game-Changer for River Monitoring

IRHIS offers a cost-effective and time-efficient alternative to traditional river health monitoring practices, such as manual water sample collection and analysis. By enabling online, real-time monitoring, the system serves as a user-friendly tool for academia, research institutions, and industrial applications.

Recognition at India Mobile Congress 2023

The 7th edition of India Mobile Congress was inaugurated by Hon’ble Prime Minister Shri Narendra Modi, underscoring the event’s significance. The 5G & Beyond Hackathon, a key highlight of the IMC, recognized groundbreaking solutions leveraging 5G and advanced technologies.

Each Winning team of the Hackathon, including the team of Prof. Gupta and Sujoy Gupta, have been selected for the INR 1,00,000 to support productization.

Prof. Gupta concluded, “This recognition highlights the transformative potential of IRHIS in addressing pressing environmental challenges and advancing technological solutions for a sustainable future.”

Rajni Singh

Dean (Corporate Communications)