

Union Minister for Coal & Mines inaugurates '5G Use Case Test Lab' at CMPDI, Ranchi.

Minister also unveils 'Replica of CMPDI services' sculpture and inaugurates CMPDI's Corporate Logo

Posted On: 09 JAN 2025 6:45PM by PIB Delhi

Union Minister for Coal and Mines, Shri G. Kishan Reddy, inaugurated the '5G Use Case Test Lab' today at the Central Mine Planning and Design Institute (CMPDI) in Ranchi. This cutting-edge facility, aimed at advancing the coal sector's Digital Transformation and technological landscape. 5G Use Case Test Lab serves as a testbed for the development, testing and adaptation of various 5G-based applications, tailored to meet the needs of the coal industry. Ministry of Coal nominated CMPDI as Centre of Excellence (COE) for establishing 5G Use Case Test lab for Coal Industry to leverage 5G technology effectively.



Minister appreciated CMPDI and said that CMPDI has always been a pioneer of innovation. Through relentless research and development, CMPDI is making mining safer, more efficient, and environmentally sustainable. The establishment of the 5G Centre of Excellence Lab further cements CMPDI's leadership in leveraging cutting-edge technologies to meet the evolving challenges of the mining sector.

Secretary, Ministry of Coal, Shri Vikram Dev Dutt; Additional Secretary, Ministry of Coal, Smt Vismita Tej; Chairman, Coal India Limited (CIL), Shri P.M. Prasad; CMD, CMPDI, Shri Manoj Kumar; CMD, Central Coalfields Limited (CCL), Shri Nilendu Kumar Singh; CMD, Eastern Coalfields Ltd (ECL), Sri Satish Jha and other senior officers and dignitaries attended the inauguration ceremony.

Minister also unveiled 'Replica of CMPDI services' sculpture made from scrap material from CMPDI like Delivery Hose pipe, NQ Drilling Rod, Core box etc. This Replica sculpture showcases CMPDI's commitment to sustainable practices through intricate depictions of its core services i.e Geomatics, Exploration, Planning

& Design and Environmental monitoring. This art installation not only reflects CMPDI's operational strengths but also emphasizes importance of recycling industrial waste to create a meaningful and sustainable art. He also inaugurated new corporate logo of CMPDI.



5G Use Case Lab

The **5G Use Case Lab** established by CMPDI is a **lab-scale representation** of an **Industry 5G Private Network**, specifically designed to support the **coal mining industry**. This lab will serve as a testing and development hub for integrating **5G Radio and Core** technologies with **5G-enabled devices**, as well as with **Edge/Cloud Enterprise IT/OT applications** and equipment. 5G Use case lab for coal industry will become a key pillar supporting industry for projects and digital transformation journeys in coal industry.

Purpose and Key objectives of 5G Test Lab:

1. To outline the requirements and different Innovative Use Cases/applications in Coal Mining industry associated with test lab
2. Testing & Development of 5G Use Cases such as Voice, video, and data communication applications; Industrial Internet of Things (IIoT) sensors for Vehicle Management and other applications over 5G Network.

3. Create a Scalable and Replicable Model to replicate a real-world Industry 5G Private Network setup, consisting of 5G Radio and Core systems that are compatible with Edge/Cloud IT/OT applications.
Way forward.

1. To Explore development of High-Resolution Video & IoT Applications: The lab focuses on providing reliable, high-speed, low-latency wireless connectivity to support mission-critical applications in the coal mining sector, such as smart mining, predictive maintenance, and real-time monitoring.
2. To Explore Implementation of next generation advanced use cases like Mines Digital Twin, Automated Guided Vehicles (AGVs), Augmented Reality (AR) and Virtual Reality (VR) in Coal industry to optimize the various field operations and productivity.

Benefits to Coal Industry:

By connecting a wide range of **IoT applications**, including **surveillance cameras, sensor-integrated machines, predictive maintenance systems** and **automated machinery**, CIL will benefit from real-time data exchange, improved decision-making, and streamlined operations. The implementation of a 5G network by Coal India Limited (CIL) will significantly enhance the efficiency, safety, and sustainability of its mining operations. As the network is Private captive network, the data generated during the operations lies with CIL.

Shuhaib T

(Release ID: 2091546)