

Geospatial Infrastructure and Digital Twin Supporting Sustainable Mandates into Digital Exploration and Mining

At the Geosmart India 2023, a two-day flagship program of Exploration and Mining was envisaged where mining of minerals in a sustainable manner with suitable technologies, discussion on required policy interventions and bringing all stakeholders on one platform were the main goals. The discussions delved into the importance of geospatial policies, technology, and their implementation for enhancing the mining sector in India, as well as, safeguarding the interest of the general public. Addressing the program underscored the indispensable roles played by the Central Mine Planning and Design Institute (CMPDI) and the Ministry of Coal in supporting mining businesses in India, which was

the highlight of the program. CMPDI's contributions, ranging from technical expertise to consultancy services and their involvement in driving industry advancements, were emphasized.

The program, additionally delved into the sector's value chain in India, that involved a comprehensive explanation of how geospatial technologies, including GPS, DGPS, Satellite Imageries, Drone and LiDAR, etc. play vital roles at various stages of the sector, enhancing efficiency and precision. Moreover, the integration of geospatial technologies with emerging technology advancements like Digital Twin, IoT, and AI in India's exploration and mining sector was discussed, which emphasized numerous advantages, such as

improved resource management and safety measures, gained through this integration.

The challenges within the Mining Industry in India, the program also discussed the solutions through utilization of geospatial technologies, aiming to enhance environmental sustainability, reduce operational risks, optimize resource allocation and much more.

Sanjay Chakraborty, Head Technology, Adani Natural Resources "From bidding to getting the block, the biggest hurdle starts with the challenge of land. To rehabilitate the people and acquire the land, we need accurate maps. We struggle with cadastral map that are not accurate but we get around it by mapping the area manually."

Dr Ashutosh Roul, General Manager (Mines), National Aluminium Company Limited (NALCO), "Drones have the capability to provide high accuracy of measurement, accurate stockpile data, faster surveys with low cost, and identify hazards and mitigate them". Maps can improve worker and site management as it requires only one or two persons to manage the entire survey.

Debkumar Bhattacharyya, Deputy Director General, Geological Survey of India explained "In UK, Australia, Canada, mining is a sort of a monolith. They have a strong favorable policy, which streamlines a lot of work for the mining professionals there. Traditionally, India has lacked that kind of substantial policies but through the national geospatial

policy, it encourages the participation of private companies." "Inter-ministerial collaboration and cooperation is being taking place. There is also a policy in the works that would increase the interoperability between different government stakeholders".

Finally, the session underlined the digital transformation of the Mining industry in India, emphasizing that embracing geospatial and emerging technologies is the way forward. These technologies promise to drive the sector towards increased productivity, sustainability, and overall progress in the years to come. It also touched upon the concepts of 'Net Zero' and its applicability in mining sector. Impact of mining on environment and its mitigation measures were also discussed.



Co-Organizer



Academic Partner



ALL PANELISTS AND SPEAKERS

- **Dr MP Narayanan**
Chairman, Geospatial World
- **Manoj Kumar**
CMD, CMPDI
- **Dheeraj Kumar**
Deputy Director, (IIT) ISM Dhanbad
- **Harshit**
Manager Geology, Adani Cementation Ltd
- **Aboboacker Siddique**
P*, Secretary, Department of Mines, Jharkhand
- **Abinash Majhi**
DGM, Adani Enterprises Ltd
- **RK Amar**
GM, CMPDI
- **Piyush Srivastava**
Chief, Natural Resources Division, Tata Steel Limited
- **M Prasanna Kumar**
CMD, Neyveli Lignite Corporation Ltd
- **Mohit Sahu**
Co - Founder, BlueBanyan Technologies
- **Ravi K**
Vice President
Marvel Geospatial
- **Vibhu Sinha**
Sr. Manager, Esri India
- **Shanto Mukherjee**
Head - Technical Services, Adani Enterprises Limited
- **Cyriac Joseph**
MD & CEO, Squadron Infra and Mining Private Limited
- **Vijay Mishra**
Director, Geo Green Enviro House Pvt. Ltd.
- **B R Reddy**
Former CMD, SECL
- **Pranay Johri**
Sales Manager
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- **Rajiva Kumar Singh**
GM, Exploration, CMPDI
- **Chiranjib Patra**
GM, Under Ground Mining Division, CMPDI
- **Vineet Lohani**
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- **Dr Akala**
Ex CMD, CMPDI
- **Afroz Ali**
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- **Mrinmoy Dhara**
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