



सड़क परिवहन
एवं राजमार्ग मंत्रालय
MINISTRY OF
ROAD TRANSPORT
AND HIGHWAYS

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Azadi Ka
Amrit Mahotsav



2022

GE SMART INFRASTRUCTURE

5-6 September | New Delhi



CONFERENCE REPORT



OVERVIEW

The GeoSmart Infrastructure 2022 with the theme “Digital Empowerment of Transport Infrastructure Development” and Ministry of Road Transport and Highways being the co-organizer, successfully concluded after two days of comprehensive discussion, visionary plenaries and engaging interactions at Holiday Inn, Aerocity, New Delhi 2022. The conference kick started with the Inaugural Session followed by the plenary sessions on Geospatial Technologies in Cross Sectoral Stakeholder Coordination for Gati Shakti National Masterplan , Geospatial Solutions for Green & Safe Transport Infrastructure Development and Transport Infrastructure Projects - Catalyst for Planned Development of Industrial Corridors. The conference saw participation of over 275+ delegates ranging from Technology providers, Project owners and operators and by all stakeholders of Construction architecture and engineering industry.

KEY STATISTICS



55

Speakers



275+

Delegates



120+

Organizations



INAUGURAL SESSION

• Chief Guest •

Our Prime Minister's vision is to turn India into a five trillion dollar economy. In line with it, we need to develop four sectors that are crucial for the country: water, power, transport, and communication. Without it, we cannot increase our GDP growth rate, which is essential for employment generation and poverty eradication.

Departments and stakeholders, are always thinking in silos. There is no cooperation, coordination and communication between them, which is a big problem.

Technology makes our decision-making process transparent, time-bound, result oriented and qualitative, enabling us to complete the project on time, with good quality and at a reduced cost. While using technology, we need to focus on cost reduction using different type of materials particularly waste materials. We also need to be mindful of cutting down cost without compromising on quality.

Digitalization would provide impetus to the construction and infrastructure sector by fostering a collaborative mechanism, and ensuring qualitative enhancement, transparency and effective decision-making.

Digital technology and infrastructure is also a vital subject for roads, power projects, rural sector and host of other things. Time is another considerable factor. We have to improve all types of systems, and for that we need to assess our strengths and weaknesses regularly on a case-to-case basis.

Honourable Minister Shri Nitin Gadkari
Ministry of Road Transport and Highways,
Government of India





Sanjay Kumar, CEO, Geospatial World

Welcomed all the dignitaries on the dais and mentioned about India becoming the fifth largest economy in the world and surpassing United Kingdom by a very small margin. In line with the aspiration and ambition to be \$5 trillion economy, Infrastructure is at the core of this ambition and that in next five to seven years, the role of infrastructure in our socio economic development will be phenomenal and unparalleled.

Digital Twin is a system where we can look at our infrastructure in totality for the coming few decades. The role of digital twin is not only into the design phase or construction phase but is highly relevant for maintenance phase. Any kind of updation that is taking place should be automatically updated into the digital environment. This will help maintain that asset.

Digitalization will empower entire infrastructure and make it more efficient. Geospatial technology helps you understand the complexities, and visualize the options, so that you can see the whole value proposition of the infrastructure before you start working on it. Infrastructure is the biggest driver of India's vision of a five trillion dollar economy; accordingly, the Government has been emphasizing infrastructure development in the country.



Amit Ghosh, Additional Secretary, Ministry of Road Transport and Highways

The financial year in terms of allocation for National highway construction stands at the highest ever, with the growth and allocation being at a steady CAGR OF 13% from 2015 till now. This places a great responsibility upon us to utilize these national resources very carefully and most efficiently and geospatial technology can help us achieve those efficiencies.

Geospatial technologies, will be crucial in deciding on the optimal highway network strategy leading to reduced logistics, cost and time across the country.

Geospatial is expected to aid all stakeholders in highway construction industry with building resilient infrastructure for the future through designing and finalizing highway networks and supporting strategic repairs and upgrades to existing networks



Alok, Member Administration, National Highways Authority of India

Technology is not being used in the road sector to the extent, it should.

The scale of opportunity for technology induction in highway sector is huge and NHAI is open to accepting any of the technology. The integration with our own system is possible and the best practices will be adopted.

In the Highway sector India is no less than any other country with the type and speed of construction that is happening. He urged the technology providers to make a presentation in NHAI on a specific suitable technology and that they are ready to adopt it. He concluded by saying that along with them the leadership of the country is also always for technology.



SK Nirmal, Director General Roads and Special Secretary, Ministry of Road Transport and Highways

Road sector is the second largest road network in the world with the last decade seeing a phenomenal growth in the road transmission network and to achieve the goals of five trillion dollar economy by 2025 road sector has to play a very important role to achieve that kind of target.

Digitalization will change the way of gathering data required for design of roads. and successful applications of remote sensing data, AEM drone and lidar survey machine learning has already been incorporated in our highway projects. .



Nagendra Nath Sinha IAS, Secretary, Ministry of Rural Development

Ministry of Rural Development has undertaken various initiatives in the use of GIS technologies, managing asset generation and targeting beneficiaries which is possible only if one has done the geospatial math.

GIS now being an established technology at Ministry of Rural Development, we are moving towards use of AI and ML algorithms to fully utilise our massive GIS data sets. The ongoing effort endeavour would be to prepare the DPR in terms of not only the linear terms but also in 3D terms so that we have the DPRs from the stage of preparation of the DPRs to measurements and every data set being in a 3D manner on a 3D data set and further designing would be taken on that platform.

The future is not GIS or AI/ML or any such technologies in isolation, but how we can blend different technologies and make them work for our beneficiaries and policy objectives so that the public money that is being spent through the government offers of the central government, of the state government is put to best use.

Vote of Thanks

Sanjay Kumar, Founder and CEO, Geospatial World

Delivered the Vote of Thanks by complimenting the minister about the power of his visionary and forward thinking. He urged Minister to consider setting up a BIM and Digital Twin promotion board which can outline the potential role of this technology into the economy as a whole, and build a policy environment for implementation and deployment of these technologies across the infrastructure projects

PLENARY 1:

Geospatial Technologies in Cross-sectoral Stakeholder Coordination for 'Gati Shakti' National Masterplan and Future Development



Prime Minister Narendra Modi launched the Gati Shakti National Master Plan for Multimodal Connectivity 100 lakh core project aimed at breaking silos, improving collaboration, improving coordination and accelerating the development of quality and trustworthy infrastructure development in the country. The goal is to ensure that we have synchronized, holistic, integrated and comprehensive planning system to achieve the \$5 trillion economy that we want to achieve.

The Gati Shakti Master plan is going to bring together 16 ministries, inclusive of power, inclusive of telecom, inclusive of roadways, railways, all together to ensure that we have a coordinated implementation plan. When it comes to infrastructure development, one of the key fundamentals of Gati Shakti is the establishment of a geospatial digital platform. ”

Ananya Narain

Director – GW Consulting, Geospatial World



The time has come to synchronize everything together, prioritize and take some decisions where all the six pillars of Gati Shakti, will come up with effective decision making which is the whole object or proposition of Gati Shakti.

Indo Arc GIS which is a refined version of ARC GIS was launched last year and we did that because we could see the gap of technology versus jumpstarting your whole project.

We have come up with a lot of solution products which are given along with Arc GIS technology which are all India based and mostly take care of the kind of work you're into it. It could be electric, utility, forest management, property tax amongst others.”

Vishal Anand

Senior Vice President, Sales, Esri India



As an Industry we need transparency, collaboration and commitment with a focus on quality, time and perspective.

Digital twin is the future and we need a connected data environment instead of a common data environment.

The beauty about the engineering industry is that one project uses various companies software and as an industry, we need to make sure that it is interoperable.”

Kaushik Chakraborty

Vice President, Asia Pacific Bentley Systems



PM Gati Shakti is of importance to the private sector in terms of opportunity, ease of planning, ease of doing business and in terms of ease of implementing projects which our country will be witnessing it in the coming decades.

What we have constructed within 70 years will get double in this decade and we all are fortunate to see this rapid movement and this rapid transformation with which our infrastructure growth stories being written.

We are a late urbanizer as a country but it is only the technology which can help us in planning to move ahead with infrastructure creation at a very rapid pace.

Post its launch, close to 900 central layers has already been uploaded onto PM Gati Shakti which includes all infrastructure ministries and every ministry involved in the development of any kind of economic zone like textile park, electronic,

manufacturing cluster, pharmaceutical cluster, defense clusters etc.

NICDC has adopted a strategy whereby we have requested all our consultants as well as the contractors to submit everything into the 3D drawings format at the planning stage itself. We use a lot of the solutions which are available and will keep on using those solutions as we move forward. Technology adoption will be more acceptable for the purpose of making effective planning, digitizing every land record, every utility hence laying below the road and for the purpose of effective management of those utilities and the city as a whole. ”

Abhishek Chaudhary

**Vice President, Corporate Affairs, HR and Company Secretary,
National Industrial Corridor Development Corporation Limited**



Geospatial, the word was first used in 1974 very early which refers to GIS with higher positional accuracy. Geospatial technology leverages on these significant advances to produce solutions by taking input from historical and real time location awareness of the data. ”

Sajid Mukhtar

Chairman, Roter Group



Moving from BIM to connected BIM and AI/ML and now DSMA is changing the world in a way very quickly.

Automation is driving the new way of designing and make whatever you design, whether it's a building or a road or a machine or a movie, the entire design process is changing and that's changing because of AI, ML and other such technologies.

We need to adopt technology at a faster pace, and we don't have that much time. We need to collectively have a vision to move forward, adopt good technologies, adopt good processes, collaborative processes, technology that can help us to design and build better. ”

Sunil MK

**Country Manager-Architecture,
Engineering & Construction, Autodesk India**

PLENARY 2:

Geospatial Solutions for Green & Safe Transport Infrastructure Development

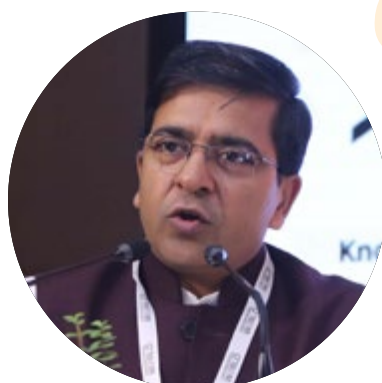


“We have to coordinate, cooperate and share our strategies, share our data so that we can make more and more services available to the public at the least cost and improve their ease of living which is the way forward.

The government and the industry is aggressively working towards creating a green and safe transport infrastructure using various geospatial technologies and IT solutions.”

Lt Gen Girish Kumar (Retd)

Former Surveyor General, Survey of India



“Ministry of Rural Development has a small body called National Rural Infrastructure Development Agency, NRIDA, which is a technical body which governs the PMGSY for the whole country.

Many activities under PMGSY is strongly data driven, IT backbone based and GIS initiatives used in PMGSY has helped us in planning and management of road network in rural India.

In PMGSY, we lay heavy emphasis on using new technologies and construction of rural roads. Currently, we are going very big on full depth reclamation and in that both management as well as quality control, GIS is playing a huge role.”

Dr. Ashish Kumar Goel IAS

Additional Secretary

Ministry of Rural Development and Director General, NRIDA



“Spoke about the best use case for the GIS concerning road safety. Road safety is one of the biggest issue, when officially we are reporting that roughly 160,000 people are dying and officially figure maybe even higher.”

Mr. Akhilesh Srivastava

IT Advisor, Government of Uttarakhand



Climate change has caused changes in weather pattern and will impact built space and urban areas with dire consequences as seen in the recent floods in Bangalore. While what has been built and permitted cannot be reversed.. the authorities need to reconsider solutions to these recurring issues of water logging. Some of the recent ideas that has been seen to solve the flooding issues are the sponge city concept. Percolating of water or sponge concrete can be used to solve the issues where water logging is common.. improving storm water drains on a regular basis is also key to keep the infrastructure appraised before monsoon season. While it is inevitable to reverse the impact of climate change.. adaption and mitigation techniques are crucial for survival. The mankind must choose wisely to use limited resources and rationalize to build with nature.”

Roshan Toshniwal

Head, Urban Mobility, Ola Mobility Institute



PLENARY 3:

Transport Infrastructure Projects - Catalyst for Planned Development of Industrial Corridors



Transport infrastructure development integrated with digital technologies has a significant positive impact on economic growth.

Connected construction solutions is the key to advocate and to ensure that there is awareness and there is implementation of connected construction solutions across the ecosystem.”

Dr Shivangi Somvanshi
Director – GKI, Geospatial World



We have the second largest road network in the world out of which the responsibility of the various state government, the central government are divided and depending upon who is the custodian the road network has been classified and NHAI is responsible for the national highways.

The National Highways Government of India has launched an ambitious program. which covers 55,000 national highways and digital technologies can help in each and every aspect. The industry should work towards optimizing the cost, increase pace of construction and ensuring sustainability of construction.

Digital construction can help us a lot by ensuring elimination of human intervention and confidence For faster progress the industry should come forward, and work together.”

RK Pandey
Member Projects, National Highways Authority of India



For India's GDP to become 5 trillion in the next few years, we have to grow the transport infrastructure. Build the transport infrastructure in a faster manner. The GDP has to grow much faster than the population growth. If the population growth, the GDP will grow because more people are employed. Use of technology is very important, especially digital technology. Transport infrastructure is absolutely important, not only for the corridors, but for the entire country. ”

Rajan Aiyyer
Managing Director, Trimble



“Transportation of goods and their tracking is very important and we can have real time visibility of railway wagons throughout the national rail network.

Smart railways will be reality when everything is IT enabled, whether it is the track or signalling, ocean rolling stock, locomotives, coaches, big data and data crunching plays a big role. You need huge servers. IT people know it and they have complex technologies. And they have to integrate human elements, organizations, technical solutions. It has to have a very highly intelligent computerized system.”

Anil Vij

Director Technical,

Rail India Technical and Economic Services Private Limited (RITES)



“A lot of changes are taking place in the infrastructure domain and the industry will witness a positive change in the infrastructure sector within next three to four years, positively.

DFCCIL is committed for funding construction, commissioning of two corridors. Operation and maintenance would be with DFC. Business development is with DFC and new DFCS are also planned. The integrated strategy would be that new feeder routes have been identified, which are already existing on Indian Railways.

In Project Execution due to the new government and its push there has been tremendous progress.”

Hari Mohan Gupta

Director Infrastructure,

Dedicated Freight Corridor Corporation of India Limited (DFCCIL)



“GIS is basically a foundation technology which helps in the complete lifecycle of a corridor development. Starting from the engineering design or identifying the corridor, aligning it with the highways. We talked about identifying those, identifying the projects through it, creating clusters, modeling, and finally looking at the carrying capacity, using it for policy planning and in all of that GIS plays a very comprehensive role.”

Narinder Thapar

Vice President & Head - Urban & Utilities, Esri India



“Presented on how transport Infrastructure acts as a Catalyst for the Planned Development of industrial corridors. He showcased how Bentley Systems play a crucial role in advancing infrastructure and contributing to a journey that takes India to a Global stage by creating these Integrated Industrial Corridors, making India the Capital of the manufacturing hub”

Roshan Bucha

Manager Civil Success, Bentley

Session 1: Geospatial Technologies for Railways, and Metros

Moderator: SK Vij, Former Member, Railway Board

Speakers: Sunil Mathur, Director (Rolling Stocks, System & Operations),
Maharashtra Metro Rail Corporation Limited

Lt. Col. Satyadev Singh, Border Road Organization

Parveen Sharma, CEO, The BIM Engineers

K Venkat, Senior GIS Expert & Nodal Officer, National Capital Region Transport Corporation

Key Points:

- India is catching up very fast in terms of technology adoption globally and we are not only serving India but we are trying to serve the world through India
- In any project so many different organizations are involved and to connect all these organization and work together is a challenge we need to overcome
- India construction environment is so huge and elephant takes time to move. We are constantly adding new innovations and dimensions of technology
- 95% of the construction problem can be identified and mitigated very easily with embracing and implementing technology.



Session 2: Transforming Highway and Airport Project Delivery using connected construction System

Moderator: Sudhir Misra, Professor, IIT Kanpur

Speakers: Anand Sirohi, Director, Trimble

Panelist: Bidur Kant Jha, Director (New Technology for Highway Development), Ministry of Road Transport and Highways
Atasi Das, Assistant Vice President- GR Infraprojects
Sudhir Hoshing, CEO, IRB Infrastructure Developers
Renu Arora, BIM/Digital Engineering Manager, Jacobs

Key Points:

- Centralization and consuming of right data is very important else it will lead to thousands of clashes
- Integrations, our a long way to go but we have to achieve it in no time so that there is no hurdle in our OEM period and we are able to give back assets in digitized form to the authorities.
- One has to use these futuristic technology smart digital tools for increase speed without compromising on accuracy and quality to increase efficiency in design and construction
- Technology must add value to system and must give actual data without any scope of manipulation. Technology providers should be cognizant of this fact.
- Using Digitalization, digital records, digital platforms into construction processes will no doubt help construction and finally maintenance. Assets can be constructed in a couple of years but they will last for many more years.
- Digitization - an interface of physical and digital world, are pillars of productivity and efficiency. We have started deliberating on digital twins and BIM which will not only help build the projects today in a less time, with less clash of projects, with less resources, but would also help engineers to make a systematic understanding of various options.



Session 3: GEOBIM Technology: An Integrated Approach for Future Ready Infrastructure

Moderator: Dr KC Tiwari, Professor –Civil Engineering Dept, Delhi Technological University
Speakers: Anuradha Katti, Director, Exto Project Solutions
Capt Mahendra Kumar, Hydrography Chief, IWA
Vivek Bansal, Vice President, Pan India

Key Points:

- Whatever we create today that technology and Infrastructure should be sensitive to be able to adopt to future technologies
- GIS and BIM together can lead to most cost effective solutions
- Digitization is not a magic wand which can solve all the problems. For digitalization defining the processes, workflows, reports and data capture is of utmost importance as that will improve project management maturity
- Digital Twins is rapidly progressing and would play a major role in the coming days enabling asset-centric organizations to combine their engineering, operational, and information technologies into a portal or augmented/immersive experiences



Session 4: BIM and Digital Twins Advancing Roads, Highway and Airport Development

Moderator: Amit Goel, Professor and Dean, National Institute of Construction Management & Research
Panelist: BS Mukund, Head – BIM, L&T Construction
Hari Kumar, CTO, Roter
Nikhil Bagalkotkar, Head Technical Sales AEC, APAC, Autodesk
Anuj Pandey, Practice lead - Digital transformation, CAPA India

Key Points:

- The India construction sector is growing by a CAGR of 15.7 % and this is massively changing the skylines around us everywhere
- Maharashtra state was the first in mandating public projects where BIM had to be used and now other states and at centre level they are following up with BIM mandates
- The long term sustenance of BIM efforts can be ensured by connecting it to broader policies and digitalization efforts related to value from public data, data governance and data modelling and then integration across various information modelling domains
- The purpose of digital twins is to integrate the real world with a virtual environment for seamless monitoring and administration of the construction process, facility management, environmental monitoring, and other processes in the life cycle operations.



Session 5: Enhancing Efficiency and Productivity of Project Progress Tracking and Asset Management

Moderator: Kalyan Vaidyanathan, Director, Business Development, Bentley Systems

Panelist: Sandeep Desai, Executive Vice President, Afcon Infrastructure

Dr Pradeep Kumar, Senior Principal Scientist, CRRRI

Ashish Pandita, DGM - Planning, Welspun

Kalyan Vaidyanathan moderated a power-packed session, highlighting the perspectives of contractors and research organizations on Project Management and Connected Data Environment. Kalyan showcased how nPulse helps in project management and control in achieving project goals



Session 6: GEOBIM and Digital Twins for Advanced Data Visualization

Moderator: Abhishek Verma, Research Analyst, Geospatial World

Panelist: Dwaipayan Dighal, National Head-Govt Business Development, Education, ESRI India

Karthik Mani, BIM Strategy Manager, WSP

Artee Rana, Director, AEC Digital Solutions

Viraj Voditel, Founder and Director, Techure

Key Points:

- The entire objective of ECOBIM is to make sure that we quantify, observe and measure the economic impact of BIM for the infrastructure through entire project lifecycle
- BIM adoption is already happening in lot of projects in India, moving forward we need to work more on open standards improving technology and policies at government level
- All specialist who want to work on integration of BIM and GIS have a collective responsibility that we need to come up with a policy mandate, articulation to government authority has to be transparent, clearly illustrating the entire futuristic road map and its cost value benefit. If the government they can come up with a policy mandate in public tenders of infrastructure projects the integration of Digital twin BIM and GIS will definitely realise.



Session 7: Integration of Geospatial Technologies for Digital Bridges and Tunnel Systems

Moderator: Lt Gen (Retd) Ravi Shankar, PVSM, VSM, President, Intercontinental Consultants and Technocrats
Speakers: Col Manish Kapil Joint Director, Tunnels and Bridges, Border Road Organisation
Cdr Ashutosh Kaushik, CEO, Parsan Overseas

Key Points:

- Technology is important and when it comes to alignment, today we have the facility of choosing between different alignments as to which is best using geospatial technology. That is something if we start using, it would have been more cost effective and lesser problems.
- Use of aerial survey, drone, photography high resolution satellite images are must and we have to extensively use this while we are making our DPR s and that will definitely expedite our work on ground.
- BIM has been used extensively in the world, In india we will see it being implemented for the first time in couple of months.
- Digital Twins offer a risk-free way of simulating construction as well as optimizing design and allowing stakeholders to visualize emergency evacuations and resilience to extreme weather conditions.



Session 8: Unlocking Opportunities in Transport Infrastructure with Reality Capture Technologies

Moderator: Prof. Manabendra Saharia, Assistant Professor, Dept. of Civil Engineering & School of AI, Indian Institute of Technology Delhi
Panelist: Varun Kumar Sagarkar, Director of Digital Engineering, Desapex Engineering Consultants
Prashant S Alatgi, Designated Partner, Prashant Advanced Survey LLP

Key Points:

- India was way behind technology ten years back but now at par or even more advanced than European countries as far as mobile mapping is concerned and mobile mapping is most popular and widely adopted technology
- Infrastructure metaverse if different company can share their metaverse and if they are able to interact with another through an interoperable platform could give the industry some push making it a viable community



GEOSMART INFRASTRUCTURE AWARDS 2022

The GeoSmart Infrastructure 2022 presented the GeoSmart Infrastructure Awards, which aims to celebrate technology's best-in-class application and leadership in transport infrastructure development and asset management. The awards felicitates the forward-looking organizations, projects, and individuals for their impeccable work in the field of digital construction and engineering.

General (Dr.) Vijay Kumar Singh PVSM, AVSM, VSM (Retd.), Minister of State, Ministry of Road Transport and Highways released the "BIM's Strategic Return on Investment (ROI) in Indian Infrastructure Projects" presented the awards to the winners at Geosmart Infrastructure Awards.

As technology gets used more, challenges like time overrun and cost overrun can be addressed. We need to develop technology such that users find it useful and easy, thus we can get benefit in terms of quality, methodology, time and cost effective. Infrastructure industry and construction tech are changing by leaps and bounds. As land area is shrinking, we need technology and innovation to help us meet the requirements of infrastructure development as well as future of people," said General Singh.

GEOSMART INFRASTRUCTURE EXCELLENCE AWARD

- National Rural Infrastructure Development Agency for project operations and maintenance - **Project: GeoSadah**
- Konkan Railway Corporation Limited for Bridge Project-**Project: Chenab Bridge**
- Bangalore International Airport Limited for Airport Project- **Project: Kempegowda International Airport Terminal 2**
- Maharashtra Metro Rail Corporation Limited (MAHA-METRO) for metro project - **Project: Nagpur Metro Rail Project**
- National Highways Authority of India (NHAI) for road highway and expressway project-**Project: Vadodara-Mumbai Expressway Package 1**
- Border Road Organization for tunnel project - **Project: Atal Tunnel**

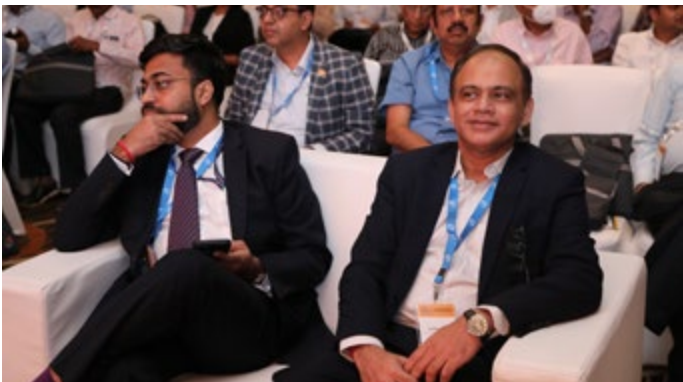


REPORTS UNVEILED

The event witnessed the release of three reports namely:

- **The National BIM and Digital Twin Strategy Report**, prepared under the aegis of Non-Executive National BIM and Digital Twin Think Tank sets out an action-oriented strategic plan for the adoption of BIM and Digital Twin for government and decision-makers across the construction and infrastructure community of India to develop its capability as a construction leader and act as an exemplary example for infrastructure development worldwide. The report considers a 'whole-sector' approach –to springboard the development of a National BIM and Digital Twin policy across the sub-sector infrastructure projects (transport infrastructure and urban development projects) and overcome the bottlenecks which currently face the Indian construction and infrastructure sector.
- **BIM's Strategic Return on Investment for Indian Infrastructure Projects Report** prepared under the aegis of Geospatial World and Autodesk India, highlights BIM's Strategic Return on Investment for Indian Infrastructure Projects. The report mentions the need for digital transformation in Indian infrastructure projects, the need for BIM and the return on investment or RoI of implementing BIM across transport infrastructure projects, namely, roads and highways, airports, civil aviation, ports; buildings and campuses, oil and gas, etc.
- **Connected Construction Solutions for Indian Highway and Airport Infrastructure Report**, prepared under the aegis of Geospatial World in association with Trimble. The report illustrates the current scenario of highway and airport development in India highlights the current market trends and directions in these two infrastructure sectors in terms of technology adoption. Further, the report also discusses the need for adoption of connected construction solutions, the challenges faced by the airport and highways infrastructure sector and benefits achieved in such technology adoption across the infrastructure project lifecycle.





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