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# MAHA METRO CONFERRED 'EXCELLENCE IN URBAN TRANSPORT' AWARD - FOR BEST MULTI-MODAL INTEGRATION IN NAGPUR



The Urban Mobility India (UMI) Conference and Expo is an annual event with the overarching theme which runs across all the aspects of urban mobility and is organized by the Institute of Urban Transport (India) under the aegis of the Ministry of Housing & Urban Affairs, Government of India.

This year, the 14th Urban Mobility India Conference was held on 29th October 2021 in New Delhi. Due to COVID – 19 pandemic, this year's conference was fixed for one day and was held virtually through video conferencing.

Every year, during the UMI conference, Ministry of Housing & Urban affairs (MoHUA) gives awards for excellence in urban transport/ best practice projects in 12 categories based on the performance in various identified categories, one of them being 'Metro Rail with Best Multimodal Integration'.

An award selection committee was been nominated which consisted of esteemed panellists consisting of urban transport experts of India, senior officers from MoHUA, Shivanand Swami of Centre for Excellence, Ahmedabad, Chief Executive Officer (CEO) and president of World Resources Institute (WRI) and other experts. Entries were invited from all metro rail corporations in India, and they were tasked with selecting the winner.

Nagpur Metro is the first metro rail agency in

India that had prepared a detailed plan for comprehensive feeder services. The feeder services include city bus, centralized public transport, e-rickshaw, e-bike, autorickshaw, electric scooter, etc. Maha Metro has prepared a plan for making these services available at metro stations. The aim of this plan is to provide fast, safe, reliable and affordable feeder service to metro passengers.

The main steps taken by the agency include constructing pick-up and drop bays for city buses and other feeder vehicles near entrances and exits of metro stations, separate footpaths for pedestrians, cycling tracks, bicycle parking, parking for two-wheelers and four-wheelers, parking for physically challenged and provision for carrying bicycles in metro trains. Signing and Implementation of MoU's with feeder operators for different services such as Bicycles, E-cycles, E-Scooters, E-Rickshaws, Feeder bus services etc. Recognizing the initiatives, this year, **Maha Metro was conferred the Excellence in Urban Transport Award for Metro Rail with Best Multimodal Integration in Nagpur.** The award was presented to MD, Maha Metro by Shri Hardeep Singh Puri, Union Minister for Housing & Urban Affairs and Petroleum & Natural Gas. The award conferred by MoHUA has added another feather in the cap of Maha Metro. It is also a matter of great pride for Nagpurians.

# METRONEO AND MMI IN NAGPUR SHOWCASED AT DUBAI EXPO



World Expo 2020 is being hosted by Dubai in the United Arab Emirates from 1<sup>st</sup> October 2021 to 31<sup>st</sup> March 2022. The Theme of the Expo is "Connecting Minds, Creating the Future" and the three Sub-themes are Opportunity, Mobility & Sustainability. India is a participant nation in the Expo 2020 participating under the Sub-Theme "Opportunity". MD/ Maha Metro along with senior officials from the Ministry of Housing & Urban Affairs (MoHUA) travelled to Dubai to showcase India's strengths and case studies in sustainable transportation in the global arena.

During the panel discussion on 'Smart and Sustainable Transportation; Focus on Urban Transport Systems' in the World Expo Dubai, MD/Maha Metro showcased the concept of MetroNeo, which will soon be implemented in Nashik city as well as Integrated Public Transport (Multimodal Integration at Nagpur).

MetroNeo is an innovative and cost effective mass transport solution for Tier-2 and Tier-3 Indian cities. It runs on dedicated right of way and is ecofriendly and smart.



MD, Maha Metro iterated that when India had become independent in 1947, trams were the most important mode of public transport in cities. "The first development in this field took place when the government started constructing underground metro in Kolkata. However, such costly solution is unfeasible in smaller cities and hence Maha Metro developed MetroNeo.

MetroNeo is an innovative public transport system, which is seamless, fast, reliable, and cost effective. It will provide travel experience of international standards at par with

Metro systems. It is being implemented for the first time in India at Nasik. The 33 km Nasik Metro Neo Project has 2 elevated corridors. It was announced in the Union Budget of 2021. It is scheduled to be completed in 4 years. Total project cost is Rs 2,092.6 crore.

Speaking on Multimodal Integration at Nagpur, MD/Maha Metro added Construction of metros is a recent phenomenon in India and it is basically an infrastructure for people. The main challenge is how to connect metro to people. The only way this can be done is through other modes of transport, which has been done by Nagpur Metro.

In order to provide feeder services, it was important that metro stations have the necessary infrastructure. Nagpur Metro has provided this infrastructure right from the beginning. The stations have space for shared bicycles, for vehicle parking and bays for feeder vehicles.

Feeder Services are being provided through e-scooters, e-autorickshaws, e-rickshaws, battery operated mini-vans, bicycles and through rationalization of NMC operated city



buses. Several MoU's have been signed private operators and Nagpur Municipal Corporation (NMC) for this purpose. Nagpur Metro is also providing a shuttle bus service between the Airport Metro Station and Nagpur Airport. The discussion moderator Dr O P Agrawal praised MD/Maha Metro for bagging the national award for best metro feeder service. He said that Nagpur Metro has created a model feeder service, which should be emulated by other metros.

## THE FIRST SET OF PUNE METRO'S OWN ROLLING STOCK ARRIVES FROM ITALY



On 16th October 2021, the first set of metro coaches manufactured in Italy arrived in Pune. The coaches were transported from Italy to Mumbai through an express service sea vessel which arrived at Mumbai port on 7th October 2021, and, via road, it reached from Mumbai to Pune at Hill View Park Car Depot. The metro coaches were unloaded by engaging special cranes, two cranes each of 100-ton capacity. The testing and commissioning are currently under process at the depot.

The other two trains at TFA Italy, are also under the advanced stages of manufacturing & assembly work and are likely to get dispatched soon from the manufacturing unit in Italy.

For PMRP, the order for the trains, a total of 34 train sets each with a three-car composition was placed in August 2019 in a consortium of M/s Titagarh Works Limited (TWL) India and M/s TFA Italy. The first three trains would be manufactured at the TFA plant at Caserta, Italy. The balance 31 train sets will be manufactured at the TWL India Plant at Kolkata.

The TWL train for Pune Metro is an aluminium car body that is lightest in weight (8% lesser than the stainless steel car body train), Given the aluminium body, the axle load is 16 T against 17 T of regular metro coaches made of non-aluminium material, and hence Pune

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TRAIN SET RECEIVED FROM ITALY AT HILL VIEW PARK CAR DEPOT

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The TWL train for Pune Metro is an aluminium car body that is lightest in weight (8% lesser than the stainless steel car body train), Given the aluminium body, the axle load is 16 T against 17 T of regular metro coaches made of non-aluminium material, and hence Pune Metro rolling stock is energy efficient. Also, the trains are equipped with state of art technology systems and world-class passenger safety and amenities. The passenger-carrying capacity of each train is 978 (seating- 140, including a minimum of 2 wheelchairs for specially-abled persons). The each Metro car is 22 meters in length and 2.9 meters wide.

The testing and commissioning of the metro train is a highly complex process, and it involves various stages of validations and approvals including the statutory approvals/certification from RDSO/ Railway Board and Commissioner Metro Rail Safety (CMRS), before putting the train in service.

The Metro train consists of several different mechanical, electro-mechanical, electrical power and electronics systems such as Bogie systems, Brakes and Pneumatics systems, Traction and Propulsion systems, Auxiliary Power Supply system, various protection systems such as fire detection and alarm system, Automatic Train Protection (ATP). It also includes Train Control and Monitoring System (TCMS), Passenger Announcements and Passenger Information System (PAPIS) systems, and CCTV etc. The testing and commissioning of each system is critical & also mandatory stage-wise approvals and certifications make the process even more complex and time-consuming.

The testings of the various systems mentioned above have already started & engineers from TFA Italy and TWL Kolkata including the OEMs are performing the testing. The initial testing is performed in the static condition of the train. After static tests, the dynamic testing (train put in run conditions) would be carried out.

After the above tests, RDSO will conduct the oscillation trial for the train for issuing speed certificates for the train. Once the speed certificates are received from RDSO, Pune Metro will request CMRS for inspection and further approval of the Railway Board for putting the train in Passenger services.

It needs to be taken into account that currently, Pune Metro is using train sets from Nagpur for Train Trial purposes. Train Trials conducted on Corridor 1 and 2 were conducted using the metro train sets from Nagpur.

Pune Metro Coaches would be of two different colours, namely, Purple & Blue for corridors 1 and 2 respectively. And, 65 per cent of equipment for Pune Metro coaches is sourced from Indian manufacturers to promote the Make In India policy of the Indian Government.



PURPLE & BLUE PROFILE FOR PUNE METRO ROLLING STOCK



## EMPLOYEE'S CORNER

### BRICK TO BLOCK 2.0

Written By: Amit Baporikar (DGM-P&C), Pune

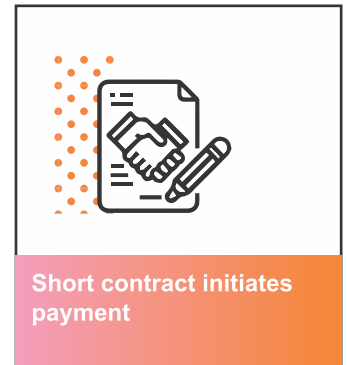
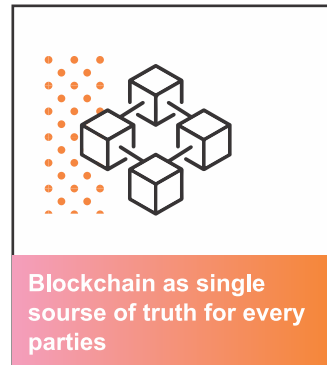
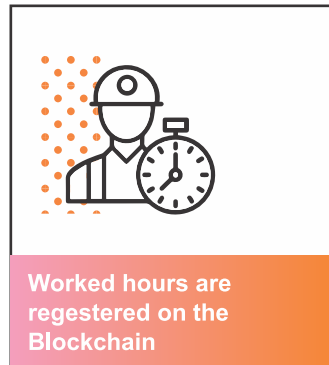
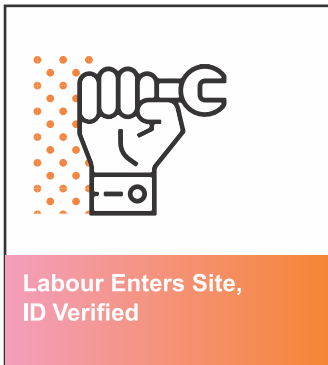
In this segment, we will talk about how blockchain can address the payment & procurement issues along with BIM to enhance project management effectiveness.

#### Transparency in Payment & Project Management through Blockchain:

At project level, sluggish payments cause risk to suppliers which result in delayed payments. The cash flow problem in the construction industry has an ill impact on many established and dependent small-scale industries causing a downfall for them. While payment processes are significantly escaping from thumb era, digitally permitted work can pledge payments with predetermined terms and smart contract arrangements, to effectively progress many aspects of construction projects.

We will refer to hypothetical example of blockchain governed site working hours register and payment system: A construction laborer enters the site with its ID card for security & HSE reasons. The evidence about who come in and how much period they worked on site is recorded on a blockchain enabled distributed ledger between the stakeholders.

Thus, no supplementary documentation needed (though work supervision need be implemented stringently) to validate this information, as it has already logged on the Blockchain. Based on the approved terms with regards to the number of worked hours on site, a smart contract can pledge payment and send payment accreditations for all parties if needed.



#### Blockchain Administered work ledger and Payment System

#### Blockchain-Enabled Procurement:

The prospects of blockchain technology does not just stop at the payment application. It can also transform the current supply chain management of the construction industry, like, safeguarding derivation for structural/ construction materials and creating a verified chain of custody transparent for all stakeholders in the supply chain.

Imagine a blockchain application where the explicit construction materials are recorded and traced along the supply chain until the completion of the construction. For instance, as a client, all information on the materials

purchased are evident, such as manufacture and quality certificates, together with logistics track until delivery to construction location. Through this unassailable chain of custody, stakeholders can have confidence in the quality, safety specifications and standards of materials. This process is easier, quicker, and less bureaucratic.

**Tata Steel & HSBC successfully execute a blockchain enabled, paperless trade transaction - A GLOBAL FIRST FOR THE STEEL INDUSTRY**

Through a blockchain platform, instead of manual paper-based credentials and wet signatures, digital tamper-proof approvals can control the activities of goods. Moreover, the status of the shipment is reorganized continuously and linked across all stakeholders by the blockchain.

Tata Steel has initiated a blockchain pilot project which aims to create a transparent chain of custody for all resources, with the pilot focusing on steel construction materials. The initiated pilot is aiming to follow the lifecycle of a steel beam from production, through the supply chain until its reuse or recycle. Every beam will be tracked through a unique ID, which is registered on a blockchain system.



The World Economic Forum along with TATA STEEL & Six other Metal & Mining Companies formed Blockchain Enabled Procurement.

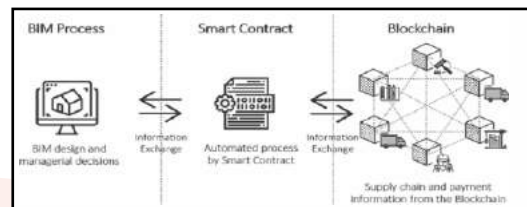
**BIM (Building Information Modeling) & Blockchain:**

While BIM implementation has come a long way in the past decade, it is yet to swing to its full potential. The level of evidence in a model or its development varies from projects to different sectors in the construction industry. The modelling levels are generally designated 'D = dimensions' to diversify information classes based on the type of information used/received. It goes from 3D geometry to, in recent years, 7D. Proudly in the Pune Metro project, the BIM is getting utilized to a 5D extent.

The concept that permit the grouping of BIM and blockchain would result in a combined source of truth that covers all aspects of the project while putting the audit trail of design endorsements, data corroboration, and project management decisions on a blockchain.

Hence, we can distinguish two major ways of utilizing BIM and blockchain collectively:

- » BIM can syndicate information from the blockchain, such as procurement, particularly during construction.
- » BIM can assign information to the blockchain such as design, source of data or model modification orders. This information can be used ahead by smart contracts to initiate further action, such as payments or material orders.



**Blockchain-Enabled BIM Operational Model**

We have previously discussed that by enabling blockchain solutions, the provenance of materials is properly recorded on the blockchain. The BIM model also gets updated during construction to ensure everything is put-up, as planned. If there are necessary modifications, then they are implemented in the model and remain till the end of the life cycle. Smart Asset Management (SAM) systems obtain even more traction in the industry.

To conclude, the construction and infrastructure sector have passed through a series of revolution. This renovation is moderately digital to improve productivity and digital workflows. The current rank-order based status quo model is not sustainable. Blockchain technology has the latent to change and simplify this modernization.



## EMPLOYEE'S CORNER

# A trilingual ode to Pune Metro

वाजवी भाडे, जलद आणि सुरक्षित प्रवास ..  
आरामदायी सफरीचा असेल, अनुभव नक्कीच हा खास ..१..

होतो आहे आम्हा पुणे करांना, सुखद असा आभास ..  
स्वप्न साकारेल महामेट्रो आमचे, आहे आम्हाला विश्वास ..२..

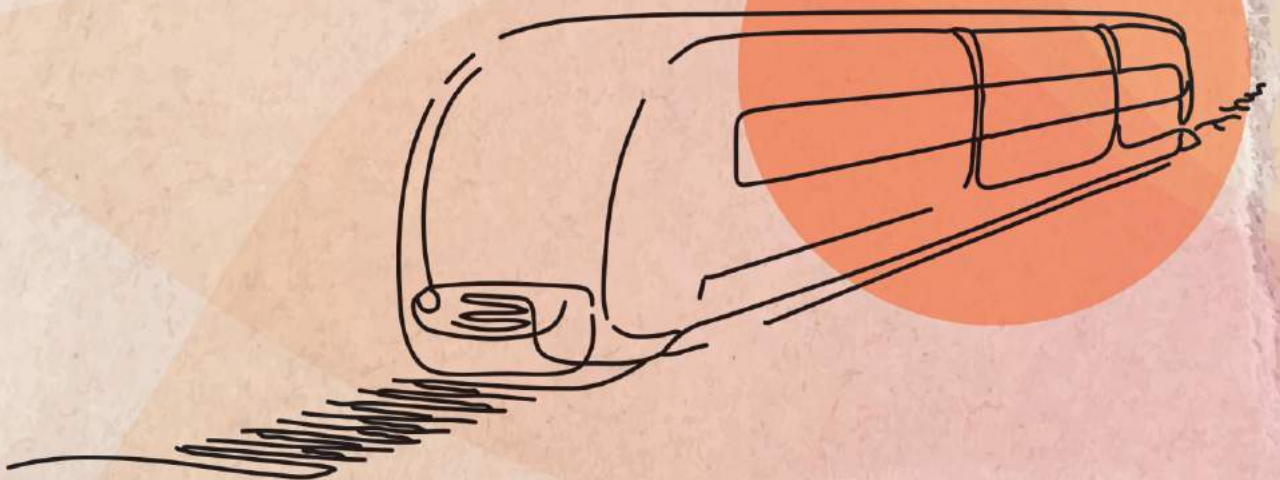
मेट्रो दौडगी पुणे मे, लग रहा था एक अफसाना ..  
भारत और महाराष्ट्र सरकार ने, जनता को दिया है ये नजराना ..१..

मुश्कीले राहो मे बहुत थी मगर, महामेट्रो ने पुरा किया हर एक पैमाना ..  
चंद लम्हे इंतजार के साथीयो, सफर हम सबका हो जायेगा सुहाना ..२..

Traffic chaos, Disturbing noise, huge pollution ..  
Accept it or not, these are the fruits of urbanisation ..1..  
Don't worry Pune-kars, get rid of these frustrations ..  
A matter of few days, its time to enjoy Metro operations ..2..

**- Nilesh Ghuguskar**

Manager (HR)  
Maha Metro, Nagpur





# PROGRESS UPDATE

As on 30<sup>th</sup> October, 2021



# METRO NEW JOINEES



## NAGPUR METRO



**Prakash Dhawarde**  
Senior Section Engineer (Track)

## PUNE METRO



**Prakash Misal**  
Additional CPM (Civil)



**Navin Rikhadi**  
Sr. Technician (Rolling Stock)



**Anandkumar Patel**  
Sr. Technician (Rolling Stock)



**Ashish Naik**  
Sr. Technician (Rolling Stock)



**Ratnesh Saxena**  
Sr. Technician (Rolling Stock)



**Keshav Choudhary**  
Sr. Technician (Rolling Stock)



**Sanju Patil**  
Technician (Electro.Mech)



**Madhukar Suryvanshi**  
Sr. Technician (Rolling Stock)

NAGPUR METRO		
Sr.No.	Stretch	Progress
1	Khapri to Sitabuldi	100%
2	Lokmanya Nagar to Sitabuldi	100%
3	Sitabuldi to Kasturchand Park	100%
4	Kasturchand Park to Automotive Sq.	97.5%
5	Sitabuldi to Prajapati Sq.	97.5%

PUNE METRO		
Sr.No.	Stretch	Progress
1	PCMC to phugewadi -E	95%
2	Vanaz to Garware -E	87%
3	Phugewadi to Bopodi-E	65%
4	Bopodi to Range Hill-E	41%
5	Garware to Civil Court-E	55%
6	Civil Court to Bund Garden-E	73%
7	Range Hill to Civil Court-UG	55%
8	Bund Garden to Ramwadi-E	51%
9	Civil Court to Swargate-UG	32%

## SOCIAL MEDIA ENGAGEMENT

Citizens *Love*

## Maha Metro!

Social media engagement of Pune & nagpur Metro far exceeds its other counterparts in the country.

Pure testimony of **Maazi Metro**



### NAGPUR METRO

Average acquisition of FB followers per month

**9865**

**6,74,707** LIKES

**14,200** FOLLOWERS

**1,648,859** VIEWS

**16,200** FOLLOWERS



### PUNE METRO

Average acquisition of FB followers per month

**7654**

**6,12,787** LIKES

**14,400** FOLLOWERS

**98,978** VIEWS

**28,200** FOLLOWERS

Monthly newsletter published by Maharashtra Metro Rail Corporation Ltd.

For contribution & suggestions, please write to **cs@mahametro.org**

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