

ASIA-PACIFIC Railway Innovations Forum



21-24 May 2019
Manila, Philippines



Day 1, 21 May

Digital Revolution: Big Data in Railway Asset Management, Smart Stations, and Smart Ticketing and Cyber Security

Day 2, 22 May

Future Trends: Railway Signaling and Train Control, Regional Railway Initiatives, Private Sector Engagement

Day 3, 23 May

Railway Industry Day: Industry updates on the latest innovative railway solutions

Background

The railway sub-sector is a growing focus for the region and for ADB support to Developing Member Countries.

Innovative and new disruptive technologies of the Fourth Industrial Revolution (4IR) are about to significantly change modern railway systems and the way of building, maintaining, operating, but also managing and governing them.

In high industrialized countries these changes are vastly affecting the complete railway sector, from the industry, to policy makers, regulators, operators, asset owners, and infrastructure/asset managers.

In developing countries of Asia and the Pacific, with their very different technology development levels and often ancient railway infrastructures, systems, and rolling stock, such new disruptive technologies are an immense opportunity, but at the same time the agony of choice.

These developing countries have huge and ambitious investment plans to build, extend, revive their national railways and to connect them to international railway corridors. In view of the technical opportunities and options, and the pressing requirement to increase the private sector involvement, to assist the necessary funding and to obtain the technical expertise, these developing countries are looking for answers to the following questions:

- Which railway system technologies and technology levels are economical and financial sustainable for system specific operation requirements and an expected traffic demand;
- Which of the new disruptive technologies are possible and the best solution for their specific and unique urban or national railway development plans;
- Will an investment in common railway systems be sustainable and advisable, or would it be more appropriate to skip high capital investments in potentially soon outdated technologies;
- Which technical opportunities will safeguard a sustainable high performance and quality of railway services;
- Which financing models are possible and best suited for a private sector involvement, in consideration of the complexity of maintaining and operating railways.

The Asia-Pacific Railway Innovations Forum, jointly organized by the Asian Development Bank (ADB) and the International Union of Railways (UIC), will try to find answers to these crucial questions during focused discussion sessions and the sharing of knowledge between industry, policy makers, and other stakeholders in the sector.

Venue:

Auditorium Zones A-C
ADB Headquarters (HQ)
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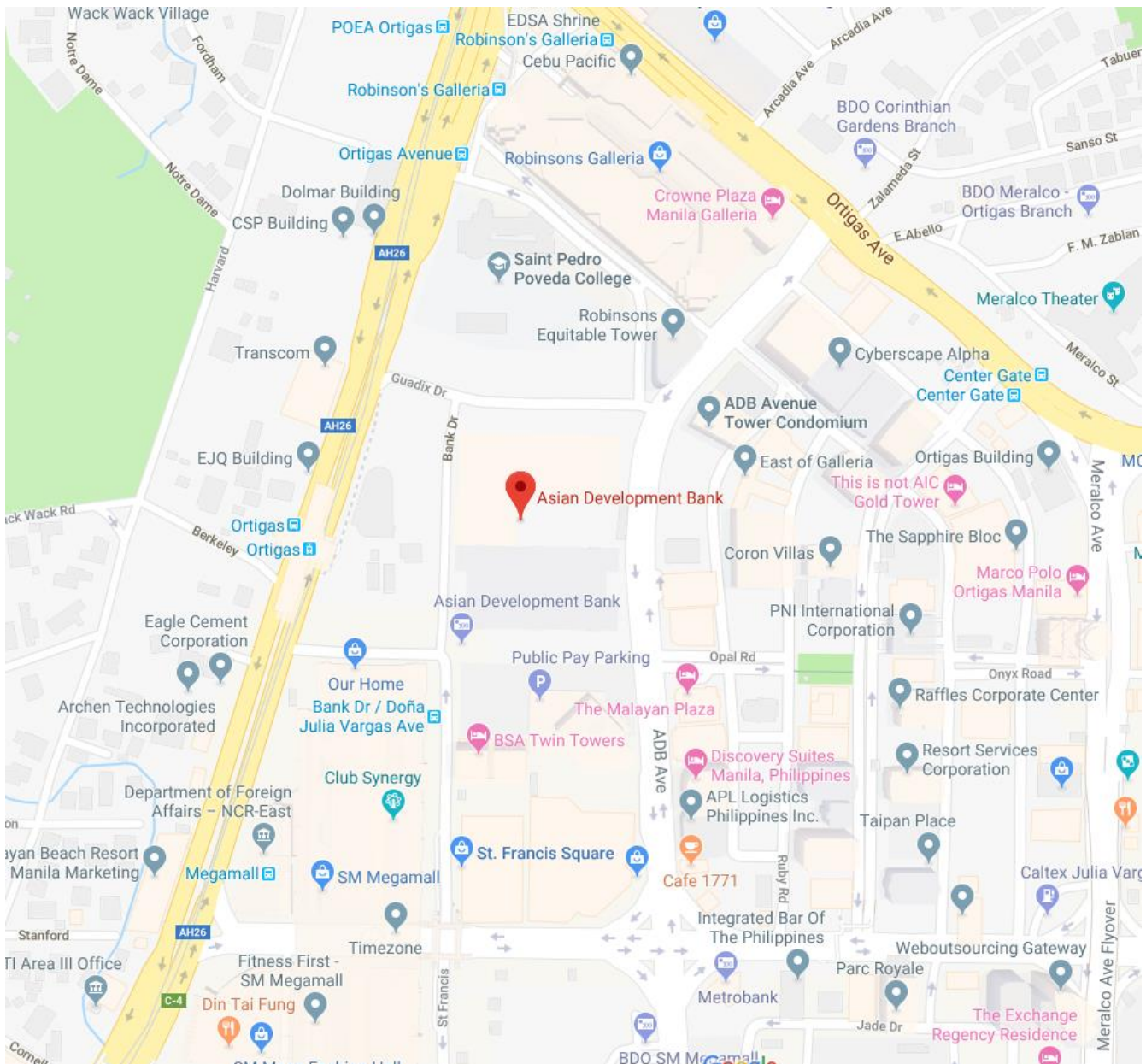
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Location Map



FORUM AT A GLANCE

Tuesday 21 May	Wednesday 22 May	Thursday 23 May	Friday 24 May
<p>Digital Revolution: Big Data in Railway Asset Management, Smart Stations, Smart Ticketing and Cyber Security</p> <p>Opening Plenary and Keynotes</p> <ul style="list-style-type: none"> • Session 1: Railway Asset Management principles and Life-cycle strategies • Session 2: Digital Solutions to lead and steer Railway Design and O&M Strategies • Session 3: Opportunities and risks related to the Digital Revolution and new passenger interfaces 	<p>Future Trends: Railway Signaling & Train Control, Private Sector Engagement, and Regional Railway Initiatives</p> <ul style="list-style-type: none"> • Session 4: Signaling & Train Control Systems Solutions – Part 1 • Session 5: Signaling & Train Control Systems Solutions – Part 2 • Session 6: Financing models and Private Sector engagement models for DMCs • Session 7: The Role of Regional Cooperation Initiatives in Scaling Up Innovation <p align="center">Closing Plenary Panel</p>	<p align="center">Railway Industry Day</p> <ul style="list-style-type: none"> • Session 1: Digital Twins and BIM applications for Railways • Session 2: Developments of advanced train control, safety, and dynamic timetabling systems • Session 3: Drones, wayside condition monitoring, and other support systems for Asset Management • Session 4: Advanced digital solutions for railway infrastructure maintenance services 	<p align="center">Technical Meetings and Round Table Meetings</p> <p align="center">(by invitation only)</p>
<p>Cocktail Reception</p>		<p>27th UIC Asia-Pacific Regional Assembly (by invitation only)</p>	

Railway Innovations Exhibition, ADB Cafeteria Hallway and Auditorium Area



Tuesday, 21 May 2019

Digital Revolution: Big Data in Railway Asset Management, Smart Stations, Smart Ticketing and Cyber Security

8:30 a.m. – 9:00 a.m.	Registration
9:00 a.m. – 10:30 a.m.	Opening Remarks <ul style="list-style-type: none">• Bambang Susantono, Vice President, Knowledge Management and Sustainable Development, ADB• Timothy John Batan, Undersecretary for Railways, Department of Transport, Philippines• Jean-Pierre Loubinoux, Director General, International Union of Railways (UIC) Keynote Session <ul style="list-style-type: none">• Keynote Speech: <i>Railway Innovations and Future Developments</i> – Jean-Pierre Loubinoux, Director General, UIC• Keynote Panel: <i>Digital technology driven changes in the railway market</i>
10:30 a.m. – 11 a.m.	Coffee Break
11 a.m. - 12:30 p.m.	Session 1: Railway Asset Management Principles and Life-cycle Strategies <p><i>Modern Asset Management strategies for railways require a Life-cycle approach with a balance between maintenance and renewal, to be based on principles, common definitions, and data processing.</i></p> <p><u>Presentations:</u></p> <ul style="list-style-type: none">• Infrastructure Sustainability - a shift of priorities towards LCC considerations and maintenance - Jamie Leather, Chief of Transport Sector Group, ADB• Asset Management – ISO55000 application guideline for railways infrastructure organizations – Teodor Gradinariu, Senior Technical Advisor Rail System Department, UIC• Digital Asset Management: Analysis of key transformations of the rail business introduced by the digital industry and a focus on their impacts on asset management – Stephane Romei, General Manager, Systra Scott Lister, Singapore <p>Session chair: Ravi Ravitharan, IRT, Australia</p>
12:30 p.m. – 2 p.m.	Lunch
2 p.m. - 3:30 p.m.	Session 2: Digital Solutions to lead and steer Railway Design and O&M Strategies <p><i>The technical developments of data processing and storage have opened a lot of new opportunities, in the design and construction process of rail infrastructure projects and the way to efficiently and sustainably operate and maintain railways.</i></p> <p><u>Presentations</u></p> <ul style="list-style-type: none">• BIM for Railway Design, Construction, and Operation and Asset Management - Jugal Makwana, Royal Haskoning DHV, Netherlands• Track Data Analytics and Visualization - Ravi Ravitharan, IRT, Australia• Introducing Digital Technologies into Track Maintenance Machinery - Krzysztof Wilczek, Plasser & Theurer, Austria• Application of Big Data in the Railway Operation and Management - Li Ping, Senior Expert, CARS, PRC <p>Session chair: Francis Bedel, UIC</p>
3:30 p.m. – 4 p.m.	Coffee break
4 p.m. – 5:30 p.m.	Session 3: Opportunities and risks related to the Digital Revolution and new passenger interfaces <p><i>This session shall highlight the most compelling opportunities, critical risks, and pressing questions of new digital solutions in the railway sector.</i></p> <p><u>Presentations:</u></p> <ul style="list-style-type: none">• Smart Railway Stations and Smart Ticketing - Marc Guigon, Director Passenger & High-Speed Dpt., UIC• Cybersecurity solution for current and future threats - Teodor Gradinariu, Senior Technical Advisor Rail System Department, UIC• The Use of Technology —Improving Customer Experience - Naoko Makita, JR East, Japan• Adapting Global Smart Ticketing Solutions to Local Realities - Ingo Noka, AF Payments, Philippines <p>Session chair: Sharad Saxena, Principal Transport Specialist, ADB</p>
5:30 p.m. onwards - Cocktail Reception hosted by ADB	

Wednesday, 22 May 2019

Future Trends: Railway Signaling & Train Control, Private Sector Engagement, and Regional Railway Initiatives

9 a.m. - 10:15 a.m.	Session 4: Signaling & Train Control Systems Solutions – Part 1 <i>With a variety of different signaling and train control systems in place, each for different railway systems and operation needs, different developments for driverless operations, and technical developments for future 5G or satellite-based systems, these two sessions shall give an overview of different systems, options, and near-future system standards.</i> <u>Presentations:</u> <ul style="list-style-type: none">• ERTMS/ETCS – international practice, status, and developments - David Milburn, Senior Technical Director, Global Leader Digital Train Control, GHD, Australia• Challenges for Signaling & Control - Alexey Ozerov, Head of International Department, NIIAS, Russia• The Solution of China Railway Signaling System: The Integration of Train Control and Traffic Management - Zhang Qi, Senior Researcher, CARS, PRC• Innovative Communications-Based Train Control for Remote and Regional Rail Lines - Derel Wust, Managing Director, 4Tel, Australia Session chair: Tom Sargant , UIC
10:15 a.m. – 10:45 a.m.	Coffee Break
10:45 a.m. - 12:00 p.m.	Session 5: Signaling & Train Control Systems Solutions – Part 2 <u>Presentations:</u> <ul style="list-style-type: none">• Satellite-based alternative for Low Cost-Low Traffic Lines (SATLOC) - Teodor Gradinariu, Senior Technical Advisor, UIC• Automatic Train Operation (ATO) Solution for Suburban Railway - Yin Xunzheng, Senior Researcher, CARS, PRC• Automatic Train Operations in Railways - Friedemann Brockmeyer, Senior Project Manager, Civity, Germany
12:00 p.m. – 1:30 p.m.	Lunch
1:30 p.m. - 3:00 p.m.	Session 6: Financing models and Private Sector engagement models for DMCs <i>This session shall highlight on alternative financing options and modalities for urban railway projects</i> <u>Presentations:</u> <ul style="list-style-type: none">• Attracting private sector to railway projects in the Asia-Pacific: setting the scene – Srinivas Sampath, Chief of Public-Private Partnership Thematic Group, ADB• Alternative Financing and Revenue Options for Metro Rail Projects in India - Brijesh Dixit, Managing Director, MAHA METRO, India• Non-Sovereign Investment in Bangkok Metrorail - Daniel Wiedmer, Principal Investment Specialist, PSOD, ADB• Financing Urban Transit: Applying Land Value Capture (LVC) Strategies - Sanjay Grover, PPP Specialist, OPPI, ADB and Abdul Abiad, Director, ERCD, ADB• Panel discussion on opportunities, risks, and lessons learned from private sector engagement models Session Chair: Sujata Gupta , Director, EASI, ADB
3:00 p.m. – 3:30 p.m.	Coffee Break
3:30 p.m. – 5:00 p.m.	Session 7: The Role of Regional Cooperation Initiatives in Scaling Up Innovation <i>The session will examine the types of innovations that can facilitate the effective development of the Trans-Asian Rail Network, and examine the role of regional cooperation initiatives to scale up the uptake of appropriate new technologies and methods.</i> <i>Part 1: The regional view</i> <ul style="list-style-type: none">• Implications of new technologies and methods on interoperability - Bayan Adilbekova, P.O. Directorate for Transport and Communication, ECO• ADB's Regional Cooperation Programs and their role in scaling up investment needs in new technology and methods - Xiaohong Yang, Country Director, Pakistan Resident Mission, ADB <i>Part 2: Country views</i> <ul style="list-style-type: none">• Guo Chunjiang, Senior Engineer, Department of Reform & Development, China Railways• Md. Jahangir Hossain, Chief Planning Officer, Ministry of Railways, Bangladesh• TBC Session chair: Ko Sakamoto , Senior Transport Specialist, CWTC, ADB
5:00 p.m. – 5:30 p.m.	Closing Plenary Panel <ul style="list-style-type: none">• Jean-Pierre Loubinoux, Director General, UIC• Dong-Soo Pyo, Director, CWTC, concurrently Chair of Transport Sector Committee, ADB

Thursday, 23 May 2019

Railway Industry Day

Industry updates on the latest and innovative railway solutions

9:00 a.m. – 10 a.m.	<p>Opening Remarks by Ruediger Zander, Senior Railway Specialist, ADB</p> <p>Session 1: Digital Twins and BIM applications for Railways</p> <p><u>Speakers:</u></p> <ul style="list-style-type: none">• “Application of a Digital Twin in Rail Asset Management” - Peter Boom, Royal HaskoningDHV• “Developing digital engineering workflows to deliver infrastructure projects in the future” - Alejandro Saez Sanz, Cundall Singapore• “Linear Infrastructure Projects fully designed with BIM” - Arezki Touat, Systra <p>Session chair: James Bradford, Jacobs</p>
10 a.m. – 10:30 a.m.	Coffee Break
10:30 a.m. – 12:30 p.m.	<p>Session 2: Developments of advanced train control, safety, and dynamic timetabling systems</p> <p><u>Speakers:</u></p> <ul style="list-style-type: none">• “Scalable signaling solutions for Metros and Commuter lines” - Hugo Ramos, Thales• “Digital Train Control - Automation for segregated (Metro) and open (Mainline) routes” - David Milburn, GHD• “Innovative Advanced Driver Advisory System Using Artificial Intelligence and Machine Learning to Improve Safety” - Derel Wust, 4Tel• “Dynamic Timetabling Using Connected Driver Advice & Distributed Micro-Scheduling” - Dale Coleman, TTG Transportation Technology <p>Session chair: TBC</p>
12:30 p.m. – 2 p.m.	Lunch
2 p.m. – 3 p.m.	<p>Session 3: Drones, wayside condition monitoring, and other support systems for Asset Management</p> <p><u>Speakers:</u></p> <ul style="list-style-type: none">• “The Implementation of Unmanned Autonomous Systems (UAS) for Railway Inspection” - Ravi Ravitharan, IRT• “Wayside Condition Monitoring Systems” - Nick Aschberger, Track IQ• “Digital technology for power substations - new design trends and maintenance optimization” – Dominik Ratajski, ABB <p>Session chair: Peter Boom, Royal HaskoningDHV</p>
3:00 p.m. – 3:30 p.m.	Coffee Break
3:30 p.m. – 4:30 p.m.	<p>Session 4: Advanced digital solutions for railway infrastructure maintenance services</p> <p><u>Speakers:</u></p> <ul style="list-style-type: none">• “High performance machines: pay off!” - Florian Polterauer, Plasser & Theurer• “Digital Solutions for optimized railway maintenance” - Neil MacCuaig, Geismar• “Designed elastic components to improve life cycle costs of track superstructures” - Thomas Dorfner, Getzner <p>Session chair: Uwe Stoffer, German Track Engineers GmbH</p>