

SMARTTRANSIT BOSTON AGENDA

Site Visits & Day 1			
9:30am	<p style="text-align: center;">MBTA site visits Transit Operation Center</p> <p>The Massachusetts Bay Transportation Authority (MBTA) Operations Control Center is the hub for T operations and safety-related communications. The state-of-the-art Control Center equipped with wall-sized electronic monitors closely tracks location and movement of hundreds of subway cars and trolleys on all four Rapid Transit Lines (Red, Orange, Blue, and Green) around the clock. Supervisors and dispatchers constantly communicate with train crews and other subway personnel throughout the 63-mile Rapid Transit System that sees more than 2,600 trips a day. The OCC is also staffed by MBTA Transit Police, who monitor images from over 700 closed circuit television cameras in subway stations, platforms, and tunnels.</p>		
1:00pm	Networking lunch		
Interactive workshop sessions			
2:00pm	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"> <p>Workshop: Rail Signaling Over TETRA and LTE</p> <ul style="list-style-type: none"> Introduction to communications solutions for signaling systems. Infrastructure & onboard equipment. TETRA air interface vs communications interface for signaling. TETRA availability and quality of service for ETCS signaling. TETRA viability for high-speed rail. Rail signaling over LTE: state of the art and next steps. <p>Jose Martin, President & CEO, PowerTrunk</p> </td> <td style="width: 50%; text-align: center; vertical-align: middle; padding: 5px;"> <p>Workshop 2</p> <p>Enabler</p> </td> </tr> </table>	<p>Workshop: Rail Signaling Over TETRA and LTE</p> <ul style="list-style-type: none"> Introduction to communications solutions for signaling systems. Infrastructure & onboard equipment. TETRA air interface vs communications interface for signaling. TETRA availability and quality of service for ETCS signaling. TETRA viability for high-speed rail. Rail signaling over LTE: state of the art and next steps. <p>Jose Martin, President & CEO, PowerTrunk</p>	<p>Workshop 2</p> <p>Enabler</p>
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3:00pm	Networking coffee		
<p>Day 1:</p> <p>Chair: Bob Newhouser, Former Deputy Director- Strategic Initiatives, NYCTA</p>			
3:30pm	<p style="text-align: center;">Integrating Paratransit to Increase Mobility</p> <ul style="list-style-type: none"> What are the benefits of integrating paratransit into a transit network? Consider studies from Harvard and MIT on how to how to optimize the entire Paratransit system using multiple transportation modes and issues that may arise. The benefits of partnering with other transport network companies into a paratransit network. <p>Diogo Lousa, Director of Technology - Paratransit, MBTA</p>		
3:50pm	<p>Wireless 101- An introduction to the Federal Communications Commission and it's Regulation of Wireless</p> <p>There has been a shift of public demand over recent years due to the access and reliability of the internet and overall connectivity. The younger generation are now constantly connected to media and the transit industry must adapt to this shift to attract these people groups.</p> <ul style="list-style-type: none"> Assess how the reliability on apps and the world wide web has impacted on mobility habits with transit playing catch up. Discuss the options available for on board WiFi to improve connectivity across the network to attract the younger generation. Examine the benefits of a connected network with the introduction of apps and ability to send instant updates/information to passengers. <p>Alan Tilles, Attorney, Shulman Rogers</p>		

4:10pm	<p style="text-align: center;">Skate: Building a Better Bus Dispatch App</p> <p>In recent years, public transit agencies have focused on giving riders powerful and simple technology like Google Maps and robust official trip planning websites. But tools to help operations staff deliver good service often remain entrenched in legacy, monolithic systems and designs that don't consider the needs of transit operations users. This article discusses how the Massachusetts Bay Transportation Authority, the transit agency for the Boston region, applied modern principles of research, design, and technology to build an internal dispatch app for its bus field staff. This tool, "Skate," was designed with the MBTA's bus officials to give them the tools they need to keep buses running on-time, manage operator shifts, and generally run good bus service. Today, over 130 individual MBTA field bus officials log into Skate every week. It's also part of the MBTA's strategy to give riders better predictions about bus service, show officials on-time performance information in real-time to help their decision-making, and the agency has released Skate as open source software so that other agencies can take advantage of this tool.</p> <p>Logan Nash, Deputy Director of Realtime Applications, Massachusetts Bay Transportation Authority</p>
4:30pm	<p style="text-align: center;">Mobility and Meeting Consumer Demand</p> <ul style="list-style-type: none"> • Designing the personal journey experience in a mass transit world • How data can drive better decision-making in mobility planning • Why this matters if we are going to change peoples behaviours and get them out of their cars <p>Johannah Randal, Director, Startup Rail/ Rail Innovation Group</p>
4:50pm	<p style="text-align: center;">Panel Discussion</p> <p>Moderator: Bob Newhouser, Former Deputy Director- Strategic Initiatives, NYCTA</p> <p>Liam Henderson, Founder, Rail Innovation Group Diogo Lousa, Director of Technology- Paratransit, MBTA Johannah Randal, Director, Startup Rail/ Rail Innovation Group Alan Tilles, Attorney, Shulman Rogers Logan Nash, Deputy Director of Realtime Applications, Massachusetts Bay Transportation Authority</p>
5:40pm	<p>St Patrick's Day Evening Reception</p>

	<p>Day 2</p>
9:00am	<p>Welcome Address Craig Simpson, Conference Director, SmartRail World</p>
	<p style="text-align: center;">Keynotes: Innovation & The Modern World Of Transit</p> <p>Chair: Alan Tilles, Attorney, Shulman Rogers</p>
9:00am	<p style="text-align: center;">Opening Keynote Session</p> <p>The latest projects and innovative projects being undertaken at the Massachusetts Bay Transit Authority</p> <p>Rob DiAdamo, Rail Administrator, MBTA</p>
9:20am	<p style="text-align: center;">The Future of Public Transportation</p> <p>Hear from expert and transport "evangelist" about the future developments coming to cities and transportation within the next 10 years in America.</p> <p>Paul Comfort, Author, The Future of Public Transportation</p>
9:30am	<p style="text-align: center;">The Business Case for Continued Investment in the Latest Digital Technology</p> <ul style="list-style-type: none"> • Analyze how short term capital expenditure on new technologies can result in long term financial savings. • Understand how the case for investing in innovative technology can differ between passenger and freight services. • Discuss how a lack of investment in new communications technology may have a detrimental effect and cause the transit industry to fall irreparably behind other modes of transport.

	<p>Kevin Quinn, CEO, Maryland Transit Administration</p>
9:50am	<p align="center">How MBTA Solves "Impossible" Supply Chain Problems with 3D Printing</p> <p>As rolling stock ages, things break, suppliers disappear, and parts become unavailable. This leads to a myriad of problems, from customer dissatisfaction, to trainsets out of service. Learn how the MBTA is using 3D printing to solve supply chain problems, create a better customer experience, and keep trains in service.</p> <p>Aaron Hurd, Senior Manager- Rail Industry Lead, Strataysys</p>
10:10am	<p align="center">Crowdsourcing Transit Safety</p> <p>PTASP has agencies training employees and installing backend software to manage safety hazards, but how many will actually be reported? Learn what safety hazards passengers notice and how they can be an important part of reporting safety issues with their mobile phones.</p> <p>Ed English, CEO, ELERTS</p>
10:30am	<p align="center">Keynote Innovation Panel Discussion</p> <p>Moderator: Alan Tilles, Attorney, Shulman Rogers</p> <p>Rob DiAdamo, Rail Administrator, MBTA Paul Comfort, Author, The Future of Public Transportation Kevin Quinn, CEO, Maryland Transit Administration Ed English, CEO, ELERTS G Satish, Founder and CEO, Connixt Aaron Hurd, Senior Manager- Rail Industry Lead, Strataysys Kunal Mehta, Blueprint Managing Director, Strataysys</p>
11:00am	<p>Networking coffee Break</p>
11:30am	<p align="center">Keynote Presentation: Building a Better T</p> <p>Steve Poftak, General Manager, MBTA</p>
11:50pm	<p align="center">Case Study: the Strategic Planning & Political Outlook in the UK & How to Plan for the Future</p> <ul style="list-style-type: none"> • How are transport companies in the UK handling the political outlook and uncertain departure from the European Union? • Strategic planning during times of uncertainty. • Discuss how transport companies and authorities can make plans for the future of their companies. <p>Chris Moores, Head of Planning, Crossrail 2</p>
12:10pm	<p align="center">The Texas High-Speed Train- Connecting People, Creating Jobs, and a New American Industry</p> <p>The Texas High-Speed Train will be the first high-speed train in the country, connecting Houston to North Texas in less than 90 minutes. It will drive huge economic growth as it is being built, and when operational, create a new high-tech American industry.</p> <p>Holly Reed, Managing Director, Texas Central</p>
12:30pm	<p align="center">Train-Centric Positioning System for Urban Rail: A Review of UWB Deployments in New York MTA</p> <p>Piper's CEO, Robert Hanczor, will review three UWB pilot programs in the New York subway system and provide a description of UWB technology and operation with an emphasis on accelerating CBTC deployments.</p> <p>The presentation will cover 4 project phases:</p> <p>01) Installation – Show how Piper helped put trains back into service faster with less downtime through thoughtful packaging, rapid provisioning, and by using equipment that is small and easy to install.</p>

	<p>02) Positioning – Explain how sensors installed wayside and onboard trains communicate wirelessly in real-time, determine accurate distances to within a few inches, and then calculate the location of the train along the track and feed that information into the train control system.</p> <p>03) Smart Use of Data – Discuss how UWB system helps accelerate the new signaling upgrades by feeding critical data into the CBTC systems so that trains can run closer together. In addition, provide examples of how it can also be used for many operational functions including track worker safety, work train and equipment location, and fleet management.</p> <p>04) Future - Piper is looking ahead to the evolution of fully vehicle-centric positioning systems that require minimal wayside equipment.</p> <p>Robert Hanczor, CEO, Piper</p>					
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	<ul style="list-style-type: none"> Analyze changes in ridership numbers across public transport and discuss any trends and their possible reasons. Look at the few areas in which numbers are increasing and examine the potential reasons for this in comparison to elsewhere. How can we as an industry begin to change habits and start reading a modal shift back to using public transit? <p>Liam Henderson, Founder, Rail Innovation Group</p>	<p>Now that most commuter railroads have entered into agreements with PTC-220 to share spectrum, or acquired other spectrum, what have they learned from testing and implementation. What spectrum opportunities continue to exist as rail systems grow and expand?</p> <p>Alan Tilles, Attorney, Shulman Rogers</p>
3:15pm	<p>Panel discussion: Recent Developments: Bus/Rail Integration, Working with Uber/Lyft & Microtransit</p> <p>Liam Henderson, Founder, Rail Innovation Group Mike Goldman, Vice Chairman, WMATA Tonya Anderson, Electronic Fare Operations Manager- Smart Media Technology and Mobile Ticketing, RTD Denver Brandon Thomas, Senior Advisor, COTA</p>	<p>Panel discussion: Discuss the benefits of implementing PTC in ways such as safety and standardization.</p> <p>Many have questioned the financial sense behind the rollout of PTC against the actual benefits it provides. Gain an understanding of the status of PTC in the US and the extent of its rollout across the network</p> <p>Examine the benefits of standardization and the safety element of PTC and discuss whether this method is the most efficient to achieve these factors.</p> <p>Stéphane Callet, CBTC Project Manager, SNCF Alan Tilles, Attorney, Shulman Rogers Karen Antion, Head of PTC, MBTA</p>
3:40pm	Networking Coffee	
	Connectivity and Digitization	SafeRAIL
	<p>Chair: Chris Jackson, Editor-in-Chief, Railway Gazette</p>	<p>Chair: Bob Newhouser, Former Deputy Director-Strategic Initiatives, NYCTA</p>
4:10pm	<p>Modernized Maintenance- the Benefits of Robots Over the Need to Send a Workforce</p> <ul style="list-style-type: none"> How new robotic technology enables efficiencies within the workforce. Understand why remote devices allow prioritized maintenance and therefore increase efficiency. Change management and the need to train staff to use new and innovative forms of technology. <p>Girija Subramaniam, Founder, Forcing Function</p>	<p>Roundtable: Getting the Most Out of Fiber Optic Sensors for Asset Monitoring Across Transport Infrastructure (4:10-4:40pm)</p> <p>Mike Hines, Chairman, Fiber Optic Sensing Association (FOSA)</p>
4:25pm	<p>Digital to the Core: Leveraging the Convergence of Data, Analytics, and AI</p> <p>Cornel Bleoja, Manager- Enterprise Systems Development, TriMet</p>	
4:45pm	<p>Asset Lifecycle Information Management?</p> <p>Ever Diaz, Digital Solutions Director- Enterprise Asset Management Systems, Keolis</p>	
		<p>Case study: Innovative use of Thermal Imaging Technology to Record Trespassing Data (4:40-5:00pm)</p> <ul style="list-style-type: none"> Challenging preconceptions about the perpetrators and motives of trespassing

		<ul style="list-style-type: none"> • Developing on-board and static technology for monitoring trespassing incidents • Results from the study: developing a profile of the average trespasser and new ways to tackle the problem <p>Sarah Searcy, <i>Bicycle and Pedestrian Program Manager</i>, Institute for Transportation Research and Education</p>
5:05pm	<p>The Connected Customer Experience- Operator Perspective</p> <p>Where can we make effective implants for improved customer experience with technology that also creates efficiencies for operators? Understanding the varying business models for implementing technology projects and how these can be used to drive improved customer experience and corporate goals.</p> <p>Shirley Qian, <i>Senior Planner</i>, Capitol Corridor Joint Powers Authority</p>	<p>Latest Technology to Prevent Trespassing Incidents (5:00-5:20pm)</p> <p>Rail trespassing – intentional and unintentional is still the primary cause of fatalities on North American railroads.</p> <p>This session will look at the newest technologies being implemented and created to prevent trespassing incidents on railroads and prevent fatalities.</p> <p>Michael Allen, <i>Director</i>, New Jersey Operation LifeSaver</p>
5:25pm	<p>Creating the Connected Customer Experience</p> <p>Danny Levy, <i>Chief of Customer Experience</i>, MBTA</p>	<p>Shared Autonomous Vehicles- where have we come, where are we going? (5:20-5:40pm)</p> <ul style="list-style-type: none"> • With many transport accidents resulting from human error do autonomous vehicles provide a solution to avoid these incidents by removing human drivers? • How are companies deploying autonomous vehicles into their transit networks and ensure passenger safety? • What is the future for the integration of autonomous vehicles in transit networks? <p>Joseph Holmes, <i>Sales Director</i>, EasyMile</p>
5:45pm	<p>Connecting in the Dark</p> <p>The adoption of new technology to economic growth is improving the speed, quality, and cost of goods and services. This can only be realized when and if the newly adopted technology is widely distributed and used. Did you ever stop to think about the operational expenditure that exceeded your budget vs the capital expenditure that was in your budget? There are decisions that are often the result of a comparison of the uncertain benefits of the newly adopted technology and the uncertain</p>	<p>Advances in Distributed Sensing for Rail Applications (5:40-6:00pm)</p> <p>An introduction to the Fiber Optic Sensing Association (FOSA), Distributed Fiber Optic Sensing (DFOS) concepts with relevance in rail applications, and a comprehensive description of what can be detected when applying relevant DFOS methods to rail.</p> <p>Mike Hines, <i>Chairman</i>, Fiber Optic Sensing Association (FOSA)</p>

	<p>costs of adopting it. An understanding of the dark factors affecting this choice is essential to your budgets bottom line by exposing the dark truths of your current infrastructure.</p> <p>John Cochran, <i>Director of Technology Infrastructure, MARTA</i></p>	
6:05pm	<p>Panel Discussion: How will increased connectivity benefit transit operations?</p> <ul style="list-style-type: none"> • What are the main challenges when it comes to accustomising staff to new systems? • How will increased levels of automation benefit the transit industry? • How can transit take advantage of improved communications networks? • What problems will arise out of increased connectivity for passengers and operators? <p>Chair: Chris Jackson, <i>Editor-in-Chief, Railway Gazette</i></p> <p>Girija Subramaniam, <i>Founder, Forcing Function</i> Cornel Bleoja, <i>Manager- Enterprise Systems Development, TriMet</i> Ever Diaz, <i>Digital Solutions Director- Enterprise Asset Management Systems, Keolis</i> Shirley Qian, <i>Senior Planner, Capitol Corridor Joint Powers Authority</i> Danny Levy, <i>Chief of Customer Experience, MBTA</i> John Cochran, <i>Director of Technology Infrastructure, MARTA</i></p>	<p>Panel Discussion: (6:00-6:20pm)</p> <p>Chair: Bob Newhouser, <i>Former Deputy Director- Strategic Initiatives, NYCTA</i></p> <p>Mike Hines, <i>Chairman, Fiber Optic Sensing Association (FOSA)</i> Sarah Searcy, <i>Bicycle and Pedestrian Program Manager, Institute for Transportation Research and Education</i> Michael Allen, <i>Director, New Jersey Operation LifeSaver</i> Joseph Holmes, <i>Sales Director, EasyMile</i> Mike Hines, <i>Chairman, Fiber Optic Sensing Association (FOSA)</i></p>
6:20pm	Networking Drinks Reception	
7:00pm	End of Day 2	

	Day 3	
	Day 2 Keynotes: New Challenges & Electrification	
	Chair: Mike Ogborn , <i>Advisor, ASLRRA</i>	
9:00am	Using Trial Running Trains for Technical Functions Validation	
	Stephane Callet , <i>CBTC Project Manager, SNCF</i>	
9:20am	New York City Transit Subway Service Visualization	
	<ul style="list-style-type: none"> • What technologies are available that can effectively collect and distribute information? • How can the service visualization enhance operations and overall service to the customer? • Understand the ways in which the software can increase safety, as well as operational efficiency and passenger comfort. <p>Alla Reddy, <i>Deputy Chief, Data Research & Development, NYCTA</i></p>	
9:40am	Achieving Continuous 5G Connectivity in the Metro	
	<p>Mobile operators and Wi-Fi have made ubiquitous connectivity the standard we have come to expect – always connected wherever we go. Transit agencies have worked with Neutral Host providers to extend this connectivity to underground platforms with end-to-end connectivity throughout tunnels as well. 5G brings new challenges with higher data speeds and new frequency</p>	

	<p>bands including millimeter wave. As we transition to 5G, the transit agencies will need to adapt their infrastructure to keep pace with the improved experience riders are experiencing above ground to provide seamless connectivity for Tier One carrier customers. We will look at the next generation 5G technology, how it will be deployed, what happens to existing technologies, and what it all means for both Transit Agencies and the customer experience for ridership.</p> <p>Joe Mullin, Chief Technology Officer, InSite Wireless Group</p>
10:00am	<p align="center">MTA's use of Real Time Data for their Transit Priority Initiative</p> <p>This project identifies "sticking points" where buses travel slower than traffic or are held up at lights, stops, etc. and recommends infrastructure improvements to help speed up transit.</p> <p>Holly Arnold, Deputy Administrator & Chief of Planning, Programming, and Engineering Officer, MTA</p>
10:20am	<p align="center"><u>Panel Discussion:</u></p> <p>Stephane Callet, CBTC Project Manager, SNCF Chris Moores, Head of Planning, Crossrail 2 Alla Reddy, Deputy Chief, Data Research & Development, NYCT Holly Arnold, Deputy Administrator & Chief of Planning, Programming, and Engineering Officer, MTA</p>
10:45am	Networking Coffee Break
11:15am	<p align="center">Cyber Security Measures at MBTA</p> <p>Michael Woodson, CISO, MBTA</p>
11:35am	<p align="center">Cyber-Attacks: How Prepared are Transport Operators?</p> <p>The Mineta Transportation Institute has commissioned a study to evaluate the transit industry's cyber preparedness. In addition to a literature review, oral interviews, and a digital survey, this study will make policy recommendations to Congress, the Administration and the Industry.</p> <p>Scott Belcher, Research Associate, Mineta Transportation Institute</p>
11:55am	<p align="center">The Increased Need for Cyber Security and the Growing Threat of Cyber-Attacks</p> <ul style="list-style-type: none"> • How has the threat of cyber-attacks developed over recent years with the constant modernization of data and technological capabilities? • In a world that relies heavily on digital assets, how damaging could a severe cyber-attack potentially be? • How are transport authorities dealing with increased cyber security threats? <p>Atilio Framarini, Senior Cyber Security Analyst, RTD Denver</p>
12:25pm	<p align="center">Cyber Security Panel: Managing Operations Cyber Risks</p> <p>Michael Frustenberg, Director of Industrial Security, Waterfall Michael Woodson, CISO, MBTA Atilio Framarini, Senior Cyber Security Analyst, RTD Denver Scott Belcher, Research Associate, Mineta Transportation Institute</p>
12:55pm	Networking Lunch
1:50pm	<p align="center">Green Line Extension</p> <p>John Dalton, Green Line Extension Program Manager, MBTA</p>
2:10pm	<p align="center">Modernizing the WMATA Customer Experience</p> <ul style="list-style-type: none"> • What are the goals for Metro Customer Experience • In what ways can digitization and new technologies improve customer experience. • How can open data be used and in what ways has this developed the WMATA customer experience?

	Brian Anderson , <i>Director of Innovation & Digital Communications, WMATA</i>
2:30pm	<p align="center">Innovative Payment Solutions and B2B Partnerships to Drive Business Growth</p> <ul style="list-style-type: none"> • What payment solutions are being used at transport operators in the US? • Why should companies integrate innovative solutions into their payment methods. • Understand the ways in which B2B partnerships can lead to overall business growth? <p>Liam Henderson, <i>Founder, Rail Innovation Group</i></p>
	Joseph Holmes , <i>Sales Director, EasyMile</i>
3:00pm	<p align="center">Innovation and Development at MBTA</p> <p>Steve Hicks, <i>Chief Mechanical Officer, MBTA</i></p>
3:20pm	<p>Q&A Panel Discussion</p> <p>Joseph Holmes, <i>Sales Director, EasyMile</i> Attilio Framarini, <i>Senior Cyber Security Analyst, RTD Denver</i> Scott Belcher, <i>Research Associate, Mineta Transportation Institute</i> John Dalton, <i>Green Line Extension Program Manager, MBTA</i></p>
3:45pm	End of Day 3