

# The State of Safety & Security

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## Bus Procurement: The View from the Supply Side

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BEST PRACTICES FOR BETTER PUBLIC TRANSPORTATION

*InnoTrans  
2018 Recap*

→  
The bi-annual  
international trade  
fair for the rail  
industry held in  
Berlin, Germany.

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# The Future of Mobility



November 2018

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### INNOTRANS 2018 RECAP

"The Future of Mobility" was the theme of this year's InnoTrans, the bi-annual international trade fair for the rail industry held by Messe Berlin in Berlin, Germany.



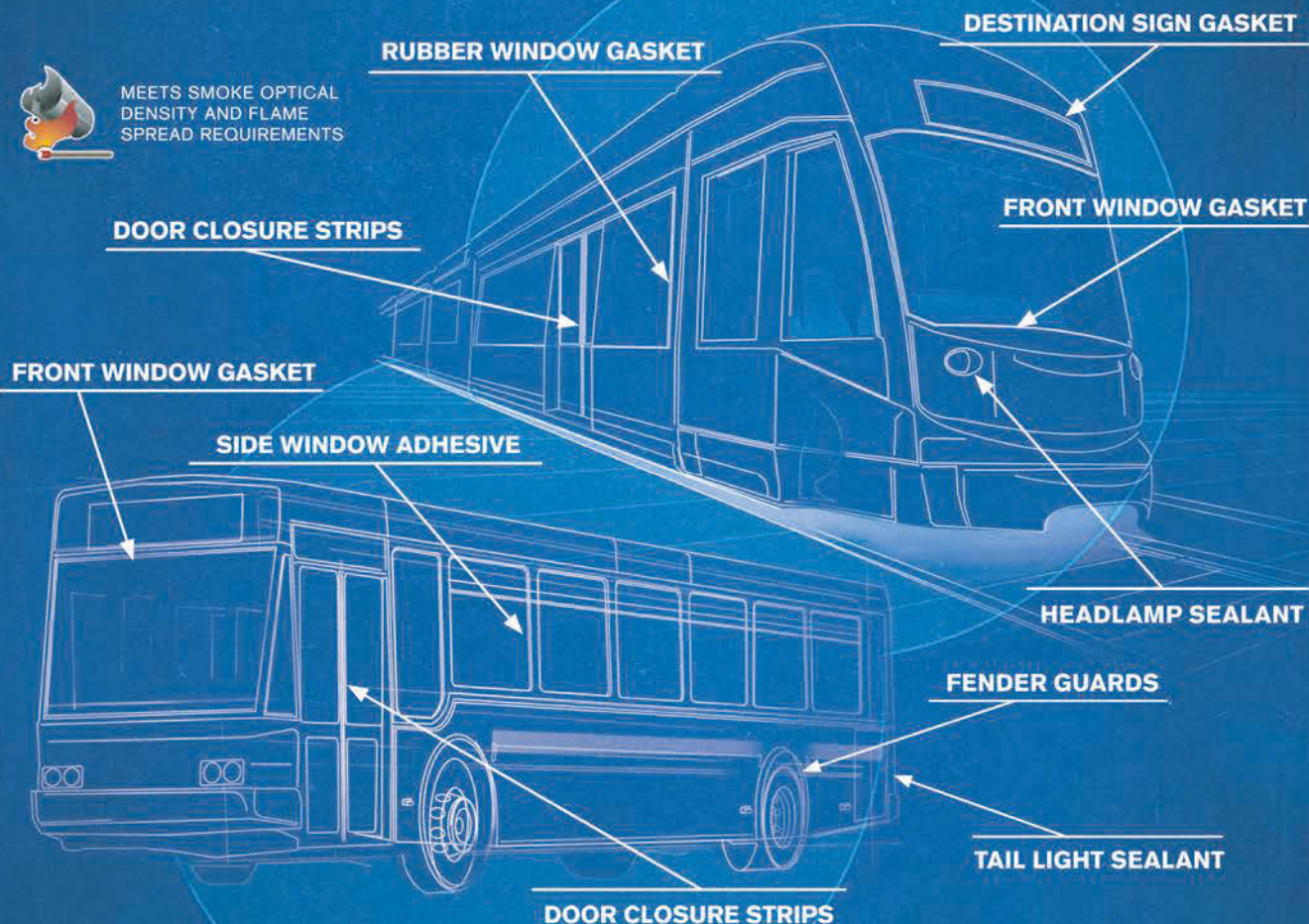


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## ONLINE EXCLUSIVES

### Flooring That Moves With Mass Transit

Flooring in public transportation should be more than just durable.  
[MassTransitmag.com/12434854](http://MassTransitmag.com/12434854)

#### Public Transit – Still a Huge Component of America's Transportation Infrastructure

The U.S. government, however, views public transit a little differently and funding has been inadequate for decades.

[MassTransitmag.com/12432350](http://MassTransitmag.com/12432350)

#### Continental Embedded Tire Pressure Monitoring Sensor Technology Now Available as Factory Install Option

Previously available only as an aftermarket solution, mounted TPMS sensors are starting to roll out from the Continental factory.

[MassTransitmag.com/12428545](http://MassTransitmag.com/12428545)

#### The Challenges and Opportunities of Operating University Shuttle Services

Shuttles do more than just transport students to class.

[MassTransitmag.com/12428741](http://MassTransitmag.com/12428741)

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# Working Towards Further Development

How are new transit developments affecting the industry?



Like with Uber and Lyft, cities have to determine how regulations can be enforced.

It's that time of year again when the summer fades to fall and the changing colors adorn the trees. Like the changing seasons, the transit industry is ever changing as well. More mobility options are expanding, including e-scooters, bike rentals and autonomous shuttle trials. Options like e-scooters bring it to question as to what laws and considerations need to be adhered to when it comes to deploying them on the streets.

Despite any concerns for operations within cities – and determining how to adapt to each city's personal infrastructure – the emerging companies have received a great deal of funding. E-scooters are one of the growing options for first mile, last mile and have a diverse reach as to who rides them.

Like with Uber and Lyft, cities have had to determine how they can be regulated and it brings to question as to how regulations can be enforced. In Charlotte, North Carolina their pilot service for e-scooters allowed for an introduction of 400 e-scooters from both Bird and Lime. Charlotte city officials is waiting to see what rules legislators will implement as to moderating the e-scooters, which can reach up to 20 miles per hour and are used on both sidewalks and streets. In Charlotte the worry leads to if the city puts strict rules into place, they could be overturned by further legislation.

Lyft and Uber are looking to expand each of their company's reach into further ride-sharing developments. In addition to autonomous testing, the companies are also looking to introduce their own e-scooter ventures. In San Francisco Lyft recently contacted Mayor London Breed to ask that she reconsider the decision made for e-scooter permits. SFMTA accepted around a dozen applications for a pilot program for app-based rentals for e-scooters. The agency made the decision to select two companies for the pilot, Scoot and Skip, deploying 1,250 scooters within six months of the yearlong pilot and the option to possibly expand upon that number.

Other cities have implemented bans after safety concerns. In Denver the use of e-scooters were suspended after safety concerns and e-scooters being left around the city. Watching such developments call into question as to how first mile, last mile will further develop and what impact that will have on traditional transit methods.

A handwritten signature in black ink, likely of Maile Bucher.

Maile Bucher, Assistant Editor

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**ORANGE COUNTY** Transportation Authority board members recently awarded a \$220.5-million contract to Walsh Construction to build the first modern streetcar in Orange County. (Rendering of the OC Streetcar)

## OCTA Awards \$220.5-Million Contract to Build County's First Modern Streetcar Line

Orange County Transportation Authority board members recently awarded a \$220.5-million contract to a construction firm to build the first modern streetcar in Orange County.

[MassTransitmag.com/12431611](https://www.masstransitmag.com/12431611)

the Environmental Protection Agency, making the Charger one of the cleanest diesel-electric passenger locomotives currently in operation.

[MassTransitmag.com/12432153](https://www.masstransitmag.com/12432153)

## Corona-based Walsh Construction is expected to begin work later this year.

► The streetcar will span a 4.1-mile route between the Santa Ana Regional Transportation Center and Harbor Boulevard in Garden Grove, stopping at bus stops along the way. Cars will serve the busy downtown area of Santa Ana, which includes county and local government offices and courthouses.

[MassTransitmag.com/12431611](https://www.masstransitmag.com/12431611)

## California Could be Rolling all Electric Buses by 2040

► Despite worries about how well environmentally friendly electric buses will withstand the pounding of everyday traffic, the California Air Resources Board held the first of two hearings on committing to begin transitioning to a full fleet of zero-emission buses in two years.

Northern California agencies already testing the clean-burning vehicles include AC Transit, MUNI, the Santa Clara Valley Transportation Authority and Monterey-Salinas Transit with SamTrans joining the list next year.

The message is clear. This will be the green light of an electric revolution for public transit with the goal to have only electric buses on all city streets by 2040.

[MassTransitmag.com/12431759](https://www.masstransitmag.com/12431759)

## New Orleans RTA is Awarded \$6.3M Grant for 17 New Buses

► The New Orleans Regional Transit Authority has landed a \$6.3 million federal grant for 17 new diesel-powered buses, a boost for the agency's aging bus fleet.

The RTA was one of more than 100 agencies nationwide chosen to get grants under a Federal Transit Administration program that helps states and transit agencies replace buses and bus barns.

The government awarded \$366 million total in the 2018 fiscal year. Federal officials received applications this year from more than 250 agencies, totaling \$2 billion in requests.

RTA officials announced the grant Tuesday, calling it a big win for the authority.

[MassTransitmag.com/12431492](https://www.masstransitmag.com/12431492)



**RIBBON CUTTING** ceremony in honor of new Charger locomotives with (left) Shirley Choate, Interim District Director Caltrans District 7; Jennifer L. Bergener, Managing Director LOSSAN Rail Corridor Agency; Tony Kranz, Board Member LOSSAN Rail Corridor Agency; Brian C. Annis, Secretary of California State Transportation Agency; Armin Kick, Vice President, Locomotives and High-Speed Trainsets, Siemens.

## Amtrak Pacific Surfliner, Caltrans Introduce New, Cleaner Locomotives at Los Angeles Union Station

► With a blast of the locomotive's horn and a shower of biodegradable confetti, the Los Angeles — San Diego — San Luis Obispo Rail Corridor Agency and the California Department of Transportation introduced new, cleaner locomotives to the Amtrak Pacific Surfliner service at Los Angeles Union Station.

State and local officials in attendance had an opportunity to step aboard one of 14 new Charger locomotives that will begin operating starting this fall. The Charger locomotives, manufactured by Siemens, will power the next generation of Pacific Surfliner trains between San Diego, Los Angeles and San Luis Obispo.

The Charger is the first passenger locomotive to receive the stringent Tier IV emissions certification from



## Consultants See Half-Billion Dollar Potential in Durham, Orange Light-Rail Stations

► The jobs, affordable housing and other community benefits Chapel Hill gains from the Durham-Orange light-rail project will depend on local decisions made now, say town and GoTriangle staff members.

Hitchings and GoTriangle planner

**BY PROVIDING** a congestion free alternative, light rail will help manage future growth while creating vibrant, walkable communities and connecting residents to jobs, education, and healthcare.

(Rendering of the Durham & Orange Light Rail)

Patrick McDonough detailed one scenario for one of Chapel Hill's planned stations — with buildings up to 15 stories tall and a mix of business and recreation uses — to the Chapel Hill Town Council and the Orange County Board of Commissioners on Wednesday night. They gave a similar presentation to the Durham and Orange county commissioners in June.

➔ [MassTransitmag.com/12432403](http://MassTransitmag.com/12432403)

## Decatur to Get \$4.6 Million for New City Buses

► The city of Decatur is set to receive \$4.6 million in federal funds to replace 18 of its public transit buses over the next five years, officials said Thursday.

The money comes from a competitive grant program through the Federal Transit Administration. U.S. Rep. Rodney Davis, R-Taylorville, announced the award in a statement. Bloomington was also awarded \$6 million through the program to help pay for new battery electric buses, bus shelters and benches, and a new downtown transfer center.

Decatur Mayor Julie Moore Wolfe said in a statement that the city council has struggled to maintain its public transit system during hard financial times. The federal grant, along with state Department of Transportation money, will make it possible to replace much of the aging fleet, she said.

➔ [MassTransitmag.com/12430899](http://MassTransitmag.com/12430899)

Continued ►

## People in the News



**Kimberly Sewell**



**Edward Naczek**



**Natalie Cornell**



**Julie D'Orazio**



**Jason Mayfield**

### TriMet

**TriMet's Kimberly Sewell has been promoted to executive director of the Labor Relations & Human Resources Division.** Sewell moves into the role from TriMet's Legal Services Division and takes over for the outgoing executive director, Randy Stedman, who will be retiring. Sewell has been with TriMet for 16 years. She served as our director of legal services for the past seven years and, prior to that, was TriMet's deputy general counsel. In her roles in the Legal Services Division, Sewell has developed a keen insight and understanding of employment.

➔ [MassTransitmag.com/12432369](http://MassTransitmag.com/12432369)

### WAGO

**WAGO has hired Edward (Ed) Naczek as the product manager for DIN Rail Mount Terminal Blocks.** From the Greater Milwaukee Area, Naczek obtained his Bachelor of Science in Business Administration from Cardinal Stritch University. "I am looking forward to being able to be in a collaborative environment with the product managers and the sales team," Naczek said. Naczek previously worked for Storage Battery Systems, LLC from 2011-2018 as application & product sales engineer/marketing for three years.

➔ [MassTransitmag.com/12432316](http://MassTransitmag.com/12432316)

### LTK

**Natalie Cornell, LTK's director of business development, was selected as the 2018 Outstanding Public Transportation Business Member by the American Public Transportation Association.** Cornell was honored at an awards ceremony and luncheon on September 25th in Nashville, Tennessee, as part of APTA's Annual Meeting. Cornell serves as co-chair of APTA's Procurement Steering Committee, chair of the Business Member Procurement Committee, and vice chair of the Rolling Stock Equipment Technical Forum.

➔ [MassTransitmag.com/12432318](http://MassTransitmag.com/12432318)

### WSP USA

**Julie D'Orazio, senior vice president and national market leader for transit and rail for WSP USA, has been elected to the board of directors of the American Public Transportation Association as a business member at-large.** D'Orazio is focused on three key areas that align with APTA's mission. These are safety and security, innovative mobility solutions and service network optimization and efficiency. D'Orazio is a registered professional engineer in New York and currently serves on the board of directors of WTS New York.

➔ [MassTransitmag.com/12432312](http://MassTransitmag.com/12432312)

### WSP USA

**Jason Mayfield has been named to a lead architect position working on transportation facilities in the St. Louis office of WSP USA.** In his new position, Mayfield will be responsible for working on numerous projects with WSP's transportation facilities group, including the Texas Bullet Train, where WSP is providing engineering support for the high-speed rail line between Houston and Dallas. He was previously with the firm from 2000-2004 as a project architect and most recently with Ross & Baruzzini as senior architect.

➔ [MassTransitmag.com/12432310](http://MassTransitmag.com/12432310)

Continued ►



## PEOPLE & PLACES



MTA IS looking to improve the city's transit services through technology.

### MTA Taps Techies to Help Fix Mass Transit

The Metropolitan Transportation Authority is looking for companies that could help the agency improve New York City's bus and subway service.

The MTA and the Partnership for New York City announced Wednesday the launch of the Transit Tech Lab, an accelerator program that works to identify private partners and test new technology for curtailing delays and improving riders' experience.

The program is a "customer-centric approach" to address some of the most common complaints about the transit system, said MTA President Pat Foye. The first lab projects would focus on reducing subway delays and increasing bus speeds on congested city streets.

➔ [MassTransitmag.com/12431361](https://www.masstransitmag.com/12431361)

### Read More Online

► The U.S. DOT has released new Federal guidance for automated vehicles, advancing its commitment to safe integration of automation.

➔ [MassTransitmag.com/12432324](https://www.masstransitmag.com/12432324)

► U.S. DOT Secretary Elaine L. Chao was joined by Governor Bruce Rauner (R-IL) and members of the Illinois congressional delegation for a grant announcement.

➔ [MassTransitmag.com/12431968](https://www.masstransitmag.com/12431968)

► The Toledo Area Regional Transit Authority is consulting with business organizations and other stakeholders to bring electric bus service to downtown that will link businesses, attractions, and residential developments by as early as this spring.

➔ [MassTransitmag.com/12432515](https://www.masstransitmag.com/12432515)

► The Metropolitan Atlanta Rapid Transit Authority's Board of Directors made history by unanimously approving the More MARTA Atlanta program which represents the region's largest transit investment in more than four decades.

➔ [MassTransitmag.com/12432615](https://www.masstransitmag.com/12432615)

► For the sixth consecutive year, the Hillsborough Area Regional Transit Authority has received the Certificate of Achievement for Excellence in Financial Reporting for its FY2017 Comprehensive Annual Financial Report from the Government Finance Officers Association of the United States and Canada.

➔ [MassTransitmag.com/12432320](https://www.masstransitmag.com/12432320)

► Mayor Thomas Broderick Jr. asked the Anderson Redevelopment Commission to consider providing \$1.8 million in Tax Increment Financing funds to finalize the necessary funding for the proposed \$8.3 million facility.

➔ [MassTransitmag.com/12432271](https://www.masstransitmag.com/12432271)

► Ricardo Diaz, Penny Scott and Robert Leyse walked into cheers and applause at a surprise ceremony today at Atlantic-Central Base where they were named King County Metro's Transit Operators of the Year.

➔ [MassTransitmag.com/12431675](https://www.masstransitmag.com/12431675)

► Mobile ticketing has arrived at the Maryland Transit Administration. The agency on Thursday introduced "Charm-Pass," a mobile app that allows transit riders to purchase tickets and passes for buses, the light rail, MARC trains and commuter buses, and the metro subway with a smartphone.

➔ [MassTransitmag.com/12431760](https://www.masstransitmag.com/12431760)

### People in the News



Kevin J. Holzendorf

#### JTA

**The American Public Transportation Association Board of Directors elected Jacksonville Transportation Authority Vice Chairman Kevin J. Holzendorf** to serve a

three-year term on the APTA Executive Committee during its Annual Meeting in Nashville, TN. Holzendorf was appointed to the JTA Board in 2013 and reappointed to another four-year term in 2017. Holzendorf is an account manager at CISCO Systems, Inc. He has spent his professional career in both the private and public sectors working in the accounting, financial services and technology industries. He holds a bachelor's degree in Accounting and a master's degree in Public Administration from the University of North Florida.

➔ [MassTransitmag.com/12433359](https://www.masstransitmag.com/12433359)



Wanda Y. Dunham

#### MARTA

**The Metropolitan Atlanta Rapid Transit Authority has promoted Chief Wanda Y. Dunham** from

assistant general manager of police and emergency management to chief of system safety, security, and emergency management/police chief. As a member of MARTA's executive team, Chief Dunham will have expanded areas of responsibility including the department of safety and quality assurance, the office of the chief information security office (CISO) in addition to her existing responsibility for police and emergency management. Chief Dunham has more than three decades of experience with transportation law enforcement, and she has led MARTA's Police Department since May of 2006.

➔ [MassTransitmag.com/12429512](https://www.masstransitmag.com/12429512)



Gary Fitzgerald

#### GPS Insight

**GPS Insight has announced the promotion of Gary Fitzgerald to chief executive officer.**

Former CEO and Founder, Rob Donat, will remain with the company as chairman of the Board. Wayne Holder, the company's controller, moves to the chief financial officer role and Jason Walker, VP of sales, becomes chief revenue officer. Fitzgerald joined GPS Insight in November of 2016 from GE, where he served as an enterprise architect for ten years.

"We are thrilled to announce Gary's promotion to CEO," said Donat. "Over the past two years, Gary has proven himself as a leader within the business and has gained the respect of the entire team at GPS Insight."

➔ [MassTransitmag.com/12433351](https://www.masstransitmag.com/12433351)

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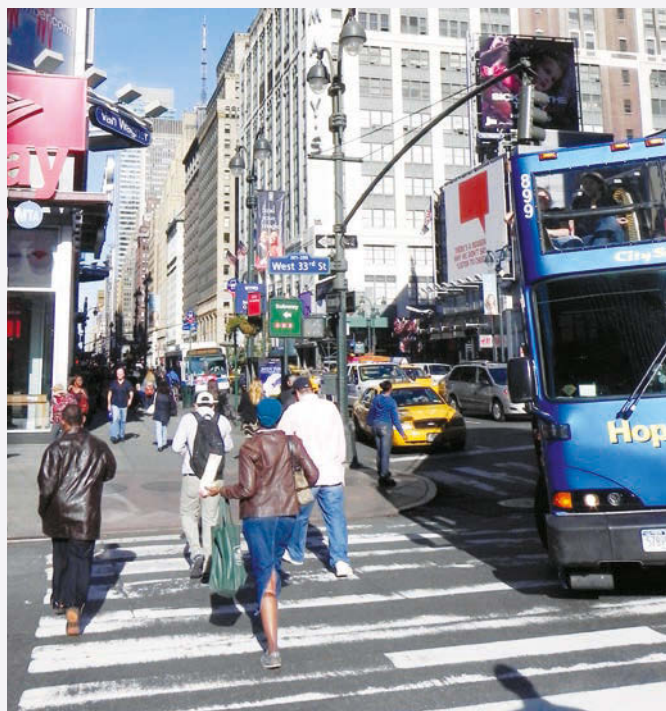
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# InnoTrans 2018 Recap: *The Future*

**“The Future of Mobility” was the theme of this year’s InnoTrans, the bi-annual international trade fair for the rail industry held by Messe Berlin in Berlin, Germany.**

By **Mass Transit staff**

**T**HIS YEAR THERE WERE 146 WORLD PREMIERES, HIGHLIGHTING the importance of the event as a showcase of innovation and economic driver of the sector, said Christian Göke, chief executive officer, Messe Berlin GmbH.

Covering 2,152,782 square feet, this year’s event included 155 vehicles on the outdoor track display and 10 buses in the outdoor bus display. There were 3,062 exhibitors from 62 countries and they anticipate more than 130,000 attendees over the four-day event.

The bus display was first introduced in 2016 and this year the International Bus Forum was introduced to accompany the display. The theme of the forum is “Electric buses in public transport — The solution to attaining clean air and climate targets in urban transport?”

Ben Möbius, managing director, Verband der Bahnindustrie in Deutschland e.V. (VDB), said the rail industry is moving innovation forward in e-mobility and automated systems. Electric mobility is moving people with less impact on the environment and automation is affording transit operators to run on a tighter schedule to increase capacity. The essence of innovations for the railway industry, he said, is that it makes good sense and it’s great fun to ride rail.

Philippe Citroën, director general, Union des Industries Ferroviaires Européennes (UNIFE), said there are several megatrends continuing to lead development in the railway industry and are expected to continue to the further growth in the market. Those include urbanization, population growth, globalization and increasing environmental awareness. The growth of the market is being driven by all product segments, he said, but also said it will undergo a massive transformation due to digitalization, automation, artificial intelligence, cybersecurity and innovative financing models.



# *of Mobility*







Mass Transit/Leah Harnack

## Battery-Electric EMU: The Green Alternative to Diesel Trains

The Bombardier TALENT 3 battery electric multiple unit was premiered during InnoTrans 2018, showcasing its emission-free, energy-efficient, low-noise features.

The prototype vehicle is equipped with four Bombardier MITRAC traction batteries and can travel routes about 25 miles on non-electrified railways. In 2019, the next-generation battery-operated trains are expected to travel up to 62 miles.

Bombardier Chief Engineer, TALENT 3 Battery Train, Stefan von Mach, said they look at the 30 years total cost of ownership, not just the cost of the vehicle. According to a comparative study by the Technical University of Dresden, it saves cost over the service life. Von Mach stressed that energy management and energy consumption are an integral part of the project.

[www.bombardier.com/en](http://www.bombardier.com/en)

**THE BOMBARDIER TALENT 3** battery-operated train made its maiden voyage at Bombardier's Hennigsdorf site. It is 50 percent quieter than modern diesel trains and sees peak values of 90 percent in the areas of efficiency and recyclability.

## World's First Autonomous Tram

Siemens Mobility, together with ViP Verkehrsbetrieb Potsdam GmbH, presented their research project on the world's first autonomous tram on a 3.7-mile section of the tram network in Potsdam, Germany.

ViP provided a Siemens Combino tram for the project. The experimental vehicle is equipped with multiple lidar, radar and camera sensors to collect data while complex algorithms interpret and evaluate the data triggering actuators to execute a response.

The experimental vehicle runs in the non-restricted area, stopping at regular stops, and simulating door operation. During its demonstration run, it reacted autonomously to trackside signals and to hazards, such as crossing pedestrians and other vehicles.

The goal of the demonstration project is to identify technological challenges of autonomous driving under real-life conditions, leading to further developments.

The experimental tram is the next step to the future: more safety, more comfort.

<https://www.siemens.com/global/en>



Mass Transit/Leah Harnack

**SIEMENS' COMBINO** autonomous tram in Potsdam, Germany, can already master essential operating tasks in real road traffic, relying on Siemens Tram Assistant, the collision warning system.



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**IRIS' IRMA 6** counting sensor features 80,000 pixel sensor with 3D time-of-flight technology.

## Optimum Accuracy from the Latest Counting Sensor

The sixth generation of counting sensors from Iris is the IRMA 6, providing optimum accuracy and reliability thanks to well-proven time-of-flight technology (ToF).

For train, tram, platform screen door, buses, or ferry boats, the IRMA 6 offers real-time capture of passenger load; precise revenue sharing facilitated by highly accurate monitoring of transportation services, based on revenue passenger miles and height classification of passengers; and demand-based management of fleet deployment.

The latest sensor has higher resolution and offers a wider area of coverage. The 80,000-pixel sensor has 3D ToF.

IRMA 6 is all about the 3Cs:

- Collecting data
- Communicating data
- Crunching data

The sensor is IoT ready, connected right to the router and can help transit agencies provide passengers with more information in real time.

[www.irisgmbh.de](http://www.irisgmbh.de)

## INIT: Ready for e-Mobility

"Ready for e-mobility" was the theme for Init's showcase at InnoTrans 2018.

Electric buses are rolling out in cities around the globe and planning for electromobility will require smart systems to provide accurate data to help transit operators prepare a variety of analysis on things such as timetables, charging times, ranges and energy consumption.

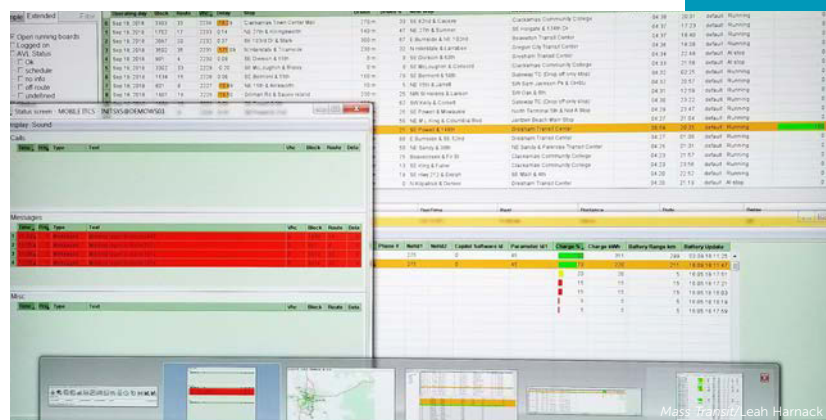
INIT's Intermodal Transport Control System (MOBILE-ITCS) provides an overview of important vehicle information for the dispatcher, including the current charge level and remaining range.

Operators can set thresholds, which will then show a color indicator to reflect the remaining charge level and warnings in the status display. A warning can be displayed when a vehicle falls below a charge level or below the remaining range threshold.

MOBILECharge can provide operators with intelligent charge management. It connects charging points, electricity supply and operational information systems to help in developing charge planning. Operators can predict energy requirements and load management.

INIT provides a comprehensive system for e-bus operation from planning stages prior to procurement through operating your fleet.

[www.initse.com](http://www.initse.com)



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**MOBILE-ITCS PROVIDES** a warning if the remaining range or the charge level of an electric vehicle falls below a set threshold.



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Mass Transit/Leah Harnack

## Cetrovo from CRRC: The Next-Generation Metro

Cetrovo, the new metro from CRRC is a high-speed, environmentally friendly, intelligent design with a speed up to 87 miles per hour.

It is designed with a carbon fiber composite car body, silicon carbide permanent magnetic traction system, and an active radial and fully active suspension system bogie. The adoption of a split-mould modular design approach offers precision mouldings. The adoption of a hybrid sandwich structure for the side walls ensures they are light and stiff. Interiors and floors rely on ultra-light, ultra-strong environmentally friendly materials.

The train is 13 percent lighter, the noise is 3 dB lower and the energy efficiency is improved by 15 percent. It is an unmanned smart metro train, featuring flexibility in configuration.

The passenger information system is integrated with a search engine, entertainment and shopping channel system and can be accessed via smart screens in the windows.

An online operation and maintenance monitoring system provides real-time data to the operation and maintenance center, transforming the maintenance approach to improve rolling stock availability. By integrating and interfacing with information such as axle temperature, vibration, lateral stability, infrared pantograph monitoring, bogie infrared monitoring. In-motion and smart detection offers early warnings.

[www.crrccr.com/en](http://www.crrccr.com/en)

**CETROVO IS** an unmanned smart metro train, featuring flexibility in configuration. Interiors and floors rely on ultra-light, ultra-strong environmentally friendly materials.



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# Tailoring a Mobile Payment System to Keep The Pulse BRT Flowing



Caption goes here.

## GRTC and Genfare collaborate to craft unique proof of payment system

The GRTC Transit System's partnership with Genfare has resulted in many unique solutions for Richmond's public transit system over the years. Recently, the two organizations collaborated to refresh the entire fare payment program, installing Fast Fare fareboxes, integrating them with GRTC's Mobile Pass mobile ticketing, and investigating a variety of solutions to enhance the passenger experience.

But when it came time to develop a mobile fare payment solution for GRTC's new BRT, The Pulse, the collaboration had to rise to a whole new level. The paper ticket machines on each of The Pulse's 14 stations were designed to be a traditional solution for those who prefer to purchase a paper tick-

et, however, GRTC's tech-savvy passengers also desired a mobile payment solution.

There was one major obstacle: The Pulse was designed to operate without fareboxes, employing fare inspectors on the vehicles so that the boarding process would be expedient, to truly keep The Pulse flowing, and as GRTC likes to say, "make more time for life."

So, how do you roll out a mobile fare payment system when you have no fareboxes or bar code scanners on the vehicles? And, how do you build in fraud protections that will eliminate fare evasion?

Rob Taggart, GRTC Director of Information Systems, said the Genfare team

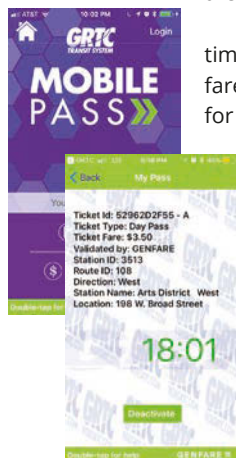
welcomed the challenge. "We have always been able to rely on Genfare to help us focus on our forward-looking vision, so we knew we could work together to develop a solution."

"GRTC's Mobile Pass app had already been live for some time when we starting planning for The Pulse," said Rob Antonio, Genfare's Program Manager. "What we needed to design was a modification to our app allowing the user to display a proof of fare payment specific to the date, time and station where the passenger boarded."

The solution they developed relies on the scanning of a QR code that is specific to each station and is prominently displayed on the station's signage, and Mobile Pass was modified to include a Pulse-specific module. When the user chooses to use one of their passes (currently the 1-, 7-, and 30-day unlimited use passes) to ride The Pulse, the user selects the Pulse pass option when they activate it so they can interact with the station's QR code using the device's built-in camera.

Once the user scans the code, the pass is activated and they receive a screen that displays where they boarded. The displayed clock will start at 45:00 and begin to count down and move around the screen, which the users leave running while riding The Pulse as a proof of payment. The animated screen protects against fraud from users who might try to deceive fare inspectors by using screen captures of activated passes.

Once Mobile Pass users complete their rides on The Pulse, they can click "Deactivate," and they will be done until ready to ride The Pulse again. ■



### The Pulse is Strong and Mobile Fare Sales are Healthy

The Pulse launched its service in June, and ridership is strong. According to GRTC, there are already more than 30,000 Pulse riders per week. The Pulse now carries more than 6,000 riders each weekday, almost doubling the goal of 3,500 daily riders.

As important to Taggart is the fact that mobile fare purchases are also quite healthy. "We had about \$30,000 in app-specific sales in the first month and we are seeing passengers activate their passes on The Pulse."

Another important feature of the solution, according to Taggart, is that GRTC is able to track Pulse ridership data from Mobile Pass usage and activation. "We are able to analyze how, when, and where the Mobile Passes are used on The Pulse, which is especially important when managing our first BRT service."





**THE INTERIOR** of Stadler's Metro Glasgow EMU has a continuous floor height throughout the passenger compartment.

## Customer Comfort in a Compact Design

The Glasgow Subway is the third-oldest underground system in the world. The Victorian tunnel system required a very compact vehicle design, while still meeting the customer requirements for comfort.

Stadler's Metro Glasgow EMU has an optimum use of space, which was integral in creating the open and welcoming interior. The interior features a continuous floor height throughout the entire passenger compartment, six doors on each side of the vehicle, and a modern passenger information system and video surveillance.

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**ALSTOM BRINGS** together its expertise in electric traction and rolling stock to offer a new concept in electro-mobility: Aptis.

## Aptis Provides A New Mobility Concept

Alstom brings together its expertise in electric traction and rolling stock to offer a new concept in electro-mobility: Aptis. It was developed as a clean, highly efficient urban transportation solution. It applies the advantages of a light rail vehicle to a bus, bringing significant improvements to the travel experience and vehicle operations.

The 39-foot bus can carry 95 passengers. Passenger access is facilitated by up to three sets of double doors on either side of the vehicle and the interior is bright, with 20 percent more window area than other buses.

The battery unit is located on the roof and provides flexibility in terms of the power supply and charging system. It can be charged overnight, providing 6 hours of operation, or can be recharged in 5 minutes at the end of the line or can have opportunity charging at bus stops with Alstom's SRS fast-charge technology.

Aptis has four steerable wheels. It also has park assist, enabling the vehicle to align with the edge of the pavement.

[www.alstom.com](http://www.alstom.com)

## The Passenger of Tomorrow: A Need for Options

Fundamentals of the business are simple, said Bernard Tabary, Keolis CEO International: "A: safety, safety, safety, which is at the core of any mobility." He continued, "Beyond safety, there's the expectation of the basic features of dependability and information.

"People really want to trust the mode they are going to use and they want that level of attention and they want that level of information that makes them feel ... knowledgeable.

"The sophistication of mobility on personalization," Tabary said, "is something that will suddenly make mobility more pleasant.

"And the piece that's our task is to facilitate that."

Keolis is a transportation operator, operating public transportation networks on behalf of 300 transportation authorities around the world in 16 countries. It operates more than 10 modes of transportation, including trains, buses, motorcoach, bikeshare, carshare and autonomous shuttles.

Today's transportation climate is facing its share of challenges, including the higher cost of mobility. As there continue to be a better utilization of assets, he believes that could trend downward.

The road to lower mobility



Mass Transit/Leah Harnack

costs is also through shared mobility. " ... parking and urbanization itself will change," he explained. "You may have cities with investments in various modes of transport which suddenly don't seem all that relevant anymore, where either the capacity or the scales will not be aligned with the new demands." <sup>MT</sup>

[www.keolis.com/en](http://www.keolis.com/en)

**BERNARD TABARY**, Keolis CEO International, spoke about what they see in future trends and who working with public transit agencies to transform their networks takes a collaborative approach.

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# Bus Procurement: The View from the Supply Side

Price still reigns king; right-sizing  
and electric power the trends.

By **Brian A. Sullivan, Contributing Editor**

**W**HEN IT COMES TO BUS PROCUREMENT, WE all know that the buy-side of the equation sets the expectations for the market, and the original equipment manufacturers (OEMs) and the component suppliers must react to those demands. To get a sense for the latest trends in procurement, however, it is the sell-side of the equation that has the finger on the pulse,

so it is important for the industry to survey and assess what OEMs and suppliers are recognizing as trends when transit buyers are developing their specifications and soliciting bids and proposals.

For example, it is no secret that the demand (and even the mandate, in some cases) for zero-emission and electric-powered vehicles continues to grow, but the one-size-fits-all approach to standardizing fleets is fading and right-sizing for the needs of the operation is clearly the trend.

## Procurement Process Status Quo; Price Remains Paramount

The first and most fundamental question when assessing purchasing trends is to analyze the procurement process itself. While the equipment and the technical features continue to change and evolve, the process of purchasing vehicles for transit agencies has not changed much, if at all. "Procurement of transit vehicles is not radically different today than it has been for last ten years," said Patrick Scully, MCI Executive Vice President of Sales and Marketing. "But while the

**ELECTRIC VEHICLES** are increasing in popularity, suppliers work to help customers understand the specifications.





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process remains the same, the newest frontier we are seeing is in the specifications for technology, especially electric buses.”

According to Todd Kangas, Director of Sales & Marketing – Advanced Products for component supplier EMP, “Price is still ‘king,’ which is why the development and definition of the equipment specifications are so important to our sales teams as they build relationships with the transit agencies.”

## Right-Sizing with a Right-Sized Vehicle

One of the most impactful trends suppliers are seeing is the gradual move away from a homogenized fleet and toward a fleet mix that reflects what can best be described as right-sizing to fit the needs of the particular service.

“Increasingly, agencies are reconsidering their fleet mix. The reality for urban transit today is that it is no longer a one-size-fits-all approach, like the Southwest Airlines model,” said Michael Roschlau, a strategic advisor to Grande West Transportation Group and former Chief Executive Officer for the Canadian Urban Transit Association (CUTA). According to Roschlau, with slight declines in ridership across North America, agencies cannot justify using large 40-foot buses on some community and feeder routes.



**AMENITIES AND** passenger comfort are in the forefront of suppliers minds.

Grande West has developed one solution for customers in its Vicinity community bus, a vehicle that in and of itself is right-sized. According to Grande West’s Vice President of Corporate Development John LaGourgue, the Vicinity bus is available in 27.5-, 30- and 35-foot models powered by clean diesel or CNG and is designed with affordability, accessibility and the environment in mind. “It represents a less costly alternative to a traditional 40-foot transit bus, burns less fuel and emits fewer emissions,” said LaGourgue. Recognizing the growing demand for electric vehicles,

Grande West is developing a battery powered version to further expand the Vicinity’s value in the public transit marketplace.

Roschlau cautions, however, that these changes to transit fleets will need to

**TRANSIT CUSTOMERS** are looking for increased efficiency in vehicles.

## Right-sizing

The Vicinity bus is available in sizes

**27.5,30-  
35-foot  
models**

occur over time. “Right-sizing is just a part of the 10-20-year transition toward a more dynamic and flexible fleet mix. It will not occur overnight.”

## Entering the Zero-Emission Frontier, But What About the Infrastructure?

With the rising demand for electric vehicles, there is a commensurate demand for charging infrastructure, which represents a huge difference for the industry, according to Scully. “There is a learning curve on both sides of the procurement process,” said Scully. “For example, defining the range for an electric vehicle in the agency’s specification is much different than with a traditional diesel vehicle.”

So how is the supplier side of the transit industry addressing the infrastructure question?

MCI’s answer is to work alongside their customers to understand the specifications and learn together. “We invite customers to join us and our experts at our Vehicle Innovation Center where we



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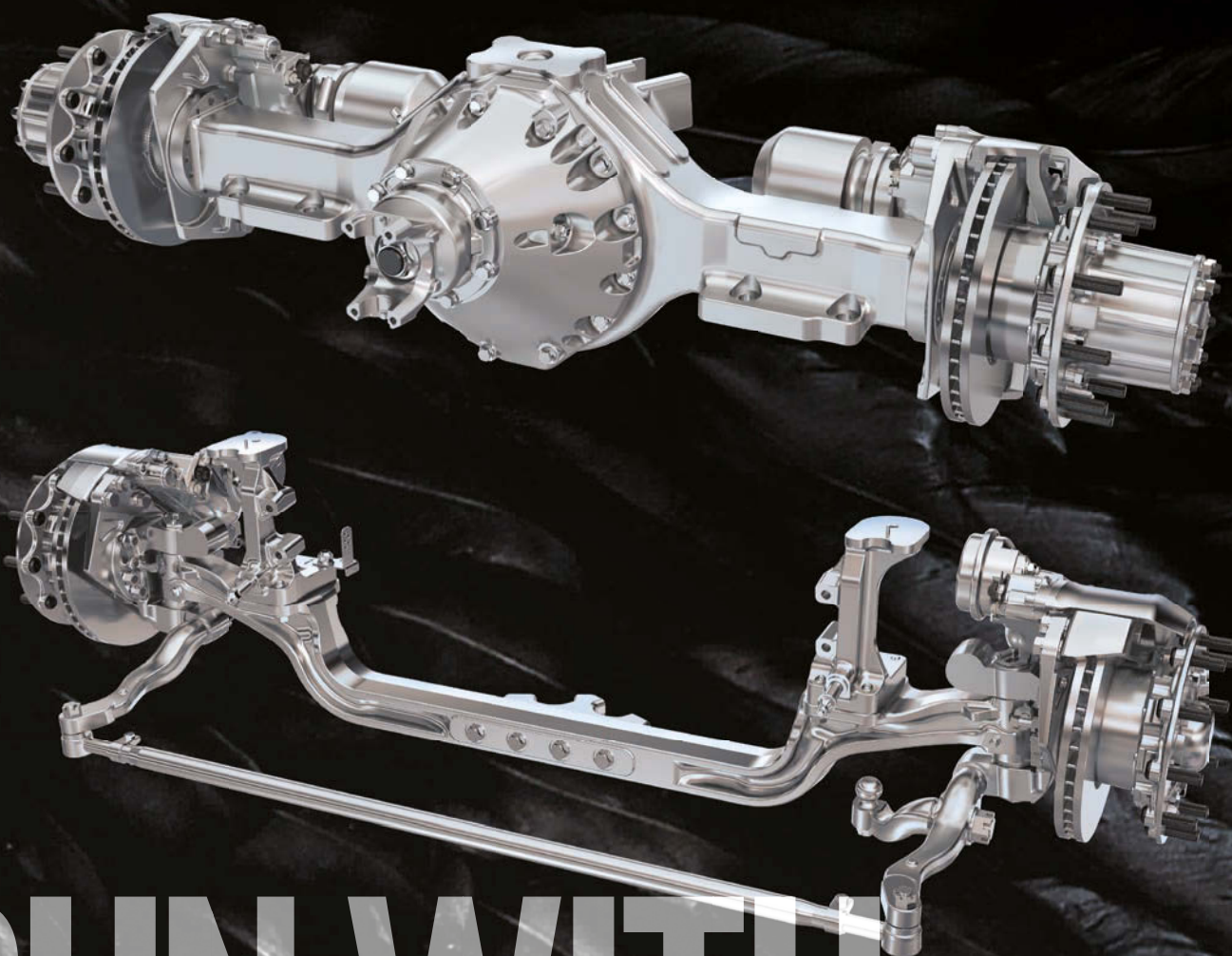
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address infrastructure concerns, as well as features like driver assistance systems and how they play into the vehicle specifications,” said Scully.

According to Roschlau, Grande West and the industry as a whole know that the age of the electric vehicle is coming. “The ‘Holy Grail’ is the optimal battery and energy storage solution. There are a lot of trials and errors going on regarding battery packs. The major advances are just not ideal yet, but the propulsion technology improvements are coming quickly, so I think we’ll get there,” said Roschlau.

## Leveraging Technology to Extend Engine Life

Like the real estate industry’s “location, location, location” adage, from EMP’s perspective as a supplier, it’s all about “efficiency,

**“Right-sizing** is just a part of the 10-20-year transition toward a more dynamic and flexible fleet mix. It will not occur overnight.”

**-MICHAEL ROSCHLAU**, strategic advisor to Grande West Transportation Group and former Chief Executive Officer for the Canadian Urban Transit Association (CUTA)

efficiency, efficiency.” According to Kangas, “Transit customers are demanding more efficiency and extended vehicle life. So, we are working to make our components more efficient for the customers.”

EMP has developed patent-pending predictive and precision software systems that work together to promote extended engine and transmission life, minimize power needs and noise, and offer improved fuel economy. “If

we can keep bus engines running at optimized temperatures we greatly increase safety and improve efficiency,” said Kangas.

## Passenger Experience Enhancements Always a Challenge

“As suppliers, we need to help our customers appeal to each market segment they serve, whether commuter, community shuttle, urban transit, or mobility challenged,” said Roschlau. More than ever before, suppliers know they need to combine comfort, access, convenience, connectivity, and other passenger amenities – to truly offer mobility solutions for everyone.

As Roschlau summarizes, “It’s incumbent on us as suppliers to put the customer experience at the front of everything decision we make.” **MT**

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# The State of Safety 6

From PTC to cybersecurity, transit leaders discuss progress made on several key issues, along with what will remain a strategic focus heading into 2019.

By **Gregg Wartgow**,  
Contributing Editor

**T**RANSIT AGENCIES CONTINUE TO WRESTLE WITH THE SAME safety and security issues they've faced for years — issues that are exacerbated by the current environment we live in. At the same time, new challenges are coming to the forefront, often as a result of the growing imprint technology has on our lives.

As 2018 draws to a close, it's a good time to reflect on the state of safety and security in the transit industry. Experts from the American Public Transportation Association (APTA) discuss some of the issues warranting additional focus, along with how the industry is working to address these issues going forward.





# Security

**SAFETY AND** security are essential points for transit industries to keep in mind.

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## Positive Train Control (PTC)

A major safety initiative the industry has been undertaking is the Congressional mandate for PTC installation by the end of this year. The next deadline is December 31, 2020 when full implementation of PTC systems is required.

“The general outlook is very positive based on the progress that has been made—especially regarding the 2018 installation requirement,” said Narayana Sundaram, APTA’s senior director of engineering and commuter rail operations.

According to APTA data compiled back in June:

- 91% of needed radio spectrum had been acquired, with all 100% expected by the end of October
- 85% of 13,698 pieces of on-board equipment on locomotives and cab cars had been PTC-installed
- 79% of 14,083 wayside installations had been completed
- 78% of back office control systems were ready for operation
- 74% of 14,847 employees had been trained

The industry continues to make progress despite some se-



**PTC EDUCATION** offers multiple insights.

**By the Numbers**

**34%**

of commuter railroads were in testing, revenue service demonstration or already operating trains with PTC

rious challenges. For instance, a limited number of PTC technology manufacturers has strained the installation effort, as has a limited workforce. Thus far the primary need has been for track workers and mechanical staff to help execute PTC installation. Looking ahead to the implementation phase, transit agencies will need integration and testing engineers, as well as administrative staff to help generate the necessary reports to obtain Federal Railroad Administration (FRA) approvals.

Transit agencies are bound to face other challenges during the implementation phase. Once sys-

**APTA HOSTED** a commuter rail PTC workshop.

tems are installed, testing on individual components can begin. Once that testing is complete, agencies can move into integration testing to ensure that all components can function together. “Then agencies move into revenue service demonstration (RSD),” Sundaram pointed out. “For the passenger rail industry, that means testing PTC systems while passengers are on board.”

Data from RSD testing is then submitted to the FRA in pursuit of a conditional certification. “A complex challenge arises which is interoperability testing,” Sundaram said. “Railroad hosts and tenants need to be on the same page with all software and components performing compatibly with each other. This can be a challenge.”

Despite this challenge and others, the transit industry has already made progress on the implementation phase. According to APTA’s June scorecard, 34 percent of commuter railroads were in testing, revenue service demonstration, or already operating trains with PTC.



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Once a railroad has managed through the installation and component testing steps, Sundaram says much of the battle has already been fought. "An agency still faces completion of the RSD phase, interoperability testing and FRA approval," Sundaram reminded. "But the industry has been planning for this, and we are very encouraged by the progress made over past seven to eight months."

Limited funding remains a major obstacle. Paul Skoutelas, president and CEO of APTA, provided written testimony to the U.S. Senate's Committee on Commerce, Science and Transportation for a hearing on PTC held October 3. Skoutelas urged Congress and the Administration to provide additional PTC funding given the high costs of this effort. Those costs are estimated to be \$4.1 billion for implemen-



tation, and \$80-\$130 million per year for operation and maintenance. APTA will continue to lobby Congress for additional funding to support PTC.

### Trespassing and Intentional Death

As powerful as PTC technology is, it cannot prevent grade-crossing collisions and trespasser

WHILE PTC is continuing to develop, there are some areas of security that it cannot benefit.

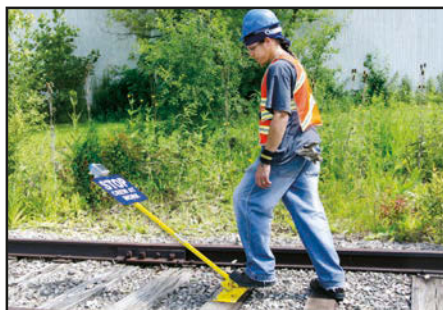
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**“This generation may not understand the dangers because trains are pretty quiet today. But a track is not a cut-through and needs to be taken seriously.”**

**-POLLY HANSON,**  
director of  
security risk  
and emergency  
management,  
APTA

fatalities. Speaking of which, rail crossing trespasser fatalities are at a 10-year high. Some are intentional, others are accidental. Regardless, the transit industry has taken notice.

Polly Hanson, director of security risk and emergency management for APTA, pointed to a few factors when trying to explain why fatalities are up. First of all, suicides in general are on the rise. Secondly, many new rail services are in operation. Social media is also influencing dangerous behavior, such as taking selfies on railroad tracks.

“You train a generation about rail crossing safety, and then they grow up,” Hanson said. “Then the next generation comes along and you start all over. This generation may not understand the dangers because trains are



**TRESPASSING AND** crossing fatalities are at a 10-year high.

pretty quiet today. But a track is not a cut-through and needs to be taken seriously.”

Some transit systems have very thoughtful, engaged programs. Some participate in regional or local suicide prevention task forces, looking for every oppor-

tunity to help prevent this type of tragic event. For instance, SEPTA (Southeastern Pennsylvania Transit Authority) just worked with a regional task force on Worldwide Suicide Prevention

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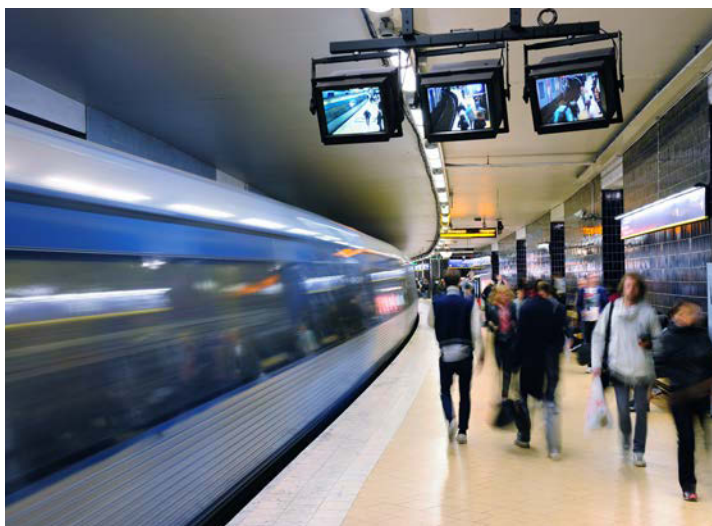
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Day (September 10). SEPTA also posts signs at stations with a number to call if passengers are not feeling good and think they may want to hurt themselves.

Operation Lifesaver is a non-profit public safety education and awareness organization dedicated to reducing collisions, fatalities and injuries at highway-rail crossings as well as trespassing on or near tracks. Educational awareness resources are made available. Rail Safety Week held the last week of September helps bring heightened attention. This year marked the second year for this initiative.

### Cybersecurity

Cybersecurity is a topic of growing importance. It's not just "on the radar" either; the transit industry has already been affected.



**EDUCATING RIDERS** is an important aspect of safety.

"You can do a Google search and see who has been hacked," Hanson said.

Earlier this year, the TSA and

FBI conducted a workshop on cybersecurity for APTA's CEO members. "We've actually had sessions on cybersecurity and enterprise risk management at every one of our conferences this year," Hanson

### Rail Safety

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**“The** reality is that buses and trains are really computers on wheels. That means there is an exposure to cyberattack.”

-POLLY HANSON, director of security risk and emergency management, APTA

pointed out. “The reality is that buses and trains are really computers on wheels. That means there is an exposure to cyberattack.”

That exposure exists in the form of online ticketing and fare collection, for example, where systems could be vulnerable to hackers. Operations technology for

things like signaling, train control and access control is also vulnerable, as are surveillance systems. “We just held a session at our annual meeting in Nashville on big data and how it can help an agency drive efficiencies,” Hanson said. “But big data also creates an additional exposure and must be protected.”

APTA has a group focused on developing cybersecurity standards for the transit industry. A second group is focused on enterprise risk management. “These groups are in the process of developing recommended practices as well as updating existing ones,” Hanson points out.

### Homeland Security

The 17th anniversary of 9/11 was just commemorated a couple of months ago. Hanson cautions that even though ISIS has lost territory in the Middle East, and that Al-Qaeda doesn’t receive the media attention it once did, these terrorist groups have not disappeared.

“These groups are now advocating for terrorist acts that are easier to commit,” Hanson said. “These acts may not be as sophisticated as 9/11 was, but someone who is radicalized online and has a van or knife can carry out an attack. We’ve already seen this demonstrated in New York, as well as places in Europe such as Paris, Barcelona and Stockholm. In many ways it is easier to carry out an attack today.”

It’s not just the major U.S. cities either. Terrorists see public transportation as an attractive target due to its inherent pedestrian traffic. “That’s why we had Brian Michael Jenkins (terrorism expert)



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**SECURITY PRACTICES** continue to develop with technology.

speak at our rail conference in Denver this past June,” Hanson said.

Although the terrorism threat has not diminished, Hanson points out that transit security grant funding is not as robust as it used to be. Agencies rely on that funding for equipment and operations, and to increase visibility with law enforcement officers and K-9s during special events, holidays or other high-volume times.

Additionally, the grant funding that does exist is distributed to agencies based on factors such as risk, which is partially based on passenger volume. “The bigger agencies with more passengers benefit, but smaller and mid-size agencies need help, too, because they are also at

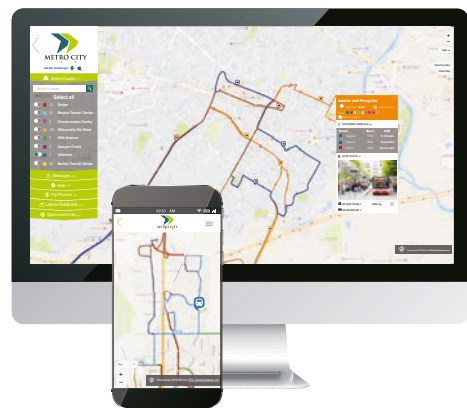
risk,” Hanson pointed out. “The terrorism threat has not disappeared, it has just evolved. You could say it’s even more challenging today because of the emerging threat of cyberattacks.”

As has always been the case, public vigilance is an important weapon. Transit agencies will continue to communicate strongly with both its employees and passengers. “If something doesn’t look right, report it,” Hanson urged. “Passengers need to be aware of whatever communications mechanism the transit agency allows, such as text-a-tip or perhaps even tweeting. We will continue to invite passengers to partner with transit systems they are using to help keep the transit systems safe.” **MT**

**“These** acts may not be as sophisticated as 9/11 was, but someone who is radicalized online and has a van or knife can carry out an attack.”

**-POLLY HANSON**, director of security risk and emergency management, APTA

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**IN 2016**, Hyperlight Systems partnered with South Coast British Columbia Transportation Authority, TransLink, to design and deploy the world's first hands-free fare gate solution across Vancouver, BC.

Columbia Transportation Authority, TransLink, to design and deploy the world's first hands-free fare gate solution across Vancouver, BC. The collaboration was born out of TransLink's desire to provide better access for customers unable to tap their payment cards at newly installed fare gates. Following the success of this deployment, Hyperlight Systems has also expanded their platform to equip elevators with the fully-automated, touchless access technology.

### **The world's first hands-free fare gate technology**

Hyperlight Systems worked closely with TransLink to design and prototype a solution that would solve a major accessibility challenge for the newly installed, tap-enabled fare gates. Prior to this system, Customers not able to tap could not navigate through the fare gates independently. They either had to phone ahead before arriving at a SkyTrain station, and request a SkyTrain Attendant to come meet them or travel with a companion to open the fare gate for them.

TransLink has a proud tradition of innovative public transport. The SkyTrain, built for the World's Fair in 1986, was the first fully-automated rapid light rail in North America and is currently the world's largest fully automated Rapid Transit System. The trains are driverless and have no conductors on board. The stations have a fleet of attendants floating at different stations with none stationed full time. TransLink strives to provide all customers the same travel experience. In collaboration with Hyperlight Systems, the team

**Public Private Partnership  
Between TransLink and Hyperlight  
Systems Results in the**

# **World's First Hands-Free Fare Gate Solution**

Vancouver-based Hyperlight Systems offers a Smart-city platform for removing barriers and enabling universal accessibility for public transit.

By **Tamira Nasanbat**

**H**YPERLIGHT SYSTEMS IS working to enable fully accessible transit for everyone, everywhere. Their innovative technology eliminates the need for passengers with disabilities to tap, swipe or push

buttons to use transit fare gates, buses, elevators and intersections. The company is dedicated to developing Smart Cities and accessibility technology solutions to solve complex urban challenges.

In 2016, Hyperlight Systems partnered with South Coast British

**"I'm** happy to be part of the solution making transit more accessible."

**-BRAD ZDANIVSKY**, a TransLink rider who uses a wheelchair

talked to a range of stakeholders before proceeding to build a solution. Hyperlight Systems made it a priority to work with TransLink to retrofit their existing infrastructure and hardware, with the goal of improving customer experience with minimal construction effort, time and cost.

The solution was a custom built OpenHAP (Hand-free Access Point) system, leveraging wireless technology to automatically open fare gates across transit stations. Eligible passengers are assigned a Radio Frequency Identification (RFID) card that triggers fare gates to swing open within close range. RFID sensors were placed above the fare gates, eliminating

the need for any new construction or hardware modifications on the existing gates. As a result, the technology enables passengers to travel independently and achieve equal access to social and economic participation.

This new hands-free system, termed the Universal Fare Gate Access Program, was rolled out in a rapid but phased approach. The proof of concept was developed, tested and piloted at three stations in 2017. Then in January 2018, the system was successfully deployed across 40 percent of TransLink stations. To date, over 91 percent of SkyTrain and Canada Line stations and SeaBus terminals in BC are equipped with

## By the Numbers

**91%**

of SkyTrain and Canada Line stations and SeaBus terminals in BC are equipped with Universal Fare Gate technology

**All**

of SkyTrain and Canada Line stations and SeaBus terminals in BC will be equipped with Universal Fare Gate technology

the technology, with the goal to outfit all TransLink stations by the end of 2018. Since the initial roll out, the technology has received overwhelmingly positive user feedback. Brad Zdanivsky, a TransLink rider who uses a wheelchair, joined the Hyperlight Systems team to help test, roll out and promote the new system. "I'm happy to be part of the solution making transit more accessible," says Brad. Rider response continues to demonstrate the technology's positive impact in supporting independence for people with disabilities and senior citizens.

TransLink encourages all customers with mobility challenges to apply, with the goal of empowering everyone to travel independently and pass through public spaces with dignity. The positive reception from transit users and the public has enhanced TransLink's reputation as a customer-focused leader in accessibility. Together with Hyperlight Systems, they are helping put Canada on the map as a global leader for universal accessibility.

## Developing fully accessible transit for smarter cities

Hyperlight Systems envisions smart cities of the future to be inclusive and responsive. Through continuous community engagement and user-feedback, Hyperlight Systems has created a customer journey map to understand additional accessibility barriers that exist from the time someone leaves their home until they arrive at their destination. The team is committed to developing a unified accessibility platform that enables barrier-free mobility experience through fare gates, elevators, intersections, and any other type of access points that pose a challenge to those with disabilities. 

**TRANSLINK WORKS** to provide the same travel experience.





# Operator & Passenger Safety

Positive Train Control / Mediation / Identifying Behaviors

## Philadelphia, Penn.

**IN ORDER FOR A TRANSIT ORGANIZATION** to be successful, safety has to be the top priority of all of its employees and its passengers. Through operational improvements, technological advancements and diverse internal and external outreach programs, the Southeastern Pennsylvania Transportation Authority (SEPTA) has created a “Safety First” culture for staff and customers.

Positive Train Control (PTC) has been at the forefront of transportation industry safety since 2008. On its Regional (commuter) Rail, SEPTA pushed ahead to meet PTC deadlines and, as of May 2017, all of SEPTA lines and equipment have been operating with PTC. Throughout the PTC implementation effort, SEPTA’s in-house team has worked continuously with Amtrak, freight partners, third-party contractors and the FRA. The final focus is completing the task of establishing interoperability with CSX and Norfolk Southern, which operate along portions of SEPTA territory. This phase of the program is scheduled to be completed by December.

SEPTA has 9,500 employees and, in addition to commuter rail, operates two subway/elevated lines, eight light rail trolley lines, one interurban high speed line and 119 bus routes. The Authority’s proactive approach to safety resulted in the 2012 launch of the “Never Too Busy for Safety” employee-focused program. In the spirit of Never Too Busy for Safety, SEPTA developed its Operational Safety Improvement Program (OSIP) in 2018. The OSIP defines how SEPTA will continue to enhance safety on all its operating modes. Key stakeholders from various departments, in conjunction with SEPTA’s General Manager and Deputy General Manager develop the initiatives in the plan and monitor progress on a monthly basis.



**Jim Fox**  
Assistant  
General  
Manager of  
System Safety  
Southeastern  
Pennsylvania  
Transportation  
Authority

## The Authority’s proactive approach to safety resulted in the 2012 launch of the “Never Too Busy for Safety” employee-focused program.

Technology has played a significant role in the continued development and success of SEPTA’s safety culture. Railroad simulators give engineers the ability to experience non-routine operating scenarios that may not otherwise be experienced in actual operating environments, such as slippery rail conditions. The program is beginning with Regional Rail and will be expanded to include all rail modes.

In the field, the Roadway Worker Protracker system is currently in use on the Norristown High Speed Line and is being piloted on Regional Rail. Each railcar has an onboard sensor that communicates with an armband worn by a roadway worker to warn of an approaching train. SEPTA continues to install the Bus Alert Turn Warning, which provides

an audible alert on the outside of the bus to warn those around the vehicle anytime it changes lanes or is making a turn. With over 600 installed, the balance of SEPTA’s 1,400 buses will be completed by 2019. SEPTA also recently started to install bus operator protective barriers, with all 1400 expected to be installed by 2020. Additionally, SEPTA is evaluating a couple of collision avoidance systems to mitigate collisions with privately owned vehicles, pedestrians and fixed objects.

The success of SEPTA’s safety culture relies on the buy in of its employees and customers. This year the System Safety Division developed Safety Culture surveys for employees to voluntarily complete. Approximately 5,000 responses were received. Once the results of the surveys were tabulated, System Safety officers visited all of SEPTA reporting locations on all shifts to discuss the results, listen to their concerns and remind them of the safety resources that are available to them.

In the community, SEPTA regularly interacts with its customers about safety. In addition to monthly safety blitzes and Operation Lifesaver presentations, since 2013 the Authority has held an annual System-wide “Make the Safe Choice” Safety Day in the spring. Over 400 employee ambassadors and safety officers visit stations across the service area, distributing safety materials and provide safety educational tips to passengers. Over the past two years, SEPTA has partnered with local school students who develop safety-related posters and messages to be distributed to riders.

One of the newest SEPTA safety tools is the “Safety Education Bus”, a passenger bus once slated for retirement was overhauled by employees at the Berridge Shop. The bus has been on the road since June, being used exclusively for the Authority’s internal and external safety awareness events.

## Palm Beach, FL



**Richard McKinney**  
Senior Manager of Safety, Training and Compliance  
Palm Tran

**P**ALM TRAN PUBLIC TRANSPORTATION in West Palm Beach, Florida is committed to putting the safety of its bus operators and passengers at the forefront through implementing strategies to advance safety and security. These strategies include: equipping buses with audio and video recording technology and providing ongoing de-escalation training for bus operators. These initiatives have resulted in measurable improvements in safety and security.

"The few incidents that have occurred on our system could have likely been avoided if drivers had followed their de-escalation training. We work with the bus operators to identify their 'button-pushers' and counsel them on how to deal with customers who may be a threat to the safety and comfort of the operator and the passengers," Palm Tran Executive Director Clinton B. Forbes said. "One of the best pieces of advice I give the operators is that it is their absolute right to call for help and have someone removed from the system if they perceive any potential safety threat."

Palm Tran enlisted Moore Counseling & Mediation Services, Inc. (MCSM)

to provide regular de-escalation training to all Palm Tran bus operators. The program trains bus operators to diffuse tense situations through effective communication tactics which help avoid serious aggression.

"De-escalation works as a great set of tools, assisting operators with making a sound judgment when they are faced with a challenging passenger," said MCSM President and CEO Martina Moore. "We have trained thousands of operators and other professionals and have received feedback that the de-escalation skills have been helpful in the workplace and in their personal life."

"Many safety situations arise from fare disputes. We train the bus operators to quote the Company policy and not escalate the situation," Senior Manager of Safety, Training and Compliance Richard McKinney said.

Bad actors can also be banned for 90 days from the bus system and all Palm Tran property under a trespass ordinance approved by the Palm Beach County Board of County Commissioners. It has been an effective tool to enhance safety and security working with law enforcement, according to McKinney.

Additionally, when Forbes joined the transit agency in 2015, he noted that while Palm Tran buses were equipped with video monitoring devices, the audio recording technology was turned off. Forbes led a safety initiative to turn on the audio on Palm Tran's entire bus fleet of 159 buses. In addition, the buses now have audio announcements and

decals that inform passengers assaulting a bus operator is a felony among other important notifications.

"Equipping the buses with video and audio recording equipment drastically improves the safety of our system," Forbes explained. "This critical technology captures precise and unbiased evidence which aids law enforcement in the case of an incident. The audio and video recordings are also a strong deterrent, and that's reinforced with onboard signage."

Furthermore, Palm Tran bus operators receive customer service training and Americans with Disabilities Act (ADA) sensitivity training and must routinely pass a variety of safety assessments throughout their career.

The safety culture is ever-present at Palm Tran. For example, all meetings begin with a monthly safety message. The message, which is also displayed on monitors throughout all Palm Tran buildings, focuses on contemporary issues that are being reported by bus operators, maintenance technicians and other staff. This month's message focuses on preventing slips, trips and falls. Last month, the message raised awareness about increased pedestrians as schools resumed session.

"Promoting a culture of safety is imperative," McKinney said. "As Palm Beach County surges in population, Palm Tran will continue to drive the best-in-class safety practices and utilize onboard technology to ensure we remain a safe and efficient mode of transportation."



## San Diego, Calif.

**Del Lisk**  
VP of Safety  
Lytx

**P**ASSENGER AND OPERATOR safety is a top priority at Lytx, and has been for the past 20 years. Quite simply, our goal is to save lives. This theme of safety has been a connecting thread

throughout my 36-year career in fleet safety, during which I have worked in driver training and safety/risk analysis. I've personally trained tens of thousands of drivers, while Lytx currently protects more than 850,000 across the globe.

For Lytx's 3,000+ clients, including nine of the top 15 transit and railroad companies, having a strong safety culture



## BEST PRACTICES

is a requirement. And these clients have seen firsthand the other incredible benefits that come with safety, like reduced costs around collisions, insurance claims, fuel and maintenance, to name a few.

The most impactful way to achieve this level of safety is to prevent collisions *before* they happen with technology that can pinpoint the exact areas of risk within your fleet, provide you with evidence of that risk, show you how to address it and track improvements as you go. This is the power of managed video telematics solutions like those from Lytx, which are backed by more than 80 billion miles of analyzed driving data and supported by real people tagging each and every event triggered by a DriveCam event recorder.

With this massive vault of data, Lytx has been able to pinpoint the riskiest driving behaviors and understand exactly how risky they are. For example, we know that drivers cited for seatbelt violations are 3.4 times more likely to get into a collision

than the average driver. We also know that a late response (late braking or an abrupt swerve) – the most frequently observed behavior among all of our transit clients – increases the likelihood of getting into a collision by 84 percent in addition to dramatically increasing the potential for a passenger fall claims.

The key for fleet managers is to pair this knowledge, and the video evidence from their program, with an internal safety program focused on coaching operators when they exhibit unsafe behaviors – and rewarding them when they've done everything right. We are constantly hearing from clients about the positive impact of rewards systems and a focus on improving skills, rather than taking a punitive approach.

And we've seen it work – the program is associated, on average, with a 50 percent reduction in collisions. MV Transportation, the largest privately owned passenger transportation contracting services firm in the U.S. and a Lytx client since 2005,

**The most impactful way to achieve this level of safety is to prevent collisions before they happen with technology that can pinpoint the exact areas of risk...**

implemented our flagship DriveCam safety program to identify the riskiest drivers in their fleet, then provided them with coaching and counseling to improve. As a result, the organization saw a 50 percent reduction in both incidence severity and frequency of risky driving incidents.

Safety is crucial for every fleet, and this is especially true when passengers are on board – lives being the most precious cargo. Leveraging technology to gain actionable insights and tailor coaching based on real-life events is a surefire way to better protect your operators and passengers.

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## Tempe, Ariz.

**A** NEW AND EXCITING DRIVER monitoring solution has just been deployed in the transportation industry. It promises to be a game changer in terms of driver monitoring by automatically classifying driver violations at a level of detail that has never been attempted nor deployed before. Most existing systems are focused on tracking a driver's face/eyes and flagging an alert when the driver is not looking at the road or feeling drowsy. While this is very important, it is not nearly the entire story. Specific behaviors need to be identified, addressed and drivers need to be coached on adhering to overall fleet policy. The problem is that most of these behaviors go unnoticed because, thankfully, most of them are not associated with an accident. They are also unaddressed because it is not feasible for



**Tarek El Dokor**  
Founder & CEO  
EDGE3  
Technologies

a manual review to look at all non-accident violations associated with a given trip, because of the amount of data that is involved. This is where EDGE3's CloudDETECT solution comes in.

With a side facing camera looking at the entire cabin, EDGE3 CloudDETECT is an AI platform that can automatically extract and pinpoint behaviors such as eating/drinking, smoking or texting while driving. This is a total game changer. Now, a manager can get small clips of someone eating, smoking, leaning forward with no seatbelt, etc. Previously inaccessible information without a tedious manual review process.

Fleet managers can also filter clips by violation, can look at the clips, and can

invite the drivers to come in and undergo training. Just as important, fleet managers, using the CloudDETECT platform can trend out behavior over time, and monitor as number of infractions go up or down. An HR review page is available allowing site managers to write notes next to small video clips.

EDGE3's CloudDETECT platform can extract violations from the raw data and provide these small infraction clips to the fleet managers as part of a more comprehensive Driver Performance Management system.

CloudDETECT can look at a 20 hour video and reduce it to 10 minutes of dangerous driving and/or commercial fleet policy violations. These 10 minutes are also further broken down and classified into categories. A manager can take such a clip, sit down with the driver, and put a training plan in place, or utilize the overall trending fleet data to assess what fleetwide issues exist for their drivers. **MT**

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## Talkphone Via Series Access and Courtesy Communication Pedestal

Talkphone has announced the new Via Series Access and Courtesy Communication Pedestal. This most recent addition to the Talkphone access communication product line includes a VOIP-200 series IP call station and has optional card reader and push plate switch accessories. To add an additional security measure, customers can choose a card reader with a keypad.

Make an impression with the Via as building access, parking access or courtesy communication. When used in access installation the included blue LED light band will change to green when the door is activated through the call station.

The included VOIP-200 series call stations are constructed of IP66-rated, vandal resistant marine grade stainless steel.

[talkphone.com](http://talkphone.com)



## Baron Telematics for Public Safety

Baron announced Telematics for Public Safety, a technology that uses accurate, patented technology to aid organizations in keeping their employees, students, and customers safe.

Using basic weather information cross-referenced with proprietary algorithms and other data inputs, Baron's Telematics can generate highly accurate road weather condition data. In addition, Telematics for Public Safety enables organizations to access the most current technology. Telematics for Public Safety also provides organizations with contextual weather data by delivering alerts tied to their immediate location, and makes staying informed easy and quick, using pre-interpreted information.

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## Model SA-XS Hinged Type Derail



The new Model SA-XS\* hinged derail is fabricated from steel, but is longer than the current EBX type derail. The longer design of the SA-XS provides a bi-directional derail with a deflection angle similar to our single direction derails. We have added an assist spring and hand grip to the design of the SA-XS to significantly reduce the effort required to apply and remove the derail from the rail. The Model SA-XS is manufactured in sizes to fit today's most popular rail section. Please contact Western-Cullen-Hayes for more information on all of our derail products.

\*Patent Applied For



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## DISCUSSION

### Tweet & Retweet



**Adriano L. Martinez**

@LASmogGuy

Here's what's great about the electric bus panel at the [#APTAannual18](#) conference: it's not just California. It's Tennessee, Kentucky, and Indiana on the panel. There is a nationwide web of transit agencies disrupting the combustion bus status quo. [#RightToZero](#)



**Denveright**  
@denveright

RTD is identifying future high-priority bus rapid transit (BRT) corridors. Many under consideration are those ID'd in Denveright's Denver Moves: Transit and Blueprint Denver plans. Learn more & give RTD feedback at <http://www.rtd-denver.com/BRT-study.shtml>. [#transit](#)



**moovel Group**  
@moovel

Interesting interview with Lamparter (Head of Mobility Services) about [#SmartCities](#), the future of urban mobility and the [#Mobility-as-a-Service](#) pioneer [#moovel](#). The trend is toward mobility on demand." [#MaaS](#)

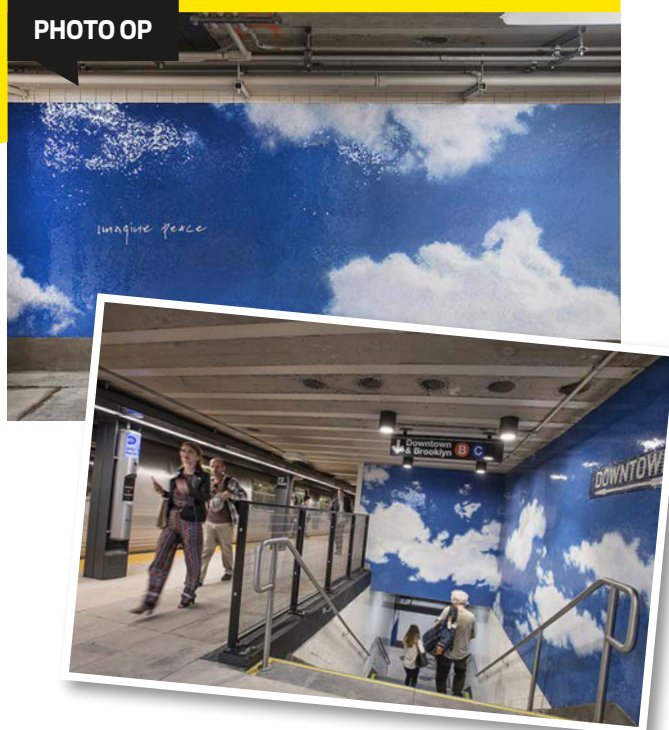
## MTA Modernizes Subway Stations



**Metropolitan Transit Authority**  
@MTA

► The Metropolitan Transportation Authority (MTA) reopened the 72 St station on the B, C lines following extensive work to repair deteriorating infrastructure and modernize the station environment with improvements such as digital signage for real-time service information, enhanced wayfinding and station entrances, energy-efficient lighting and updated security equipment.

## PHOTO OP



## THE VIEW



**VIA METROPOLITAN TRANSIT**

@VIA\_TRANSIT

VIA Metropolitan joined the lip sync craze that's sweeping the nation and released video with a rendition of "Uptown Funk" by Mark Ronson featuring Bruno Mars. VIA Metropolitan Transit accepted a challenge from Austin's Capital Metro, which featured mostly law enforcement departments across the country.

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**MOHAMED MEZGHANI**  
@MEDMEZGHANI

## PERSPECTIVE



**TriMet**  
@trimet

► TriMet is adding a new bus line to get workers and travelers to and from Portland International Airport. TriMet is also splitting its longest bus line and adding frequent service to decrease wait times. The expansion brings more connections to jobs and other destinations. [MassTransitmag.com/12425719](http://MassTransitmag.com/12425719)

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