How Digi International is helping railroads overcome the PTC challenge.

It is now ten years since then President George W. Bush signed the Rail Safety Improvement Act of 2008 into law, requiring passenger and freight railroads across the U.S. to implement Positive Train Control (PTC). However, the rollout of the technology has not always progressed smoothly with the original deadline of December 31, 2015 being pushed back three years.

With the extended deadline now just seven months away, the Federal Railroad Administration (FRA) and U.S. Transport Secretary Elaine Chao are showing few signs of further flexibility. Earlier this year, Chao issued a forceful reminder to 47 Class 1, intercity, state and local transit authorities in a direct letter: "Safety is our top priority at the U.S. Department of Transportation as we believe it is in your organization. It is expected that your organization is taking all possible measures to ensure that it will meet the requirements specified by Congress."

We wanted to learn more about what it really takes to deliver some of the key communications technology required to make the rails safer. There are few better placed to discuss developing, installing and implementing the technology, and offer advice to organizations that still have work to do, than **Digi International** the Internet of Things (IoT) connectivity products and services leader, that supplies PTC communications technology to a host of rail and transit operators across the U.S. We are fortunate to spend some time speaking exclusively with Steve Mazur, Director of Government Business Development at Digi, to gain his insights into this important area of our industry.

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Rail operators including the Southeastern Pennsylvania Transportation Authority (SEPTA), Long Island Rail Road (LIRR), Massachusetts Bay Transportation Authority (MBTA) and many others already work with Digi products. At the heart of their offering, is the Digi TransPort WR44 RR, a rugged enterprise-class cellular router, purpose-built for the rail industry and designed to be mounted on-board locomotives or any other rail vehicles. Its ratings, versatility, security features and performance make it ideal for Positive Train Control (PTC).

Steve tells us more about what the Digi WR44 offers to those using it: "It was first brought to market in late 2013 and we now have over 6,000 units busily working away in rail vehicles around the world. It provides a reliable high speed cellular connection for backhaul to the central office and Wi-Fi connections to nearby waysides. Its firewall and multiport routing keep control of communications to off-board and on-board systems, such as the train controller, event recorder and 220 MHz radio. It is small, but enclosed in a heavy-duty case designed for high shock and vibration environments. And it helps overcome certification challenges with already being AAR S-9401, EN50155 and AREMA compliant. We pride ourselves in being easy to work with, and provide easy setup, mass configuration, troubleshooting and maintenance."

One of the agencies already running more safely due to the Digi WR44, is the aforementioned SEPTA, the nation's sixth-largest public transportation system and the largest in Pennsylvania encompassing over 2,200 square miles. In metropolitan areas, like those that SEPTA serves, the reliability of cellular networks now rivals traditional wired networks. Mobile systems can expect to achieve more than 99% link availability without redundancy or other special provisions. Even greater performance is achievable through dual diversity antenna placement on the railcar or locomotive.

How Digi International is helping railroads overcome the PTC challenge. *[cont]*

"SEPTA was our first PTC customer in commuter rail. Installation began in early 2014 and continued through the year. It was certainly a complex project, working with a large network with extensive legacy technology already in operation, but the results have been fantastic.

Indeed, the deployment of cellular routers for PTC offers far more than just increased levels of safety and obeying a federal mandate; it fits into the growth of connectivity and wireless data technologies within rail and metro. Digi, founded in 1985, has always focused on IoT and machine-to-machine (M2M) communications. As Steve jokes, they were delivering the Internet of Things before it was even a term! From oil fields to hospitals and from casinos to freeways, quite simply, Digi works where machines work. And our industry, once lagging behind other verticals in its digital engagement, is now, in partnership with leaders like Digi, delivering real benefits to operators and passengers.

Still, the immediate focus of PTC remains safety. Following the Amtrak derailment in Washington in December 2017, a number of US politicians took the opportunity to inject urgency into the rollout. Sen. Richard Blumenthal, D-Conn., wrote in the New Haven Register: "Our worst railroad nightmare has happened again - tragic fatalities in a derailment resulting from entirely preventable excessive speed. It was preventable by Positive Train Control, a life-saving technology that can slow a speeding train and stop a collision. Three people might be alive in Washington State if Congress had not delayed the deadline for implementing PTC."

Digi TransPort WR44 RR Mobile Access Router

With the deadline fast approaching, Steve offers some advice for those who are not as far along with the rollout of PTC as they should be: "We know that half the nation's railways are not finished. So, if this is still a challenge for your organization, whether you are a railway or systems integrator, I would recommend you contact us for a discussion.

We can offer quick deployment and implementation, and have a proven track record, with large complex rail networks like SEPTA. Plenty of good work can still be done ahead of the deadline!"

For more information visit www.digi.com

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