Federal Railroad Administration
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Positive Train Control FAQ

Q: What are the benefits of PTC?

A: PTC systems will improve railroad safety by significantly reducing the probability of collisions between trains, casualties to roadway workers and damage to their equipment, speed enforcement accidents, and prevention of train movements through improperly aligned switches.

Q: What are the technological issues hampering implementation of PTC before the December 15, 2015 deadline?

A: There are just five major suppliers of the components that go into PTC, so the problem goes beyond technology and into the small pool of experts who can develop, test and install these components. The report to Congress lists seven sets of technical barriers to implementation:

Communications spectrum availability. Sufficient radio frequency (RF) spectrum must be made available. A recent APTA survey found that only three out of the more than 20 commuter railroads have been able to acquire the necessary spectrum. Acquisition of the spectrum represents a new cost liability affecting maintenance and operational budgets established years before the PTC requirement. Commuter railroads have attempted to get additional spectrum in the secondary market with varying degrees of success, and have requested that the FCC allocate this additional spectrum at no cost to them.

Radio Availability. In order to use the RF spectrum while supporting interoperability, software defined radios (SDR) must be developed and 60,000 radios must be built.

Design Specification Availability. There are three general types of specifications associated with PTC systems that have not been fully developed: technical interface standards, contract specifications, and interoperability standards.

Back Office Server and Dispatch System Availability. Most railroads do not have the final versions of this critical back office server software. The final version of the back office server software that will be most commonly used is not scheduled to be delivered until mid 2013 with a deployable production ready version until the fourth quarter of 2014

Track Database Verification. More than 63,000 miles of right of way with over 500,000 field assets that are critical to PTC system operation must be positively geolocated to a horizontal precision of less than 2.2 meters (approximately 7 feet) and a vertical precision of 0.8 meters (approximately 2 feet) to provide the accuracy necessary to safely warn or stop a locomotive.

Installation Engineering. The limited resources available, along with the 2015 deadline have forced the railroads to develop and install PTC technology in a less efficient way than would otherwise be the case. System design, development, and testing that normally would be undertaken sequentially must happen in parallel, which increases the severity of the impact of defects. Because of the finite pool of the necessary personnel, fewer qualified resources are available for other service and safety technology projects.

Reliability and availability of properly working equipment. The number of components with their individual reliability greatly impact overall system availability and reliability. Generally as the number of components increases, the reliability and availability of goes down. As the reliability and availability of the PTC systems decreases, the degree to which the PTC system enhances safety decreases. Development of components and architectures to ensure that there is no decrease in reliability and availability is expensive and time consuming, and results in increased costs and longer development integration, test and deployment times.

Programmatic Obstacles to Timely Implementation: Two non-technical barriers to implementation have been identified. The budget cycles and contracting processes for public entities precluded immediate action to implement systems, delaying the award of PTC acquisition contracts by as much as 3 years.

Second, the freight, intercity passenger, and commuter railroads required to implement PTC systems are all competing for a limited set of resources, in terms of both manpower and essential PTC system components. The pool of experienced PTC system equipment suppliers is limited. There are only five major suppliers who have significant prior experience with PTC equipment manufacturers and not all manufacture all PTC system equipment. The ability of these manufacturers to provide the required quantities of necessary components has yet to be demonstrated. In addition, the limited number of qualified technicians available to the railroad industry constrains the railroad's ability to complete work required for PTC system deployment.

Q: Did FRA ask Congress to move the deadline for PTC implementation?
A: No. FRA recommended that if Congress were to consider legislation to alter the deadline, the agency should be granted sufficient flexibility to assign new completion dates as appropriate for the obstacles to implementation.

If Congress were to consider legislation allowing for provisional certification of PTC systems, FRA recommends that such legislation allow a railroad to apply for provisional certification while the railroad works towards full certification. The provisional certification would require factual evidence demonstrating satisfactory PTC system safety performance, and would allow the temporary use of PTC systems to gather additional data while allowing railroads and the public to benefit from the systems, where installed.

Q: Does FRA support the efforts of some commuter railroads to have the FCC provide wireless spectrum for use in PTC, as opposed to requiring the railroads to seek it out on the private market? Should the federal government help the railroads with the cost of acquiring spectrum?
A: FRA has supported the railroads in regard to assuring sufficient spectrum is made available to successfully implement PTC, and has worked with FCC to try to identify spectrum issues and to develop solutions. However, actual acquisition of spectrum is ultimately an FCC's issue and the Administration

has no formal policy regarding precisely how that is accomplished. That would be a FCC policy decision that we would not be involved with.

Q: How about overall costs of installing PTC? Should high-speed rail funding be available for installing PTC? Does the FRA support additional funding for the costs of installing these systems?
A: $50 million per year in grants has been authorized for safety technology development for fiscal years 2009 to 2013 , but only $50 million has been appropriated (FY10). With this funding, FRA awarded nine grants to address common PTC implementation technology issues. This work is to be completed by March 31, 2013.

Through state partners, railroads are eligible to apply for grants under the High-Speed and Intercity Passenger Rail program, as well as DOT's TIGER program. Finally, railroads can also apply for a loan from FRA's Railroad Rehabilitation & Improvement Financing (RRIF) Program, and DOT's Transportation Infrastructure Finance and Innovation Act (TIFIA) loan program.

Q: How does the 2013 budget request support the congressionally mandated December 31, 2015, implementation deadline for Positive Train Control?
A: FRA is continuing to support national deployment of Positive Train Control (PTC) to improve the safety, security, and efficiency of freight, intercity passenger rail, and commuter rail services through regulatory reform, project safety oversight, technology development, review and approval of PTC Implementation Plans, other PTC-related documentation, and financial assistance. Funding will be used to provide continuous field engineering and pre-revenue service system testing oversight support.

Q: How does FRA's final rule and January, 2013 Notice of Proposed Rulemaking (NPRM) relate to the National Transportation Safety Board's (NTSB) Most Wanted List?
A: The NTSB called for the implementation of PTC in its 2013 Most Wanted list (published, November, 2012). FRA's PTC rulemakings, including the current NPRM are consistent with NTSB's stated goals. The NPRM moves the industry one step closer to full implementation by providing the rail industry with $154 million in regulatory relief and addressing several technical issues that emerged in the two prior PTC rulemakings. The comment period for the NPRM closed March, 11, 2013.