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Train Control

Intelligent Grade Crossings

Positive Train Control ▶

Related Links

- [Get Positive Train Control updates by email](#)
- [Positive Train Control PTC Annual and Quarterly Reports](#)
- [Railroads' PTC Dockets](#)

Related Documents

- [Information Guide on Positive Train Control in 49 CFR Part 236, Subpart I](#)
- [Research Publications on Positive Train Control \(PTC\): January 2015-July 2018](#)

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Positive Train Control (PTC)

Overview

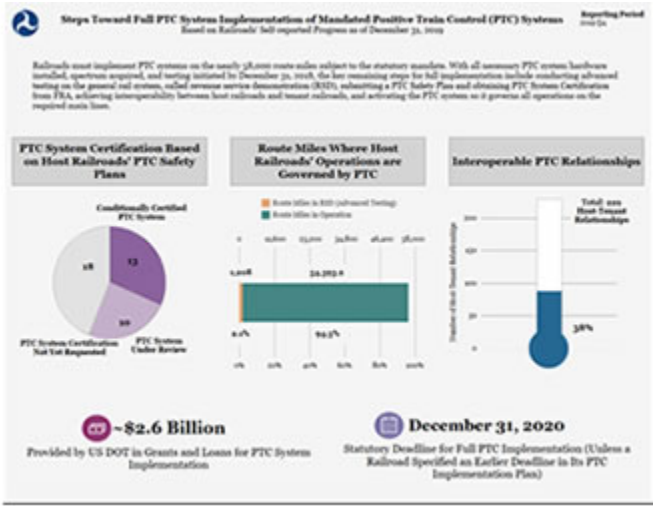
Positive Train Control (PTC) systems are designed to prevent train-to-train collisions, over-speed derailments, incursions into established work zones, and movements of trains through switches left in the wrong position. On December 29, 2020, FRA announced that PTC technology is in operation on all 57,536 required freight and passenger railroad route miles, prior to the December 31, 2020 statutory deadline set forth by Congress. Furthermore, as of that date railroads had reported that interoperability has been achieved between each applicable host and tenant railroad that currently operates on PTC-governed main lines. In addition, as required, FRA certified that each host railroad’s PTC system complies with the technical requirements for PTC systems. This accomplishment was the culmination of over a decade of sustained and direct engagement and collaboration among FRA and the 41 railroads currently subject to the statutory mandate, including seven Class I railroads, Amtrak, 28 commuter railroads, 5 other freight railroads that host regularly scheduled intercity or commuter rail passenger service, as well as key railroad industry associations, material suppliers, and service providers.

The Rail Safety Improvement Act of 2008 (RSIA) mandated the implementation of PTC systems on Class I railroads’ main lines over which five million or more gross tons of annual traffic and certain hazardous materials are transported, and on any main lines over which intercity or commuter rail passenger transportation is regularly provided. RSIA and FRA’s implementing regulations also require PTC systems to be interoperable, meaning that the locomotives of host and tenant railroads operating on the same main line must communicate with and respond to the PTC system, including during uninterrupted movements over property boundaries.

Prior to its completion, each railroad subject to the Congressional mandate submitted to FRA [Annual and Quarterly Reports](#) detailing their progress towards implementing PTC. From 2016 through 2018, FRA published infographics depicting railroad quarterly progress updates: [Steps Towards Full Implementation of Mandated PTC Systems \(Q4 2018\)](#), [Each Railroads Progress Towards Meeting Statutory Criteria for an Extension](#), [PTC Implementation Status by Railroad](#), and [PTC Implementation Status by Freight and Passenger Rail](#). Beginning in 2018, FRA published new quarterly infographics [here](#) summarizing both the industry’s progress, and each railroad’s incremental progress toward completing the major requirements of full PTC system implementation. In the fall of 2020, FRA published its [PTC-related Outreach and Communication with the Industry](#), detailing the agency’s exhaustive stakeholder engagement since 2017 to hasten and facilitate full PTC implementation.

PTC Document Submission: Railroads that are subject to the statutory mandate must submit various PTC-related documents to FRA and obtain written approval. Those documents, including PTC Implementation Plans, requests to conduct testing of uncertified PTC systems on the general rail network (including RSD), PTC Safety Plans, and FRA’s decision letters are available on www.regulations.gov under each railroad's PTC docket number, which are generally listed [here](#).

PTC Background: In 2008, Congress passed and the President signed the Rail Safety Improvement Act of 2008 requiring PTC systems to be fully implemented by December 31, 2015, on Class I railroads’ main lines



[Click here](#) for detailed PTC implementation progress graphics



that transport poison- or toxic-by-inhalation hazardous materials and any main lines with regularly scheduled intercity or commuter rail passenger service. In October 2015, Congress extended the deadline for full implementation by at least three years to December 31, 2018, and required FRA to approve any railroad's request for an "alternative schedule and sequence" with a final deadline not later than December 31, 2020, if a railroad demonstrated it met certain statutory criteria by December 31, 2018. PTC systems use communication-based and processor-based train control technology to reliably and functionally prevent train-to-train collisions, overspeed derailments, incursions into established work zone limits, and movements of trains through switches in the wrong position. FRA will continue to perform comprehensive oversight, provide technical assistance to all applicable host railroads and tenant railroads, and work with other stakeholders, including railroad associations and PTC system vendors and suppliers, until all railroads subject to the mandate fully implement FRA-certified and interoperable PTC systems by the statutory deadline.

[Click here](#) for PTC-related outreach and communication with the industry

PTC Grants and Loans: US DOT has provided grants and loans for PTC system implementation through the following programs:

- [BUILD/TIGER Grants Program](#)
- [FTA Commuter Rail Positive Train Control Program \(FY 2017\)](#)
- [High-Speed Intercity Passenger Rail Program \(HSIPR\)](#)
- [Positive Train Control Grant Program FY 2017](#)
- [PTC Systems Grants under the Consolidated Rail Infrastructure and Safety Improvements \(CRISI\) Program \(FY 2018\)](#)
- [Railroad Rehabilitation & Improvement Financing \(RRIF\)](#)
- [Railroad Safety Technology Grants for Positive Train Control \(PTC\) Program FY 2010, 2014 and 2016](#)
- [Transportation Infrastructure Finance and Innovation Act \(TIFIA\)](#)

FRA-hosted Symposia and PTC Collaboration Sessions: Beginning in 2018 and planned through 2020, FRA hosts a series of collaboration sessions intended to bring together railroads, railroad associations, and FRA's PTC experts. Topics have included statutory and regulatory requirements, testing best practices, and PTC System Certification. All past materials can be found below:

- [PTC Symposium June 2018: Revenue Service Demonstration, Substitute Criteria, Alternative Schedule, and Full Implementation of PTC Systems](#)
- [PTC Symposium July 2018: PTC Testing](#)
- [PTC Symposium August 2018: PTC System Certification](#)
- [PTC Collaboration Session: First of Six in 2019 and 2020](#)
- [PTC Collaboration Session: Second of Six in 2019 and 2020](#)
- [PTC Collaboration Session: Third of Six in 2019 and 2020](#)
- [PTC Collaboration Session: Fourth of Six in 2019 and 2020](#)
- [PTC Collaboration Session: Fifth of Six in 2019 and 2020](#)
- [PTC Collaboration Session: Final of Six in 2019 and 2020](#)

eLibrary

- [Positive Train Control Quarterly Progress Report Form](#)
- [Positive Train Control Annual Progress Report Form](#)
- [Federal Railroad Administration July 2018 Report to Congress](#)
- [Safety Advisory 2021-01; Positive Train Control Interface Design Issue With Locomotive and Cab Car Braking Systems](#)

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