

# PTC Implementation – The Operating Agency View

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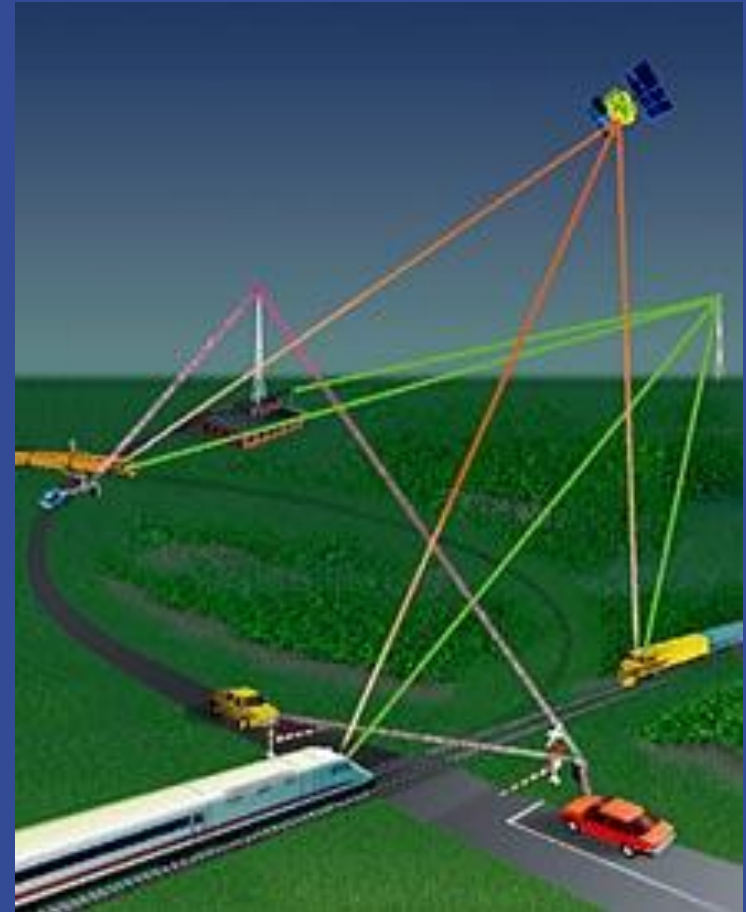


# What's PTC?

## HOW IT WORKS

### Key components:

- Equipment on locomotive cars detects position and relation to other objects
- Equipment at control center – broadcasts authority for train movements
- Wayside interface units
- Wireless data line between train and control center



# What's PTC?

## Essential elements:

- Required of all passenger intercity and commuter railroads; freight mainlines or those carrying TIH cargo
- Automatic control of train movements
- Interoperability
- Radio spectrum near 220 MHz (218-222 MHz)

## To achieve:

- Train separation or collision avoidance
- Speed control



# Statutes and Regulations

Rail Safety Improvement Act of 2008 (**RSIA**), Sec. 104: Positive Train Control (**PTC**) technology (49 U.S.C. 20157)

- Original implementation deadline: Dec. 31, 2015

Regulations: 49 C.F.R. Subpart I – part 236



# Statutes and Regulations

Positive Train Control Enforcement and Implementation Act of 2015 – amended 49 U.S.C. 20157

- Extended implementation deadline to Dec. 31, 2018
- Alternative schedule deadline Dec. 31, 2020 – if sufficient completion of implementation in place by end of 2018

**ALL FREIGHT AND PASSENGER RAILROADS REQUIRED TO INSTALL PTC HAVE MET 2018 DEADLINE OR QUALIFIED FOR ALTERNATE SCHEDULE**



# FRA Review

- FRA review – iterative:
  - PTC Implementation Plan (**PTCIP**) (49 C.F.R. § 236.1011)
  - PTC Development Plan (**PTCDP**) and Type Approval (49 C.F.R. § 236.1013) - Components
  - PTC Safety Plan (**PTCSP**) (49 C.F.R. § 236.1015) – Procedures
    - PTCDP and PTCSP need not be submitted simultaneously with PTCIP
  - FRA may require independent third-party verification and validation of product safety plan (49 C.F.R. § 236.1017; 49 C.F.R. § 236.913)



# Implementation

## Challenges:

- Novel procurement issues:
  - No off-the-shelf technology – hardware or software
  - Acquisition of radio spectrum in limited band
- Cost – unfunded mandate
- Coordination among railroads – at least one freight RR, and usually Amtrak



# Implementation

- Contracting and procurement
- Internal coordination and communication
- Addressing the public and media
- Intense technical effort with FRA





# Contracting and Procurement

- Scant negotiating leverage
  - Few off-the-shelf components – frequent sole source procurements
  - Interoperability requirements – choice of systems externally dictated
  - Spectrum – owned by consortium of Class I RRs
    - PTC 220 LLC
  - Radio vendor – owned by consortium of Class I RRs
    - MeteorComm



# Contracting and Procurement

- Limited market
  - Small vendor ecosystem – supply chain bottlenecks
  - Turnkey solutions desired – not always achievable
- Vendors demanded uniform contracts
  - Sovereign immunity – vendors sought waivers
  - Difficult to allocate risk – vendors sought blanket indemnities
  - Insurance/indemnity issues
  - Vendor-specified venue – not always possible under state law



# Contracting and Procurement

- Solutions
  - Sublease spectrum from Class I host
  - Use vendor's standard contract – negotiate amendments as riders
  - Allocate risk – each party responsible for its own
  - Cap liability using statutory \$295 million cap at 49 U.S.C. 28103 - insure



# Internal Communication

- Close coordination among engineering, safety and executive teams = success
- Contracting and negotiating issues frequently complex
- Concise (but not cursory) updates to Board



# Addressing Public and Media

- Frequent misunderstanding of what PTC is and can do
- Public interest – none to intense
  - Wide variation across US depending on history of incidents
- Engage your electeds!



# Looking Ahead

- Effect on timetables
- Effect on fuel usage
- Staffing demands
- Interactions with freight railroads
- Metro-North – \$2.3 million FRA grant for communications test lab
  - Efficient spectrum utilization
  - Operational reliability
- Procurement cycle begins again in 5 years when radios require replacement . . .



# Questions?

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