



**Massachusetts Bay  
Transportation Authority**

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# **Commuter Rail Positive Train Control (PTC)**

**Program Update**

**May 13, 2019**



## OVERVIEW

This presentation is to update the Fiscal and Management Control Board regarding the current activities and progress of the MBTA's PTC Program with a focus on the status of resolution of issues with Siemens PTC Hardware and Software



## CURRENT PTC ACTIVITIES AND PROGRESS

- RSD (PTC Implemented) on the Lowell Line (Pilot)
  - Consecutive Run count at **96** (as of May 6<sup>th</sup>)
  - 384 Consecutive runs without anomaly required to enter Extended RSD on the North Side
- RSD on the Fitchburg Line commenced on May 13<sup>th</sup>
  - This is the sixth line in RSD
  - FRA approved RSD for the Fitchburg Line (Boston to Littleton) in advance of MBTA achieving 384 consecutive runs on the Lowell Line due to the ongoing issue with the Siemens PTC equipment recalls
  - MBTA will still need to achieve 384 runs before entering Extended RSD on the North Side
  - Allows MBTA to keep the PTC system implementation moving forward, reduces the risk to the schedule and allows accumulation of more data for the PTC Safety Plan



## SIEMENS HARDWARE ISSUES

- Siemens, as a subcontractor to ASTS, is supplying **transponder reader hardware** that was used to upgrade certain MBTA vehicles under the PTC program
  - In February and April, 2019, Siemens recalled components of this equipment that could be the cause of transponder reading issues that the MBTA had been investigating
  - Antennas show improved performance after the second recall, however, transponder reading performance is still inconsistent and does not meet the requirements of the specifications
  - Executive level meetings with ASTS and Siemens continue to be held to ensure that correction of MBTA's transponder reading performance issues are given Siemens' highest priority
  - Siemens appeared before FMCB on April 29, 2019 and made a commitment to submit reports to MBTA on May 3<sup>rd</sup> and return today to discuss the root cause of the issue



## SIEMENS HARDWARE ISSUES

- Siemens reports were issued to MBTA on May 3<sup>rd</sup> and May 8<sup>th</sup>
  - Design review confirmed no fatal flaws in antenna design
  - CTV design review is still in progress
  - Manufacturing defects were identified (recall notices)
  - Equipment issues have been found on MBTA vehicles that vary from vehicle to vehicle - due to installation issues and faulty components
  - Results are inconclusive - root cause of transponder reading issue not yet identified
- Investigation is continuing
  - Decoder software installed on 1 vehicle to see if it improves performance
  - Antenna test equipment installed for real time data analysis
  - Installing remanufactured equipment on 1 vehicle per day
  - Monitoring performance of poor performing vehicles



## SIEMENS SOFTWARE ISSUES

- Siemens, as a subcontractor to ASTS, is supplying **the ACSES software** that is used on all of the MBTA's locomotives and cab cars
  - Siemens Software updates are required to correct functionality issues that impact the North Side Lines in particular due to the lack of ATC on those lines
  - ASTS has confirmed the release dates of these updates for revenue service:
    - Release #1 in June 2019
    - Release #2 in October 2019



## SUMMARY

- PTC continues to be the MBTA's highest priority capital program
- Siemens hardware and software issues present a continuing risk to the program that is being closely managed at the executive level
  - Root cause of transponder reading issue has not yet been determined
  - Software update cycle time of 6-9 months creates schedule risk
- MBTA will continue to execute PTC Program Plans in order to deploy PTC across the entire Commuter Rail System in compliance with the FRA regulations, which require complete deployment by December 31, 2020