



CBOSS PTC Program Status

Board of Directors
July 6, 2017



Discussion

- Program background
- Contract Termination
- Contracting Objectives and Strategy
- CBOSS PTC Program Status
- PTC Industry Progress
- Next Steps



Background

- Began CBOSS development prior to the Rail Safety Improvement Act of 2008
- CBOSS product designed to meet all requirements for PTC including interoperability
- CBOSS Prime Contract to PTG: October 2011
- \$239 m approved and funded budget
 - \$158M for PTC contract
- Original in-service date October 2015
- Persistent delays, associated program cost increases and continued lack of performance warranted termination of the PTG contract in February 2017

3



Termination and actions since

- Decision to terminate a last resort
 - Peer review, partnering
- Following termination the following steps were taken:
 - Contacted all funding partners
 - Advised and sought advice from regulators (FRA and FTA)
 - Secured program assets (Fiber, BCCF, Spares, etc.)
 - Gauged key technology partners' willingness/desire/capability to continue with the program
 - Identified critical activities to achieve RSD in December 2018
 - Assessed funding available to continue with the program
- As of May 2017 \$49M left to complete the CBOSS program
 - Enhanced by recent interoperability grant from FRA

4



Contracting Objectives and Strategy

- CBOSS contracting objectives
 - Meet December 2018 Federal PTC mandate
 - Immediately continue development of critical CBOSS systems/software
 - Retain knowledge and experience
 - Minimize procurement time
 - Maximize cost efficiencies
- Recommend and implement two-phased approach to contracting for CBOSS project completion
- Phase 1- Short term for critical activities
 - Contract awarded to Alstom in May for software development
 - Proposed early integrator to provide a detailed analysis of program left to be performed (ARINC contract for consideration today)
- Phase 2-Long term contract(s) for the completion of CBOSS
 - Projected Fall 2017

5



CBOSS PTC Program Status

- Installation of many subsystems complete
 - Overall integration and acceptance is pending
- On-Board Equipment Installation Complete
- Wayside Interface Unit Installation and FRA Official Validation Testing Complete
- Fiber Optic Cable Installation Complete
- Base Station Installation Complete
- BCCF build-out completed – minor punch list items remain
- High Rail Testing for FRA Official Critical Assets Complete
- FRA Rescue Train Brake Testing in Progress
- Draft RSD application submitted to FRA
 - FRA has completed review and provided comments

6

Industry Progress

- PTC remains a struggle
- FRA asserts there will be no extension to the 2018 deadline
- 41 active railroads are implementing PTC
 - 28 passenger railroads, 2 are conditionally approved
- Installation is progressing
 - 44% locomotives installed
 - 20% wayside track equipment installed
- Interoperability a significant challenge even when using same technology
- Funding is difficult, operations funding will not be available from grants. Significant impacts to operating budgets
- Availability of resources (people and technology) a challenge

7

Next Steps

- Continue key software development under Alstom
- Phase 1 of integration process – determine status of system left from terminated integrator to finalize remaining scope
- Phase 2 of integration process – negotiate contracts for new integrator and key subs
- New baseline schedule to be confirmed once new integrator and key subcontractors are in place
- Submit formal RSD Application
- Build JPB/TASI team through Go Live efforts

8



Next Steps - continued

- Implement UPRR territory dual - equip strategy
 - Based on recent JPB / UPRR agreement
- Complete tenant testing on Caltrain property
- Continue to strengthen open relationship with FRA to insure support during transition
- Implement long term service strategy to maintain PTC system
 - Based on recent FRA feedback, yearly maintenance of PTC systems nation-wide will require more extensive resources and funding than originally expected

9



Questions?

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10