



Communication Based Overlay Signal System Project Status

Board of Directors
December 4, 2014
Agenda Item 10



Background

- Issue Communications Based Overlay Signal System Design/Procure/Install Turn-key RFP – August 2010
- Awarded Prime Contact – October 2011
- Executed a Service Agreement with California High Speed Rail Authority (HSR11-04) for Federal Railroad Administration Funding – December 2011
- Issued Notice to Proceed to Parson Transportation Group - Jan. 27, 2012
- Executed Fiber Optic Option – April 26, 2012
- Exercised Option 1 (Phase 2) – April 30, 2013
- Exercised Option 2 (Phase 3) – Aug. 1, 2013



CBOSS Project Requirement

Positive Train Control (Rail Safety Act 2008)

- Prevent Train-to-Train Collisions
- Prevent Overspeed Derailments
- Prevent incursions into established work zones
- Prevent movement through a misaligned switch

Additional Requirements:

- Enhanced Crossing Safety / Performance
- Improved Headways and Operational Flexibility
- Enforcement of Scheduled Station Stops
- Schedule Management
- Employee In Charge

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Design/Install System Turn-key Contractor Scope of Work

- Subsystem and System Design & Integration
- Procurement of Materials and Equipment
- Installation / Testing / Commissioning
- Training, including Cab Simulator
- Backup Central Control Facility
- FRA Certification and Documentation
- Project Management
- Warranty
- Long-term Support

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CBOSS Project Solution Overview

- Interoperable Train Control Compliant Solution
- Onboard and Wayside – Interoperable Incremental Train Control System Supplied by GE Transportation - I-ITCS
- Back Office Server Supplied by WABTEC
- Backup Central Control Facility with an ARINC Office System
- PTC Data Communication Network with a Fiber Optic Backbone

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Contract Phasing

- Required to Support Project Funding Strategy
- Base Contract (Phase 1) – Notice to Proceed through CBOSS PTC Subsystem and System Critical Design (Includes Bond)
- Option 1 (Phase 2) – Subsystem and System Final Design, Factory Acceptance Test and Installation of Data Communication Subsystem with Fiber Optic Network Backbone
- Option 2 (Phases 3/4) – Remaining Subsystems and System Procurement, Installation, Testing, Training, Certification, Commissioning, Acceptance and Includes One-year Warranty

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Phases 1, 2 & 3 Major Accomplishments

- Completed Project Execution Planning, Preliminary Design, System and Subsystem Critical Design and Final Design Approval
- Received FRA Approval for Caltrain PTC Development Plan on Sept. 26, 2014
- Received FRA Approval for Caltrain PTC Implementation Plan and Request for Amendment on Oct. 24, 2014
- Secured the lease for the Backup Central Control Facility and completed BCCF tenant improvements
- Continue to work with UPRR and Other Tenant Railroads on Interoperability Coordination Activities
- Completed all tasks for the CHSRA/FRA HSR11-04

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Phases 1, 2 & 3 Major Accomplishments

- Continued community outreach for installation and testing of Data Communication and Wayside Subsystems
- Fiber installed and tested from MP 26 to CP Lick and BCCF; installation in progress from MP .03 to MP 26
- Wayside Subsystem installation and testing in progress
- Base stations 6, 7 and 9 installed; testing in progress
- Installation of equipment on eight pilot vehicles complete; equipment installation on the rest of the fleet has begun.
- Software development and Factory Acceptance Testing for Office Subsystems complete
- Software development and FAT for Cab Subsystem Release #1 complete

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Project Phase 3 Milestones

Description	Completion Date
JPB Approval for Option 2 (Phase 3)	Aug 2013
JPB Issued NTP for Option 2 (Phase 3)	Nov 2013
Commence Fiber Installation	Sept 2013
Commence Wayside Subsystem Installation	Nov 2013
Commence Pilot Segment 3 Pre-testing	Oct 2014
Commence Field Integrated Testing	Jan 2015
FRA Safety Certification	Sept 2015
System in Service	Oct 2015
Final System Acceptance	May 2016

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Project Total Installed Cost Update

Description	Turn-key Contractor Cost	Total Project Cost
Project Planning and Procurement	0	\$4.6MM
Phase 1 - Contract NTP – Critical Design	\$16.3MM	\$22.8MM
Phase 2 - Final Design and DCS Installation Including Fiber Backbone	\$35.3MM	\$51.4MM
Phase 3/4 - Field Installation, Testing and Commissioning through Acceptance & Warranty	\$86.5MM	\$152.2MM
Total	\$138MM	\$231.0 MM

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Next Steps

- Complete Fiber installation and testing (3/2015)
- Complete Wayside Subsystem installation and testing (3/2015)
- Complete Cab Software development and testing (4/2015)
- Complete Factory Integrated Testing (4/2015)
- Commence Field Integrated Testing in Segment #3 (1/2015)
- Continue Cab Subsystem installation and testing

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Questions?

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