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

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
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

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
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

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
Project Phase 3 Milestones

<table>
<thead>
<tr>
<th>Description</th>
<th>Completion Date</th>
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<tbody>
<tr>
<td>JPB Approval for Option 2 (Phase 3)</td>
<td>Aug 2013</td>
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<tr>
<td>JPB Issued NTP for Option 2 (Phase 3)</td>
<td>Nov 2013</td>
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<tr>
<td>Commence Fiber Installation</td>
<td>Sept 2013</td>
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<tr>
<td>Commence Wayside Subsystem Installation</td>
<td>Nov 2013</td>
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<tr>
<td>Commence Pilot Segment 3 Pre-testing</td>
<td>Oct 2014</td>
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<tr>
<td>Commence Field Integrated Testing</td>
<td>Jan 2015</td>
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<tr>
<td>FRA Safety Certification</td>
<td>Sept 2015</td>
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<tr>
<td>System in Service</td>
<td>Oct 2015</td>
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<tr>
<td>Final System Acceptance</td>
<td>May 2016</td>
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Project Total Installed Cost Update

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

Questions?

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