Communication Based Overlay Signal System Project Status

Board of Directors
June 6, 2013

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 (NTP) to Parson Transportation Group - January 27, 2012
• Executed Fiber Optic Option - April 26, 2012
• Exercised Option 1 (Phase 2) – April 30, 2013
CBOSS Project Requirement

Positive Train Control (Rail Safety Act 2008)

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

Additional Requirements

• Enhanced Crossing Safety / Performance
• Enhanced 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 (Phase 3) – Remaining Subsystems and System Procurement, Installation, Testing, Training, Certification, Commissioning, Acceptance and Includes One-year Warranty.
Phase 1 & 2 Major Accomplishments

- Completed Project Execution Planning, Preliminary Design, System and Subsystem Critical Design Approval
- Submitted Project PTC Development Plan to FRA (March 2012 and May 2013)
- Secured the lease for the Backup Central Control Facility and commenced BCCF tenant improvement conceptual design
- Continue to work with UPRR and Other Tenant Railroads on the Interoperability Coordination Plan
- Submitted Deliverable Packages (Tasks 1 - 6) to CHSRA/FRA that are in agreement with HSR11-04
- Commenced community outreach for installation of Data Communication Subsystem
- Commenced System and Subsystem Final Design

Project Phase 3 Milestones

<table>
<thead>
<tr>
<th>Description</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>JPB Board Approval for Option 2 (Phase 3)</td>
<td>Aug 2013</td>
</tr>
<tr>
<td>JPB Issue NTP for Option 2 (Phase 3)</td>
<td>Aug 2013</td>
</tr>
<tr>
<td>Commence Wayside, Cab, Office Subsystems Installation</td>
<td>Nov 2013</td>
</tr>
<tr>
<td>Commence Pilot Segment 3 Testing</td>
<td>Oct 2014</td>
</tr>
<tr>
<td>Commence Field Integrated Testing</td>
<td>Jan 2015</td>
</tr>
<tr>
<td>FRA Safety Certification</td>
<td>Sept 2015</td>
</tr>
<tr>
<td>System in Service</td>
<td>Oct 2015</td>
</tr>
<tr>
<td>Final System Acceptance</td>
<td>May 2016</td>
</tr>
</tbody>
</table>
### Project Total Installed Cost

<table>
<thead>
<tr>
<th>Description</th>
<th>Turn-key Contractor Cost</th>
<th>Total Project Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Planning and Procurement</td>
<td>0</td>
<td>$4.6 million</td>
</tr>
<tr>
<td>Phase 1 - Contract NTP – Critical Design</td>
<td>$16.3 million</td>
<td>$23.7 million</td>
</tr>
<tr>
<td>Phase 2 - Final Design and DCS Installation Including Fiber Backbone</td>
<td>$35.3 million</td>
<td>$52.6 million</td>
</tr>
<tr>
<td>Phase 3 - Field Installation, Testing and Commissioning through Acceptance &amp; Warranty</td>
<td>$86.5 million</td>
<td>$150.1 million</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$138 million</strong></td>
<td><strong>$231 million</strong></td>
</tr>
</tbody>
</table>

### Next Steps

- Approval all Phase 1 Milestones: June 2013
- JPB Award Option 2 (Phase 3) Contract for $86.5 million: August 2013
- Completion of JPB-CHSRA Agreement of HSR11-04: December 2013
- Commence Fiber Installation: September 2013
Questions?

CaltrainPTC@samtrans.com