Advanced Signal System Project Status

February 25, 2016

Background

• Issue Design/Procure/Install Turn-key RFP: Aug 2010
• Awarded Prime Contact: Oct 2011
• Executed Service Agreement with CHSRA for Federal Railroad Administration Funding: Dec 2011
• Issued Notice to Proceed Parson Transportation Group: Jan 2012
• Executed Fiber Optic Option: April 2012
• Exercised Option 1 (Phase 2): April 2013
• Exercised Option 2 (Phase 3): Aug 2013
• Exercised Option 2 (Phase 4): Dec 2014
Project Requirements

• PTC (Federal Mandate)
  – Prevent train to train collisions
  – Prevent over speed derailments
  – Prevent incursions into established work zones
  – Prevent movement through a misaligned switch
  – Interoperability

• CBOSS (Caltrain Improvements)
  – Enhanced crossing safety / performance
  – Improved headways and operational flexibility
  – Enforcement of scheduled station stops
  – Schedule management
  – Employee In Charge

Project Status

• Complete
  – On-Board Equipment Installation
  – Wayside Interface Unit Installation and FRA Validation Testing
  – Fiber Optic Cable Installation
  – Base Station Installation
  – Backup Control Center Facility (BCCF) Build-out

• Continuing
  – Dynamic Testing with Test Train
  – High Rail Testing for FRA Official Critical Assets
  – Testing Conducted from BCCF
Schedule and Budget

- New Project Baseline Schedule Developed
- Revenue Service Demonstration delayed Q4 2016
  - I-ITCS Software Release Delays
  - Contractor Execution Test Plans and Schedules
  - FRA process in flux
- Schedule delay requires additional funding
  - Commercial negotiation with Contractor
  - Funding for extension of Owners Team
  - Considering for FY17 Budget Process

Project Key Milestones

<table>
<thead>
<tr>
<th>Project Key Milestones</th>
<th>Planned Baseline Finish</th>
<th>Actual/ Forecast Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 JPB Issued Notice to Proceed to PTG – Phase 1</td>
<td>Jan 2012</td>
<td>Jan 2012</td>
</tr>
<tr>
<td>2 Completion of Preliminary Design Review and Acceptance</td>
<td>Sept 2012</td>
<td>Nov 2012</td>
</tr>
<tr>
<td>3 Completion of Critical Design Review and Acceptance</td>
<td>Feb 2013</td>
<td>June 2013</td>
</tr>
<tr>
<td>4 Completion of Final Design Review and Acceptance</td>
<td>Jul 2013</td>
<td>Jun 2014</td>
</tr>
<tr>
<td>5 Completion of Factory Integrated Systems/Subsystem Demo</td>
<td>Sept 2014</td>
<td>Apr 2015</td>
</tr>
<tr>
<td>6 Completion of Data Communication Subsystem (DCS) Installa</td>
<td>Sept 2014</td>
<td>Apr 2015</td>
</tr>
<tr>
<td>tion and Verification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Completion of Field Subsystem Installation and Verification</td>
<td>Jan 2015</td>
<td>Mar 2015</td>
</tr>
<tr>
<td>8 Completion of Onboard Subsystem Installation and Verifica</td>
<td>Jun 2015</td>
<td>Aug 2015</td>
</tr>
<tr>
<td>tion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Complete build out of BCCF for CBOSS PTC</td>
<td>Feb 2014</td>
<td>Sept 2014</td>
</tr>
<tr>
<td>10 Commence FRA Pilot Section Demonstration</td>
<td>Oct 2014</td>
<td>May 2015</td>
</tr>
<tr>
<td>11 Submit Revenue Service Demonstration Application</td>
<td>Jul 2015</td>
<td>Q3 2016</td>
</tr>
<tr>
<td>12 Revenue Service Demonstration</td>
<td>Oct 2015</td>
<td>Q4 2016</td>
</tr>
<tr>
<td>13 Final System Acceptance</td>
<td>May 2016</td>
<td>Q2 2017</td>
</tr>
</tbody>
</table>
Next Steps

• Develop and Submit Revised Project Budget
• Complete Segment #3 Pilot Testing and FRA Witness Testing
• Submit Revenue Service Demonstration Application
• Complete Segment #2 and Segment #1 Testing

Questions

More Information
website: www.caltrain.com/cbossptc
email: caltrainptc@samtrans.com
phone: 650.508.6499