



Project Overview/Update: Advanced Signal System CBOSS PTC

Board of Directors
September 5, 2013



CBOSS PTC - What is it?

- Communications Based Overlay Signal System Positive Train Control
- Fiber Optic Network
- Project Requirements
 - Includes federal mandate (PTC)
 - Improves Caltrain performance
- Project Partners
 - Federal Railroad Administration, Union Pacific, California High-Speed Rail Authority
- Needed for Blended System

CBOSS PTC Requirements

- PTC
 - Prevent train-to-train collisions
 - Prevent over speed derailments
 - Prevent incursions into established work zones
 - Prevent movement through a misaligned switch
 - Interoperability
- Caltrain
 - Enhanced crossing safety / performance
 - Improved headways and operational flexibility
 - Enforcement of scheduled station stops
 - Schedule management
 - Employee In Charge

Project Total Cost and Milestones

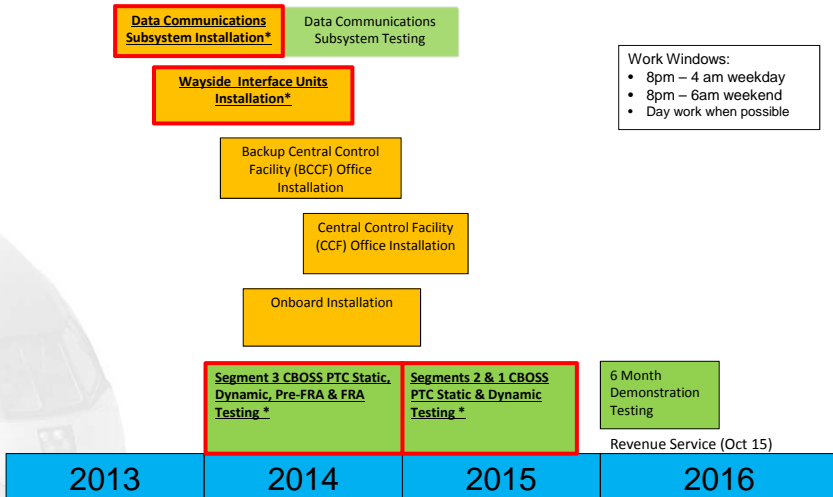
Description	Cost (in millions)	Milestones
Project Planning and Procurement	\$5	2010 - 2011
Phase 1 - Critical Design	\$25	2012 - 2013
Phase 2 - Final Design, Data Communications Subsystem & Fiber Backbone Installation	\$51	2013 - 2014
Phase 3/4 - Installation, Testing, Commissioning	\$150	2014 - 2016 (Revenue service Oct. 2015)
Total	\$231	



Segments – South to North



Installation Milestones (Entire Corridor)



Milestones (Example San Jose)

	Fall '13	Winter '13/14	Spring '14	Summer '14	Fall '14	Winter '14/15
Data Communications Subsystem Installation	Bore /Trench Three weeks	Inner-Duct Two weeks Radio Frequency Base Stations Two weeks	Cable One week			
Wayside Interface Units		Wayside Installation Eight weeks				
Testing		Static Testing One week	Data Communications Subsystem Test One week		Dynamic Testing One week	FRA Related Testing TBD

Fiber Installation



Trench (with mini excavator or by hand, within the Caltrain right of way)



Conduit placed in trench (~42" deep x 9.5" wide, within the Caltrain right of way)



Potholing (Vacuum-excitation preparing the job site, within the Caltrain right of way)

Fiber Installation continued



Boring (required at many crossings, within the Caltrain right of way)



Conduit on tunnel or bridge (clamps/hangers, may require lane closure during off-peak hours)

Base Station Installation



Pour foundation

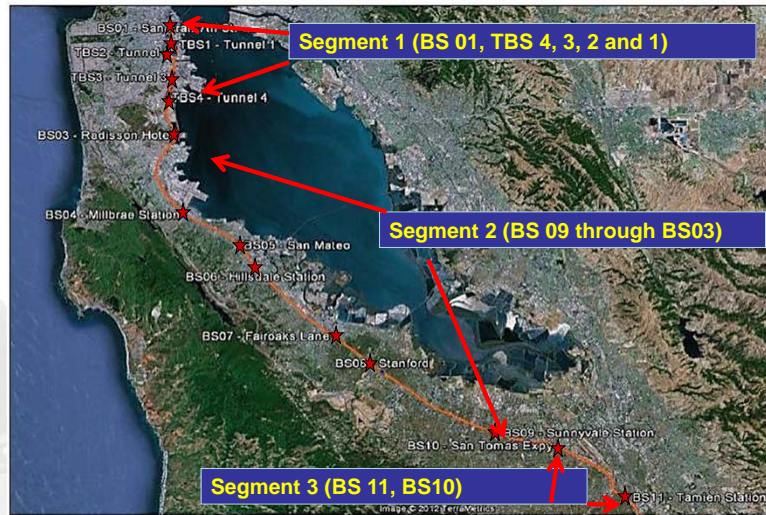


Base station footprint



Example 80' pole already on right of way

Base Station Map



Base Station Installation

- 14 Base Stations within the Caltrain right of way
 - Many near Caltrain stations
 - Located within the ROW in the following cities:

San Francisco (5)	Unincorporated San Mateo County
Brisbane	Palo Alto
Burlingame	Sunnyvale
San Mateo (2)	Santa Clara
San Jose	
- 8 x 8 ft. shelter and 40-80 ft. poles
- Average two weeks installation per base station

Outreach

- Pro-active Approach
- Activities (March – August 2013)
 - City/County Staff Coordination Group (3 meetings)
 - Local Policy Maker Group (2 meetings)
 - Next meeting follow-up on night work activities
 - One-on-one (each of the 17 cities/3 counties)
 - Provided fact sheets, and tentative jurisdiction schedule
 - Discussed tailored outreach and review process for communication material
 - Federal and State Staff Quarterly Call
 - Follow-up e-mail with project update

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On-going Outreach

- Project Information Distribution
 - Website (fact sheets, presentations, FAQ)
 - Dedicated project hotline line and project e-mail
 - Weekly updates on website, social media and through construction e-notice
 - Direct mailers along both sides of the tracks
- Next Steps
 - Permits / Installation coordination
 - Continue outreach coordination (each jurisdiction)
 - Continue briefing interested groups, as requested

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Questions

