



Advanced Signal System (CBOSS)

Project Overview/Update

Local Policy Maker Group
March 28, 2013



Peninsula Early Investment Program

- Incremental Investments to Blended System
- 1st Increment - \$1.5 billion
 - CBOSS (2015)
 - Corridor Electrification / EMUs (2019)
- Future Increments TBD



CBOSS - What is it?

- Communications Based Overlay Signal System
- Fiber Optic Network
- Project Requirements
 - Includes PTC (federal mandate)
 - Improves Caltrain Performance
- Needed for Blended System



Project Development Partners

- Federal Railroad Administration (FRA)
- California High-Speed Rail Administration (CHSRA)
- Peninsula Corridor Joint Powers Board (JPB)
- Union Pacific (UP)



CBOSS 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

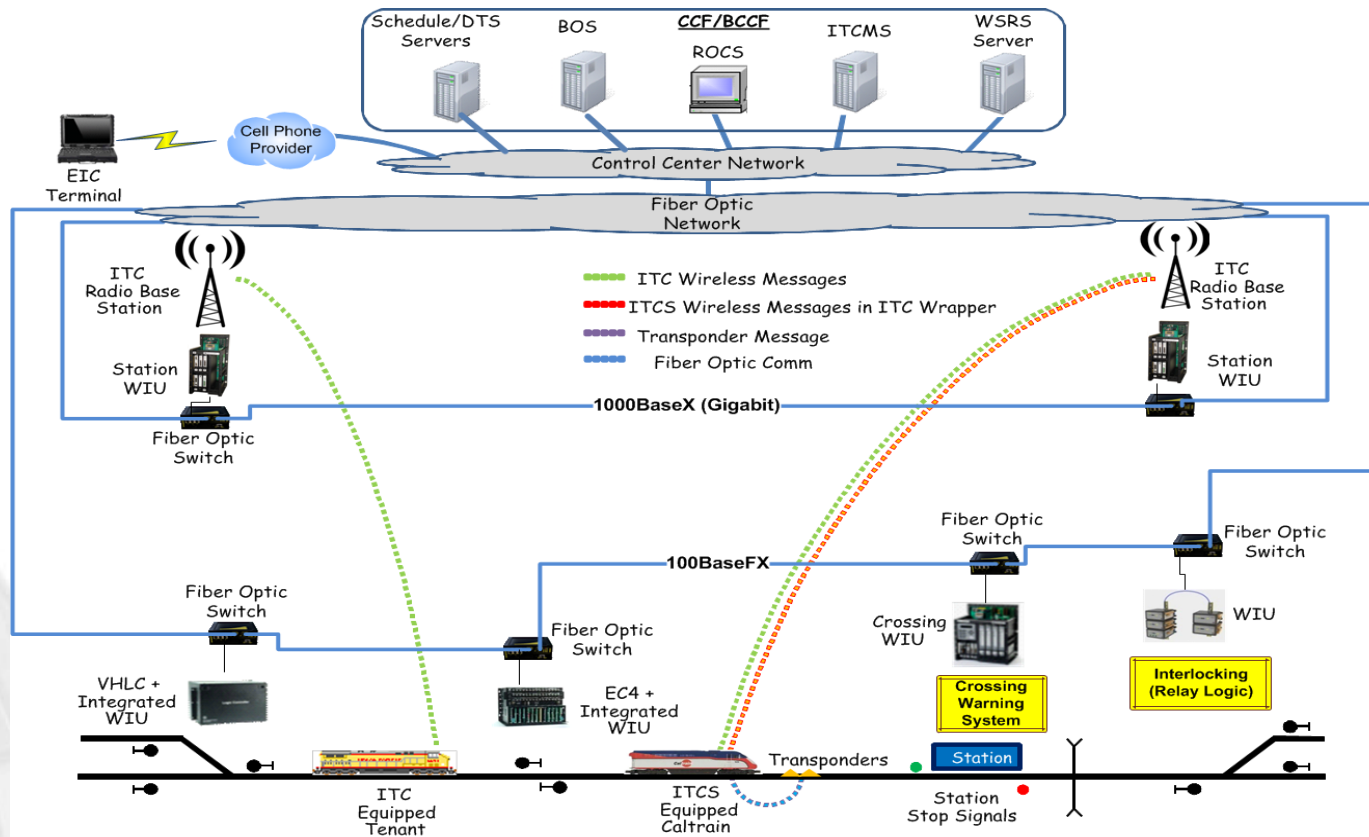


Turn-Key Contract

- Contract Cost: \$138 million
- What do we get?
 - Subsystem / System Design and Integration
 - Procurement of Materials and Equipment
 - Installation, Testing, Commissioning
 - Training
 - Backup Central Control Facility
 - FRA Certification and Documentation
 - Project Management
 - Warranty
 - Long-Term Support

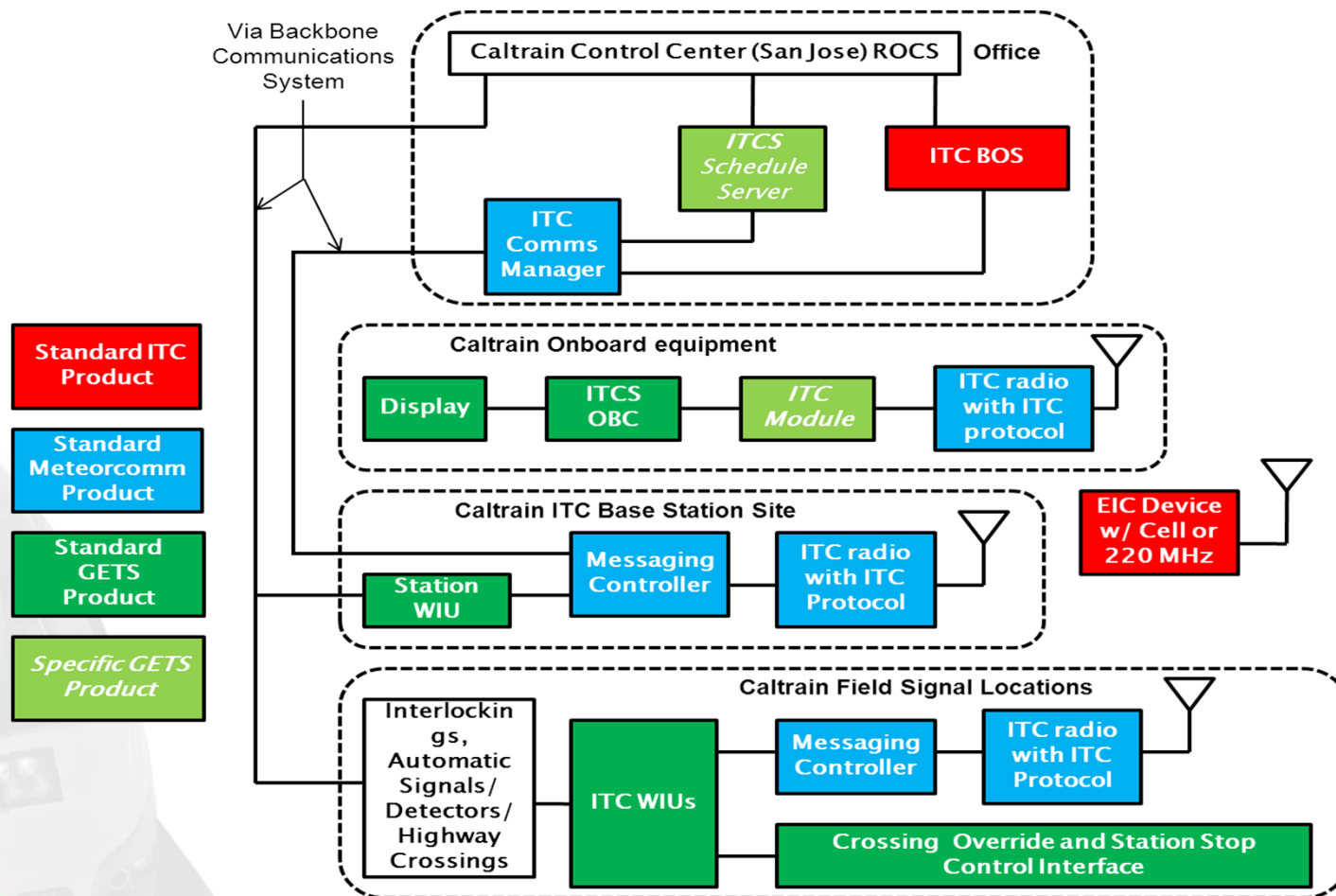


How does it work?





System Integration





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, DCS & Fiber Backbone Installation	\$51	2013 – 2014
Phase 3 - Installation, Testing, Commissioning	\$150	2014 – 2016 (Revenue service Oct. 2015)
Total	\$231	



Q & A