The Evolution of Project Controls at CSX Transportation

CSX
How tomorrow moves
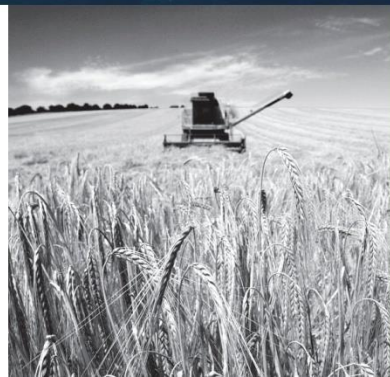
Session: CON2326

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About the Presenter

- James Minks, CSX Technology
  - 28 Years in Technologies
    - Development
    - Technical Support
    - Project Management
  - 17 years at Oracle - Technical Support, Global IT, Development
  - Joined CSX Technology in February 2011
    - Project Manager for Project Controls at CSX
    - Project Manager for Hyperion HFM and Planning at CSX

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Agenda

- CSX Transportation Overview
- Where We Began (2011)
- What We Accomplished (2012-13)
- What We Plan to do Next (2014+)
- Q&A
- Websites and Email

CSX Transportation Overview

Our Vision

To be the safest, most progressive, North American railroad, relentless in the pursuit of customer and employee excellence

Operate in every major population and industrial center east of the Mississippi and two Canadian provinces

- **$11.9B in Revenue**

- **21,000+ route miles / Over 32,000 employees**

- **4,000 locomotives / 70,000 freight cars**

- **Operates an average of 1,350 trains per day**

- **Transports an average of 20,000 carloads per day**

- **Transports 6 million carloads of products and raw materials a year**

CSX Technology Overview

19th in 2013

15th in 2014

EMPLOYEE STATISTICS

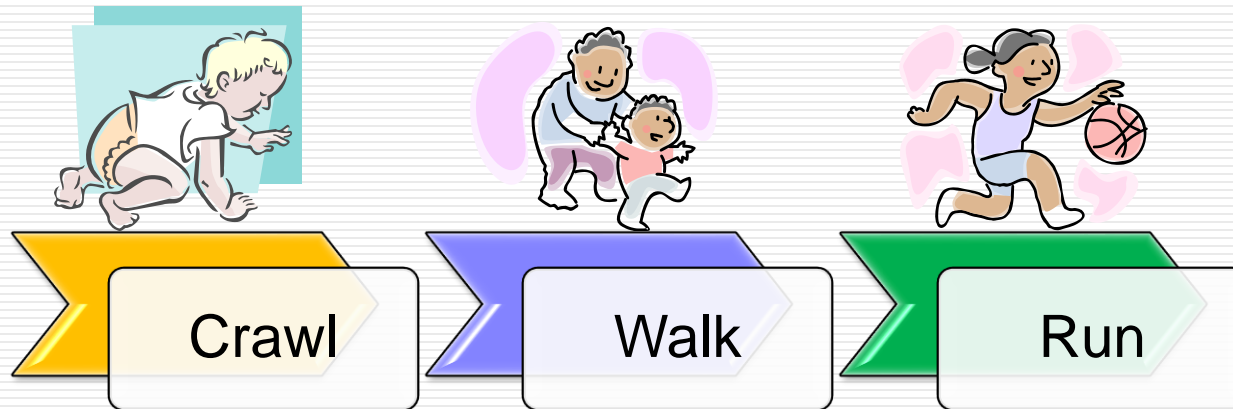|	
Total U.S.-based employees	30,974
Total U.S.-based IT employees	479
IT employee turnover in 2013	4%
IT employee promotions in 2013	6%

TRAINING

Training days offered per IT employee in 2013	8
Training budget per IT employee in 2013	$1,378

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Abstract

- CSX Transportation's (CSX) adoption and use of Primavera P6 and Contract Management solutions has exploded in 2013-14.

- In 2012, we had over 300 projects and 30,000 activities. Today, we have more than 4,100 capital and public engineering projects and 520,000 activities.

- The Engineering organization requested that CSX Technology upgrade our existing Oracle solutions (P6 and PCM) to current releases to leverage new functionality.

- AutoVue was also implemented to manage drawing markups to aid in optimal decision-making.

Where we Began (2011)

	Crawl	Walk	Run
	2011-12	**2012-13**	**2014+**

• Standardize business processes
• Roll-out P6 & CM
• PM training
• Basic Financial Integration
	• Advanced dashboard analytics
	• Improved resource management
	• Improved OP3 interface
	• Technology upgrades
	  • P6 from 8.0 to 8.2
	  • CM from 13.0 to 14.0
	• Implement Oracle AutoVue
		Technology Updates:
		• Primavera P6 8.3.2
		• P6 Team Member 8.3.2
		• Primavera Contract Manager 14.0.3.2
		• Oracle WebLogic 10.3.6
		• Universal Content Management 11gR1 11.1.1.7
		• Oracle Autovue 20.2.2
		• Oracle Vuelink 20.1
		• New DEV and UAT environments

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Where we Began at CSX (2011-12)

- Oracle Primavera P6 8.0
  - 35 named P6 users
  - Limited adoption
  - 300+ projects and 30,000 activities
- Oracle Primavera Contract Management 13
  - 5 PCM users
  - 25 projects (beta)
- Oracle Financials 12.1.3
  - Project Accounting (data source)
- Project Partners OP3 2.5.10
  - Integrates Oracle Project Accounting and P6
    - Budgets
    - Actuals

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What was CSX Project Controls in 2011?

Primavera P6

Unified Business Processes

Two tools

Contract Management

Oracle Primavera P6 is the most powerful, robust and easy-to-use solution for prioritizing, planning, managing and scheduling projects, programs and portfolios.

Oracle Primavera Contract Management is a document management and field controls solution that keeps construction projects on schedule and on budget.

How tomorrow moves [CSX]

Project Lifecycle in Project Controls
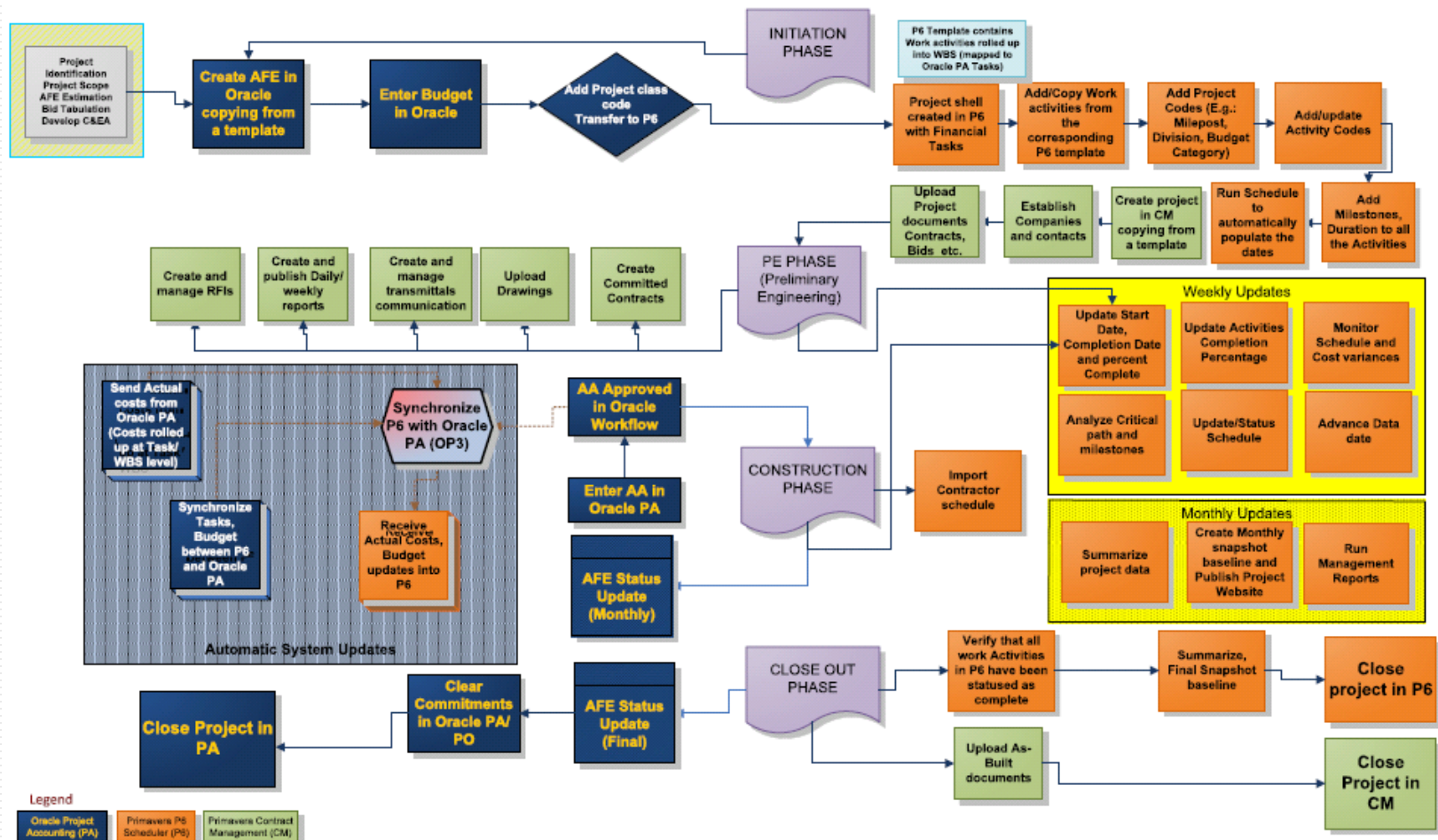
Oracle Technical Landscape

Oracle Landscape

Financials & Procurement

Oracle Assets

Oracle GL

Oracle Inventory

Material Transactions

Capitalization

Oracle A/P

Invoices

Oracle Projects (Project Accounting)

Oracle Purchasing

PO Receipts

Billing

Oracle A/R

Oracle Contracts

Project Cost Shell & Actual Costs [OP3]

Project Management

Oracle | Primavera P6

Milestones, Submittals, etc.

Oracle | Primavera CM

Document Repository

Project Documents Charter Contracts Logs

Oracle UCM (Universal Content Management)

Current Configuration

New Integration and Functionality

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Technical Architecture

2012 Project Dashboard

ORACLE Primavera P6

Dashboards ▾ | Portfolios ▾ | Projects ▾ | Resources ▾

All Projects | Design & Constructio… | Comm & Signal | Facilities Projects | Bridge Projects | All Projects - PM | Des & Con - PM | Comm & Signal - PM | Facilities Projects … | Bridge Projects - PM

All Projects
Expand All | Collapse All | Customize

Capital Spend Outlook
Save | Cancel | Add | Delete | Expand | Collapse | Export Spreadsheet | Customize

Name	Project ID	City	State / Province	Current Budget Amt	Prior Years Total Spend	2012 Plan	YTD Cost
⊟ **Total**				$488,850,903	-- -- --	$1,000,000	$63,131,307
⊟ **Boston Line Clearance Improvement Projects**				$6,450,000	$4,591,624		$1,379,223
⊞ Westborough TRANSFLO Terminal	A39025	WESTBOROUGH	Massachus…	$6,450,000	$4,591,624		$1,379,223
⊟ **Bridge**				$24,656,242	-- -- --		$4,068,819
⊞ 00J 139.20 , Whiteside, TN	A35699			$162,244	($66,962)		$151,599
⊞ SP 840.90, Chattahoochie, FL	A35700			$64,334	$0		$14,945
⊞ BAL -0.52, Baltimore, MD	A35132s	BALTIMORE	Maryland		-- -- --		
⊞ SH 331.85, Poston, SC	A35474			$4,699,889	$3,025,909		$622,799
⊞ XXB 185.00, Montgomery, AL	A35438			$4,824,702	$1,126,371		$663,671
⊞ 00F 366.00, Bartlett, TN	A35592			$538,271	$391,784		$404,229
⊞ BD 214 to 263 - Decatur Sub	A35650			$12,750,000	$3,106,356		$1,885,653
⊞ 00C 140.40 , Livingston, KY	A35672			$200,000	$106,378		$125,919
⊞ SY 857.70, Oldsmar, FL	A35701			$116,145	($62,586)		$95,499
⊞ SR 790.70, Brooksville, FL	A35703			$192,571	$0		$884
⊞ S 827.10, Valrico, FL	A35702			$181,810	($9,114)		$21,560
⊞ AN 811.60 , Ozark. AL	A35706			$92.190	($19.952)		$28.201

P6 and Oracle EBS Integration (2011+)

Classify project(s) for transfer in EBS

Daily concurrent request to transfer the project(s) budget, tasks, and header information

Daily concurrent request to transfer the project(s) actual costs

What We Accomplished (2012-13)

- Platform Change
  - Switched from Microsoft Windows 2008R2 to Redhat EL5
  - Physical servers to virtual machines, except Oracle database
- New Oracle Software
  - Team Member 8.2 (email enabled)
  - AutoVue 20.1 for visual decision-making
  - Oracle 11.1.1.5 WebCenter integration
  - Vuelink to "bridge" between Contract Management, AutoVue and Content Management system
- Authentication
  - From native method to Microsoft Active Directory
    - Oracle P6 and Contract Management
    - Oracle WebCenter and Oracle AutoVue

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What We Accomplished (2012-13)

- Upgraded Core Oracle Products
  - P6
    - From 8.0 To 8.2.1
      - Gained 20-30% improvement in performance of P6 web
    - Improved dashboards and reporting
    - Expanded resource management from managing by work teams to specific work teams
  - Contract Management
    - From Release 13 to Version 14.0.2.0
    - Refined Contract Management drawings and drawing sets
    - Standardized dashboards
    - Integrated with Oracle UCM 11g as document repository

Improved Technical Architecture
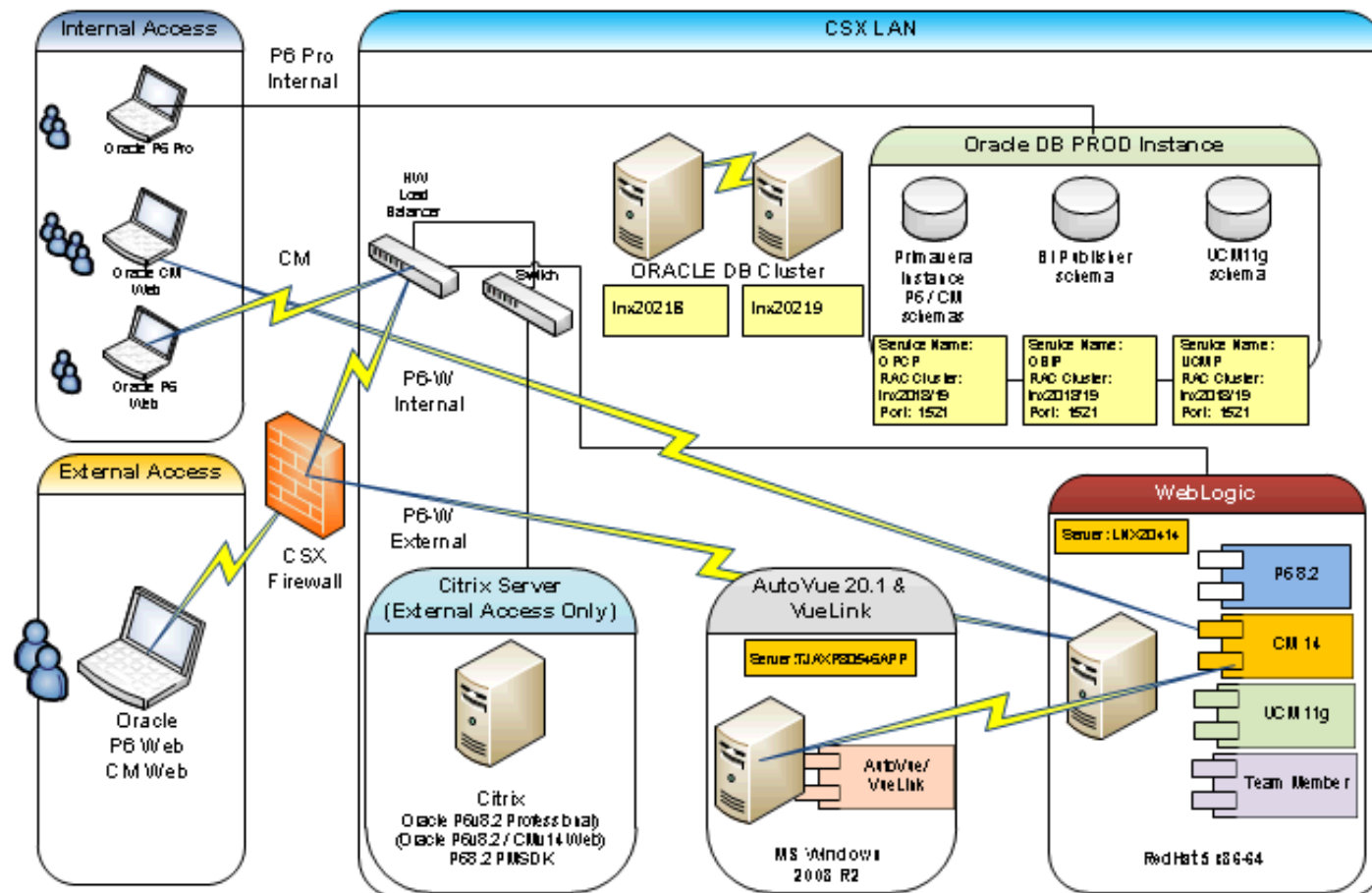
Top Primavera Implementation Issue

Problem:

**Users were maintaining separate logins for Primavera and their email, resulting in complaints from users.**

Resolution:

- **We created a single point of entry for new users via Microsoft Active Directory.**
- **We increased integration to all business systems by utilizing one source of truth.**
- **We improved user satisfaction, as it resulted in one less password to remember.**

How tomorrow moves [CSX]

Implemented Quality Control Practices

 Implemented IT patching strategy
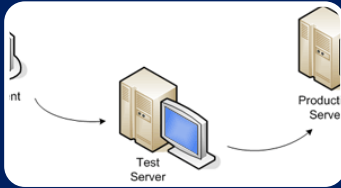
 Created multiple environments to support PROD (i.e., DEV and TEST)

 CSX instituted a Project Controls Governance Board (PCGB)

 Implemented change control and quality assurance

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Project Control Governance Board Principles

- Ensure a single point of accountability for the success of the project

- Ensure separation of stakeholder management and project decision-making activities

- Ensure separation of project governance and organizational governance structures

Elements of CSX Project Controls Governance

- All stakeholders were identified
  - CSX business partners
  - CSX Technology
    - Project Management
    - Infrastructure Support
  - Primavera P6 super users
- A defined method of communication was developed
  - Monthly meetings
  - Quarterly newsletters to field personnel
- Clear roles and responsibilities were assigned
- Process for management and resolution of issues was implemented
- Process for recording and communicating risks was established

Primavera P6 (2012-13)

- 4,100 projects
- 650,000 activities
- $2.5B in capital and public projects

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P6 Web Benefits for CSX

Portfolio Analysis

- Customized portfolio view capabilities
- Status snapshot of a portfolio of projects

Portfolio Dashboards

- Custom user-defined performance indicators
- Spreadsheets can be reduced or eliminated
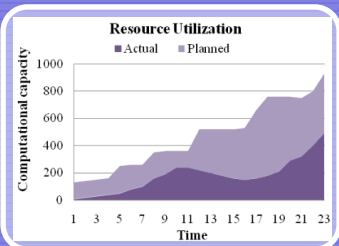
Resource Analysis

- Better resource team analysis
- Visibility to identify over- or under-allocated resources

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- The State of Florida purchased a 61-mile segment from CSX for high speed commuter rail.
- CSX provided governance of all engineering efforts:
  - $1.2B budget
  - 350 engineering projects
  - 5,300 activities

How tomorrow moves [CSX]
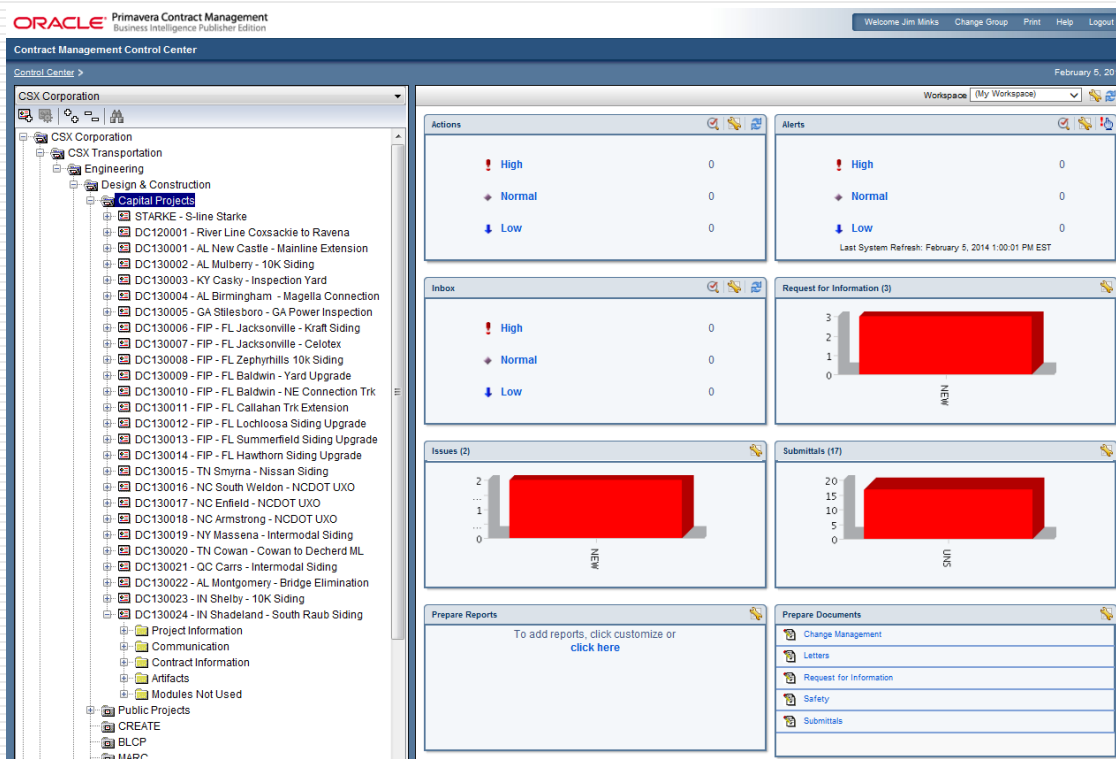
- Customized the User Interface to meet Engineering's needs and preferences

- Increased adoption and usage of Contract Management
  - 10 PCM users to 30+ users

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[CSX]

- Integrated PCM with Oracle AutoVue 2D
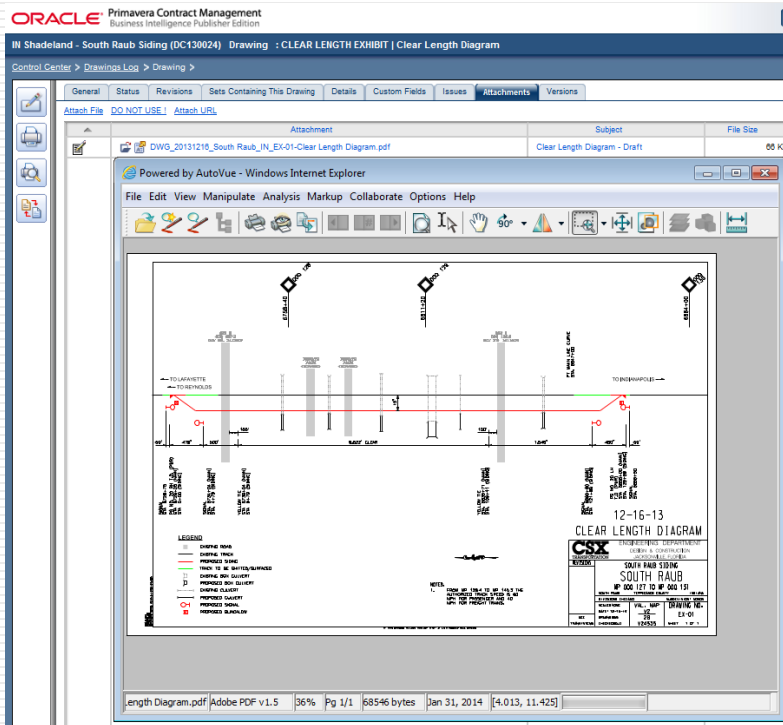
- **Value Proposition to CSX Engineering**

- Provided Engineering a web-based capability to access, view, digitally annotate and collaborate on drawing documents, without requiring investment in specialized CAD tools.

- Integrated AutoVue with Oracle ECM 11g for storing mark-ups.

- AutoVue improved Engineering's decision-making and workflow.

How tomorrow moves [CSX]

- Oracle Product Upgrades:
  - P6 8.2 to 8.3.2 to leverage new functionality
    - **Team Member**
      - Discussion Feature looks promising
      - Viewing Notebook topics
      - Viewing documents
    - Extended adoption and usage
      - Open P6 TM to General Engineering Contractors and Signal Engineering Contractors
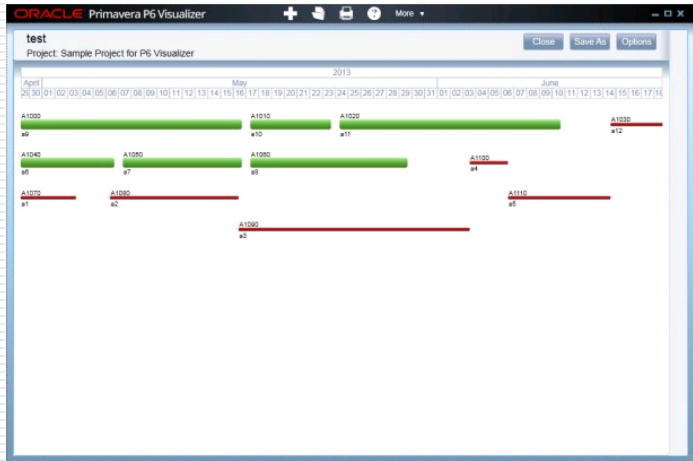
- **Oracle Product Upgrades:**
  - P6 Professional 8.3 to leverage new functionality (cont.)

  Visualizer
  - Will support graphical reporting by enabling users to create customizable Gantt charts and time scaled logic diagrams (TSLDs).
  - Improve alignment of Engineering schedules, budgets and costs.

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What We Plan to Do Next (2014+)

- Continued improvements to P6 platform
  - Modify EPS for better team alignment
  - Improve security profiles due to expanded rollout of P6 to external users such as:
    - Signal Engineering Contractors (SECs)
    - General Engineering Contractors (GECs)
  - Increase adoption and usage of P6 Team Member
    - **Discussion Feature -** enables users to communicate with their project manager and other team members about project task(s)
    - **Viewing Documents -** allows team members to view important documents such as drawings and specifications

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Questions

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