



Texas Nodal Market Implementation: Program Update

ERCOT Board of Directors
16 September 2008

Ron Hinsley

Vice President and Chief Information Officer

- **Program Status**
- **Recent Accomplishments**
- **Integrated Schedule Status**
- **Program Controls and Transparency**
- **Staffing and Vendor Management**
- **Protocol - Requirements Coverage**
- **Common Information Model (CIM) Status**
- **ERCOT Staff / Market Participant Readiness**
- **Cost**

Program Status

$$\text{Nodal Delivery} \times \text{ERCOT Readiness} \times \text{Market Participant Readiness} = \text{Nodal Success}$$

ERCOT Staff Readiness status is:



Amber status driven primarily by the ERCOT staffing and training metrics (E8, E1)

Market Participant Readiness status is:

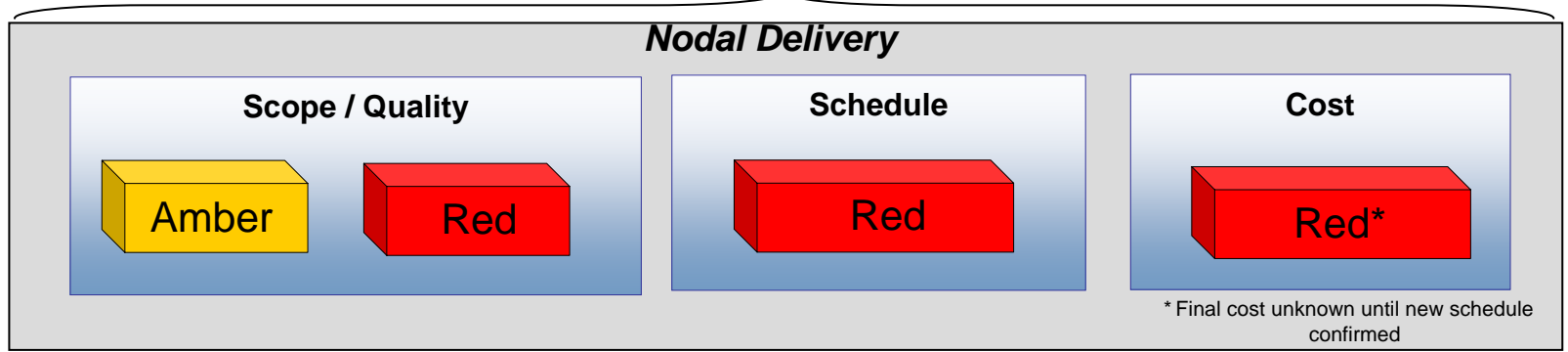


Amber status driven by limited response from entities needing to modify RARFs (MP11) and limited transaction submissions testing (MP22)

Nodal Delivery status is:



Red status driven by quality, schedule, and cost impacts



	Scope	Quality	Schedule	Cost
Green	Program is aligned with current protocols	All Nodal products currently achieve quality standards	Go-Live = 12/1/2008	Estimate at Complete =< 319M
Amber	Program is aligned to previous protocol versions	Most Nodal products currently achieve quality standards	Go-Live =< 30 days	Estimate at Complete =< 319M +10%
Red	Program is not aligned to protocols	Product quality not sufficient for Nodal launch	Go-Live =>30 days+	Estimate at Complete => 319M +10%

- **Technical Communications Workshop**
 - Hosted by ERCOT on September 3 with over 60 attendees via WebEx or in person
 - Covered basics of implementing and maintaining interfaces with ERCOT Web Services
 - Addressed many questions; scheduled follow-up session on September 10. Will schedule additional sessions to support Market Participant technical needs
- **State Estimator and Telemetry reports and extracts have completed User Acceptance Test and are approved by ERCOT Business for posting to the EDS environment**
- **Single Entry Model Go-Live procedure was approved by TAC on September 4**
- **Critical path in the integrated schedule has been completed**


- **Work completed to date**
 - Critical path through Nodal Go-Live is documented
 - All project schedules are integrated
 - Identified areas of possible resource constraints
 - Business owners have reviewed project schedules
 - Security, testing, and transition activities have been reviewed and updates incorporated
- **Remaining work**
 - Present to TPTF (two iterations) and incorporate feedback
 - Present to TAC and incorporate feedback
 - Distribute budget finalization schedule and develop budget
 - Present integrated schedule and final budget to Board of Directors and incorporate feedback
 - Baseline Nodal integrated schedule

Program Controls and Transparency

- **ERCOT is focusing efforts to provide clearer and more accurate communications to all interested parties**
- **Implementing a set of new / improved program controls that will provide more timely reporting and accurate communications of program status. Examples include:**
 - Regular status reporting
 - Standard weekly template that incorporates program and project status with weekly highlights, milestones, activities behind schedule (*example on next slide*)
 - More in-depth health indicators (stop lights)
 - Readiness reporting and dashboards
 - Risk/issue reporting
 - Quality reporting
 - Data quality dashboard
 - Defects reporting of status and trending by program and project
 - Program and project audit reporting
 - Project schedule reporting; examples include:
 - Critical path view
 - Milestone status reporting
 - Variance reporting (key tasks behind schedule)
 - Budget reporting

Sample Status Report

Program Status – weekly report of program–level activities, highlights, and health indicators



TEXAS NODAL MARKET IMPLEMENTATION

Program Status Report

Week Ending Sept. 5, 2008

PROGRAM STATUS

Health Indicators

OVERALL	SCHEDULE	BUDGET	SCOPE	RESOURCES	ISSUES/RISKS	QC
○	○	○	○	○	○	○
○	○	○	○	○	○	○
○	○	○	○	○	○	○

[more](#) Core Indicators Leading Indicators

Program Manager: **Janet Ply**

Executive Program Director: **Ron Hinsley**

Executive Sponsor: **Ron Hinsley**

Vendors:

Stakeholders:

Highlights

- Bullet 1
- Bullet 2
- Bullet 3
- Bullet 4

Items for Executive Attention

- Item 1
- Item 2
- Item 3

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Core Project Status: [Risks](#)

[NMMS](#) [Readiness](#)

[EMS](#) [Budget](#)

[MMS/QS](#) [Audit](#)

[CRR](#)

[Commercial Systems](#) [Appendix](#)

[EDS](#)

Project Status – comprehensive summary of core project activities, highlights, milestones, risks/issues, health indicators

Texas Nodal Program Status

Week ending Sept. 5, 2008

CORE NODAL PROJECTS

NMMS [to top](#)

Health Indicators

OVERALL	SCHEDULE	BUDGET	SCOPE	RESOURCES	ISSUES/RISKS	QC
○	○	○	○	○	○	○
○	○	○	○	○	○	○
○	○	○	○	○	○	○

[more](#) Core Indicators Leading Indicators

Project Manager: **Linda Clarke**

Business Owner: **Curtis Crews**

Transition Executive: **Kent Saathoff**

Vendor: **Siemens**

Stakeholders: **TSPs, System Planning, Network Modeling**

Highlights

- Bullet 1
- Bullet 2
- Bullet 3
- Bullet 4

Milestones Planned for Next 30 Days

- Milestone 1
- Milestone 2
- Milestone 3
- Milestone 4

Activities Behind Schedule

- Item 1
- Item 2

- **The PMO is engaged in several activities to address staffing and vendor management concerns**
- **Staffing Management**
 - Building a pipeline of candidates for key roles (e.g., key technical staff, Subject Matter Experts, Business Analysts) and have submitted job descriptions for Sr. Project Managers and Sr. Business Analysts with utility experience
 - Working to build a succession plan for key resources
- **Vendor management**
 - Program currently has a vacancy posting for a vendor manager to assist in this area
 - AREVA has been onsite at ERCOT working issues for the past three weeks; ERCOT had someone onsite at AREVA for the previous six weeks prior to them coming onsite
 - NMMS team members will be onsite at Siemens the weeks of Sep. 15 and Sep. 22 to conduct preFAT for the October NMMS release
 - ERCOT is developing a vendor scorecard
 - Both Bob and Ron have planned visits to Siemens and/or Nexant in the upcoming months. Other vendor visits are being planned.

Primary Reasons for Tracing:

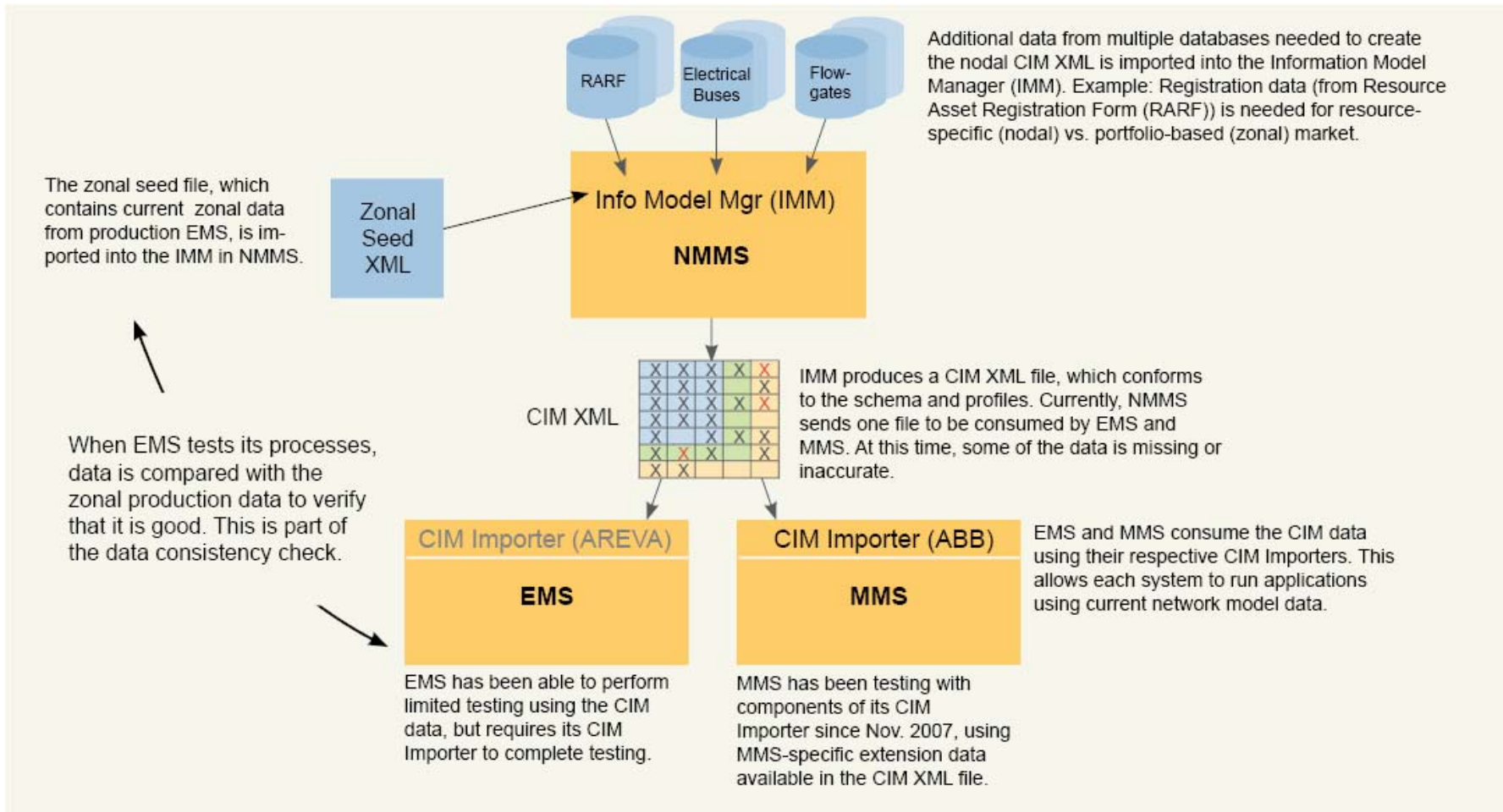
- completeness
- justification
- impact analysis

Requirement – Traceability Observations

- **Source of record for Protocols and Requirements (MSWord) does not facilitate effective traceability**
 - Section and subsections can not be uniquely identified
 - Some subsections are not called out specifically so tracing is at too high a level to be meaningful
 - Traceability effort is manually-intensive
- **Traces will only be as good as the Requirements coverage**
 - Business Objectives (goals) and User Requirements (user tasks) needed to validate Functional Requirements are not currently part the Nodal Trace Strategy
 - Non-functional Requirements (quality attributes) have not been fully explored and are not part of the Nodal Trace Strategy

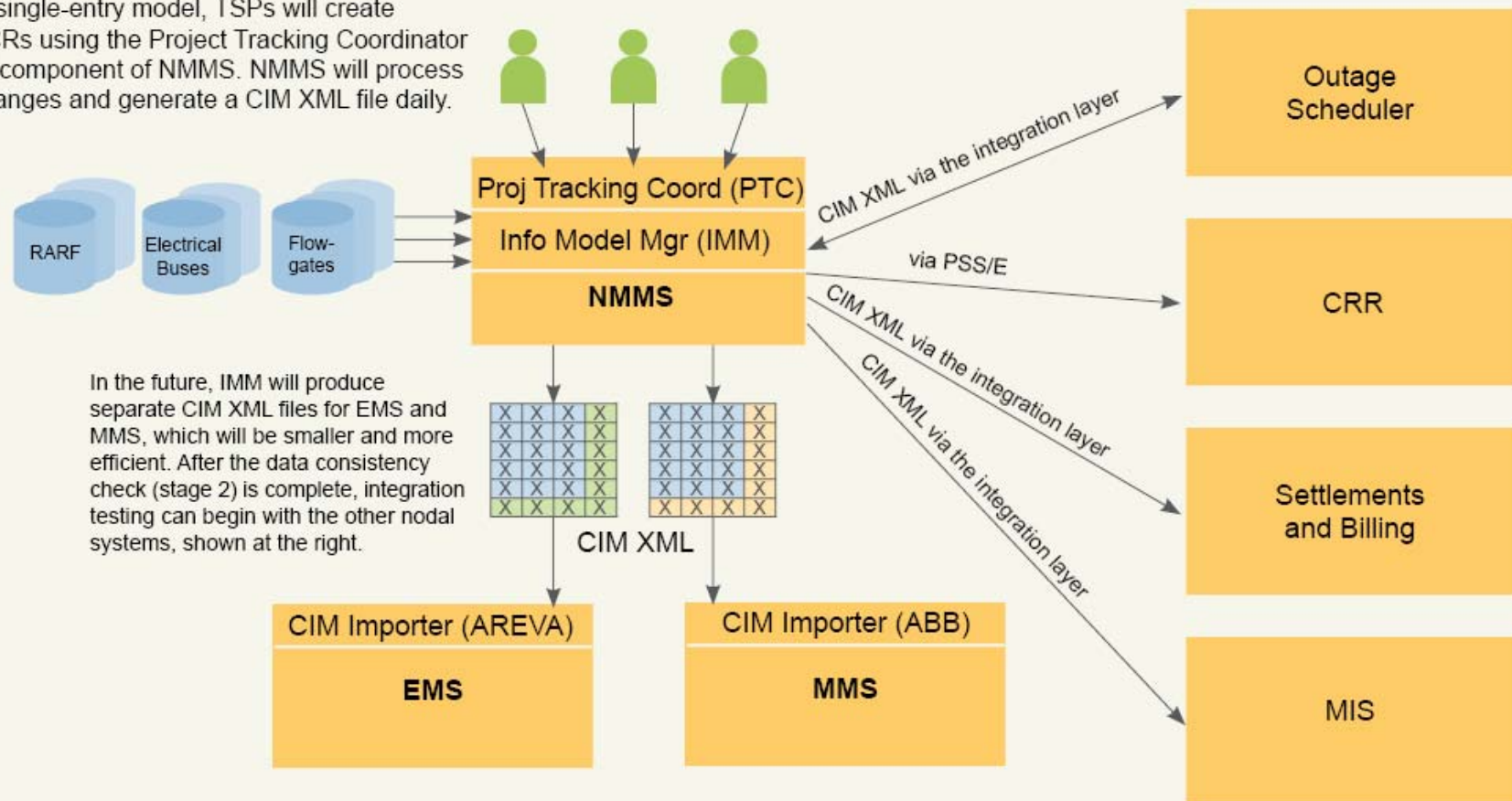
- **Delivery of a validated Common Information Model (CIM) Extensible Markup Language (XML) that is populated with production data is the next major milestone for ERCOT**
 - CIM data population and validation activities are currently the main critical items for the program
 - MMS and EMS are dependent on a synchronized CIM XML file
 - Strong program focus is on all CIM development activities
 - Completion is central to nodal functionality
- **Issues/Concerns**
 - Migrating from test to production data
 - Eliminating dependency on zonal seed
 - Adding more rigorous audit procedures and validation metrics
- **Activities / Recent Successes**
 - NMMS implemented and is currently processing the initial validation rule set
 - A technical review of Resource Asset Registration Form (RARF) data submitted to ERCOT is in progress. "Audit Reports" will be sent to Market Participants on or before Sept. 19, 2008
 - MMS CIM importer recently successfully consumed the version 1.20 CIM XML test file; v1.20 will be the CIM XML test file used with next software patch; current patches consuming and testing with version 1.16 CIM XML test file
 - EMS CIM importer work continues to address data and code issues

Today: CIM Integration Development Process (Pre-Single Entry Model)



Future: CIM Integration With the Single-Entry Model

In the single-entry model, TSPs will create NOMCRs using the Project Tracking Coordinator (PTC) component of NMMS. NMMS will process the changes and generate a CIM XML file daily.



In the future, IMM will produce separate CIM XML files for EMS and MMS, which will be smaller and more efficient. After the data consistency check (stage 2) is complete, integration testing can begin with the other nodal systems, shown at the right.

- **Completed three weeks of data correction / testing at ERCOT**
 - Number of data issues have been reduced from over 20,000 (week of Aug. 8) to 54 (week of Aug. 29)
 - New NMMS model provided on Aug. 29 – verifying three issues from the build, two issues that have been re-opened, and three new issues that have been opened
 - NMMS model drop delivered on Sep. 5 to AREVA; validation is underway
- **ERCOT SMEs continue to test with AREVA to identify/resolve issues**
 - Running validation and cross validation routines – all applications listed below run successfully except Generation and ICCP
 - Running individual applications
 - SCADA – running successfully multiple days with few minor data errors; feeding data to State Estimator
 - ICCP – running validation and reviewing the save case
 - Generation – limited success, but addressing 50 data errors and a potential code issue
 - Dynamic Rating – validated the save case is correct
 - Network Applications –
 - Study Load flow ran successfully
 - State Estimator is running successfully over multiple days
 - Contingency Analysis has limited success due to configuration data and code issue



ERCOT Staff Readiness status is **AMBER**



	Engagement	Training	Process	Staffing	Test	Overall
ERCOT	Green Circle	Yellow Inverted Triangle	Yellow Inverted Triangle	Yellow Inverted Triangle	Green Circle	Yellow Inverted Triangle
Information Technology	Green Circle	Yellow Inverted Triangle	Green Circle	Yellow Inverted Triangle	Green Circle	Yellow Inverted Triangle
System Operations	Green Circle	Yellow Inverted Triangle	Yellow Inverted Triangle	Yellow Inverted Triangle	Green Circle	Yellow Inverted Triangle
Market Operations	Green Circle	Yellow Inverted Triangle	Yellow Inverted Triangle	Yellow Inverted Triangle	Green Circle	Yellow Inverted Triangle
System Planning	Green Circle	Yellow Inverted Triangle	Green Circle	Green Circle	Green Circle	Yellow Inverted Triangle
Corporate	Green Circle	Yellow Inverted Triangle	Yellow Inverted Triangle	Yellow Inverted Triangle	Green Circle	Yellow Inverted Triangle

- **Engagement (green)**
 - ERCOT remains fully engaged
- **Training (amber)**
 - Training efforts are on-going
- **Process (amber)**
 - All departments are meeting target performance levels
 - 470 procedures; **87% complete**
- **Staffing (amber)**
 - ERCOT is currently **97%** staffed (98% required for green status)
 - Recruitment is on-going
- **Testing (green)**
 - No recent developments



Market Participant Readiness status is **AMBER**



	Engagement	Connectivity	Registration and Qualification	Telemetry	Training	Trials Participation	Overall
All Market Participants	●	●	■	●	●	●	▼
QSE with Resources	●	●	■	●	●	●	▼
QSE without Resources	●	○	▼	○	●	●	▼
TDSP	●	○	○	●	●	●	●
LSE	●	○	○	○	○	○	●

- **Engagement (green)**
 - Market Participants are fully engaged
- **Connectivity (green)**
 - No change
- **Registration and Qualification (red)**
 - **For QSEs with Resources** – limited response from entities needing to modify RARFs is driving the red status (MP11)
 - **For QSEs without Resources** – limited transaction submission testing is driving the amber status (MP22)
- **Telemetry (green)**
 - No change
- **Training (green)**
 - Market Participants are up-to-date on their training plans
- **Trials Participation (green)**
 - No change

Cost: Element Summary - Updated

When the integrated schedule has been finalized and the financial impact determined we will incorporate this into an updated forecast

Nodal Program Cost Element Summary (\$ Millions)

Cost Element	Through August 2008		
	Budget	Actual	Variance (over)/under Budget
Internal Labor	\$ 40.6	\$ 41.0	\$ (0.4)
External Labor	161.1	171.2	(10.1)
Hardware / Software	60.2	61.5	(1.3)
Travel and Other	11.2	7.0	4.2
Subtotal	\$ 273.1	\$ 280.7	\$ (7.6)
Finance Charge	9.2	10.1	(0.9)
Total	\$ 282.3	\$ 290.8	\$ (8.5)

Questions ?