



California ISO
Your Link to Power

California Independent
System Operator Corporation

Market Redesign and Technology Upgrade Budget & Schedule Report

Board of Governors Meeting
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Project Manager: Debi Le Vine
April 2007

MRTU Executive Summary

MRTU Schedule	
Current Period	Trend
	
<p>Tracking Delay: 0 weeks Critical Path Items: Vendor Delivery, Integration Testing <i>*Based on approved 2/1/08 Trade Date Go-Live date</i></p>	

MRTU Budget	
Current Period	Trend
	
<p>Approved MRTU budget: \$189.223 M* <i>*Based on approved budget on 12/06</i></p>	

- Project remains challenged with vendor delivery of applications. Mitigation plans are under development to accommodate expected delays and to avoid impacts to Go-Live.
- Factory Acceptance, Site Acceptance, and Integration Testing are ongoing for different components, in preparation for upcoming Integrated Market Simulation.
- Market Simulation Phase 2 successfully completed 3/23; environment to remain open for unstructured testing until 4/20.
- Integrated Market Simulation to begin 4/30 with 5 phased releases over the next 6 months, each phase to introduce new functionality.

- CAISO working with key vendors to negotiate remaining work and costs, including FERC.
- Revising Project work plans to align to new Integrated Market Simulation approach.
- Currently analyzing impact of vendor delays on MRTU budget. Delays expected to be absorbed by existing approved budget.

	 Delay, but will not impact 2/1/08 Trade Date Go Live.
	 Delay, will impact 2/1/08 Trade Date Go Live. Use of contingency funds.

 Variance less than +2 %		Situation has improved since last reporting period.
 Variance between +2 % and +6 %		No change since last reporting period.
 Variance over +6%		Situation has deteriorated since last reporting period.

MRTU Executive Overview

- Market Simulation Phase 2: Enhanced Rules/Connectivity & Inter-SC Trades ended on 3/23, and the environment will remain open for an additional month to allow for continued Unstructured Testing.
- Revised the Market Simulation schedule to begin on 4/30, with 5 releases over 6 months versus 2 releases over a 4 month period. This Integrated Market Simulation will include structured, semi-structured, and unstructured testing.
- The Readiness team completed the analysis assessments with all core business units and facilitated process walkthroughs with various business units. Training completed the Development of the Bid-to-Bill course. Currently, the team is defining additional training and planning for the 5/15 and 5/16 participant sessions in Portland.
- Testing team continues to execute Factory Integration Test, having successfully executing IFM runs with Network Applications. Testing of constraints and real-time runs is to commence the week of April 9th.



MRTU Program Progress as of March 28, 2007

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Program Area	Design	Build	Test	Integration Test	End-End Test	Market Simulation	Deployment
Phase 1A							
Phase 1B							
Market Systems							
Real-Time Market							
Integrated Forward Mkt							
Hour-Ahead Processor							
Residual Unit Com.							
Scheduling							
Policy Must-Haves							
FERC Changes – Market Systems							
Settlements							
Base Product							
Charge Types							
Congestion Revenue Rights							
FERC Changes – Settlements/CRRs							
Legacy							
Automated Dispatch System (ADS)							
Reference Level Calculator (RLC)							
Scheduling and Logging System (SLIC)							
Compliance Automation Production System (CAPS)							
Existing Transmission Contract Coordination (ETCC)							
Operational Meter Analysis and Reporting (OMAR)							
Open Access Same-Time Information System (OASIS)							
Reliability-Must-Run Application Validation Engine (RAVE)							
Other Applications							
Market Quality System							
PTR							
Portal							
MFRD							
FERC Changes – Legacy/Other Applications							

Preliminary application-specific testing conducted

Legend	
Phase not started	
Phase in progress	
Phase complete	

Supporting Activities

Program Area	Planning	Development	Execution
Internal Readiness			
External Readiness			
Training			
Business Processes (Phase 1)			
BPMs			



Integration (Interfaces)

- All CR3b Designs and upgrades complete
- Completed Build & Release of ALFS, MQS and PTR retrieves services
- Updated MQS Mitigated Bid schema and various IS Documents

SaMC

- Completed build & unit tests of components required for the first and second releases of Integrated Market Simulation
- Completed Site Acceptance Testing (SAT) for Release 4b
- Release 4b ready for Functional Integration Testing (FIT)

Full Network Model and State Estimator

- Completed validation of DB13 model and began preparation for DB14 model

Integrated Forward Markets/Real-Time Nodal

- Successfully completed CR3b Functional Acceptance Test (FAT)
- Completed CR3c pre-FAT; results currently being reviewed

Scheduling Infrastructure and Business Rules (SIBR)

- CR3b SAT completed

Market Quality Systems

- Completed v1.1 SAT and v2.0 Design Review

Legacy

- Continued OASIS and CAPS SAT
- Continued ADS testing

Congestion Revenue Rights

- Filed FERC Dry Run Report (3/30)

Testing

- Migrated and configured end points in IFM/RTN, SIBR CR3b systems in AIT environment
- MQS successfully tested CR3b data retrieval scripts
- Submitted Real Time Bids; continued RLC Payload
- Installed SIBR and IFM releases into FIT environment and began running Day-Ahead solutions with NA

Planned Activities

Integration (Interfaces)

- Complete FERC Design 4/6
- Finalize FERC updates; initiate IS Document updates for FERC release
- Test and release Cim-Parser changes; support CR3b FIT activities

SaMC

- Market Clearing Functional Acceptance Testing (FAT) to begin 4/20
- Update Requirements based on Post 4b Release changes
- Finalize remaining Charge Codes Requirements, Design Guides and Build

Congestion Revenue Rights

- Held stakeholder meeting to discuss changes resulting from Dry Run
- Complete defect free version of N/A Tool by End of March

Integrated Forward Markets/Real-Time Nodal

- Continue CR3a/b SAT Testing
- Validate CR3c Pre-FAT results commence FAT (4/6)
- Begin CR4 Design (4/2)
- Continue Masterfile integration with IFM/RTN and SIBR

Market Quality Systems

- Continue Integration testing in Folsom: Validation of CR3b services, and new SAT Build and AIT/FIT Build with variance fixes
- Complete development of v2.0 schedule and final cost negotiations

Legacy

- Complete RAVE Integration Logic and begin SAT execution
- Complete OASIS and CAPS SAT (4/20)

Testing

- Continue Technical FIT; Masterfile FIT
- Functionality and Interfaces completion for various SAT applications
- Continue AIT/FIT; introduce various interfaces to FIT

Market Simulation

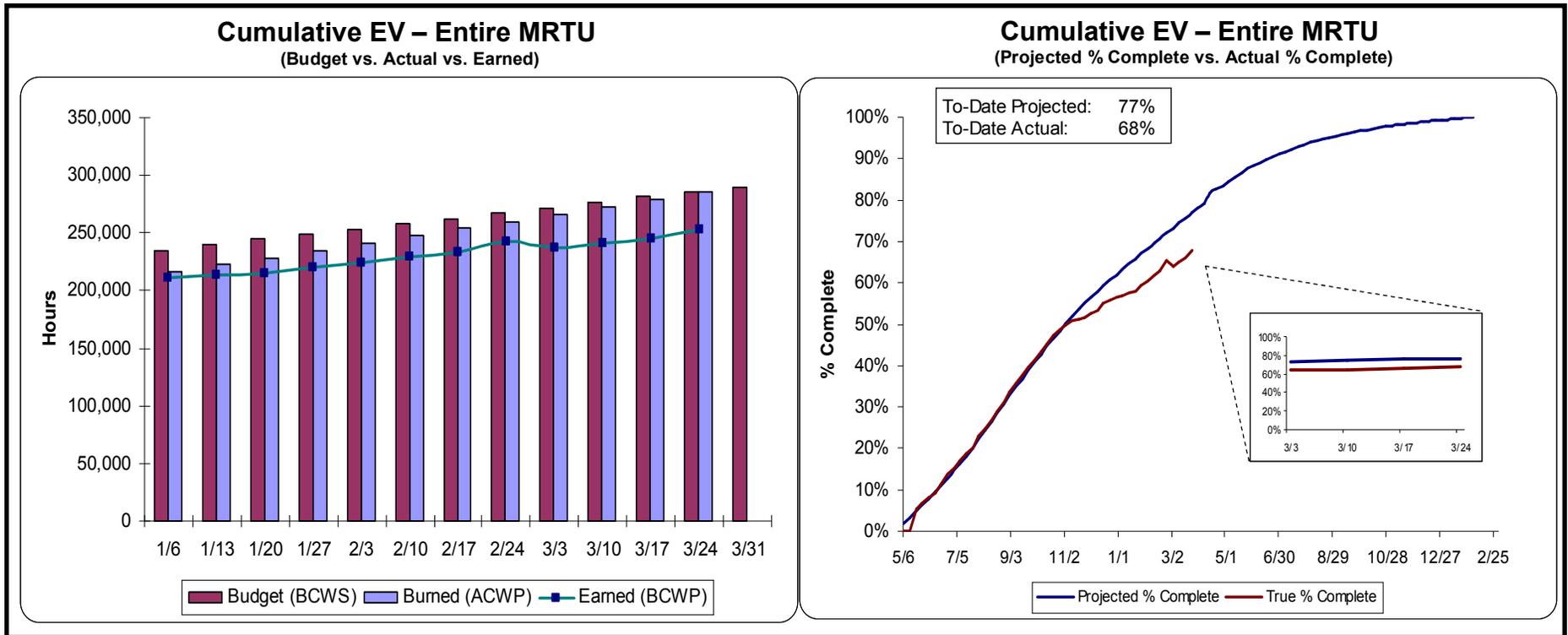
- Continue planning & preparation for IMS Release 1 and 2

MRTU High-Level Milestone Description

The following are descriptions for some of the milestones indicated on the MRTU High-Level Timeline;

- **Functional Requirements Completion – January 31, 2007**
Allows system development design activities to begin, with the exception of three MRTU projects: SaMC, SIBR, and IFM/RTN. Design activities started for SIBR and IFM/RTN during the first week of April.
- **CRR Dry-Run Filing – March 30, 2007**
CAISO filing to FERC of the report for the Dry-Run results for Annual and Monthly auctions and allocations.
- **Market Simulation Documents – Technical Interface documents for Market Simulations released specifying interface details required for participants to access CAISO Systems and participate in the simulation. Separate releases for Market Simulation Phases. Documents for the next Market Simulation were posted between March 1, 2007 and March 17, 2007.**

Program Key Metrics



Included in Graph: BPM, Business Process, SIBR, Training, FNM/SE, IFM, MQS, CRR, MFRD, SaMC, Portal, Testing, Integration, CMRI, PMO, Legacy, CAS, Readiness, and Technical Architecture.

Not Included in Graph: n/a



California Independent System Operator
Summary of Expected Completion Costs vs. December, 2006 Budget
February 28, 2007
(In Thousands) *

Project	Re-baselined Project Costs Dec. 2006 (a)**	Actual Costs Through 2006 (b)	Paid Invoices To Date 2/28/07 (c)	Estimated Costs to Complete (d)	Cost of Project at Completion (e)=(c+d)	Increase (Decrease) from Baseline (f)=(e-a)
Market Redesign	\$ 64,807	\$ 49,990	\$ 50,422	\$ 14,385	\$ 64,807	\$ -
1 Automatic Mitigation Procedures/Phase 1A	773	773	773	0	773	0
2 Real Time Markets/Phase 1B	16,297	16,297	16,297	0	16,297	0
3 Integrated Forward Markets/Real -Time Market (IFM/RTM)	33,372	23,673	23,941	9,431	33,372	0
4 Congestion Revenue Rights (CRR)	4,516	3,986	4,049	467	4,516	0
4A Market Quality System (MQS)	6,261	2,315	2,416	3,845	6,261	0
11A Hardware & Software Purchases	3,588	2,947	2,947	642	3,588	0
Technology Upgrade	\$ 74,179	\$ 61,020	\$ 62,798	\$ 11,381	\$ 74,179	\$ -
5 Scheduling Infrastructure Business Rules (SIBR)	13,323	9,727	9,733	3,590	13,323	0
6 Settlements and Market Clearing (SaMC)	18,030	16,170	16,429	1,600	18,030	0
6 Master File (MFRD)	2,300	2,291	2,303	(3)	2,300	0
9 Post Transactional Repository (PTR)	2,461	2,236	2,318	144	2,461	0
10 Legacy Systems	7,785	6,379	6,493	1,292	7,785	0
10A State Estimator/Full Network Model	1,345	1,040	1,077	269	1,345	0
11 Technology Infrastructure/ Portal	2,065	2,050	2,051	14	2,065	0
11B Hardware & Software Purchases	6,923	5,197	5,822	1,101	6,923	0
12A System Integration/Enterprise Architecture	17,989	15,540	16,065	1,924	17,989	0
12B Technology Architecture	1,957	389	507	1,450	1,957	0
Common Projects ***	\$ 41,214	\$ 25,738	\$ 27,487	\$ 13,727	\$ 41,214	\$ -
13 Training/Readiness Projects	9,709	6,975	7,586	2,123	9,709	0
14A Project Management	17,666	11,907	12,250	5,416	17,666	0
14B Testing	13,840	6,856	7,652	6,188	13,840	0
Ongoing Scope Adjustments	\$ 1,523	\$ -	\$ -	\$ 1,523	\$ 1,523	\$ (1)
Pending MRTU Scope Changes	1,523	0	0	1,523	1,523	(1)
Contingency	\$ 7,500	\$ -	\$ -	\$ 7,500	\$ 7,500	\$ -
15 Program Contingency	7,500	0	0	7,500	7,500	0
Total MRTU Project	\$ 189,223	\$ 136,748	\$ 140,708	\$ 48,515	\$ 189,222	\$ (1)

* Columns and rows may not total due to rounding.

** Budgets include: Consultant Labor, Vendor Costs, Travel & Meals Expenses, Training, Hardware, Software, Maintenance, Employee Backfill costs

*** Common Projects Allocation: 47.9% to Market Redesign; 52.1% to Technology Upgrade