







California Independent
System Operator Corporation

Market Redesign and Technology Upgrade Budget & Schedule Report

Board of Governors Meeting
Executive Sponsor: Charles A. King, PE
March, 2007





MRTU Executive Summary







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

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

- Majority of system development activities are complete, with the exception of FERC related changes and some SIBR/IFM/MQS components. PMO working with vendors to mitigate potential delivery delays.
- Project remains challenged with vendor delivery of applications. Mitigation plans are under development to accommodate expected delays and to avoid impacts to Go-Live.
- Testing executing Release 2/3 Functional Integration Testing.
- Market Simulation Phase 2 began on 1/22; Inter-SC Trades functionality available to Market Participants on 1/29.

- CAISO working with key vendors to re-negotiate remaining work and costs.
- Finalizing change requests required to re-baseline MRTU progress to new budget for FERC changes.
- Vendor delays will cause downward pressure on MRTU budget, potentially creating the need to access program contingency.

	 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 commenced on 1/22/07; functionality from Phase 1 expanded to include Inter-SC Trades

System Development

- State Estimator certified to Go Live on 2/5/2007
- Portions of Release 3 challenged due to vendor delays
- Gathering requirement for Release 4 (FERC changes)
- MQS completed Functional Acceptance Testing (FAT) with a 97% pass rate and moved to Site Acceptance Testing (SAT)

Readiness

- Internal Readiness is on-track
- External Readiness completed first assessment of each Scheduling Coordinator with an 80% response rate

MRTU Program Progress as of February 20th, 2007

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			

Accomplishments & Milestones

Integration (Interfaces)

- Delivered various services to Application Integration Testing (AIT)
- Updated various IS documents
- All SIBR, IFM/RTM, SMDM and MQS artifacts updated for market run decision
- Finalized Release 3 OASIS changes, resolved defects for P4B services

SaMC

- Completed estimates for upgrades to mapping affected by Release 3 changes
- Delivered 3rd release of Charge Codes; fixed Release 2 defects
- Proceeded with Market Clearing testing

Program Management Office (PMO)

- In the process of completing the re-baseline of project budgets and work plans

Full Network Model and State Estimator

- Prepared for Internal Readiness Review of FNM process
- Completed mapping DB1 for Release 3 Factory Acceptance Tests (FAT)/Site Acceptance Tests (SAT)
- Began Release 3 SAT

Integrated Forward Markets/Real-Time Nodal

- Continued FAT/SAT testing and supported AIT
- Successfully completed FAT for CR3A – needed for Market Sim 3

Market Quality Systems

- Passed all Release 3 Web Services for AIT
- Began FIT for all Web Services
- FAT completed; began SAT

Testing

- Continued AIT/FIT efforts and End to End Phase 1 preparation; began Release 4 FIT
- Began remote testing of interfaces for multiple applications

Planned Activities

Integration (Interfaces)

- Complete Release Planning/Updates for Market Sim 3
- Update Release 3B documents to be consistent with Release 3A
- Commence design documentation for FERC-related interfaces; support AIT activities

Testing

- Continue AIT/FIT; introduce various interfaces to FIT
- Continue to End-to-End Testing

Integrated Forward Markets/Real-Time Nodal

- Regression test all market functions with DB1
- Continue Analysis Track Testing Phase 2
- Continue Acceptance and Integration testing initiatives

Congestion Revenue Rights

- Work with stakeholder to identify potential changes
- Continue SAT for latest Build; continue Broadcast Services Testing
- Fix and successfully retest remaining two variances

SaMC

- Support Charge Code testing; continue Market Clearing testing
- Complete any outstanding design and unit test templates
- Update requirements based on Release 3 changes
- Commence design of FERC-related changes

Market Quality Systems

- Completed SAT
- Finalize FERC requirements and designs required for Market Sim 4

Legacy

- Continue Integration Logic efforts and SAT execution

Market Simulation

- Continue planning for Market Sim 3 (Business Structure Simulation)

MRTU High-Level Milestone Description

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

- **Functional Requirements Completion** – represents the date by which MRTU functional requirements documentation will be completed to allow system development design activities, with the exception of three MRTU projects, including: SaMC, SIBR, and IFM/RTN.
- **CRR Dry-Run Filing** – represents the date that CAISO will file the report for the Dry-Run results for Annual and Monthly auctions and allocations.
- **MS3 Interface Documents** – represents the date the CAISO will release the Technical Interface documents to Market Participants for Market Simulation Phase 3. These documents specify the interface details required for participants to access CAISO Systems and participate in the simulation.
- **MS4 Interface Documents** – represents the date the CAISO will release the Technical Interface documents to Market Participants for Market Simulation Phase 4. These documents specify the interface details required for participants to access CAISO Systems and participate in the simulation.



MRTU Financials

California Independent System Operator Corporation

California Independent System Operator
 Summary of Expected Completion Costs vs. December, 2006 Budget
 January 31, 2007
 (In Thousands) *

Project	Re-baselined Project Costs Dec. 2006	Actual Costs Through 2005 (a)**	Paid Invoices To Date 1/31/07 (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	\$ 40,235	\$ 50,097	\$ 14,710	\$ 64,807	\$ (0)
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	17,010	23,742	9,630	33,372	0
4 Congestion Revenue Rights (CRR)	4,516	3,386	3,993	523	4,516	0
4A Market Quality System (MQS)	6,261	0	2,346	3,916	6,261	0
11A Hardware & Software Purchases	3,588	2,769	2,947	642	3,588	(0)
Technology Upgrade	\$ 74,179	\$ 34,137	\$ 61,282	\$ 12,897	\$ 74,179	\$ (0)
5 Scheduling Infrastructure Business Rules (SIBR)	13,323	6,326	9,728	3,595	13,323	0
6 Settlements and Market Clearing (SaMC)	18,030	5,313	16,236	1,794	18,030	0
6 Master File (MFRD)	2,300	1,860	2,293	7	2,300	0
9 Post Transactional Repository (PTR)	2,461	1,041	2,269	192	2,461	0
10 Legacy Systems	7,785	3,434	6,407	1,377	7,785	0
10A State Estimator/Full Network Model	1,345	157	1,055	290	1,345	0
11 Technology Infrastructure/ Portal	2,065	2,028	2,050	15	2,065	(0)
11B Hardware & Software Purchases	6,923	4,566	5,202	1,722	6,923	0
12A System Integration/Enterprise Architecture	17,989	9,412	15,622	2,367	17,989	0
12B Technology Architecture	1,957	0	419	1,538	1,957	0
Common Projects	\$ 41,214	\$ 9,670	\$ 25,892	\$ 15,323	\$ 41,214	\$ -
13 Training/Readiness Projects	9,709	916	7,005	2,704	9,709	0
14A Project Management	17,666	7,674	11,923	5,743	17,666	0
14B Testing	13,840	1,080	6,964	6,875	13,840	0
Ongoing Scope Adjustments	\$ 1,523	\$ -	\$ -	\$ 1,523	\$ 1,523	\$ -
Pending MRTU Scope Changes	1,523	0	0	1,523	1,523	0
Contingency	\$ 7,500	\$ -	\$ -	\$ 7,500	\$ 7,500	\$ -
FERC Contingency	2,500	0	0	2,500	2,500	0
15 Program Contingency	5,000	0	0	5,000	5,000	0
Total MRTU Project	\$ 189,223	\$ 84,042	\$ 137,270	\$ 51,952	\$ 189,223	\$ (0)

* 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

MRTU Readiness Effort

The MRTU Readiness effort is focused on ensuring people, processes, and technologies are ready for the implementation of the MRTU program

Components

- Communication vehicle to gain awareness and understanding of the changes, identify gaps and make required process adjustments
- Provides detailed plans incorporating assessments, knowledge transfer, and training
- Utilize tracking mechanisms to assess progress
- Minimize surprises, provide early warning of required mitigation measures

Focuses

- Internal Readiness
- External Readiness

Summary of Activities

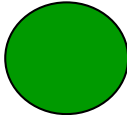

Internal Readiness Incorporating Five Activities

- ✓ Outreach
- ✓ Assessments
- ✓ Planning/Development
- ✓ Implementation
- ✓ Training

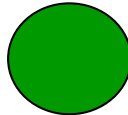

External Readiness Incorporating Four Activities

- ✓ Stakeholder
Interaction
- ✓ Outreach
- ✓ Assessments
- ✓ Training





MRTU Executive Summary

MRTU Readiness Schedule	
Current Period	Trend
	

- Training conducted on schedule.
- CAISO internal readiness tracking has been fully initiated and launched across the all Business Units with initial readiness milestones accomplished
- Participant Readiness activities are now on schedule as readiness criteria and measures have been completed and agreement has been made between CAISO and Participants
- Achieved overall planned target of completed Participant Assessments of 80% of the 75 Participants on January 31, 07
- Specific Participant Assessments accomplishments include:
 - Completed: 13 of 14 On-site Assessments
 - Completed 20 of 21 Assisted Self-assessments
 - Received 24 of 37 of the Self-assessments
 - Will provide remaining 5 action plans in February for those who have submitted an assessment

MRTU Readiness Budget	
Current Period	Trend
	

- Training and Readiness activities remain under budget.
- CAISO staff supporting internal business unit readiness have been working regularly to provided readiness update information for all key areas.
- CAISO staff have participated in the conducting and supporting the Participant Assessment activities.
- Key CAISO employees have taken on roles and accountability for both Internal and External Readiness efforts and in place to execute the work plan.

	Complete		No Delays
	Delay, but will not impact 11/07 go-live date. Contingency maintained, but at risk.		
	Delay, will impact program delivery and 11/07 Go-live date. Use of contingency funds.		




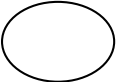
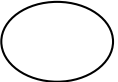
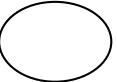



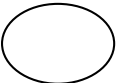
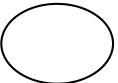
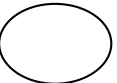



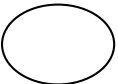
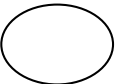
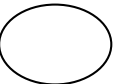

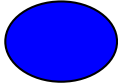

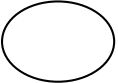
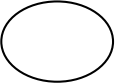
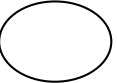


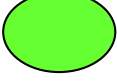



Readiness Progress (As of January 31, 2007)

CAISO Business Unit Readiness Summary

Program Area	Planning	Development	Execution	Comments
Outreach	✓	✓	✓	<ul style="list-style-type: none"> • Executing the Outreach Campaign (Kick-off meetings, periodic assessments, progress communication). • Conducted ISO wide MRTU Update meeting
Assessments	✓	✓	✓	<ul style="list-style-type: none"> • Achieved initial internal readiness milestone for all business units to have completed readiness work plans by 01/31/07 • Initiated next readiness milestone to complete MRTU impact analysis
Business Unit Readiness	✓	✓	✓	<ul style="list-style-type: none"> • Continued weekly meetings with all core Business Units to discuss next milestone tasks • Conducting regular tracking of readiness and action planning for all Business Units
Training	✓	✓	✓	<ul style="list-style-type: none"> • Conducted Level 200 Training for Operations staff • Advanced level courses under development, scheduled for 2007 • Additional courses as required

Internal Readiness Dashboard


Group A

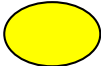
Business Unit	Kick-Off	Plan	Analysis	Design	Build	Implement	Comments
Grid Operations							<ul style="list-style-type: none"> Initial Project Work plan completed Developing reporting approach during Analysis phase Completing Business Processes in February
Market Services							<ul style="list-style-type: none"> Requirement of a work plan was communicated to the BU on 12/5 Readiness Activities are on track, work plan to be collected during Analysis phase
Operations Support							<ul style="list-style-type: none"> Initial Project work plan completed
IT							<ul style="list-style-type: none"> Initial Project work plan completed: combination of Applications and Infrastructure Knowledge Transition accelerated due to Project to IT transition schedule
External Affairs (Customer Services)							<ul style="list-style-type: none"> Initial Project work plan completed

Nov 30, 06 Feb 28, 07 May 31, 07 Sep 30, 07 Oct 26, 07

LEGEND

Completed 
Phase deliverables and tasks are approved by MRTU Readiness Lead

On Track 
Phase deliverables and tasks are on track by milestone due date

Not on Track 
Phase deliverables and tasks are not complete by milestone due date

Not Started 
Phase has not started



Internal Readiness Status

Group B

California Independent
System Operator Corporation

Business Unit	Kick-Off	Plan	Analysis	Design	Build	Implement	Comments
Corporate Services							<ul style="list-style-type: none"> Conducted initial kick-off Plan Assessments scheduled
External Affairs (All Other)							<ul style="list-style-type: none"> Completed meeting with Communications and PR and IA Need to follow up with Federal, State, Regulatory
Enterprise Risk Management							<ul style="list-style-type: none"> Conducted initial kick-off Plan Assessments scheduled
Human Resources							<ul style="list-style-type: none"> Conducted initial kick-off Plan Assessments scheduled
Legal							<ul style="list-style-type: none"> Conducted initial kick-off Plan Assessments scheduled
Market Monitoring							<ul style="list-style-type: none"> Conducted initial kick-off Developing readiness work plan Plan Assessments scheduled
MPD							<ul style="list-style-type: none"> Conducted initial kick-off Plan Assessments scheduled
Planning and Infrastructure							<ul style="list-style-type: none"> Conducted initial kick-off Developing readiness work plan Plan Assessments scheduled
Grid Ops – Reliability Coordinator							<ul style="list-style-type: none"> Conducted initial kick-off Developing readiness work plan Plan Assessments scheduled

January 31, 06 March 31, 07 May 31, 07 Sept 30, 07 Oct 26, 07

LEGEND Completed On Track Not on Track Not Started

Readiness Progress (As of January 31, 2007)

Market Participant Readiness Summary

Program Area	Planning	Development	Execution	Comments
Stakeholder Interaction	✓	✓	✓	<ul style="list-style-type: none"> Supporting Participant Readiness Advisory Group Supporting MRTU Implementation Workshop Supporting other working group sessions including Technical Workshops, SaMC User Groups and SIUG
Outreach	✓	✓	✓	<ul style="list-style-type: none"> Supporting ongoing Outreach Campaign execution (phone campaigns, MRTU Milestone Details, etc) Supporting MRTU Bulletin Board content
Market Participant Readiness	✓	✓	✓	<ul style="list-style-type: none"> Implemented participant assessments for approximately 75 market participants that included the following: On-site assessment, Assisted self-assessment, Self-assessment Achieved 80% completion of assessments from all Participants on January 31, 07 made up of the following: <ul style="list-style-type: none"> 13 of 14 On-sites 20 of 21 Assisted self-assessments Received 24 of 37 of the Self-assessments Will provide remaining 5 action plans in February for those who have submitted an assessment
Training	✓	✓	✓	<ul style="list-style-type: none"> Conducted Level 200 Training for Participants (8 out of 9 sessions with remaining 1 to be conducted by February 9, 07) Planning and began design for advanced level courses scheduled for 2007 Additional training as required

Readiness Progress (As of January 31, 2007)

Readiness Criteria Summary

Program Area	Planning	Development	Execution	Comments
Readiness Criterion	✓	✓	✓	<ul style="list-style-type: none"> • Finalized Participant comments and feedback for Readiness Criterion that will be used to assess and monitor readiness towards the MRTU Implementation in February 08. • Initial reports have been drafted to reflect the following: <ul style="list-style-type: none"> • Roll-up of categories indicating readiness, risks and actions • Dashboards provided to the Business Unit owners, MRTU Steering Committee, Officers, Board and Market Participants • Tracking began in January 07 and formal reporting for Readiness Criteria will begin February 2007