

Market Operations – Overview

1 Descriptions of Functions – Overview of Market Operations

All prior work (intellectual property of the company or individual) or proprietary (non-publicly available) work should be so noted.

1.1 Function Name

Name of Function

Market Operations across 3 Western Regional Transmission Organizations (RTOs)

1.2 Function ID

IECSA identification number of the function

M-1,M-2,M-3,M-4,M-5,M-6

1.3 Brief Description

Describe briefly the scope, objectives, and rationale of the Function.

As the electricity industry is deregulated, and as FERC defines more clearly what the market operation tariffs will encompass, three possible Regional Transmission Organizations (RTOs) in the Western Interconnection are developing seamless interfaces for Market Participants to submit energy schedules and ancillary service bids across these 3 RTOs. The 3 RTOs are California ISO (existing ISO handling the electricity market in California), RTO West (potential RTO of many northwestern utilities), and WestConnect (potential RTO of many southwestern utilities). These 3 RTOs are developing the requirements for the Western RTO functions.

The descriptions of the functions below may or may not represent the final market rules and market operations, because these have not been finalized yet.

1.4 Narrative

A complete narrative of the Function from a Domain Expert's point of view, describing what occurs when, why, how, and under what conditions. This will be a separate document, but will act as the basis for identifying the Steps in Section 2.

The following is a list of Western RTO functions related to market operations, organized for convenience by timeline. These functions have never been implemented as yet because the actual market rules have not been agreed upon and are waiting for some general FERC decisions and some FERC RTO-specific approvals. Nonetheless, the functions represent conceptually many of the key types of market operations that are need in any electricity market.

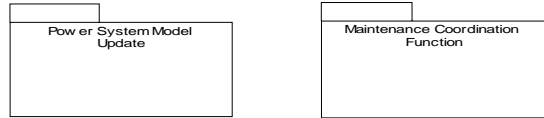
This document is an overview of the Western RTO functions and does not include any of the step by step details, which are provided in the detailed documents. Only the listed functions with asterisks are represented in the diagrams and/or step-by-step descriptions in those documents' section 2.

1. Long Term Planning
 - a. Registration of Market Participants
 - b. Capacity/Adequacy Market
 - c. Transmission and Generation Maintenance Coordination *
 - d. Updating the Power System Model *
 - e. Generation certification
2. Medium/Short Term Planning
 - a. Load Forecast *
 - b. Outage Scheduling *
 - c. Congestion Management *
 - d. Long term Auction/sale of FTRs *
 - e. Bilateral Energy Market
3. Day Ahead Market
 - a. Auction/sale of FTRs *
 - b. Day Ahead Submittal of Energy Schedules *
 - c. Day Ahead Submittal of Ancillary Service Bids *
 - d. Schedule Adjustment of Energy Schedules *
 - e. Schedule Adjustment of Ancillary Services *
 - f. NERC Tagging Management *

4. Real-Time
 - a. Operational calculations
 - b. Real-time Submittal of Schedules
 - c. Real-time Submittal of Ancillary Services
 - d. Normal Real-Time Dispatch Operations *
 - e. Normal Generation Control Operations *
 - f. Scheduling Coordinators Redispatch *
 - Redispatch
 - Notify Scheduling Coordinators of redispatch
 - g. Emergency Ancillary Services *
 - h. Real-Time Power System Historical Records *
5. Post-Dispatch
 - a. Metering Data Collection *
 - Register meters
 - Process meter revenue data
 - b. Transmission and Distribution Schedule Checkout *
 - c. Financial Settlements *
 - LMP Calculation
 - Losses calculation
 - Reconcile ISO market
 - Reconcile real-time market
 - Resolve disputes
 - d. Accounting and Billing *
 - Create budget and financial forecast
 - Manage accounts payable
 - Manage accounts receivable
 - Purchasing
 - e. Market Monitoring and Auditing *
 - Develop monitoring criteria
 - Perform market assessment
 - Investigate market abuse

Overview of Western RTOs Business Processes

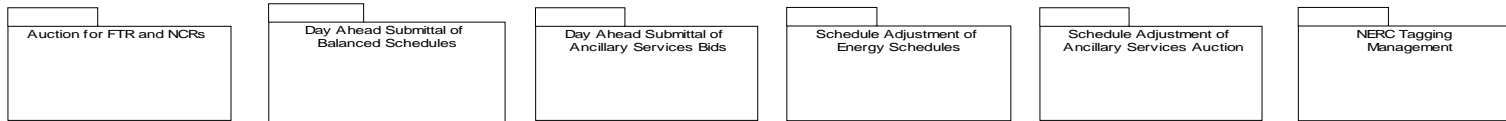
Long Term Planning Processes



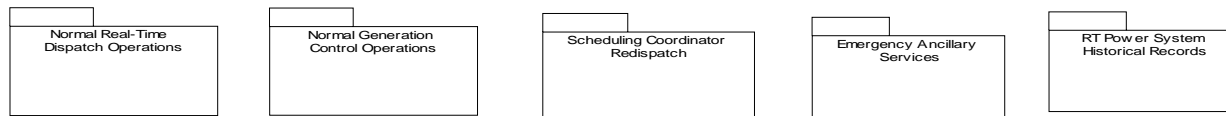
Medium and Short Term Planning Processes



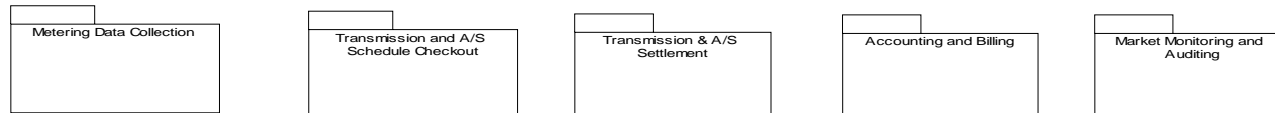
Day Ahead through Schedule Adjustment Transmission Market Processes



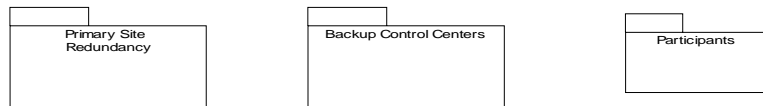
Real-Time Transmission Monitoring and Security Analysis Processes



Post-Dispatch Transmission Settlement Processes



Support Processes



1.5 Actor (Stakeholder) Roles

Describe all the people (their job), systems, databases, organizations, and devices involved in or affected by the Function (e.g. operators, system administrators, technicians, end users, service personnel, executives, SCADA system, real-time database, RTO, RTU, IED, power system). Typically, these actors are logically grouped by organization or functional boundaries or just for collaboration purpose of this use case. We need to identify these groupings and their relevant roles and understand the constituency. The same actor could play different roles in different Functions, but only one role in one Function. If the same actor (e.g. the same person) does play multiple roles in one Function, list these different actor-roles as separate rows.

<i>Grouping (Community)'</i>		<i>Group Description</i>
<i>Market Operations</i>		
<i>Actor Name</i>	<i>Actor Type (person, device, system etc.)</i>	<i>Actor Description</i>
Area & Resource Operation Centers	Corporation	
AuditingPersonnel	Person	
DatabaseAdministrator	Person	
DisCos	Corporation	
DistributionSystem	System	
Eligible Customer Metered Entity	Person	
Eligible Customers	Person	
GenCos	Corporation	
IntervalMeterDevice	Device	
LGROwner	Person	
LoadProfile	Database	
MarketParticipant	Person	

<i>Grouping (Community)'</i>		<i>Group Description</i>
<i>Market Operations</i>		
<i>Actor Name</i>	<i>Actor Type (person, device, system etc.)</i>	<i>Actor Description</i>
Metered Entities	Corporation	
WeatherService	Corporation	
NERC	Corporation	
Other 2 RTOs	Corporation	
RetailCos	Corporation	
RTOOperator	Person	
RTOProgrammerEngineerPersonnel	Person	
RTOScheduler	Person	
SC-FTROwner	Person	
SchedulingCoordinator	Person	
SettlementAdministrator	Person	
SettlementDataMgmtAgent	Corporation	
CustomerMeterDevice	Device	
Tag Authority	Corporation	
TimeLineManager	Timer	

<i>Grouping (Community)'</i>		<i>Group Description</i>
<i>Market Operations</i>		
<i>Actor Name</i>	<i>Actor Type (person, device, system etc.)</i>	<i>Actor Description</i>
TransmissionOwner	Person	
TransmissionSystem	Power System	
WSCC	Corporation	

Replicate this table for each logic group.

1.6 Information Exchanged

Describe any information exchanged in this template.

<i>Information Object Name</i>	<i>Information Object Description</i>

1.7 Activities/Services

Describe or list the activities and services involved in this Function (in the context of this Function). An activity or service can be provided by a computer system, a set of applications, or manual procedures. These activities/services should be described at an appropriate level, with the understanding that sub-activities and services should be described if they are important for operational issues, automation needs, and implementation reasons. Other sub-activities/services could be left for later analysis.

<i>Activity/Service Name</i>	<i>Activities/Services Provided</i>

<i>Activity/Service Name</i>	<i>Activities/Services Provided</i>

1.8 Contracts/Regulations

Identify any overall (human-initiated) contracts, regulations, policies, financial considerations, engineering constraints, pollution constraints, and other environmental quality issues that affect the design and requirements of the Function.

<i>Contract/Regulation</i>	<i>Impact of Contract/Regulation on Function</i>
Market Tariff	
Agreements between RTOs	

<i>Policy</i>	<i>From Actor</i>	<i>May</i>	<i>Shall Not</i>	<i>Shall</i>	<i>Description (verb)</i>	<i>To Actor</i>

<i>Constraint</i>	<i>Type</i>	<i>Description</i>	<i>Applies to</i>

2 Step by Step Analysis of Function

Not provided in this overview document

3 Auxiliary Issues

3.1 References and contacts

Documents and individuals or organizations used as background to the function described; other functions referenced by this function, or acting as “sub” functions; or other documentation that clarifies the requirements or activities described. All prior work (intellectual property of the company or individual) or proprietary (non-publicly available) work must be so noted.

ID	Title or contact	Reference or contact information
[1]		
[2]		

3.2 Action Item List

As the function is developed, identify issues that still need clarification, resolution, or other notice taken of them. This can act as an Action Item list.

ID	Description	Status
[1]		
[2]		

3.3 Revision History

For reference and tracking purposes, indicate who worked on describing this function, and what aspect they undertook.

No	Date	Author	Description
0.	February 27, 2004	Frances Cleveland	

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