

## Draft Web Service Delivery Timeline

Draft delivery plan of the External Web Services into the EDS environment.

### June 30th 2007

#### Three Part Offer\*

- Incremental/Decremental Offers
- Congestion Revenue Rights
- Current Operating Plan
- Energy-Only Offer
- Output Schedule
- Bid Set Acceptance
- Bid Set Errors
- Get mRID
- System Status

\* Currently in the sandbox.

### July 30th 2007

- Forecasted Load
- Market Totals
- Market LMPs and SPPs
- Binding Constraints
- Active Contingencies in SCED
- Voltage Profiles
- Shift Factors
- Proxy Curves
- Mitigated Curves

### August 30th 2007

- Energy Bid
- PTP Obligation
- Self Schedule
- Real-Time System Load
- Total Regulation
- Load Ratio Share
- Load Distribution Factors
- Unit Availability
- Startup and Shutdown Instructions
- CRR Awards

### September 30th 2007

- Self Arranged Ancillary Services
- Ancillary Service Offers
- Ancillary Service Trades
- Capacity Trade
- DC Tie Schedule
- Energy Trade
- Get Award Set
- Market MCPCs
- Ancillary Service Schedule Obligations
- Customer Load Profile
- PTP Obligation Awards

### October 30th 2007

- Dynamic Ratings
- Competitive Constraints
- Aggregated Ancillary Service Offer Curves
- Ancillary Service System Plan
- Pending Trade
- Energy Offer Awards
- Energy Only Offer Awards
- Energy Bid Awards
- Ancillary Service Awards
- Outage Creation

### November 30th 2007

- Total Ancillary Service Offers
- Total DAM Energy
- Derated CRRs
- Notices and Alerts
- Outage Notifications
- Alert Acknowledgement
- Outage Query
- Outage Cancellation



## Understanding: Market Participant Data Access

April 23 2007

### What is the goal of the booklet?

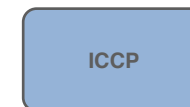
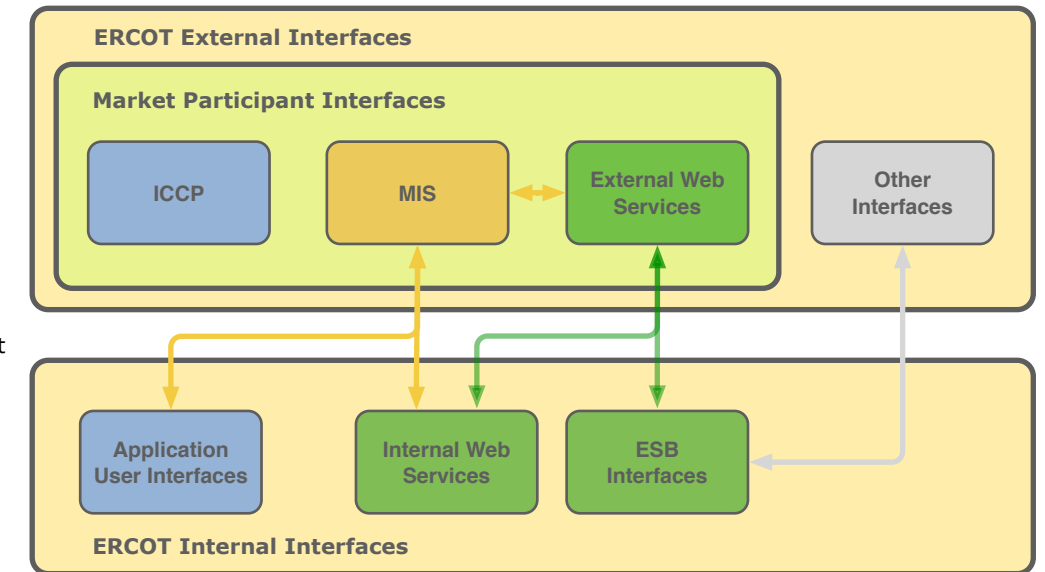
This booklet has two goals. The first is to position the Web Service APIs in the context of total Nodal solution. The second is to outline an approach to allow Market Participants to check the External Interface Specification to ensure all the data they require will be available upon implementation of the specification.

### Categories of communication

There are four categories of external communication in the Nodal solution.

Three of these communication methods, ICCP, MIS and External Web Services facilitate communication with the Market. The fourth covers data feeds used by Nodal, for example RPP, that are not directly associated with Market Participants.

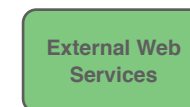
In the diagram we have identified these four methods and shown, at a high level, how each communicates with the internal Nodal systems.



Used by the EMS systems for telemetry and communication. The approach and specifications are described in the ERCOT Nodal ICCP Communication Handbook.



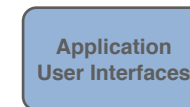
MIS presents the human interfaces to Nodal including hosting applications, dashboards and the presentation of static web content. The MIS Approach is documented in the MIS Conceptual System Design.



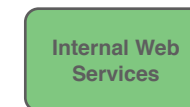
Provides machine to machine APIs to external Market Participants and the MIS Portal. The details are provided in the External Interface Specification.



Other interfaces include Renewable Production Potential (RPP), weather and other feeds to ERCOT that do not come from Market Participants.



Market facing Application User Interfaces, for example, the MMS or CRR. User Interfaces are described in the Projects documentation.

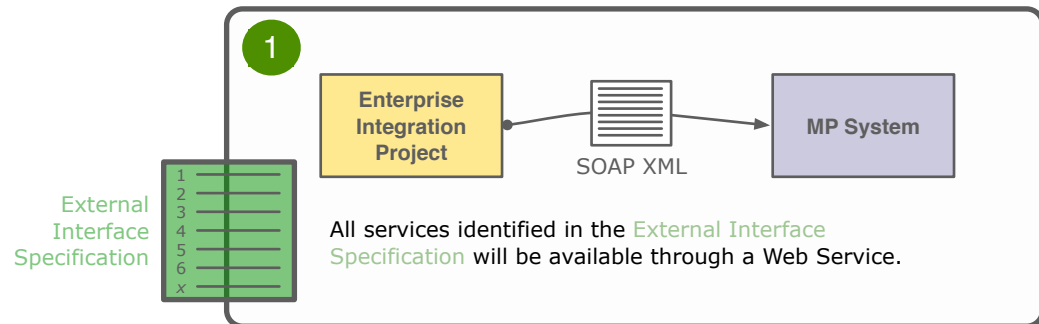


Internal Web Services used to communicate between internal ERCOT systems and provide the MIS Portal data feeds that are not required by the Market.

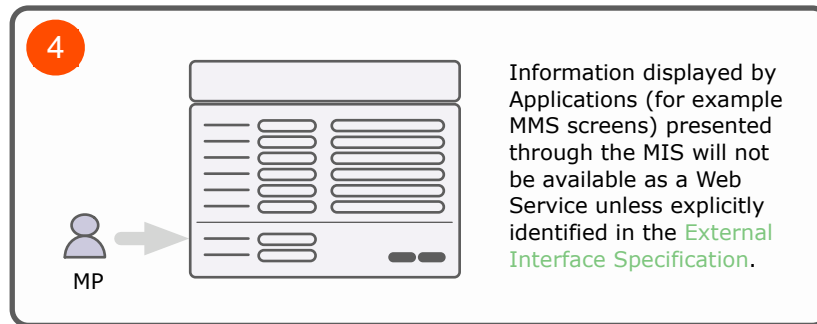


ERCOT's Enterprise Services Bus that supports the large majority of the interfaces between components internal to ERCOT.

### Services Identified in the Specification



### Information Displayed in an Application UI



### How to verify you have all required data?

All data programmatically available through Nodal will be delivered through a service described in the External Interface Specification. The notable exception to this is communication through ICCP.

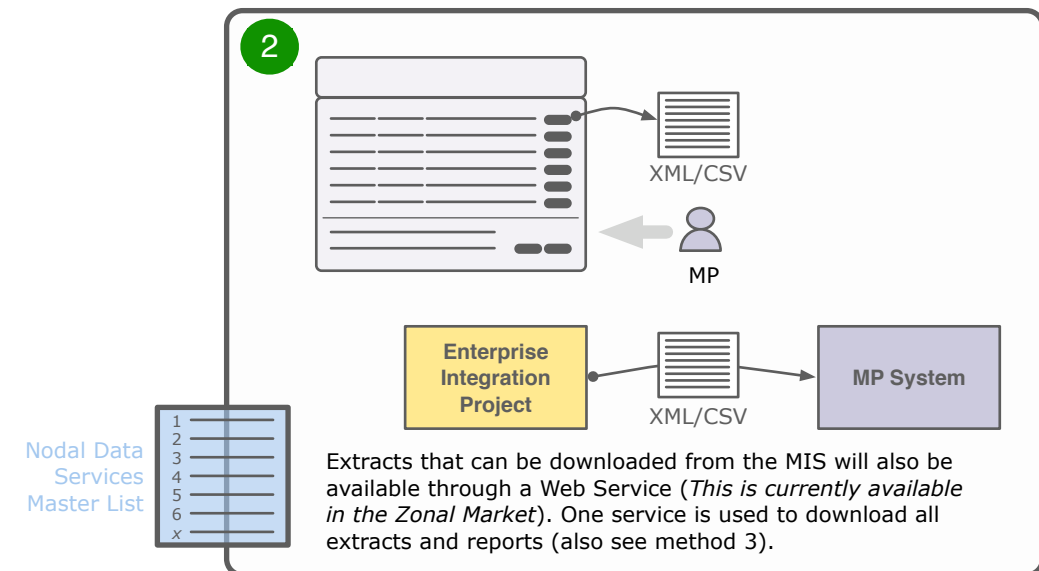
One service in the External Interface Specification, the capability to download extracts/reports provides access to a range of data. Therefore to have an item of data programmatically available it must either be associated with delivery method **1** or **2**.

To determine if a specific item will be available through either of these methods you should review the **External Interface Specification** and the **Nodal Data Services Master List**. On the **Nodal Data Services Master List** only items marked as being delivered through method **2** should be considered available.

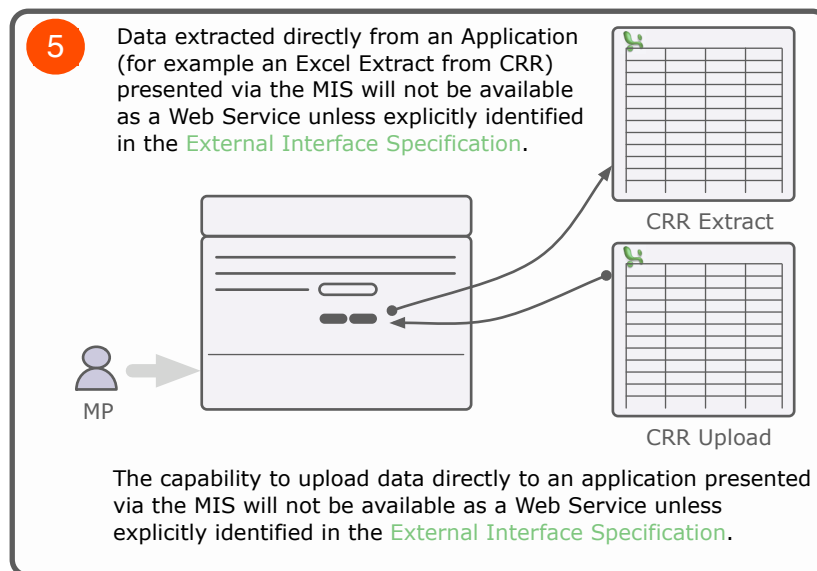
Delivery methods **1** and **2** cover a subset of the total data available in Nodal. You should review the **Nodal Data Services Master List** to get a complete inventory of all data identified in the protocols and request an addition to the **External Interface Specification** if there are items you need programmatically that are not currently being delivered in that form.

The **MIS Web Services Interface Specification** contains data items that support the MIS portal but are considered as not required by the Market. If you require any information on this list please request that the service be moved to the **External Interface Specification**. The **MIS Web Services Interface Specification** and the **External Interface Specifications** are mutually exclusive.

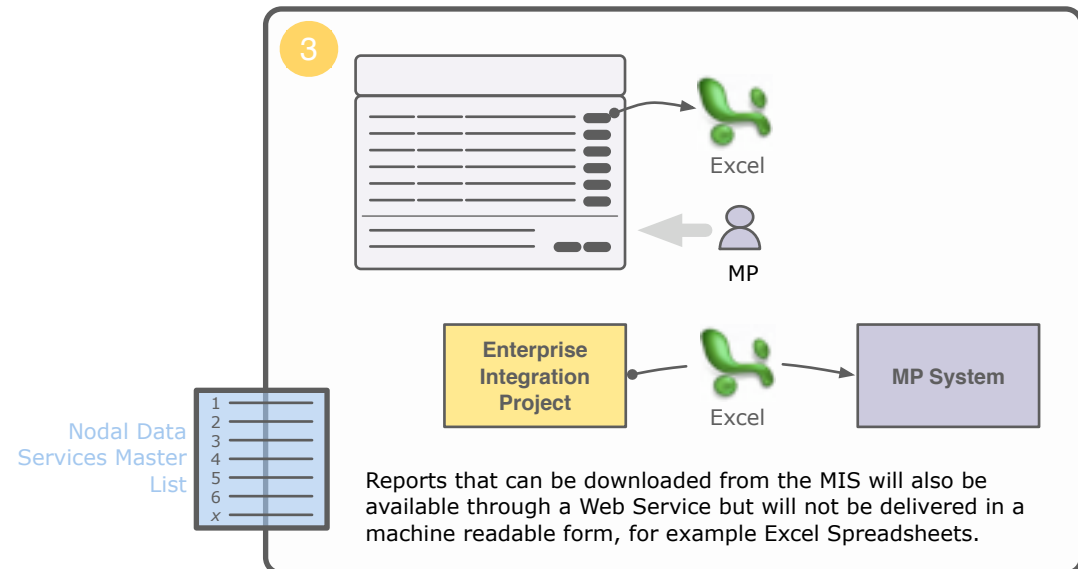
### Extracts Available on the MIS



### Data Extracted/Uploaded Directly via a App. UI



### Reports Available on the MIS



### Additional Data Required by MIS Dashboards

