Electronic Notifications for Economically Dispatched Demand Response Under Order 745

DRS
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Alex Habre, Demand Response Operations
• PJM currently uses emails to notify Economic DR participants when they are dispatched.
• email notifications have not been a reliable method of communication.
• Comply with Order 745 filing.
Objectives

- PJM needs a more robust notification and acknowledgement method for dispatching economic DR, under Order 745.
- During this session we will update you on the progress we have made so far, solicit your feedback and answer any questions you have.
• Initially the new notification method will apply only to Economically Dispatched DR.
• In the Future the same approach could apply to Synch Reserve Events and Emergency Events as well.
• Email Notification may stay as a secondary notification method during a transition period.
• All Call will still be the default method for Emergency Event Notifications.
A solution to replace email notifications. 
Easily implemented, reliable, scalable and platform independent.
Polled periodically for availability.
Message based, with embedded dispatch instructions that provide for:
  - A simple message delivery confirmation.
  - Allow confirmation of DR capabilities.
A sample client implementation with source code.
• Message syntax is already in eLRS under events.
• Minor changes to existing Web Services “Get Events” functionality (MarketType, MarketProduct, TimeStamp, MarketParticipant, etc.)
• Implement a polling mechanism.
• Implement a simple message delivery confirmation and a feedback mechanism.
## Where each Dispatch record

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Field Name</th>
<th>Type</th>
<th>Req?</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Operator</td>
<td>SO</td>
<td>String</td>
<td>Y</td>
<td>Usually market operator name – eg ‘PJM’</td>
</tr>
<tr>
<td>Time Stamp</td>
<td>TS</td>
<td>DateTime</td>
<td>Y</td>
<td>GMT Timestamp for dispatch – usually the modified time</td>
</tr>
<tr>
<td>Market Participant</td>
<td>MP</td>
<td>String</td>
<td>Y</td>
<td>Recipient – ie, CSP</td>
</tr>
<tr>
<td>Market Resource</td>
<td>MR</td>
<td>String</td>
<td>Y</td>
<td>String version of registration id, resource, or zone name – may depend on market and/or dispatch type</td>
</tr>
<tr>
<td>Market Product Type</td>
<td>MT</td>
<td>String</td>
<td>Y</td>
<td>DA, HA, RT, SS, DASR, SR, EMER, LM, REGUP, REGDN, etc</td>
</tr>
<tr>
<td>Event Id</td>
<td>ED</td>
<td>Long</td>
<td>Y</td>
<td>Unique event id</td>
</tr>
<tr>
<td>Instruction Id</td>
<td>ID</td>
<td>Long</td>
<td>Y</td>
<td>Unique event dispatch instruction id</td>
</tr>
<tr>
<td>Status</td>
<td>ST</td>
<td>String</td>
<td>Y</td>
<td>Status of dispatch [SCH, ACT, END, CXD]</td>
</tr>
<tr>
<td>Notify Time</td>
<td>NX</td>
<td>DateTime</td>
<td>Y</td>
<td>GMT Notification time</td>
</tr>
<tr>
<td>Start Time</td>
<td>SX</td>
<td>DateTime</td>
<td>Y</td>
<td>GMT Start of event</td>
</tr>
<tr>
<td>Deploy Time</td>
<td>DX</td>
<td>DateTime</td>
<td></td>
<td>GMT expected deployment time=start time + deployment (ramp) minutes</td>
</tr>
<tr>
<td>Release Time</td>
<td>RX</td>
<td>DateTime</td>
<td></td>
<td>GMT minimum release time = start time + min down time</td>
</tr>
<tr>
<td>End Time</td>
<td>EX</td>
<td>DateTime</td>
<td></td>
<td>GMT End time - release time + ramp (may not be available until end of event)</td>
</tr>
<tr>
<td>Set Point Amount</td>
<td>AMT</td>
<td>Float</td>
<td></td>
<td>Base/Target/set point level usually in MW</td>
</tr>
<tr>
<td>Awarded Price</td>
<td>RATE</td>
<td>Float</td>
<td></td>
<td>Awarded price rate usually in $/MW</td>
</tr>
<tr>
<td>Message</td>
<td>MSG</td>
<td>String</td>
<td></td>
<td>Optional text message</td>
</tr>
<tr>
<td>Test Flag</td>
<td>TEST</td>
<td>T/F</td>
<td></td>
<td>Default=F</td>
</tr>
</tbody>
</table>
### Sample Economic Dispatch Message

**Draft - Subject to Change**

#### Attribute | Field Name | Type | Req? | Description
--- | --- | --- | --- | ---
Market Participant | MP | String | Y | Recipient – ie, CSP
Time Stamp | TS | DateTime | Y | GMT Timestamp for dispatch – usually the modified time
System Operator | SO | String | Y | Usually market operator name – eg ‘PJM’
Market Resource | MR | String | Y | String version of registration id or resource name – may depend on market and/or dispatch type
Market Product Type | MT | String | Y | [DA, HA, RT, SS, DASR, SR, EMER, LM, REGUP, REGDN, etc]
Event Id | ED | Long | Y | Unique event id
Instruction Id | ID | Long | Y | Optional event dispatch instruction id to opt out or record participation – if no id then this is a general feedback
Status | ST | String | Y | Status of response [ACK, AVL, SCH, ACT, OUT, OFF]
Start Time | SX | DateTime | | GMT Start of current event or availability
End Time | EX | DateTime | | GMT End of current event or availability
Availability Amount | AVL | Float | | Availability level usually in MW
Set point Amount | AMT | Float | | Current event target/set point level usually in MW
Generation Amount | GEN | Float | | Current generation equivalent output level if available usually in MW
Load Amount | LOAD | Float | | Current metered load level if available usually in MW
Price Rate | RATE | String | | Price rate usually in $/MW
Message | MSG | String | | Optional text message
Test Flag | TEST | T/F | | Default=F

Where each Response record
Anticipated Changes for Market Participants

- Current users of eLRS Web Services, will have minimal changes.
- New Users of eLRS should get familiar with the existing eLRS Web Services.
  

- Have the infrastructure necessary to poll PJM servers periodically to ensure that you can receive Dispatch Instructions.
- PJM will make a beta version of the client as soon as feasible.

For more details….eLRS
Next Steps

- PJM will schedule future meetings to keep you up to date.
- email any questions to DSR_Ops@pjm.com.
- Questions ?