ISO Interface Specification

Demand Response Registration System

Document Version: 1.9
Date Created: 4/20/2016
Location of Document


Revision History

<table>
<thead>
<tr>
<th>Date</th>
<th>Version</th>
<th>Description</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/20/2016</td>
<td>1.0</td>
<td>Initial Version</td>
<td>CAISO</td>
</tr>
<tr>
<td>11/21/2014</td>
<td>1.1</td>
<td>Update the location of the current document and the location of all the XSDs and WSDLs referenced in this document</td>
<td>CAISO</td>
</tr>
<tr>
<td>11/21/2014</td>
<td>1.1</td>
<td>Added response xmls for RetrieveDRRSBatchStatus in 6.4.3</td>
<td>CAISO</td>
</tr>
<tr>
<td>12/31/2014</td>
<td>1.2</td>
<td>Updated the element MessagePayload.AggregatedDistributedEnergyResourceContainer.DistributedEnergyResourceContainer from required to optional in DRRSLocations_v1.xsd in section 4.4.1</td>
<td>CAISO</td>
</tr>
<tr>
<td>12/31/2014</td>
<td>1.2</td>
<td>Added the element &quot;name&quot; to MessagePayload.AggregateLocationRequest.AggregatedDistributedEnergyResourceContainer in the RequestDRRSLocationData_v1.xsd in section 5.4.1</td>
<td>CAISO</td>
</tr>
<tr>
<td>01/15/2015</td>
<td>1.3</td>
<td>Added the optional elements &quot;status&quot; and &quot;registration id&quot; to AggregatedDistributedEnergyResourceContainer and DistributedEnergyResourceContainer in DRRSLocations_v1.xsd in section 4.4.1</td>
<td>CAISO</td>
</tr>
<tr>
<td>01/15/2015</td>
<td>1.3</td>
<td>Updated section 5.2 to add details about the retrieve for location using API vs the UI</td>
<td>CAISO</td>
</tr>
<tr>
<td>2/6/2015</td>
<td>1.4</td>
<td>Remove the link for artifacts; add the &quot;Terminated&quot; status for ALOC in section 5.4.1</td>
<td>CAISO</td>
</tr>
<tr>
<td>2/23/2014</td>
<td>1.4</td>
<td>Update the date time format in the sample requests and add sample datetime formats in the appendix. Change in section 4.4.1 to make ALOC name and LOC name mandatory when action=&quot;NEW&quot; and optional when action=&quot;MODIFY&quot;</td>
<td>CAISO</td>
</tr>
<tr>
<td>3/16/2015</td>
<td>1.4</td>
<td>Add descriptions for Status in retrieveDRRSBatchStatus response</td>
<td>CAISO</td>
</tr>
<tr>
<td>9/6/2015</td>
<td>1.5</td>
<td>New services for SubmitDRRSRegistrations, RetrieveDRRSRegistrations and SubmitDRRSLocationReview</td>
<td>CAISO</td>
</tr>
<tr>
<td>Date</td>
<td>Version</td>
<td>Description</td>
<td>Author</td>
</tr>
<tr>
<td>------------</td>
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<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>9/6/2015</td>
<td>1.5</td>
<td>SubmitDRRSLocations_v1.xsd will not be supported, change to DRRSBatchStatus_v1.xsd, change to SubmitStandardOutput.xsd, introduce DRRRegistrationData_v1.xsd and RequestDRRegistrationData_v1.xsd</td>
<td>CAISO</td>
</tr>
<tr>
<td>9/6/2015</td>
<td>1.5</td>
<td>Remove the concept of aggregate locations (ALOCs)</td>
<td>CAISO</td>
</tr>
<tr>
<td>3/10/2016</td>
<td>1.6</td>
<td>Added the locationID element in both locations and registrations. Updated the “Req’d” option in element tables. Updated with BatchValidationStatus schema changes. Added Application Error Messages section. Updated the CAISO logo. Reformatted with section’s pushed to next pages.</td>
<td>CAISO</td>
</tr>
<tr>
<td>4/6/2016</td>
<td>1.7</td>
<td>Incorporated the CPG review comments received on 03/22/2016.</td>
<td>CAISO</td>
</tr>
<tr>
<td>4/20/2016</td>
<td>1.8</td>
<td>Incorporated the CPG review comments received on 04/12/2016.</td>
<td>CAISO</td>
</tr>
<tr>
<td>5/3/2016</td>
<td>1.9</td>
<td>Added Status and locationID elements in the example under section 5.4.3; additional information on the action element and DLAP derivation in section 4.4.1; end-dating location sample xml.</td>
<td>CAISO</td>
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**Appendix – CAISO Holidays**

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<th>Technology</th>
<th>Template Version</th>
<th>Document Version</th>
<th>Date Created</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.9</td>
<td>4/20/2016</td>
</tr>
</tbody>
</table>
1. Introduction

1.1 Purpose

This document describes the Market Participant interface to CAISO’s DRRS web services. It provides the WSDL, XSD, and XML information required by application programmers to create and send messages and to process response messages.

1.2 Contact Information

For any questions regarding this document or technical questions related to integrating applications with CAISO’s DRRS web services, please open a CIDI ticket with the ISO.

1.3 Related Documents

CAISO’s ISO MARKET program has produced a set of documents describing its web services architecture and associated interfaces to the Bidding, Market Results, Trades, and Sandbox services. CAISO’s ISO MARKET Web Services Architecture & Integration Specification is the top-level document in this set; Market Participants and their application programmers should read this document to gain an overall understanding of CAISO’s web services architecture prior to reading any of the detailed documents shown below.

Figure 1 – ISO MARKET Web Services Interface Specification Document Set

The ISO MARKET Web Services Interface Specification Document Set is available online at the locations indicated below.
Please refer to the appendix section for application specific use case documentation, state and status flow diagrams related to locations and registrations.

1.4 Release Notes

Release Notes for ISO Interface Specification for DRRS Web Services Version 1

This document release 1.0 will be the first release of the interface specification.

The services affected by the DRRS are the following:
1. submitDRLocations_v1 – submit a create or modify request for a location
2. submitDRLocations_v1_DocAttach – submit a create or modify request for a location(s) for .net clients
3. retrieveDRLocations_v1 – retrieve request for a DRRS Location(s)
4. retrieveDRLocations_v1_DocAttach – retrieve request for a DRRS Location(s) for .net clients
5. retrieveBatchValidationStatus_v1 – to request the status on a submission of a create or modify (see #1 & 2)
6. retrieveBatchValidationStatus_v1_DocAttach – to request the status on a submission of a create or modify (see #1 & 2) for .net clients
7. submitDRRegistrations_v1 – submit a create or modify request for a registration
8. submitDRRegistrations_v1_DocAttach – submit a create or modify request for a registration(s) for .net clients
9. retrieveDRRegistrations_v1 – retrieve request for a DRRS Registration(s)
10. retrieveDRRegistrations_v1_DocAttach – retrieve request for a DRRS Registration(s) for .net clients

1.5 API Transition Support

Initial Implementation. The existing services for submitDRRSLocations, retrieveDRRSLocations, and retrieveDRRSBatchStatus will not be supported with the new release.
2. Business Scenario

Market Participants can retrieve or submit the following data via the DRRS web services:

- Retrieve DRRS Locations
- Save request for creating draft/new DRRS Locations
- Delete request for deleting the draft/new DRRS Locations
- Submit request for creating/end-dating DRRS Locations
- Review request for reviewing DRRS Locations (for LSE/UDC/LSE&UDC review)
- Modify request for modifying DRRS Locations
- Initiate Defend request for defending for a DRRS Location
- Review Defend request for reviewing the DRRS Location that is under defend process (for DRP review)
- Retrieve status for the creation or modification requests
- Retrieve DRRS Registrations
- Save request for creating draft/new DRRS Registrations
- Delete request for deleting the draft/new DRRS Registrations
- Submit request for creating/end-dating DRRS Registrations
- Modify request for modifying DRRS Registrations
3. Service Level Agreement

The following service level agreement defines the business and technical requirements for service availability and performance.

<table>
<thead>
<tr>
<th>Service availability</th>
<th>Service Level goal is 99.9%.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected size of payload (average and maximum)</td>
<td>TBD *</td>
</tr>
<tr>
<td>Expected frequency (average and maximum)</td>
<td>5 seconds</td>
</tr>
<tr>
<td>Longest time the service can be unavailable before business is impacted</td>
<td>4 hours during regular business hours</td>
</tr>
<tr>
<td>Business impact if is unavailable</td>
<td>Market Participants utilizing the service will not be able to submit or retrieve DRRS location and registration data</td>
</tr>
</tbody>
</table>
| Expected response time for the service        | Submit service – < 10 seconds *  
Retrieve service – < 10 mins for a payload with 50K locations* |
| Expected time to retrieve the batch status    | < 2 hours under normal conditions* |

* subject to change
4. SubmitDRLocations

4.1 Use Model

The diagram below shows the sequence for submitDRLocations:

![Diagram showing sequence for submitDRLocations]
4.2 Operation Details

The service has `submitDRLocations_v1` operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message Type</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>submitDRLocations_v1</td>
<td>Input</td>
<td>submitDRLocationsRequest</td>
<td>submitDRLocations_v1.wsdl</td>
<td>DRRegistrationData_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>submitDRLocationsResponse</td>
<td>submitDRLocations_v1_DocAttach.wsdl</td>
<td><a href="#">StandardOutput_v1.xsd</a></td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturnTypeError</td>
<td>StandardOutput_v1.xsd</td>
<td><a href="#">StandardOutput_v1.xsd</a></td>
</tr>
</tbody>
</table>

4.3 WSDL (submitDRLocations_v1.wsdl)

- submitDRLocations_v1.wsdl – Used for normal SOAP messaging
- submitDRLocations_v1_DocAttach.wsdl – Used when .NET is the source of processing

The WSDL can be found at the following location:

Please refer to the latest version of the artifacts available on the CAISO website in the technical documentation section.

4.4 Message Type

submitDRLocationsRequest

4.4.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type/Length</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td>MessageHeader (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced, in GMT Time format Example: 2001-12-17T09:30:47Z</td>
<td>datetime</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Element | Data Description | Type/Length | Req'd
---|---|---|---
Source | Source system which provides data for this service | String | Yes
Version | Date reflecting the release this latest version update was related to. Valid value is 'v20160501' | String | Yes

**MessagePayload (required)**

**MessagePayload.DemandResponseRegistration_Full (optional)**

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
</tr>
</thead>
</table>
mRID | Identifier of the Registration |
| name | Name of the Registration |
| terminateRegistration Flag | TRUE/FALSE. When this Flag = TRUE, the user is requesting to terminate the associated registration in the Demand Response System |
| baselineMethod | Baseline method is the mathematical method used for establishing the DR resource's baseline load topology. Establishing a baseline helps evaluate the resource's performance with regards to a DR event called by the ISO |
| program | Every resource should be either PDR (Proxy Demand Response) or RDR (Reliability Demand Response) |
| resourceType | Resource types refers to whether the PDR or RDR resource is pre-defined in CAISO's network model build or whether a specific node has to be created for the purpose of creating a custom resource as requested by the DRP |

**MessagePayload.DemandResponseRegistration_Full.DemandResponseProvider (optional)**

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
</tr>
</thead>
</table>
mRID | Master resource identifier of the Demand Response Provider (also referred to in the DRRS system as DRP) as provided in the master file |

**MessagePayload.DemandResponseRegistration_Full.status (optional)**

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
</tr>
</thead>
</table>
value | Status value of the registration. The different values can be:

- NEW
- PENDING
- CONFIRMED
- TERMINATED

Status of a registration will be “NEW” when the registration is in the draft status (submitted with action=“SAVE”), “PENDING” if it is in the validation process, will be “CONFIRMED” if the registration is valid and tied to an active location, and “TERMINATED” if the registration is terminated. |
### Element Data Description

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type/Length</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td>MessagePayload.DemandResponseRegistration_Full.DistributedActivity</td>
<td>all activity records created for this asset</td>
<td></td>
<td></td>
</tr>
<tr>
<td>submittedActiveEndDateTime</td>
<td>Submitted end date time of the registration for which the registration is active in GMT format.</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>submittedActiveStartDateTime</td>
<td>Submitted start date time of the registration for which the registration is active in GMT format.</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>action</td>
<td>Action to be taken</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Valid values are:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SAVE</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SUBMIT</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MODIFY</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DELETE</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SAVE is used to save the registration as a draft. This will be indicated by a status of NEW. SAVE action needs to be used to change the updateable attributes of a registration in the NEW status.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SUBMIT presents the registration for consideration to the DRRS system. The registration will be in the PENDING status and will be validated against the business rules. Once the validation is complete, the registration will be in the CONFIRMED status.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MODIFY must be used along with the appropriate TerminateRegistrationFlag value to terminate a CONFIRMED registration.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MODIFY is used to change the updateable attributes of an existing registration that is in the CONFIRMED status.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DELETE is used to delete the registrations that are in draft (NEW) status.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MessagePayload.DemandResponseRegistration_Full.RegisteredGenerator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mRID</td>
<td>Resource ID as specified by master file</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>MessagePayload.DemandResponseRegistration_Full.RegisteredGenerator.LoadAggregationPoint</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type/Length</td>
<td>Req'd</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-------------</td>
<td>-------</td>
</tr>
<tr>
<td>mRID</td>
<td>Master resource identifier of the DLAP as specified by master file. The DRP does not need to submit the DLAP for the registration. If a registration comes in with no DLAP, it will be derived. If more than one DLAP is derived for a given registration, an error will be returned asking the DRP to specify the DLAP since more than one exists. If the DRP submits the registration with DLAP information, it will be validated to make sure it matches what is derived. If it does not match what is derived, an error will be returned.</td>
<td>String</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**MessagePayload.DemandResponseRegistration_Full.RegisteredGenerator.LoadAggregationPoint.AggregatedPnode (required)**

| mRID                                         | Master resource identifier of the aggregated Pnode resource (also referred to in the DRRS system as SubLAP) as specified by master file. | String       | Yes   |

**MessagePayload.DemandResponseRegistration_Full.RegisteredGenerator.LoadServingEntity (required)**

| mRID                                         | Master resource identifier of the load serving entity as provided in the master file | String       | Yes   |

**MessagePayload.DemandResponseRegistration_Full.RegisteredGenerator.SchedulingCoordinator (required)**

| mRID                                         | SCID of the DRP as provided in the master file | String       | Yes   |

**MessagePayload.DemandResponseRegistration_Full.DemandUtilityDistributionCompany (optional)**

| mRID                                         | Master resource identifier of the demand utility distribution company (also referred to in the DRRS system as UDC) as provided in the master file | String       | Yes   |

**MessagePayload.DemandResponseRegistration_Full.DistributedEnergyResourceContainer (optional) (0 to unbounded occurrences)**

<p>| mRID                                         | Master resource identifier of the distributed energy resource container (also referred to in the DRRS system as the location SAN) associated to the registration | String / 255 | No    |
| locationID                                   | Identifier of the distributed energy resource container, also known as locationID | Integer      | No    |</p>
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
<th>Type / Length</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td>locationPnodeDistributionFactor</td>
<td>Location Pnode distribution factor associated with the pnode assigned to the location (DistributedEnergyResourceContainer). Only required when the registration is associated with a Custom Demand Response Resource. The sum of the distribution factors of the distinct pnodes associated to locations of a registration should equal 1.</td>
<td>Float</td>
<td>No</td>
</tr>
<tr>
<td>mRID</td>
<td>Pnode of the location associated to the registration.</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>MessagePayload. DistributedEnergyResourceContainer (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mRID</td>
<td>Master resource identifier of the distributed energy resource container (also referred to in the DRRS system as the location SAN)</td>
<td>String / 255</td>
<td>No</td>
</tr>
<tr>
<td>locationID</td>
<td>Identifier of the distributed energy resource container, also known as locationID</td>
<td>Integer</td>
<td>No</td>
</tr>
<tr>
<td>name</td>
<td>Name of the distributed energy resource container, also known as location.</td>
<td>String / 255</td>
<td>No</td>
</tr>
<tr>
<td>comment</td>
<td>Required if validLocation=false. Optional if the validLocation is set to true</td>
<td>String / 2048</td>
<td>No</td>
</tr>
<tr>
<td>reviewerName</td>
<td>Name of the reviewer validating or invalidating the location. Required if validLocation = false</td>
<td>String / 255</td>
<td>No</td>
</tr>
<tr>
<td>validLocation</td>
<td>Valid values are true, false. This flag will be used by both the LSE/UDC for location review, as well as by the DRP for duplicate location defense. This attribute would be set to true for a valid location review response, or false for an invalid location review response</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type/Length</td>
<td>Req’d</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------</td>
<td>-------</td>
</tr>
</tbody>
</table>
| terminateRegistration Flag    | Valid values are ‘true’ and ‘false’  
When the flag is set to true, the associated registration is terminated. Setting the flag to true confirms the termination of the associated registration.  
If the action is ‘MODIFY’ and the terminate registration flag is set to true, it will force the existing CONFIRMED registration to be terminated and the changes are made to the updateable attributes of the location.  
When the flag is set to false, the request is validated per the business rules and changes are made appropriately. If one or more of the requested changes are invalid, the batch is invalidated and none of the changes in the batch are performed. The users can query the batch status and get more information regarding the batch. | Boolean     | No    |
<p>| mRID                          | Master resource identifier of the Demand Response Provider (also referred to in the DRRS system as DRP) as provided in the master file                                                                                                                                 | String      | Yes   |
| MessagePayload.DistributedEnergyResourceContainer.DistributedActivity (required) | | | |</p>
<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type/Length</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>action</td>
<td>Action to be taken</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Valid values are: SAVE, SUBMIT, DELETE, MODIFY, UDC_REVIEW, LSE_REVIEW, LSE_UDC_REVIEW, INITIATE_DEFEND, DRP_REVIEW</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SAVE is used to maintain a draft of the location and is not considered an actionable location until SUBMITTED using the SUBMIT action. SAVE creates the locations in the NEW status. SAVE can also be used to change the updateable attributes of a NEW location by specifying the locationID along with the other required attributes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SUBMIT is used to create a location. SUBMIT can also be used to end date a location in the INACTIVE or ACTIVE status by specifying the end date equal to the start date. A location in the PENDING, DISPUTED or DUPLICATE status can be withdrawn by using the SUBMIT action and specifying the end date equal to the start date. This will change the status of the location to WITHDRAWN. Withdrawn locations are equivalent to logically deleted locations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DELETE is used to delete the locations that are in draft (NEW) status.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MODIFY is used to change the updateable attributes of an existing location (i.e. after reviewed).</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>UDC_REVIEW is used to process the review comments from UDC participant</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LSE_REVIEW is used to process the review comments from LSE participant</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LSE_UDC_REVIEW is used to process the review comments from the participant who has both LSE and UDC roles</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INITIATE_DEFEND is used to defend for an existing location</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DRP_REVIEW is used to process the review comments received in response of the LOCATION_DEFEND process.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>submittedActiveEndDateTime</td>
<td>Submitted end date time of the location for which the location is active in GMT format</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>submittedActiveStartDateTime</td>
<td>Submitted start date time of the location for which the location is active in GMT format.</td>
<td>datetime</td>
<td>No</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type/Length</td>
<td>Req'd</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-------------</td>
<td>-------</td>
</tr>
<tr>
<td>MessagePayload.DistributedEnergyResourceContainer.Location (Optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>type</td>
<td>Classification by utility’s corporate standards and practices, relative to the</td>
<td>String /</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>location itself (e.g., geographical, functional accounting, etc., not a given</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>property that happens to exist at that location)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MessagePayload.DistributedEnergyResourceContainer.Location.mainAddress(Optional) – main address of the location</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MessagePayload.DistributedEnergyResourceContainer.Location.mainAddress.streetDetail (Required) – street detail of the physical location</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>addressGeneral</td>
<td>Additional address information</td>
<td>String /</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>255</td>
<td>255</td>
<td></td>
</tr>
<tr>
<td>addressGeneral2</td>
<td>General Line 2 of address</td>
<td>String /</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>255</td>
<td>255</td>
<td></td>
</tr>
<tr>
<td>MessagePayload.DistributedEnergyResourceContainer.Location.mainAddress.townDetail (Required)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>code</td>
<td>Code of the town</td>
<td>String /</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>name</td>
<td>Name of the town</td>
<td>String /</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>255</td>
<td>255</td>
<td></td>
</tr>
<tr>
<td>stateOrProvince</td>
<td>Name of the state or province</td>
<td>String /</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>255</td>
<td>255</td>
<td></td>
</tr>
<tr>
<td>MessagePayload.DistributedEnergyResourceContainer.RegisteredGenerator (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mRID</td>
<td>Pnode associated to the location. Pnode information for the location with</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>reference to the associated SubLAP will be validated against Master File.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Required if the DRP would be using this location to request for a custom PDR/RDRR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>resource</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MessagePayload.DistributedEnergyResourceContainer.RegisteredGenerator.LoadAggregationPoint (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mRID</td>
<td>Master resource identifier of the aggregated pNode resource (also referred to</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>in the DRRS system as SubLAP) as provided in the master file</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MessagePayload.DistributedEnergyResourceContainer.RegisteredGenerator.LoadServingEntity (optional) – all roles of this organization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mRID</td>
<td>Master resource identifier of the load serving entity as provided in the master</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>file</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MessagePayload.DistributedEnergyResourceContainer.status(optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Element Data Description

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type/Length</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td>value</td>
<td>Status value of the location.</td>
<td>String</td>
<td>Yes</td>
</tr>
</tbody>
</table>

The different values can be:

- **NEW**
- **PENDING**
- **DISPUTED**
- **ACTIVE**
- **INACTIVE**
- **END DATED**
- **DUPLICATE**
- **WITHDRAWN**

Status of a location will be “NEW” when the location is in the draft status (submitted with action="SAVE"), “PENDING” if it is in the review process, “DISPUTED” if the location has been reviewed and found to be invalid either by UDC or LSE, “ACTIVE” if the location is valid and tied to an active registration, “INACTIVE” if the location is valid but is not tied to an active registration, “END DATED” if it is terminated, “WITHDRAWN” if it is terminated, before the review period. A location is marked DUPLICATE if the same SAN + UDC is owned by two different DRPs. Active registration is a registration in the PENDING or CONFIRMED status.

### Message Payload.DistributedEnergyResourceContainer.DemandResponseRegistration (optional)

<table>
<thead>
<tr>
<th>mRID</th>
<th>Registration id associated to a Registration, if available based on the status</th>
<th>String</th>
<th>No</th>
</tr>
</thead>
</table>

### Message Payload.DistributedEnergyResourceContainer.DemandUtilityDistributionCompany (optional)

| mRID | Master resource identifier of the demand utility distribution company (also referred to in the DRRS system as UDC) as provided in the master file | String | Yes |

### Message Payload.DistributedEnergyResourceContainer.reviewerPhoneNumber – optional but required if validLocation = FALSE

<table>
<thead>
<tr>
<th>areaCode</th>
<th>Area or region code</th>
<th>String / 3</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>extension</td>
<td>Extension for phone number</td>
<td>String / 89</td>
<td>No</td>
</tr>
<tr>
<td>localNumber</td>
<td>Main telephone number</td>
<td>String / 7</td>
<td>Yes</td>
</tr>
</tbody>
</table>
4.4.2 Schema (DRRegistrationData_v1.xsd)

The XSD can be found at the following location:
Please refer to the latest version of the artifacts found under the technical specifications.

4.4.3 Example XML File (SubmitDRLocations_v1.xml)

SubmitDRLocations_v1.xml

Sample Submit request to create a new location with SAN:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<DRRegistrationData xmlns="http://www.caiso.com/soa/DRRegistrationData_v1.xsd#"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.caiso.com/soa/DRRegistrationData_v1.xsd# DRRegistrationData_v1.xsd">
    <MessageHeader>
        <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
        <Source>String</Source>
        <Version>v20160301</Version>
    </MessageHeader>
    <MessagePayload>
        <DistributedEnergyResourceContainer>
            <mRID>SAN1</mRID>
            <name>Location name</name>
            <DemandResponseProvider>
                <mRID>DRP1</mRID>
            </DemandResponseProvider>
            <DistributedActivity>
                <action>Submit</action>
                <submittedActiveEndDate>2016-01-11T07:00:00.000+00:00</submittedActiveEndDate>
                <submittedActiveStartDate>2015-01-11T07:00:00.000+00:00</submittedActiveStartDate>
            </DistributedActivity>
        </DistributedEnergyResourceContainer>
        <Location>
            <type>String</type>
            <mainAddress>
                <streetDetail>
                    <addressGeneral>String</addressGeneral>
                    <addressGeneral2>String</addressGeneral2>
                </streetDetail>
                <townDetail>
                    <code>String</code>
                    <name>String</name>
                    <stateOrProvince>String</stateOrProvince>
                </townDetail>
            </mainAddress>
        </Location>
    </MessagePayload>
</DRRegistrationData>
```
4.4.4 Example XML File (SubmitDRLocations_v1.xml)

SubmitDRLocations_withPnode_v1.xml

Sample Submit request to create a new location with SAN:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<DRRegistrationData xmlns="http://www.caiso.com/soa/DRRegistrationData_v1.xsd#"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.caiso.com/soa/DRRegistrationData_v1.xsd# DRRegistrationData_v1.xsd">
    <MessageHeader>
        <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
        <Source>String</Source>
        <Version>v20160301</Version>
    </MessageHeader>
    <MessagePayload>
        <DistributedEnergyResourceContainer>
            <mRID>SAN1</mRID>
            <name>Location name</name>
            <DemandResponseProvider>
                <mRID>DRP1</mRID>
            </DemandResponseProvider>
            <DistributedActivity>
                <action>SUBMIT</action>
                <submittedActiveEndDateTime>2016-01-11T07:00:00.000+00:00</submittedActiveEndDateTime>
            </DistributedActivity>
        </DistributedEnergyResourceContainer>
    </MessagePayload>
</DRRegistrationData>
```
4.4.5 Example XML File (Submit_withID_DRLocations_v1.xml)

Submit_withID_DRLocations_v1.xml

Note: Submit Location request with locationID is possible in below use-cases:

1. To submit a Location, that is saved already in draft mode (i.e., with status as “NEW”)
2. To end-date a Location. That is, to a submit location with location ID to end-date

Sample Submit request to create a new location with Location ID:

<?xml version="1.0" encoding="UTF-8"?>
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <MessageHeader>
    <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
    <Source>String</Source>
    <Version>v20160301</Version>
  </MessageHeader>
  <MessagePayload>
    <DistributedEnergyResourceContainer>
      <mRID>SAN1</mRID>
      <name>Location name</name>
      <DemandResponseProvider>
        <mRID>DRP1</mRID>
      </DemandResponseProvider>
      <DistributedActivity>
        <action>SUBMIT</action>
        <submittedActiveEndDateTime>2016-01-11T07:00:00.000+00:00</submittedActiveEndDateTime>
        <submittedActiveStartDateTime>2015-01-11T07:00:00.000+00:00</submittedActiveStartDateTime>
      </DistributedActivity>
      <Location>
        <type>String</type>
        <mainAddress>
          <streetDetail>
            <addressGeneral>String</addressGeneral>
            <addressGeneral2>String</addressGeneral2>
          </streetDetail>
          <townDetail>
            <code>String</code>
            <name>String</name>
            <stateOrProvince>String</stateOrProvince>
          </townDetail>
        </mainAddress>
      </Location>
      <RegisteredGenerator>
        <LoadAggregationPoint>
          <AggregatedPnode>
            <mRID>SUBLAP1</mRID>
          </AggregatedPnode>
        </LoadAggregationPoint>
        <LoadServingEntity>
          <mRID>LSE1</mRID>
        </LoadServingEntity>
      </RegisteredGenerator>
    </RegisteredGenerator>
  </MessagePayload>
</DRRegistrationData>
4.4.6 Example XML File (SaveDRLocations_v1.xml)

SaveDRLocations_v1.xml

Sample Save request to create a draft/new location with SAN:

```xml
<?xml version="1.0" encoding="UTF-8"?>
    <MessageHeader>
        <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
        <Source>String</Source>
        <Version>v20160301</Version>
    </MessageHeader>
    <MessagePayload>
        <DistributedEnergyResourceContainer>
            <mRID>SAN1</mRID>
            <name>Location name</name>
            <DemandResponseProvider>
                <mRID>DRP1</mRID>
            </DemandResponseProvider>
            <DistributedActivity>
                <action>SAVE</action>
                <submittedActiveEndDateTime>2016-01-11T07:00:00.000+00:00</submittedActiveEndDateTime>
                <submittedActiveStartDateTime>2015-01-11T07:00:00.000+00:00</submittedActiveStartDateTime>
            </DistributedActivity>
            <Location>
                <type>String</type>
                <mainAddress>
                    <streetDetail>
                        <addressGeneral>String</addressGeneral>
                        <addressGeneral2>String</addressGeneral2>
                    </streetDetail>
                    <townDetail>
                        <code>String</code>
                        <name>String</name>
                        <stateOrProvince>String</stateOrProvince>
                    </townDetail>
                </mainAddress>
            </Location>
        </DistributedEnergyResourceContainer>
    </MessagePayload>
</DRRegistrationData>
```
4.4.7 Example XML File (Save_withID_DRLocations_v1.xml)

Note: Save Location request with locationID is possible in below use-case:
1. To save a Location, that is saved already in draft mode (i.e, with status as “NEW”). This allows to make field changes before submitting.

Save_withID_DRLocations_v1.xml

Sample Save request to create a draft/new location with Location ID:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<DRRegistrationData xmlns="http://www.caiso.com/soa/DRRegistrationData_v1.xsd#"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.caiso.com/soa/DRRegistrationData_v1.xsd# DRRegistrationData_v1.xsd">
    <MessageHeader>
        <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
        <Source>String</Source>
        <Version>v20160301</Version>
    </MessageHeader>
    <Payload>
        <DistributedEnergyResourceContainer>
            <mRID>SAN1</mRID>
            <name>Location name</name>
            <DemandResponseProvider>
                <mRID>DRP1</mRID>
            </DemandResponseProvider>
            <DistributedActivity>
                <action>SAVE</action>
            </DistributedActivity>
        </DistributedEnergyResourceContainer>
    </Payload>
</DRRegistrationData>
```
4.4.8 Example XML File (DeleteDRLocations_v1.xml)

DeleteDRLocations_v1.xml

Sample Delete request to delete a draft/new location with Location ID:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<DRRegistrationData xmlns="http://www.caiso.com/soa/DRRegistrationData_v1.xsd#
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  ...</DRRegistrationData>
```
4.4.9 Example XML File (UDCReviewDRLocations_v1.xml)

`UDCReviewDRLocations_v1.xml`

Sample UDC Review request to review the pending location with Location ID. This will return a batch id and the UDC can obtain the status of the batch by querying against the BatchValidationStatus service using the batch id provided.

```xml
<?xml version="1.0" encoding="UTF-8"?>
xsi:schemaLocation="http://www.caiso.com/soa/DRRegistrationData_v1.xsd# DRRegistrationData_v1.xsd">
    <MessageHeader>
        <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
        <Source>String</Source>
        <Version>v20160301</Version>
    </MessageHeader>
    <MessagePayload>
        <DistributedEnergyResourceContainer>
            <DistributedActivity>
                <action>UDC_REVIEW</action>
            </DistributedActivity>
            <comment>String</comment>
            <locationID>123456</locationID>
        </DistributedEnergyResourceContainer>
    </MessagePayload>
</DRRegistrationData>
```
4.4.10 Example XML File (LSEReviewDRLocations_v1.xml)

LSEReviewDRLocations_v1.xml

Sample LSE Review request to review the pending location with Location ID. This will return the batch id that the LSE can use to query the BatchValidationService and obtain the status of the review request.

<?xml version="1.0" encoding="UTF-8"?>
<DRRegistrationData xmlns="http://www.caiso.com/soa/DRRegistrationData_v1.xsd#"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.caiso.com/soa/DRRegistrationData_v1.xsd# DRRegistrationData_v1.xsd">
  <MessageHeader>
    <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
    <Source>String</Source>
    <Version>v20160301</Version>
  </MessageHeader>
  <MessagePayload>
    <DistributedEnergyResourceContainer>
      <DistributedActivity>
        <action>LSE_REVIEW</action>
      </DistributedActivity>
      <comment>String</comment>
      <locationID>123456</locationID>
      <reviewerName>String</reviewerName>
      <validLocation>true</validLocation>
      <reviewerPhoneNumber>
        <areaCode>Number</areaCode>
        <extension>Number</extension>
        <localNumber>Number</localNumber>
      </reviewerPhoneNumber>
    </DistributedEnergyResourceContainer>
  </MessagePayload>
</DRRegistrationData>

4.4.11 Example XML File (LSE_UDC_ReviewDRLocations_v1.xml)

LSE_UDC_ReviewDRLocations_v1.xml

Sample LSE UDC Review request to review the pending location with Location ID:

<?xml version="1.0" encoding="UTF-8"?>
4.4.12 Example XML File (ModifyDRLocations_v1.xml)

ModifyDRLocations_v1.xml

Sample Modify request to modify the updateable fields of an existing location with Location ID:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<DRRegistrationData xmlns="http://www.caiso.com/soa/DRRegistrationData_v1.xsd#"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.caiso.com/soa/DRRegistrationData_v1.xsd# DRRegistrationData_v1.xsd">
  <MessageHeader>
    <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
    <Source>String</Source>
    <Version>v20160301</Version>
  </MessageHeader>
  <MessagePayload>
    <DistributedEnergyResourceContainer>
      <DistributedActivity>
        <action>MODIFY</action>
        <name>Location name</name>
      </DistributedActivity>
    </DistributedEnergyResourceContainer>
  </MessagePayload>
</DRRegistrationData>
```
<?xml version="1.0" encoding="UTF-8"?>
  <MessageHeader>
    <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
    <Source>String</Source>
    <Version>v20160301</Version>
  </MessageHeader>
  <MessagePayload>
    <DistributedEnergyResourceContainer>
      <mRID>SAN1</mRID>
      <name>Location name</name>
      <DemandResponseProvider>
        <mRID>DRP1</mRID>
      </DemandResponseProvider>
      <DistributedActivity>
        <submittedActiveEndDateTime>2016-01-11T07:00:00.000+00:00</submittedActiveEndDateTime>
        <submittedActiveStartDateTime>2015-01-11T07:00:00.000+00:00</submittedActiveStartDateTime>
        <Location>
          <mainAddress>
            <streetDetail>
              <addressGeneral>String</addressGeneral>
              <addressGeneral2>String</addressGeneral2>
            </streetDetail>
            <townDetail>
              <code>String</code>
              <name>String</name>
              <stateOrProvince>String</stateOrProvince>
            </townDetail>
          </mainAddress>
        </Location>
        <locationID>123456</locationID>
      </DistributedActivity>
    </DistributedEnergyResourceContainer>
  </MessagePayload>
</DRRegistrationData>

4.4.13 Example XML File (Initiate_Defend_DRLocations_v1.xml)

Initiate_Defend_DRLocations_v1.xml

Sample request to initiate defend process for an existing location with SAN:

<?xml version="1.0" encoding="UTF-8"?>
  <MessageHeader>
    <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
    <Source>String</Source>
    <Version>v20160301</Version>
  </MessageHeader>
  <MessagePayload>
    <DistributedEnergyResourceContainer>
      <mRID>SAN1</mRID>
      <name>Location name</name>
      <DemandResponseProvider>
        <mRID>DRP1</mRID>
      </DemandResponseProvider>
      <DistributedActivity>
<action>INITIATE_DEFEND</action>
<br>submittedActiveEndDateTime>2016-01-11T07:00:00.000+00:00</br><br>submittedActiveStartDateTime>2015-01-11T07:00:00.000+00:00</br><br><br>4.4.14 Example XML File (Initiate_Defend_withID_DRLocations_v1.xml)

Initiate_Defend_withID_DRLocations_v1.xml
Sample request to initiate defend process for an existing location with Location ID:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<DRRegistrationData xmlns="http://www.caiso.com/soa/DRRegistrationData_v1.xsd#"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.caiso.com/soa/DRRegistrationData_v1.xsd# DRRegistrationData_v1.xsd">
  <MessageHeader>
    <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
    <Source>String</Source>
    <Version>v20160301</Version>
  </MessageHeader>
  <MessagePayload>
    <DistributedEnergyResourceContainer>
      <mRID>SAN1</mRID>
      <name>Location name</name>
      <DemandResponseProvider>
        <mRID>DRP1</mRID>
      </DemandResponseProvider>
      <DistributedActivity>
        <action>INITIATE_DEFEND</action>
        <submittedActiveEndDateTime>2016-01-11T07:00:00.000+00:00</submittedActiveEndDateTime>
        <submittedActiveStartDateTime>2015-01-11T07:00:00.000+00:00</submittedActiveStartDateTime>
      </DistributedActivity>
      <Location>
        <type>String</type>
        <mainAddress>
          <streetDetail>
            <addressGeneral>String</addressGeneral>
            <addressGeneral2>String</addressGeneral2>
          </streetDetail>
          <townDetail>
            <code>String</code>
            <name>String</name>
            <stateOrProvince>String</stateOrProvince>
          </townDetail>
        </mainAddress>
      </Location>
      <RegisteredGenerator>
        <LoadAggregationPoint>
          <AggregatedPnode>
            <mRID>SUBLAP1</mRID>
          </AggregatedPnode>
        </LoadAggregationPoint>
        <LoadServingEntity>
          <mRID>LSE1</mRID>
        </LoadServingEntity>
      </RegisteredGenerator>
    </DistributedEnergyResourceContainer>
  </MessagePayload>
</DRRegistrationData>
```
4.4.15 Example XML File (DRP_Review_DRLocations_v1.xml)

Sample DRP review request for a location that's under Defend process:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<DRRegistrationData xmlns="http://www.caiso.com/soa/DRRegistrationData_v1.xsd#"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xsi:schemaLocation="http://www.caiso.com/soa/DRRegistrationData_v1.xsd# DRRegistrationData_v1.xsd">
    <MessageHeader>
        <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
        <Source>String</Source>
        <Version>v20160301</Version>
    </MessageHeader>
    <MessagePayload>
        <DistributedEnergyResourceContainer>
            <DistributedActivity>
                <action>DRP_REVIEW</action>
            </DistributedActivity>
            <comment>String</comment>
            <locationID>123456</locationID>
            <reviewerName>String</reviewerName>
            <validLocation>false</validLocation>
            <reviewerPhoneNumber>
                <areaCode>Number</areaCode>
                <extension>Number</extension>
                <localNumber>Number</localNumber>
            </reviewerPhoneNumber>
        </DistributedEnergyResourceContainer>
    </MessagePayload>
</DRRegistrationData>
```
4.4.16 Example XML File (End date location)

When a location in the Pending, Disputed or Duplicate status is end dated by using the SUBMIT with the end date same as the start date, the location goes into the WITHDRAWN status. The SUBMIT action with end date same as start date on a location in the ACTIVE or INACTIVE status end-dates the location. If the location is in an ACTIVE status and is tied to a CONFIRMED registration that is currently active/progressing, the end date of the location gets updated with the date that is five business days from the day of the request. If the location is in an ACTIVE status that is tied to CONFIRMED registration that starts in the future, the registration is deleted.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<DRRegistrationData xmlns="http://www.caiso.com/soa/DRRegistrationData_v1.xsd#"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.caiso.com/soa/DRRegistrationData_v1.xsd# DRRegistrationData_v1.xsd">
  <MessagePayload>
    <DistributedEnergyResourceContainer>
      <mRID>SAN1</mRID>
      <name>Name</name>
      <DemandResponseProvider>
        <mRID>DRP1</mRID>
      </DemandResponseProvider>
      <DistributedActivity>
        <action>SUBMIT</action>
        <submittedActiveEndDateTime>2017-01-01T08:00:00Z</submittedActiveEndDateTime>
        <submittedActiveStartDateTime>2017-01-01T08:00:00Z</submittedActiveStartDateTime>
      </DistributedActivity>
      <Location>
        <type>Business</type>
        <mainAddress>
          <streetDetail>
            <addressGeneral>xxxx</addressGeneral>
            <addressGeneral2>xxx</addressGeneral2>
          </streetDetail>
          <townDetail>
            <code>95630</code>
            <name>Folsom</name>
            <stateOrProvince>CA</stateOrProvince>
          </townDetail>
        </mainAddress>
      </Location>
    </DistributedEnergyResourceContainer>
  </MessagePayload>
</DRRegistrationData>
```
4.5 Message Type

submitDRLocationsResponse and faultReturnType both conform to the StandardOutput_v1.xsd

4.5.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type / Length</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td>MessagePayload (required)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EventLog.Event (required)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>result</td>
<td>Success or failure message</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>id</td>
<td>A unique identifier</td>
<td>string</td>
<td>Yes</td>
</tr>
<tr>
<td>description</td>
<td>Appropriate details related to the result of the event</td>
<td>string</td>
<td>No</td>
</tr>
<tr>
<td>creationTime</td>
<td>The creation time in GMT format</td>
<td>dateTime</td>
<td>No</td>
</tr>
<tr>
<td>EventLog.Service (required)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>The service Id (created by the web services framework)</td>
<td>integer</td>
<td>Yes</td>
</tr>
<tr>
<td>name</td>
<td>The name of the service as used by the Web Service.</td>
<td>string</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### EventLog.Batch (optional)

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type / Length</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>mRID</td>
<td>This represents the batch ID for submission of a request to create or modify location and/or registration</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>creationTime</td>
<td>Time of creation</td>
<td>Datetime</td>
<td>No</td>
</tr>
</tbody>
</table>

#### 4.5.2 Schema

**StandardOutput_v1.xsd**

The XSD can be found at the following location:

Please refer to the latest version of the artifacts found under the technical specifications.

#### 4.5.3 Example XML File (StandardOutput.xml)

Sample response for submitDRLocations request

```xml
<?xml version="1.0" encoding="UTF-8"?>
    <MessageHeader>
        <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
        <Source>DRRS</Source>
        <Version>v20160501</Version>
    </MessageHeader>
    <MessagePayload>
        <EventLog>
            <Batch>
                <mRID>101</mRID>
                <creationTime>2015-01-11 T07:00:00.000+00:00</creationTime>
            </Batch>
            <Event>
                <creationDateTime>2015-01-11 T07:00:00.000+00:00</creationDateTime>
                <description>Save to Audit completed</description>
                <id>String</id>
                <result>Success</result>
            </Event>
            <Service>
                <id>123123</id>
            </Service>
        </EventLog>
    </MessagePayload>
</StandardOutput>
```
<name>submitDRRegistrations_v1</name>
</Service>
</EventLog>
</MessagePayload>
</StandardOutput>
5. RetrieveDRLocations

5.1 Use Model

The diagram below shows the sequence for retrieveDRLocations:

![Diagram showing the sequence for retrieveDRLocations]
5.2 Operation Details

The service has retrieveDRLocations_v1 operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>retrieveDRLocations_v1</td>
<td>Input</td>
<td>retrieveDRLocationsRequest</td>
<td>retrieveDRLocations_v1.wsdl</td>
<td>RequestDRRegistrationData_v1.xsd</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>retrieveDRLocations_v1.wsdl</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>retrieveDRLocationsResponse</td>
<td>retrieveDRLocations_v1_DocAttach.wsdl</td>
<td>DRRegistrationData_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturnType</td>
<td></td>
<td>StandardOutput_v1.xsd</td>
</tr>
</tbody>
</table>

The structure of the request for retrieving the DRRS Location information is described below in 5.4. The response structure (DRRegistrationData_v1.xsd) and StandardOutput_v1.xsd have been described earlier in this document in sections 4.4 and 4.5.

5.3 WSDL (retrieveDRLocations_v1.wsdl)

retrieveDRLocations_v1.wsdl

- retrieveDRLocations_v1.wsdl – Used for normal SOAP messaging
- retrieveDRLocations_v1_DocAttach.wsdl – Used when .NET is the source of processing

The WSDL can be found at the following location:
Please refer to the latest version of the artifacts found under the technical specifications.

5.4 Message Type

retrieveDRLocationsRequest

5.4.1 Element Table
<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type/Length</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MessageHeader (Optional)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced, in Pacific Prevailing Time format</td>
<td>datetime</td>
<td>Yes</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Date reflecting the release this latest version update was related to.</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>MessagePayload (required)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MessagePayload.LocationRequest (optional)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MessagePayload.LocationRequest.DistributedEnergyResourceContainer (optional)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mRID</td>
<td>Master resource identifier of the distributed energy resource container (also referred to in the DRRS system as the location ID). This is generated by the DRRS system</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>name</td>
<td>Name of the LOCATION</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>mRID</td>
<td>Master resource identifier of the demand utility distribution company (also referred to in the DRRS system as UDC) as provided by master file</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>MessagePayload.LocationRequest.DistributedEnergyResourceContainer.RegisteredGenerator (optional)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mRID</td>
<td>Master resource identifier of the aggregated pNode resource (also referred to in the DRRS system as SubLAP) as provided by master file</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>mRID</td>
<td>Master resource identifier of the load serving entity as provided by master file</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>MessagePayload.LocationRequest.DistributedEnergyResourceContainer.status (optional)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mRID</td>
<td>Status of the asset</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type/Length</td>
<td>Req’d</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-------------</td>
<td>-------</td>
</tr>
<tr>
<td>value</td>
<td>The current status of the LOCATION in DRRS. Valid values are NEW, ACTIVE, PENDING, INACTIVE, ENDDATED, DUPLICATE, and DISPUTED. A location is ACTIVE if it is part of an active registration (registration in the Confirmed or Pending status) in the DRRS system and INACTIVE if it is part of a registration that is not active or if it is not part of any registration.</td>
<td>String</td>
<td>Yes</td>
</tr>
</tbody>
</table>


| mRID    | Master resource identifier of the registration as provided by the DRRS system. | String       | Yes   |


| mRID    | Master resource identifier of the demand utility distribution company (also referred to in the DRRS system as UDC) as provided by master file. | String       | Yes   |

**MessagePayload.LocationRequest.rangePeriod (optional)**

| end     | End date and time of interval in GMT format. | datetime     | Yes   |
| start   | Start date and time of interval in GMT format. | datetime     | Yes   |

**MessagePayload.RegistrationRequest (optional)**

| requestType | Type of the request. Valid values are: REGISTRATION_ONLY, BOTH. If the request type = “BOTH”, information about the registration and the associated locations will also be returned. If the request type = “REGISTRATION_ONLY”, only information about the registration will be provided. If no value is specified, only information about the registration will be provided. | String       | No    |

**MessagePayload.RegistrationRequest.DemandResponseRegistration (optional)**

| mRID    | Id of the registration. | String       | No    |
| name    | Name of the registration. | String       | No    |
| program | Every resource should be either PDR (Proxy Demand Response) or RDR (Reliability Demand Response). | String       | No    |

**MessagePayload.RegistrationRequest.DemandResponseRegistration.DemandResponseProvider (optional)**

<p>| mRID    | Master resource identifier of the Demand Response Provider (also referred to in the DRRS system as DRP) as provided by master file. | String       | No    |</p>
<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type/Length</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td>mRID</td>
<td>Master resource identifier of the resource associated with the registration as provided by master file.</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>mRID</td>
<td>Master resource identifier of the aggregated pNode resource (also referred to in the DRRS system as SubLAP) as provided by master file</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>mRID</td>
<td>Master resource identifier of the load serving entity as provided by master file</td>
<td>String</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**MessagePayload.RegistrationRequest.DemandResponseRegistration.RegisteredGenerator.LoadAggregationPoint.AggregatedPnode (required)**

| mRID   | Master resource identifier of the aggregated pNode resource (also referred to in the DRRS system as SubLAP) as provided by master file | String | Yes |

**MessagePayload.RegistrationRequest.DemandResponseRegistration.RegisteredGenerator.LoadServingEntity (required)**

| mRID   | Master resource identifier of the load serving entity as provided by master file | String | Yes |

**MessagePayload.RegistrationRequest.DemandResponseRegistration.status (optional) – Status of the registration**

| value | Valid values are: NEW CONFIRMED TERMINATED | String | Yes |

**MessagePayload.RegistrationRequest.DemandResponseRegistration.DemandUtilityDistributionCompany (optional)**

| mRID   | Master resource identifier of the demand utility distribution company (also referred to in the DRRS system as UDC) as provided by master file | String | Yes |

**MessagePayload.RegistrationRequest.rangePeriod (optional)**

| end    | end date and time of interval in GMT format | datetime | Yes |
| start  | start date and time of interval in GMT format | datetime | Yes |

### 5.4.2 Schema (RequestDRRegistrationData_v1.xsd)

The XSD can be found at the following location:

Please refer to the latest version of the artifacts found under the technical specifications.

### 5.4.3 Example XML File (RequestDRRegistrationData_v1.xml)

Sample request to retrieve a location:

```xml
<?xml version="1.0" encoding="UTF-8"?>
```
Sample response for a location retrieve request:
Note: Refer the section 4.4.1 for the response data fields and section 4.4.2 for the schema.

```xml
<?xml version="1.0" encoding="UTF-8"?>
  <MessageHeader>
    <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
    <Source>String</Source>
    <Version>v20160301</Version>
  </MessageHeader>
  <MessagePayload>
    <DistributedEnergyResourceContainer>
      <mRID>SA N1</mRID>
      <name>Location name</name>
      <DemandResponseProvider>
        <mRID>DRP1</mRID>
      </DemandResponseProvider>
      <RegisteredGenerator>
        <LoadAggregationPoint>
          <AggregatedNode>
            <mRID>SUBLA P1</mRID>
          </AggregatedNode>
        </LoadAggregationPoint>
        <LoadServingEntity>
          <mRID>LSE1</mRID>
        </LoadServingEntity>
      </RegisteredGenerator>
      <DemandUtilityDistributionCompany>
        <mRID>UDC1</mRID>
      </DemandUtilityDistributionCompany>
    </DistributedEnergyResourceContainer>
  </MessagePayload>
</DRRegistrationData>
```
<DemandResponseProvider>
  <mRID>DRP1</mRID>
</DemandResponseProvider>

<DistributedActivity>
  <action>NA</action>
  <submittedActiveEndDateTime>2016-01-11T07:00:00.000+00:00</submittedActiveEndDateTime>
  <submittedActiveStartDateTime>2015-01-11T07:00:00.000+00:00</submittedActiveStartDateTime>
</DistributedActivity>

<Location>
  <type>String</type>
  <mainAddress>
    <streetDetail>
      <addressGeneral>String</addressGeneral>
      <addressGeneral2>String</addressGeneral2>
    </streetDetail>
    <townDetail>
      <code>String</code>
      <name>String</name>
      <stateOrProvince>String</stateOrProvince>
    </townDetail>
  </mainAddress>
</Location>

<RegisteredGenerator>
  <IndividualPnode>
    <mRID>PNODE</mRID>
  </IndividualPnode>
  <LoadAggregationPoint>
    <AggregatedPnode>
      <mRID>SUBLAP1</mRID>
    </AggregatedPnode>
  </LoadAggregationPoint>
  <LoadServingEntity>
    <mRID>LSE1</mRID>
  </LoadServingEntity>
</RegisteredGenerator>

<status>
  <value>WITHDRAWN</value>
</status>

<locationID>374516</locationID>

<DemandUtility DistributionCompany>
  <mRID>UDC1</mRID>
</DemandUtility DistributionCompany>

</MessagePayload>

</DRRegistrationData>
6. RetrieveBatchValidationStatus

6.1 Use Model

The diagram below shows the sequence for retrieveBatchValidationStatus:

[Diagram description]

: Market Participant

: DRRS

prepare request parameters

retrieveBatchValidationStatusRequest

Submit request

Query database

transform

Return batch status

retrieveBatchValidationStatusResponse
6.2 Operation Details

The service has `retrieveBatchValidationStatus_v1` operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>retrieveBatchValidationStatus_v1</code></td>
<td>Input</td>
<td><code>retrieveBatchValidationStatusRequest</code></td>
<td><code>retrieveBatchValidationStatus_v1.wsdl</code></td>
<td><code>BatchValidationStatus_v1.xsd</code></td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td><code>retrieveBatchValidationStatusResponse</code></td>
<td><code>retrieveBatchValidationStatus_v1_DocAttach.wsdl</code></td>
<td><code>BatchValidationStatus_v1.xsd</code></td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td><code>faultReturnType</code></td>
<td></td>
<td><code>StandardOutput_v1.xsd</code></td>
</tr>
</tbody>
</table>

6.3 WSDL (`retrieveBatchValidationStatus_v1.wsdl`)

- `retrieveBatchValidationStatus_v1.wsdl` – Used for normal SOAP messaging
- `retrieveBatchValidationStatus_v1_DocAttach.wsdl` – Used when .NET is the source of processing

The WSDL can be found at the following location: Please refer to the latest version of the artifacts found under the technical specifications.

6.4 Message Type

`retrieveBatchValidationStatusRequest`

6.4.1 Element Table

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type/Length</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>MessageHeader (optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeDate</td>
<td>Application level relevant time and date for when this instance of the message was produced, in GMT Time format</td>
<td>datetime</td>
<td>Yes</td>
</tr>
<tr>
<td>Element</td>
<td>Data Description</td>
<td>Type/Length</td>
<td>Req’d</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-------------</td>
<td>-------</td>
</tr>
<tr>
<td>Source</td>
<td>Source system which provides data for this service</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td>Version</td>
<td>Date reflecting the release this latest version update was related to.</td>
<td>String</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Valid value is: v20160301</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MessagePayload (required)**

**MessagePayload.BatchStatus (required)**

| mRID                                         | This represents the batch ID of a request that was generated by the system and sent back to the user for submission of a request to create or modify registration and/or location | String      | Yes   |
| creationTime                                 | Date/time of status creation in GMT format                                         | datetime    | No    |
| description                                  | Description of batch status                                                       | String      | No    |
|                                              | There are 4 values for status: SUCCESS, ERROR, IN_PROCESS, and NOT_PROCESSED.      |             |       |
|                                              | • Once the batch is submitted, the status is set to “NOT_PROCESSED”.               |             |       |
|                                              | The processor runs periodically to pick up the submitted batch jobs and start processing them by changing the status to “IN_PROCESS”. |             |       |
|                                              | • If you query during the time the application is processing the batch, you will get “IN_PROCESS” status. |             |       |
|                                              | • Once the processing is complete, the status will change either to “SUCCESS” or “ERROR”. |             |       |

**MessagePayload.DistributedEnergyResourceContainer (optional) (0 to unbounded occurrences)**

| mRID                                         | Master resource identifier of the distributed energy resource container (also referred to in the DRRS system as the location ID) | String      | No    |
| name                                         | Name of the location                                                              | String      | No    |

**MessagePayload.DistributedEnergyResourceContainer.Error Log (required) – reasons for error in locations**

| mRID                                         | Master resource identifier of the error (Error Code)                              | String      | No    |
| startTime                                    | Start time of the error in GMT                                                    | datetime    | No    |
| endTime                                      | End time of the error in GMT                                                      | datetime    | No    |
| errMessage                                   | error message                                                                     | String      | Yes   |
### Element Data Description

<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type/Length</th>
<th>Req’d</th>
</tr>
</thead>
<tbody>
<tr>
<td>errPriority</td>
<td>Priority number for the error message, default is 0</td>
<td>integer</td>
<td>Yes</td>
</tr>
<tr>
<td>logTimeStamp</td>
<td>Date time when the error was created</td>
<td>datetime</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**MessagePayload.DemandResponseRegistration (optional) (0 to unbounded occurrences)**

| mRID | Master resource identifier of the registration | String | No |
| name | Name of the registration | String | No |

**MessagePayload.DemandResponseRegistration.ErrorLog (required) – reasons for error in registration**

| mRID | Master resource identifier of the error (Error Code) | String | No |
| startTime | Start time of the error in GMT | datetime | No |
| endTime | End time of the error in GMT | datetime | No |
| errorMessage | error message | String | Yes |
| errPriority | Priority number for the error message, default is 0 | integer | Yes |
| logTimeStamp | Date time when the error was created in GMT | datetime | Yes |

**MessagePayload.ErrorLog (optional) – There can be some errors which are not associated with any resources in those situations this element will be used. Batch payload fails xsd schema validations**

This element will be populated when the OMAR replacement project has been implemented in order to consolidate meter data exchange. **For FALL 2016 implementation, this element should not be populated.**

| mRID | Master resource identifier of the Error (Error Code) | String | No |
| startTime | Start time of the error in GMT | datetime | No |
| endTime | End time of the error in GMT | datetime | No |
| errorMessage | error message | String | Yes |
| errPriority | Priority number for the error message, default is 0 | integer | Yes |
| logTimeStamp | Date time when the error was created in GMT | datetime | Yes |

**MessagePayload.RegisteredResource (Optional)**

This element will be populated when the OMAR replacement project has been implemented in order to consolidate meter data exchange. **For FALL 2016 implementation, this element should not be populated.**

| mRID | Master resource identifier of the registered generator resource as specified in masterfile | String | No |
| name | Name of the resource | String | No |

**MessagePayload.RegisteredResource.RegisteredInterTie (Optional)**
<table>
<thead>
<tr>
<th>Element</th>
<th>Data Description</th>
<th>Type/Length</th>
<th>Req'd</th>
</tr>
</thead>
<tbody>
<tr>
<td>mRID</td>
<td>Master resource identifier of the registered intertie resource as specified in masterfile</td>
<td>String</td>
<td>No</td>
</tr>
<tr>
<td>name</td>
<td>Name of the resource</td>
<td>String</td>
<td>No</td>
</tr>
</tbody>
</table>

**MessagePayload.RegisteredResource.RegisteredLoad (Optional)**

| mRID   | Master resource identifier of the registered load resource as specified in masterfile | String | No |
| name   | Name of the resource | String | No |

**MessagePayload.RegisteredResource.Flowgate (Optional)**

| mRID   | Master resource identifier of the flow gate resource as provided in the master file | String | No |
| name   | Name of the resource | String | No |

**MessagePayload.RegisteredResource.Measurements (Optional)**

| measurementType | Type of the measurement.  
Valid values are: LOAD or GEN  
Measurement types are the same as channel ID in current metering solution. LOAD is channel 1 and GEN is channel 4. | String | Yes |

**MessagePayload.RegisteredResource.Measurements.MeasurementValue (one to many occurrences)**

| intervalEndTime | End Datetime in GMT of the interval for which the meter value is being submitted or retrieved. This is interval ending. | dateTime | Yes |

**MessagePayload.RegisteredResource.ErrorLog (one to many occurrences) – reasons for error in batch**

| mRID   | Master resource identifier of the error (Error Code) | String | No |
| startTime | Start time of the error in GMT  
This element will not be populated | datetime | No |
| endTime | End time of the error in GMT  
This element will not be populated | datetime | No |
| errorMessage | error message | String | Yes |
| errPriority | Priority number for the error message  
Default is 0. | integer | Yes |
| logTimeStamp | Date time when the error was created in GMT | datetime | Yes |

6.4.2 Schema (BatchValidationStatus_v1.xsd)
The XSD can be found at the following location:
Please refer to the latest version of the artifacts found under the technical specifications.

6.4.3 Example XML File (BatchValidationStatus_v1.xml)

```xml
<?xml version="1.0" encoding="UTF-8"?>
    <MessageHeader>
        <TimeDate>2014-11-13T19:32:45.879+00:00</TimeDate>
        <Source>String</Source>
        <Version>v20141001</Version>
    </MessageHeader>
    <MessagePayload>
        <BatchStatus>
            <mRID>1234</mRID>
        </BatchStatus>
    </MessagePayload>
</BatchValidationStatus>

Sample successful batch response:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<BatchValidationStatus xmlns="http://www.caiso.com/soa/BatchValidationStatus_v1.xsd#">
    <MessageHeader>
        <TimeDate>2014-11-13T19:32:45.879+00:00</TimeDate>
        <Source>String</Source>
        <Version>v20160301</Version>
    </MessageHeader>
    <MessagePayload>
        <BatchStatus>
            <mRID>1234</mRID>
            <description>SUCCESS</description>
            <creationTime>2014-11-13T19:32:45.879+00:00</creationTime>
        </BatchStatus>
    </MessagePayload>
</BatchValidationStatus>

Sample response for failed batch:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<BatchValidationStatus xmlns="http://www.caiso.com/soa/BatchValidationStatus_v1.xsd#">
    <MessageHeader>
        <TimeDate>2016-04-06T14:19:59.134-07:00</TimeDate>
        <Source>DRRS</Source>
        <Version>v20160501</Version>
    </MessageHeader>
```
<MessagePayload>
  <BatchStatus>
    <mRID>3444</mRID>
    <description>ERROR</description>
    <creationTime>2016-04-06T00:00:00.000-07:00</creationTime>
  </BatchStatus>
  <DistributedEnergyResourceContainer>
    <mRID>SAN1</mRID>
    <name>LOCATION1</name>
    <ErrorLog>
      <errMessage>The DRP is missing or is invalid.</errMessage>
      <errPriority>0</errPriority>
      <logTimeStamp>2016-04-06T14:19:59.110-07:00</logTimeStamp>
    </ErrorLog>
  </DistributedEnergyResourceContainer>
  <DistributedEnergyResourceContainer>
    <mRID>SAN2</mRID>
    <name>LOCATION2</name>
    <ErrorLog>
      <errMessage>The UDC is missing or is invalid.</errMessage>
      <errPriority>0</errPriority>
      <logTimeStamp>2016-04-06T14:19:59.131-07:00</logTimeStamp>
    </ErrorLog>
  </DistributedEnergyResourceContainer>
</MessagePayload>
</BatchValidationStatus>
7. SubmitDRRegistrations

7.1 Use Model

The diagram below shows the sequence for submitDRRegistrations:

[Diagram showing the sequence of actions]

- Market Participant
- DRRS

- prepare request parameters
- submitDRRegistrationsRequest
- submitBatch
- Generate batch id
- transform
- Return batch id
- submitDRRegistrationsResponse
7.2 Operation Details

The service has \textit{submitDRRegistrations\_v1} operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>\textit{submitDRRegistrations_v1}</td>
<td>Input</td>
<td>\textit{submitDRRegistrationsRequest}</td>
<td>\textit{submitDRRegistrations_v1.wsdl}</td>
<td>\textit{DRRegistrationData_v1.xsd}</td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>\textit{submitDRRegistrationsResponse}</td>
<td>\textit{submitDRRegistrations_v1_DocAttach.wsdl}</td>
<td>\textit{StandardOutput_v1.xsd}</td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>\textit{faultReturnType}</td>
<td></td>
<td>\textit{StandardOutput_v1.xsd}</td>
</tr>
</tbody>
</table>

7.3 WSDL (\textit{submitDRRegistrations\_v1.wsdl})

- \textit{submitDRRegistrations\_v1.wsdl} – Used for normal SOAP messaging
- \textit{submitDRRegistration\_v1\_DocAttach.wsdl} – Used when .NET is the source of processing

The WSDL can be found at the following location:

\textit{Please refer to the latest version of the artifacts found under the technical specifications.}

7.4 Message Type

\textit{submitDRRegistrationsRequest}

7.4.1 Element Table

\textit{Refer to Section 4.4.1}

7.4.2 Schema (\textit{DRRegistrationData\_v1.xsd})

The XSD can be found at the following location:

\textit{Please refer to the latest version of the artifacts found under the technical specifications.}
7.4.3 Example XML File (SubmitDRRegistrations_v1.xml)

`SubmitDRRegistrations_v1.xml`
Sample Submit request to create a new registration:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<DRRegistrationData xmlns="http://www.caiso.com/soa/DRRegistrationData_v1.xsd#"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.caiso.com/soa/DRRegistrationData_v1.xsd# DRRegistrationData_v1.xsd">
  <MessagePayload>
    <DemandResponseRegistration_Full>
      <name>REGISTRATION_NAME</name>
      <DemandResponseProvider>
        <mRID>DRP</mRID>
      </DemandResponseProvider>
      <DistributedActivity>
        <action>SUBMIT</action>
        <submittedActiveEndDateTime>2018-10-01T07:00:00Z</submittedActiveEndDateTime>
        <submittedActiveStartDateTime>2017-01-01T08:00:00Z</submittedActiveStartDateTime>
      </DistributedActivity>
      <RegisteredGenerator>
        <mRID>RESOURCE_ID</mRID>
        <LoadAggregationPoint>
          <mRID>DLAP</mRID>
          <AggregatedPnode>
            <mRID>SUBLAP</mRID>
          </AggregatedPnode>
        </LoadAggregationPoint>
        <LoadServingEntity>
          <mRID>LSE</mRID>
        </LoadServingEntity>
        <SchedulingCoordinator>
          <mRID>DRP_SC_ID</mRID>
        </SchedulingCoordinator>
      </RegisteredGenerator>
      <terminateRegistrationFlag>FALSE</terminateRegistrationFlag>
      <DemandUtilityDistributionCompany>
        <mRID>UDC</mRID>
      </DemandUtilityDistributionCompany>
      <baselineMethod>BASELINE_METHOD</baselineMethod>
      <program>PROGRAM</program>
      <resourceType>RESOURCE_TYPE</resourceType>
      <DistributedEnergyResourceContainer>
    </DemandResponseRegistration_Full>
  </MessagePayload>
</DRRegistrationData>
```
7.4.4 Example XML File (SaveDRRegistrations_v1.xml)

SaveDRRegistrations_v1.xml

Sample Save request to create a new registration:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<DRRegistrationData xmlns="http://www.caiso.com/soa/DRRegistrationData_v1.xsd#"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="http://www.casio.com/soa/DRRegistrationData_v1.xsd# DRRegistrationData_v1.xsd">
   <MessagePayload>
     <DemandResponseRegistration_Full>
       <name>REGISTRATION_NAME</name>
       <DemandResponseProvider>
         <mRID>DRP</mRID>
       </DemandResponseProvider>
       <DistributedActivity>
         <action>SAVE</action>
         <submittedActiveEndDateTime>2018-10-01T07:00:00Z</submittedActiveEndDateTime>
         <submittedActiveStartDateTime>2017-01-01T08:00:00Z</submittedActiveStartDateTime>
       </DistributedActivity>
       <RegisteredGenerator>
         <mRID>RESOURCE_ID</mRID>
         <LoadAggregationPoint>
           <mRID>DLAP</mRID>
         </LoadAggregationPoint>
         <AggregatePnode>
           <mRID>SUBLAP</mRID>
         </AggregatePnode>
       </RegisteredGenerator>
       <LoadServingEntity>
         <mRID>LSE</mRID>
       </LoadServingEntity>
     </DemandResponseRegistration_Full>
   </MessagePayload>
</DRRegistrationData>
```
7.4.5 Example XML File (DeleteDRRegistrations_v1.xml)

DeleteDRRegistrations_v1.xml

Sample Delete request to delete a new/draft registration:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<DRRegistrationData xmlns=http://www.caiso.com/soa/DRRegistrationData_v1.xsd#
xmlns:xsi=http://www.w3.org/2001/XMLSchema-instance
xsi:schemaLocation=http://www.caiso.com/soa/DRRegistrationData_v1.xsd# DRRegistrationData_v1.xsd">
  <MessagePayload>
    <DemandResponseRegistration_Full>
      <mRID>REGISTRATION_ID</mRID>
      <DistributedActivity>
        <action>DELETE</action>
      </DistributedActivity>
    </DemandResponseRegistration_Full>
  </MessagePayload>
</DRRegistrationData>
```
7.4.6 Example XML File (ModifyDRRegistrations_v1.xml)

*ModifyDRRegistrations_v1.xml*

Sample Modify request to create a new registration:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<DRRegistrationData xmlns="http://www.caiso.com/soa/DRRegistrationData_v1.xsd#"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.caiso.com/soa/DRRegistrationData_v1.xsd# DRRegistrationData_v1.xsd">
  <MessagePayload>
    <DemandResponseRegistration_Full>
      <mRID>REGISTRATION_ID</mRID>
      <name>REGISTRATION_NAME</name>
      <DistributedActivity>
        <action>MODIFY</action>
        <submittedActiveEndDateTime>2018-10-01T07:00:00Z</submittedActiveEndDateTime>
        <submittedActiveStartDateTime>2017-01-01T08:00:00Z</submittedActiveStartDateTime>
      </DistributedActivity>
      <terminateRegistrationFlag>FALSE</terminateRegistrationFlag>
    </DemandResponseRegistration_Full>
  </MessagePayload>
</DRRegistrationData>
```

7.5 Message Type

submitDRRegistrationsResponse and faultReturnType both conform to the StandardOutput_v1.xsd

7.5.1 Element Table

Refer to Section 4.5.1

7.5.2 Schema

StandardOutput_v1.xsd

The XSD can be found at the following location:

Please refer to the latest version of the artifacts found under the technical specifications.

7.5.3 Example XML File (StandardOutput.xml)

Sample response for submitDRRegistrations request
<?xml version="1.0" encoding="UTF-8"?>
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    <MessageHeader>
        <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
        <Source>String</Source>
        <Version>v20160301</Version>
    </MessageHeader>
    <MessagePayload>
        <EventLog>
            <Batch>
                <mRID>101</mRID>
                <creationTime>2015-01-11T07:00:00.000+00:00</creationTime>
            </Batch>
            <Event>
                <creationDateTime>2015-01-11T07:00:00.000+00:00</creationDateTime>
                <description>Successfully Received</description>
                <id>String</id>
                <result>Success</result>
            </Event>
            <Service>
                <id>123123</id>
                <name>submitDRRegistrations_v1</name>
            </Service>
        </EventLog>
    </MessagePayload>
</StandardOutput>
8. RetrieveDRRegistrations

8.1 Use Model

The diagram below shows the sequence for retrieveDRRegistrations:

[Diagram showing the sequence of steps for retrieving DR Registrations]
8.2 Operation Details

The service has `retrieveDRRegistrations_v1` operation with three message types. All input and output messages are in XML format.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Message Types</th>
<th>Message</th>
<th>WSDL</th>
<th>XSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>retrieveDRRegistrations_v1</td>
<td>Input</td>
<td>retrieveDRRegistrationsRequest</td>
<td>retrieveDRRegistrations_v1.wsdl</td>
<td>RequestDRRegistrationData_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>retrieveDRRegistrationsResponse</td>
<td>retrieveDRRegistrations_v1_DocAttach.wsdl</td>
<td>DRRegistrationData_v1.xsd</td>
</tr>
<tr>
<td></td>
<td>Fault</td>
<td>faultReturnTyp</td>
<td></td>
<td>StandardOutput_v1.xsd</td>
</tr>
</tbody>
</table>

The structure of the request for retrieving the DRRS registration information is described in 5.4. The response structure (DRRegistrationData_v1.xsd) and StandardOutput_v1.xsd have been described earlier in this document in sections 4.4 and 4.5.

8.3 WSDL (retrieveDRRegistrations_v1.wsdl)

retrieveDRRegistrations_v1.wsdl

- retrieveDRRegistrations_v1.wsdl – Used for normal SOAP messaging
- retrieveDRRegistrations_v1_DocAttach.wsdl – Used when .NET is the source of processing

The WSDL can be found at the following location:
Please refer to the latest version of the artifacts found under the technical specifications.

8.4 Message Type

retrieveDRRSRegistrationsRequest

8.4.1 Element Table

Refer to Section 5.4.1

8.4.2 Schema (RequestDRRegistrationData_v1.xsd)
The XSD can be found at the following location:
Please refer to the latest version of the artifacts found under the technical specifications.

8.4.3 Example XML File (RequestDRRegistrationData_v1.xml)

Sample request to retrieve DRRS Registration details:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<RequestDRRegistrationData xmlns="http://www.caiso.com/soa/RequestDRRegistrationData_v1.xsd#"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.caiso.com/soa/RequestDRRegistrationData_v1.xsd#RequestDRRegistrationData_v1.xsd">
  <MessageHeader>
    <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
    <Source>String</Source>
    <Version>v20160301</Version>
  </MessageHeader>
  <MessagePayload>
    <RegistrationRequest>
      <requestType>REGISTRATION_ONLY</requestType>
      <DemandResponseRegistration>
        <mRID>R123</mRID>
        <name>Name of Registration</name>
        <DemandResponseProvider>
          <mRID>DRP1</mRID>
        </DemandResponseProvider>
        <DemandUtilityDistributionCompany>
          <mRID>UDC1</mRID>
        </DemandUtilityDistributionCompany>
      </DemandResponseRegistration>
    </RegistrationRequest>
  </MessagePayload>
</RequestDRRegistrationData>
```

Sample response to the above retrieveDRRSRegistration request is as below:

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<DRRegistrationData xmlns="http://www.caiso.com/soa/DRRegistrationData_v1.xsd#">
  <MessageHeader>
    <TimeDate>2016-04-27T14:41:05.598-07:00</TimeDate>
    <Source>DRRS</Source>
    <Version>v20160501</Version>
  </MessageHeader>
</DRRegistrationData>
```
<MessagePayload>
  <DemandResponseRegistration_Full>
    <mRID>R123</mRID>
    <name>Name of Registration</name>
    <DemandResponseProvider>
      <mRID>DRP1</mRID>
    </DemandResponseProvider>
    <DistributedActivity>
      <action>NA</action>
      <submittedActiveEndDateTime>2018-10-01T00:00:00.000-07:00</submittedActiveEndDateTime>
      <submittedActiveStartDateTime>2017-01-01T00:00:00.000-08:00</submittedActiveStartDateTime>
    </DistributedActivity>
    <RegisteredGenerator>
      <LoadAggregationPoint>
        <mRID>DLAP</mRID>
        <AggregatedNode>
          <mRID>SUBLAP</mRID>
        </AggregatedNode>
      </LoadAggregationPoint>
      <LoadServingEntity>
        <mRID>LSE</mRID>
      </LoadServingEntity>
      <SchedulingCoordinator>
        <mRID>DRP_SC_ID</mRID>
      </SchedulingCoordinator>
    </RegisteredGenerator>
    <status>
      <value>STATUS</value>
    </status>
    <DemandUtilityDistributionCompany>
      <mRID>UDC1</mRID>
    </DemandUtilityDistributionCompany>
    <baselineMethod>BASELINE_METHOD</baselineMethod>
    <program>PROGRAM</program>
    <resourceType>RESOURCE_TYPE</resourceType>
  </DemandResponseRegistration_Full>
</MessagePayload>
</DRRegistrationData>
9. Application Error Messages

Below are the list of messages that DRRS responds in respective use-cases:

<table>
<thead>
<tr>
<th>SNo</th>
<th>Message</th>
<th>Use-case</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The SAN is missing or is invalid.</td>
<td>If SAN is missing or is invalid in the location/registration request</td>
</tr>
<tr>
<td>2</td>
<td>The DRP is missing or is invalid.</td>
<td>If DRP is missing or is invalid in the location/registration request</td>
</tr>
<tr>
<td>3</td>
<td>The UDC is missing or is invalid.</td>
<td>If UDC is missing or is invalid in the location/registration request</td>
</tr>
<tr>
<td>4</td>
<td>The LSE is missing or is invalid.</td>
<td>If LSE is missing or is invalid in the location/registration request</td>
</tr>
<tr>
<td>5</td>
<td>The SUBLAP is missing or is invalid.</td>
<td>If SUBLAP is missing or is invalid in the location/registration request</td>
</tr>
<tr>
<td>6</td>
<td>The PNODE is invalid.</td>
<td>If PNODE is missing or is invalid in the location/registration request</td>
</tr>
<tr>
<td>7</td>
<td>The location name is missing or is invalid.</td>
<td>If LOCATION NAME is missing or is invalid in the location request</td>
</tr>
<tr>
<td>8</td>
<td>The location ID is either missing or is invalid.</td>
<td>If LOCATION_ID is missing in the location request</td>
</tr>
<tr>
<td>9</td>
<td>The START DATE is missing or is invalid.</td>
<td>If START DATE is missing or is invalid in the location/registration request</td>
</tr>
<tr>
<td>10</td>
<td>The END DATE is missing or is invalid.</td>
<td>If END DATE is missing or is invalid in the location/registration request</td>
</tr>
<tr>
<td>11</td>
<td>The END DATE cannot be before the START DATE.</td>
<td>If the END DATE is prior to START DATE in the location/registration creation request</td>
</tr>
<tr>
<td>12</td>
<td>The location ADDRESS is either missing or is invalid.</td>
<td>If ADDRESS is missing or is invalid in the location request</td>
</tr>
<tr>
<td>13</td>
<td>The location CITY is either missing or is invalid.</td>
<td>If CITY is missing or is invalid in the location request</td>
</tr>
<tr>
<td>14</td>
<td>The location STATE is either missing or is invalid.</td>
<td>If STATE is missing or is invalid in the location request</td>
</tr>
<tr>
<td>15</td>
<td>The location ZIP is either missing or is invalid.</td>
<td>If ZIP is missing or is invalid in the location request</td>
</tr>
<tr>
<td>16</td>
<td>The location VALID flag is either missing or is invalid.</td>
<td>If VALID LOCATION flag is missing or is invalid in the location request</td>
</tr>
<tr>
<td>17</td>
<td>The location REVIEWER NAME is either missing or is invalid.</td>
<td>If REVIEWER NAME is missing or is invalid in the location request</td>
</tr>
<tr>
<td>18</td>
<td>The location REVIEWER CONTACT NUMBER is either missing or is invalid.</td>
<td>If REVIEWER CONTACT NUMBER is missing or is invalid in the location request</td>
</tr>
<tr>
<td>19</td>
<td>Location does not exist for review!!!</td>
<td>When a location review request is received and if the Location doesn’t exist in the system</td>
</tr>
<tr>
<td>20</td>
<td>The location reviewer name or contact details missing or is invalid.</td>
<td>If COMMENTS are passed without the REVIEWER name and contact details in the location request</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>21</td>
<td>UDC already reviewed and approved the location</td>
<td>If a duplicate UDC_REVIEW request is received</td>
</tr>
<tr>
<td>22</td>
<td>UDC already reviewed and disapproved the location</td>
<td>If a duplicate UDC_REVIEW request is received</td>
</tr>
<tr>
<td>23</td>
<td>UDC review request received after the location_review end period</td>
<td>If the UDC_REVIEW request is received after the review_period</td>
</tr>
<tr>
<td>24</td>
<td>LSE already reviewed and approved the location</td>
<td>If a duplicate LSE_REVIEW request is received</td>
</tr>
<tr>
<td>25</td>
<td>LSE already reviewed and disapproved the location</td>
<td>If a duplicate LSE_REVIEW request is received</td>
</tr>
<tr>
<td>26</td>
<td>LSE review request received after the location_review end period</td>
<td>If the LSE_REVIEW request is received after the review_period</td>
</tr>
<tr>
<td>27</td>
<td>The user doesn't have permissions for requested DRP entity</td>
<td>When a Location request is submitted by a DRP USER with a DRP entity for which he/she doesn't have the permissions</td>
</tr>
<tr>
<td>28</td>
<td>The user doesn't have permissions for requested UDC entity</td>
<td>When a Location request is submitted by a UDC USER with a UDC entity for which he/she doesn't have the permissions</td>
</tr>
<tr>
<td>29</td>
<td>The user doesn't have permissions for requested LSE entity</td>
<td>When a Location request is submitted by a LSE USER with a LSE entity for which he/she doesn't have the permissions</td>
</tr>
<tr>
<td>30</td>
<td>The required user security role was not found for the user USER_NAME</td>
<td>When a Location/Registration request is submitted by an unauthorized USER</td>
</tr>
<tr>
<td>31</td>
<td>Internal application error occurred unable to create new location</td>
<td>When an exception is thrown while creating a location</td>
</tr>
<tr>
<td>32</td>
<td>Internal application error occurred unable to process duplicate location</td>
<td>When a duplicate request is received for location creation</td>
</tr>
<tr>
<td>33</td>
<td>Internal application error occurred unable to end-date location</td>
<td>When an exception is thrown while end-dating a location</td>
</tr>
<tr>
<td>34</td>
<td>Internal application error occurred unable to modify location</td>
<td>When an exception is thrown while modifying a location</td>
</tr>
<tr>
<td>35</td>
<td>Internal application error occurred unable to update location</td>
<td>When an exception is thrown while updating a location</td>
</tr>
<tr>
<td>36</td>
<td>Internal application error occurred unable to delete new location</td>
<td>When an exception is thrown while deleting a draft location</td>
</tr>
<tr>
<td>37</td>
<td>Internal application error occurred unable to review location</td>
<td>When an exception is thrown while reviewing a pending location</td>
</tr>
<tr>
<td>38</td>
<td>Internal application error occurred unable to process request</td>
<td>When an exception is thrown while retrieving a location/registration</td>
</tr>
<tr>
<td>39</td>
<td>Internal application error occurred unable to defend location</td>
<td>When an exception is thrown while processing the location defend request</td>
</tr>
<tr>
<td>40</td>
<td>Internal application error occurred unable to process defend review request</td>
<td>When an exception is thrown while processing the location defend response request</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Reason</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>42</td>
<td>The registration ID is either missing or is invalid.</td>
<td>If REGISTRATION ID is missing or is invalid in the registration request</td>
</tr>
<tr>
<td>43</td>
<td>The registration name is either missing or is invalid.</td>
<td>If REGISTRATION NAME is missing or is invalid in the registration request</td>
</tr>
<tr>
<td>44</td>
<td>The registration BASELINE_METHOD is either missing or is invalid.</td>
<td>If BASELINE METHOD is missing or is invalid in the registration request</td>
</tr>
<tr>
<td>45</td>
<td>The registration PROGRAM is either missing or is invalid.</td>
<td>If PROGRAM is missing or is invalid in the registration request</td>
</tr>
<tr>
<td>46</td>
<td>The registration RESOURCE_TYPE is either missing or is invalid.</td>
<td>If RESOURCE TYPE is missing or is invalid in the registration request</td>
</tr>
<tr>
<td>47</td>
<td>The registration DLAP is invalid.</td>
<td>If DLAP is invalid in the registration request</td>
</tr>
<tr>
<td>48</td>
<td>The registration SCHEDULING COORDINATOR is either missing or is invalid.</td>
<td>If SCHEDULING COORDINATOR is missing or is invalid in the registration request</td>
</tr>
<tr>
<td>49</td>
<td>The sum of location's PNODE DISTRIBUTION FACTOR within a REGISTRATION is invalid.</td>
<td>If PNODE DISTRIBUTION FACTOR is invalid in the registration request (ie. When the sum of dist factor's is more than 1)</td>
</tr>
<tr>
<td>50</td>
<td>The combination of DRP, SUBLAP, and RESOURCE_ID fields is invalid.</td>
<td>If either the RESOURCE ID, Sublap, or DPR is invalid in the registration request</td>
</tr>
<tr>
<td>51</td>
<td>Internal application error occurred unable to create new registration</td>
<td>When an exception is thrown while creating a registration</td>
</tr>
<tr>
<td>52</td>
<td>Internal application error occurred unable to modify registration</td>
<td>When an exception is thrown while modifying a registration</td>
</tr>
<tr>
<td>53</td>
<td>Internal application error occurred unable to delete new registration</td>
<td>When an exception is thrown while deleting a registration</td>
</tr>
<tr>
<td>54</td>
<td>Internal application error occurred unable to end-date registration</td>
<td>When an exception is thrown while end-dating a registration</td>
</tr>
</tbody>
</table>
Appendix – date/time Data Type

The date/time data type is used to specify a date and a time.

The date/time is specified in the following form YYYY-MM-DDThh:mm:ss[(+|-)hh:mm:ss] where:

- YYYY indicates the year
- MM indicates the month
- DD indicates the day
- T indicates the start of the required time section
- hh indicates the hour
- mm indicates the minute
- ss indicates the second
- + (plus) or - (minus) to specify an offset from the UTC time

The submittedActiveEndDateTime and submittedActiveStartDateDateTime field values should always be specified as the start of the day (midnight of the date) expressed in GMT.

For example, during DST, the date format should be either of the following:

- 2016-01-26T07:00:00.000-00:00
- 2016-01-26T07:00:0000Z

2016-01-26T07:00:0000ZNote that current DRRS version does not support more than 3 decimal places for
milliseconds

Examples for start

//m:MessagePayload)/m:DistributedEnergyResourceContainer/m:DistributedActivity/m:submittedActiveStartDateDateTime) and end

//m:MessagePayload)/m:DistributedEnergyResourceContainer/m:DistributedActivity/m:submittedActiveEndDateTime) in the DRRegistrationData_v1.xsd

<table>
<thead>
<tr>
<th>Daily -0000 offset</th>
<th>start</th>
<th>end</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daylight-Savings Time</td>
<td>2014-10-15T07:00-0000</td>
<td>2014-10-16T07:00-0000</td>
</tr>
<tr>
<td>Non Daylight-Savings Time</td>
<td>2014-11-15T08:00-0000</td>
<td>2014-11-16T08:00-0000</td>
</tr>
</tbody>
</table>
Appendix – CAISO holidays

For the purpose of calculating 5 Business Days for master file SLA for termination of resources, following is the list of ISO holidays that are considered in addition to weekends:

- January 1 – New Year’s (Friday is a holiday if this falls on Saturday and following Monday is a holiday if it falls on Sunday)
- Third Monday in January – MLK Day
- Third Monday in February – President’s Day
- Last Monday in May – Memorial Day
- July 4 – Independence Day (Friday is a holiday if this falls on Saturday and following Monday is a holiday if it falls on Sunday)
- First Monday in September – Labor Day
- Last Thursday in November – Thanksgiving Day
- Last Friday in November – Day after Thanksgiving
- Dec 25 – Christmas (Friday is a holiday if this falls on Saturday and following Monday is a holiday if it falls on Sunday)

References – Use Case Documentation

Use Case documents are located here:


http://www.caiso.com/Documents/LocationandRegistrationLifecycle.pdf

The WSDLs are located here:

http://www.caiso.com/Documents/DemandResponseLocationRegistrationEnhancement-ArtifactsPackage-v2_0.zip