

# ISO Interface Specification

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# Demand Response Registration System

Document Version: 2.1


Date Created: 5/15/2018

## Location of Document

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Owner: CAISO


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 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	[Template Version]
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<http://www.caiso.com/Documents/DemandResponseLocationRegistrationEnhancement-TechnicalSpecifications-v10.pdf>

## Revision History

Date	Version	Description	Author
5/15/2018	1.0	Initial Version	CAISO
11/21/2014	1.1	Update the location of the current document and the location of all the XSDs and WSDLs referenced in this document	CAISO
11/21/2014	1.1	Added response xmls for RetrieveDRRSBatchStatus in 6.4.3	CAISO
12/31/2014	1.2	Updated the element MessagePayload.AggregatedDistributedEnergyResourceContainer.DistributedEnergyResourceContainer from required to optional in DRRSLocations_v1.xsd in section 4.4.1	CAISO
12/31/2014	1.2	Added the element "name" to MessagePayload.AggregateLocationRequest.AggregatedDistributedEnergyResourceContainer in the RequestDRRSLocationData_v1.xsd in section 5.4.1	CAISO
01/15/2015	1.3	Added the optional elements "status" and "registration id" to AggregatedDistributedEnergyResourceContainer and DistributedEnergyResourceContainer in DRRSLocations_v1.xsd in section 4.4.1	CAISO
01/15/2015	1.3	Updated section 5.2 to add details about the retrieve for location using API vs the UI	CAISO
2/6/2015	1.4	Remove the link for artifacts; add the "Terminated" status for ALOC in section 5.4.1	CAISO
2/23/2014	1.4	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="NEW" and optional when action="MODIFY"	CAISO
3/16/2015	1.4	Add descriptions for Status in retrieveDRRSBatchStatus response	CAISO
9/6/2015	1.5	New services for SubmitDRRSRegistrations, RetrieveDRRSRegistrations and SubmitDRRSLocationReview	CAISO
9/6/2015	1.5	SubmitDRRSLocations_V1.XSD will not be supported, change to DRRSBatchStatus_v1.xsd, change to SubmitStandardOutput.xsd, introduce	CAISO


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<b>Date</b>	<b>Version</b>	<b>Description</b>	<b>Author</b>
		DRRegistrationData_v1.xsd and RequestDRRegistrationData_v1.xsd	
9/6/2015	1.5	Remove the concept of aggregate locations (ALOCs)	CAISO
3/10/2016	1.6	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.	CAISO
4/6/2016	1.7	Incorporated the CPG review comments received on 03/22/2016	CAISO
4/20/2016	1.8	Incorporated the CPG review comments received on 04/12/2016	CAISO
5/3/2016	1.9	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	CAISO
5/15/2018	2.0	Introducing new baseline methods and deprecating some of the existing baseline methods with ESDER2 activation; approval of baseline methods for a DRP; details of registrations with control group baseline method in section 4.4.1  New optional element LocationGroupType in DemandResponseRegistration in section 4.4.1; sample xml for Control group baseline registrations	CAISO
7/12/2018	2.1	DLAP for registrations with control group baseline method in section 4.4.1	CAISO


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# 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.

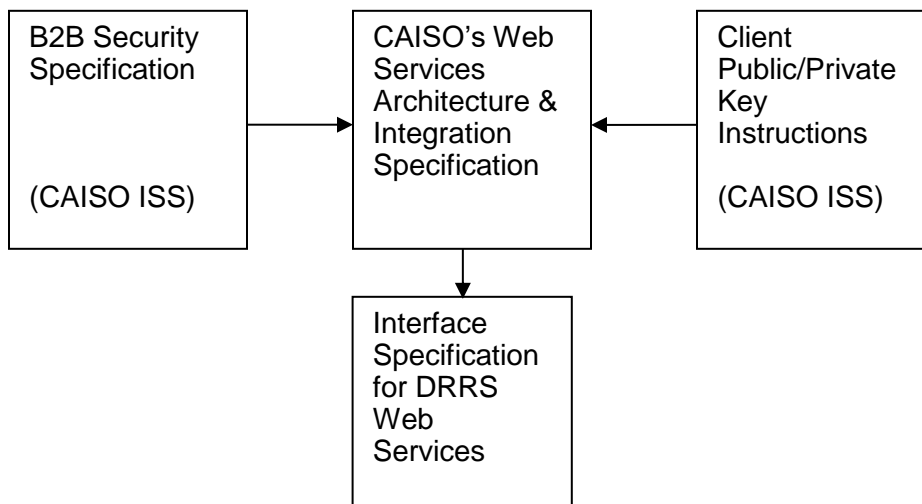



Figure 1 – ISO MARKET Web Services Interface Specification Document Set

The ISO MARKET Web Services Interface Specification Document Set is available online at the locations indicated below.

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Doc. No.	Document Name	Location
1	ISO MARKET B2B Security Specification	<a href="https://portal.caiso.com">https://portal.caiso.com</a>
2	Client Public/Private Key Instructions	<a href="http://www.caiso.com/Documents/ClientPublic_PrivateKeyGuidelines.pdf">http://www.caiso.com/Documents/ClientPublic_PrivateKeyGuidelines.pdf</a>

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 initial release.




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## 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


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### 3. Service Level Agreement

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

<b>Service availability</b>	Service Level goal is 99.9%.
<b>Expected size of payload (average and maximum)</b>	< 150MB *
<b>Expected frequency (average and maximum)</b>	5 seconds
<b>Longest time the service can be unavailable before business is impacted</b>	4 hours during regular business hours
<b>Business impact if is unavailable</b>	Market Participants utilizing the service will not be able to submit or retrieve DRRS location and registration data
<b>Expected response time for the service</b>	Submit service – < 10 seconds * Retrieve service – < 10 mins for a payload with 50K locations*
<b>Expected time to retrieve the batch status</b>	< 2 hours under normal conditions*

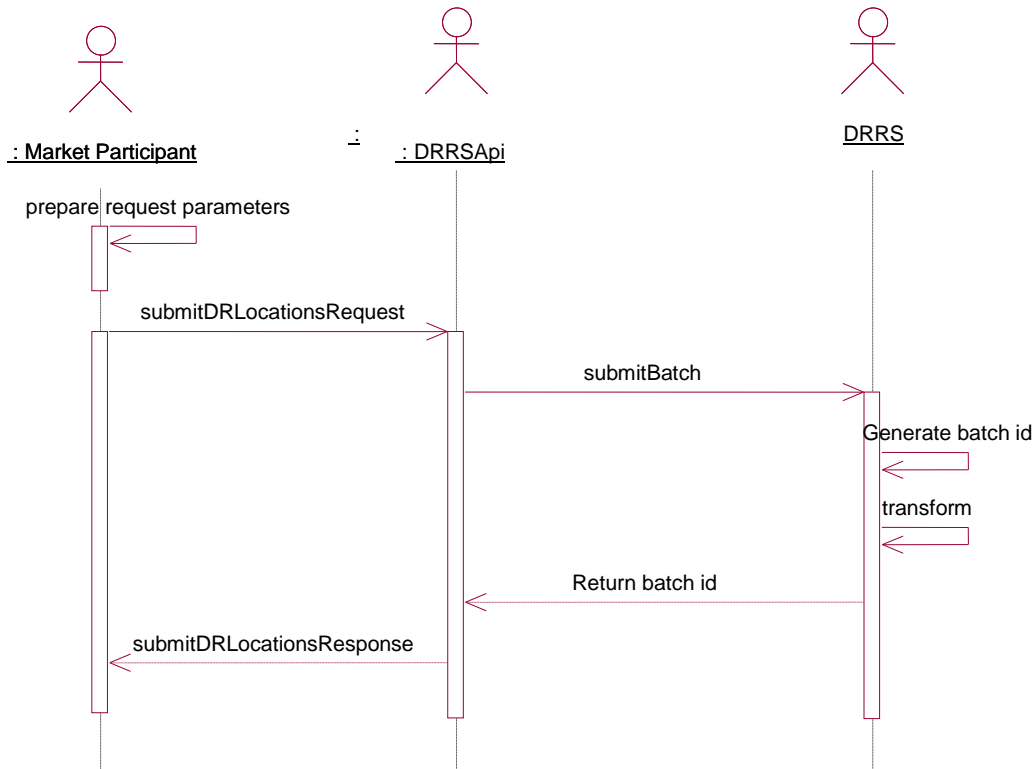
\* subject to change


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## 4. SubmitDRLocations

### 4.1 Use Model

The diagram below shows the sequence for submitDRLocations



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## 4.2 Operation Details

The service has *submitDRLocations\_v1* operation with three message types. All input and output messages are in XML format.

Operation	Message Types	Message	WSDL	XSD
submitDRLocations_v1	Input	submitDRLocationsRequest	submitDRLocations_v1.wsdl	DRRegistrationData_v1.xsd
	Output	submitDRLocationsResponse	submitDRLocations_v1_DocAttach.wsdl	StandardOutput_v1.xsd
	Fault	faultReturnTyp e		StandardOutput_v1.xsd

## 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


Element	Data Description	Type/Length	Req'd
<b>MessageHeader (optional)</b>			
TimeDate	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	datetime	Yes
Source	Source system which provides data for this service	String	Yes

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Element	Data Description	Type/ Length	Req'd
Version	Date reflecting the release this latest version update was related to. Valid value is 'v20160501'	String	Yes
<b>MessagePayload (required)</b>			
<b>MessagePayload.DemandResponseRegistration_Full (optional)</b>			
mRID	Identifier of the Registration	String	No
name	Name of the Registration	String / 255	No
terminateRegistration Flag	TRUE/FALSE. When this Flag = TRUE, the user is requesting to terminate the associated registration in the Demand Response System	Boolean	No
baselineMethod	<p>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</p> <p>The baseline method "Hourly Gen (requires CAISO pre-approval)" is being renamed to "Hourly Gen" with the ESDER2 release.</p> <p>The new baseline methods will be available prior to the actual go-live date for registrations whose start date is after ESDER2 activation. The availability of these baseline methods for a DRP is based on the PDR admin's approval.</p> <p>Valid values are:  Hourly Gen *  10 in 10 with SMA *  Meter Generation Output with 10 in 10  Meter Generation Output  Weather Matching  Day Matching Combined  Day Matching 10/10  Day Matching 5/10 (Residential Only)  Control Group</p> <p>* The baseline methods "Hourly Gen" and "10 in 10 with SMA" will not be available for registrations with start date after ESDER2 activation.</p>	String	No

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Element	Data Description	Type/ Length	Req'd
program	Every resource should be either PDR (Proxy Demand Response) or RDR (Reliability Demand Response)	String	No
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	String	No
<b>MessagePayload.DemandResponseRegistration_Full.DemandResponseProvider (optional)</b>			
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
<b>MessagePayload.DemandResponseRegistration_Full.status(optional)</b>			
value	<p>Status value of the registration.</p> <p>The different values can be:  NEW  PENDING  CONFIRMED  TERMINATED</p> <p>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.</p>	String	Yes
<b>MessagePayload.DemandResponseRegistration_Full.DistributedActivity (required) – all activity records created for this asset</b>			
submittedActiveEndDateTime	Submitted end date time of the registration for which the registration is active in GMT format.	datetime	No
submittedActiveStartDateTime	Submitted start date time of the registration for which the registration is active in GMT format.	datetime	No


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Element	Data Description	Type/ Length	Req'd
action	<p>Action to be taken</p> <p>Valid values are:            SAVE            SUBMIT            MODIFY            DELETE</p> <p>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.</p> <p>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.</p> <p>MODIFY must be used along with the appropriate TerminateRegistrationFlag value to terminate a CONFIRMED registration.</p> <p>MODIFY is used to change the updateable attributes of an existing registration that is in the CONFIRMED status.</p> <p>DELETE is used to delete the registrations that are in draft (NEW) status.</p>	String	Yes
<b>MessagePayload.DemandResponseRegistration_Full.RegisteredGenerator (optional)</b>			
mRID	Resource ID as specified by master file	String	No
<b>MessagePayload.DemandResponseRegistration_Full.RegisteredGenerator.LoadAggregationPoint (required)</b>			


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Element	Data Description	Type/ Length	Req'd
mRID	<p>Master resource identifier of the DLAP as specified by master file.</p> <p>Registrations not using control group baseline method: 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. The DRP is expected to submit the DLAP in instances where more than one DLAP exists for the given condition.</p> <p>If the DRP submits the registration with DLAP information, it will be validated to make sure it matches with what is derived. If it does not match with what is derived, an error will be returned.</p> <p>Registrations using control group baseline method: For control group baseline registrations, DLAP should be provided by the user. Registrations missing the DLAP information will be rejected by the system as DLAP cannot be derived without the subLAP and these registrations can span multiple subLAPs.</p>	String	Yes
<b>MessagePayload.DemandResponseRegistration_Full.RegisteredGenerator.LoadAggregationPoint.Aggregate dPnode (required)</b>			
mRID	<p>Master resource identifier of the aggregated Pnode resource (also referred to in the DRRS system as SubLAP) as specified by master file.</p> <p>For control group baseline registrations, the subLAP should be specified as "NULL" since this registration can span locations across multiple subLAPs</p>	String	Yes
<b>MessagePayload.DemandResponseRegistration_Full.RegisteredGenerator.LoadServingEntity (required)</b>			
mRID	Master resource identifier of the load serving entity as provided in the master file	String	Yes
<b>MessagePayload.DemandResponseRegistration_Full.RegisteredGenerator.SchedulingCoordinator (required)</b>			
mRID	SCID of the DRP as provided in the master file	String	Yes
<b>MessagePayload.DemandResponseRegistration_Full.DemandUtilityDistributionCompany (optional)</b>			
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




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Element	Data Description	Type/ Length	Req'd
<b>MessagePayload.DemandResponseRegistration_Full.DistributedEnergyResourceContainer (optional) (0 to unbounded occurrences)</b>			
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
locationGroupType	<p>Flag to indicate if a location tied to a registration with “Control Group” baseline method belongs to control group or treatment group.</p> <p>Valid values: CG, TG</p> <p>If the flag is CG, it is a control group location</p> <p>If the flag is TG, it is a treatment group location</p> <p>A control group baseline registration can have locations belonging to different subLAPs. However, the subLAPs of all locations flagged as treatment group should be the same. These registrations also need a minimum of 150 control group locations and at least one treatment group location.</p> <p>A control group location tied to a control group baseline registration is allowed to be associated with a different control group baseline registration with overlapping timeframe as long as it is marked as a control group location in the other registration.</p> <p>A treatment group location tied to a control group baseline registration will not be allowed to participate in a different control group baseline registration with overlapping timeframe.</p>	String	No
locationID	Identifier of the distributed energy resource container, also known as locationID	Integer	No
locationPnodeDistributionFactor	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.	Float	No
<b>MessagePayload.DemandResponseRegistration_Full.DistributedEnergyResourceContainer.RegisteredGenerator (optional)</b>			
<b>MessagePayload.DemandResponseRegistration_Full.DistributedEnergyResourceContainer.RegisteredGenerator.IndividualPnode(required)</b>			
mRID	Pnode of the location associated to the registration.	String	Yes

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Element	Data Description	Type/ Length	Req'd
<b>MessagePayload.DistributedEnergyResourceContainer (optional)</b>			
mRID	Master resource identifier of the distributed energy resource container (also referred to in the DRRS system as the location SAN)	String / 255	No
locationID	Identifier of the distributed energy resource container, also known as locationID	Integer	No
name	Name of the distributed energy resource container, also known as location.	String / 255	No
comment	Required if validLocation=false. Optional if the validLocation is set to true	String / 2048	No
reviewerName	Name of the reviewer validating or invalidating the location. Required if validLocation = false	String / 255	No
validLocation	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	String	No
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
<b>MessagePayload.DistributedEnergyResourceContainer.DemandResponseProvider (optional)</b>			
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
<b>MessagePayload.DistributedEnergyResourceContainer.DistributedActivity (required)</b>			

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Element	Data Description	Type/ Length	Req'd
action	<p>Action to be taken</p> <p>Valid values are:</p> <p>SAVE SUBMIT DELETE MODIFY UDC_REVIEW LSE_REVIEW LSE_UDC_REVIEW INITIATE_DEFEND DRP_REVIEW</p> <p>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.</p> <p>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.</p> <p>DELETE is used to delete the locations that are in draft (NEW) status.</p> <p>MODIFY is used to change the updateable attributes of an existing location (i.e. after reviewed).</p> <p>UDC_REVIEW is used to process the review comments from UDC participant</p> <p>LSE_REVIEW is used to process the review comments from LSE participant</p> <p>LSE_UDC_REVIEW is used to process the review comments from the participant who has both LSE and UDC roles</p> <p>INITIATE_DEFEND is used to defend for an existing location</p> <p>DRP_REVIEW is used to process the review comments received in response of the LOCATION DEFEND process.</p>	String	Yes
submittedActiveEndDateTime	Submitted end date time of the location for which the location is active in GMT format	datetime	No
submittedActiveStartDateTime	Submitted start date time of the location for which the location is active in GMT format.	datetime	No

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Element	Data Description	Type/ Length	Req'd
<b>MessagePayload.DistributedEnergyResourceContainer.Location (Optional)</b>			
type	Classification by utility's corporate standards and practices, relative to the location itself (e.g., geographical, functional accounting, etc., not a given property that happens to exist at that location)	String / 100	No
<b>MessagePayload.DistributedEnergyResourceContainer.Location.mainAddress(Optional) – main address of the location</b>			
<b>MessagePayload.DistributedEnergyResourceContainer.Location.mainAddress.streetDetail (Required) – street detail of the physical location</b>			
addressGeneral	Additional address information	String / 255	Yes
addressGeneral2	General Line 2 of address	String / 255	No
<b>MessagePayload.DistributedEnergyResourceContainer.Location.mainAddress.townDetail (Required)</b>			
code	Code of the town	String / 10	Yes
name	Name of the town	String / 255	Yes
stateOrProvince	Name of the state or province	String / 2	Yes
<b>MessagePayload.DistributedEnergyResourceContainerRegisteredGenerator (optional)</b>			
<b>MessagePayload.DistributedEnergyResourceContainer.RegisteredGenerator.IndividualPnode (optional)</b>			
mRID	Pnode associated to the location. Pnode information for the location with reference to the associated SubLAP will be validated against Master File. Required if the DRP would be using this location to request for a custom PDR/RDRR resource	String	Yes
<b>MessagePayload.DistributedEnergyResourceContainer.RegisteredGenerator.LoadAggregationPoint (optional)</b>			
<b>MessagePayload.DistributedEnergyResourceContainer.RegisteredGenerator.LoadAggregationPoint.AggregatedPnode (required)</b>			
mRID	Master resource identifier of the aggregated pNode resource (also referred to in the DRRS system as SubLAP) as provided in the master file	String	Yes
<b>MessagePayload.DistributedEnergyResourceContainer.RegisteredGenerator.LoadServingEntity (optional) – all roles of this organization</b>			
mRID	Master resource identifier of the load serving entity as provided in the master file	String	Yes
<b>MessagePayload.DistributedEnergyResourceContainer.status(optional)</b>			

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Element	Data Description	Type/ Length	Req'd
value	<p>Status value of the location.</p> <p>The different values can be:</p> <p>NEW PENDING DISPUTED ACTIVE INACTIVE END DATED DUPLICATE WITHDRAWN</p> <p>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.</p> <p>A location is marked DUPLICATE if the same SAN + UDC is owned by two different DRPs.</p> <p>Active registration is a registration in the PENDING or CONFIRMED status.</p>	String	Yes
<b>MessagePayload.DistributedEnergyResourceContainer.DemandResponseRegistration (optional)</b>			
mRID	Registration id associated to a Registration, if available based on the status	String	No
<b>MessagePayload.DistributedEnergyResourceContainer.DemandUtilityDistributionCompany (optional)</b>			
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
<b>MessagePayload.DistributedEnergyResourceContainer.reviewerPhoneNumber – optional but required if validLocation = FALSE</b>			
areaCode	Area or region code	String / 3	Yes
extension	Extension for phone number	String / 89	No
localNumber	Main telephone number	String / 7	Yes

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#### 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 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>
        <submittedActiveEndTime>2016-01-
11T07:00:00.000+00:00</submittedActiveEndTime>
        <submittedActiveStartTime>2015-01-
11T07:00:00.000+00:00</submittedActiveStartTime>
      </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>
```

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```

        </mainAddress>
    </Location>
    <RegisteredGenerator>
        <LoadAggregationPoint>
            <AggregatedPnode>
                <mRID>SUBLAP1</mRID>
            </AggregatedPnode>
        </LoadAggregationPoint>
        <LoadServingEntity>
            <mRID>LSE1</mRID>
        </LoadServingEntity>
    </RegisteredGenerator>
    <DemandUtilityDistributionCompany>
        <mRID>UDC1</mRID>
    </DemandUtilityDistributionCompany>
</DistributedEnergyResourceContainer>
</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 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>
                <submittedActiveEndTime>2016-01-
11T07:00:00.000+00:00</submittedActiveEndTime>
                <submittedActiveStartTime>2015-01-
11T07:00:00.000+00:00</submittedActiveStartTime>
            </DistributedActivity>
        </DistributedEnergyResourceContainer>
    </MessagePayload>
</DRRegistrationData>

```

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```

    <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>PNODE1</mRID>
    </IndividualPnode>
    <LoadAggregationPoint>
      <AggregatedPnode>
        <mRID>SUBLAP1</mRID>
      </AggregatedPnode>
    </LoadAggregationPoint>
    <LoadServingEntity>
      <mRID>LSE1</mRID>
    </LoadServingEntity>
  </RegisteredGenerator>
  <DemandUtilityDistributionCompany>
    <mRID>UDC1</mRID>
  </DemandUtilityDistributionCompany>
</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"?>
<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>

```




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```

    <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>
        <submittedActiveEndTime>2016-01-
11T07:00:00.000+00:00</submittedActiveEndTime>
        <submittedActiveStartTime>2015-01-
11T07:00:00.000+00:00</submittedActiveStartTime>
      </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>
      <locationID>123456</locationID>
      <DemandUtilityDistributionCompany>
        <mRID>UDC1</mRID>
      </DemandUtilityDistributionCompany>
    </DistributedEnergyResourceContainer>
  </MessagePayload>
</DRRegistrationData>

```


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#### 4.4.6 Example XML File (SaveDRLocations\_v1.xml)

##### *SaveDRLocations\_v1.xml*

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

```
<?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>SAVE</action>
        <submittedActiveEndTime>2016-01-
11T07:00:00.000+00:00</submittedActiveEndTime>
        <submittedActiveStartTime>2015-01-
11T07:00:00.000+00:00</submittedActiveStartTime>
      </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>
      </RegisteredGenerator>
    </DistributedEnergyResourceContainer>
  </MessagePayload>
</DRRegistrationData>
```

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```

        </AggregatedPnode>
    </LoadAggregationPoint>
    <LoadServingEntity>
        <mRID>LSE1</mRID>
    </LoadServingEntity>
</RegisteredGenerator>
<DemandUtilityDistributionCompany>
    <mRID>UDC1</mRID>
</DemandUtilityDistributionCompany>
</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 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>SAVE</action>
                <submittedActiveEndTime>2016-01-
11T07:00:00.000+00:00</submittedActiveEndTime>
                <submittedActiveStartTime>2015-01-
11T07:00:00.000+00:00</submittedActiveStartTime>
            </DistributedActivity>
        </Location>
        <type>String</type>
    </MessagePayload>
</DRRegistrationData>

```

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```

    <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>
  <locationID>123456</locationID>
  <DemandUtilityDistributionCompany>
    <mRID>UDC1</mRID>
  </DemandUtilityDistributionCompany>
</DistributedEnergyResourceContainer>
</MessagePayload>
</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 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>

```

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```

        <action>DELETE</action>
    </DistributedActivity>
    <locationID>123456</locationID>
</DistributedEnergyResourceContainer>
</MessagePayload>
</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 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>UDC_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>

```

#### 4.4.10 Example XML File (LSEReviewDRLocations\_v1.xml)

##### *LSEReviewDRLocations\_v1.xml*

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	[Template Version]
		<b>Document Version:</b>	<b>2.1</b>
<b>ESDER Phase 2 ISO Interface Specification</b>		<b>Date Created:</b>	<b>5/15/2018</b>

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"?>
<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>
```

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	[Template Version]
		<b>Document Version:</b>	<b>2.1</b>
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```

        <action>LSE_UDC_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>

```

#### 4.4.12 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 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>
            <name>Location name</name>
            <DistributedActivity>
                <action>MODIFY</action>
                <submittedActiveEndTime>2016-01-
11T07:00:00.000+00:00</submittedActiveEndTime>
                <submittedActiveStartTime>2015-01-
11T07:00:00.000+00:00</submittedActiveStartTime>
            </DistributedActivity>
            <Location>
                <type>String</type>
                <mainAddress>
                    <streetDetail>
                        <addressGeneral>String</addressGeneral>
                        <addressGeneral2>String</addressGeneral2>
                    </streetDetail>
                    <townDetail>

```

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	[Template Version]
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```

        <code>String</code>
        <name>String</name>
        <stateOrProvince>String</stateOrProvince>
    </townDetail>
</mainAddress>
</Location>
<locationID>123456</locationID>
</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"?>
<DRRegistrationData xmlns="http://www.aiso.com/soa/DRRegistrationData_v1.xsd#"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.aiso.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>

```



 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	[Template Version]
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```

        <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>
<comment>String</comment>
<reviewerName>String</reviewerName>
<DemandUtilityDistributionCompany>
    <mRID>UDC1</mRID>
</DemandUtilityDistributionCompany>
<reviewerPhoneNumber>
    <areaCode>Number</areaCode>
    <extension>Number</extension>
    <localNumber>Number</localNumber>
</reviewerPhoneNumber>
</DistributedEnergyResourceContainer>
</MessagePayload>
</DRRegistrationData>

```

#### 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 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>


```

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	[Template Version]
		<b>Document Version:</b>	<b>2.1</b>
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```

    <name>Location name</name>
    <DemandResponseProvider>
      <mRID>DRP1</mRID>
    </DemandResponseProvider>
    <DistributedActivity>
      <action>INITIATE_DEFEND</action>
      <submittedActiveEndTime>2016-01-
11T07:00:00.000+00:00</submittedActiveEndTime>
      <submittedActiveStartTime>2015-01-
11T07:00:00.000+00:00</submittedActiveStartTime>
    </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>
    <comment>String</comment>
    <locationID>123456</locationID>
    <reviewerName>String</reviewerName>
    <DemandUtilityDistributionCompany>
      <mRID>UDC1</mRID>
    </DemandUtilityDistributionCompany>
    <reviewerPhoneNumber>
      <areaCode>Number</areaCode>
      <extension>Number</extension>
      <localNumber>Number</localNumber>
    </reviewerPhoneNumber>
  </DistributedEnergyResourceContainer>
</MessagePayload>
</DRRegistrationData>

```

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	[Template Version]
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#### 4.4.15 Example XML File (DRP\_Review\_DRLocations\_v1.xml)

[\*DRP\\_Review\\_DRLocations\\_v1.xml\*](#)


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

```
<?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 version="1.0" encoding="UTF-8"?>
```

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```

<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>
        <submittedActiveEndTime>2017-01-
01T08:00:00Z</submittedActiveEndTime>
        <submittedActiveStartTime>2017-01-
01T08:00:00Z</submittedActiveStartTime>
      </DistributedActivity>
      <Location>
        <type>Business</type>
        <mainAddress>
          <streetDetail>
            <addressGeneral>xxxxx</addressGeneral>
            <addressGeneral2>xxx</addressGeneral2>
          </streetDetail>
          <townDetail>
            <code>95630</code>
            <name>Folsom</name>
            <stateOrProvince>CA</stateOrProvince>
          </townDetail>
        </mainAddress>
      </Location>
      <RegisteredGenerator>
        <IndividualPnode>
          <mRID>PNODE1</mRID>
        </IndividualPnode>
        <LoadAggregationPoint>
          <AggregatedPnode>
            <mRID>SLAP1</mRID>
          </AggregatedPnode>
        </LoadAggregationPoint>
        <LoadServingEntity>
          <mRID>LSE1</mRID>
        </LoadServingEntity>
      </RegisteredGenerator>
      <locationID>123456</locationID>
      <DemandUtilityDistributionCompany>
        <mRID>UDC1</mRID>
      </DemandUtilityDistributionCompany>
    </DistributedEnergyResourceContainer>

```

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	[Template Version]
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</MessagePayload>  
 </DRRegistrationData>

## 4.5 Message Type

submitDRLocationsResponse and faultReturnTypes both conform to the StandardOutput\_v1.xsd

### 4.5.1 Element Table

Element	Data Description	Type / Length	Req'd
<b>MessagePayload (required)</b>			
<b>EventLog.Event (required)</b>			
result	Success or failure message	string	Yes
id	A unique identifier	string	Yes
description	Appropriate details related to the result of the event	string	No
creationTime	The creation time in GMT format	dateTime	No
<b>EventLog.Service (required)</b>			
id	The service Id (created by the web services framework.	integer	Yes
name	The name of the service as used by the Web Service.	string	Yes
<b>EventLog.Batch (optional)</b>			
mRID	This represents the batch ID for submission of a request to create or modify location and/or registration	String	Yes
creationTime	Time of creation	Datetime	No


### 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)


 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	[Template Version]
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Sample response for submitDRLocations request

```

<?xml version="1.0" encoding="UTF-8"?>
<StandardOutput xmlns="http://www.caiso.com/soa/StandardOutput_v1.xsd#"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.caiso.com/soa/StandardOutput_v1.xsd# StandardOutput_v1.xsd">
  <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>2015-01-11T07:00:00.000+00:00</creationTime>
      </Batch>
      <Event>
        <creationDateTime>2015-01-11T07:00:00.000+00:00</creationDateTime>
        <description>Save to Audit completed</description>
        <id>String</id>
        <result>Success</result>
      </Event>
      <Service>
        <id>123123</id>
        <name>submitDRRegistrations_v1</name>
      </Service>
    </EventLog>
  </MessagePayload>
</StandardOutput>

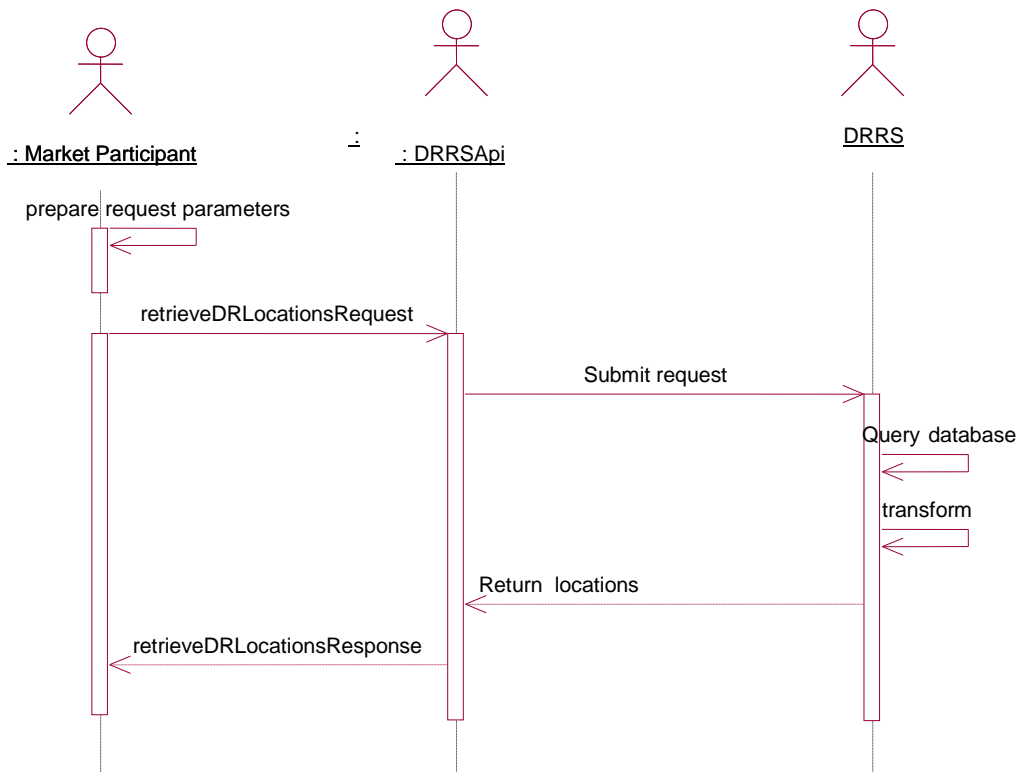
```


 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	[Template Version]
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## 5. RetrieveDRLocations

### 5.1 Use Model

The diagram below shows the sequence for retrieveDRLocations



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## 5.2 Operation Details

The service has *retrieveDRLocations\_v1* operation with three message types. All input and output messages are in XML format.

Operation	Message Types	Message	WSDL	XSD
retrieveDRLocations_v1	Input	retrieveDRLocationsRequest	retrieveDRLocations_v1.wsdl	RequestDRRegistrationData_v1.xsd
	Output	retrieveDRLocationsResponse	retrieveDRLocations_v1_DocAttach.wsdl	DRRegistrationData_v1.xsd
	Fault	faultReturnTy e		StandardOutput_v1.xsd

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




 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	[Template Version]
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Element	Data Description	Type/ Length	Req'd
<b>MessageHeader (Optional)</b>			
TimeDate	Application level relevant time and date for when this instance of the message was produced, in Pacific Prevailing Time format	datetime	Yes
Source	Source system which provides data for this service	String	Yes
Version	Date reflecting the release this latest version update was related to.	String	Yes
<b>MessagePayload (required)</b>			
<b>MessagePayload.LocationRequest (optional)</b>			
<b>MessagePayload.LocationRequest.DistributedEnergyResourceContainer (optional)</b>			
mRID	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	String	No
name	Name of the LOCATION	String	No
<b>MessagePayload.LocationRequest.DistributedEnergyResourceContainer.DemandResponseProvider (optional)</b>			
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
<b>MessagePayload.LocationRequest.DistributedEnergyResourceContainer.RegisteredGenerator (optional)</b>			
<b>MessagePayload.LocationRequest.DistributedEnergyResourceContainer.RegisteredGenerator.LoadAggregationPoint (optional)</b>			
<b>MessagePayload.LocationRequest.DistributedEnergyResourceContainer.RegisteredGenerator.LoadAggregationPoint.AggregatedPnode (required)</b>			
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
<b>MessagePayload.LocationRequest.DistributedEnergyResourceContainer.RegisteredGenerator.LoadServingEntity (required)</b>			
mRID	Master resource identifier of the load serving entity as provided by master file	String	Yes
<b>MessagePayload.LocationRequest.DistributedEnergyResourceContainer.status (optional) – Status of the asset</b>			

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	[Template Version]
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Element	Data Description	Type/ Length	Req'd
value	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.	String	Yes
<b>MessagePayload.LocationRequest.DistributedEnergyResourceContainer.DemandResponseRegistration (optional)</b>			
mRID	Master resource identifier of the registration associated with the registration as provided by the DRRS system	String	Yes
<b>MessagePayload.LocationRequest.DistributedEnergyResourceContainer.DemandUtilityDistributionCompany (optional)</b>			
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
<b>MessagePayload.LocationRequest.rangePeriod (optional)</b>			
end	end date and time of interval in GMT format	datetime	Yes
start	start date and time of interval in GMT format	datetime	Yes
<b>MessagePayload.RegistrationRequest (optional)</b>			
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
<b>MessagePayload.RegistrationRequest.DemandResponseRegistration (optional)</b>			
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
<b>MessagePayload.RegistrationRequest.DemandResponseRegistration.DemandResponseProvider (optional)</b>			
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
<b>MessagePayload.RegistrationRequest.DemandResponseRegistration.RegisteredGenerator (optional)</b>			

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	[Template Version]
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Element	Data Description	Type/ Length	Req'd
mRID	Master resource identifier of the resource associated with the registration as provided by master file.	String	No
<b>MessagePayload.RegistrationRequest.DemandResponseRegistration.RegisteredGenerator.LoadAggregationPoint.AggregatedPnode (required)</b>			
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
<b>MessagePayload.RegistrationRequest.DemandResponseRegistration.RegisteredGenerator.LoadServingEntity (required)</b>			
mRID	Master resource identifier of the load serving entity as provided by master file	String	Yes
<b>MessagePayload.RegistrationRequest.DemandResponseRegistration.status (optional) – Status of the registration</b>			
value	Valid values are: NEW CONFIRMED TERMINATED	String	Yes
<b>MessagePayload.RegistrationRequest.DemandResponseRegistration.DemandUtilityDistributionCompany (optional)</b>			
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
<b>MessagePayload.RegistrationRequest.rangePeriod (optional)</b>			
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 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">
```

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```

<MessageHeader>
  <TimeDate>2015-01-11T07:00:00.000+00:00</TimeDate>
  <Source>String</Source>
  <Version>v20160301</Version>
</MessageHeader>
<MessagePayload>
  <LocationRequest>
    <DistributedEnergyResourceContainer>
      <mRID>SAN1</mRID>
      <name>Location Name</name>
      <DemandResponseProvider>
        <mRID>DRP1</mRID>
      </DemandResponseProvider>
      <RegisteredGenerator>
        <LoadAggregationPoint>
          <AggregatedPnode>
            <mRID>SUBLAP1</mRID>
          </AggregatedPnode>
        </LoadAggregationPoint>
        <LoadServingEntity>
          <mRID>LSE1</mRID>
        </LoadServingEntity>
      </RegisteredGenerator>
      <DemandUtilityDistributionCompany>
        <mRID>UDC1</mRID>
      </DemandUtilityDistributionCompany>
    </DistributedEnergyResourceContainer>
  </LocationRequest>
</MessagePayload>
</RequestDRRRegistrationData>

```


**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 version="1.0" encoding="UTF-8"?>
<DRRRegistrationData xmlns="http://www.caiso.com/soa/DRRRegistrationData_v1.xsd#"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.caiso.com/soa/DRRRegistrationData_v1.xsd# DRRRegistrationData_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>


```

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```

        <mRID>DRP1</mRID>
    </DemandResponseProvider>
    <DistributedActivity>
        <action>NA</action>
        <submittedActiveEndTime>2016-01-
11T07:00:00.000+00:00</submittedActiveEndTime>
        <submittedActiveStartTime>2015-01-
11T07:00:00.000+00:00</submittedActiveStartTime>
    </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>
    <DemandUtilityDistributionCompany>
        <mRID>UDC1</mRID>
    </DemandUtilityDistributionCompany>
</DistributedEnergyResourceContainer>
</MessagePayload>
</DRRegistrationData>

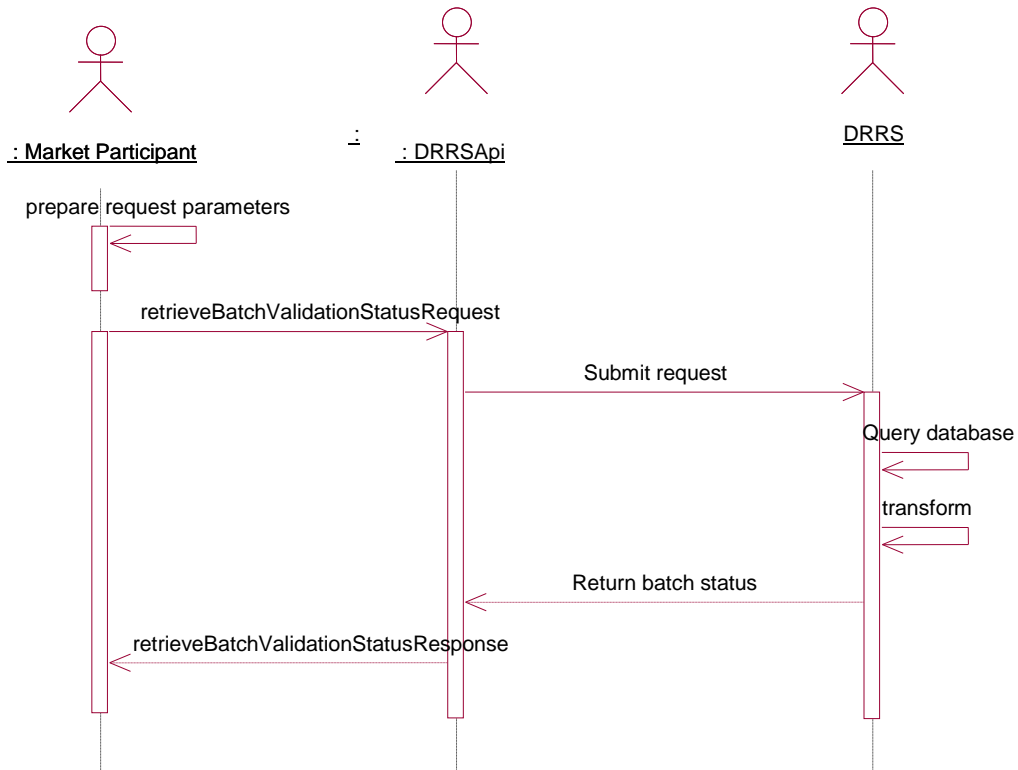
```


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## 6. RetrieveBatchValidationStatus

### 6.1 Use Model

The diagram below shows the sequence for retrieveBatchValidationStatus



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## 6.2 Operation Details

The service has *retrieveBatchValidationStatus\_v1* operation with three message types. All input and output messages are in XML format.

Operation	Message Types	Message	WSDL	XSD
<i>retrieveBatchValidationStatus_v1</i>	Input	retrieveBatchValidationStatusRequest	retrieveBatchValidationStatus_v1.wsdl	BatchValidationStatus_v1.xsd
	Output	retrieveBatchValidationStatusResponse	retrieveBatchValidationStatus_v1_DocAttach.wsdl	BatchValidationStatus_v1.xsd
	Fault	faultResponseType		StandardOutput_v1.xsd

## 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

Element	Data Description	Type/Length	Req'd
<b>MessageHeader (optional)</b>			
TimeDate	Application level relevant time and date for when this instance of the message was produced, in GMT Time format	datetime	Yes
Source	Source system which provides data for this service	String	Yes


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Element	Data Description	Type/ Length	Req'd
Version	Date reflecting the release this latest version update was related to.  Valid value is: v20160301	String	Yes
<b>MessagePayload (required)</b>			
<b>MessagePayload.BatchStatus (required)</b>			
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 There are 4 values for status: SUCCESS, ERROR, IN_PROCESS, and NOT_PROCESSED.  <ul style="list-style-type: none"> <li>Once the batch is submitted, the status is set to "NOT_PROCESSED".</li> </ul> <p>The processor runs periodically to pick up the submitted batch jobs and start processing them by changing the status to "IN_PROCESS".</p> <ul style="list-style-type: none"> <li>If you query during the time the application is processing the batch, you will get "IN_PROCESS" status.</li> <li>Once the processing is complete, the status will change either to "SUCCESS" or "ERROR".</li> </ul>	String	No
<b>MessagePayload.DistributedEnergyResourceContainer (optional) (0 to unbounded occurrences)</b>			
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
<b>MessagePayload.DistributedEnergyResourceContainer.ErrorLog (required) – reasons for error in locations</b>			
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
errPriority	Priority number for the error message, default is 0	integer	Yes
logTimeStamp	Date time when the error was created	datetime	Yes



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Element	Data Description	Type/ Length	Req'd
<b>MessagePayload.DemandResponseRegistration (optional) (0 to unbounded occurrences)</b>			
mRID	Master resource identifier of the registration	String	No
name	Name of the registration	String	No
<b>MessagePayload.DemandResponseRegistration.ErrorLog (required) – reasons for error in registration</b>			
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
errPriority	Priority number for the error message, default is 0	integer	Yes
logTimeStamp	Date time when the error was created in GMT	datetime	Yes
<b>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</b>			
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
errPriority	Priority number for the error message, default is 0.	integer	Yes
logTimeStamp	Date time when the error was created in GMT	datetime	Yes
<b>MessagePayload.RegisteredResource (Optional)</b>			
<b>MessagePayload.RegisteredResource.RegisteredGenerator (Optional)</b>			
mRID	Master resource identifier of the registered generator resource as specified in masterfile	String	No
name	Name of the resource	String	No
<b>MessagePayload.RegisteredResource.RegisteredInterTie (Optional)</b>			
mRID	Master resource identifier of the registered intertie resource as specified in masterfile	String	No
name	Name of the resource	String	No
<b>MessagePayload.RegisteredResource.RegisteredLoad (Optional)</b>			
mRID	Master resource identifier of the registered load resource as specified in masterfile	String	No
name	Name of the resource	String	No

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Element	Data Description	Type/ Length	Req'd
<b>MessagePayload.RegisteredResource.Flowgate (Optional)</b>			
mRID	Master resource identifier of the flowgate resource as provided in the master file	String	N
name	Name of the resource	String	No
<b>MessagePayload.RegisteredResource.Measurements (Optional)</b>			
measurementType	Type of the measurement.  <b>Valid values are: LOAD or GEN or MBMA or CBL or TMNT*</b> <b>*Meter Before Meter After (MBMA), Baseline Load Data (CBL) and Treatment Group Load Data (TMNT) can only be used upon ESDER 2 project activation for DRS Replacement.</b> <b>Meter data submitted with CBL or TMNT measurement types cannot be retrieved using the API or the UI. This is only used for internal auditing purposes.</b>  Measurement types are the same as channel ID in current metering solution. LOAD is channel 1, GEN is channel 4 and MBMA is channel 9.	String	Yes
<b>MessagePayload.RegisteredResource.Measurements.MeasurementValue (one to many occurrences)</b>			
intervalEndTime	End Datetime in GMT of the interval for which the meter value is being submitted or retrieved. This is interval ending.	dateTime	Yes
<b>MessagePayload.RegisteredResource.ErrorLog (one to many occurrences) – reasons for error in batch</b>			
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
errMessage	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:

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	[Template Version]
		<b>Document Version:</b>	<b>2.1</b>
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Please refer to the latest version of the artifacts found under the technical specifications.

### 6.4.3 Example XML File (BatchValidationStatus\_v1.xml)


```
<?xml version="1.0" encoding="UTF-8"?>
<BatchValidationStatus xsi:schemaLocation="http://www.caiso.com/soa/BatchValidationStatus_v1.xsd#
BatchValidationStatus_v1.xsd" xmlns="http://www.caiso.com/soa/BatchValidationStatus_v1.xsd#"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <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:

```
<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:


```
<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>
```

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```

    <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>

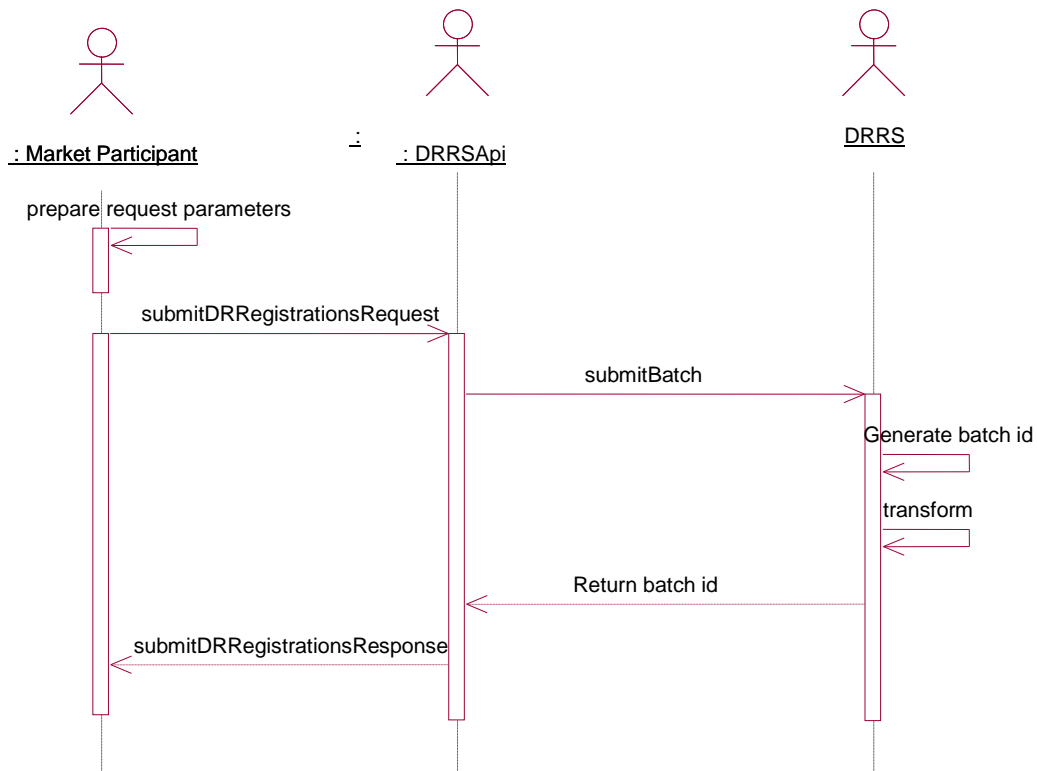
```


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## 7. SubmitDRRegistrations

### 7.1 Use Model

The diagram below shows the sequence for submitDRRegistrations



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## 7.2 Operation Details

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

Operation	Message Types	Message	WSDL	XSD
<i>submitDRRegistrations_v1</i>	Input	<i>submitDRRegistrationsRequest</i>	<i>submitDRRegistrations_v1.wsdl</i>	<i>DRRegistrationData_v1.xsd</i>
	Output	<i>submitDRRegistrationsResponse</i>	<i>submitDRRegistrations_v1_DocAttach.wsdl</i>	<i>StandardOutput_v1.xsd</i>
	Fault	<i>faultReturnTyped</i>		<i>StandardOutput_v1.xsd</i>

## 7.3 WSDL (*submitDRRegistrations\_v1.wsdl*)

- *submitDRRegistrations\_v1.wsdl* – Used for normal SOAP messaging
- *submitDRRegistration\_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.](#)

## 7.4 Message Type

*submitDRRegistrationsRequest*


### 7.4.1 Element Table

[Refer to Section 4.4.1](#)

### 7.4.2 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.](#)


 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	[Template Version]
		<b>Document Version:</b>	<b>2.1</b>
<b>ESDER Phase 2 ISO Interface Specification</b>		<b>Date Created:</b>	<b>5/15/2018</b>

### 7.4.3 Example XML File (SubmitDRRegistrations\_v1.xml)

#### *SubmitDRRegistrations\_v1.xml*

Sample Submit request to create a new registration:

```
<?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>
        <mRID>SAN</mRID>
      </DistributedEnergyResourceContainer>
    </DemandResponseRegistration_Full>
  </MessagePayload>
</DRRegistrationData>
```

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```

        <RegisteredGenerator>
            <IndividualPnode>
                <mRID>PNODE</mRID>
            </IndividualPnode>
        </RegisteredGenerator>
        <locationID>NUMBER</locationID>

        <locationPnodeDistributionFactor>FLOAT</locationPnodeDistributionFactor>
        </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 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>SAVE</action>
                <submittedActiveEndTime>2018-10-
01T07:00:00Z</submittedActiveEndTime>
                <submittedActiveStartTime>2017-01-
01T08:00:00Z</submittedActiveStartTime>
            </DistributedActivity>
            <RegisteredGenerator>
                <mRID>RESOURCE_ID</mRID>
                <LoadAggregationPoint>
                    <mRID>DLAP</mRID>
                    <AggregatedPnode>
                        <mRID>SUBLAP</mRID>
                    </AggregatedPnode>
                </LoadAggregationPoint>
                <LoadServingEntity>
                    <mRID>LSE</mRID>
                </LoadServingEntity>
            <SchedulingCoordinator>

```



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```

        <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>
      <mRID>SAN</mRID>
      <RegisteredGenerator>
        <IndividualPnode>
          <mRID>PNODE</mRID>
        </IndividualPnode>
      </RegisteredGenerator>
      <locationID>NUMBER</locationID>

    <locationPnodeDistributionFactor>FLOAT</locationPnodeDistributionFactor>
  </DistributedEnergyResourceContainer>
</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 version="1.0" encoding="UTF-8"?>
<DRRegistrationData xmlns="http://www.aiso.com/soa/DRRegistrationData_v1.xsd#"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.aiso.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)

 <b>California ISO</b>	<b>Technology</b>	<b>Template Version:</b>	[Template Version]
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### *ModifyDRRegistrations\_v1.xml*


Sample Modify request to create a new registration:

```
<?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>
```

### **7.4.7 Sample Submit Registration request with “Control Group” baseline method**

Sample Submit request to create a new registration:


```
<?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>2020-10-
01T07:00:00Z</submittedActiveEndDateTime>
        <submittedActiveStartDateTime>2019-01-
01T08:00:00Z</submittedActiveStartDateTime>
      </DistributedActivity>
      <RegisteredGenerator>
        <mRID>RESOURCE_ID</mRID>
      <LoadAggregationPoint>
```

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```

        <mRID>DLAP</mRID>
        <AggregatedPnode>
            <mRID>NULL </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>Control Group</baselineMethod>
<program>PROGRAM</program>
<resourceType>RESOURCE_TYPE</resourceType>
<DistributedEnergyResourceContainer>
    <mRID>SAN</mRID>
    <RegisteredGenerator>
        <IndividualPnode>
            <mRID>PNODE</mRID>
        </IndividualPnode>
    </RegisteredGenerator>
    <locationGroupType>CG</locationGroupType>
    <locationID>NUMBER</locationID>
<locationPnodeDistributionFactor>FLOAT</locationPnodeDistributionFactor>
</DistributedEnergyResourceContainer>
<DistributedEnergyResourceContainer>
    <mRID>SAN</mRID>
    <RegisteredGenerator>
        <IndividualPnode>
            <mRID>PNODE</mRID>
        </IndividualPnode>
    </RegisteredGenerator>
    <locationGroupType>TG</locationGroupType>
    <locationID>NUMBER</locationID>
<locationPnodeDistributionFactor>FLOAT</locationPnodeDistributionFactor>
</DistributedEnergyResourceContainer>
    <DistributedEnergyResourceContainer>
    <mRID>SAN</mRID>
    <RegisteredGenerator>
        <IndividualPnode>
            <mRID>PNODE</mRID>
        </IndividualPnode>
    </RegisteredGenerator>
    <locationID>NUMBER</locationID>

```

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```

        <locationPnodeDistributionFactor>FLOAT</locationPnodeDistributionFactor>
    </DistributedEnergyResourceContainer>
</DemandResponseRegistration_Full>
</MessagePayload>
</DRRegistrationData>

```

## 7.5 Message Type

submitDRRegistrationsResponse and faultReturnTypes 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"?>
<StandardOutput xmlns="http://www.caiso.com/soa/StandardOutput_v1.xsd#"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.caiso.com/soa/StandardOutput_v1.xsd# StandardOutput_v1.xsd">
  <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>
      </Event>
    </EventLog>
  </MessagePayload>
</StandardOutput>


```

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```

        <id>String</id>
        <result>Success</result>
    </Event>
<Service>
    <id>123123</id>
    <name>submitDRRegistrations_v1</name>
</Service>
</EventLog>
</MessagePayload>
</StandardOutput>

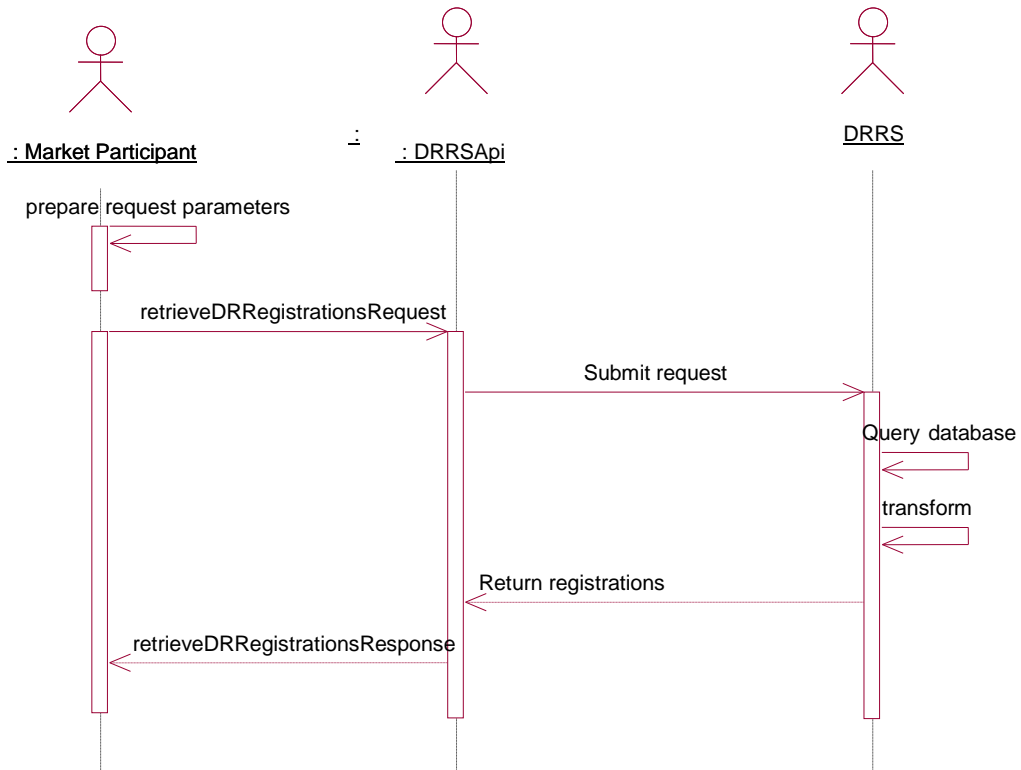
```


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## 8. RetrieveDRRegistrations

### 8.1 Use Model

The diagram below shows the sequence for retrieveDRRegistrations



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## 8.2 Operation Details

The service has *retrieveDRRegistrations\_v1* operation with three message types. All input and output messages are in XML format.

Operation	Message Types	Message	WSDL	XSD
retrieveDRRegistrations_v1	Input	retrieveDRRegistrationsRequest	retrieveDRRegistrations_v1.wsdl	RequestDRRegistrationData_v1.xsd
	Output	retrieveDRRegistrationsResponse	retrieveDRRegistrations_v1_DocAttach.wsdl	DRRegistrationData_v1.xsd
	Fault	faultResponseType		StandardOutput_v1.xsd

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)

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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 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 retrieve DRRS Registration request is as below:

```
<?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>
  <MessagePayload>
```




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```

<DemandResponseRegistration_Full>
  <mRID>R123</mRID>
  <name>Name of Registration</name>
  <DemandResponseProvider>
    <mRID>DRP1</mRID>
  </DemandResponseProvider>
  <DistributedActivity>
    <action>NA</action>
    <submittedActiveEndTime>2018-10-01T00:00:00.000-
07:00</submittedActiveEndTime>
    <submittedActiveStartTime>2017-01-01T00:00:00.000-
08:00</submittedActiveStartTime>
  </DistributedActivity>
  <RegisteredGenerator>
    <LoadAggregationPoint>
      <mRID>DLAP</mRID>
      <AggregatedPnode>
        <mRID>SUBLAP</mRID>
      </AggregatedPnode>
    </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>


```

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## 9. Application Error Messages

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


SNo	Message	Use-case
1	The SAN is missing or is invalid.	If SAN is missing or is invalid in the location/registration request
2	The DRP is missing or is invalid.	If DRP is missing or is invalid in the location/registration request
3	The UDC is missing or is invalid.	If UDC is missing or is invalid in the location/registration request
4	The LSE is missing or is invalid.	If LSE is missing or is invalid in the location/registration request
5	The SUBLAP is missing or is invalid.	If SUBLAP is missing or is invalid in the location/registration request
6	The PNODE is invalid.	If PNODE is missing or is invalid in the location/registration request
7	The location name is missing or is invalid.	If LOCATION NAME is missing or is invalid in the location request
8	The location ID is either missing or is invalid.	If LOCATION_ID is missing in the location request
9	The START DATE is missing or is invalid.	If START DATE is missing or is invalid in the location/registration request
10	The END DATE is missing or is invalid.	If END DATE is missing or is invalid in the location/registration request
11	The END DATE cannot be before the START DATE.	If the END DATE is prior to START DATE in the location/registration creation request
12	The location ADDRESS is either missing or is invalid.	If ADDRESS is missing or is invalid in the location request
13	The location CITY is either missing or is invalid.	If CITY is missing or is invalid in the location request
14	The location STATE is either missing or is invalid.	If STATE is missing or is invalid in the location request
15	The location ZIP is either missing or is invalid.	If ZIP is missing or is invalid in the location request
16	The location VALID flag is either missing or is invalid.	If VALID LOCATION flag is missing or is invalid in the location request
17	The location REVIEWER NAME is either missing or is invalid.	If REVIEWER NAME is missing or is invalid in the location request
18	The location REVIEWER CONTACT NUMBER is either missing or is invalid.	If REVIEWER CONTACT NUMBER is missing or is invalid in the location request
19	Location does not exist for review!!!	When a location review request is received and if the Location doesn't exist in the system
20	The location reviewer name or contact details missing or is invalid.	If COMMENTS are passed without the REVIEWER name and contact details in the location request
21	UDC already reviewed and approved the location	If a duplicate UDC_REVIEW request is received

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22	UDC already reviewed and disapproved the location	If a duplicate UDC_REVIEW request is received
23	UDC review request received after the location_review end period	If the UDC_REVIEW request is received after the review period
24	LSE already reviewed and approved the location	If a duplicate LSE_REVIEW request is received
25	LSE already reviewed and disapproved the location	If a duplicate LSE_REVIEW request is received
26	LSE review request received after the location_review end period	If the LSE_REVIEW request is received after the review period
27		
28	The user doesn't have permissions for requested DRP entity	When a Location request is submitted by a DRP USER with a DRP entity for which he/she doesn't have the permissions
29	The user doesn't have permissions for requested UDC entity	When a Location request is submitted by a UDC USER with a UDC entity for which he/she doesn't have the permissions
30	The user doesn't have permissions for requested LSE entity	When a Location request is submitted by a LSE USER with a LSE entity for which he/she doesn't have the permissions
31	The required user security role was not found for the user 'USER_NAME'	When a Location/Registration request is submitted by an unauthorized USER
32	Internal application error occurred unable to create new location	When an exception is thrown while creating a location
33	Internal application error occurred unable to process duplicate location	When a duplicate request is received for location creation
34	Internal application error occurred unable to end-date location	When an exception is thrown while end-dating a location
35	Internal application error occurred unable to modify location	When an exception is thrown while modifying a location
36	Internal application error occurred unable to update location	When an exception is thrown while updating a location
37	Internal application error occurred unable to delete new location	When an exception is thrown while deleting a draft location
38	Internal application error occurred unable to review location	When an exception is thrown while reviewing a pending location
39	Internal application error occurred unable to process request	When an exception is thrown while retrieving a location/registration
40	Internal application error occurred unable to defend location	When an exception is thrown while processing the location defend request
41	Internal application error occurred unable to process defend review request	When an exception is thrown while processing the location defend response request
42	The registration ID is either missing or is invalid.	If REGISTRATION ID is missing or is invalid in the registration request

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43	The registration name is either missing or is invalid.	If REGISTRATION NAME is missing or is invalid in the registration request
44	The registration BASELINE_METHOD is either missing or is invalid.	If BASELINE METHOD is missing or is invalid in the registration request
45	The registration PROGRAM is either missing or is invalid.	If PROGRAM is missing or is invalid in the registration request
46	The registration RESOURCE_TYPE is either missing or is invalid.	If RESOURCE TYPE is missing or is invalid in the registration request
47	The registration DLAP is invalid.	If DLAP is invalid in the registration request
48	The registration SCHEDULING COORDINATOR is either missing or is invalid.	If SCHEDULING COORDINATOR is missing or is invalid in the registration request
49	The sum of location's PNODE DISTRIBUTION FACTOR within a REGISTRATION is invalid.	If PNODE DISTRIBUTION FACTOR is invalid in the registration request (ie. When the sum of dist factor's is more than 1)
50	The combination of DRP, SUBLAP, and RESOURCE_ID fields is invalid.	If either the RESOURCE ID, Sublap, or DPR is invalid in the registration request
51	Internal application error occurred unable to create new registration	When an exception is thrown while creating a registration
52	Internal application error occurred unable to modify registration	When an exception is thrown while modifying a registration
53	Internal application error occurred unable to delete new registration	When an exception is thrown while deleting a registration
54	Internal application error occurred unable to end-date registration	When an exception is thrown while end-dating a registration
55	Sublap to baseline mapping is invalid. For Control Group baseline registrations, the sublap should be NULL.	When the baseline method for a registration is "Control Group", the sublap value should be "NULL". If the value does not match, exception is thrown
56	BASELINE_METHOD and DRP relation is not valid for the given dates	If the baseline method is not approved by the PDR coordinator for the DRP, the exception is surfaced
57	Invalid registration request. Group type cannot be specified for registration with XX baseline.	If the location group type attribute element is specified for a control group baseline registration, the system throws the error
58	Invalid group type specified for the location in the registration	Value specified for location group type does not match CG or TG
59	For control group baseline registrations, there must be at least 150 control group locations and at least one treatment group location.	The count of locations specified for a control group baseline registration with location group type attribute as CG are less than 150 or TG are less than 1.
60	For control group baseline registrations, same location cannot belong to both control group and treatment group.	For control group baseline registrations, at least one of the locations is marked as belonging to both control group and treatment group.
61	For control group baseline registrations, locations belonging to treatment group should belong to the same sublap.	For control group baseline registrations, locations belonging to treatment group do not belong to the same sublap.

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62	A valid DLAP must be provided for Control Group Baseline method.	For control group baseline registrations, DLAP must be provided explicitly as it cannot be derived without the subLAP information.
----	--	--

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## Appendix – dateTime Data Type

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

The dateTime 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 submittedActiveStartDateTime 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
- 2016-01-26T07:00:00.000Z


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

### Examples for start

**//m:MessagePayload/m:DistributedEnergyResourceContainer/m:DistributedActivity/m:submittedActiveStartDateTime) and end**

**//m:MessagePayload/m:DistributedEnergyResourceContainer/m:DistributedActivity/m:submittedActiveEndDateTime) in the DRRegistrationData\_v1.xsd**

	<i>Daily -0000 offset</i>	
	start	end
<b>Daylight-Savings Time</b>	2014-10-15T07:00-0000	2014-10-16T07:00-0000
<b>Non Daylight-Savings Time</b>	2014-11-15T08:00-0000	2014-11-16T08:00-0000

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<b>Short Day</b>	2014-03-09T08:00-0000	2014-03-10T07:00-0000
<b>Long Day</b>	2014-11-02T07:00-0000	2014-11-03T08:00-0000

## Appendix – CAISO holidays

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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

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Use Case documents are located here:

<http://www.caiso.com/Documents/SummaryofUseCaseforDemandResponseSolutions-Registrations.pdf>

<http://www.caiso.com/Documents/SummaryofUseCaseforDemandResponseSolutions-Locations.pdf>

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

The WSDLs are located here:

[http://www.caiso.com/Documents/ Energy Storage and Distribution Energy Resource Phase 2 - ArtifactsPackage-v1\\_0.zip](http://www.caiso.com/Documents/ Energy Storage and Distribution Energy Resource Phase 2 - ArtifactsPackage-v1_0.zip)