Technical Specification

ADS

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Location of Document

https://developer.caiso.com/

Revision History

Date	Version	Description
10/18/2023	8.4.1	• Change to rules of Partial Accept functionality
7/30/2023	8.4.0	• Fall 2023 Changes o Project: Resource Sufficiency Evaluation Enhancements Phase 2 ▪ Changes to getDispatchBatch API to populate EN instructions and Breakdown of Cleared MW by priority types for Batch Type 5.
2/3/2021	8.3.0	Updated Reason Codes Section to include Unannounced AS Test reason code
7/29/2020	8.2.0	Updated consolidated list of supported artifacts section to include additional note for WSDL file access.
6/15/2020	8.1.0	Updated consolidated list of supported artifacts to include note. Updated element table to add additional details for newly added attributes.
5/20/2020	8.0.0	API Service changes related to Fall 2020 Release.
3/17/2014	7.0.0	EIM Release Add baseSchedule Add registeredIntertieFlag
10/25/2013	6.0.0	Add hourlyMwThreshold to instruction
7/9/2013	5.2.0	Add ADS Reason Codes
9/6/2012	5.1.1	Update schema definitions
8/28/2012	5.1	Update CAISO header logo.
7/10/2012	5.0	Add contingency dispatch elements.
6/24/2010	4.2	Add AGC and RMR flag
12/7/2009	4.1	Added configuration id to Trajectory data.

Date	Version	Description
12/7/2009	4.0	Added MSG Configuration elements. Added ADS API Transition Support section. Updated UIDs to correctly reflect GUIDs instead of Integers.
9/17/2008	3.1	Added DOP sequenceNumber and Trajectory Batch bindingFlag elements.
Date	**Version**	**Description**
8/22/2008	3.0	Removed DA AS Award from XSD and data definition. Added new ADS API Response Web Service methods.
11/5/2007	2.2	Changed data types for UID fields to string.
10/5/2007	2.1	Removed PassIndicator from XSD.
4/4/2007	2.0	Updated ads.caiso.com.xsd. Corrected data dictionary.
2/22/2007	1.9	Removed Price field from Detail Segments
2/21/2007	1.8	Adjusted batch type definition and updated Market simulation reference. Added note regarding MSS LF.
2/19/2007	1.7	Modified spec for CR3B changes.
10/13/2006	1.6	Added Sample XML Added Batch Type for OOS Instructions
10/12/2006	1.5	Added XSD to Section 4.0 as per PMO standards request.
5/31/2006	1.4	Added MSS data dictionary items. Updated TOC.
5/31/2006	1.3	Add MSS LF methods and payloads. Added AS Award Type field to instruction payload.
05/06/2018	1.2	Removed PenaltyBidSegment field. Added bidDelay field. Added Change Log
01/31/2006	1.1	Revised based on feedback from LCG testers. Added TOC, Revision History and Cover page. Renamed the document to ADS API Specification.
10/01/2005	1.0	Initial Draft. Updated from Phase1b Documentation

TABLE OF CONTENTS

1 Introduction

Purpose

The purpose of this document is to capture the information a developer would need to complete interface development. This document establishes a basis for initiation and development of the services.

1.1 The technical specifications capture the service information, element description, formatting conditions of the data that is essential for the development of interfaces.

Related Documents

For more information on current or past project initiative releases that impacted the technical specification, please refer to the release planning page at

1.2 http://www.caiso.com/informed/Pages/ReleasePlanning/Default.aspx

Reference Documents

Please refer to the following specifications and documents for help with developing the interface.

1.3

Document Name	Document Link	Document Details
B2B Security Specification	https://developer.caiso.com/Documents/ISO%20B2B%20Security%20Specification.pdf	B2B Security Standards Specification
Acceptable dateTime Format	https://developer.caiso.com/Documents/ISO%20B2B%20Security%20Specification.pdf	Acceptable formats for specifying the dateTime data type for submit and request services
Application Access Endpoints, Technical documents & Sample files	https://developer.caiso.com/Pages/application.aspx?app=ADS	Developers are encouraged to test the interface against the market simulation environment (MAP Stage). Please refer to the developer site for Map stage URLs, Production URLs, technical specification, Service Artifacts, Sample Files etc.
User/Certificate Role Provisioning	https://developer.caiso.com/pages/AIM.aspx	AIM is an application that supports provisioning of the roles necessary for the certificate to interface with the ISO's applications.
Acceptable Use Policy	https://developer.caiso.com/Documents/TechnicalSpecifications-AcceptableUsePolicyImplementation.pdf	This document explains the technical specifications for the Acceptable Use Policy (AUP) Implementation.

2 Document Release Notes

Version 8.4.10

This document release version affects the following system data interface specifications:

2.1

Project	New or Update	Service	Schema	Version #	
				Major	**Minor**

3 Consolidated List of Supported Artifacts

This section shows all the supported service versions for this application:

Service Name	Major Version	Minor Version
https://adssta.caiso.com:447/ADS/APIWebService/v8	V8	0.0
https://adssta.caiso.com:447/ADS/APIWebService/v7	V7	0.0
https://adssta.caiso.com:447/ADS/APIWebService/v6	V6– Deprecated upon Fall 2020 release Deployment	0.0
https://adssta.caiso.com:447/ADS/APIResponseWebService/v8	V8	0.0
https://adssta.caiso.com:447/ADS/APIResponseWebService/v7	V7	0.0
https://adssta.caiso.com:447/ADS/APIResponseWebService/v6	V6– Deprecated upon Fall 2020 release Deployment	0.0

Note : Deprecated version of API services will not be supported. If you are currently using a version which is scheduled for deprecation, please plan to migrate to supported versions to avoid service disruption.

WSDL Files:

To get the WSDL file for a specific version of API service, please use https://developer.caiso.com. Currently downloading WSDL from WSDL url is not supported.

4 Services

The following requests services are available through the ADS API Service

Request	Description
getDispatchBatchesSinceUID	Retrieves a list of batch headers dispatched after a specified batch UID (unique identifier). Batches will not include instruction data.
getBatchStatus	Returns the batch status for a specified batch UID.
getBatchHeader	Returns the batch header for the specified batch UID.
getDispatchBatch	Retrieves the dispatch batch including the requestor's set of instructions for the specified batch UID.
isNewTrajData	Returns true if new trajectory data has become available since a specified batch UID.
getTrajectoryData	Returns all new trajectory data received since the specified batch UID.
submitMSSLFRequest	Receives an MSS Load Following Request into the ADS system and returns validation results.
validateDispatchBatch	Informs the ADS system that the specified batch UID has been successfully received by the requestor.

The following requests are available through the ADS API Response Web Service:

Request	Description
acceptInstruction	Fully accepts the specified Instruction.
declineInstruction	Declines the specified Instruction.
partialAcceptInstruction	Partially accepts the specified Instruction.

Each ADS API request will return a single response that will contain the requested data or a fault condition. The following custom response types are described below

Response	Description

APIDispatchResponse	XML document containing a list of batches and associated information about each batch (e.g. batch UID, batch status, etc.).
DispatchBatch	XML Document containing a single ADS Dispatch Batch. May or may not contain instruction data depending on the call.
APITrajectoryResponse	XML document containing all trajectory data relevant to a particular client.
MSSLFResponse	XML document containing the validation results for each MSS LF Request submitted via **submitMSSLFRequest.**

Service Description: ADSAPIWebService

4.1 The ADSAPIWebService has multiple operations. Operation specific details are available below.

ADS system is introducing following]four new batch types as part of the upcoming ADS release. These batch types and data associated with these batch types are only supported in v8 version of ADSAPIWebService operations to ensure backward compatibility. .

> 10 = 5 minute Flex Ramp Award
>
> 11 = 15 minute Energy Award
>
> 12 = Unannounced AS Test
>
> 13 = Operational Instructions

Above batch types are not supported in v7 version of ADSAPIWebService operations. Using batch UIDs belongs to these batches in v7 version will not return any response.

4.1.1 Operation Details

4.1.1.1 getDispatchBatchesSinceUID

Returns all batches processed by the ADS system since the batch UID specified. Batches are returned in a list without instructions. The list will be empty if no batches are found. Batches should be processed in the order received. No assumptions should be made regarding the magnitude or ordering of the Batch UID.

Always use the last batch UID processed for your next call or use -1 to retrieve all the batches received by ADS in the last 24 hours.

The batch list will be returned as an XML document conforming to the **ads.caiso.com.xsd** *APIDispatchResponse* schema definition.

Note: This operation from the v7 version will filter out batchTypes 10, 11, 12 and 13 to ensure backward service compatibility. Please use v8 version if you are planning to integrate these new batch data into your system.

Operation	Message Types	Message	WSDL	XSD
getDispatchBatc hesSinceUID	Input	xsd:string **batchUID** Last batch UID processed by your system	ADSAPIWe bService.w sdl	ads.caiso.com
	Output	xsd:APIDispatchRespon se XML document containing a list of dispatches received since the batch UID specified		ads.caiso.com

4.1.1.2 getBatchStatus

This request returns the batch status associated with the provided batch UID.

Note: This operation from the v7 version will not return any batch status values for the batch Types 10, 11, 12 and 13 to ensure backward service compatibility. Please migrate to v8 version if you are planning to integrate new batch types into your system.

Operation	Message Types	Message	WSDL	XSD
getBatchStatus	Input	xsd:string Valid ADS batch UID	ADSAPIWebService.ws dl	ads.caiso.co m

	Output	xsd:integer		ads.caiso.com
		One of the following integer values:		
		0 = New		
		1 = Active		
		2 = Time Out (hourly only).		
		3 = Closed		
		4 = Emergency Cancelled		
		5 = Operator Response Period (hourly only)		
		6 = Deferred.		

4.1.1.3 getDispatchBatch

Returns the Dispatch Batch and associated instructions in Base64 encoded compressed XML for the batch UID specified.

Only those instructions viewable by the requestor will be returned. If the requester does not have any viewable instructions then system will return null. This batch will be returned as an XML document conforming to the **ads.caiso.com.xsd** *DispatchBatch* schema definition. The data is returned as Base64 Encoded Compressed (GZIP) XML.

Note: This operation from the v7 version will not return any batch data and associated instructions for the batch Types 10, 11, 12 and 13 to ensure backward service compatibility.

As part of the Fall Release Project (Resource Sufficiency Evaluation Enhancements Phase 2), v8 API's populates EN instruction's for Batch Type 5 along with Cleared Megawatt Priority Breakdown.

Please migrate to v8 version if you are planning to integrate the following new batch types into your system.

10 = 5 minute Flex Ramp Award

ADS Batch type which includes resource's 5-miute Flex Ramp up (FRU) and Flex Ramp down (FRD) awards.

11 = 15 minute Energy Award

ADS Batch type which includes intertie resource's 15-miute Enery awards.

12 = Unannounced AS Test

ADS Batch type that includes dispatch instructions associated with Unannounced AS Test. Unannounced AS Test is not announced prior to the issue of dispatch instructions of resources for its ability to deliver the

correct amount of Ancillary Service Capacity.

13 = Operational Instructions

ADS Batch type that includes operational instructions issued due to operational system condition for a resource(s). Data includes operational instruction reason ("Congestion" or "System Reliability" or "Over generation"), start, end times and followDotFlag (Instructing EIR resources to follow their DOT value).

The new attribute followDotFlag will be included in dispatch instructions including contingency dispatches (RTCD or RTDD) for the operational instructions effectively period. The v8 version of this operation will include FRU and FRD awards for AS Awards batch type (batch Type = 3) whereas v7 version will not include FRU and FRD awards to ensure backward service compatibility.

Operation	Message Types	Message	WSDL	XSD
getDispatchBatch	Input	xsd:string Valid ADS batch UID	ADSAPIWebService.wsdl	ads.caiso.com
	Output	xsd:DispatchBatch XML document containing the requested batch and associated instructions viewable by the requestor		ads.caiso.com

4.1.1.4 getBatchHeader

Returns the batch header for the batch UID specified. This method can be used to check the status of batch as well as other batch attributes without the overhead of requesting the entire instruction set.

The batch will be returned as an XML document conforming to the **ads.caiso.com.xsd *DispatchBatch*** schema definition. This data **will not** be compressed or encoded.

Note: This operation from the v7 version will not return any batch header data for the batch Types 10, 11, 12 and 13 to ensure backward service compatibility.

Please migrate to v8 version if you are planning to use this operation for new batch types.

Operation	Message Types	Message	WSDL	XSD
getBatchHeader	Input	xsd:string Valid ADS batch UID	ADSAPIWebService.wsdl	ads.caiso.com

Output	xsd:DispatchBatch XML document containing the requested batch. instructions will not be returned		ads.caiso.com

4.1.1.5 isNewTrajData

Returns **true** if more recent trajectory data exists since the batch UID specified, otherwise returns **false**. Periodically execute to check for new trajectory data. When True is returned, execute the *getTrajectoryData* method to retrieve all new trajectory data in a single XML document.

Note that the Trajectory Batch UID is tracked separately form the Dispatch Batch UID. You should also track these values separately in your code.

Operation	Message Types	Message	WSDL	XSD
isNewTrajData	Input	xsd:string Valid ADS trajectory batch UID	ADSAPIWebService.wsdl	ads.caiso.com
	Output	xsd:boolean True if new trajectory exists, otherwise false.		ads.caiso.com

4.1.1.6 getTrajectoryData

Retrieves trajectory data received by the system since the trajectory batch UID specified. This batch list will be returned as an XML document conforming to the **ads.caiso.com.xsd** *APITrajectoryResponse* schema definition. The data is returned as Base64 Encoded Compressed (GZIP) XML.

Operation	Message Types	Message	WSDL	XSD

				ads.caiso.com
isNewTrajData	Input	xsd:string Valid ADS trajectory batch UID	ADSAPIWebService.wsdl	ads.caiso.com
	Output	xsd:APITrajectoryResponse XML document containing a list of trajectory batches received since the batch UID specified. Each batch will contain the DOP and Compliance data associated with the batch.		ads.caiso.com

4.1.1.7 submitMSSLFRequest

This operation allow user to submit an MSS Load Following Request into the ADS system. This method performs a simple validation on each submitted instruction and forwards valid instructions to CAISO Market System.

This method will return an MSS LF Response with the newly assigned CAISO batch identifier and a list of the MSS LF Instruction Response items. Each item also includes the newly assigned CAISO Instruction identifier and a flag indicating whether the instruction was valid.

The submitted request is an XML document conforming to the **ads.caiso.com.xsd** *MSSLFRequest* schema definition. The response is an XML document conforming to the **ads.caiso.com.xsd** *MSSLFResponse* schema definition.

NOTE: This functionality is ONLY available to MSS Load Following Market Participants

Operation	Message Types	Message	WSDL	XSD
submitMSSLFRequest	Input	xsd:MSSLFRequest XML document containing a list of MSS LF Instruction requests	ADSAPIWebService.wsdl	ads.caiso.com

	Output	xsd:MSSLFResponse XML document containing a list of MSS LF Instructions submitted along with an assigned CAISO identifier and a flag indicating whether or not the instruction passed validation		ads.caiso.com

4.1.1.8 <u>validateDispatchBatch</u>

This operation allows user to Informs the ADS system that the requestor has successfully received the specified batch UID.

Only those instructions for which the requestor has primary access to the resource will be validated. If the instruction has already been validated, the instruction is skipped. This method should ONLY be passed ADS Dispatch Batch UIDs. Do not pass trajectory UIDs

Note: This operation from the v7 version will not allow user to use batch UIDs for the batch Types 10, 11, 12 and 13 to ensure backward service compatibility.

For operational instructions with batch type= 13, CAISO is expecting acknowledgement of operational instruction delivery. To acknowledge the receipt operational instruction, API users can use this operation from v8 version.

Operation	Message Types	Message	WSDL	XSD
validateDispatchBatch	Input	xsd:string Valid ADS batch UID	ADSAPIWebService.wsdl	ads.caiso.com
	Output	N/A		ads.caiso.com

4.2

Service Description: APIResponseWebService

4.2.1 Operation Details

The ADSAPIWebService has multiple operations. Operation specific details are available below.

4.2.1.1 Note: There is no functional differences in APIResponseWebService between v7 and v8 Response Result Codes

All the operations in the APIResponseWebService return a single xsd:int: value. The result codes are defined below.

Response	Code	Description
RC_SUCCESS	0	The Instruction Response was received and accepted by the ADS system.
RC_INVALID_RESPONSE	1	The Instruction Response submitted is invalid. For example, the MW value may be outside the acceptable range for the instruction.
RC_INVALID_RESPONSE_PERIOD	2	The Instruction Response was received by ADS outside of the Market Participant response period.
RC_BATCH_NOT_FOUND	3	The Batch UID specified does not exist.
RC_INSTRUCTION_NOT_FOUND	4	The Instruction UID specified does not exist in the Batch specified.
RC_UNAUTHORIZED	5	You do not have sufficient privileges to respond to the resource associated with the submitted Instruction UID.

4.2.1.2 acceptInstruction

This operation allows API users to accept the specified ADS Instruction for the instructed DOT value associated hourly pre-dispatch instructions. This operation is only applibcable to the bachtype = 1 (Hourly Pre-Dispatch) with batch status = 1 (Active)

User must have a Primary or Secondary role for the resource associated with the instruction. The batch must not be expired and must be accepting responses.

Operation	Message Types	Message	WSDL	XSD

acceptInstruction	Input	xsd:string **batchUID** - Batch UID of DispatchBatch associated with Instruction xsd:string **instructionUID**- Instruction UID of instructions to be accepted	APIRespon seWebServ ice.wsdl	ads.caiso.com
	Output	xsd:int Refer section 4.2.1.1 Response Result Codes for details.		ads.caiso.com

4.2.1.3 declineInstruction

This operation allows API users to decline the specified ADS Instruction for the entire instructed DOT value, returning the instruction to its Hour Ahead schedule or zero if not scheduled.

User must have a Primary or Secondary role for the resource associated with the instruction. The batch must not be expired and must be accepting responses. For hourly pre-dispatch instructions, this means the batch status must be 1 (Active). Valid reason code is required to decline the Instruction.

Operation	Message Types	Message	WSDL	XSD

declineInstruction	Input	xsd:string **batchUID** Batch UID of DispatchBatch associated with Instruction xsd:string **instructionUID** Instruction UID of instructions to be accepted xsd:int **reasonCode** Valid Reason Code values are: 10 - Line down 11 - Economic Considerations 12 - Bad Bid Submitted 13 - Unit Derate 14 - No Available Transmission 15 - Timed Out: Minimum Accepted 16 - Timed Out: Forced Decline	APIResponseWebService.wsdl	ads.caiso.com
	Output	xsd:int Refer section 4.2.1.1 Response Result Codes for details.		ads.caiso.com

4.2.1.4 partialAcceptInstruction

This operation allows API user to partially accept the specified ADS Instruction for the specified MW amount. The specified MW amount must be between the 0 and ~~Hourly MW~~Hourly DOT MW ~~Threshold~~.

User must have a Primary or Secondary role for the resource associated with the instruction. The batch must not be expired and must be accepting responses. For hourly pre-dispatch instructions, this means the batch status must be 1 (Active).

Operation	Message Types	Message	WSDL	XSD

partialAcceptInstruction	Input	xsd:string **batchUID** Batch UID of DispatchBatch associated with Instruction	APIResponseWebService.wsdl	ads.caiso.com
		xsd:string **instructionUID** Instruction UID of instructions to be accepted		
		xsd:double **acceptDOT** The accepted DOT amount which must be between 0 and Hourly DOT MW~~the instructed DOT MW and the Hour Ahead schedule~~.		
		xsd:int **reasonCode** Valid Reason Code values are: 10 - Line down 11 - Economic Considerations 12 - Bad Bid Submitted 13 - Unit Derate 14 - No Available Transmission 15 - Timed Out: Minimum Accepted 16 - Timed Out: Forced Decline		

	Output	xsd:int Refer section 4.2.1.1 Response Result Codes for details.		ads.caiso.com

4.2.2 Certificate Roles Requirement

This section should provide a matrix for the different roles that can access this particular service.

AIM Display Name	Role Details
EXTERNAL READ-ONLY	ADS application access role with read only access.
EXTERNAL READ-WRITE	ADS application access role with read and write access.

4.2.3 Use Model

The ADS API services are designed for real time data retrieval usage and cannot be used as a historical data query tool. For historical data need from ADS, please use the ADS Query Tool.

The following is pseudo code demonstrating the expected API service in a real time API client application. This logic should keep your client application current with all ADS Dispatch and Trajectory Batch data. ADS API methods are highlighted in red.

Pseudo Code

```
Load LastDispatchUID    // or default to -1 the first time
Load LastTrajectoryUID  // or default to -1 the first time

Start Loop
     // Check for new batches
     Batches = getDispatchBatchesSinceUID( LastDispatchUID )
     // Iterate batches returned (may be zero if no new)
     For Each Batch in Batches
          // Retrieve Instructions
          BatchData = getDispatchBatch( Batch.BatchUID )
          // Decode and decompress
          DecodeAndDecompress( BatchData )
          // Optional Step: Validate receipt
```

```
            validateDispatchBatch( Batch.BatchUID )
            // Process Batch Data (your logic)
            Process( BatchData )
            // Update the last batch uid processed
            Set LastDispatchUID = Batch.BatchUID
      End for each


      // Check for new trajectory batches
      If isNewTrajData( LastTrajectoryUID ) then
            // Get New Trajectory data
            TrajBatches = getTrajectoryData( LastTrajectoryUID )
            // Decode and decompress
            DecodeAndDecompress( TrajBatches )
            // Iterate Trajectory Batches
            For Each TrajBatch in TrajBatches
                  // Process Batch Data (your logic)
                  ProcessTrajectory( TrajBatch )
                  // Update the last batch uid processed
                  Set LastTrajectoryUID = TrajBatch.BatchUID
            End for each
      End if
      // Sleep
      Sleep 10 Seconds
End Loop
```

4.2.4 Element Table

The table below describes any application specific logic that is validated for the elements in the service artifact.

Element / *Attribute*	Description
DispatchBatch	
batchUID	Unique identifier for ADS Dispatch Batch.
marketID	Market Run Identifier
batchStatus	The batch status. One of the following integer values:

	0 = New
	1 = Active
	2 = Time Out (hourly only).
	3 = Closed
	4 = Emergency Cancelled
	5 = Operator Response Period (hourly only)
	6 = Deferred.
batchReceived	Time batch was received into the ADS system.
batchSent	Time batch was set to Active (batchStatus = 1).
batchExpires	Time the batch expires/times out or otherwise transitions the batch status from its current status to the next. This differs depending on the batch type.
batchType	The batch type.
	0 = 5 minute dispatchable
	1 = Hourly Pre-Dispatch 2 = Commitment (Startup/Shutdown) 3 = AS Awards 4 = OOS Instructions
	5 = Pre-Dispatch Hourly AS Awards
	10 = 5 minute Flex Ramp Award
	11 = 15 minute Energy Award
	12 = Unannounced AS Test
	13 = Operational Instructions
startTime	The start time associated with the batch. This time should correspond to the start time of the interval for which the batch is targeted.
dispatchMode	The source system's dispatch mode: 0 = Interval 1 = Manual 2 = Contingency
bindingFlag	Whether or not the batch is a binding batch. For the first release of ADS MRTU, this will always be Y (binding).
revisionNo	A revision number used to track incremental changes to the batch. Each time an instruction within the batch changes or the batch status changes, this value is incremented.
contingencyType	Valid contingency type values are: RTCD = Real-Time Contingency Dispatch RTDD = Real-Time Disturbance Dispatch
pathExclusion	Valid path exclusion values are:

	NTE = Northern Ties Excluded
	STE = Southern Ties Excluded
	NSTE = Both Northern & Southern Ties Excluded
Instruction	
instructionUID	ADS Unique identifier for each instruction. Unique across all batches.
resourceId	Either the MF registerd resource ID or the dynamic Intertie TransactionID
configurationId	MSG Configuration ID if applicable.
startTime	Start time for instruction. Aka target time for DOT instructions.
endTime	End time for instruction. Does not apply to all instruction types.
Dot	DOT for 5 minute, hourly and OOS instructions.
awardMW	AS MW Award for Ancilary Service Award instructions.
clearedMW	AS Cleared MW for AS Award instructions. Cleared MW is the total MW amount; equal to awardMW + daMW + selfSchedMW.
selfSchedMW	AS Self Scheduled MW for AS Award instructions.
oosEnergyCode	OOS Energy Code for Out-Of-Stack Instructions.
asType	AS Type for Ancillary Service Award instructions: EN = Energy RU = Regulation Up RD = Regulation Down SR = Spinning Reserve NR = Non-Spinning Reserve RC = Residual Unit Commitment SR = Spinning Reserve LFU = Load Following Up LFD = Load Following Down FRU = Flexible Ramp Up FRD = Flexible Ramp Down
prodType	EN = Energy. This attribute is only applicable for the batchtype = 11
instructionType	Instruction Type. One of the following values: 0 = DOT (5 minute/Hourly/OOS) 1 = Min Constraint (OOS) 2 = Max Constraint (OOS) 3 = Fixed Constraint (OOS) 4 = Start up (Commitment) 5 = Shut down (Commitment) 6= Capacity Award (AS Award)

	7 = MSG Transition Instruction
	8 = FMM Energy Award
	9 = Unannounced AS Test
	10 = Operational Instruction
transitionFromConfigId	Defines the "from" configuration id for an MSG transition instruction (instructionType=7). Note that the startTime and endTime elements will define the transition period.
transitionToConfigId	Defines the "to" configuration id for an MSG transition instruction (instructionType=7). Note that the startTime and endTime elements will define the transition period.
agcFlag	The AGC flag will communicate when a resource was on AGC (Automatic Generation Control) at the start of the real-time market run. Y/N.
rmrFlag	The RMR flag will communicate when a resource is being incremented above the day- ahead schedule in real time, due to a RMR (Reliability Must Run) contract. Y/N.
hourlyMwThreshold	This element contains value of ~~Accept/decline MW threshold~~RUC Schedule MW. Note: On the ADS Web UI this field is named as "RUC Schedule".
baseSchedule	EIM resource hourly base schedule
registeredIntertieFlag	Y: Physical resource has a MF registered resource Id. N: Physical resource does not have a MF registered resource Id.
preGoto	Previous DOT if available.
minAccept	Minimum Accept DOT for Intertie instructions. May be null if not applicable.
acceptDot	Accepted DOT for intertie instructions.
acceptStatus	Accept Status for intertie instructions.
responder	Responder for intertie instructions.
reasonCode	Reason Code for declined or partially accepted intertie instructions. Valid values are: 10 - Line down 11 - Economic Considerations 12 - Bad Bid Submitted 13 - Unit Derate 14 - No Available Transmission 15 - Timed Out: Minimum Accepted 16 - Timed Out: Forced Decline Reason Code for Unannounced AS Test Instructions: 17 - Unannounced A/S Test

oprAcceptDot	Operator Accept DOT for intertie instructions.
oprAcceptStatus	Operator Accept Status for intertie instructions.
oprResponder	Operator responder for intertie instructions.
oprReasonCode	Operator Reason Code for declined or partially accepted intertie instructions.
validated	Time instruction was validated by ADS Client. If null, the instruction was not received by an ADS Client with Primary access to the resource.
validatedBy	The user common name responsible for the instruction validation.
apiValidated	Time instruction was validated by ADS API Client. If null, an ADS API Client did not receive the instruction with Primary access to the resource OR the ADS API client has not been coded to call *validateDispatchBatch*. See the pseudo code for an example.
apiValidatedBy	The client certificate common name responsible for the instruction validation.
revisionNumber	Each time an instruction is updated, its revision number is incremented.
statusCode	The status of the instruction. Should always correspond to the instruction's batch status. However may differ during during Emergency cancel situations.
bidDelay	Minutes to sync
rmrTestRequestor	
oprInsReasonCode	Reson for Operation Instruction. This attribute is only applicable to batchType= 13
followDotFlag	The followDotFlag will communicate whether a EIR resource is required to follow DOT. (Y indicates resource is required to follow DOT). This attribute will be included in the 5 min DOT instructions issued during the operational instruction time frame. Note: followDotFlag included in the response only if the value is "Y"
resourceBidOption	"DYNAMIC" - The resource is a dynamic resource. "EB15MIN" - Economic bid with participation in 15-minute market. "EBHB" - Economic bid hourly block' "EBHBCHG" - Economic bid hourly block with single intra-hour economic schedule change. "SSHB" - Self scheduled hourly block. This attribute is only applicable for the batchType= 11

ISO Public   Page 26 of

InstructionDetail	
segNo	The unique number used to order the instruction detail elements.
serviceType	The service type associated with the instruction detail element.
mw	The MW amount.
TrajectoryBatch	
batchUID	Unique identifier for ADS Dispatch Batch.
batchReceived	Time batch was received into the ADS system.
bindingFlag	Y/N indicating whether or not the DOPs in this batch are binding.
batchSent	Time batch was set to Active (batchStatus = 1).
TrajectoryDOP	
dopUID	Unique identifier for the ADS DOP record.
resourceId	Resource ID from the ISO Master File.
configurationId	MSG Configuration ID if applicable.
Dop	Dispatch Operating Point (DOP)
targetTime	Target Time for DOP.
sequenceNumber	A sequence value to indicate correct ordering of DOP points when there are two points within the same batch with the same targetTime. To properly order points, use the following ordering: DOP Target Time, Trajectory Batch batchReceived time, DOP sequenceNumber.
TrajectoryCompliance	
complianceUID	Unique identifier for the ADS Compliance record.
resourceId	Resource ID from the ISO Master File.
configurationId	MSG Configuration ID if applicable.
startTime	5 minute interval start time associated with this compliance record.
Mwh	Expected energy in MWh's for the 5 minute interval.
complFlag	Flag indicating compliance with the expected energy. Y/N.
MSSLFRequest	
scMSSBatchId	Unique identifier assigned by the SC for this batch of MSS Requests.
mssLFInstructionRequests	MSS Load Following Instruction Requests.
MSSLFInstructionRequest	
scMSSBatchId	Unique identifier assigned by the SC for this batch of MSS requests.
scMSSLFInstructionId	Unique identifier assigned by the SC for this Load Following Instruction request.

resourceId	Resource Id. ADS will verify that SC has sufficient privileges to submit on behalf of resource.
startTime	Start time for LF MW.
endTime	End time for LF MW.
loadFollowingMW	Load Following MW
	Positive for follow-up and negative for follow-down.
MSSLFResponse	
caisoMSSBatchId	Unique identifier assigned by the CAISO for this batch of MSS requests. Used internally by the ISO to track these requests.
scMSSBatchId	Unique identifier assigned by the SC for this batch of MSS requests passed back to SC so they can use either the newly assigned ISO id or their own.
MSSLFInstructionResponse	
caisoMSSBatchId	Unique identifier assigned by the CAISO for this batch of MSS requests. Used internally by the ISO to track these requests.
scMSSBatchId	Unique identifier assigned by the SC for this batch of MSS requests passed back to the SC for their internal coding.
caisoMSSLFInstructionId	Unique identifier assigned by CAISO for this Load Following Instruction request. Used internally by the ISO to track this request.
scMSSLFInstructionId	Unique identifier assigned by the SC for this Load Following Instruction request. Passed back to the SC for their internal coding.
validated	Flag specifying whether or not the submitted request was valid.

5 Fault Return Codes

This section describes the fault codes that are returned for any service requests that does not pass all the validation rules.

All error conditions will be reported as SOAP <fault> elements.

All other response types are standard xsd type definitions defined in the **ads.caiso.com.xsd** document.