



Market Simulation Call - Fall 2020 Release & Independent 2020 Releases

Anshuman Vaidya
Market Simulation Coordinator

October 05, 2020

Recordings

Calls and webinars are recorded for stakeholder convenience, allowing those who are unable to attend to listen to the recordings after the meetings. The recordings will be publicly available on the ISO web page for a limited time following the meetings. The recordings, and any related transcriptions, should not be reprinted without the ISO's permission.

Agenda

- MAP Stage Availability
- Known Issues – ADS
- ADS Replacement Transition Updates
- ADS Replacement – Cutover Activities At a Glance
- Independent 2020 Releases Structured Scenario Registration Details
- Independent 2020 Releases Market Simulation Initiatives & Timelines
- Initiatives
 - Aliso Canyon Phase 5
 - FRP Improvements - Buffer and Min
 - Energy Imbalance Market (EIM) Enhancements 2020
 - Hybrid Resources - Phase 1
 - Commitment Costs and Default Energy Bid Enhancements Phase 1
 - Nodal Pricing Model
 - Intertie Deviation Settlement
 - Symmetrical Wheeling
 - Settlements Q4/Winter Release
- Next Steps

Fall 2020 Release MAP Stage Availability

- Refer to MAP Stage portal <https://portalmap.caiso.com> for system availability information
- Current MAP Stage Maintenance
 - None
- Upcoming MAP Stage & Stage Maintenance
 - **MAP STAGE**
 - Tuesday 10/6-Wednesday 10/7: CMRI UI/API closure, system will be unavailable
 - **STAGE**
 - Monday 10/5: ADS cutover dry run 1500-1700 PT, [customers invited to participate](#)
- MAP Stage Weekly Maintenance Window
 - Friday

Known Issues - ADS

#	System	Summary	Status	Estimated Fix Date
1	ADS	Support to share/port over the profiles across environment	Will help manually porting over one profile per user upon request. Please submit CIDI ticket with the details (Profile Name, User ID & Environment To & From)	N/A

ADS Replacement Transition - Cutover Dry Run in Stage/Parallel Operations environment

- Market Participants are invited to participate in the Cutover Dry Run in the Stage/Parallel Operations environment
- Monday 10/5 1500-1700 PT
 - [refer to ISO calendar](#)
 - Same WebConf details as market simulation call
- For Delphi client access to Stage, you may need to update the servers.xml file available on the [Dev site under ADS](#)

ADS Replacement Transition

- *October 7-8* production deployment
- ISO Operations will start using the new client and will keep the Delphi client available.
- Enhancements that require different Operator actions under the new client will be disabled until everyone has transitioned to the new client.
 - These enhancements will continue to be tested in MAPStage.
 - During this time, existing procedures will be utilized.
 - These enhancements include:
 - DOTT
 - Unannounced AS TEST
 - RTCD Commitment
 - ISO operators will conduct AS testing and issue operating instructions when needed to units using phone call (current process) while these enhancements are de-active in production. ISO operator will follow up with an ED instruction after phone call for AS testing. SCs should continue to respond to AS testing instructions and operating instructions.
- New data for FRU/FRD and FMM inter-ties will be available in the new ADS upon go-live of the ADS replacement
- v6, v7, and v8 API will be supported upon go-live of the ADS replacement

ADS Replacement Transition

- ISO received approval from our Quality Review Board for the transition, planned for Oct 7 - Oct 8, and the final decision for the transition will depend on Production connectivity completion:
 - *We are adding criteria for customers to demonstrate production connectivity for this transition due to the significant infrastructure changes*
 - The transition has been adjusted to span two phases over two days to implement the infrastructure and network transition during phase 1 and application transition during phase 2
- What to expect:
 - Backward compatible: Delphi client and V6 APIs
 - Target time is between 10:30AM-12:30PM PDT*
 - *ADS interruption will be between 1115-1140 PT to avoid the hourly ramp
 - Planning for minimal downtime (10 min); the user interface will disconnect and will need to be restarted on client side
 - *During this transition of downtime, SCs should continue to follow the last available DOT until new DOT becomes available.*
 - There will be a brief interruption to ADSWS (API)

ADS Replacement Transition

- **What to expect (continued):**
 - **Market:**
 - Prior to cutover, RTD will send dispatches to all just like today
 - Then the outage starts and ADS will be down for all so no one will receive any dispatches. Everyone will remain at the last DOT sent (so they will stay flat). The expected down time is only around 10 minutes
 - During the outage ISO Operations will use the “send previous solution” functionality. This will also keep everyone flat because we just keep sending the previous DOTs
 - Then ADS comes back up. We will continue to stay flat and use previous solution so that DOTs are actually being sent to ADS. Then participants can verify that they are receiving DOTs just like before the outage started
 - Then once we get confirmation that DOTs are being received, then we will stop using the previous solution and we will switch over to using the “market disconnect”. Since the market has been flat and using previous solution for a few intervals, we want to make sure that participants are comfortable with the new dispatch instructions that are about to be sent before actually sending them, to avoid any large swings here. This mitigation step will allow ISO Operations and EIM customers to verify their dispatches in BAAOP to decide whether or not to resume with latest market results.
 - Then if everyone is good with the new dispatch instructions, we turn off market disconnect and proceed as normal going forward.
 - Customers are asked to join a bridge during the deployment - refer to public calendar and customer notice
 - Parallel Operations is extended to 10/16 in Stage

ADS Replacement Transition Pre-Req - Production Connectivity

- This communication is **Critical** to the successful implementation of the ADS Replacement application on Wednesday, October 7th - Thursday, October 8th.
- - We would like to ensure that EVERY AVAILABLE USER can connect to the existing ADS and new ADS (user interface and API) systems before the 10/7-10/8 implementation
- - This connection test must be performed between 10/1/2020 10:00 and 10/5/2020 17:00
- EVERY AVAILABLE USER should do steps 1 and 2 below (we say 'available' as we understand that some users may be off shift)
- Step 3 must be performed if your organization is using the ADS API (**regardless of which version of the API you are using**)
- - Please ensure that your IT organization has seen this communication, to ensure that they have whitelisted the new ADS IP addresses.

ADS Replacement Transition Pre-Req - Production Connectivity

Steps to test connectivity to Existing ADS and New ADS:

1. ADS Delphi Client (existing ADS) From the system(s) where you plan to use the ADS Delphi Client:

- i. Ensure your firewalls are open outbound to CAISO @ [45.42.16.51](#) & [45.42.22.51](#)
- ii. Ensure your CAISO ADS certificate is loaded in your web browser
- iii. Launch a web browser and go to <https://adsws.prod.caiso.com>
- iv. You should see a message similar to screenshot above

2. ADS UI

From the system(s) where you plan to use the new ADS UI:

- i. Ensure your firewalls are open to CAISO @ [45.42.16.16](#) & [45.42.22.16](#)
- ii. Ensure your CAISO ADS certificate is loaded in your web browser
- iii. Launch a web browser and go to <https://ads.prod.caiso.com>
- iv. You should see a message similar to screenshot above

3. ADS API

From the system(s) where you plan to use the ADS API:

- i. Ensure your firewalls are open to CAISO @ [45.42.16.51](#) & [45.42.22.51](#)
- ii. Ensure your CAISO ADS certificate is loaded in your web browser (or API client)
- iii. Launch a web browser (or API client) and go to <https://adsws.prod.caiso.com>
- iv. You should see a message similar to screenshot above Note: For ECN users, you may follow the above steps, but your network devices and firewalls will need a different configuration. Please contact the Service Desk (ServiceDesk@caiso.com, 888-889-0450) for more info.

• Note: When we cut over, the addresses <http://adssta.caiso.com>, and <http://ads.caiso.com> will become DNS Aliases to <http://adsws.prod.caiso.com> ([45.42.16.51](#) & [45.42.22.51](#)). If you have any issues connecting, please follow these steps:

1. Ensure your firewalls are open from the source workstation/servers out to the CAISO IP listed above
2. Ensure the certificate you are testing with is valid, installed in your browser, and allowed for ADS
3. If you still have issues, try with this same certificate to the LEGACY ADS: <https://adssta.caiso.com:447> and see if your connection works to the LEGACY ADS system
4. Please contact the Service Desk (ServiceDesk@caiso.com, 888-889-0450), and provide your certificate name and

ADS Replacement Transition - Production

Phase 1 on October 7:

Planned Time	Action	Task	Team	MP Action / Comments
08:00	Validate	Verify external connectivity to new systems	ISO / MP	Ensure you have tested the new firewalls <ul style="list-style-type: none"> • 45.42.16.51/ 45.42.22.51 • 45.42.16.16/ 45.42.22.16 For ECN customers, please ensure you can connect
10:30	Validate	Login to current ADS and verify dispatches are coming	ISO / MP	
11:15	Validate	Verify data flowing into ADS	ISO	
11:15	Execute	Final Go/No-Go	ISO	
11:15	Execute	Apply DNS changes	ISO	Close current ADS client connections Restart ADS Delphi Client
11:15	Validate	Verify you are able to see dispatches	MP /ISO	

Phase 2 on October 8:

Planned Time	Action	Task	Team	MP Action / Comments
10:00	Execute	Install Integration Layer Patches	ISO MP	Verify external users are able to login to new ADS UI
10:00	Execute	Cut over new ADS Adapter	ISO MP	
11:15	Validate	Verify access to API v6, v7, v8	ISO MP	You should be able see v8 now
10:00	Validate	Verify ADS is receiving data from upstream systems	ISO	
10:00	Execute	Open up WEBSDK UI	ISO / MP	UI now available
11:00	Validate	Verify Users successfully logged into ADSUI	ISO	

**ADS interruption will be between 1115-1140 PT for Phase 1 on 10/7 and Phase 2 on 10/8 to avoid the hourly ramp*

ADS Replacement Transition

ADS Replacement Features on Go-Live	
Available	
Disabled	<ul style="list-style-type: none">• DOTT• Unannounced AS TEST• RTCD Commitment

ADS Replacement – Cutover Activities At a Glance

Milestone Date	Activity	MAPStage	Stage	Production
7/27/2020	New Code Available	New ADS UI ADS API V8	-	-
7/27/2020	Hard Cut-Over	ADS API V6	-	-
09/01/2020	New Code Available	-	New ADS UI ADS API V8	-
09/01/2020	Hard Cut-Over	-	ADS API V6	-
09/04/2020	Milestone	End Market Sim	-	-
09/30/2020	Milestone	-	End Parallel Operations	-
10/7/2020				Phase 1
10/8/2020	New Code Available	-	-	Phase 2 New ADS UI ADS API V8 Production Go-Live
10/1/2020	Hard Cut-Over	-	-	ADS API V6
10/16/2020	Milestone	-	End Parallel Operations	
11/04/2020	Hard Cut-Over	Current ADS Delphi Client	Current ADS Delphi Client	-
02/01/2021	Hard Cut-Over	-	-	Current ADS Delphi Client ADS API V6

ADS Replacement – Cutover Activities at a Glance

Even for use of existing ADS API URL and versions (v6 & v7), you may need to whitelist the new ADS API IPs as access to the v6 & v7 will redirect to the new IPs.

	MAP-STAGE	STAGE	PRODUCTION
API Existing URL	https://adsmap.caiso.com:447/	https://adsstage.caiso.com:447	https://ads.caiso.com:447/
API Existing IPs	12.200.60.164	12.200.60.237 12.200.60.238	12.200.60.98 12.200.60.99 12.231.58.98 12.231.58.99
API New Additional IPs	45.42.17.165 45.42.23.165	45.42.17.51 - correction 45.42.23.51 - correction	45.42.16.51 45.42.22.51
UI Existing URL	https://adsmap.caiso.com:447/	https://adsstage.caiso.com:447	https://ads.caiso.com:447/
UI Existing IP	12.200.60.164	12.200.60.237 12.200.60.238	12.200.60.98 12.200.60.99 12,231.58.98 12.231.58.99
UI New Additional URL	https://ads.map.caiso.com/	https://ads.stage.caiso.com/	https://ads.prod.caiso.com/
UI New Additional IP	45.42.17.130 45.42.23.130	45.42.17.16 45.42.23.16	45.42.16.16 45.42.22.16

For ECN questions, please submit a CIDI and/or contact Service Desk (ServiceDesk@caiso.com, 888-889-0450)

Independent 2020 Releases

Independent 2020 Releases Structured Scenario Registration Details

MP's will need to register their request with the ISO to participate in this simulation via the MarketSim@caiso.com mailbox.

Date of registration October 9, 2020.

We will do our best to accommodate for late registration

Independent 2020 Releases Market Simulation Initiatives & Timelines

Independent 2020 Release Initiatives	Start Date	Start Date (Trade Date)	End Date	Structured Simulation Start (Trade Date)
Independent 2020 Release Market Simulation				
Aliso Canyon Phase 5	10/13/20		10/28/20	N/A
FRP Improvements - Buffer and Min	10/13/20		10/28/20	10/13/20
Energy Imbalance Market (EIM) Enhancements 2020	10/19/20		10/30/20	N/A
Hybrid Resources - Phase 1	10/26/20		11/13/20	TBD
Commitment Costs and Default Energy Bid Enhancements Phase 1	7/27/20		11/24/20	N/A
Nodal Pricing Model	10/6/20		11/13/20	10/27/20
Intertie Deviation Settlement	10/20/20		11/20/20	10/21/20
Symmetrical Wheeling	10/20/20		11/20/20	
Settlements Q4/Winter Release	10/6/20		11/13/20	

Aliso Canyon Phase 5

- **Timeline:** October 13 – October 28

Business Requirements Specification -

<http://www.caiso.com/Documents/BusinessRequirementsSpecification-AlisoCanyonPhase5.pdf>

FRP Improvements - Buffer and Min

- **Timeline:** October 13 – October 28

Structured Scenarios document -

<http://www.caiso.com/Documents/MarketSimulationScenarios-FRPImprovementsBufferandMin.pdf>

Energy Imbalance Market (EIM) Enhancements 2020

- **Timeline:** October 19 – October 30 (CMRI)
- BAAOP & BSAP currently available in MAP-Stage

Unstructured Scenarios document -

<http://www.aiso.com/Documents/MarketSimulationScenariosEnergyImbalanceMarket2020Enhancements.pdf>

Hybrid Resources - Phase 1

- **Timeline:** October 26 – November 13

Business Requirements Specification -

<http://www.caiso.com/Documents/BusinessRequirementsSpecification-HybridResourcesPhase1.pdf>

Commitment Costs and Default Energy Bid Enhancements

- **Timeline:** July 27 – November 24
- Training - <http://www.caiso.com/Documents/Presentation-CommitmentCosts-DefaultEnergyBidEnhancements.pdf>

Nodal Pricing Model

- **Timeline:** October 6 – November 13
- **Structured:** October 27

Structured Scenarios document -

http://www.aiso.com/Documents/NPM_structured_mktsim-Reviewed.pdf

Intertie Deviation Settlement

- **Timeline:** October 20 – November 20

Structured Scenarios document -

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

Symmetrical Wheeling

- **Timeline:** October 20 – November 20

Settlements Q4/Winter Release

Release Milestones as follows:

- 1st draft technical documentation posted = 8/10
 - Posted IDS and Day Ahead Nodal (NPM project)
- 1st draft configuration output file + initial release component summary to post = 8/25
 - Will include current project scope -> IDS, Day Ahead Nodal & Symmetrical Wheeling
 - Also 1st draft tech doc for Symmetrical Wheeling
- 2nd draft configuration output file + 2nd draft tech docs + updated release component summary posted = 9/14
 - Includes 2 dispute related production adjustments:
 - RTM Net Amount PC for RMR capacity payment
 - Spin Non-Spin No Pay Quantity PC for fast start units
- 3rd draft configuration output file (pre market sim) to post = **10/9**
- MAP-Stage deployment - 10/6
- Connectivity for PAC 10/13 - 10/21
- Structured scenarios 10/27 - 11/4

Winter 2020 settlements release draft settlements technical documentation:

<http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=EF90CE68-D8D0-43F7-8052-04FBE1D0825B>

Next Steps

- The next teleconference is scheduled on Thursday, October 8 at 1400 PDT

Reference Slides

Independent 2020 Releases Communication Plan

- **Schedule**

<i>Monday</i> Sep 28, Oct 5,12,19, 26 Nov 2, 9	<i>Thursday</i> Oct 1,8,15, 22, 29 Nov 5, 12
--	---

- **Connection Information**

- **Web Conference Information**

- Web Address: <https://caiso.webex.com/meet/MarketSim>
- Meeting Number: 962 067 710
- Audio connection instructions will be available after connecting to the web conference. When prompted, select "Call me" and enter the phone number you will use during the call. You will be called by the conference shortly.

- **Conference Call Information**

- Dial-in Number: 866-528-2256
- International Dial-in: 216-706-7052
- Access Code: 202 249 0

Market Simulation Issue Management

- Submit all issues to the CIDI case management system
- CIDI tickets must have “**Functional Environment**” = “**Market Simulation Independent 2020**” to be reviewed by ISO SMEs

ISO Market Simulation Support

- **Hours:** Monday thru Friday 0900-1800 PDT
- **ISO's 24x7 Service Desk:** (916) 351-2309 (Connectivity – UI or API)
 - Issues called in after hours will be worked on during the next business day
- **Email:** MarketSim@caiso.com

Automated Dispatch System (ADS) replacement

- **Timeline:** July 27 – September 04
- **Structured:** August 11 (Completed)
Rerun on 8/18 per Market Participant Request - Complete

Structured Scenarios document -

<http://www.caiso.com/Documents/MarketSimulationScenarios-ADSReplacement.pdf>

Training -

- <http://www.caiso.com/Documents/AutomatedDispatchSystemReplacementPart1.pdf>
- <http://www.caiso.com/Documents/AutomatedDispatchSystemReplacementPart2.pdf>

ADS: Update on Changes for FMM AS/EN

- Based on several feedback we planned to make some changes for 'FMM AS/EN' from Interval Grid and how it's filter the data when user click on 'Filter Resource' checkbox. Summary is given below:
 - Proposed change:
 - Renamed the 'FMM AS/EN' as 'FMM AS'
 - Checkbox must filter only the operating reserve (Non-zero SR, NR, RU & RD).
 - Notes:
 - For FMM AS, keep processing and displaying all productType (SR, NR, RU, RD, FRU, FRD, LFU, LFD as applicable) for
 - Visual alert (pop-up/dialogue) – FMM AS
 - Visual alert (Flashing) – No change
 - Audio alert - No Change
 - For FMM Energy, keep processing and displaying productType (EN)
 - Visual alert (pop-up/dialogue) – FMM Energy
 - Visual alert (Flashing) – **No Flashing**
 - Audio alert - No Change
 - The audio alert for **FMM energy** will still be able to be configured for no alarm, 1 time, or continuous
 - Batch types will remain two separate (batchType = 11 for 'FMM Energy', batchType = 3 for 'FMM AS' ('RT AS') also known as 'AS Awards')
 - The message will show as own message in message history.
 - API remains same (FMM energy dispatches & intertie bid type available)
- Update: This ADSUI changes is completed and will be ready on MKT-SIM on 9/28.

ADS SSL Cipher Settings with ADS Cutover

As discussed on 9/15 TUG:

- **New SSL cipher settings will be enforced with for ADS with ADS cutovers in MAP-Stage, Stage, and Production**
- **No change in TLS version - TLS will remain 1.2**
- **We encourage customers to transition to the new SSL cipher settings as early as possible to avoid impacts when the new settings become enforced for ADS**
- In MAP-Stage and Stage
 - *On **11/4/20** old ADS will no longer be available, and participants will need to have the new SSL cipher settings to continue using new ADS UI and any ADS API (including v7)*
- In Production
 - When new ADS is available 10/1, we will not enforce the new SSL cipher settings
 - *On **2/1/21** old ADS will no longer be available, and participants will need to have the new SSL cipher settings to continue using new ADS UI and any ADS API (including v7)*

ADS SSL Cipher Settings with ADS Cutover - continued

- Here is the list of the ciphers being accepted today, in comparison to the reduced list that will be enforced with the ADS cutover:

Currently Supported TLS 1.2 ciphers	Future Supported TLS 1.2 ciphers to be enforced 11/4 in MAP-STAGE/STAGE and 2/1 in PRODUCTION
TLS_DHE_RSA_WITH_AES_128_CBC_SHA TLS_DHE_RSA_WITH_AES_128_CBC_SHA256 TLS_DHE_RSA_WITH_AES_128_GCM_SHA256 TLS_DHE_RSA_WITH_AES_256_CBC_SHA TLS_DHE_RSA_WITH_AES_256_CBC_SHA256 TLS_DHE_RSA_WITH_AES_256_GCM_SHA384 TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256 TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256 TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384 TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384 TLS_RSA_WITH_AES_128_CBC_SHA TLS_RSA_WITH_AES_128_CBC_SHA256 TLS_RSA_WITH_AES_128_GCM_SHA256 TLS_RSA_WITH_AES_256_CBC_SHA TLS_RSA_WITH_AES_256_CBC_SHA256 TLS_RSA_WITH_AES_256_GCM_SHA384	TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256 TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256 TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384 TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384

ADS: Upcoming Changes for Query Tool

Based on several feedback we planned to make some changes for 'Query Tool', It will also improve the performance . Summary is given below:

- Allow user to retrieve data for 39 months:
 - 30 days max at a time for batchType Instructions
 - System will allow only 1 day at a time for batchType 'Trajectory' & 'MSS LF Instructions'
 - System to allow user select only startDate
 - System will automatically adjust the EndDate with user selected startDate.
- Provide user the option to choose what batchType to query for (Making it similar to Existing Query Tool functionality).
 - Available batchType:
 - Instructions (Includes following):
 - DOT
 - Commitment
 - AS Awards
 - Operating Instructions
 - ASTEST
 - Energy
 - Exceptional dispatch
 - Trajectory
 - MSS LF Instructions

ADS: Visual for Upcoming Changes for Query Tool

The screenshot displays the Query Tool interface in Google Chrome, showing three stacked panels. Each panel includes a 'Start Date' field (set to 10/01/2020), a 'Batch Type' dropdown menu, and a 'Resource' field. The top panel's 'Batch Type' dropdown is open, showing options: 'Instructions', 'Instructions', 'Trajectory', and 'MSSLF Instructions'. The middle panel's 'Batch Type' is set to 'MSSLF Instructions'. The bottom panel's 'Batch Type' is set to 'Trajectory'. Each panel also features a 'Submit Query Request' button and a 'Requested Date' field. Below each panel is a table with columns: Resource ID, Interval Start Time, Market ID, Batch Type, Instruction Type, Sent Configuration ID, Batch Received, Start Time, End Time, DOT AS Type, Cleared MW, Award MW, Self Sched MW, ED Energy Code, Prev DOT, Min Accept DOT, Accept DOT, Accept Status, Hourly Sched, HASE SUPP, RMP, SPIN, NSPIN, MSSLF, TBD, and Bid File.

ADS dependencies for DOTTC, IDS functionality

- New functionality includes
 - Follow DOT Flag
 - Operating instructions
 - Un announced AS TEST
 - RTCD Commitment
 - Receive Operating instruction flag for EIRs
 - Broadcast message to EIRs operator
 - Display the HASP schedule, the scheduling coordinator accepted value, and the difference between the two

ADS Replacement – Data availability – During Parallel Operations

- During parallel operation Data for new functionalities (such as Follow DOT Flag, Operating instructions, Un announced AS TEST, RTCD Commitment) will not be available as we will stream production data to parallel environment.
- For those new functionalities data will be available in MAPStage.

Trouble-shooting tips to access ADS

- Check your firewall settings.
- Clear the browser cache & cookies.
- Pop-up blockers on your browser may lead to issues accessing CAISO ADS.
- If you use a pop-up blocker, you must whitelist the CAISO domain (caiso.com)