



ADS UI Replacement Training Part 1

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Objectives

- After this training, the attendee will be able to:
 - Identify upcoming dates, changes, and actions needed for the transition to ADS Replacement planned for Fall 2020 implementation
 - Describe changes related to the transition to new ADS WebSDK User Interface
 - Describe the layout upon viewing the login
 - Identify basic navigation and functionality in ADS Replacement WebSDK application
 - Identify next training and locate reference material for additional information

Introduction: what is ADS? Let's review!

- Automated Dispatch System (ADS) User Interface (UI) is used to view market dispatch instructions provided by the Real Time Market
- ADS can be used to view:
 - View Dispatch instructions
 - Dispatch Operating Targets (DOTs)
 - Commitment Instructions
 - Ancillary Services
 - Critical ISO messages
 - Historical data

Today's training:

- Introduce and become familiar with the new user interface to participate in ~~Application Preview~~ and Market Sim
 - ~~Application preview is early access for ADS users to preview the new UI before Market Simulation (need access from the entity UAA in the Stage Environment)~~
- For more information on the ADS Replacement project and requirements, reference the [Business Requirements Specification 1.0](#) (BRS 1.0)
 - ADS BRQ 001-003 – Port the ADS User Interface from the current Delphi based platform to the WebSDK platform
 - ADS BRQ550-552 Allow Participants to query for Operator Messages sent via ADS and enhance visibility of the messages in the UI
 - ADS-BRQ560 System to maintain access to ADS data for on-line retrieval and reports up to 30 days

**Application preview has been removed from schedule and schedule has been updated with parallel operations and production timeline. Refer to MPPF presentation or join into ADS CPG and RUG for updated schedule*

Future Training: ADS Changes (not part of current ADS application)

- Display FMM (15 minute) schedules for intertie resources
- Add an alarm in the FMM for energy dispatches
- Display RTD (5min) & FMM Flex Ramp Up/Down binding awards (FRU/FRD)
- CAISO BA - initiate unannounced ancillary service testing in the market (“ASTEST” instruction)
- CAISO BA - Communicate real time contingency dispatch instructions to individual resources, including startup time
- Addition of columns
 - Previous Supp and RT Supp Delta
 - Previous Accept DOT to account any manual intervention from interchange scheduler
- Operating Instruction changes (Dispatch Operating Target Tariff Clarification)

Notable changes which may require external entity adjustment to technology

- API Changes
 - With the Fall 2020 project releases, enhancements will be implemented in ADS API v8
 - Plan for Fall Release is to only support v7, v8
 - v6 version will be deprecated upon release of v8
 - Technical Specifications posted on developer.caiso.com under ADS
 - For Technical User Group review, visit the May 26, 2020 meeting <http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=11F4151A-B332-4107-B254-1D7F46902A4F>

Notable changes which may require external entity adjustment

- Query tool data export
 - Excel format only
 - Data retention reduced from 39 months to 30 days
- Login using the recommended and supported browsers: **Chrome and Edge with Chromium**
 - Not in scope to support Internet Explorer
- Will be accessible from the **Market Participant Portal (MPP)**

ADS UI Replacement Upcoming Dates

June 2020

User Access Administrators (UAAs) provision access to users participating in ~~Application Preview in Stage~~ (reference access transition overview covered 6/1/2020)

Review Market Simulation scenarios and provide feedback and requests due 7/3/2020 (reference 6/2/2020 RUG meeting and Release Planning site for details)

Training Webinar: ADS UI Replacement Part 1 (6/11/2020)



July 2020

~~Application Preview~~ (7/7/2020)

Training Webinar: ADS UI Replacement Part 2 Training (7/16/2020)

Market Simulation begins (7/27/2020)

Continue to attend:

Release User Group, Technical User Group

Update: ADS Customer Partnership Group scheduled for July 9, 2020 (visit ISO calendar for details)

Certificate access to ADS UI Replacement

- MAPStage and Production implementation: access provisioned on an active certificate at the SCID level will not require transition
 - ***Current certificate and provisioned access can be used***
 - New ADS UI: Keystore & certificate file extension change will not be needed
 - *Continue to process certificate renewals as normal*
 - *Note: if users ONLY had ADS access, need to ensure they have a certificate installed in their browser*
- Access which use Resource Access Control List(s), or RACLs, will need to be transitioned to an Access Control List (s), or ACLs in AIM
 - Transition plan and review was provided to SC and EIM Entity UAAs on 6/1/2020
 - Link: [ADS UI Replacement Provisioning Access Review](#)

Note: In order to participate in the Application Preview - UAAs will need to provision access to the appropriate certificates to the STAGE environment

Logging in – general look and feel is similar

California ISO Automated Dispatch System

| Interval | RT DOT | Hourly DOT | Exceptional | Commitment | RT AS | Hourly AS |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Current Interval | 19:50-19:55 | 19:00-20:00 | | 19:45-20:00 | 19:45-20:00 | 19:00-20:00 |
| Dispatch Interval | 19:55-20:00 | 20:00-21:00 | | 20:15-20:30 | 20:15-20:30 | 20:00-21:00 |
| Received/Status | 19:50:22 | 19:04:25 | Idle | 19:42:31 | 19:42:32 | 19:04:34 |

System Messages

| | |
|---------------------|--|
| 06/02/2020 19:50:22 | Received new 5 Minute DOT batch DISP-BF25C780-8759-4038-8423-AC18024CEF9B |
| 06/02/2020 19:45:34 | Received new 5 Minute DOT batch DISP-1339C930-8759-4038-8423-AC18024CEF9B |
| 06/02/2020 19:42:32 | Received new Real Time AS batch DISP-A7346F60-8758-4038-8423-AC18024CEF9B |
| 06/02/2020 19:42:31 | Received new Unit Commitment batch DISP-A6778800-8758-4038-8423-AC18024CEF9B |
| 06/02/2020 19:40:45 | Received new 5 Minute DOT batch DISP-673BC980-8758-4038-8423-AC18024CEF9B |

Filter Resources

Real Time: Hourly Pre-Dispatch

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| Valid | AGC | Resource ID | Config ID | DOT Type | SC ID | RT Prev DOT | RT DOT | RT DOT Delta | DOT Start Time | DOT End Time | ED Fixed | ED Max | ED Min | Unit Commitment | Commitment Start Time | Commitment End Time | Commitment To Config | Current AS Total | Current Spin | Dispatch AS Total | Dispatch Spin | Dispatch Non Spin | Dispatch Regl Up | Dispatch Regl Down | Priority | Base Schedule |
|-------|-----|-------------|-----------|----------|-------|-------------|--------|--------------|----------------|--------------|----------|--------|--------|-----------------|-----------------------|---------------------|----------------------|------------------|--------------|-------------------|---------------|-------------------|------------------|--------------------|----------|---------------|
| No | | | | DOT | | 117.85 | 117.85 | 0.00 | 19:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.003 | 0.00 | |
| No | | | | DOT | | 133.95 | 133.95 | 0.00 | 19:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.003 | 0.00 | |
| No | | | | DOT | | 200.00 | 200.00 | 0.00 | 19:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.003 | 0.00 | |
| No | | | | DOT | | 0.00 | 0.00 | 0.00 | 19:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.003 | 0.00 | |
| No | | | | DOT | | 147.10 | 147.10 | 0.00 | 19:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.003 | 0.00 | |
| No | | | | DOT | | 147.10 | 147.10 | 0.00 | 19:57 | | | | | | | | | 0.00 | 0.00 | 21.67 | 21.67 | 0.00 | 0.00 | 0.003 | 0.00 | |
| No | | | | DOT | | 0.47 | 0.47 | 0.00 | 19:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.003 | 0.00 | |
| No | | | | DOT | | 1.20 | 1.20 | 0.00 | 19:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.003 | 0.00 | |
| No | | | | DOT | | 0.35 | 0.35 | 0.00 | 19:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.003 | 0.00 | |
| No | | | | DOT | | 0.85 | 0.85 | 0.00 | 19:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.003 | 0.00 | |

Trajectory Plot:

Instructions - Resource ID:

| Valid | Instruction Type | Accept DOT | Accept Status | Award MW | ED Energy Code | Instr MW | Min Accept | Self Sched MW | Start Time | End Time | Prev Goto | Responder | From Config Id | To Config Id |
|-------|------------------|------------|---------------|----------|----------------|----------|------------|---------------|------------|----------|-----------|-----------|----------------|--------------|
| | DOT | 117.85 | | | | 117.85 | | | 19:57 | | 117.85 | | | |
| | DOT | 117.85 | | | | 117.85 | | | 19:52 | | 117.85 | | | |
| | DOT | 117.85 | | | | 117.85 | | | 19:47 | | 117.85 | | | |
| | DOT | 117.85 | | | | 117.85 | | | 19:42 | | 117.85 | | | |
| | DOT | 117.85 | | | | 117.85 | | | 19:37 | | 117.85 | | | |
| | DOT | 117.85 | | | | 117.85 | | | 19:32 | | 117.85 | | | |
| | DOT | 117.85 | | | | 117.85 | | | 19:27 | | 117.85 | | | |
| | DOT | 117.85 | | | | 117.85 | | | 19:22 | | 117.85 | | | |
| | DOT | 117.85 | | | | 117.85 | | | 19:17 | | 117.85 | | | |
| | DOT | 117.85 | | | | 117.85 | | | 19:12 | | 117.85 | | | |
| | DOT | 117.85 | | | | 117.85 | | | 19:07 | | 117.85 | | | |
| | DOT | 117.85 | | | | 117.85 | | | 19:02 | | 168.42 | | | |
| | DOT | 117.85 | | | | 168.42 | | | 18:57 | | 168.42 | | | |

Username (Certificate) and Environment Name

Status

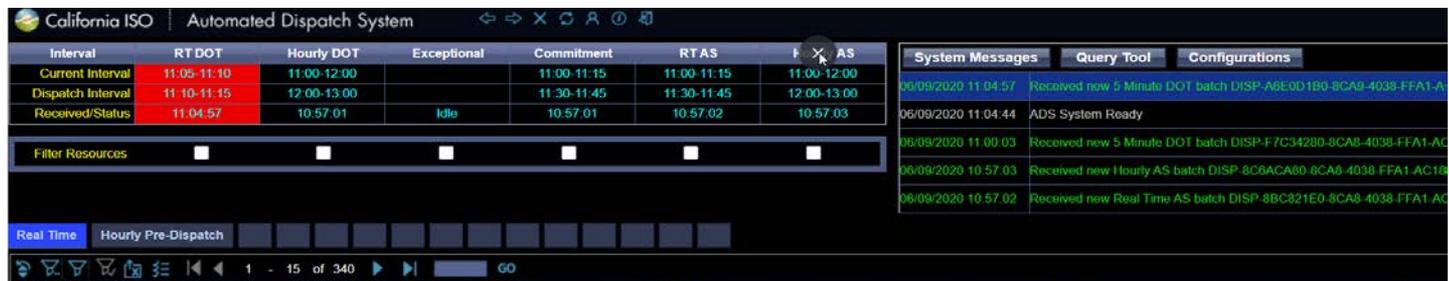
CONNECTED

TEST | VERSION: 1.14.242 | BUILD TIMESTAMP: 05-29-2020 12:51:29

06/02/2020 19:51:1

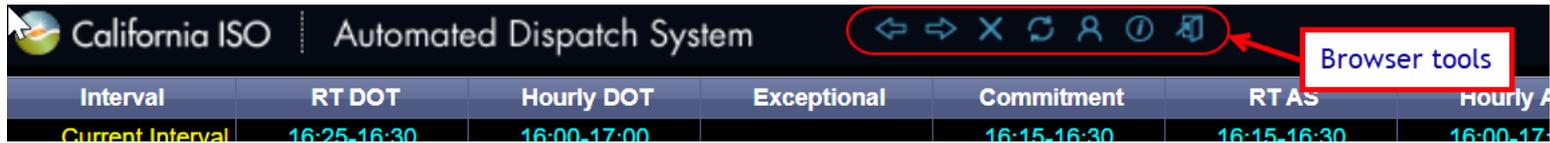
Tip! Viewing Full Screen [instead of browser view]

- Click 3 dots in upper right hand side of Chrome Browser
- Navigate to row label'd Zoom and click the "square" icon
- To exit full screen, click X when hovering in the middle of the display



Shortcut: click F11 on keyboard to enter/exit the Full Screen mode

UI “Browser” functions



| Icon | Definition |
|---|---|
|  | Back |
|  | Forward |
|  | Stop |
|  | Refresh (Use this when loading a new profile) |
|  | User Preferences (US Time Zone options) |
|  | Information (system) |
|  | Exit (can also X out of window in upper right corner of browser window) |

Logging in – general look and feel

The screenshot displays the California ISO Automated Dispatch System interface. At the top, there are tabs for 'System Messages', 'Query Tool', and 'Configurations'. Below these are several data tables and a trajectory plot.

System Messages Table:

| Timestamp | Message |
|---------------------|---|
| 06/02/2020 19:50:22 | Received new 5 Minute DOT batch DISP-BF25C780-8759-4038-8423-AC18024CEF9B |
| 06/02/2020 19:45:34 | Received new 5 Minute DOT batch DISP-1339C930-8759-4038-8423-AC18024CEF9B |
| 06/02/2020 19:42:32 | Received new Real Time AS batch DISP-A7346F60-8759-4038-8423-AC18024CEF9B |
| 06/02/2020 19:42:31 | Received new Unit Commitment |
| 06/02/2020 19:40:45 | Received new 5 Minute DOT batch |

Main Data Table (Partial):

| Valid | AGC | Resource ID | Config ID | DOT Type | SC ID | RT Prev DOT | RT DOT | RT DOT Delta | DOT Start Time | DOT End Time | ED Fixed | ED Max | ED Min | Unit Commitment | Commitment Start Time | Commitment End Time | Commitment Config | Dispatch Real Down | Priority | Base Schedule |
|-------|-----|-------------|-----------|----------|-------|-------------|--------|--------------|----------------|--------------|----------|--------|--------|-----------------|-----------------------|---------------------|-------------------|--------------------|----------|---------------|
| Yes | No | | | DOT | | 117.85 | 117.85 | 0.00 | 19:57 | | | | | | | | | 0.003 | 0.00 | |
| Yes | No | | | DOT | | 133.95 | 133.95 | 0.00 | 19:57 | | | | | | | | | 0.003 | 0.00 | |
| Yes | No | | | DOT | | 200.00 | 200.00 | 0.00 | 19:57 | | | | | | | | | 0.003 | 0.00 | |
| Yes | No | | | DOT | | 0.00 | 0.00 | 0.00 | 19:57 | | | | | | | | | 0.003 | 0.00 | |
| Yes | No | | | DOT | | 147.10 | 147.10 | 0.00 | 19:57 | | | | | | | | | 0.003 | 0.00 | |
| Yes | No | | | DOT | | 147.10 | 147.10 | 0.00 | 19:57 | | | | | | | | | 0.003 | 0.00 | |
| Yes | No | | | DOT | | 0.47 | 0.47 | 0.00 | 19:57 | | | | | | | | | 0.003 | 0.00 | |
| Yes | No | | | DOT | | 1.20 | 1.20 | 0.00 | 19:57 | | | | | | | | | 0.003 | 0.00 | |
| Yes | No | | | DOT | | 0.35 | 0.35 | 0.00 | 19:57 | | | | | | | | | 0.003 | 0.00 | |
| Yes | No | | | DOT | | 0.85 | 0.85 | 0.00 | 19:57 | | | | | | | | | 0.003 | 0.00 | |

Trajectory Plot: A line graph showing power output over time. The y-axis ranges from 60 to 170. The plot shows a sharp drop from approximately 165 to 115 around 19:57, followed by a period of constant output at 115 until 19:02, and then a sharp drop to approximately 60.

Instructions - Resource ID Table:

| Valid | Instruction Type | Accept DOT | Accept Status | Award MW | ED Energy Code | Instr MW | Min Accept | Self Sched MW | Start Time | End Time | Prev Goto | Responder | From Config Id | To Config Id |
|-------|------------------|------------|---------------|----------|----------------|----------|------------|---------------|------------|----------|-----------|-----------|----------------|--------------|
| Yes | DOT | 117.85 | | | | 117.85 | | | 19:57 | | 117.85 | | | |
| Yes | DOT | 117.85 | | | | 117.85 | | | 19:52 | | 117.85 | | | |
| Yes | DOT | 117.85 | | | | 117.85 | | | 19:47 | | 117.85 | | | |
| Yes | DOT | 117.85 | | | | 117.85 | | | 19:42 | | 117.85 | | | |
| Yes | DOT | 117.85 | | | | 117.85 | | | 19:37 | | 117.85 | | | |
| Yes | DOT | 117.85 | | | | 117.85 | | | 19:32 | | 117.85 | | | |
| Yes | DOT | 117.85 | | | | 117.85 | | | 19:27 | | 117.85 | | | |
| Yes | DOT | 117.85 | | | | 117.85 | | | 19:22 | | 117.85 | | | |
| Yes | DOT | 117.85 | | | | 117.85 | | | 19:17 | | 117.85 | | | |
| Yes | DOT | 117.85 | | | | 117.85 | | | 19:12 | | 117.85 | | | |
| Yes | DOT | 117.85 | | | | 117.85 | | | 19:07 | | 117.85 | | | |
| Yes | DOT | 117.85 | | | | 117.85 | | | 19:02 | | 168.42 | | | |

Note: display layout will be static and predefined (the default in the current ADS)

Using these tools within the various data grids

- Filtering  
- Adjusting columns
 - Sorting
 - Adding or removing columns 
 - Modify order through drag & drop
- Edit (Pencil) 
- Paging Options 
- Export Data 
 - Excel format (default is .xls, but csv is also available)
 - Export All
 - Export Page
 - Export Wizard (can choose CSV)

Batch Status/Interval and Alarms Panel

The screenshot displays the California ISO Automated Dispatch System interface. At the top, there is a navigation bar with the system name and various icons. Below this, a summary table provides key information:

| Interval | RT DOT | Hourly DOT | Exceptional | Commitment | RT AS | Hourly AS |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Current Interval | 11:50-11:55 | 11:00-12:00 | | 11:45-12:00 | 11:45-12:00 | 11:00-12:00 |
| Dispatch Interval | 11:55-12:00 | 11:00-12:00 | | 12:15-12:30 | 12:15-12:30 | 12:00-13:00 |
| Received/Status | 11:50:05 | Idle | Idle | 11:40:21 | 11:40:22 | 10:57:22 |

Below the summary table is a 'Filter Resources' section with several checkboxes. The main part of the interface is a large data table with columns for Valid, AGC, Resource ID, Config ID, DOT Type, SC ID, RT Prev DOT, RT DOT, DOT Delta, DOT Start Time, and DOT End Time. A red arrow points from a text box to the 'Filter Resources' section.

Batch Status/Interval Display and Alarm Management Panel

At the bottom left, there is a 'Trajectory Plot' showing a graph with a y-axis from 0.0 to 1.0 and an x-axis representing time. A legend indicates 'DOP' (orange line) and 'DOT' (blue line). At the bottom right, there is an 'Instructions - Resource ID:' table with columns for Valid, Instruction Type, Accept DOT, Accept Status, Award MW, ED Energy Code, Instr MW, Min Accept, Self Sched MW, and Start Time.

- Displays current alarms, current active RT market interval, dispatch intervals for various resources, and allows user to use default filters

Batch Status/Interval and Alarms Panel

The screenshot displays the California ISO Automated Dispatch System interface. At the top, the title bar reads "California ISO Automated Dispatch System" with navigation icons. Below this is a table with the following data:

| Interval | RT DOT | Hourly DOT | Exceptional | Commitment | RT AS | Hourly AS |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Current Interval | 18:00-18:05 | 18:00-19:00 | | 18:00-18:15 | 18:00-18:15 | 18:00-19:00 |
| Dispatch Interval | 18:05-18:10 | 18:10-20:00 | | 18:30-18:45 | 18:30-18:45 | 19:00-20:00 |
| Received/Status | 18:00:01 | 01:26 | Idle | 17:57:21 | 17:57:22 | 17:57:24 |

Below the table is a "Filter Resources" section with six checkboxes. At the bottom left, there are tabs for "Real Time" and "Hourly Pre-Dispatch", and a status bar showing "1 - 15 of 350". A pop-up window titled "ADS New Instructions" is open, displaying the following text:

18:00:01 5 Minute DOT
17:57:24 Hourly AS
17:57:22 Real Time AS

- Updates when new instructions arrive and will flash red
- Hourly DOT column, Received/Status row will flash yellow when time to accept/decline hourly DOTs is close to running out (approx. 2 minutes)

Other similar functions

- When a column is selected, all resources with records for the received batch will be highlighted. A second click on the column will remove the highlight.

| Interval | RT DOT | Hourly DOT | Exceptional | Commitment | RT AS | Hourly AS |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Current Interval | 16:35-16:40 | 16:00-17:00 | | 16:30-16:45 | 16:30-16:45 | 16:00-17:00 |
| Dispatch Interval | 16:40-16:45 | 17:00-18:00 | | 17:00-17:15 | 17:00-17:15 | 17:00-18:00 |
| Received/Status | 16:35:00 | 15:57:00 | Idle | 16:27:48 | 16:27:48 | 15:57:11 |

| Valid | Resource ID | Res Type | Hourly DOT | Hourly DOT Start Time | Accept DOT | Accept Status | AGC | Base Schedule | Commitment To Con |
|-------|-------------|----------|------------|-----------------------|------------|---------------|-----|---------------|-------------------|
| | | ITIE | 11:00 | 17:00 | 11:00 | ACCEPT | No | | 0.00 |
| | | ITIE | 30:00 | 17:00 | 30:00 | ACCEPT | No | | 0.00 |
| | | ETIE | 11:00 | 17:00 | 11:00 | ACCEPT | No | | 0.00 |
| | | ITIE | 4:00 | 17:00 | 4:00 | ACCEPT | No | | 0.00 |
| | | ITIE | 5:00 | 17:00 | 5:00 | ACCEPT | No | | 0.00 |
| | | ITIE | 16:00 | 17:00 | 16:00 | ACCEPT | No | | 0.00 |
| | | ITIE | 253:00 | 17:00 | 253:00 | ACCEPT | No | | 0.00 |
| | | ETIE | 253:00 | 17:00 | 253:00 | ACCEPT | No | | 0.00 |
| | | GEN | | | | | No | | 0.00 |
| | | GEN | | | | | No | | 0.00 |
| | | GEN | | | | | No | | 0.00 |
| | | GEN | | | | | No | | 0.00 |

- In the Resource Panel, show only resources which received instructions for that type
 - Use Filter Resources Checkboxes (by batch type)

| Interval | RT DOT | Hourly DOT | Exceptional | Commitment | RT AS | Hourly AS |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Current Interval | 18:00-18:05 | 18:00-19:00 | | 18:00-18:15 | 18:00-18:15 | 18:00-19:00 |
| Dispatch Interval | 18:05-18:10 | 18:00-20:00 | | 18:30-18:45 | 18:30-18:45 | 19:00-20:00 |
| Received/Status | 18:00:01 | 01:26 | Idle | 17:57:21 | 17:57:22 | 17:57:24 |

Filter Resources

Acknowledging/Silencing ALL alerts at once

California ISO Automated Dispatch System

| Interval | RT DOT | Hourly DOT | Exceptional | Commitment | RT AS | Hourly AS |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Current Interval | 15:55-16:00 | 15:00-16:00 | | 15:45-16:00 | 15:45-16:00 | 15:00-16:00 |
| Dispatch Interval | 16:00-16:05 | 17:00-18:00 | | 16:30-16:45 | 16:30-16:45 | 16:00-17:00 |
| Received/Status | 15:55:02 | 15:57:06 | Idle | 15:57:06 | 15:57:07 | 14:57:11 |

System Messages

| System Messages | Query Tool |
|--|------------|
| 06/08/2020 15:57:08 Received new Hourly AS | |
| 06/08/2020 15:57:07 Received new Real Time | |
| 06/08/2020 15:57:06 Received new Unit Com | |
| 06/08/2020 15:55:02 Received new 5 Minute | |
| 06/08/2020 15:50:11 Received new 5 Minute | |

Filter Resources

Real Time Hourly Pre-Dispatch

Accept Decline Partial

Valid Resource ID Res Type Accept DOT Accept Status AGC Base Schedule Commitment To Config Config ID Current Spin Dispatch AS Total DOT Start Time ED Fixed ED Max ED Min

| Valid Resource ID | Res Type | Accept DOT | Accept Status | AGC | Base Schedule | Commitment To Config | Config ID | Current Spin | Dispatch AS Total | DOT Start Time | ED Fixed | ED Max | ED Min |
|-------------------|----------|------------|---------------|-----|---------------|----------------------|-----------|--------------|-------------------|----------------|----------|--------|--------|
| | GEN | | | No | 0.00 | | | 0.00 | 0.00 | 16:02 | | | |
| | GEN | | | No | 0.00 | | | 0.00 | 0.00 | 16:02 | | | |
| | GEN | | | No | 0.00 | | | 0.00 | 0.00 | 16:02 | | | |
| | GEN | | | No | 0.00 | | | 0.00 | 0.00 | 16:02 | | | |
| | GEN | | | No | 0.00 | | | 0.00 | 0.00 | 16:02 | | | |
| | GEN | | | No | 0.00 | | | 0.00 | 0.00 | 16:02 | | | |
| | GEN | | | No | 0.00 | | | 0.00 | 0.00 | 16:02 | | | |
| | GEN | | | No | 0.00 | | | 0.00 | 0.00 | 16:02 | | | |
| | GEN | | | No | 0.00 | | | 0.00 | 0.00 | 16:02 | | | |
| | GEN | | | No | 0.00 | | | 0.00 | 0.00 | 16:02 | | | |
| | GEN | | | No | 0.00 | | | 0.00 | 0.00 | 16:02 | | | |
| | GEN | | | No | 0.00 | | | 0.00 | 0.00 | 16:02 | | | |
| | GEN | | | No | 0.00 | | | 0.00 | 0.00 | 16:02 | | | |
| | GEN | | | No | 0.00 | | | 0.00 | 0.00 | 16:02 | | | |
| | GEN | | | No | 0.00 | | | 0.00 | 0.00 | 16:02 | | | |
| | GEN | | | No | 0.00 | | | 0.00 | 0.00 | 16:02 | | | |

ADS New Instructions

15:57:08 Hourly AS
 15:57:07 Real Time AS
 15:57:06 Unit Commitment
 15:57:06 Hourly DOT
 15:55:02 5 Minute DOT

OK

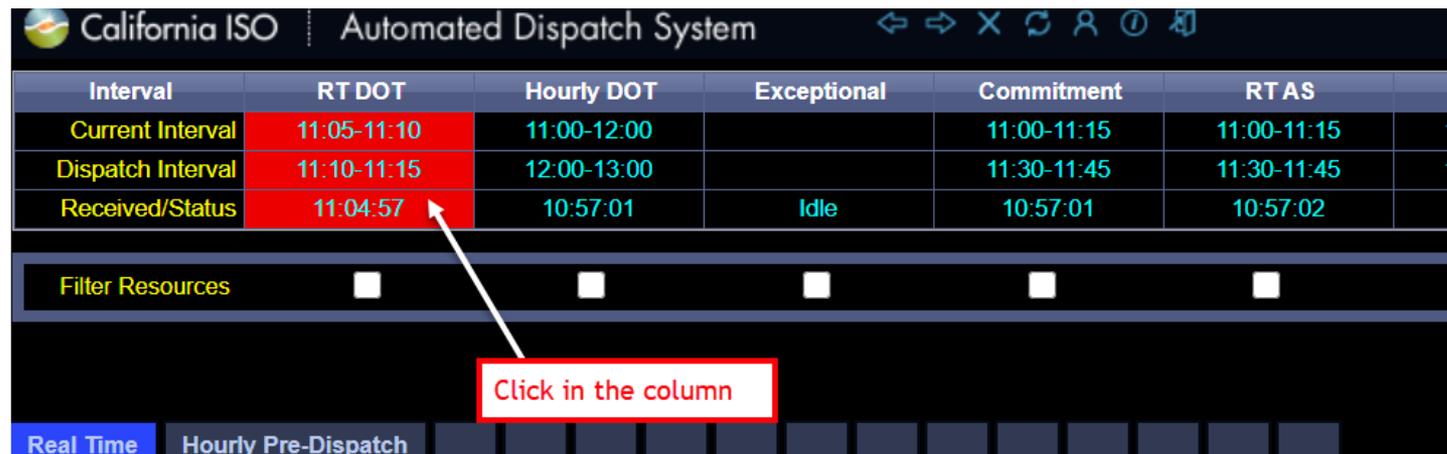
Trajectory Plot:

Valid Instruction Type Accept DOT Accept Status Award MW ED Energy Code Instr MW Min Accept Self Sched MW

Note: this is a change – to acknowledge ALL from the Batch Status grid, user can click in the Interval column (current ADS has a button on top of the column)

Acknowledging/Silencing alert by individual instruction type

- Click in the individual column
- Example: if you wanted to acknowledge and stop the red flashing for the RT DOT column, click the rows beneath column labeled “RT DOT”



California ISO | Automated Dispatch System

| Interval | RT DOT | Hourly DOT | Exceptional | Commitment | RT AS | |
|-------------------|-------------|-------------|-------------|-------------|-------------|---|
| Current Interval | 11:05-11:10 | 11:00-12:00 | | 11:00-11:15 | 11:00-11:15 | 1 |
| Dispatch Interval | 11:10-11:15 | 12:00-13:00 | | 11:30-11:45 | 11:30-11:45 | 1 |
| Received/Status | 11:04:57 | 10:57:01 | Idle | 10:57:01 | 10:57:02 | |

Filter Resources

Real Time | Hourly Pre-Dispatch

Click in the column

System Messages – Pop up messages

- Pop-up message alerts
 - For example, when instructions received or operator messages

The screenshot displays the California ISO Automated Dispatch System (ADS) interface. It features several data tables and pop-up messages. The main interface includes a 'System Messages' window with a list of messages, a 'Query Tool' window, and a 'Configurations' window. A large pop-up message titled 'ADS New Instructions' is visible, listing instructions such as '16:29:58 Real Time AS', '16:29:55 Unit Commitment', and '16:25:59 5 Minute DOT'. Another pop-up message titled 'Contingency in progress' is also visible, containing the text: 'ALERT - ALL ADS USERS: ATTN: Market Participants - Contingency in progress. Please watch ADS for further instructions and follow them immediately. Units carrying NSPIN reserves will not receive startup instructions but may receive real time DOTs and should follow them without delay.' The interface also shows a table of resources with columns for AGC, Resource ID, Config ID, DOT Type, SC ID, RT Suppl Energy, RT Prev DOT, RT DOT, and RT DO Delta. The table contains 15 rows of data, all with 'No' in the AGC column and 'GEN' in the Resource ID column. The 'Contingency in progress' message is displayed in a large, bold font, making it highly visible to the user.

Enhanced visibility on pop up messages - screen displays show increased text size and updated scheme

System Messages Grid

California ISO | Automated Dispatch System

| Interval | RT DOT | Hourly DOT | Exceptional | Commitment | RT AS | Hourly AS |
|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Current Interval | 11:50-11:55 | 11:00-12:00 | | 11:45-12:00 | 11:45-12:00 | 11:00-12:00 |
| Dispatch Interval | 11:55-12:00 | 11:00-12:00 | | 12:15-12:30 | 12:15-12:30 | 12:00-13:00 |
| Received/Status | 11:50:05 | Idle | Idle | 11:40:21 | 11:40:22 | 10:57:22 |

| System Messages | Query Tool | Configurations |
|---------------------|------------|--|
| 06/05/2020 11:50:05 | | Received new 5 Minute DOT batch DISP-4B3746D0-8988-4038-FFD0-AC18024C2CB2 |
| 06/05/2020 11:45:06 | | Received new 5 Minute DOT batch DISP-960FD300-898A-4038-FFD0-AC18024C2CB2 |
| 06/05/2020 11:40:22 | | Received new Real Time AS batch DISP-EF C95230-8989-4038-FFD0-AC18024C2CB2 |
| 06/05/2020 11:40:21 | | Received new Unit Commitment batch DISP-FF0F4650-8989-4038-FFD0-AC18024C2CB2 |
| 06/05/2020 11:40:12 | | Received new 5 Minute DOT batch DISP-E9DDC650-9909-4038-FFD0-AC18024C2CB2 |

| Valid | AGC | Resource ID | Config ID | DOT Type | SC ID | RT Prev DOT | RT DOT | RT DOT Delta | DOT Start Time | DOT End Time | ED Fixed | ED Max | ED Min | Unit Commitment | Commitment Start Time | Commitment End Time | Commitment To Config | Current AS Total | Current Spin | Dispatch AS Total | Dispatch Spin |
|-------|-----|-------------|-----------|----------|-------|-------------|--------|--------------|----------------|--------------|----------|--------|--------|-----------------|-----------------------|---------------------|----------------------|------------------|--------------|-------------------|---------------|
| | No | | | DOT | | 0.00 | 0.00 | 0.00 | 11:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| | No | | | DOT | | 0.00 | 0.00 | 0.00 | 11:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| | No | | | DOT | | 0.00 | 0.00 | 0.00 | 11:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| | No | | | DOT | | 0.00 | 0.00 | 0.00 | 11:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| | No | | | DOT | | 0.00 | 0.00 | 0.00 | 11:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| | No | | | DOT | | 0.00 | 0.00 | 0.00 | 11:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| | No | | | DOT | | 0.00 | 0.00 | 0.00 | 11:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| | No | | | DOT | | 0.00 | 0.00 | 0.00 | 11:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| | No | | | DOT | | 0.00 | 0.00 | 0.00 | 11:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| | No | | | DOT | | 0.00 | 0.00 | 0.00 | 11:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| | No | | | DOT | | 0.00 | 0.00 | 0.00 | 11:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| | No | | | DOT | | 0.00 | 0.00 | 0.00 | 11:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| | No | | | DOT | | 0.00 | 0.00 | 0.00 | 11:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| | No | | | DOT | | 0.00 | 0.00 | 0.00 | 11:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 |
| | No | | | DOT | | 0.00 | 0.00 | 0.00 | 11:57 | | | | | | | | | 0.00 | 0.00 | 0.00 | 0.00 |

System Messages Panel

- View latest System Messages that were received
- Batch received messages, System Operating messages from Generation Dispatcher or Real Time Market Operator

Options Menu – System Messages, Query Tool, and Configuration Buttons

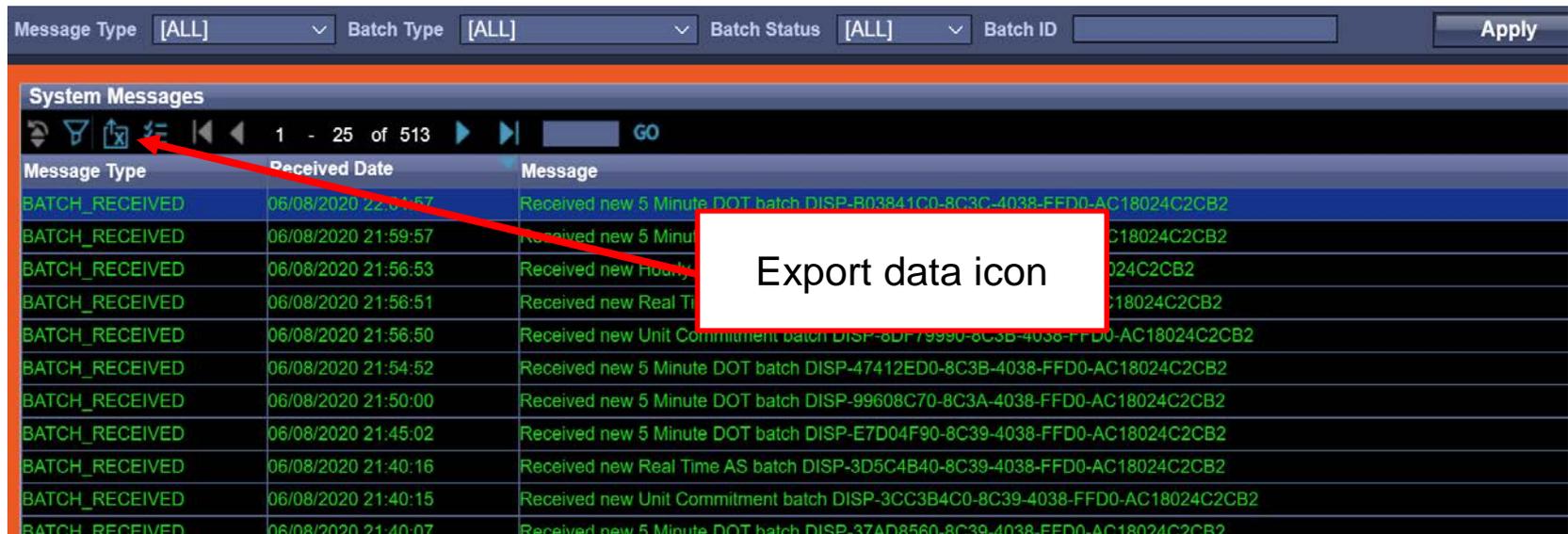
Options Menu for System Messages, Query Tool, and Configurations

Provides access to:

- View System Messages history
- Query Tool (query 30 day historical dispatch instructions)
- Configuration display to configure profile, sounds/alarms, and pop up messaging

Viewing System Messages History

- Click on System Messages History Button
- Filter Options
 - Message Type
 - Batch Type
 - Batch Status
 - Batch ID



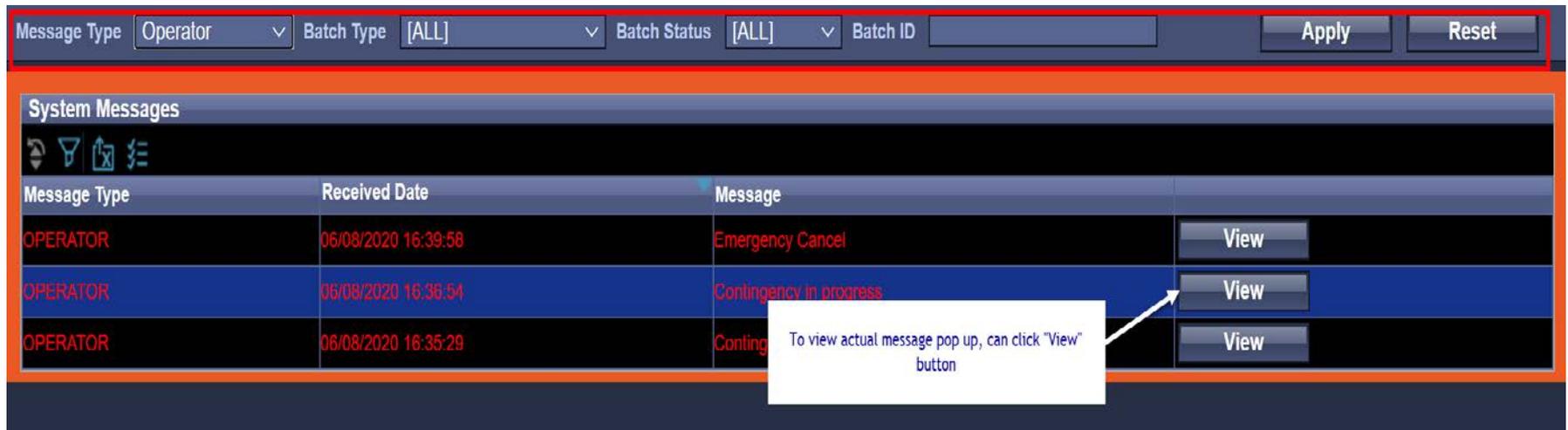
The screenshot displays the 'System Messages' interface. At the top, there are filter dropdowns for 'Message Type' (set to [ALL]), 'Batch Type' (set to [ALL]), 'Batch Status' (set to [ALL]), and a 'Batch ID' input field. An 'Apply' button is located to the right of these filters. Below the filters is a toolbar with icons for search, refresh, and navigation, along with a 'GO' button. The main area is a table with the following columns: 'Message Type', 'Received Date', and 'Message'. The table contains 11 rows of data, all with 'BATCH_RECEIVED' as the message type and dates from 06/08/2020 21:40:07 to 22:04:57. A red arrow points from the 'Export data icon' (a document with a download arrow) in the toolbar to the text 'Export data icon' in a white box.

| Message Type | Received Date | Message |
|----------------|---------------------|--|
| BATCH_RECEIVED | 06/08/2020 22:04:57 | Received new 5 Minute DOT batch DISP-B03841C0-8C3C-4038-FFD0-AC18024C2CB2 |
| BATCH_RECEIVED | 06/08/2020 21:59:57 | Received new 5 Minute DOT batch DISP-47412ED0-8C3B-4038-FFD0-AC18024C2CB2 |
| BATCH_RECEIVED | 06/08/2020 21:56:53 | Received new Hourly batch DISP-37AD8560-8C39-4038-FFD0-AC18024C2CB2 |
| BATCH_RECEIVED | 06/08/2020 21:56:51 | Received new Real Time AS batch DISP-3D5C4B40-8C39-4038-FFD0-AC18024C2CB2 |
| BATCH_RECEIVED | 06/08/2020 21:56:50 | Received new Unit Commitment batch DISP-8DF79990-8C3B-4038-FFD0-AC18024C2CB2 |
| BATCH_RECEIVED | 06/08/2020 21:54:52 | Received new 5 Minute DOT batch DISP-47412ED0-8C3B-4038-FFD0-AC18024C2CB2 |
| BATCH_RECEIVED | 06/08/2020 21:50:00 | Received new 5 Minute DOT batch DISP-99608C70-8C3A-4038-FFD0-AC18024C2CB2 |
| BATCH_RECEIVED | 06/08/2020 21:45:02 | Received new 5 Minute DOT batch DISP-E7D04F90-8C39-4038-FFD0-AC18024C2CB2 |
| BATCH_RECEIVED | 06/08/2020 21:40:16 | Received new Real Time AS batch DISP-3D5C4B40-8C39-4038-FFD0-AC18024C2CB2 |
| BATCH_RECEIVED | 06/08/2020 21:40:15 | Received new Unit Commitment batch DISP-3CC3B4C0-8C39-4038-FFD0-AC18024C2CB2 |
| BATCH_RECEIVED | 06/08/2020 21:40:07 | Received new 5 Minute DOT batch DISP-37AD8560-8C39-4038-FFD0-AC18024C2CB2 |

Example of System Messages History

Applying a Filter

- 1) Select filter criteria using the drop down menu options
- 2) Click "Apply" Button



The screenshot displays a web interface for viewing system messages. At the top, there are filter controls: 'Message Type' set to 'Operator', 'Batch Type' set to '[ALL]', 'Batch Status' set to '[ALL]', and a 'Batch ID' input field. 'Apply' and 'Reset' buttons are located to the right of these filters. Below the filters is a 'System Messages' section with a table of messages. The table has columns for 'Message Type', 'Received Date', and 'Message'. Three messages are listed, all with 'Message Type' as 'OPERATOR'. The second message is highlighted in blue. A callout box with an arrow points to the 'View' button of the highlighted message, containing the text: 'To view actual message pop up, can click "View" button'.

| Message Type | Received Date | Message | |
|--------------|---------------------|-------------------------|------|
| OPERATOR | 06/08/2020 16:39:58 | Emergency Cancel | View |
| OPERATOR | 06/08/2020 16:38:54 | Contingency in progress | View |
| OPERATOR | 06/08/2020 16:35:29 | Contingency in progress | View |

Clear filter selection

- 1) click "Reset"

Query Tool

- Click on the “Query Tool” Button
- Query history during that session will be held in a list

The screenshot shows the Query Tool interface. At the top, there are input fields for 'Start Date' (05/20/2020), 'End Date' (05/22/2020), and 'Resource' (a dropdown menu). A 'Submit Query Request' button is located to the right. Below this is a section titled 'Query Requests' with a table. The table has columns for 'Requested Date', 'Resource ID', 'Start Date', 'End Date', and 'Status'. Below the table, there are tabs for 'Instructions', 'Trajectory Data', and 'MSSLF Instructions'. At the bottom, there is a table with various columns including 'Interval', 'Market', 'Batch', 'Instruction', 'Configuration', 'Start', 'End', 'AS', 'Closed', 'Award', 'Self', 'ED', 'Proc', 'Min', 'Asset', 'Asset', 'Hours', 'Binding', 'Batch', 'Event', 'To', and 'P'.

Query history will now be limited to 30 days

Query Tool - Example

Start Date: 06/08/2020 End Date: 06/08/2020 Resource: [Dropdown] Submit Query Request

Query Requests

| Requested Date | Resource ID | Start Date | End Date | Status |
|------------------|-------------|------------|------------|-----------|
| 06/02/2020 16:45 | | 05/20/2020 | 05/22/2020 | Completed |
| 06/02/2020 16:40 | | 05/20/2020 | 05/22/2020 | Completed |

To query,
 1. Select date range
 2. Select Resource ID
 3. Click "Submit Query Request" Button

Once results load, able to view Instructions tab, Trajectory Data (i.e. DOP), and MSSLF Instructions

Instructions Trajectory Data MSSLF Instructions

| Resource ID | Interval Start Time | Market ID | Batch Type | Instruction Type | Configuration ID | 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 | SUPP | RMPS | SPIN | NSPIN | MSSLF | TBD |
|-------------|---------------------|-----------|--------------|------------------|------------------|------------------|----------|------|---------|------------|----------|---------------|----------------|----------|----------------|------------|---------------|--------------|------|-------|------|-------|-------|-----|
| | 05/20/2020 00:00 | 120052001 | 5 Minute DOT | 0 | | 05/20/2020 00:02 | | 0.00 | | | | | | 0.00 | | 0.00 | | | 0 | 81.25 | 0 | 0 | | |
| | 05/20/2020 00:05 | 120052001 | 5 Minute DOT | 0 | | 05/20/2020 00:07 | | 0.00 | | | | | | 0.00 | | 0.00 | | | 0 | 82.08 | 0 | 0 | | |
| | 05/20/2020 00:10 | 120052001 | 5 Minute DOT | 0 | | 05/20/2020 00:12 | | 0.00 | | | | | | 0.00 | | 0.00 | | | 0 | 55.1 | 0 | 0 | | |
| | 05/20/2020 00:15 | 120052001 | 5 Minute DOT | 0 | | 05/20/2020 00:17 | | 0.00 | | | | | | 0.00 | | 0.00 | | | 0 | 57.55 | 0 | 0 | | |

Instructions Trajectory Data MSSLF Instructions

1 - 15 of 863 GO

Export All
 Export Page
 Export Wizard

| Resource ID | Market ID | Batch Type | Instruction Type | Configuration ID |
|-------------|-----------|------------|------------------|------------------|
|-------------|-----------|------------|------------------|------------------|

Export options to .xls (default) and .csv are available
 Export all = All results, Export Page = current page

Configurations

- This display can be used to:
 - Save settings as a Display Profile
 - View and load your own created profiles
 - View and load Display Profiles which have been saved as “Sharable”
 - Shared Display Profiles
 - Edit Audio Alarms and Pop Up Alerts
 - Reset settings

The screenshot displays a web-based configuration interface with an orange background. At the top, there are two buttons: "Save Current Display Settings As a Template" and "Reset User Display Settings".

Below these are two panels for display profiles:

- Private Display Profiles:** A table with columns for Profile Name, Description, Sharable, and Created Date. It includes "Load" and "Delete" buttons for each row.
- Shared Display Profiles:** A table with columns for Owner, Profile Name, Description, and Created Date. It includes "Load" buttons for each row.

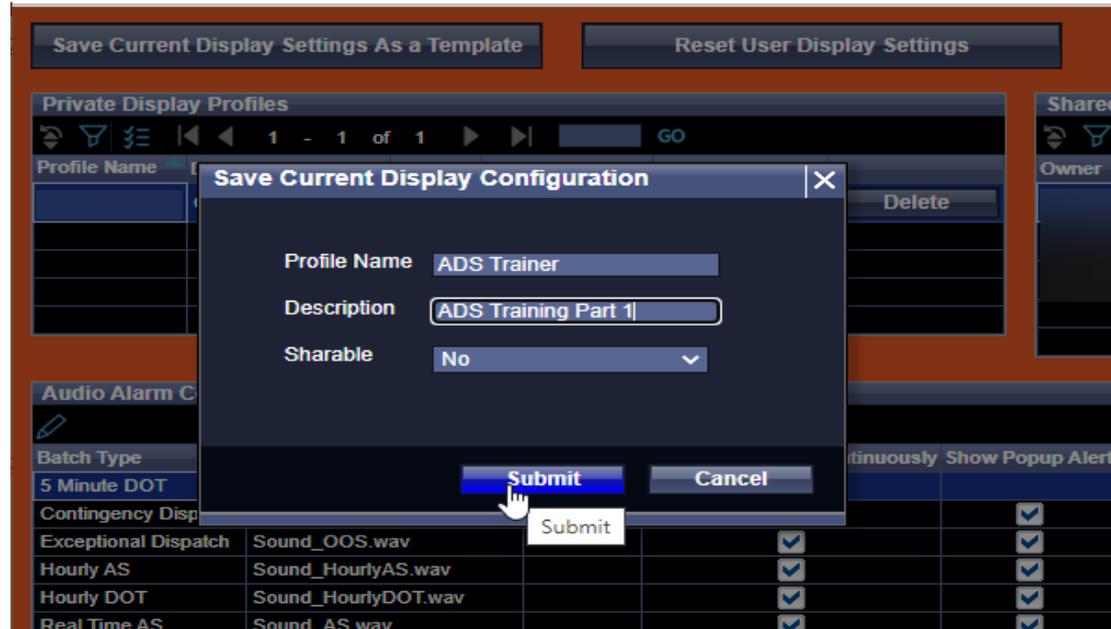
At the bottom is the **Audio Alarm Configurations** section, which includes a table with the following data:

| Batch Type | Audio File | Mute | Sound Play | Audio Alarm | Continuously | Show Popup Alert |
|----------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 5 Minute DOT | Sound_5MinDOT.wav | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Contingency Dispatch | Sound_5MinDOT.wav | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Exceptional Dispatch | Sound_OOS.wav | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Hourly AS | Sound_HourlyAS.wav | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Hourly DOT | Sound_HourlyDOT.wav | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Real Time AS | Sound_AS.wav | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Unit Commitment | Sound_UnitCommitment.wav | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Below the table is a "Test Audio Sound File:" section with a dropdown menu set to "Sound_UnitCommitment.wav", and "Play Sound" and "Reset Audio Profile" buttons.

Configurations

- Filter criteria, Audio Alarms, and Alerts are saved as part of this profile
- Create a User Profile(s)
 - Click “Save Current Display Settings as a Template
 - Fill in Profile Name, Description, Select “Sharable” if you want others to be able to view the profile



Modifying Configurations

- This is not inherently a feature –
 - A user can load the profile
 - Make setting changes
 - Save the current settings as a new profile
 - Delete old profile

The screenshot shows a web application interface with an orange background. At the top, there are two buttons: "Save Current Display Settings As a Template" and "Reset User Display Settings". Below these are two panels for profile management:

- Private Display Profiles:** A table with columns: Profile Name, Description, Sharable, Created Date, Load, and Delete. It shows 1 of 1 profiles.
- Shared Display Profiles:** A table with columns: Owner, Profile Name, Description, Created Date, and Load. It shows 3 profiles.

Below the profile panels is the **Audio Alarm Configurations** section, which includes a table and a test audio control.

| Batch Type | Audio File | Mute | Sound | Play | Audio Alarm | Continuously | Show Popup Alert |
|----------------------|--------------------------|------|-------|------|-------------------------------------|--------------|-------------------------------------|
| 5 Minute DOT | Sound_5MinDOT.wav | | | | | | <input checked="" type="checkbox"/> |
| Contingency Dispatch | Sound_5MinDOT.wav | | | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> |
| Exceptional Dispatch | Sound_OOS.wav | | | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> |
| Hourly AS | Sound_HourlyAS.wav | | | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> |
| Hourly DOT | Sound_HourlyDOT.wav | | | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> |
| Real Time AS | Sound_AS.wav | | | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> |
| Unit Commitment | Sound_UnitCommitment.wav | | | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> |

At the bottom of the audio section, there is a "Test Audio Sound File:" dropdown menu set to "Sound_UnitCommitment.wav", and two buttons: "Play Sound" and "Reset Audio Profile".

Configuring Audio Alarms and Pop Up Alerts

- For each Batch Type (listed by row), user can select:
 - Audio file (default sounds align with the batch type)
 - Choose to Mute Sound (don't play sound at all)
 - Continuously alert until acknowledged
 - If this is unchecked, will sound once each time the notification is sent

The screenshot displays the 'Audio Alarm Configurations' window. It features a table with columns for 'Batch Type', 'Audio File', 'Mute Sound', 'Play Audio Alarm Continuously', and 'Show Popup Alert'. A dropdown menu is open for the 'Audio File' column, showing a list of sound files. A red box highlights the 'Update' and 'Cancel' buttons at the top of the configuration window. A callout box points to a pencil icon with the text 'Click pencil to make changes'.

| Batch Type | Audio File | Mute Sound | Play Audio Alarm Continuously | Show Popup Alert |
|----------------------|-----------------------|--------------------------|-------------------------------------|-------------------------------------|
| 5 Minute DOT | Sound_5MinDOT.wav | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Contingency Dispatch | [None] | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Exceptional Dispatch | Sound_5MinDOT.wav | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Hourly AS | Sound_AS.wav | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Hourly DOT | Sound_Contingency.wav | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Real Time AS | Sound_HourlyAS.wav | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Unit Commitment | Sound_HourlyDOT.wav | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Resource Data Grid

The screenshot displays the California ISO Automated Dispatch System interface. At the top, there are tabs for Interval, RT DOT, Hourly DOT, Exceptional, Commitment, RTAS, and Hourly AS. Below these are System Messages and Configurations sections. The main area is the Resource Data Grid, which is highlighted with a red border. The grid has columns for Valid, AGC, Resource ID, Config ID, DOT Type, SC ID, RT Prev DOT, RT DOT, RT DOT Delta, DOT Start Time, DOT End Time, ED Fixed, ED Max, ED Min, Unit Commitment, Commitment Start Time, Commitment End Time, Commitment To Config, Current AS Total, Current SpIn, Dispatch AS Total, and Dispatch SpIn. Below the grid is a Trajectory Plot and an Instruction table. A blue box with the text "Resource Data Grid" is overlaid on the bottom right of the screenshot.

- Main display which provides resource ID-specific data including relevant times and other resource specific information

Resource Data Grid - Tabs

- Default Filter Tabs
 - Real Time
 - Hourly Pre-Dispatch
- Additional Tabs that can be configured/filtered/modified
 - Right click to Rename
 - Once tabs are setup as desired, user may save it as a Display Profile
- Selected tab highlights in **blue**



Column Configurations

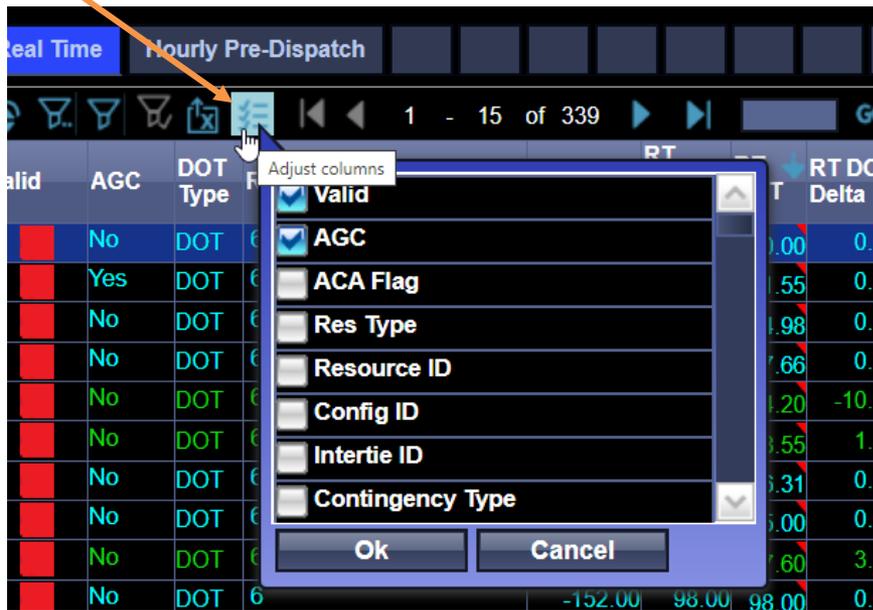
- Sorting (can click on column to sort)

| Valid | AGC | Resource ID | Config ID | DOT Type | SC ID | RT Suppl Energy | RT Prev DOT | RT DOT | RT DOT Delta | DOT Start Time | DOT End Time | Unit Comm |
|-------|-----|-------------|-----------|----------|-------|-----------------|-------------|--------|--------------|----------------|--------------|-----------|
| [Al v | | | | | | | | | | | | [ALL |
| No | | | | DOT | | 0.00 | 627.00 | 627.00 | 0.00 | 17:52 | | |
| Yes | | | | DOT | | 0.00 | 330.00 | 330.00 | 0.00 | 17:52 | | |
| No | | | | DOT | | -90.50 | 174.10 | 172.50 | -1.60 | 17:52 | | |
| No | | | | DOT | | 0.00 | 117.30 | 115.50 | -1.80 | 17:52 | | |
| No | | | | DOT | | 0.00 | 104.26 | 104.26 | 0.00 | 17:52 | | |
| No | | | | DOT | | -112.00 | 98.00 | 98.00 | 0.00 | 17:52 | | |
| No | | | | DOT | | -112.00 | 98.00 | 98.00 | 0.00 | 17:52 | | |
| No | | | | DOT | | 0.00 | 81.80 | 96.33 | 14.53 | 17:52 | | |

Column Configurations

Adjust columns

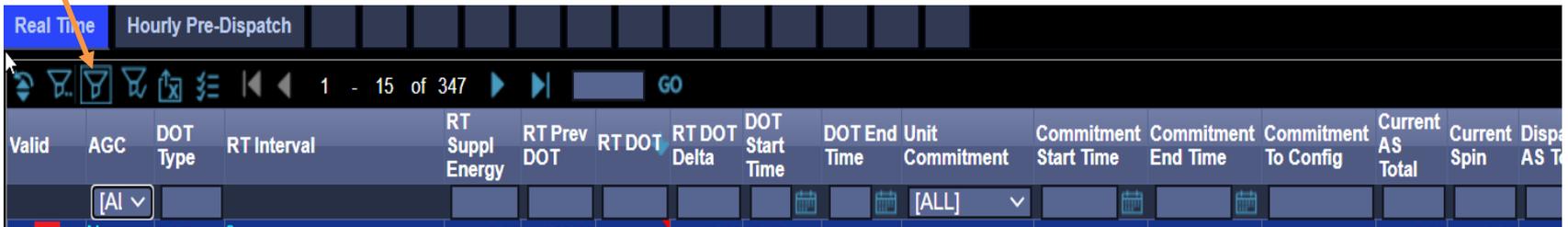
 Click checklist icon to add or remove columns from view



Filter Options

Inline Filter – a quick “contains” search for specific criteria

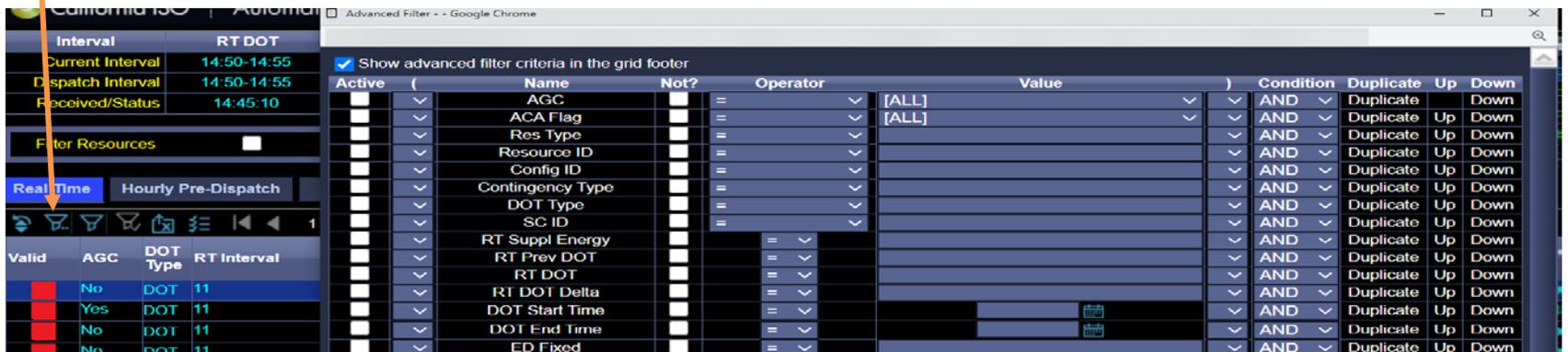
 To get to the inline filter, click the “funnel” shaped icon



| Valid | AGC | DOT Type | RT Interval | RT Suppl Energy | RT Prev DOT | RT DOT | RT DOT Delta | DOT Start Time | DOT End Time | Unit Commitment | Commitment Start Time | Commitment End Time | Commitment To Config | Current AS Total | Current Spin | Dispa AS T |
|-------|-----|----------|-------------|-----------------|-------------|--------|--------------|----------------|--------------|-----------------|-----------------------|---------------------|----------------------|------------------|--------------|------------|
| | [A] | | | | | | | | | [ALL] | | | | | | |

Advanced Filter – can choose multiple Filter criteria

 To get to the advanced filter option – click “funnel” shaped icon with two dots



| Active | Name | Not? | Operator | Value | Condition | Duplicate | Up | Down |
|--------------------------|------------------|--------------------------|----------|-------|-----------|-----------|----|------|
| <input type="checkbox"/> | AGC | <input type="checkbox"/> | = | [ALL] | AND | Duplicate | Up | Down |
| <input type="checkbox"/> | ACA Flag | <input type="checkbox"/> | = | [ALL] | AND | Duplicate | Up | Down |
| <input type="checkbox"/> | Res Type | <input type="checkbox"/> | = | | AND | Duplicate | Up | Down |
| <input type="checkbox"/> | Resource ID | <input type="checkbox"/> | = | | AND | Duplicate | Up | Down |
| <input type="checkbox"/> | Config ID | <input type="checkbox"/> | = | | AND | Duplicate | Up | Down |
| <input type="checkbox"/> | Contingency Type | <input type="checkbox"/> | = | | AND | Duplicate | Up | Down |
| <input type="checkbox"/> | DOT Type | <input type="checkbox"/> | = | | AND | Duplicate | Up | Down |
| <input type="checkbox"/> | SC ID | <input type="checkbox"/> | = | | AND | Duplicate | Up | Down |
| <input type="checkbox"/> | RT Suppl Energy | <input type="checkbox"/> | = | | AND | Duplicate | Up | Down |
| <input type="checkbox"/> | RT Prev DOT | <input type="checkbox"/> | = | | AND | Duplicate | Up | Down |
| <input type="checkbox"/> | RT DOT | <input type="checkbox"/> | = | | AND | Duplicate | Up | Down |
| <input type="checkbox"/> | RT DOT Delta | <input type="checkbox"/> | = | | AND | Duplicate | Up | Down |
| <input type="checkbox"/> | DOT Start Time | <input type="checkbox"/> | = | | AND | Duplicate | Up | Down |
| <input type="checkbox"/> | DOT End Time | <input type="checkbox"/> | = | | AND | Duplicate | Up | Down |
| <input type="checkbox"/> | ED Fixed | <input type="checkbox"/> | = | | AND | Duplicate | Up | Down |

In current ADS client, similar to Filter Builder

Advanced Filter Columns

- First Column: Active Flag – check this box in the rows you want to apply criteria for
 - Only rows with this checked will be used for filtering.
 - Effectively delete a row by unchecking it and hitting update
 - When reopened, all active rows will be moved to the top of the list
- Defining Criteria for filter:
 - Name Column: each row corresponds to a column in the grid
 - By default, only one row of each column is present, can use “Duplicate” option in that row to add another
 - Operator Column: Most of these operations are self-explanatory
 - LIKE is similar to CONTAINS but requires wildcards
 - Value Column is a freeform String entry here
- Linking or separating criteria:
 - Condition Column:
 - AND will be used when linking separate exclusion ideas together
 - Within a single exclusion idea either AND or OR will be used
 - Parentheses – can be used in pairs to group criteria into a single idea
- Up/Down Columns - execution is from top to bottom
 - Order of rows is important for multi-line filters

Advanced Filter Example

Show advanced filter criteria in the grid footer

| Active | (| Name | Not? | Operator | Value |) | Condition | Duplicate | Up | Down |
|--|---|-----------------------|-------------------------------------|----------|---------|---|-----------|-----------|-----------|------|
| <input type="checkbox"/> | ∨ | AGC | <input type="checkbox"/> | = | [ALL] | ∨ | AND | ∨ | Duplicate | Down |
| <input type="checkbox"/> | ∨ | ACA Flag | <input type="checkbox"/> | = | [ALL] | ∨ | AND | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | Res Type | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | Resource ID | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | Config ID | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | Contingency Type | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| Criteria 1: RT DOT not equal to 0 | | | | | | | | | | |
| <input type="checkbox"/> | ∨ | RT Prev DOT | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| <input checked="" type="checkbox"/> | (| RT DOT | <input checked="" type="checkbox"/> | = | 0 |) | OR | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | RT DOT Delta | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | DOT Start Time | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | DOT End Time | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | ED Fixed | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | ED Fixed Start Time | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | ED Fixed End Time | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | ED Fixed Energy Code | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | ED Max | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | ED Max Start Time | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | ED Max End Time | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | ED Max Energy Code | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| Criteria 2: Unit Commitment equals Startup | | | | | | | | | | |
| <input type="checkbox"/> | ∨ | ED Min End Time | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | ED Min Energy Code | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |
| <input checked="" type="checkbox"/> | (| Unit Commitment | <input type="checkbox"/> | = | Startup |) | AND | ∨ | Duplicate | Up |
| <input type="checkbox"/> | ∨ | Commitment Start Time | <input type="checkbox"/> | = | | ∨ | AND | ∨ | Duplicate | Up |

Show results where the RT DOT is NOT equal to 0, OR the Unit Commitment is a Startup

Group By Column

- Right click on the column
- Click on Group by this Column



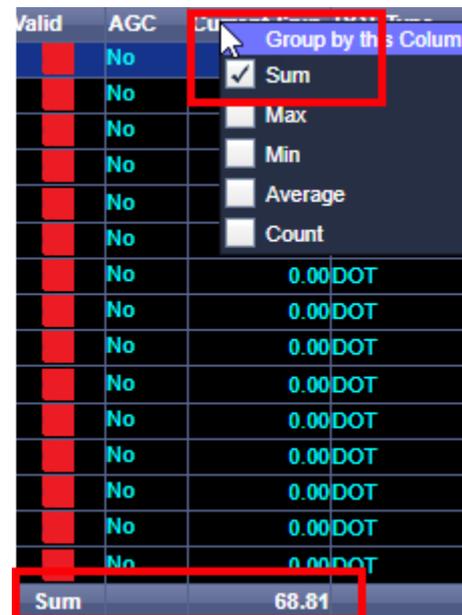
The screenshot shows a data table with a context menu open over the 'Resource ID' column. The table has columns: Valid, AGC, Res Type, Resource ID, DOT, SC, RT Prev, RT DOT, RT Delta, DOT Start Time, DOT End Time, ED Fixed, ED Max, ED Min, and Unit C.. The context menu has two options: 'Group by this Column' and 'Count'. The table data includes rows with 'No' AGC and 'GEN' Res Type, with values for DOT, RT, and ED.

| Valid | AGC | Res Type | Resource ID | DOT | SC | RT Prev | RT DOT | RT Delta | DOT Start Time | DOT End Time | ED Fixed | ED Max | ED Min | Unit C.. |
|-------|-----|----------|-------------|-----|----|---------|--------|----------|----------------|--------------|----------|--------|--------|----------|
| | No | GEN | | | | 0.00 | 0.00 | 0.00 | 10:17 | | | | | |
| | No | GEN | | DOT | | 0.00 | 0.00 | 0.00 | 10:17 | | | | | |
| | No | GEN | | DOT | | 0.00 | 0.00 | 0.00 | 10:17 | | | | | |
| | No | GEN | | DOT | | 0.00 | 0.00 | 0.00 | 10:17 | | | | | |
| | No | GEN | | DOT | | 0.00 | 0.00 | 0.00 | 10:17 | | | | | |
| | No | GEN | | DOT | | 0.61 | 0.61 | 0.00 | 10:17 | | | | | |

Change from current ADS: "Group By" option is supported, however the collapse is not able to be supported

Calculate – Sum, Min, Max, Average, Count

- Right click on a column, select box next to calculation
- Results view at bottom of the Resource Data Grid



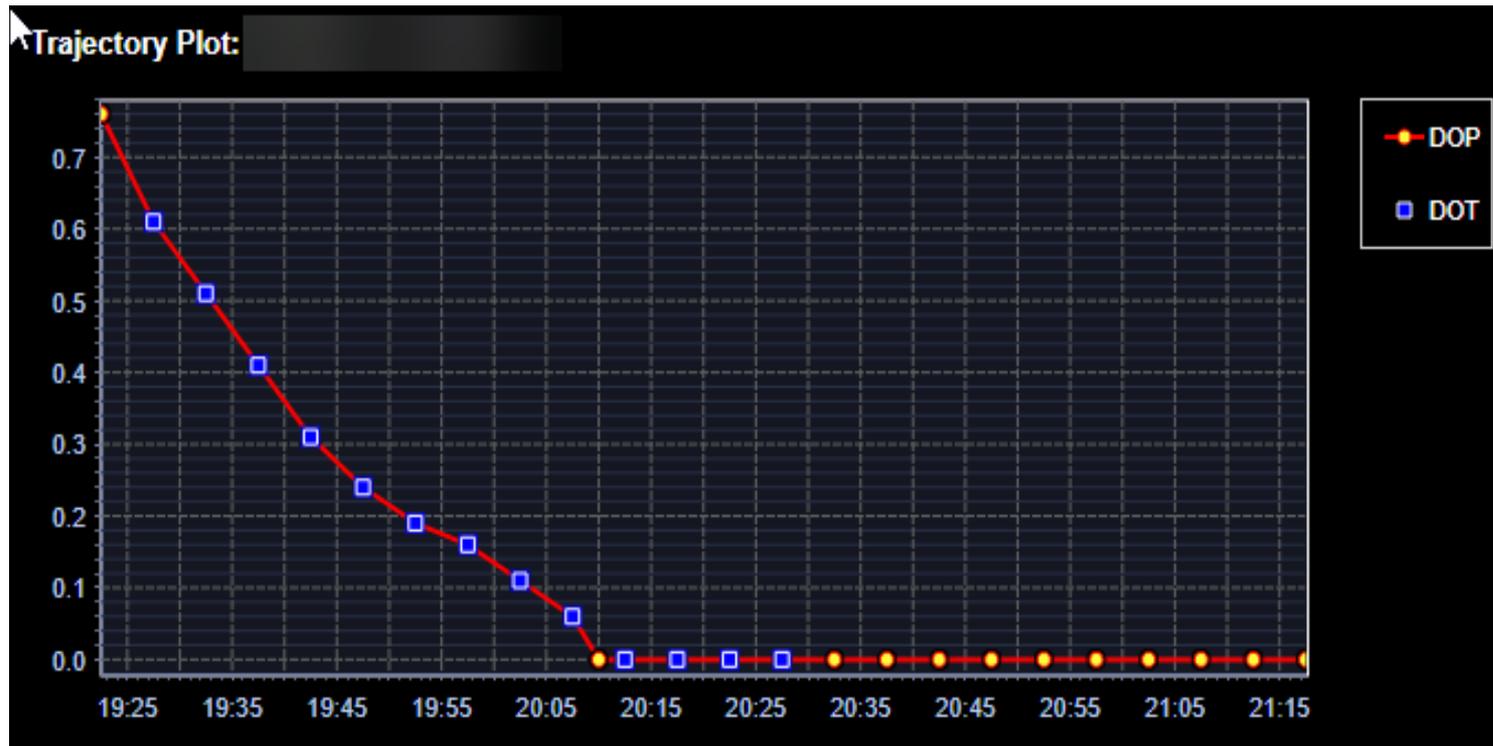
| Valid | AGC | CU |
|-------|-----|---------|
| No | No | |
| No | No | 0.00DOT |
| Sum | | 68.81 |

Trajectory Plot Panel

The screenshot displays the California ISO Automated Dispatch System interface. A central table lists resource data with columns for Valid, AGC, Resource ID, Config ID, DOT Type, SC ID, RT Prev DOT, RT DOT, RT DOT Delta, and DOT Time. A red box highlights the 'Trajectory Plot' area in the bottom left, which shows a graph with a y-axis from 0.0 to 1.0 and a legend for DOP (Dispatch Operating Point) and DOT (Dispatch Operating Target). A red arrow points from a text box labeled 'Trajectory Plot Panel' to this plot area. To the right, an 'Instructions - Resource ID:' table lists instruction details including Valid, Instruction Type, Accept DOT, Accept Status, Award MW, ED Energy Code, Instr MW, Min Accept, Self Sched MW, and Start Time.

- Trajectory Plot tracks a selected resource's Dispatch Operating Targets and Dispatch Operating Points (DOTs and DOPs)

Trajectory Plot Example



Change: In new ADS UI replacement, DOTs are shown as squares instead of triangles

Examples of viewing various Instruction Types

Instructions - Resource ID:

1 - 20 of 30 GO

| Valid | Instruction Type | Accept DOT | Accept Status | Award MW | ED Energy Code | Instr MW | Min Accept | Self Sched MW | Start Time | End Time | Prev Goto |
|-------|------------------|------------|---------------|----------|----------------|----------|------------|---------------|------------|----------|-----------|
| | Shutdown | | | | | 0.00 | | | 20:45 | 20:45 | |
| | NR | | | 0.00 | | 0.00 | | 0.00 | 20:45 | 21:00 | |
| | RD | | | 0.00 | | 0.00 | | 0.00 | 20:30 | 20:45 | |
| | RU | | | 0.00 | | 0.00 | | 0.00 | 20:30 | 20:45 | |
| | SR | | | 0.00 | | 0.00 | | 0.00 | 20:30 | 20:45 | |
| | DOT | | | | | | | | 20:27 | | |
| | DOT | | | | | | | | 20:22 | | |
| | DOT | | | | | | | | 20:17 | | |

Instructions - Resource ID: SENTNL_2_CTG6

1 - 20 of 25 GO

| Valid | Instruction Type | Accept DOT | Accept Status | Award MW | ED Energy Code | Instr MW | Min Accept | Self Sched MW | Start Time | End Time | Prev Goto | Responder | Fr Id |
|-------|------------------|------------|---------------|----------|----------------|----------|------------|---------------|------------|----------|-----------|-----------|-------|
| | NR | | | 0.00 | | | | | 21:00 | 21:15 | | | |
| | SR | | | 0.00 | | 0.00 | | 0.00 | 21:00 | 21:15 | | | |
| | NR | | | 0.00 | | | | | 20:45 | 21:00 | | | |
| | SR | | | 0.00 | | 0.00 | | 0.00 | 20:45 | 21:00 | | | |
| | DOT | 0.00 | | | | 0.00 | | | 20:42 | | 0.00 | | |
| | DOT | 0.00 | | | | 0.00 | | | 20:37 | | 0.00 | | |
| | DOT | 0.00 | | | | 0.00 | | | 20:32 | | 0.00 | | |

Review

- High level - what is coming in terms of timeline and changes for ADS UI Replacement Project
- Walked through the general layout and functionality of the new ADS User Interface
- Covered functionality to perform actions within the new ADS UI such as filtering, sorting, and profile configurations for alarms & messaging

General troubleshooting steps during Login

Checking with your UAA

- Not able to get in or get access denied error?
- Not seeing the correct SCID/resources?
- Certificate expired?

Calling the CAISO Service Desk

- Don't know who your UAA is?
- Disconnecting, unable to reconnect? System appears to be unavailable? Should also check for any MNS notifications

Clearing cache and restarting your browser

- Opening a new ADS session and receive notification that a session is already established?
- Not seeing a change or new feature after patch implementation & release note provided?

Check browser and settings

- Pop up display expected? Check pop up settings allow for this
- Display not showing correctly? Check browser

Next Steps

Continue attending Release User Group and Technical User Group for updates

Review Market Simulation Scenarios and provide feedback/structured scenario requests

~~Participate in the Application Preview in Stage to get familiar with the User Interface~~

Training (participate, deliver)

Application preview has been removed from schedule, however, market participants are encouraged to participate in Market Sim and Parallel Operations to become familiar with the UI and continue preparation (such as training, noting filters and configurations, and participating in market simulation scenarios).

Release User Group – ADS Replacement Snapshot

Fall 2020 – ADS Replacement

| Project Info | | Details/Date | |
|------------------------------|-------------------------|--|--------|
| Application Software Changes | | <ul style="list-style-type: none"> • Transition to web-based user interface to eliminate the need to install thick client • Transition ADS provisioning to the Access and Identity Management (AIM) application including Resource Level Access Controls (RACL) access • The query tool will provide 30 days of historical data • Various user interface enhancements adding content per Operation's request • ADS B2B services changes | |
| BPM Changes | | <ul style="list-style-type: none"> • Market Instruments • Market Operations | |
| Tariff Changes | | <ul style="list-style-type: none"> • N/A | |
| Milestone Type | Milestone Name | Dates | Status |
| Board Approval | | N/A | |
| External BRS | | Aug 06, 2018 | ✓ |
| ADS Update | | Aug 15, 2018 | ✓ |
| ADS Demonstration | | Apr 16, 2020 | ✓ |
| Preview | | Jul 07, 2020 | |
| Config Guides | | N/A | |
| Tech Spec | | May 22, 2020 | ✓ |
| Tariff | | N/A | |
| BPMs | | Jul 20, 2020 | |
| External Training | | Jun 01, 2020 | ✓ |
| | | Jun 11, 2020 | |
| | | Jul 16, 2020 | |
| Market Sim | | Jul 27, 2020 - Sep 04, 2020 | |
| Production Activation | ADS Replacement | Oct 01, 2020 | |
| Production | ADS Parallel Operations | TBD | |
| Decommission | Old ADS Decommission | TBD | |

Refer to the Release User Group and ADS CPG for the latest schedule

ADS UI Replacement Project Part 2 Training

July 16, 2020

- Functional changes
 - Display Fifteen Minute Market Energy Schedule
 - Unannounced Ancillary Service tests and Unit Comment during Real Time Contingency Dispatches (CAISO BA)
 - Display 5 & 15 Minute Flex Ramp Awards (Flex Ramp Up/Flex Ramp Down)
 - Changes to instruction display to include the following
 - Previous Supp: similar to RT Prev DOT, will show last binding Supp.
 - RT Supp Delta: similar to RT DOT Delta, will show difference between RT Supp. Energy and Previous Supp

ADS – DOT Tariff Clarification

July 16, 2020

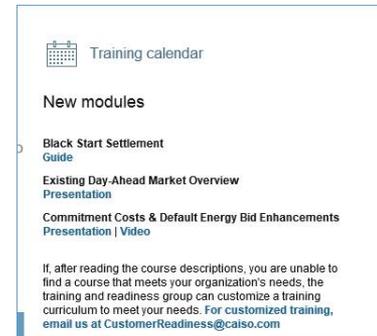
- Ability to see Operating Instructions at the resource level
 - Applies to Eligible Intermittent Resources
 - “Do not exceed DOT” instruction that includes: Reason, Start and End time, FOLLOW_DOT flag
 - For more information please refer to:
 - BRS:
<http://www.caiso.com/Documents/BusinessRequirementSpecificationv11Clean-DispatchOperatingTargetTariffClarification.pdf>
 - Stakeholder Initiative Training:
<http://www.caiso.com/InitiativeDocuments/Presentation-DispatchOperatingTargetTariffClarificationTraining.pdf>

ADS – Intertie Deviation Settlement (IDS) project Training ~~July 20, 2020~~ September 29, 2020

- Implement a new Under/Over Delivery Charge for intertie deviations from Market Schedule and After-The-Fact (ATF) E-Tag, to replace Decline charge in Settlements
- In ADS, ability to view the HASP schedule, the SC accepted value, and the difference between the two (delta MW)
- For more information, please refer to:
 - BRS:
<http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=C63E5D69-FA4F-467C-828E-EF21BD9C4DF9>

Online References

- ADS Replacement Training Part 1
 - caiso.com → Participate → [Learning Center](#)
 - ~~Video can take 1-2 weeks~~ Posted
- Release Planning
 - [Release Planning Home Page](#)
- Stakeholder Meetings
 - [Release User Group](#) (Ongoing)
 - [ADS UI Replacement Provisioning Access Review](#) (June 1, 2020)
 - [ADS Replacement Demo](#) (April 16, 2020)
 - [Technical User Group](#) (May 26, 2020)
- API information/Technical Specifications
 - [Developer.caiso.com](#) >> Apps >> ADS
- BPM – Market Operations ([caiso.com](#) → Rules → Business Practice Manuals)
- Current ADS Application
 - Current ADS Delphi client application training (caiso.com → Participate → Learning Center)
 - Current ADS Delphi client application overview (caiso.com → Participate → Application Access → ADS → Technical Documentation)



Training calendar

New modules

- Black Start Settlement Guide
- Existing Day-Ahead Market Overview Presentation
- Commitment Costs & Default Energy Bid Enhancements Presentation | Video

If, after reading the course descriptions, you are unable to find a course that meets your organization's needs, the training and readiness group can customize a training curriculum to meet your needs. For customized training, email us at CustomerReadiness@caiso.com

Questions?