



Energy Data Acquisition Systems October 2025

Welcome

Our presentation will begin shortly.

Today's Presenter: Jakob Helsher – EDAS Associate Specialist

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Rev. 9/14/23

Housekeeping



Keep yourself muted to minimize background noise



Unmute to ask verbal questions or write questions in the chat pod



Raise your hand using WebEx interactivity tools

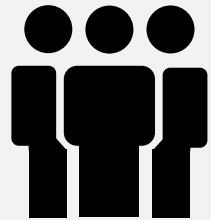
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Objectives

EDAS Overview
EDAS Documentation Requirements
Telemetry Validation Requirements
Telemetry Non-Compliance/Exemptions
Discussion/Wrap-Up

EDAS Overview



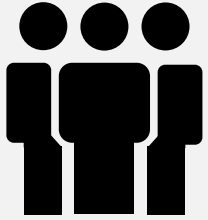
Energy Data Acquisition Specialist Team (**EDAS**) is responsible for engineering requirements and standards for:

- Revenue Metering via:
 - Approved CAISO Meters (CAISO Inspected and Certified)
 - CAISO Meter data processing
 - Settlement Quality meter data (SQMD) plans
- Direct Telemetry via:
 - Distributed Network Protocol 3 (DNP3) devices
- Generation Desk Support Center (GDSC)
- Ancillary Services (AS) Testing

EDAS Overview – The EDAS Team

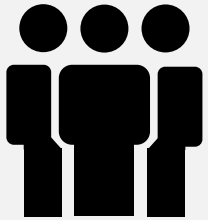
- Full-Time
 - Priyanka Namburi
 - David Acevedo
 - Vitaliy Daniliuk
 - Christian Ramos
 - Stacia Lee
 - Timothy Sysa
 - Jakob Helsher
- Contractors
 - Jeffrey McDonald
 - Joshua Caldeira
 - Mohammed Dhali
 - Ryan Aboueljoud

EDAS Overview: What does EDAS do? (Pre-COD)



- Document Review
 - Single Line Diagram (SLD)
 - Three-Line Diagram (3LD)
 - Communication Block Diagram (CommBlock)
 - Remote Intelligent Gateway (RIG) Details Form
 - Meter Configuration Worksheet (MeterConfig)
 - 24Hour Contact Form
 - Certification Practice Statement for Basic Assurance Certification Authority (CPS) Agreement
 - Energy Communications Network (ECN) Agreement
 - Meter and Site Verification Sheet (MSVS)
 - Point of Receipt (POR) Calculation
 - Meter Exemption (BESS Idle, Dynamic Losses)
 - Metering Overview
- DNP3 Point Building
- Point to Point Testing
- Trial Operations (SYNC) Reviews
 - EDAS SYNC
 - Operational Readiness SYNC
- Commercial Operation Date (COD) Reviews
 - EDAS COD (72-hour Test)
 - Certificate of Compliance (COC)
 - Operational Readiness COD
- WREGIS
 - QRE Requests

EDAS Overview: What does EDAS do? (Post-COD)



- AS Certification Testing
 - Regulation
 - Spin/Non-spin
 - Black Start
- Meter Data
 - Processing
 - Corrections
 - Meter Exemptions
- Telemetry Non-Compliance
 - RIG Notifications & Issue Tracking
 - Weekly SC Notifications
 - Telemetry Exemptions
- WREGIS
 - Uploads
 - Corrections
- Generation Desk Support Center (GDSC)
 - Manual MW Updates
 - Unannounced Ancillary Services (AS) Testing
 - Automatic Generation Control (AGC) telemetry monitoring
- Fieldwork/RIMS Projects
 - P2P Testing (New Points/Devices)
 - RIG Maintenance/Replacements
 - Meter Maintenance/Replacements
 - Communication Maintenance
 - RIG Certificate Renewal
-and more!

EDAS Overview: What does EDAS do? 2024 Metrics

2024 Fieldwork Appointments

- P2P Tests: **224**
- Meter Maintenance: **1045**
- Meter Replacement: **103**
- RIG Replacements: **15**
- Communication Maintenance: **74**
- RIG Maintenance: **80**
- RIG Certificate Renewal: **639**

GDSC

- Talk Time: **10,615 minutes**
- Unannounced AS Tests: **52**

Telemetry Issue Tracking

- Tickets Created: **2532**
- Exemptions: **1610**

AS Certification Tests: **322**

Meter Exemptions: **392**

EDAS Documentation Requirements

Bucket 1

- SLD/3LD
 - CTs/PTs Correctly Labelled
 - [Checklist](#)
- CommBlock
 - Clearly identify source points
 - Submit updates for any changes [Checklist](#)
- RIG Details Form
 - [Checklist](#)
- Metering Scheme Overview
 - Required for any complex metering
 - BESS IDLE – detail loss of comm to BESS IDLE source device

EDAS Documentation Requirements

Bucket 2

- Meter Configuration Worksheet
 - Correct channels
 - Port numbers
 - Public IP – ISO firewall
 - Multipliers
 - Load/Standby provider

Bucket 3

- 24/7 Contact Form
- CPS Agreement
- External Network Form (Previously ECN Agreement)

Bucket 5

- Meter and Site Verification Sheet (MSVS)
 - Seal numbers
- Point of Receipt (POR) Calculation (If applicable)
- Meter Exemption
 - Required for external inputs to CAISO Meter (e.g. loss schemes, BESS IDLE)

Question 1



Raise your hand if you've been part of a P2P test that didn't go exactly as planned.

Telemetry Validation Requirements – Point to Point Testing

- Updated P2P Procedure
- Important topics
 - Pretesting/Comm Check
 - Source Devices
 - Test Kit Requirements
 - BESS IDLE
 - AGC Setpoint Testing
 - Comm Pulls

Question 2



Raise your hand if you have passed the NRI 72-hour test on the first try.

Telemetry Validation Requirements – 72-Hour Test

New 72-hour Test Procedure:

Important topics

- Performance Validation in real-world conditions
- DNP3 Quality & Operational Data and logic
- Builds Operator trust
- EDAS may request additional runtime
- 10 Business days processing time

Telemetry Non-Compliance/Exemptions - Critical Points

- Updated Critical Points:
 - **Generation Points – All resources**
 - UPMW - Unit Point of Delivery MW
 - UGMW – Unit Gross MW
 - UNMW – Unit Net MW
 - UAMW – Unit Auxiliary MW
 - UCON – Unit/Resource Connect
 - **Meteorological Points - Solar and Wind Resources**
 - BPTMP - Back Panel Temperature
 - PAIRD – Irradiance
 - SPD - Wind Speed
 - DIR - Wind Direction
- **Battery Specific Points**
 - SOC – Instantaneous State of Charge in MWh
 - MXENERGY – Maximum Continuous Energy Limit in MWh
- **Ancillary Service Specific Points – for units providing Regulation**
 - UOHL - Unit Operating High Limit
 - UOLL - Unit Operating Lower Limit
 - UAGC - Unit Automatic Generation Control
- **Co-Located, and Hybrid, and VERs Providing AS Resource Specific Points**
 - HSL – High Sustainability Limit

Telemetry Non-Compliance/Exemptions – Exemption Timelines

- Initial exemptions are granted in good faith
- Required Information for extensions
 - Detailed description of the steps taken to resolve it along with the timeline
 - Expected date of resolution of the issue
 - Purchase order of the parts
 - Signed agreements of contractors
 - Service tickets with communication service providers
 - Extended generation outages evaluated on case-by-case basis
- Exemptions beyond 90 days will require a phone call discussion with Resource Owner, Scheduling Coordinator and any involved technicians

To Recap:

- The EDAS Team
- EDAS Documents
- NRI 72-hour Test Procedure
- P2P Test Procedure
- Telemetry Non-Compliance Updates
- Pre-COD ADS Testing

Helpful Links

Certification of Metering Facilities

<http://www.caiso.com/Documents/5710.pdf>

Meter Data Acquisition and Processing Procedure

<http://www.caiso.com/Documents/5740.pdf>

Appointment Scheduling for EDAS Fieldwork

<http://www.caiso.com/fieldworksupport/Pages/default.aspx>

Direct Telemetry BPM

<https://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Direct%20Telemetry>



Helpful Links (Cont.)

EDAS request tool

<http://www.caiso.com/fieldworksupport/Pages/default.aspx>

Fieldwork Guide

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

RIG Acceptance Test (RAT) Procedures

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

RIG/DPG Validation Procedure

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

Metering Exemptions from Compliance

<http://www.caiso.com/Documents/5730.pdf>



Helpful Links (Cont.)

BPM for Metering

<http://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Metering>

SQMD Template

<http://www.caiso.com/Documents/SQMDPlanTemplate.docx>

SQMD Template Tutorial

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

Operating Procedure 5750 – Submission and Approval Process

<http://www.caiso.com/Documents/5750.pdf>

EDAS Document Checklists

<http://www.caiso.com/Documents/Checklist-CommunicationBlockDrawing.pdf>

<http://www.caiso.com/Documents/Checklist-MeteringAndRIGDrawingRequirements.pdf>



Discussion

- If you could give advice to a new project team going through EDAS requirements for the first time, what would you tell them?
- Looking ahead, what improvements would you like to see in telemetry or metering standards?
- Can anyone share a time when 72-hour test went flawlessly and what made it successful?



Wrap Up

Summary, Q&A



Thank you for your participation!

For more detailed information on anything presented, please visit our website at: www.caiso.com or send an email to: CustomerReadiness@caiso.com.

For resource specific questions or concerns, please submit a CIDI ticket.