Welcome to the OpenADR Alliance

Please help yourselves to lunch as we get ready to begin today’s sessions.
Housekeeping

Network Name: meetingroom
Password: None Needed

Follow us! @OpenADRAlliance
Engage: #OpenADRmtg
Housekeeping

Network Name: membermeeting
Password: None Needed

Parking Validation Directions:

1. Scan Ticket
2. Wait for 3 beeps
3. Take scanned ticket to Pay Station to Pay for Parking
4. Take Ticket to the Gate to Exit (credit card only)
Wednesday’s Agenda Recap

- 12:00 –1:00 Lunch
- 1:00 – 1:45 OpenADR Update
- 1:45 - 2:00 Making Sense of Industry Events
- 2:00 – 3:00 Supply-Side vs. Demand-Side Perspectives
- 3:00 - 3:30 Break
- 3:30 – 4:00 Securing OpenADR Implementations
- 4:00 – 5:00 OpenADR Case Study
- 6:00 – 8:00 *OpenADR Networking Reception*
OpenADR Networking Reception

June 18, 2014  Maggiano’s Little Italy
Santana Row  3055 Olin Ave.,
Suite 1000  San Jose,
California 95128
6PM – 8PM
*Appetizers & cocktails will be served

Carpooling encouraged/Taxis will be out front around 5:40pm
OpenADR Alliance Introduction and Update

June 18, 2014

San Jose, CA
The mission of the OpenADR Alliance is to foster global development, adoption, and compliance of Open Automated Demand Response (OpenADR) standards through collaboration, education, testing, and certification.
Board of Directors

- Albert Chiu, Secretary/Treasurer
- Rish Ghatikar, Vice Chairman
- Carl Besaw, Chairman
- Ed Koch, Director
- Venki Ramachandran, Director
- Jeff McAulay, Director
OpenADR Team

Barry Haaser
Managing Director

Rolf Bienert
Technical Director

Shannon Mayette
Marketing Director

Sharon Calcagno
Administrative Services Coordinator

Rachel Dawn Davis
Member Services Director
OpenADR Deployment Map

OpenADR Deployments

This map illustrates the locations of the OpenADR Deployments. Each marker indicates a specific location. Click on the marker for more information.

Source: http://drrc.lbl.gov/openadr/map
OpenADR Deployment Map

Completed

- Bonneville Power and Light
- China Electric Power Research Institute

In Progress

- Ireland
- Martha’s Vineyard
- NYSERDA
- PJM Interconnect (MD)
- PJM Interconnect (NJ)
- PJM Interconnect (PA)
- Sacramento Municipal Utility District
- Scottish and Southern Energy
- Seattle City Light
- Southern California Edison
- World Energy

Under Consideration

- Australia
- France
- India
- Kauai Island Utility Cooperative
- South Korea - Jejong Island
- Spain

Source: http://drrc.lbl.gov/openadr/map
Affiliate Organizations

- Support OpenADR Alliance goals and purposes as established by the OpenADR Alliance Board of Directors
- Conform OpenADR Bylaws, policies, and procedures
- Established as non-profit organization (when possible)
- Operates in a specific or region
- No legal relationship (subsidiary or division)
- Each member of Affiliate is also a member of OpenADR Alliance
- Interest in Japan, Korea and Taiwan
OpenADR Member Categories

- **Sponsor** membership is extended to industry stakeholders that strongly support the vision, mission, and activities of the OpenADR Alliance who wish to serve on the Board of Directors.

- **Contributor** membership is open to any vendor organization offering hardware, software or services.

- **Adopter** membership is open to organizations such as consumer and government organizations, research agencies, and regulatory bodies not otherwise classified as a vendor community or manufacturer of products, systems, or components.
Member Growth

- Total Members
- Individual
- Adopter
- Contributor
- Sponsor
OpenADR Members by Country

- USA, 79
- Japan, 12
- Korea, 8
- Netherlands, 2
- Norway, 1
- Taiwan, 3
- France, 3
- Hong Kong, 1
- Canada, 5
Sponsor Members

- AutoGrid
- EnerNOC
- IPKeys
- Berkeley Lab
- Honeywell
- PG&E
- Southern California Edison
- Siemens
- openADR Alliance
Contributor Members Here Today

Adopter Members

AEP AMERICAN ELECTRIC POWER
AUSTIN ENERGY
California ISO
Shaping a Renewed Future
Duke Energy
EDF R&D
Hawaiian Electric Company

ITRI Industrial Technology Research Institute

LAE 財団法人 エネルギー総合工学研究所

III 財団法人 資訊工業策進會
INSTITUTE FOR INFORMATION INDUSTRY

KOREA ELECTROTECHNOLOGY RESEARCH INSTITUTE

JOULE ASSETS
NV Energy
PECI openADR ALLIANCE
OpenADR 2014/15 Goals

- Increase number of projects/programs using OpenADR 2.0
- Develop a base line and methodology to measure OpenADR adoption
- Facilitate global adoption of the OpenADR standard
- Expand membership worldwide
Goals & Objectives

- Increase number of projects/programs using OpenADR 2.0.
- Make OADR simpler and easier to deploy by publishing draft implementation guidelines for developers and users (utilities and system operators).
- Organize webinars targeting utilities and system operators on OpenADR program development and implementation.
- Create RFP & RFI language to help utilities write OpenADR related specifications by September 1, 2014.

Seeking volunteers to support these initiatives.

Contact Rachel Davis – rachel@openadr.org
Goals & Objectives

- Develop a base line and methodology to measure OpenADR adoption
- Create a project database and dashboard containing detailed information on existing programs; changes to existing programs; and any new programs.
- Implement a methodology to track new and modified regulations impacting OpenADR adoption.
- Create a searchable database of certified products to allow people to locate products by type, region, application and company.
Goals & Objectives

- Facilitate global adoption of the OpenADR standard.
  - Drive IEC committees with an interest in OpenADR to complete CIM adapter interface standard.
  - Increase industry education and outreach through active participation at 5 conferences, 4 webinars and 1 trade show.
  - Work with QualityLogic to implement a virtual test server supporting various DR programs to help utilities, system operators and vendors with OpenADR programs and products.
Goals & Objectives

- Expand membership worldwide.
- Support the development of four OpenADR affiliate organizations.
- Recruit 20 vendors in building and industrial automation into the alliance.
- Form European interest group to address European market.
Marketing Update
OpenADR Press Releases: Strong Momentum

- May 2014 – Availability of Over 50 Certified Products
- March 2014 - New Sponsor Member IPKeys, Certified Products, Global Adoption and Strong Member Presence at DistribuTECH
- Feb. 2014-OpenADR™ Alliance and Wi-SUN® Alliance Form Strategic Relationship to Advance Energy Efficiency
Media Coverage

- Each release generates approx 300 clicks from journalists, analysts and bloggers.
Media & Analyst Relations

- 13 Press/Analyst meetings to date

- Contributed articles on Demand Response by OpenADR Alliance for June issues: POWER Engineering, PowerGrid International; FierceEnergy (ongoing opportunity for utilities to contribute)

- “Latest Auto DR Platform Empowers Customers” (Co-authored by IPKeys and LBNL) – included in summer issue of Electric Energy Magazine

- Article focused on importance of certification the works (co-authors OpenADR/ QualityLogic) for Energy Central

- OpenADR 2.0 whitepaper in draft
Members in the News

- June 2014 – Universal Devices Integrates Real Time Weather with OpenADR and Home Automation Platform
- May 2014 - Powerit Solutions Receives OpenADR Alliance 2.0b Profile Certification
- May 2014- IPKeys, PJM, Walmart, Berkeley Lab and Schneider Electric Demonstrate Energy Management Advances with OpenADR 2.0b Market Pilots
- April 2014 - ecobee Becomes First Thermostat Company to Receive OpenADR 2.0b Certification
- March 2014 - Honeywell And CPS Energy Expand Efforts To Help Make The Electrical Grid Smarter, More Reliable
- January 2014 - EPRI Releases Open Source OpenADR 2.0b VTN and VEN Code; Greenlots Is First EV Charging Provider to Earn OpenADR Certification; Enbala Becomes Member
DistribuTECH 2014 Recap

- Created awareness of OpenADR – Gathered over 100 leads, Ad in PowerGrid International, Email blast prior to show, 7 press/analyst meetings, OpenADR focus in many track sessions

- Strong sense of community throughout show floor and in 10x20 booth: Highlighted 23 members exhibiting on the show floor, membership cards distributed, relationship building

- Created a buzz around OpenADR at show through Social Media, post show coverage
Increasing presence in 2015 with 20x20 booth #3811 to involve members through theater and exhibit pavilion.

OpenADR members can promote their products and services through kiosks, theater presentations and online media kit.

Two panel discussion submitted:
- Implementing Automated DR Programs Using an Open Standard
- Using Legislation to Drive Demand Response Adoption
DistribuTECH 2015 Sponsorships

- **Member kiosks:**
  - $4,000 for non-exhibiting members  ($1,500 PennWell fee)
  - $2,500 for exhibiting members.

  Cost for Kiosk includes: *Booth logistics *Copy of all leads captured at show *15 minute company presentation in theater *Company listed in show guide as exhibitor *Mention in pre-show email blast through PennWell *Show guide ad and all Alliance pre and post show communications.

- **Theater presentation:** $200

- **Online Media Kit:** $100

*Questions contact Shannon Mayette at shannon@openadr.org
Promotion Vehicles for Members

- Monthly newsletter: Our newsletter is sent to over 3,000 contacts
- Member section on the OpenADR website to highlight news stories and press releases
- Social Media Outlets: OpenADR can post your news to our LinkedIn Groups, FaceBook, Twitter feed
- OpenADR executives can provide a quote for your upcoming press releases
- Let us help write and promote your case studies – *template available*
- Bi-weekly Marketing Working Group calls
OpenADR 2.0 – Technical Update

Rolf Bienert
Technical Director OpenADR Alliance
Key Milestones

- **Q4 - 2013**
  - First OpenADR 2.0b certified products
  - Japan test events
  - Discussions with Korea Smart Grid Association
  - Over 2500 (3821 as of today!) downloads of OpenADR specs

- **Q1/2 – 2014**
  - Begin work on Demand Response Program Implementation Guidelines
  - Passed 40 Certified Products (now 52 devices)
  - Successful trial in Japan
  - Korean Chapter in discussions
  - IEC PAS published by PC 118 – ICE PAS 62746-10-1
  - EPRI Open Source Software stack released
  - Multiple new projects in Europe and US
Profile Working Group

- Open to All Members
- Reviews all issues concerning the profile specification, PICS, and test plan
- Creates new specifications and updates
- Tracks issues with specification
- Meets **Thursday’s at 3PM** US Pacific time, shared time slot with Implementation Committee
- Good place to ask questions about schema and conformance statements
Security Working Group

- Open to All Members
- Reviews all issues concerning the profile specification security aspects
- Meets when needed at 9am US Pacific time on Wednesdays
Implementation Working Group

- Open to all members
- Newly formed working group
- Shares 3PM US Pacific time slot on Thursdays
- Is tasked to create the Implementation Guidelines:
  - Implementation Architectures
  - Define roles of VTNs and VENs in deployments
  - Defines use cases for DR programs
  - Maps OpenADR 2.0 to DR programs
## Feature sets of OpenADR Profiles

<table>
<thead>
<tr>
<th>Feature Set</th>
<th>1.0</th>
<th>2.0a</th>
<th>2.0b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple Event Service (EiEvent – simple levels only)</td>
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<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Full Event Service (EiEvent)</td>
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<tr>
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<tr>
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<td>✔️</td>
</tr>
<tr>
<td>Opt in/out</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Opt in/out scheduling service (EiOpt)</td>
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<td>✔️</td>
</tr>
<tr>
<td>Registration Service (EiRegisterParty)</td>
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<td>-</td>
<td>✔️</td>
</tr>
<tr>
<td>2-Peer Security with digital certificates</td>
<td>-</td>
<td>✔️</td>
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</tr>
</tbody>
</table>
The OpenADR Alliance has been active in several IEC working groups

- **IEC PC118** recently published the OpenADR 2.0b Profile Specification as IEC/PAS 62746-10-1
- IEC PC118 and **TC57 WG 21** are working on adapting OpenADR into the CIM framework
- **IEC TC65 WG17** (Industrial Automation) is leaning on OpenADR 2.0 functionality
OpenADR in the IEC

Adapted structure of the standard

- 62746 Ed.1: Systems Interface between Customer Energy Management System and the Power Management System
  - 62746-1 Overview (include Glossary)
  - TR 62746-2 Use Cases and Requirements
  - 62746-3 Architecture
  - 62746-4 Data Model
  - 62746-5 Service interface to customer system
  - 62746-10 Mapping
  - 62746-10-1 PAS OpenADR
  - 62746-10-2 CIM compliant Mapping to XMPP
    - Message content and exchange patterns
    - Message transport and services
    - Security
    - Availability, redundancy
    - Placeholder <Engineering>
      (maintenance, parameterization, configuration, commissioning, registration)
    - Profiles, Interoperability
    - Placeholder <Conformance Testing>
Korea is ready to form Korean OpenADR Alliance Affiliate (OpenADR Korea)

Organized by Korean Smart Grid Association

Korean companies can join locally
- Membership fees are split between Affiliate and OADR Alliance

Affiliate will have local activities and own board of directors

Technical and Marketing activities to be discussed

Certification testing will become available locally
Japanese Market

- Proposal to form OpenADR Japan on the table
- Several demo projects on the way organized by TEPCO, METI, Waseda University
Japanese Market

Proposal to form OpenADR Japan on the table

Several demo projects on the way organized by TEPCO, METI, Waseda University
Japanese Market

- Proposal to form OpenADR Japan on the table
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2014/15 OpenADR Work Items

- Vendor Guide
  - Service and Payload Definitions
  - Glossary of Schema Payload Elements
  - Glossary of Enumerated Values
  - OpenADR A and B Profile Differences
  - Frequently Asked Questions
  - A Profile Sample Payloads
  - B Profile Sample Payloads
Currently OpenADR 2.0 defines the communications interface
- No specific DR Program Definitions & Restrictions
- Very flexible
- Many Implementers (VTN & VEN) seek more Guidance and Harmonization

Implementation Working Group started work to expand the domain of the protocol
- Define common DR program goals and objectives
- Reduce the complexity by defining common OpenADR-based DR programs
- Create a decision tree for implementers to select the relevant program to support
- Create testable DR program templates
OpenADR DR Parameters

- Grid Reliability & Safety (Primary Objective)
  - Frequency and Voltage Stability
  - Resource Adequacy
  - Peak Capacity
  - Ramping
  - Contingency
    - Peak Shaving
    - Load Following
    - Frequency Regulation
  - Reserves
  - Asset Protection
    - Transactive (Incentivize)
    - System Load Requests
    - Indirect Automation
    - Control Physical Devices
      - Different Customer segments (C&I, ...)

Example of Decision Tree

Secondary Objectives

Load Profile Objectives

Interaction Pattern
OpenADR DR Parameters

- Additional Primary & Secondary Objectives
  - Procurement of Energy
    - Spot Market Prices
    - Price Arbitrage
  - Asset Management
    - Damage Prevention
    - Maintenance Reduction
    - Lifetime Extension
  - Capacity Management
    - Economic Benefits
    - Emergency Management
  - Environmental
    - Negawatt
    - Clean Energy
The new OpenADR Program Guide will include the following sections:
- Definition of Actors
- Processes
- DR Decision tree
- Program Attributes
- Program Templates
- Deployment Scenarios
- RFI Templates
Current Work Items

- Collect existing and planned DR Program information
  - All input is welcome!

- Review existing DR Program description

- Filter program parameters to establish common criteria

- Define OpenADR 2.0 DR Profiles (not a new Profile specification)

- Vendor Guide document
Thank You!

Q&A

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www.openadr.org
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Making sense of Industry Events

Anto Budiardjo
CEO
PointView, Inc.

https://www.pointview.com/
Supply Side v. Demand Side:

An Experts’ Perspective

Mary Anne Piette
Director, Demand Response Research Ctr
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Securing OpenADR Implementations:

Oscar Marcia
President, NetworkFX™
Securing OpenADR Implementations:

Fred Yoo
Senior Program Manager
Integrated Demand Response
OpenADR Networking Reception

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Santana Row 3055 Olin Ave.,
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