Welcome!

□ Thank you for joining today's webinar:
OpenADR 2.0a & 2.0b Profiles

□ If you have a question please use the question box located on the right side of your screen.

□ Questions for our speaker will be addressed at the end of the presentation.

□ This webinar will be recorded for future playback.

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Today's Speakers

- Rolf Bienert, Technical Director, OpenADR Alliance, Rolf oversees the technical developments and the certification program of the Alliance.


- George Bell, Technical Coordinator, Honeywell Smart Grid Solutions
  - Technical Coordinator for Honeywell's DOE grant program
  - Project Manager & Developer of C&I projects
  - Deployment Lead and Application Engineer
  - Designer of Honeywell Version 1.0 ADR Gateway
  - Involved in ADR Projects in California, Arizona and other location

Agenda

- How it works

- OpenADR 2.0a & 2.0b Profile Specifications

- Interoperability concept

- OpenADR Profiles in the DR Program Guide
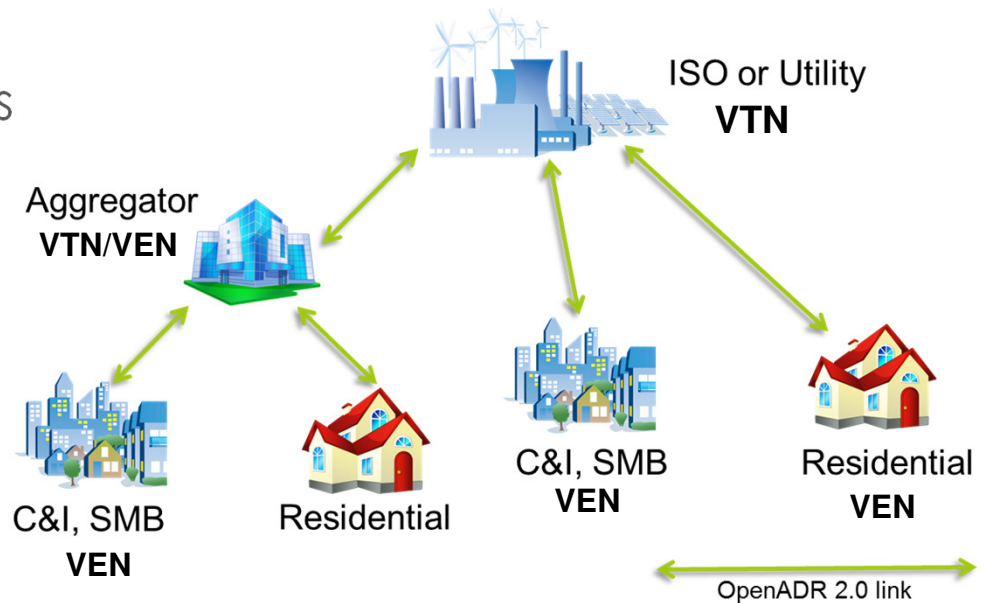
- Hear from Honeywell

How it works

Open Automated Demand Response (OpenADR) provides a non-proprietary, open, standardized DR interface that allows electricity providers to communicate DR signals directly to existing customers using a common language and existing communications such as the Internet.
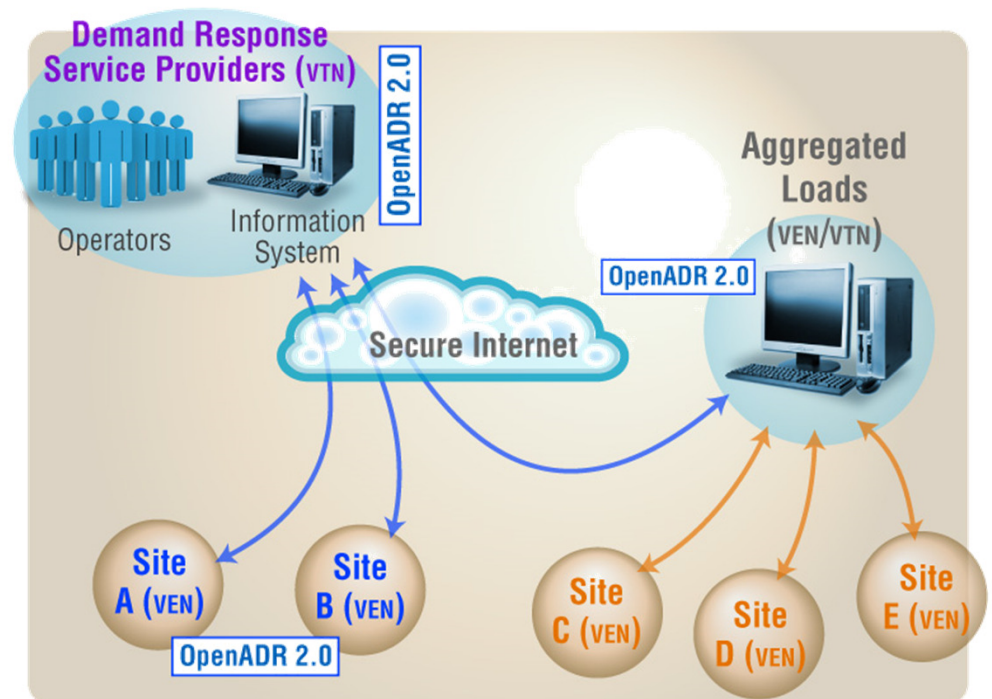
How it works

□ **OpenADR is a message exchange protocol with two primary actors:**

- □ Virtual Top Nodes (VTN)
    - □ Manages Resources
    - □ Creates/Transmit events
    - □ Request Reports
- □ Virtual End Nodes (VEN)
    - □ Receive events and respond to them
    - □ Generate reports
    - □ Control demand side resources

ISO or Utility
VTN

Aggregator
VTN/VEN

C&I, SMB
VEN

Residential

C&I, SMB
VEN

Residential
VEN

OpenADR 2.0 link

How it works

- Web Service like logical request-response services
    - Event Service – Send and Acknowledge DR Events
    - Opt Service – Define temporary availability schedules
    - Report Service – Request and deliver reports
    - RegisterParty Service – VEN Registration, device information exchange

- XML Payloads

- Communication through broadband or dedicated internet connection

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OpenADR 2.0a & 2.0b Profile Specifications

- □ OpenADR 2.0a Profile Specification
  - □ First OpenADR profile
  - □ Created with resource constrained devices in mind
  - □ Limitations in services and signals

- □ OpenADR 2.0b Profile Specification
  - □ Full set of features
  - □ No limitations in Event service
  - □ Report, Opt, Registration services added

- □ VTN – Must include support for both profiles

- □ VEN – Can pick and choose

OpenADR 2.0a & 2.0b Profile Specifications

Detailed differences

- EiEvent services in the only service in 2.0a

- EiEvent is restricted in the following ways –
  - Only one signal per event, must be the signal SIMPLE
  - Limited targeting – venID, groupID, resourceID, partyID
  - Baselines are not supported
  - modificationDateTime and modificationReason are not supported
  - Different end point URL for HTTP

- NOTE: 2.0b is not an "extended" 2.0a

Interoperability

VTN
ISO/Utility/Operator

- VTN responsible for interoperability
- Must support 2.0a, 2.0b, ECC/RSA pull, push, etc. (in some cases also OpenADR 1.0)

- Compare to cell phone base stations

VEN

- VEN can choose profile
- Security certificates options
- Transport protocol options

C&I, SMB, Residential

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Interoperability

- In other words
  - 2.0b profile **VTN**s must be able to interoperate with both 2.0a and 2.0b VENs
  - 2.0b **VEN**s may optionally support the A profile, but are not required to

- No new VTNs can certify for 2.0a only

- VENs can continue to choose profiles

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Interoperability

Disclaimers

- OpenADR Alliance has no influence on implementer decisions

- Utilities or DR program operators may choose to use 2.0a or 2.0b only (or opt to not upgrade over time)

- Alliance urges any DR Program operator to upgrade their VTNs

OpenADR Profiles in the DR Program Guide

- ☐ OpenADR DR Program Guide outlines a number of standard DR Programs ([Download here](#))

- ☐ DR Program Guide includes statements on profile usage in the programs

- ☐ Rules of thump –
  - ☐ 2.0a can be used for most programs that include pre-defined values (4 values)
  - ☐ If values are not pre-defines, 2.0b must be used
  - ☐ If other signal types are needed, 2.0b is needed
  - ☐ If telemetry feedback is wanted, 2.0b is needed (Report)
  - ☐ XMPP for fast transactions

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Honeywell Implementations

George Bell

Honeywell Implementations

Honeywell Inc. background

- Across North America & Global
  - *Europe, Asia, Pacific & Latin America*
- Residential Commercial and Industrial Programs
- Makers of VTN/ VEN products
- In ADR since the inception

Honeywell Implementations

■ **2.0 Deployment**

Multiple deployments
Both C&I and Residential programs
    Wide variety of customer drivers
Backward compatibility important (CLIR, V1.x)
End-use customer communications very important
RTU replacements for BIP
Telemetry underutilized (Utilities & End Users)
Backend Reporting
Notifications (Events, Client Status)

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Honeywell Implementations

Path forward?

- Interoperability is paramount
- Telemetry is crucial
- Reliability is a must
- New Market Growth
- New APPLICATION Growth

Q&A

- Recording and slides from this presentation will be available at www.openadr.org.

- The OpenADR Webinar Series will continue throughout 2015. More information on future webinar topics can be found on www.openadr.org.

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Thank You!

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