A little about Novar...

- Honeywell business focused exclusively on providing comprehensive energy management and building automation solutions to centrally managed multi-site enterprises
- Founded in 1964, based in Independence, OH, acquired by Honeywell in 2004
- Direct-to-customer business model with vertically integrated technology, installation & service offerings
- Strong commitment to backward compatibility and continued support for legacy technology
Enterprise Software Application

HQ Level

Enterprise Management
- Remote Monitoring
- Global Parameter Management
- System Programming
- Alarm Management
- Reporting
- Analytics
Site Level Building Automation Application

SITE Level

- Interior
- Parking Lot
- Security
- Signage
- Enterprise HQ

Supervisory Control, BAS Executive

HVAC Control

Temperature Humidity CO2 Security

Metering
Automated Demand Response Application Example

Grid Operator

Demand Response Automation Server (DRAS)

Grid operator (ISO/Utility) broadcasts ADR event notification based on market conditions.

Open ADR Event Dispatch

Enterprise HQ

Enterprise Building Automation Server

Receives and dispatches event notification to remote sites.

Event Dispatch

Site

Opus BAS

Receives ADR notification and initiates load reduction strategies.

Event Confirmation

Demand Meter

Records site energy usage.

Event Confirmation
Automated Demand Response Application Example

**Grid Operator**
- Demand Response Automation Server (DRAS)
- Grid operator (ISO/Utility) broadcasts ADR event notification based on market conditions

**Enterprise HQ**
- Enterprise Building Automation Server
- Receives and dispatches event notification to remote sites

**Site**
- Opus BAS
  - Receives ADR notification and initiates load reduction strategies
- Demand Meter
  - Records site energy usage

- Event Dispatch
- Event Confirmation

**Internet**
- Open ADR Event Dispatch
Site Load Reduction Strategies

- Cooling or heating setpoint reset
- HVAC unit load rotation
- Cooling or heating stage limit for multistage package HVAC units

- Turn off non-essential lighting
- Dim lighting

- Switch in back-up generation
OpenADR Challenges

Technology
- Event propagation latency
- Customer security requirements
- Site control strategy effectiveness (maximum load drop with minimum impact to occupant comfort and safety)
- Reliability of site resources
- Meter accuracy

Market
- Legacy technology
- Concern about occupant comfort, business impact
- Reluctance to accept automated demand response