

About ASHRAE

- ▶ ASHRAE – American Society of Heating, Refrigerating and Air-Conditioning Engineers
 - Over 53,000 members
 - ASHRAE “seeks to advance human well-being through sustainable technology for the built environment.”
 - Global society with chapters in 27 countries.
- ▶ ASHRAE is heavily involved in both research and standards development. A number of its standards have gained attention both nationally and internationally including:
 - ANSI/ASHRAE 135 (ISO 16484-5) – BACnet
 - ANSI/ASHRAE/IES 90.1 – the energy standard for commercial buildings in most parts of the US.
 - ASHRAE/NEMA 201P (ISO/WD 17800) – Facility Smart Grid Information Model
- ▶ Additional information about ASHRAE can be found at www.ashrae.org/about-ashrae/.

ASHRAE 201 P – Facility Smart Grid Information Model

- ▶ In order to fully achieve the potential benefits of the Smart Grid, facilities need to be involved as more than simply utility customers.
- ▶ There are numerous, well-established protocols used within facilities and it is extremely unlikely that these protocols will be replaced just to achieve facility/grid integration.
- ▶ Facility oriented protocols want to extend their protocols to support the Smart Grid.
- ▶ Inconsistent extensions could make it more difficult for facilities to participate in the Smart Grid.
- ▶ The SGIP asked ASHRAE to assemble a group to create an abstract, object-oriented information model to ease the integration of these protocols with the Smart Grid.
- ▶ ASHRAE gathered a group of almost 50 experts from a wide variety of manufacturers, trade organizations, utilities, and governmental entities to create a model that would ease the job of integrating multiple protocols so that the facility could interact with the grid.

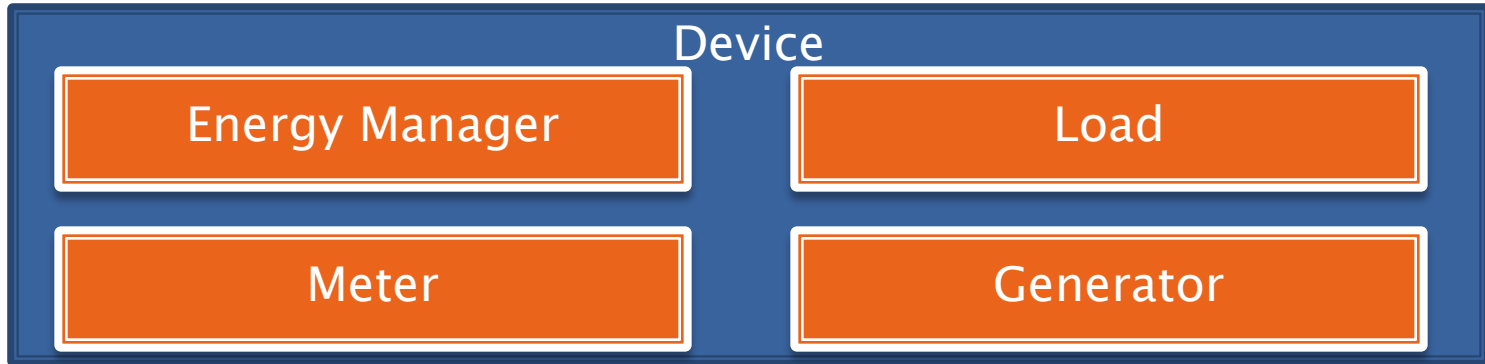
FSGIM Overview

Grid-side protocols and services.



FSGIM

Device



Facility-side protocols and services.



Current Status, Limitations and Gaps

▶ Current Status

- Draft standard has been in development since 2010.
- Latest draft is almost 1000 pages long including informative annexes, but few groups will need to understand the entire standard.
- Committee is currently harmonizing different parts of the draft standard.
- Draft standard is also being considered as WD 17800 within ISO.
- Committee is working with the OpenADR Alliance and the BACnet committee to test out the FSGIM's ability to bridge a grid-side protocol standard and a facility-side protocol standard.

▶ Limitations and gaps

- Does not define a protocol, but does provide a mechanism to map its information to other protocols.
- Does not currently include energy sources other than electricity and thermal storage, but it is designed to be extensible should others want to undertake that effort.