

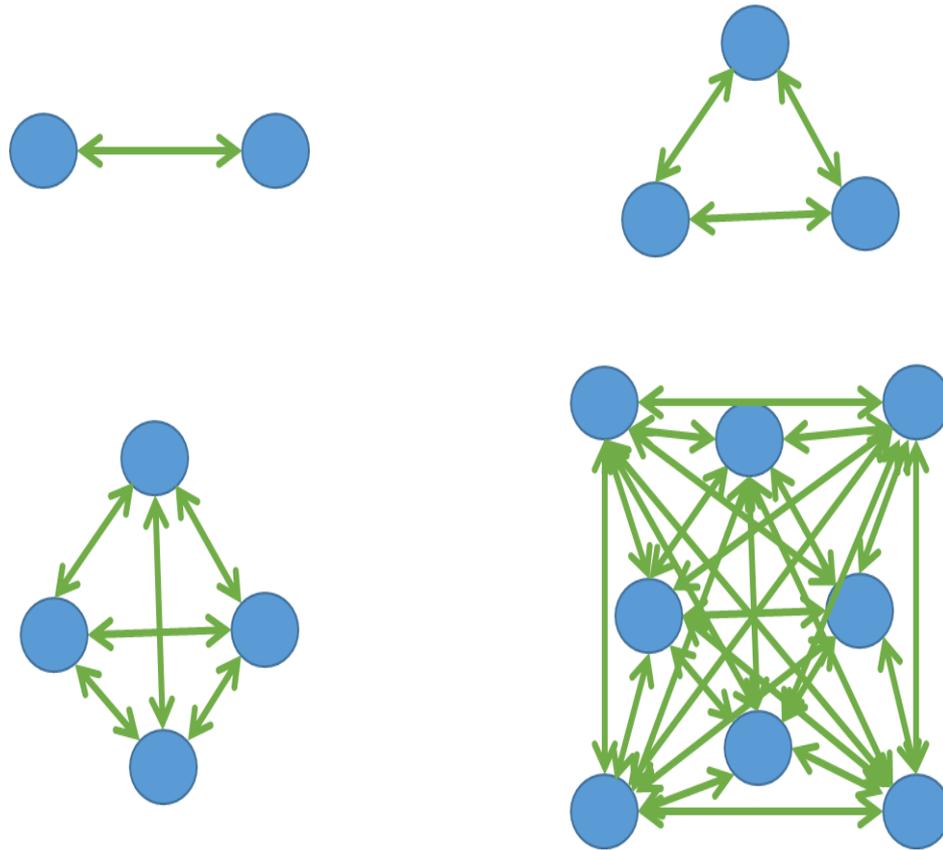


Organization for the Advancement of
Structured Information Standards

<http://www.oasis-open.org/>

William Cox, Cox Software Architects LLC
Toby Considine, TC9 Inc

Light, loose integration for inter-domain communications



We use composite protocols and security when we want them to scale.



Real-world installations are composed of multiple standards

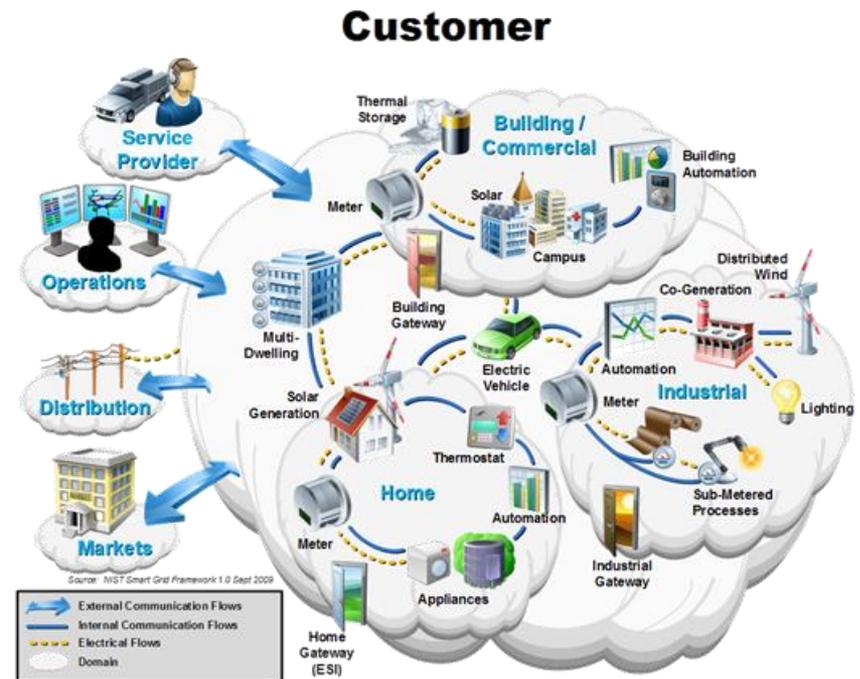
... So are yours ...



Your latest thing

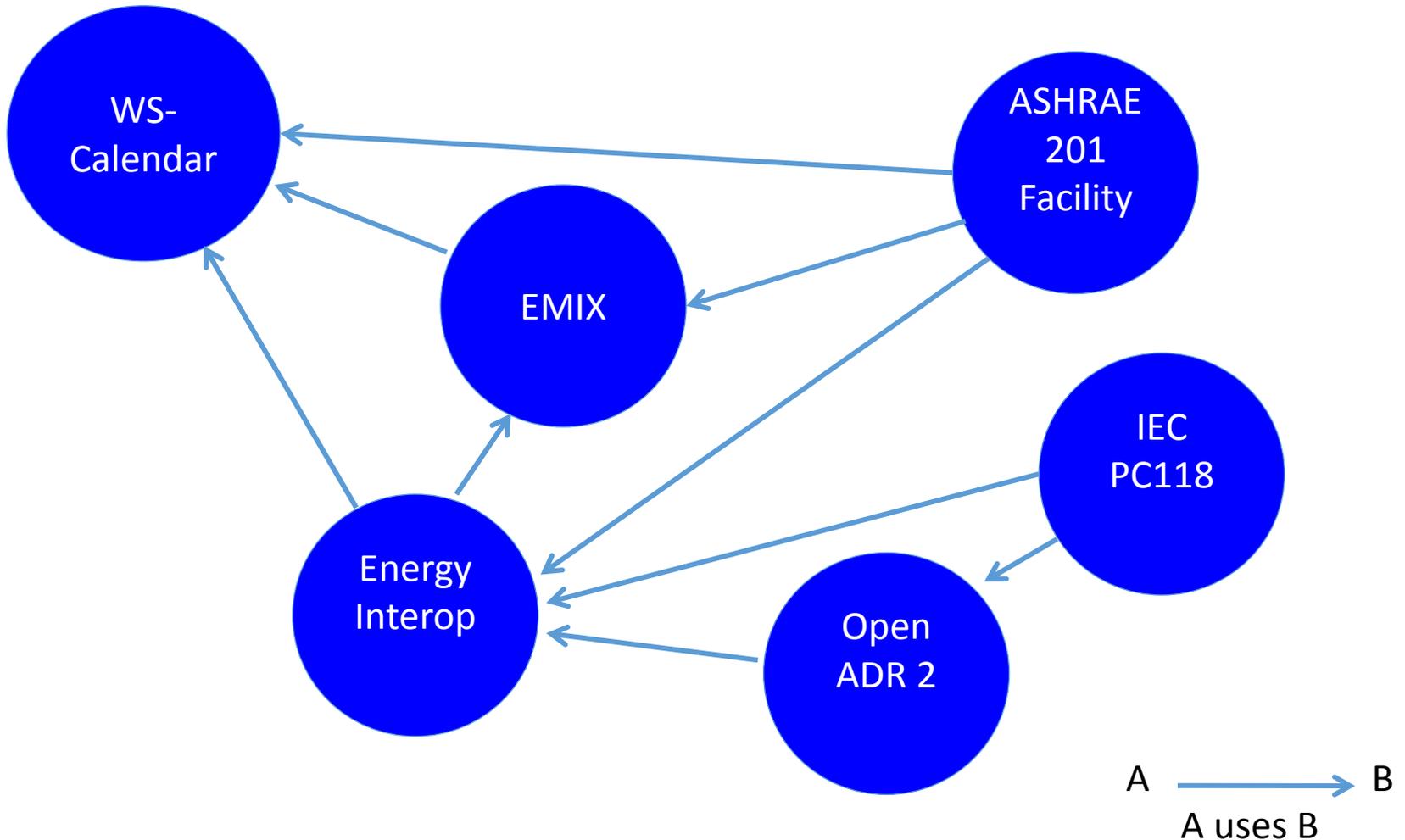
Smart Grids present challenges and Opportunities to Building Owners

- Intermittent Energy sources lead to unscheduled changes in availability
- Shortage & **Surplus**
- Manage each node as a microgrid that may contain microgrids
- Market Signals, not Control

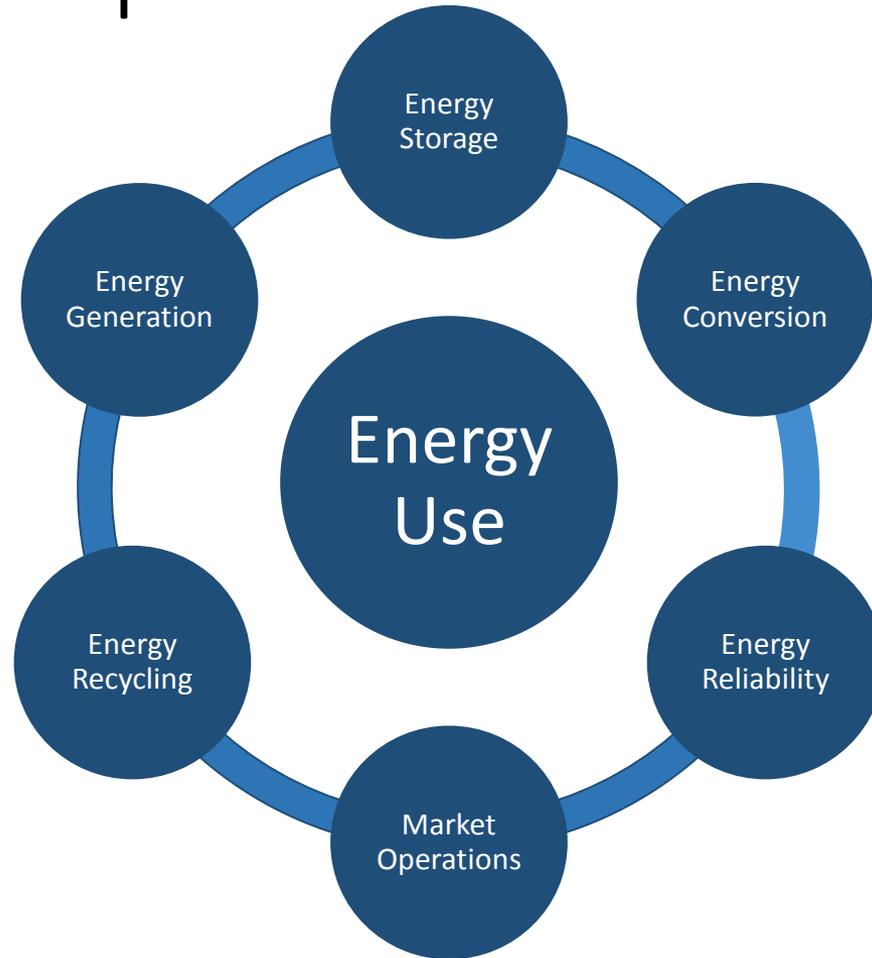


OASIS Smart Grid Standards

Coordinating Money, Time, Space, and Energy



Microgrids operate to support their occupants



Key standards for Smart Buildings

- OASIS Smart Energy Standards
 - OBIX (open Building Information Exchange)
 - WS-Calendar (exchange schedule and calendar with services and people)
 - EMIX (Energy Market Information Exchange)
 - Energy Interoperation (OASIS)
- Slim BIM
 - GBXML
 - COBIE & OMNICLASS

Smart energy standards moving rapidly into market

- OpenADR Alliance
 - 100 companies delivering Energy Interoperation profile & out-of-the-box interoperability
- Transactive Energy Market exchanges (TEMIX)
- Key parts, profiles, and work in other standards, e.g.
 - ASHRAE SPC201
 - IEC PC118, interoperation with IEC TC57

Background Information

Presenter Contact Information

- Toby Considine
 - toby.considine@gmail.com
 - <http://www.tc9.com/> blog and references
- William Cox
 - [wtcox@CoxSoftwareArchitects.com](mailto:wtcx@CoxSoftwareArchitects.com)
 - <http://www.CoxSoftwareArchitects.com/>
 - Annotated papers and presentations at “What’s New”
- Contact Toby or Bill for an introduction to OASIS or to any of the OASIS specifications mentioned
- Contact Toby for BIM and Green Building XML information
- Contact Bill for IEC PC118 information

OASIS Energy Specifications

- DR, DER, and Transactive Energy Services
 - [OASIS Energy Interoperation](#)
 - Basis for OpenADR2 and TEMIX (Transactive) profiles
- Price and Product Definition
 - [OASIS Energy Market Information Exchange](#) (EMIX)
 - Power Market prices, extends to Gas, Thermal, ...
- IETF iCalendar Extensions for Energy Schedules
 - [OASIS WS-Calendar](#)
 - PIM (abstract model) for WS-Calendar [in progress](#)

OASIS oBIX Specifications

- [oBIX Technical Committee](#)
 - *Enabling mechanical and electrical control systems in buildings to communicate with enterprise applications*
- [oBIX 1.0](#)
- oBIX 1.1 in progress
 - See <http://www.oasis-open.org/committees/obix> for links
 - oBIX 1.1 Committee Specification Draft 02
 - oBIX 1.1 Encodings
 - oBIX 1.1 REST Bindings, SOAP Bindings, WebSockets Bindings

Decoupling—Flexible Joints

- Allow independent evolution across
 - Technologies
 - Versions
 - Communication stacks
- “Flexible joints”
 - Key information
 - “reduce 10% from 4-6pm today”
 - Broad understanding
- Connect actors in one domain with actors in the same or others

Decoupling—Independent Evolution

- Coupled—MUST change when someone else changes

- Decoupled—change on your own schedule

