



BIMCards and Touchless Integration

Connecting BIM to Enterprise
Standards

Toby Considine, TC9

Smart building operation is responsive to environmental schedules

- Interactions with business operations
- Smart grids and demand response
- Schedules for internal energy generation and storage



Business integration is too expensive to do very often

- We can do anything with money and time
- Rarely do we have enough of either



Let's use COBIE to bring Buildings into the Internet of Things

- Direct integration with enterprise scheduling
- Simpler approach to smart energy
- Agile Integration with divers business processes
- Enable Mash-ups to find new value



My perspectives:

- 30 years of enterprise IT
- 20 years supporting Facilities Management
- Former faculty member of Institute for Facilities Management
- Chair of oBIX TC (control system middleware)
- Member of NIST Smartgrid Roadmap team
- Chair of WS-Calendar
- Editor of EMIX
- Editor of Energy Interoperation
- Member, SGIP Smart Grid Architecture Committee



The State of Enterprise Scheduling



Enterprises schedules are based on people and resources

- Find a time when the following people can meet
- Find a room for the meeting that holds 20 people, has a projection screen and internet connection that supports a phone bridge.
- Notify the facilities guys to activate the phone
- Notify housekeeping to clean up the room afterwards



Recipients manage performance to enterprise schedules

- One invitation to three people for 8:00 AM meeting
 - Walk dog, drive to work, stop at Starbucks
 - Do laundry the night before, Kids to school, arrive at work
 - Book flight, research train schedule on Internet, drive to airport
- Different processes, different technologies, result-oriented exchange



Enterprise integration is based on loose interactions of simple things

- Service oriented integration defines simple surface of interaction
- Minimal information exchange means minimal impedance between technologies
- Process is irrelevant, only the results (service) matters



IETF
OASIS
BIM

Standards landscape for Enterprise Schedules



Personal (and enterprise) schedules are based on RFCs

- Mail protocols: SMTP, POP, IMAP
- Calendar protocols: iCalendar, vAvailability
- Directory protocols: vCard and LDAP
- Serialization: XML exchanges
- New Resource RFCs
 - vCard for Resources
 - LDAP for Resources



Corporate and device interactions are based on OASIS specifications

- SOA Reference Architecture
- Service and Device Discovery
 - WS-DD, DPWS
- Composite Security
 - Policy-based management (often with LDAP)
- WS-Calendar SOAP and REST interactions



Semantics of building spaces and systems are found in BIM/COBIE

- Business functions occur in spaces and areas
- Areas have capabilities and capacities
- Relevant fixtures in areas
- Identity of systems that support each area and space



Identity

Description

Capability

Directory Services

Standardize use of COBIE in Resource vCards



Commision Resource vCards based on COBIE (BIMCards)

- Provides standard semantics for enterprise resources
- Common identity for business systems and building systems interface
- Link spaces to the systems that support them
- Ontology for Facility Systems energy management (ASHRAE SPC201)



Synchronize schedules between Calendar-based system surfaces

- Systems that share a common vCard share a common schedule
- Analyse performance based upon service schedule
- Link maintenance to system schedules
- Understand direct effects on business services of demand response events



Pre-adapt building systems for new business interactions

- Every facility is a microgrid
- Every campus / base / office park / neighborhood is a microgrid
- “Green Registrar”
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Leverages existing work
Extends value or COBIE
Short path to completion

Standardize application of COBIE to calendar Resources



Toby.Considine@gmail.com

www.NewDaedalus.com

www.tcnine.com

Discussion

