Meeting Minutes

TC 7.06 Building Data Exchange Subcommittee
Monday, June 15, 2020, 09:00 – 12:00
Virtual Conference

1. Meeting started – 09:04 AM EDT

2. Attendees:

Name	Affiliation	Email
Harry Bergmann	DOE	Harry.bergmann@ee.doe.gov
Mark Borkum	PNNL	mark.borkum@pnnl.gov
Nicholas Long	NREL	nicholas.long@nrel.gov
Cory Mosiman	NREL	cory.mosiman@nrel.gov
Stephen Roth	Carmelsoft	sroth@carmelsoft.com
Nora Wang	PNNL	nora.wang@pnnl.gov
Amanda Webb	University of Cincinnati	webb2al@ucmail.uc.edu
Scott West	HSA	scott.west@hfa-ae.com
Marco Ascazubi	CUNY	mascazubi@ccny.cuny.edu
Elyse Malherek		

3. Data Exchange Updates

   a. DOE (Bergmann)

      i. DOE working on 3-5 year data portfolio strategy. How to make BuildingSync easier including modularization. How to make it more friendly and work together with HPXML.
      ii. Work on interoperability is underway. Presently working on choosing the best Ontology and Std 223. How does BDx and 223 overlap?

   b. BEDES and BEDES Mapping Manager (Bergmann)
      i. BEDES mapping manager is now live.
      ii. Maalka has been using the mapping tool successfully.
      iii. CPUC is using BEDES to make program evaluation easier.
      iv. Moving static mapping to dynamic mapping.
      v.

   c. bEQ (Roth)
- i. ASHRAE's building energy rating system. Only focuses on energy (therefore not competing with LEED).
- ii. Use has declined slightly due to worldwide circumstances
- iii. Growth in South America
- iv. https://Buildingeq.ashrae.org
- v. Integrates gbXML and BuildingSync. Import functionality
- vi. Carmelsoft received new grant on improving data exchange and will focus on BuildingSync and gbXML.

   d. gbXML (Roth)
- i. New tools are adopting the schema.
- ii. Webinar is July 16 featuring 2 newer tools that import gbXML. Trane and P+W will also be presenting. https://attendee.gotowebinar.com/register/482320974334463758
- iii. RP1810 updates – Development of … schemas
  1. BuildSimHub subcontractor
  2. 20 test cases identified. Focus on the test cases are geometry. Wants to include 2 non-geometric HVAC test cases but that became very complicated. (No one used HVAC data in current gbXML.)
  3. Working on expanding the validation portal. More generic and focuses on the test cases.
  4. Planned completion by the end of this CY.
  5. Uses Autodesk Forge (display geometry on web)
  6. Example: room inside of room –
- iv. Revit System Analysis
  1. R2020.1 – Ability to run HVAC system analysis. Built on top of OpenStudio.
  2. Data are sent via gbXML (a modified version).
  3. Need to decide on how to handle the new data in the gbXML format. Need to determine what to do.
  4. The format is not public nor available for others to use.
  5. Option to deprecate existing elements in gbXML and then create a new HVAC representation.
- v. Board meeting Monday June 29, 2020 2PM ET. Link is: https://www.gbxml.org/

   e. IBPSA Building Data Exchange (Rao)

       i. 3 focuses; webinars, surverys, authoring consensus documents on data models for design, analysis, and operation.

   f. Measure Standardization (RP 1836) (Webb)

       i. Developing standard system to catergorize and characterize EEMs. Specifically from Audit related data that is coming from cities.

       ii. As well as the day to day use of an energy auditor.

       iii. 3 tasks

          1. Literature
          2. Development of test standardization
          3. Application

       iv. Needs help defining the component portion of the EEMs. That is the component that the action is taking place.

          1. Uniformat
          2. EnergyPlus/OpenStudio (does mapping onto simulation make sense)

       v. Interim report would be helpful to BRICK, BSync, etc.

       vi. How does this tie into Guideline 14?

          1. If we are doing an evaluation of a project, then how do we propose an improvement, then compare that performance to history?
          2. Development of a grammar has happened at PNNL and can potentially be used.
          3. Be wary of tag-based approach.
          4. PNNL is working on ECMs in Audit Template. These are right now BuildingSync measures but can be any schema. This is an active research area right now.

       vii. How does this work in audits as well as modeling? How do we make this integrate with AT and BuildingSync and others?

   g. UBID (Borkum)

       i. Unique building identification

          1. Define natural key for encoding a space that is occupied by a building footprint.

       ii. Part of the building exchange data accelerator

       iii. Need a GUI.

       iv. https://buildingid.pnnl.gov/

       v. UBID is open sourced; Proprietary (more than 2 dimensions) is also under progress. There are license agreements that can be used.

       vi.

   h. HPXML (--)

       i. Working on integrating schematon

i. BuildingSync (Long)

    i. Greater adoption (10's of companies)
    ii. Development effort around:
        1. Scenarios
        2. Documentation of HVAC systems
        3. Development of additional Use cases
    iii. Need to get around the same page on measures
        1. Is this mapped out? What is the measure workflow?
        2. Lots of undefined specifications that need to be defined
            a. E.g. how does ComStock understand measures represented from ComStock?
            b. What is the spatial component of measures and anchoring them in the world.
        3. The concept of a measure can get really big really fast. What do we tackle now and allow future development?
        4. Std211 and Std100 think about measures way different – operates at a high level.
        5. How to get BIM <-> BEM to work together?
    iv. 1836 can be the starting point and pull together the other requirements.
    v. Who else needs to be in the room:
        1. BIM authoring tool
        2. Actual auditors
        3. Building energy modelers (measure implementors)
        4. Computer scientist
        5. Architectural engineers
        6.

j. Asset Score / Audit Template (Borkum)
    i. Holding pattern.
    ii. BuildingSync support is stable (no recent issues)
    iii. TSPR – total system performance ratio
    iv. Water usage in BuildingSync

k. Haystack / BRICK / Standard 223P / Interoperability (Mosiman)
    i. ASHRAE has a working group. Bushby has taken over the lead role.

ii. Getting list of schemas and ontologies. Bringing working group up to speed on the various schemas (RDF, OWL, XML, XSD, etc).
iii. Working on BRICK 1.1 with updated definitions and class hierarchy
iv. How to model soft points (SP) in haystack? Setpoint vs parameters vs limits, etc.
v. ACEEE paper in the works

l. IEA Annex 70 – Energy Data Epidemiology (Bergmann)
    i. They are entering their reporting year. Attempting to create a special journal publications.

m. Ruleset Standard (SPC 229P) (--)
    i. No Update

n. Other (All)
    i.

4. Old Business / Action Items (Long)
    a. See updated action item table at end of minutes.

5. New Business
- RTAR Ideas
  - ***Development of datasets and workflows for data exchange within ASHRAE-sponsored tools and publications…***
    - *RP-1801 - data models for equipment*
    - *GPC-20 - guideline for data model for*
    - Demonstrate data exchange within ASHRAE "tool" ecosystem
    - Explain the concepts (textbook, documentation,)
    - Creating a workflow and describe where ASHRAE integrates into each step. Make this a teaching workflow. (Greenbook for building energy data analysis?)
    - Graduating students need better data analysis capabilities.
    - Understanding of all the buildings related analysis methods (NMEC, CalTRACK, Change Point Models, HDD/CDD binning, etc).
    - Collaborate with TC4.7, 7.6
    - GL14 is being updated (continuous maintenance)

6. Adjourn – 11:30AM EDT

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Action Items

Item	Owner	Due Date	Status
Send minutes to Hyojin Kim (kiml@cua.edu)	Long	6/22/2020	
Draft RTAR on datasets and workflows	Long	6/22/2020	
Stephen has a list of all inputs BuildingEQ is using from BuildingSync, will send it out to the group (after ASHRAE permission).	Roth	~~8/15/2019~~*	If access is desired, email Stephen Roth.
Webinar for the community regarding gbXML efforts, test casts, etc.	Roth	7/16/2020	

* Updated