Specifiers Properties Information Exchange (SPIE)
Project Description

18-Jan-08

Executive Summary

With the successful exchange of building objects and geometry through the IFC 2x3 Coordination View comes the next challenge- that of providing a Building Information Model (BIM) data model that goes beyond the exchange of geometry. The data required to impart interoperable meaning to BIM models, in the context of this project, is the data needed by specifiers to identify the set of objects that can be included in the model and minimum performance (and other) characteristics of these materials, products, and equipment. This data is added to a BIM during the design stage and transferred to facility operators as part of the as-built BIM. This project will define and publish an initial list of specifiers' properties data exchange requirements, conduct limited demonstrations of interested manufacturer's data and publishing companies, coordinate with software firms interested in including these property sets within their design and specifications software, demonstrate the transfer of these attributes through design, construction, and construction handover, and begin the process of full industry review and adoption. One of the first practical uses of this specification will be the augmentation of the COBIE equipment lists to include the associated specifiers' property sets.

Points of Contact

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Problem Statement

Information that specifies the requirements for materials, products, and equipment to be procured and installed during construction are currently, commonly provided in a paper specification documents. There is momentum within the industry for a transition to electronic information exchange, but there is no common standard that identifies the typically accepted characteristics of materials, products, and equipment that can be electronically shared among the variety of project stakeholders who need access to the information. Interoperable BIM exchange today does a good job of with respect to exchanging geometry but these models are "hollow" in that the data about the objects in the model is not routinely shared. The lack of data standards has limited the manufacturing communities' ability to provide data about their materials, products, and equipment in an interoperable format. For facility operators the cost of not having the original specifiers' properties is quite high since the performance requirements of

replacement material, products or equipment may not be known. This lack of information contributes to the complexities in building commissioning and resulting sub-optimal maintenance of equipment and systems.

Objectives

The objective of this project is to define and demonstrate the use of an initial set of specifiers' properties that cover a "standard" set of major materials, products, and equipment installed in the United States. The publication of this "critical mass" of property sets across all Masterformat- and Uniformat-based specification sections will assist in moving the interoperable exchange of building industry data forward, beyond the exchange of geometry to the exchange of interoperable building objects within the models.

The definition of these properties is of vital importance to improving the productivity of the building industry and the ultimate performance of buildings. The property sets identified in this project can be expected to be updated as wider industry segments, publishers, and software service providers contribute their collective knowledge. The secondary objective of this project is to create a forum for continued dialog among manufactures, industry associations, professional organizations, designers, engineers, publishers, and service providers to update and maintain these property sets.

Expected Outcomes

- A national repository of property set lists hosted through the Product Guide of the Whole Building Design Guide (www.wbdg.org)
- Specifications requiring the inclusion of these properties within federal government BIM deliverables
- A "virtual" list of manufacturers who can provide data about their products based on the property set lists.
- A list of software service providers who have incorporated these property sets within their products.
- The formation of a national team composed of manufacturers' associations, data publishers, and professional associations that will update and organize industry participation in the national property set lists.

Activities

1. Production of Initial Specifiers' Property Set Templates

Specifications Consultants in Independent Practice members as created a property set that provides those properties of interest to construction specifiers. While there are

many other types of properties of interest to other stakeholders, maintaining a focus on one type of property set at a time has allowed the rapid identification and production of the specifiers' property sets. It is expected that an initial version of a complete property set across all specification sections will be completed by 1 April 2008.

2. Publication of Initial Specifiers' Property Set Templates

The National Institute of Building Sciences, under contract to the National Aeronautics and Space Administration, will be displaying the initial property set templates on the Whole Building Design Guide's Product Guide. It is expected that these templates will be available for public review by 1 June 2008.

3. Coordination with Industry

Following publication of the initial specifiers' property set templates, coordination with a wide variety of industry stakeholders will take place. Some coordination activities will take place by team member presentations at national conferences, professional, and trade association meetings.

4. Federal Government Request for Information

A formal opportunity for coordination will be provided through a formal Request for Information issued by the U.S. Army, Corps of Engineers. The U.S. Army Corps of Engineers will ask manufacturers, associations, publishers, software service providers, and others stakeholders to notify the government about their plan to implementing these property sets. It is expected that a meeting following this RFI will be held by 1 August 2008.

5. Publication of Specifiers' Property Set IFC Templates

Of critical concern to the project team is that the exchange of specifiers' properties be fully transparent regardless of the software system that applies these properties. To support the IFC exchange of these properties a formal IFC definition of these properties will be provided for perspective implementers on the Whole Building Design Guide no later than 1 October 2008.

6. Demonstration of Manufacturer Property Sets for Specifiers

Since many firs are currently hosting and publishing manufacturers' property sets, in some cases, well beyond the requirements need for specifiers. The team will be engaging manufacturers associations, trade groups, publishers, software companies, and others to demonstrate the interoperable exchange of specifiers' property sets.

7. Implementation of BIM Property Set Specifications

It is expected that within twelve months of the publication of the property set lists, several United States Federal Government agencies will mandate the submission of these standard property sets with their design BIM submissions. Agencies directly participating in this project include the Army Corps of Engineers, Department of State, and National Aeronautics and Space Administration.

One implementation that can be expected is in the specification of data sets required for the Construction Operations Building Information Exchange (COBIE) format. Since the specifiers' data is of critical concern to facility managers and operators, COBIE data standards will be updated to include "Attribute" table following publication of the initial specifiers' property set templates.

8. Initiation of CSI/SCIP/buildingSMART Project

It is expected that within twenty-four months of the publication of the property set lists, a joint project between the Construction Specification Institute, the Specifications Consultants in Independent Practice, and the buildingSMART Alliance publish and updated list of property sets.

9. Coordination with International Efforts

It is expected that within thirty-six months of the publication of the property set lists, the definitions of all items in the list will be provided to the International Framework for Dictionaries project. This project will assist translating the requirements for BIM designs in the United States to international customers and markets.

How to Participate in This Project

As new project milestones are provided on email "list servers" such as the NIBMS, FMOC and buildingSMART servers. Team leaders will provide regular updates via email through those two venues. Those with a casual interest in the project are encouraged to join these email list servers. To join one of these list servers please contact the National Institute of Building Sciences (www.nibs.org).

To participate and comment on the Specifiers' Property Set Templates prior to the publication of the initial templates in the summer of 2008, please contact Mr. Bill Brodt (wbrodt@nasa.gov).

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