40. Project Information Taxonomy

Jun 20, 2016 (https://www.bimframework.info/2016/06/project-information-taxonomy.html)

The **Project Information Taxonomy** extends the *Modular Requirements Clarification Language* first introduced in Paper A10. The taxonomy currently includes 21 concepts/terms (14 are new) to be used in defining project information requirements within mission-critical documentation (e.g. within an Employer's Information Requirements (EIR), a BIM Management Plan (BMP) or similar).

Project Information includes both *Unstructured Project Information* and *Structured Project Information*:

- **Unstructured Project Information** refers to non-computable data, undocumented, and temporary project information (e.g. hand sketches and casual phone chats); and
- **Structured Project Information** refers to information organised and formatted for particular purposes or use cases.

Project information can be represented, stored or exchanged as either Documents, Models or Data. These three *Information Representation Types* can be mapped against a number of new Information Management concepts – including: *Information Delivery Format*, *Information Uses*, *Information Views*, *Information View Definitions*, *Information Viewers* and *Common Information Environments*.

This is clarified in the below table, a 'flat' representation of the Project Information Taxonomy (slightly updated **Nov 29, 2016**):

Project Information Taxonomy – Table

INFORMATION REPRESENTATION TYPE How information is represented		
Document A physical or digital medium (e.g. a paper or an email) carrying a variety of Information including text, Data (e.g. hexadecimal code) and embedded Models (e.g. a 3D PDF document) [Partially adapted from ISO 14050:2009 and ISO 9000:2005][1]	**Model** A digital three-dimensional representation of Information. A 3D Model may embed or reference both Data and Documents. The term 'Model' refers to both digital and physical models (e.g. a 3D printed shape) but does not refer to financial, mathematical or conceptual models… Also refer to BIModel [2]	**Data** A reinterpretable representation of Information which can be collected/parsed with or without the human actor. Data is either statically embedded within Documents and Models or drive their dynamic generation/ modification [Adapted from ISO/IEC 2382-1:1993] [3]
INFORMATION DELIVERY FORMAT *How information is - or need to be - delivered on a project*		
Documented Project Information [4] Project information collated within Documents for functional purposes. Documented Project Information are captured and exchanged either manually or through digital means, and are intended for use by the human actor (e.g. drawings, maps and reports)	**Modelled Project Information** Project information collated within Models for functional purposes. Modelled Project Information are generated by the human actor or driven by machine-captured data (e.g. structural analysis and asset tracking)	**Structured Project Data** Granular project information collated within Documents and Models, or driving the generation of Documents and Models; Structured Project Data are captured through sensors and scanners; derived from connected data sources; or generated through machine learning

40. Project Information Taxonomy

Jun 20, 2016 (https://www.bimframework.info/2016/06/project-information-taxonomy.html)

<table>
<tr><td colspan="3">INFORMATION USE The intended uses/applications of project information</td></tr>
<tr><td>Document Use

The intended or expected project deliverables from developing and exchanging information through Documents.

Examples: Master Plan Drawing or Minutes of Meeting.</td><td>Model Use

The intended or expected project deliverables from generating, collaborating-on and linking Models to external databases.

Example: model-based Urban Planning</td><td>Data Use

The intended or expected project deliverables from generating, exchanging and manipulating Data.

Example: Fabrication Scripting, using code to drive cutting, milling or sintering equipment.</td></tr>
<tr><td colspan="3">INFORMATION VIEW How project information is represented to enable its use</td></tr>
<tr><td>Document View

A view representing one or more Document Uses. A Document View can be a drawing, schedule, report, an instruction memo or a set of specifications. A Document View may be analogue or digital, developed manually or derived automatically from a Model or Data source.

Example: a Room Data Sheet</td><td>Model View

A view representing one or more Model Uses. A Model View can be a static 3D view, an animation, a holograph or a 3D print. A Model View follows the specifications within its corresponding Model View Definition or reflects unique project requirements

Example: A Model View showing only Mechanical and Structural elements</td><td>Data View

A view representing one or more

Data Uses. A Data View can be a code snippet, a Computer Numerical Control (CNC) , an XML file or similar information not primarily intended for the human actor.

Example: An If This Then That (IFTTT) recipe or a visual script in Autodesk Dynamo</td></tr>
<tr><td colspan="3">INFORMATION VIEW DEFINITION How Information Views are defined to enable the consistent use of Structured Project Information</td></tr>
<tr><td>Document View Definition

A specification which identifies the contents, attributes and formats of Document Views. Document View Definitions are typically generated by authorities and large clients.</td><td>Model View Definition (MVD)

A specification which identifies the properties and specifies the exchange requirements of Model View Definition (MVD) can be a subset of an established schema (e.g. the Industry Foundation Classes) and is typically intended for software developers (not end users) to implement into their BIM Software Tools

Example: the IFC4 Design Transfer View by buildingSMART International</td><td>Data View Definition

A specification which identifies the properties and specifies the exchange requirements of Data Views. Data View Definitions are generated by Project Participants to formalise their data exchange scenarios</td></tr>
<tr><td colspan="3">INFORMATION VIEWER The software allowing access to Structured Project Information by a solitary user</td></tr>
<tr><td>Document Viewer

A software application allowing users to inspect and manipulate of Structured Project Information according to pre-set Document Views.

Example: A PDF reader or a 2D CAD viewer</td><td>Model Viewer

A software application allowing users to inspect and navigate Modelled Information according to ad-hoc or standard Model View Definitions. As opposed to Model Servers, Models accessed by a Model Viewer are read-only and cannot be modified.

Example: Autodesk Navisworks or Solibri Model Checker</td><td>Data Viewer

A software application allowing users to inspect and manipulate data according to pre-set Data View Definitions. An example of a Data Viewer is an online project dashboard merging data from several sources

Example: Google Flux or Autodesk Forge Viewer</td></tr>
</table>

40. Project Information Taxonomy

Jun 20, 2016 (https://www.bimframework.info/2016/06/project-information-taxonomy.html)

<table>
<tr><td colspan="3">COMMON INFORMATION ENVIRONMENT The digital environment allowing access to Structured Project Information by multiple concurrent users</td></tr>
<tr><td>Shared Document Environment

A central source for Documented Project Information. A Shared Document Environment is not necessarily a single software tool but a combination of several software solutions – including: a Document Management System, a Document Viewer, a Model Viewer, and a Project Management software. A Shared Document Environment may connect several software tools and desperate data sources through middleware and plugins</td><td>Federated Modelling Environment

A central source for Modelled Project Information used to collect, store and allow controlled access to model-based information by project/asset stakeholders. A Federated Modelling Environment differs from a Shared Document Environment by allowing the isolation of Structured Project Information by Model View</td><td>Integrated Data Environment

A central or distributed repository of

Integrated Data feeding from multiple data sources and information systems across disciplines and domains. An Integrated Data Environment allows manipulation of data by multiple stakeholders according to access rights and agreed Data View Definitions</td></tr>
</table>

More info

This post is part of the of an ongoing effort to clarify the language used (or to be used) in defining project requirements within Noteworthy BIM Publications. Some of the concepts introduced above are still being refined, connected and reconnected to multiple models, taxonomies and classifications. For an update-to-date description of these concepts and their relations, please refer to respective terms within the BIM Dictionary.

Endnotes

[1] A document refers to “information and its supporting medium” [i.e. when the information is placed on a medium, itbecomes a document] … “The medium can be paper, magnetic, electronic or optical computer disc, photograph or master sample, or a combination thereof” – [SOURCE: ISO 14050:2009, 4.5 - adapted from ISO 9000:2005, 3.7.2]

[2] Another definition is a “representation of a system that allows for investigation of the properties of the system” [SOURCE: ISO 29481-1:2016(en) Building information models — Information delivery manual — Part 1: Methodology and format]

[3] “a reinterpretable representation of information in a formalized manner suitable for communication, interpretation, orcommunication, or processing” [SOURCE: ISO/IEC 2382-1:1993, Information technology — Vocabulary — Part 1: Fundamental terms.01.01.02]

[4] Note: *Documented Project Information* should not be confused with *Documented Information* which is defined in ISO 9001:2015 as meaningful data that is required to be controlled and maintained by the organization and the medium on which it is contained (Source: ABP Consultant (http://isoconsultantpune.com/iso-90012015-documented-information/)