



National BIM Standard - United States® Version 3

2 Reference Standards

2.6 BIM Collaboration Format – Version 1.0

2.6.1 Scope – Business Case Description

The BIM Collaboration Format (BCF) represents a standard for communication between BIM Models. The BCF format allows for all parties involved transferring critical information and viewpoints between individuals independent of the software being used. The BCF uses an XML schema to carry critical information between software in an improved collaboration workflow.

In most real-life projects the user of a tool for one discipline will import IFC models from other disciplines. If there is an issue related to one of the imported models the efficient process will be to raise that issue so they can be resolved in the BIM authoring application from where this model originated. The responsibility for maintaining and updating this model will in many/most cases be assigned to the author of the model and be performed in their own software.

2.6.1.1 Publishing organization

buildingSMART International

2.6.1.2 Version

BCF Version 1.0

2.6.1.3 Date publication

February 28th 2011

2.6.1.4 Industry source and process

The BCF introduces a workflow communication capability connected to IFC models. The idea is to separate the "communication" from the actual model. The BCF format is based on XML. In most real-life projects the user of a tool for one discipline will import IFC models from other disciplines. If there is an issue related to one of the imported models, the efficient process will be to raise that issue so they can be resolved in the BIM authoring application from where this model originated. The responsibility for maintaining and updating this model will in many/most cases be assigned to the author of the model. Instead of adding information directly into an IFC model as a "property set" or whatever and send the whole thing back (which could be an alternative), the issues are described using BCF with direct links to objects in the model(s) with the issue(s).

The BCF format is extremely simple and easy to implement. The basic content is that you create an issue, add comment and refer that to the object(s) in question (using IFC mechanisms for Global Unique ID's (GUIDs)). The format also supports comments and status as this issue may be referred to and answers/suggestions added by receiving applications. In addition to text, comments and the list of objects, each issue can also have camera and viewport attached and even a snapshot of how the model looked in the application where the issue was last addressed.

The close connection to the IFC positions it as a capability extension of the existing IFC format with focus on workflow and processes (close relation also to IDM).

The BCF format is independent of which IFC schema version being used. [Example of BCF in use.](#)

2.6.1.5 Revision plans and notification

The BCF Standard is maintained by buildingSMART International LTD. The BCF format will be revised on a regular basis, depending of the need of the industry. A revision 2.0 is currently under development/specification. New revisions will be published at the official web-pages of buildingSMART International (www.buildingsmart.org)

2.6.2 Normative references.

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

- IFC (ISO 16759) is the main 'buildingSMART data model' standard. An MVD is a subset of IFC to satisfy one or several exchange requirements, defined in an Information Delivery Manual (IDM). But there are others: for example BCF is a candidate for a new 'buildingSMART data model' standard for collaboration messages, mvdXML is a candidate for a new 'buildingSMART data model' standard for exchanging MVD specifications.
- IDM (ISO 29481) is the main 'buildingSMART process definition' standard.
- IFD (ISO 12006-3) is the main standard for 'buildingSMART dictionary terms'.
- Extensible Markup Language (XML) - The Extensible Markup Language (XML) is a subset of SGML that is completely described in this document. Its goal is to enable generic SGML to be served, received, and processed on the Web in the way that is now possible with HTML. XML has been designed for ease of implementation and for interoperability with both SGML and HTML.

2.6.3 Terms and definitions, symbols and abbreviated terms

For the purposes of this document, the following terms and definitions apply. The terms and definitions given in ... and the following apply.

2.6.3.1

BIM Collaboration Format BCF

An XML schema that provides for the packaging and transfer of model information between individuals independent of software.

2.6.3.2

viewpoint

a saved representation of 3D camera view.

2.6.3.3

markup

a saved illustration of a model view with attached comment.

2.6.4 [BIM Collaboration Format \(BCF\)](#)

2.6.4.1 License terms

[BCF License terms](#)

2.6.4.2 Referenced by NBIMS-US™ Content

None

2.6.5 Bibliography

None