



UKBIMA Communities BIM Regions West Midlands

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BIM Interoperability Expert Group Report - Recommendations and Next Steps

Fiona Moore Information Management Consultant



Interoperability Definition:

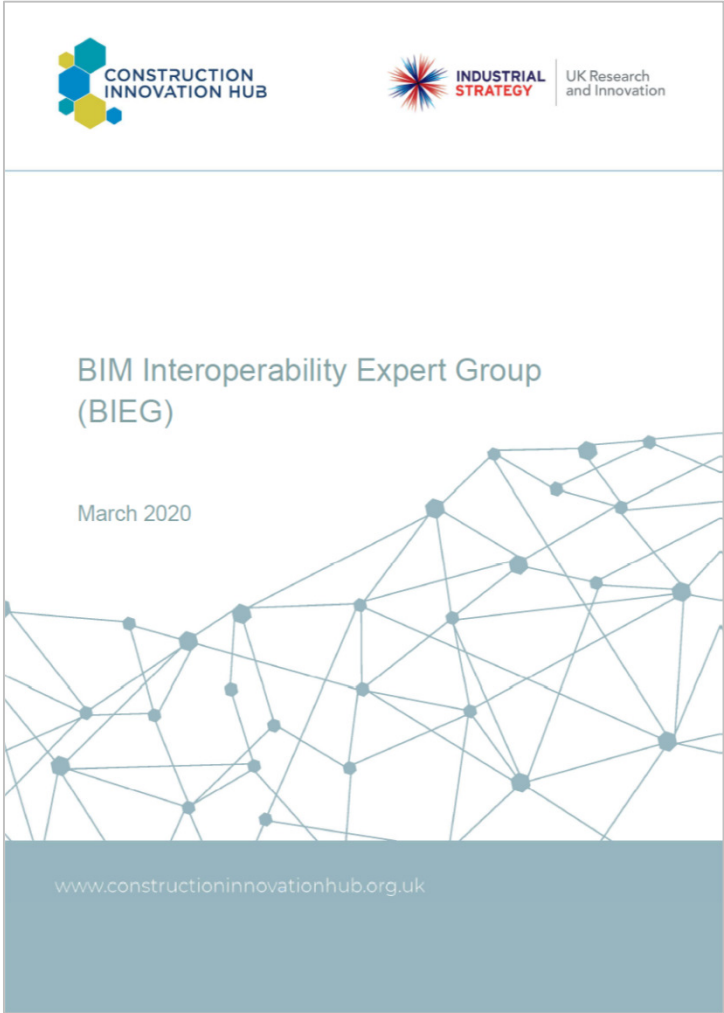
‘the ability of two or more systems to exchange information and to use the information that has been exchanged’

- Information exchange
- Information use during the whole of an assets lifecycle
- Authoring softwares and proprietary systems

Interoperability Questions:

1. How are you [or the industry as a whole] currently achieving [or providing the means for] information/data openness and interoperability?
2. What problems do you encounter [or does the industry encounter] when currently delivering [or providing the means to deliver] interoperable data?
3. What do you think could be used to deliver interoperable BIM data in future? Please consider a timeframe of **up to 5 years** only.
4. What needs to change/happen to achieve interoperability going forward?





a) Evidence Providers

The BIEG would like to thank all those who generously gave up their time to provide evidence. Evidence providers were as follows:

Organisation	Name	Second Person	Field of Expertise
ActivePlan	George Stevenson		Data Expert
Atkins	Nick Tune		Data Expert
Autodesk	Marek Suchocki		Technology Provider
Bentley	Mark Coates	Marc Thomas	Technology Provider
Bond Bryan Digital	Emma Hooper	Rob Jackson	Practitioner
BSI	Dan Rossiter		BIM Expert
buildingSMART	Nick Nisbet		Data Expert
CIBSE	Hywel Davies	Carl Collins	Data Expert
Clearbox	Graeme Forbes		Technology Provider
Environment Agency	Graeme Tappenden	Alan Proctor	BIM Expert
Faithful & Gould	Andy Green	Shahida Rajabdeen	Data Expert
Galliford Try	John Ford		Practitioner
Glider Technology	John Hall	John Adams	Technology Provider
IBM	Paul Surin		Technology Provider
Intra TeamIT Consultant	Phil Jackson		Data Expert
Majenta Solutions	James Smith		BIM Expert
NBS	Sarah Delany		Classification Expert
Northumbrian Water	Mike Overy		Client
Scottish Futures Trust	Ryan Tennyson		Client
Universities of Cambridge and Auckland	Prof. Rafael Sacks	Prof. Robert Amor	Academia
Viewpoint / Trimble	Duncan Reed	Ben Wallbank	Technology Provider





5. Primary recommendations / enablers

i. Classification Schema Alignment

Firstly, it is proposed that the Steering Group work with NBS to examine how Uniclass 2015 can be improved, supported and maintained going forward.

Once this initial engagement has been undertaken, other matters can be considered, including:

- How Uniclass 2015 aligns / maps to other conventions, such as CoClass.
- Alignment or mapping of appropriate aspects of Uniclass 2015 with other breakdown structures, such as NRM and SFG20.
- Support to help NBS to improve and then maintain Uniclass 2015 – including helping NBS to liaise with key construction industry sector stakeholders.

It should be noted that the BIEG also considered other schemas such as CoClass and OmniClass. It concluded that the most efficient way forward was to continue to support Uniclass 2015, whilst at the same time supporting its mapping to other schemas.

ii. COBie - Practical Application and Development

Liaise with the UK BIM Alliance and buildingSMART UKI, with support from buildingSMART International as appropriate, to explore the development of multiple Model View Definitions (MVDs). This work will start with COBie, for the reason that it continues to be a very important part of UK Government information procurement.

More specific work is likely to be identified once the initial liaison has taken place.

iii. Education and Skills

There is clear direction from those providing evidence that there is a lack of digital skills within the sector which needs to be urgently addressed.

This is an area which will involve wider engagement, and may need to be addressed by, and coordinated across, a number of different organisations.

iv. Industry Foundation Classes (IFC)

Liaise with buildingSMART International, and its UK/Ireland Chapter, to support the further development of IFC, with the aim of helping to voice the concerns of key construction industry stakeholders, as expressed by a number of the evidence providers (see Appendix B).

More specific work is likely to be identified once the initial liaison has taken place.

v. Standards

It is clear that work is required to clarify and communicate the Standards landscape and then to make sure appropriate training is available to help improve its application. Further discovery work will be required to correctly scope this work.



6. Secondary recommendations / enablers

During the course of the work a number of other facets of the interoperability agenda were raised. However, the BIEG agreed that these enablers required further evaluation, prior to issuing specific recommendations for a variety of reasons, including:

- lack of consensus on direction;
- requirement for further development and/or unlikely to enter the mainstream within the timeframe of this report;
- insufficient evidence to produce an acceptable level of recommendation; and
- some form of proprietary content

These secondary enablers are listed below in alphabetical order and NOT in order of priority. Each is explained Appendix B.

- i. Asset Information Model (AIM) Common Data Environments (CDE)
- ii. Drivers and Enablers
- iii. Global Unique Identifiers (GUID)
- iv. Operational Focus
- v. Product Data Templates (PDT)
- vi. Proprietary software and the use of Application Program Interfaces (API)
- vii. Standard Data Approach
- viii. Procurement and Contracts

In assessing each of the enablers and potential activities, it will be important for the Steering Group to take account of the work of others in the field, who may be working on other related projects within the CIH, the UK BIM Alliance and wider industry. The Steering Group should actively seek to share knowledge, avoid duplication and improve outcomes.

- Further Consultation
- Feedback
- Report Publication





4. Promotion by Government and leadership

It is very clear that in order to build on the UK's BIM adoption momentum to date and to ensure benefit is delivered now and in the future, there is a need for Government to lead the way. The BIEG repeatedly heard that the Government's April 2016 BIM Mandate, and the work of UK BIM Task Group, greatly helped message, positively engage and energise the construction industry as a whole, including public sector clients.

Central Government intervention is required

There is a clear view that central government intervention and public sector client leadership is required in order to achieve the desired outcome.

The BIM Mandate is, and will continue to be, official Government policy, but it is clear that it has to adapt over time to ensure it takes account of developments in technology and the market. Therefore, it is proposed that the existing mandate is further developed to reflect the technology, standards and process developments that have taken place since it was first drafted as part of the 2011 Government Construction Strategy. It will also be important to continue to support the promotion of BIM through Government projects, and to work with key industry bodies, such as Construction Leadership Council (CLC), Infrastructure Projects Authority (IPA) and UK BIM Alliance, to encourage the wider industry to follow suit.

A coordination group is required to ensure continued adoption.

A coordination group is required to ensure adoption is carried through the entire supply chain, drawing from experience gained from the success of the BIM Task Group.

The recommendations are:

- To create a new BIM Interoperability Steering Group, herein referred to as the Steering Group, to instigate, engage, lead, manage, coordinate, promote and communicate recommendations across Government and externally, as appropriate.
- That the Steering Group is made up of members of the BIEG committee in the first instance, but pulling in others from across the industry as and when appropriate. It is proposed this Group would meet once a month and at other times if/when required.
- That technical resource is used to carry out specific assigned tasks within an agreed programme of work. It is envisaged that these tasks would cover the recommendations given in sections 5 and 6 of this report.

It is currently envisaged that the Steering Group would need to be in place for between 2 ½ years and 5 years, in order to establish continuous, considered, incremental strategy, engagement and outputs. The duration of the group would need to be reviewed once the extent of the work required is fully determined, following the first full year's engagement.

The main focus of the group will be Design, Build & Operate, but not Integrate, addressing the problems of the here and now, and what needs to occur within a five year horizon. However, the work will help to inform the longer term National Digital Twin programme (Integrate) and to this end it is proposed that the



Next Steps:

- Workstreams
 1. Classification Schema Alignment
 2. Industry Foundation Classes (IFC) and COBie - Practical Application and Development
 3. Education and Skills
 4. Standards
 5. Asset Information Model Common Data Environment (AIM CDE)
 6. Standard Data Approach
 7. Procurement and Contracts
- Resource
- Regular Updates



Q & A