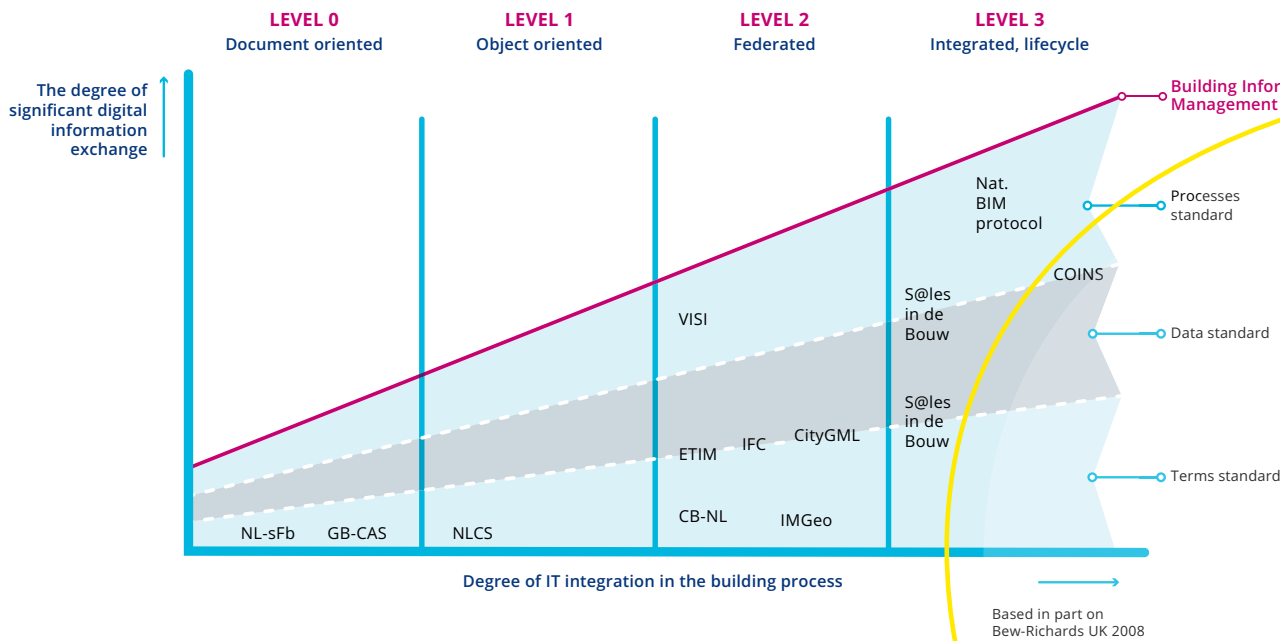


BIR Leaflet Number 2

Open BIM Standards

Dutch BIM Levels

Chain Integration by means of Open BIM Standards



This Open BIM Standards Leaflet gives insight into the Open BIM standards already available in the Netherlands. It is on this overview that the Building Information Council's BIM standards policy is based.

Using the standards

The standards are placed within so-called BIM-levels in order to interpret them. For more information about Dutch BIM levels, refer to BIR Knowledge Map Number 1. Please note that these standards are allocated according to the level at which they form a boundary condition and are, therefore, necessary in order to function at this level. They are sometimes, however, applicable at lower levels. In addition to this, the standards are categorized according to:

- Data i.e. the format of the information carrier.
- Processes i.e. process agreements about the information process; who provides which information when.
- Terms i.e. language agreements (semantics and definitions) to facilitate both the interpretation and automatic interpretation of the information.

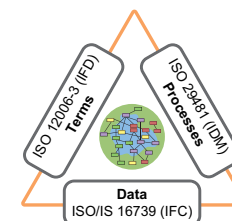
Some standards can be classified into more than one category.

What is a standard and when can it be described as an open standard?

A standard is a central and formal determination of information and process agreements set down in a document. The goal of the standard is making interoperability possible and thus to enable IT systems to exchange data and share information (and knowledge). An open standard is a standard with an open standardisation process. Therefore the definition includes issues such as easily accessible documentation, no intellectual property rights constraints, open participation in addition to independence and the sustainability of the standardisation organisation.

Why do we need open standards?

It is government policy that standards should be open, except in cases where circumstances prevent this. This supports good, sustainable and cost-effective information exchange. This is how the government seeks to stimulate communication and co-operation between different parties as well as promoting healthy competition in the open market due to software independence. Furthermore, today's information is kept usable in the long-term. This open standard policy, however, does not rule out the use of closed standards.



buildingSMART's interoperability triangle



The Standards Defined

Standard (Managed by)	Description	Further Information	Standard (Managed by)	Description	Further Information
CB-NL (BIR)	The CB-NL is a digital description of generic, reusable concepts (types or sorts) related to physically built objects and usable spaces and areas. It can be used by the B&U, GWW and the Spatial Environment throughout the entire lifecycle. In other words the CB-NL is a dictionary for the entire building industry. (source: www.cb-nl.nl) Internationally the CB-NL complies with the standard IFD, the International Framework Dictionary. Note: This standard is under construction.	www.cb-nl.nl/en www.bouwinformatieraad.nl	IMGeo (Geonovum)	IMGeo (Information Model Geography) forms the basis for the exchange of 3D geo-information and contains agreements about the exchange of plus and maintenance topography. This includes agreements relating to the legally compulsory BGT (Basis Registration Large-Scale Topography) (based in part on source: www.geonovum.nl)	www.geonovum.nl
COINS (BIR)	COINS (Constructive Objects and the Integration of Process and Systems) underpins the exchange of Systems Engineering Information and therefore ensures that an object tree, GIS, 2D drawings, 3D models, IFC models and object type libraries successfully cohere with each other within one database. (source: www.coinsweb.nl)	www.coinsweb.nl	Nat. BIM-Protocol Checklist (BIR)	One national BIM protocol checklist to ensure that the operational and legal agreements for BIM projects are accurately and adequately made and anchored. The development of such a protocol checklist will be looked into during the BIR's BIM program.	www.bouwinformatieraad.nl
CityGML (OGC/ Geonovum)	CityGML is a data model for the representation of urban objects in 3D. It defines the classes and relationships between the most relevant topographical objects in cities and regional models in relation to their outward appearance as well as their geometric, topological and semantic characteristics. (based in part on: http://nl.wikipedia.org/wiki/Citygml)	http://www.geonovum.nl/wegwijzer/standaarden	NLCS (BIR/ SBR CURnet)	NLCS is the 2D standard for CAD in the Dutch GWW sector. The NLCS encompasses agreements about metadata, digital signatures, the outward appearance of the drawing and – in particular – the file composition of the 2D drawing. (source: www.nlcs-gww.nl)	www.nlcs-gww.nl
ETIM (ETIM)	The European Technical Information Model for technical products, set up by the HVAC sector (heating, ventilation, and air conditioning). It is a system of classification for a logical, unambiguous division of products in different article classes and the determination of the selective product characteristics in the class. (source www.etim.nl)	www.etim.nl	NL-SfB (BNA/STABU)	The NL-SfB is a classification based on functions which the different parts of the building have to fulfil. The NL/SfB is based on CI/SfB, the international Construction Index. (source: www.stabu.org)	www.stabu.org
GB-CAS (STABU)	The Integrated Building CAD-Agreement System (GB CAS) is primarily aimed at structured drawings in a 2D environment and information exchange for the AEC sector. (source: www.gbcas.nl)	www.gbcas.nl	S@les in de Bouw	Independent communication standard (XML-standard) for electronic information exchange between parties active in the building and HVAC (heating, ventilation, air conditioning) sector, notably for communication concerning purchase and sale transactions.	www.salesindebouw.nl
IFC (building SMART)	The Industry Foundation Classes (IFC) form an open, internationally standardised data model for the exchange and sharing of specific BIM Information between different software applications and parties in the building process. The standard is available for the B&U (houses and offices) sector and is currently being expanded by buildingSMART to include Infrastructure.	www.building-smarttech.org/	VISI (BIR/CROW)	VISI forms the basis for communication and information transfer within organisations and building and other projects. It makes sure that project responsibilities are well shared. This well accepted open standard structures, safeguards and stores communication agreements sector wide. (source: www.crow.nl/visi). VISI is now used internationally due to its inclusion as part 2 – 'Interaction Framework', of the ISO-standard 'Building information Models – Information Delivery Manual'.	www.visi.nl

Acknowledgements

This leaflet (version 4, April 2015) is an initiative of the Building Information Council (BIR) and is number 2 in a series of leaflets. For more information see www.bouwinformatieraad.nl or contact the Information Technology Group's co-ordinator Bram Mommers, bram.mommers@arcadis.nl.

