

International BIM standardization

CEN/TC 442 and ISO/TC 59



May 12, 2016

Espen Schulze,

- expert CEN/TC 442 WG4
- committee member SN/K 257
- member buildingSMART Product Room

The new CEN/TC 442

- The new CEN/TC 442 on BIM (Building Information Modeling) was recently created by CEN/BT decision with Standards Norway secretariat
- CEN/TC 442 [web page](#) - Scope
- CEN/TC 442 [Business Plan](#)

The new CEN/TC 442



Scope

Standardization in the field of structured semantic life-cycle information for the built environment.

The committee will develop a structured set of **standards**, **specifications** and **reports** which specify methodologies to define, describe, exchange, monitor, record and securely handle **asset data**, **semantics** and **processes** with links to geospatial and other external data.

CEN/TC 442 meetings

- First meeting took place on 2015-09-16 in Brussels
- The second meeting was held in Oslo last February

2nd plenary meeting of CEN/TC 442

**on 2016-02-15/16 at
Norwegian building authority
Mariboegs gate 13 0183 OSLO
Norway**

CEN/TC 442 meetings

- The next meetings:
 - 2016-04-27/28 WG meetings, Paris
 - 2016-06-20/21 TC 442 Plenary, lunch-to-lunch, Lisbon
 - 2016-09-12/13 WG meetings, Berlin
 - 2016-10-26 TC 442 Plenary, one day, Madrid
 - 2016-12-12/13 WG meetings, Vienna
 - 2017-02-14/15 TC 442 Plenary, France (place to be determined)
 - 2017-03-29/30 WG meetings, Stockholm (to be confirmed)
 - 2017-06-19/20 TC 442 Plenary, Zürich

CEN/TC 442 Work Programme



- During the first meeting, the TC decided to start the approval process on the adoption of:
 - ISO 16739:2013 - Industry Foundation Classes;
 - ISO 29481-2 Building Information Modelling - Information Delivery Manual - Part 2 Interaction Framework;
 - ISO 12006 Building Construction - Organization of Information about Construction Works - Part 3: Framework for object oriented information.
- The three Work Items have been created and expected to be voted shortly ([CEN/TC 442 Work Programme](#))

CEN/TC 442 Structure



- The TC decided to create 4 working groups for the development of the future work ([CEN/TC 442 structure](#)):
 - [Working Group 1 - Strategy and Planning](#) – BSI secretariat;
 - [Working Group 2 - Exchange information](#) – DIN secretariat;
 - [Working Group 3 - Information Delivery Specification](#) – ASI secretariat;
 - [Working Group 4 - Support Data Dictionaries](#) – AFNOR secretariat.
- And a Chair Advisory Group a permanent group created with the aim to coordinate and advise on generic issues across the CEN/TC 442 working groups

CEN/TC 442 Liaison Organizations



- The concept of Partnership with European Organizations and other stakeholders – [CEN-CENELEC Guide 25](#)
 - [CERAME-UNIE](#) – The European Ceramic Industry Association
 - [European Federation of Engineering Constancy Associations](#)
 - [FIEC](#) – European Construction Industry Federation
 - [building Smart International](#)
 - European Commission – DG Grow – Unit C1 - Clean Technologies and Products – Category 4 (European Counsellor)
- Annex III Organization (Reg. 1025/2012)
 - [SBS](#) – Small Business Standards



CEN/TC442 - Structure



CEN/TC 442 –Building Information Modelling Plenary



WG 01

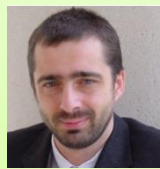
Strategy
and
Planning



UK

WG 02

Exchange
Information



Germany

WG 03

Information
Delivery
Specification



Austria

WG 04

Support Data
Dictionaries



France

Chairman's Advisory Group

WG1 – Strategy and planning

Secretariat: BSI (UK)



Convener: Richard Waterhouse

Secretary: Danny Peacock

- provide guidance to CEN/TC 442 related to the development of the Business Plan and Work Program
- monitor worldwide and European current and planned activities regarding Building Information Modelling (BIM)
- provide strategic advice to CEN/TC 442 on matters and issues related to CEN/TC 442 and focus on developing the European strategy for BIM standardization
- to active collaborate with ISO/TC59/SC13/TF02 - Business Planning and Strategy



WG2 - Exchange information

Secretariat: DIN (Germany)



Convenor: Thomas Liebich

Secretary: Andrea Schilde (replaced by Britta Grotewold)

- development of electronic formats for information exchanges (such as ISO 16739 (IFC))
- development of subsets of such electronic formats for specific information exchanges (such as MVD)
- specification of data content to be exchanged using such specific information exchanges (such as data drops)

DECISION 047 taken by CEN/TC 442 on 2016-02-16:

Scope for WG2 and WG 3 will be further developed once the WGs have had time to develop their areas of activity; “just start working”.



WG3 - Information Delivery Specification – ASI (Austria=



Convenor: Peter Kompolschek

Secretary: Stefan Wagmeister

Germany's proposed scope for WG 3:

- development of an overall process definition for communication in the construction industry (such as process maps, as defined in ISO 29481 (IDM))
- identification of roles within such process definitions
- identification of input/output relations between such processes

DECISION 047 taken by CEN/TC 442 on 2016-02-16:

Scope for WG2 and WG 3 will be further developed once the WGs have had time to develop their areas of activity; "just start working".



WG4 - Support Data Dictionaries

AFNOR (France)



Convenor: Roland Dominici

Secretary: Etienne Cailleau

- From the Business Plan:
- Establish a common Data Dictionary framework and Application Programming Interfaces
- Harmonisation of construction product properties
- Harmonisation of European classification tables
- Dictionaries and Object Libraries

Work Items

Approved NWI:

- ISO 16739:2013 - Industry Foundation Classes;
- ISO 29481-2 Building Information Modelling - Information Delivery Manual - Part 2 Interaction Framework;
- ISO 12006 Building Construction - Organization of Information about Construction Works - Part 3: Framework for object oriented information.

NWIP to be further developed by the WG's

- High level Information Delivery Manual (France)
- Data Dictionaries-Method of definition (France)
- Implementing a phase model for Building Information Modelling (Austria)
- Implementing a European properties server based on bsDD (Austria)

Work programme

Sections	Items	Deliverable
Understand the current position	Terminology	TR
	Identification of stakeholder expectations (roles, phases...)	TR
	Common base of construction procurement methodology within Europe	TR
	BIM Implementation wedges	TR
	Available standards in the market (status and usage)	TR
	Definition of construction exchange processes	TR
Develop Exchange Information - IFC standards	ISO 16739 Industry Foundation Classes for data sharing in the construction and facility management industries	CEN ISO EN
	Extend and develop standards for industrial facilities and infrastructure	To define
	Record management	To define
Develop Information Delivery Specifications	ISO 29481-1 Building information modelling – Information delivery manual – Part 1: Methodology and format	CEN ISO EN
	ISO 29481-2 Building information models – Information delivery manual – Part 2: Interaction framework	CEN ISO EN
	ISO/TS 12911:2012 Framework for building information modelling (BIM) guidance	To define
	Framework for BIM Guidelines	To define
	Energy Assessment(EN 15603)	To define
	Lifecycle Cost estimation and Assessment, (CEN / TC 350)	To define
	Facility Management and Operation,	To define
	Building Applications (Planning and Regulatory Authorities)	To define
	Support Data Dictionaries	ISO 12006 Building construction – Organisation of information about construction works -- Part 2: Classification
ISO 12006 Building construction – Organisation of information about construction works -- Part 3: Framework for object-oriented information		To define (CEN ISO/ EN or TS)
Common Data Dictionary framework and Application Programming Interfaces		To define
Harmonisation of construction product properties		To define
Harmonisation of European classification tables		To define
Dictionaries and Object Libraries		To define
Sustainability	Representing European sustainability standards in BIM	To define

Work programme



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Understand the current position	Terminology	TR	
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	Extend and develop standards for industrial facilities and infrastructure	To define	
	Record management	To define	
Develop Information Delivery Specifications	ISO 29481-1 Building information modelling – Information delivery manual – Part 1: Methodology and format	CEN ISO EN	
	ISO 29481-2 Building information models – Information delivery manual – Part 2: Interaction framework	CEN ISO EN	
	ISO/TS 12011:2012 Framework for building information modelling (BIM) guidance	To define	
	Framework for BIM Guidelines	To define	
	Energy Assessment(EN 15603)	To define	
	Lifecycle Cost estimation and Assessment, (CEN / TC 350)	To define	
	Facility Management and Operation	To define	
	Building Applications (Planning and Regulatory Authorities)	To define	
	Support Data Dictionaries	ISO 12006 Building construction – Organisation of information about construction works -- Part 2: Classification	To define (CEN ISO/ EN or TS)
		ISO 12006 Building construction – Organisation of information about construction works -- Part 3: Framework for object-oriented information	To define (CEN ISO/ EN or TS)
Common Data Dictionary framework and Application Programming Interfaces		To define	
Harmonisation of construction product properties		To define	
Harmonisation of European classification tables		To define	
Dictionaries and Object Libraries		To define	
Sustainability		Representing European sustainability standards in BIM	To define

IFC
(model)

IDM
(process)

Classification

IFD
(Data Dictionary)

Questions?

abeltrao@cencenelec.eu

Øivind Rooth (or@dibk.no)

www.cen.eu

www.cencenelec.eu



ISO/TC 59/SC13 – Organization of Information about construction works

Subcommittee of
ISO/TC 59 Buildings and civil engineering works

Chair: Kjell Ivar Bakkmoen, Sykehusbygg HF, Norway
Secretary: Lisbet Landfald, Standards Norway (SN)



ISO/TC 59/SC13 – Organization of Information about construction works

*The gateway to ISO
BIM-standards*

*ISO/TC 59/SC 13
- developer of the
IFD-standard
and
IDM-standards*

- Object libraries
- Classification
- Management of communication

- Further development of the IDM/MVD concept:

- System standards for development and certification of AECO|professional content
- IDM's/MVD's with AECO professional domain specific content



ISO/TC 59/SC13 – Organization of Information about construction works

Organization in liaison:





ISO/TC 59/SC13 – Organization of Information about construction works

Working Group	Title
Task Force 01	Terminology Convenor: Mr. Mike Roberts, UK Secretary: Mr. Danny Peacock (BSI)
Task Force 02	Business Planning and Strategy Convenor: Mr. Mark Bew, UK Secretary: Mr. David Hyde (BSI)
WG 2	Classification of the information on the construction industry Disbanded 2015-06
WG 7	Process management Disbanded 2014-07
WG 8	Building information models - Information delivery manual Convenor: Mr. Henk Schaap, NL Project leader: Mr. Jan Karlshøj, DK
WG 9	BIM guidance Disbanded 2014-07
WG 10	Object libraries Disbanded 2014-07
WG 11	Product data for building services systems model Convenor: Mr. Wolfgang Wilkes, D Project leader: Mr. Manfred Pikart, D
JWG 12	Development of ISO 16739 and other building data related standards Joint ISO/TC 59/SC 13 - ISO/TC 184/SC 4 WG Convenor: Mr. Thomas Liebich
WG 13	Implementation of collaborative working over the asset lifecycle Convenor: Ms. Anne Kemp, UK Secretary: Mr. Danny Peacock (BSI)



ISO/TC 59/SC13 – Organization of Information about construction works

Participating countries: 24

Australia (SA), Austria (ASI), Belgium (NBN), Canada (SCC), China (SAC), Czech Republic (UNMZ), Denmark (DS), Finland (SFS), France (AFNOR), Germany (DIN), Italy (UNI), Japan (JISC), Malaysia (DSM), Netherlands (NEN), Norway (SN), Portugal (IPQ), Romania (ASRO), Singapore (SPRING SG), Spain (AENOR), Sweden (SIS), Switzerland (SNV), Turkey (TSE), United Kingdom (BSI), United States (ANSI)

Observing countries: 10

Belarus (BELST), Bulgaria (BDS), Estonia (ESTV), Hungary (MSZT), Iceland (IST), India (BIS), Israel (SII), Republic of Korea (KATS), Poland (PKN), Serbia (ISS)



ISO/TC 59/SC13 – Organization of Information about construction works

Developed ISO standards

- **ISO 12006-2:2001**

Building construction -- Organization of information about construction works -- Part 2: Framework for classification of information. *Revised, replaced by ISO 12006-2:2015*

- **ISO 12006-3:2007**

Building construction -- Organization of information about construction works -- Part 3: Framework for object-oriented information

- **ISO 22263:2008**

Organization of information about construction works -- Framework for management of project information

- **ISO/TS 12911:2012**

Framework for building information modelling (BIM) guidance

- **ISO 29481-1:2010**

Building information modelling -- Information delivery manual -- Part 1: Methodology and format. Under revision (WG 8)

- **ISO 29481-2:2012**

Building information models -- Information delivery manual -- Part 2: Interaction framework

- **ISO 16354:2013**

Guidelines for Knowledge Libraries and Object Libraries

- **ISO 16757-1:2015 (published February 2015)**

Data structures for electronic product catalogues for building services -- Part 1: Concepts, architecture and model. *Part 2-5 under development or planned*

- **ISO 12006-2:2015 (published May 2015)**

Building construction - Organization of information about construction works - Part 2: Framework for classification



ISO/TC 59/SC13 – Information about

Framework for classification

Uniclass (UK)
Omniclass (US)
BSAB (SE)

Developed ISO standards

- **ISO 12006-2:2001**

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ISO/TC 59/SC13 – Information about

The IFD standard
buildingSMART Data
Dictionary

Developed ISO standards

- **ISO 12006-2:2001**

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- ~~ISO 22263:2006~~

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ISO/TC 59/SC13 – Information about

IDM -
processes and information
flow

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ISO/TC 59/SC13 – Organization of Information about construction works

On-going projects

WG 8 Building information models - Information delivery manual (IDM):

- **ISO 29481-1** Building information modelling -- Information delivery manual -- Part 1: Methodology and format (*revision of ISO 29481-1:2010*)

Current status: Publication date 2016-05-01

WG 11 Product data for building services systems model

- **ISO/DIS 16757-2:** Data structures for electronic product catalogues for building services -- Part 2: Geometry Current status: DIS approved for registration as FDIS. Publication limit date 2017-04-10

JWG 12 Development of ISO 16739 and other building data related standards:

Joint Working Group between ISO/TC 59/SC 13 and ISO/TC 184/SC4 established in July 2013 for the maintenance of ISO 16739 (IFC) and development of related standards.

- **ISO/NP 16739-1** Industry Foundation Classes (IFC) for data sharing in the construction and facility management industries -- Part 1: Data schema using EXPRESS schema definitions
- **ISO/NP 16739-2** Industry Foundation Classes (IFC) for data sharing in the construction and facility management industries -- Part 2: Data schema using XML schema definitions

WG 13 Implementation of collaborative working over the asset lifecycle:

- **ISO/WD 19650-1** Organization of information about construction works -- Information management using building information modelling -- Part 1: Concepts and principles
- **ISO/WD 19650-2** Organization of information about construction works -- Information management using building information modelling -- Part 2: Delivery phase of assets

Current status both parts: Working Draft under preparation. To be discussed at WG 13 meeting in April. DIS limit date 2016-11-28. Publication limit date 2017-11-28



ISO/TC 59/SC13 – Organization of Information about construction works

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Revision of
IDM -
processes and information
flow



ISO/TC 59/SC13 – Information about

Revision of IFC

On-going projects

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ISO/TC 59/SC13 – Information about

Information management
using BIM
Based on PAS 1192-2 (UK)
ISO and CEN

On-going projects

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Thank you for your attention!



May 12, 2016

Espen Schulze,

- expert CEN/TC 442 WG4
- committee member SN/K 257
- member buildingSMART Product Room