Digitising manufacturers data - how to develop machine readable information

-

Structured and interoperable manufacturers information

Lars Chr. Fredenlund
CEO

Oslo , 16.04.2020

It’s all about data.

Fit-for-purpose and accurate product data improves quality of service, time to market and reduces time, cost and environmental footprint

Slow digitalization heavily affects profitability

- The Engineering and Construction industry continues to operate as it has for the past 50 years
  - manual labour
  - mechanical technologies
  - legacy business models.

- Lack of productivity growth leading to
  - delays in the completion of projects
  - material wastages
  - poor project profitability

http://www3.weforum.org/docs/Future_Scenarios_Implications_Industry_report_2018.pdf

Global trends forcing fundamental change

- Megatrends
  - Sustainability and climate change
  - Circularity of assets
  - Industry 4.0
- Industry-specific trends
  - increasing urbanization
  - growing talent and infrastructure gaps.
  - Focus on enviromental impacts
- Overall
  - new digital technologies
  - new distribution chains
  - Data, data, data

DATA can turn challenges into PROFIT

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Make data your competitive advantage.

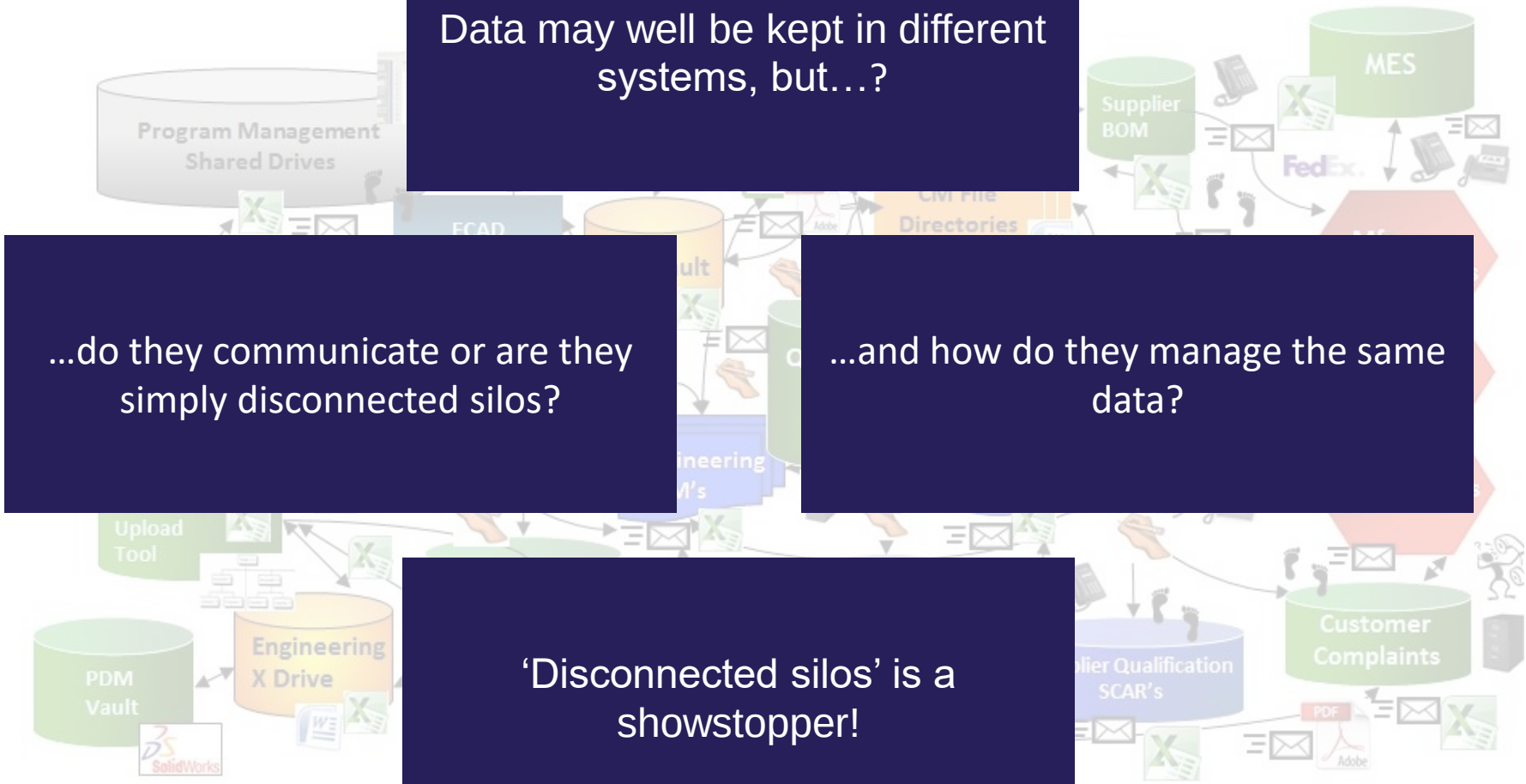
A typical data situation

Data may well be kept in different systems, but…?

…do they communicate or are they simply disconnected silos?

…and how do they manage the same data?

‘Disconnected silos’ is a showstopper!



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Tidy up your internal data infrastructure…

… or if you prefer, we'll just make a system within the mess and still enable you to connect to the "rest of the world" (external systems)

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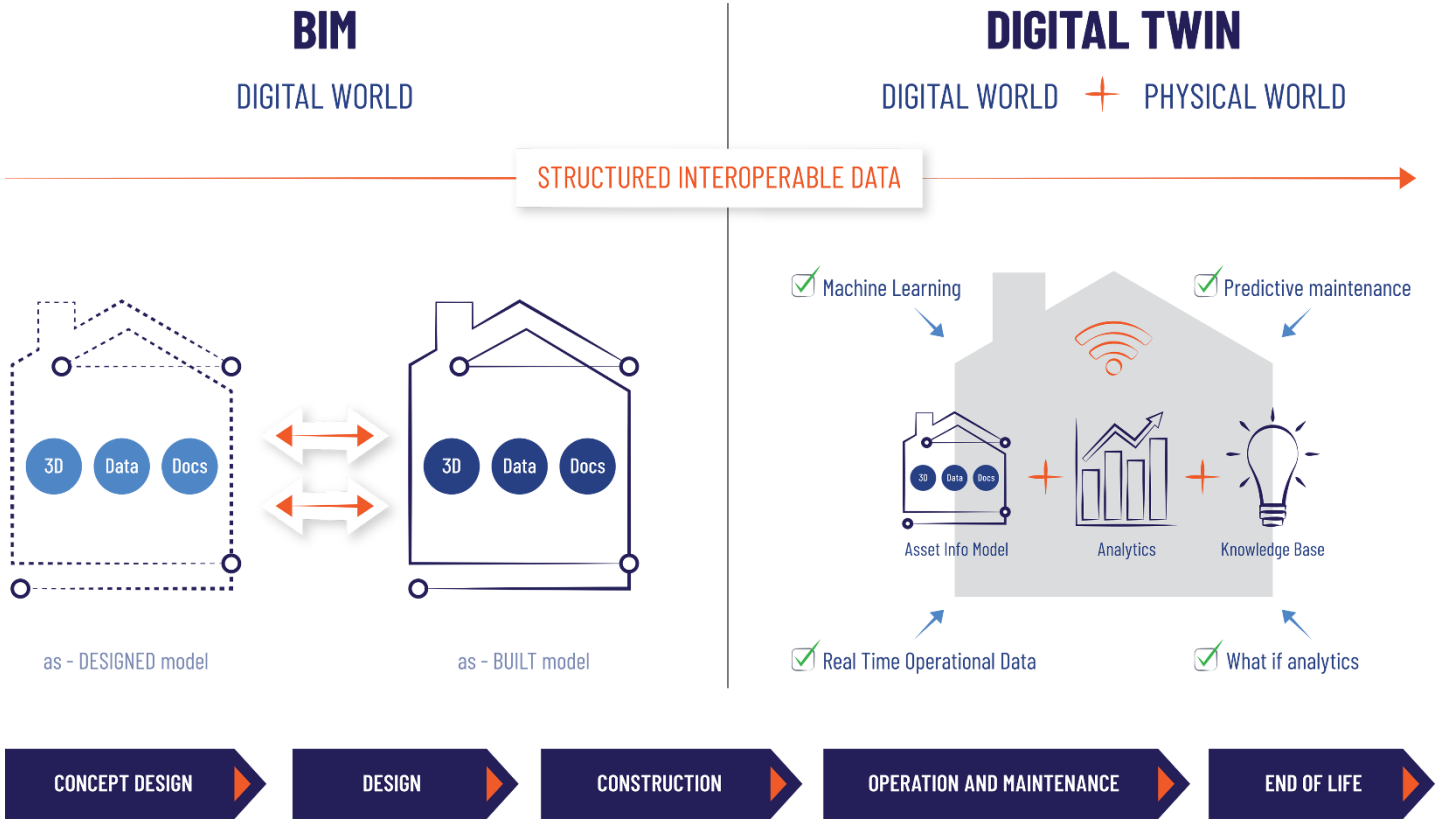
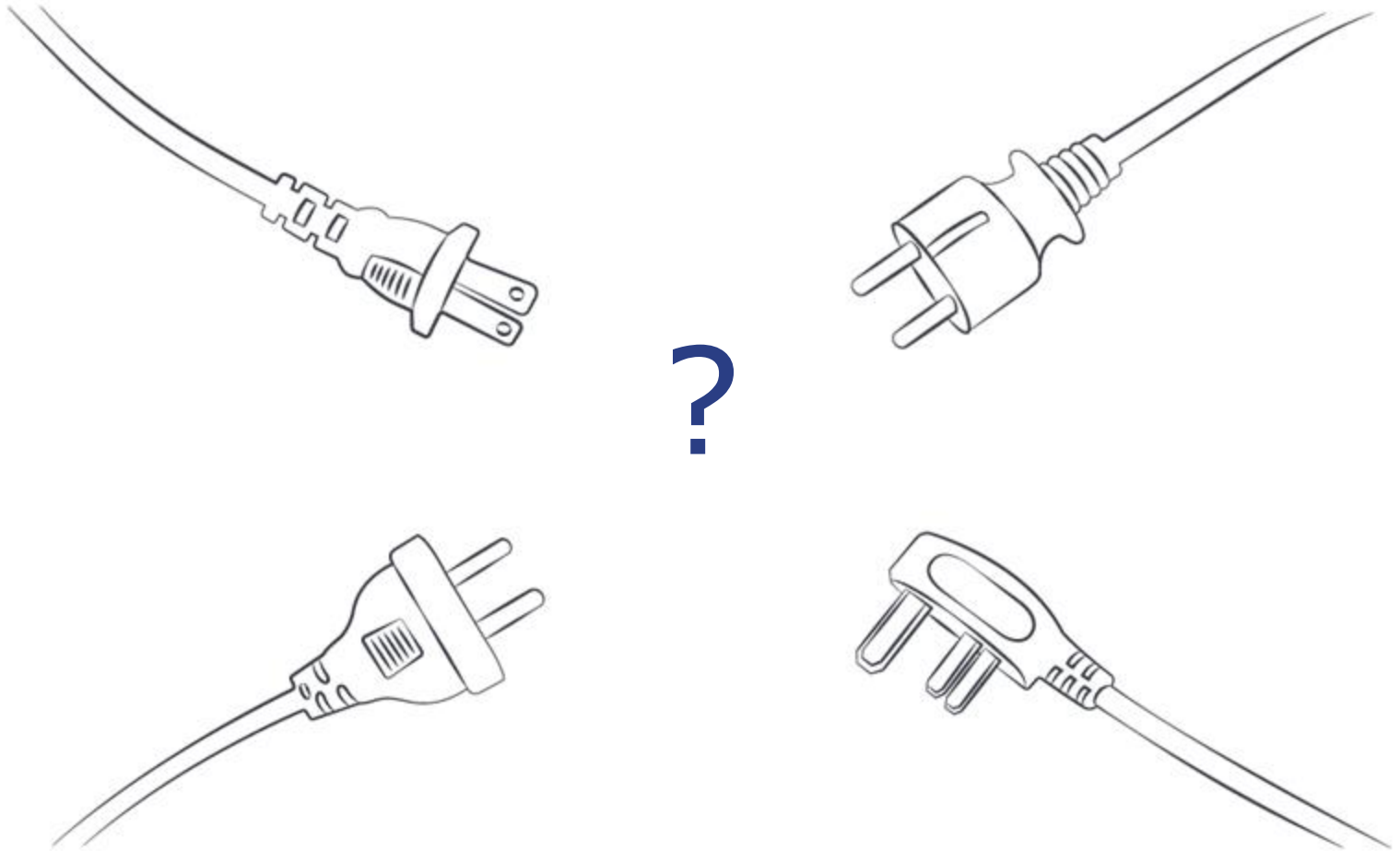
Digital twin - this new digital market is becoming a priority for market actors



The as-designed model is based on input from the design teams which ultimately forms the basis for the as-built model that contains all the characteristics of a building. #CEN #ISO #ASTM etc. standards opens a closed market

BIM enables Cobuilder to provide data to create Digital Twins which is a virtual representation of physical as-built asset by linking standardized data to 3D. This opens a new digital market on planned development, where assets are sold

Without standards ?



EN ISO 23386 & prEN ISO 23387

- what these standards means for manufacturers

Lars Chr. Fredenlund
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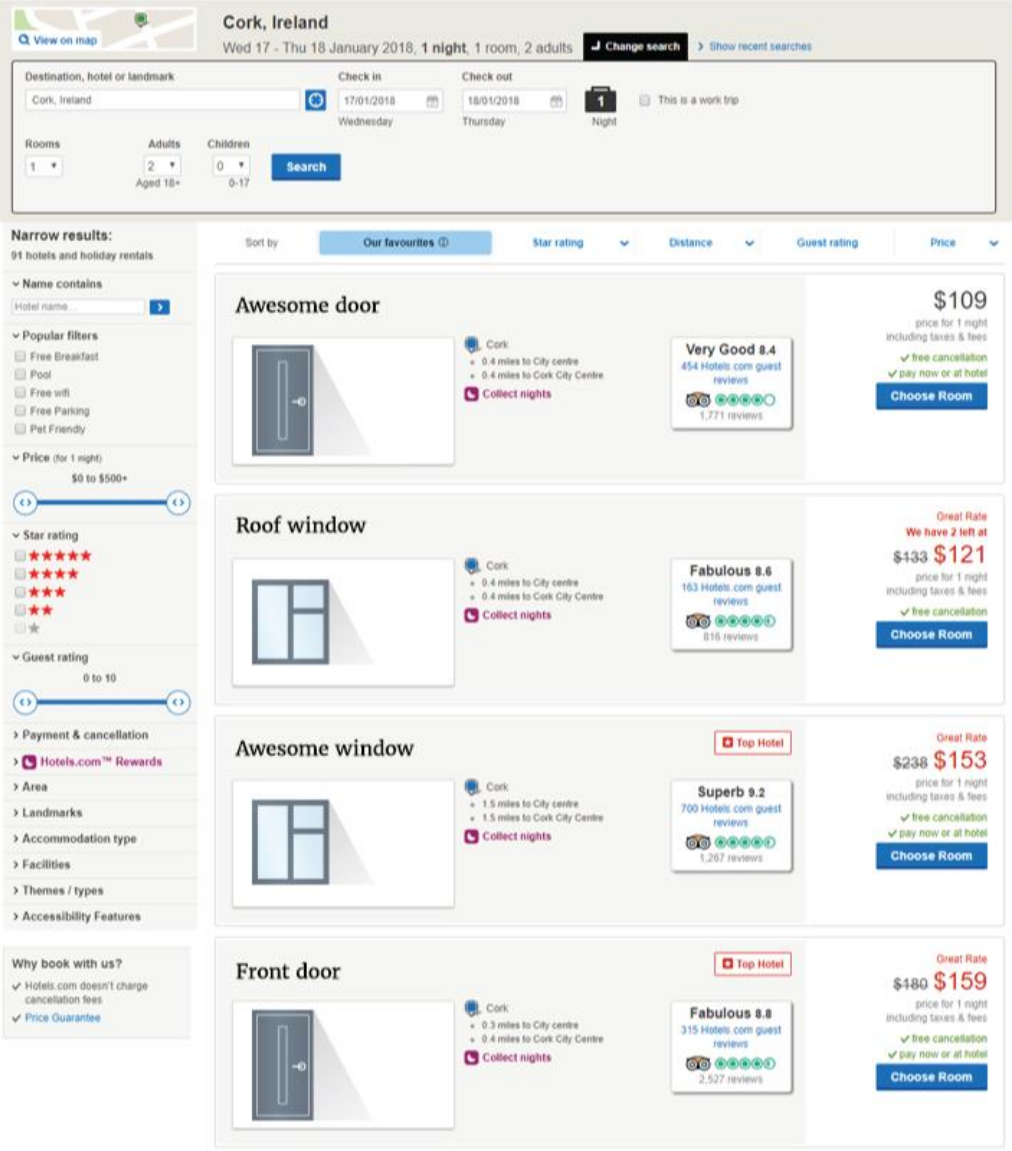
We can develop our industry – welcoming data platforms

Similary, digitalisation in the construction sector made it possible to use structured standart-based product information for both setting specific product requirements and identifying, specifying and purchasing construction products that meet those requirements.



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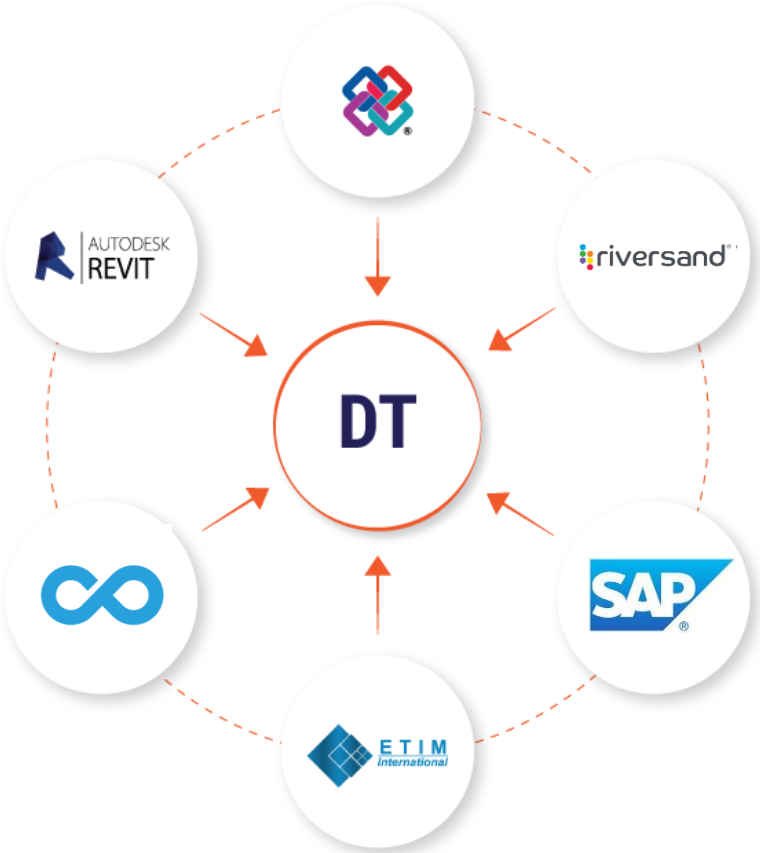
We need a common language !

VS



Twitter: @_fredenlund

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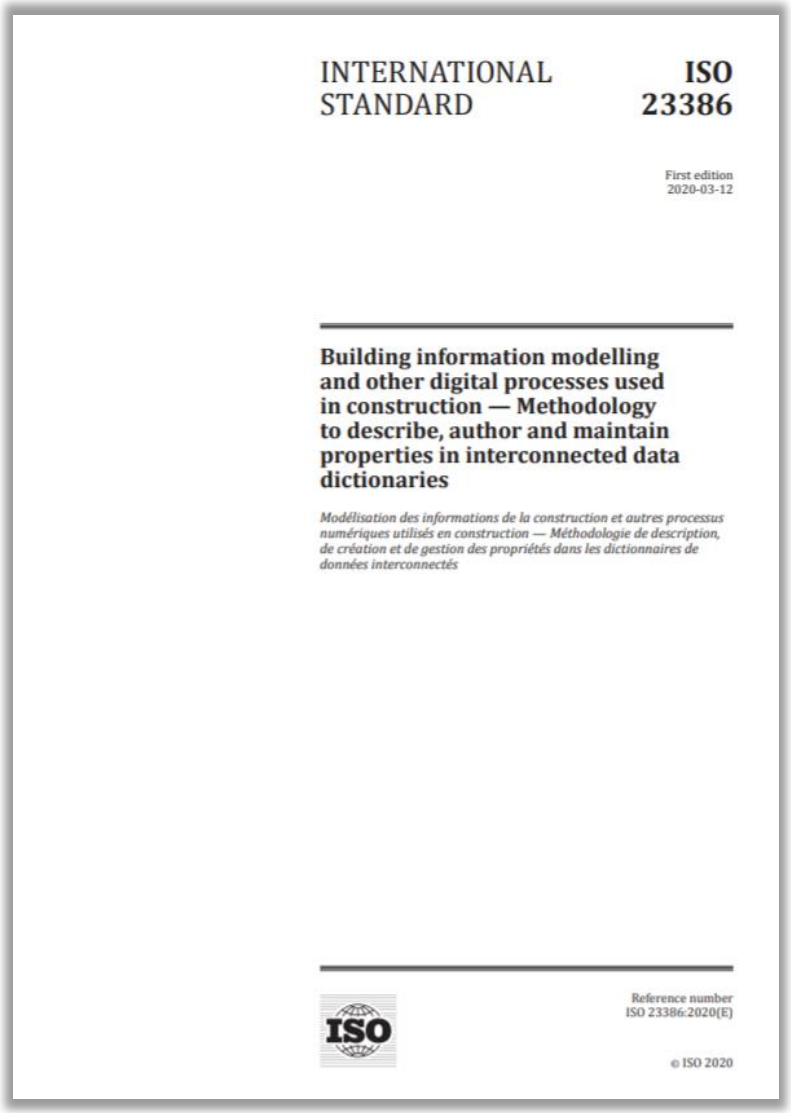
ISO 23386 - Building information modelling and other digital processes used in construction — Methodology to describe, author and maintain properties in interconnected data dictionaries



INTERNATIONAL STANDARD

ISO 23386

First edition
2020-03-12

Building information modelling and other digital processes used in construction — Methodology to describe, author and maintain properties in interconnected data dictionaries

Modélisation des informations de la construction et autres processus numériques utilisés en construction — Méthodologie de description, de création et de gestion des propriétés dans les dictionnaires de données interconnectés

ISO

Reference number
ISO 23386:2020(E)

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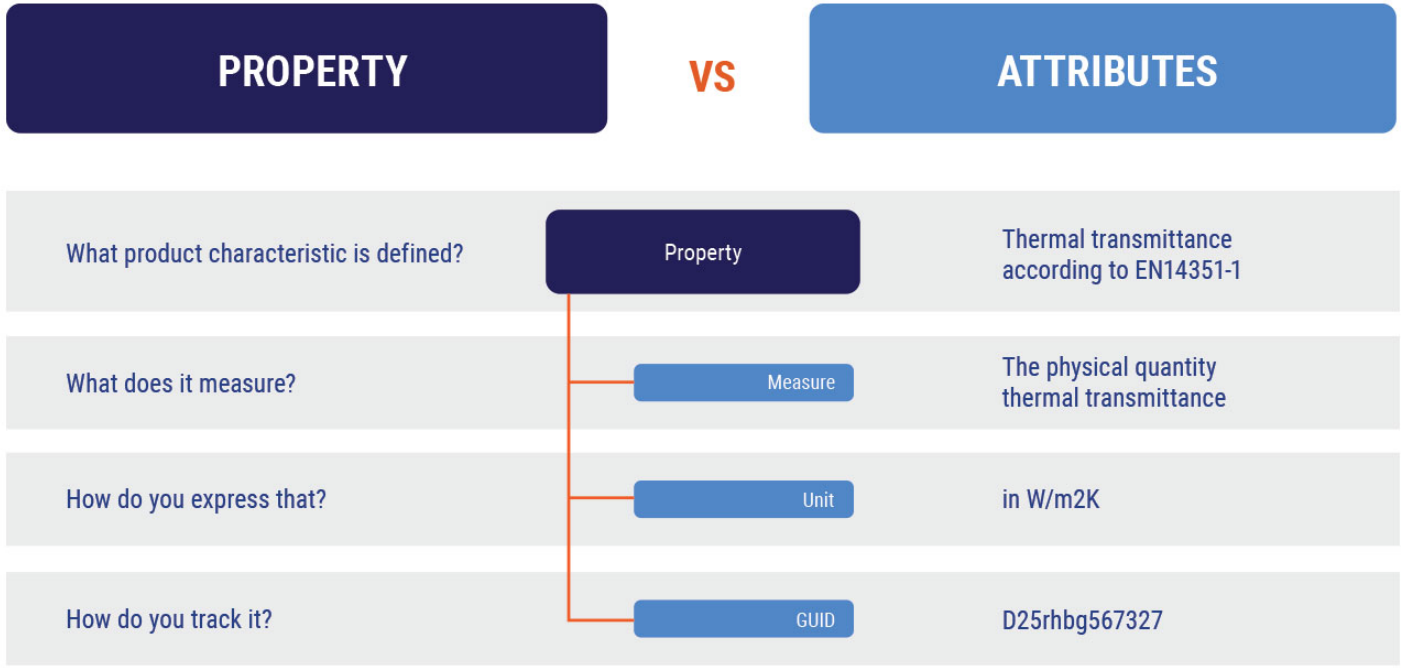

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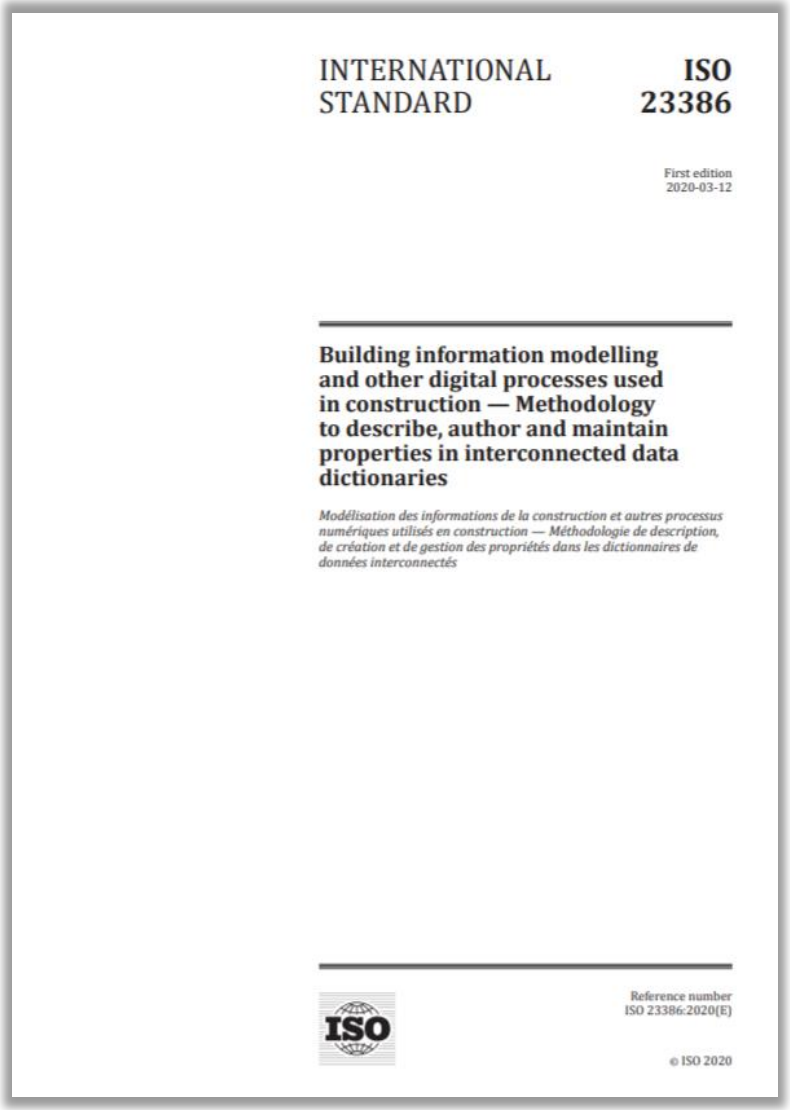

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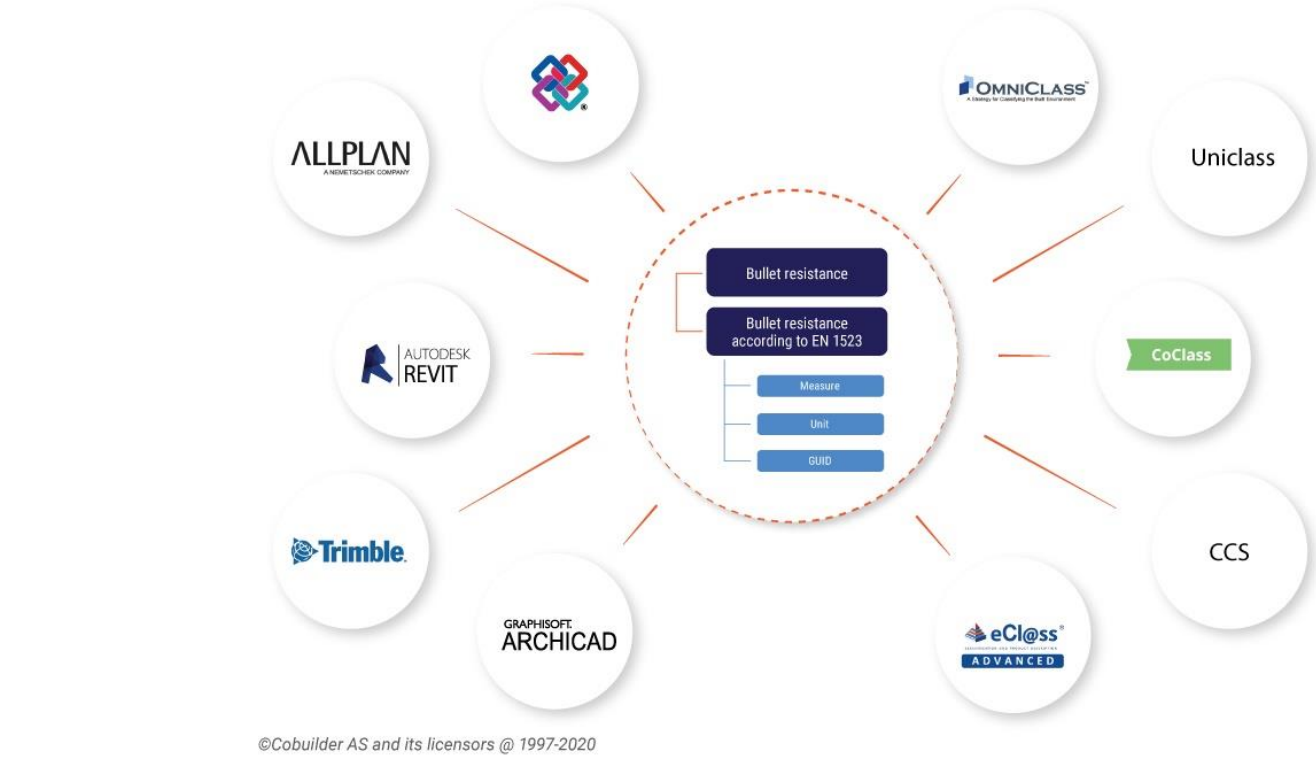

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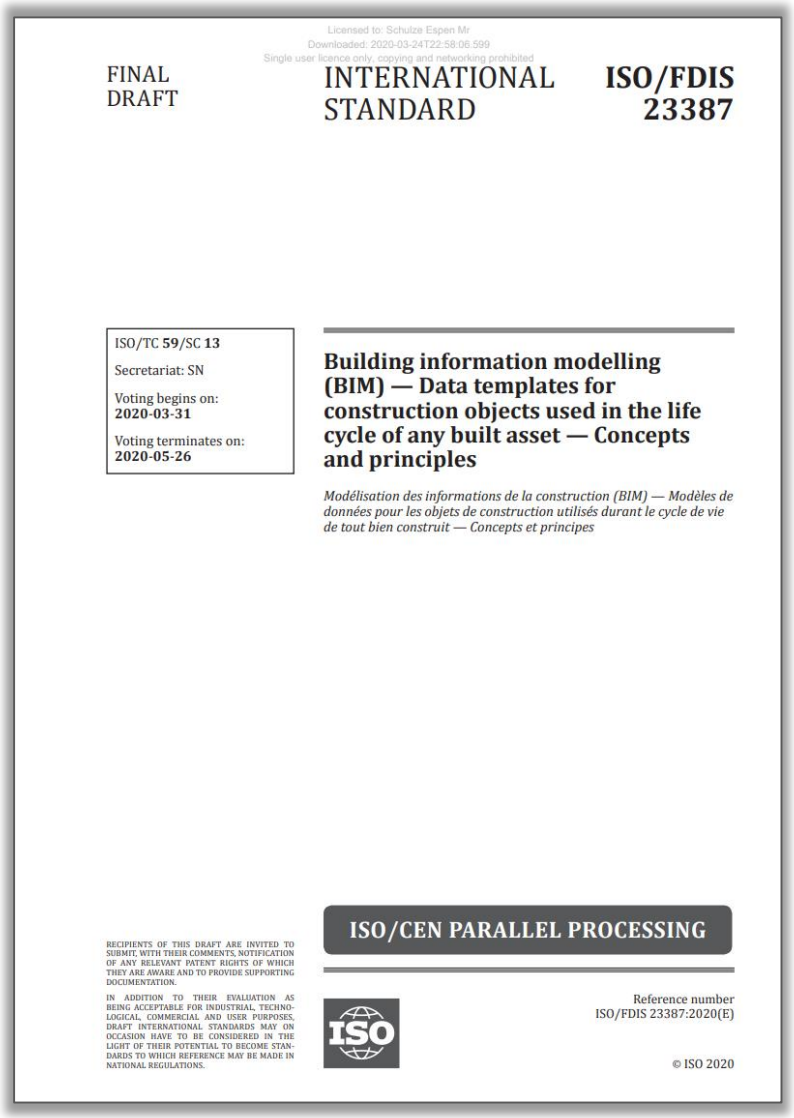
ISO 23387 - Data Templates for construction objects used in the life cycle of any built asset — Concepts and principles



FINAL DRAFT

INTERNATIONAL STANDARD

ISO/FDIS 23387

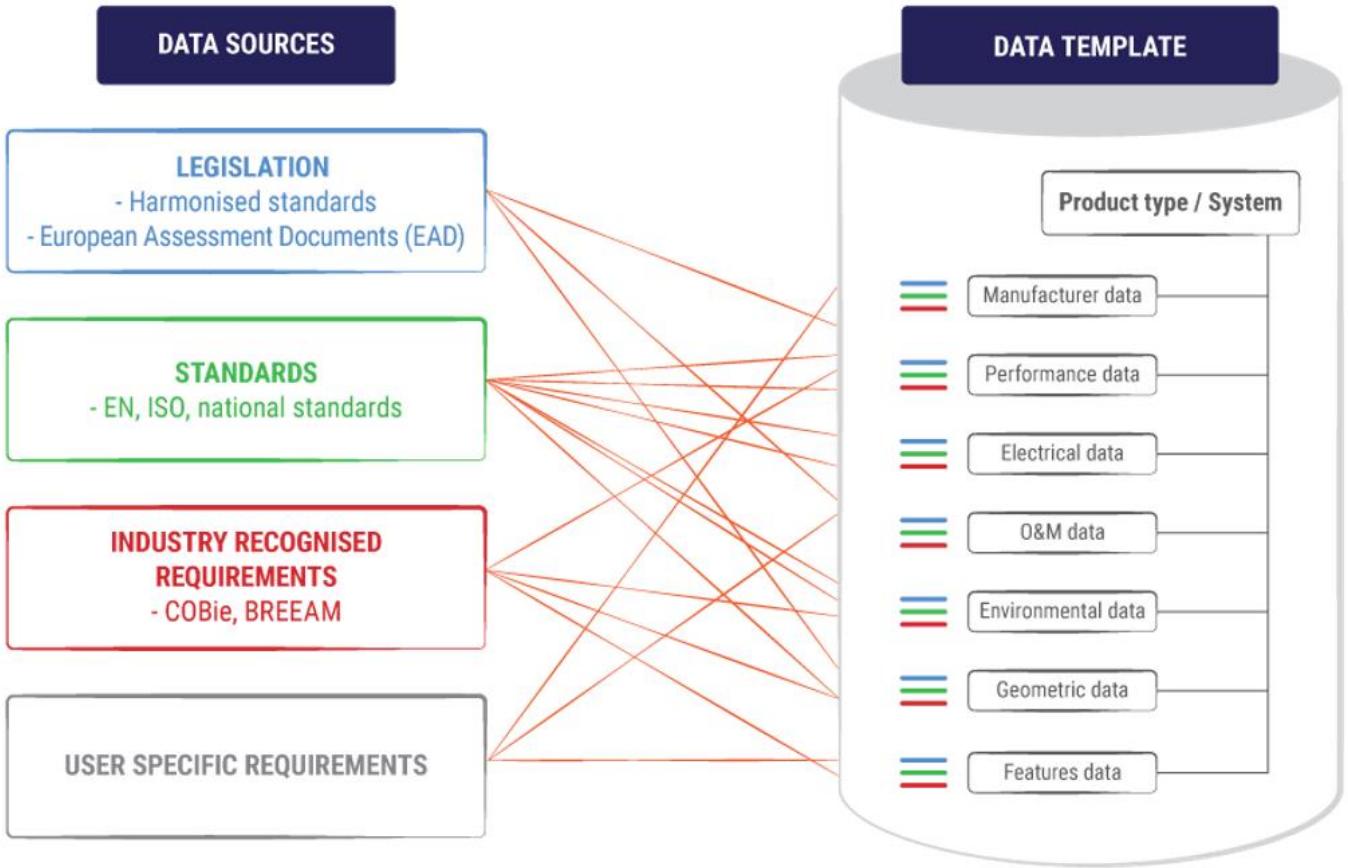
ISO/TC **59**/SC **13**
Secretariat: SN
Voting begins on: **2020-03-31**
Voting terminates on: **2020-05-26**

Building information modelling (BIM) — Data templates for construction objects used in the life cycle of any built asset — Concepts and principles

Modélisation des informations de la construction (BIM) — Modèles de données pour les objets de construction utilisés durant le cycle de vie de tout bien construit — Concepts et principes

ISO/CEN PARALLEL PROCESSING

Reference number
ISO/FDIS 23387:2020(E)



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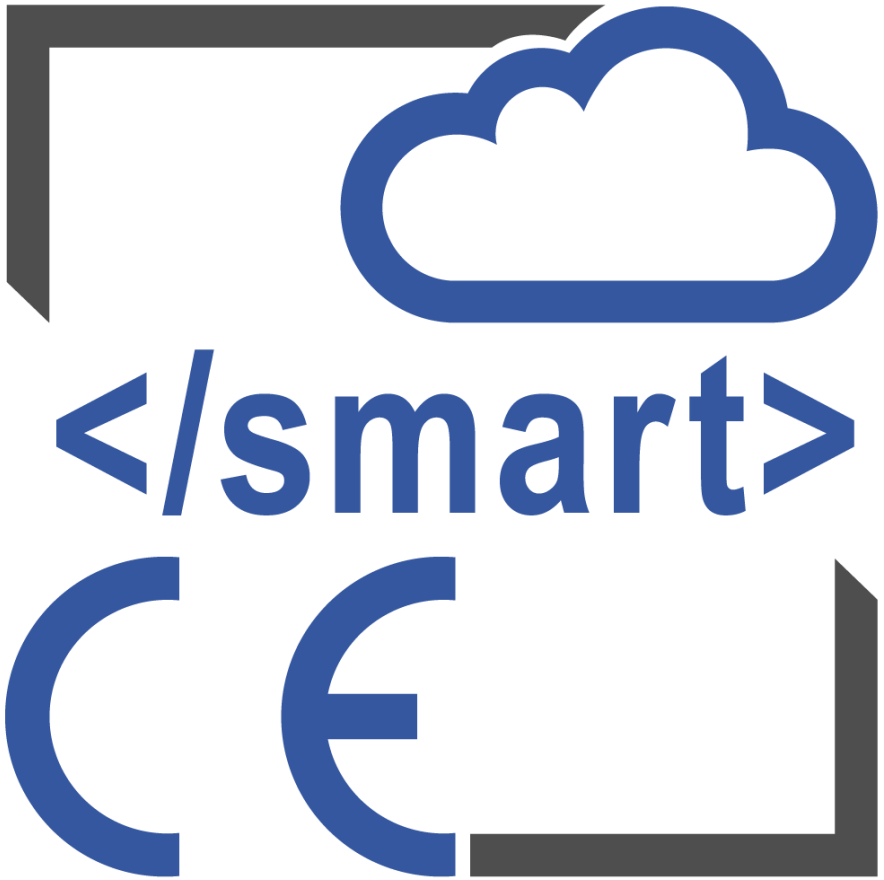
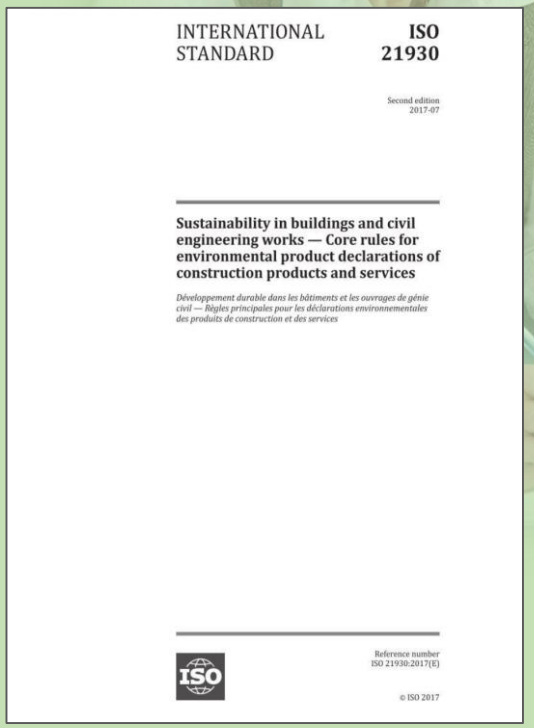


CONSTRUCTION PRODUCTS EUROPE

CEN CENELEC ISO

Espen Schulze

ISO 23386 & 23387 - Data Templates for construction objects used in the future standard to digitise Environmental Data from EPD – and can enhance CPR (DoP)



INTERNATIONAL STANDARD **ISO 21930**

Second edition
2017-07

Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services

Développement durable dans les bâtiments et les ouvrages de génie civil — Règles principales pour les déclarations environnementales des produits de construction et des services

Reference number
ISO 21930:2017(E)

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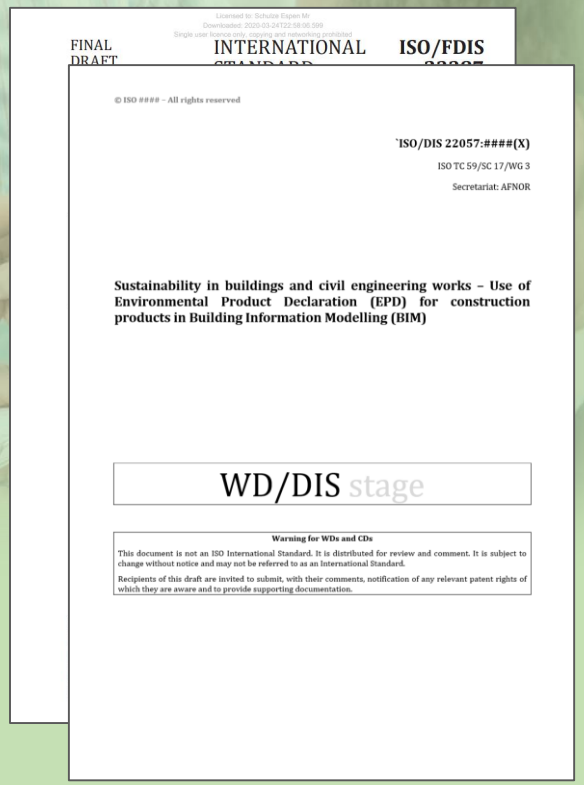

FINAL DRAFT INTERNATIONAL STANDARD **ISO/FDIS**

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`ISO/DIS 22057:####(X)

ISO TC 59/SC 17/WG 3

Secretariat: AFNOR

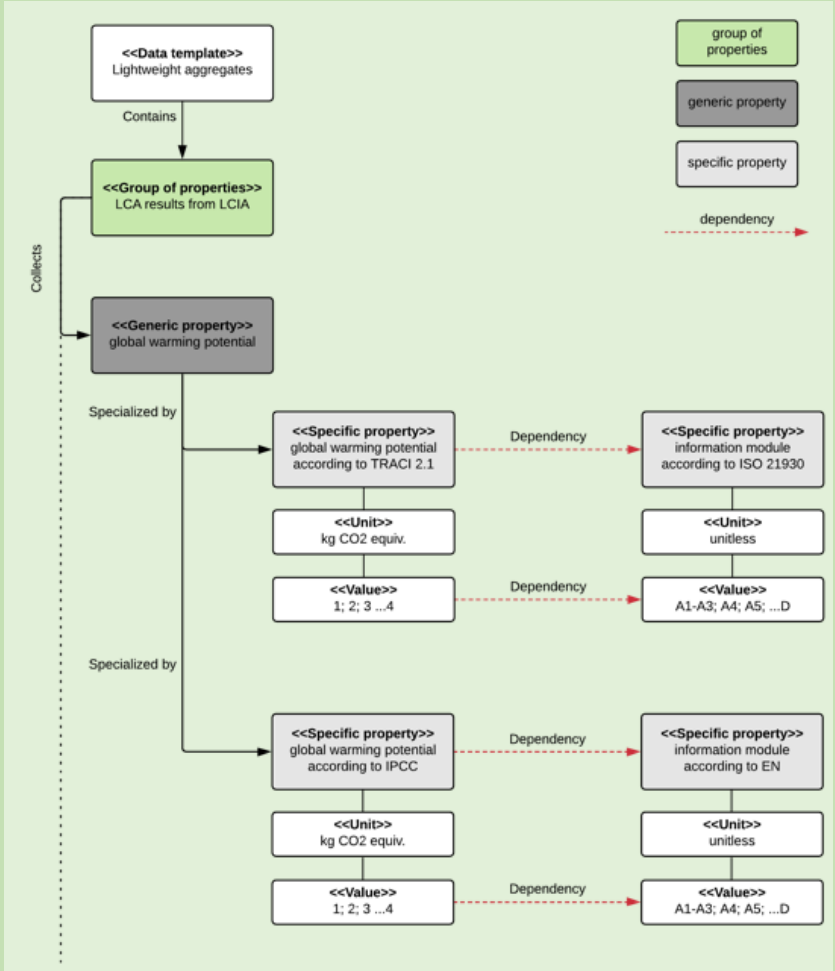
Sustainability in buildings and civil engineering works – Use of Environmental Product Declaration (EPD) for construction products in Building Information Modelling (BIM)

WD/DIS stage

Warning for WDs and CDs

This document is not an ISO International Standard. It is distributed for review and comment. It is subject to change without notice and may not be referred to as an International Standard.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.



CENELEC ISO

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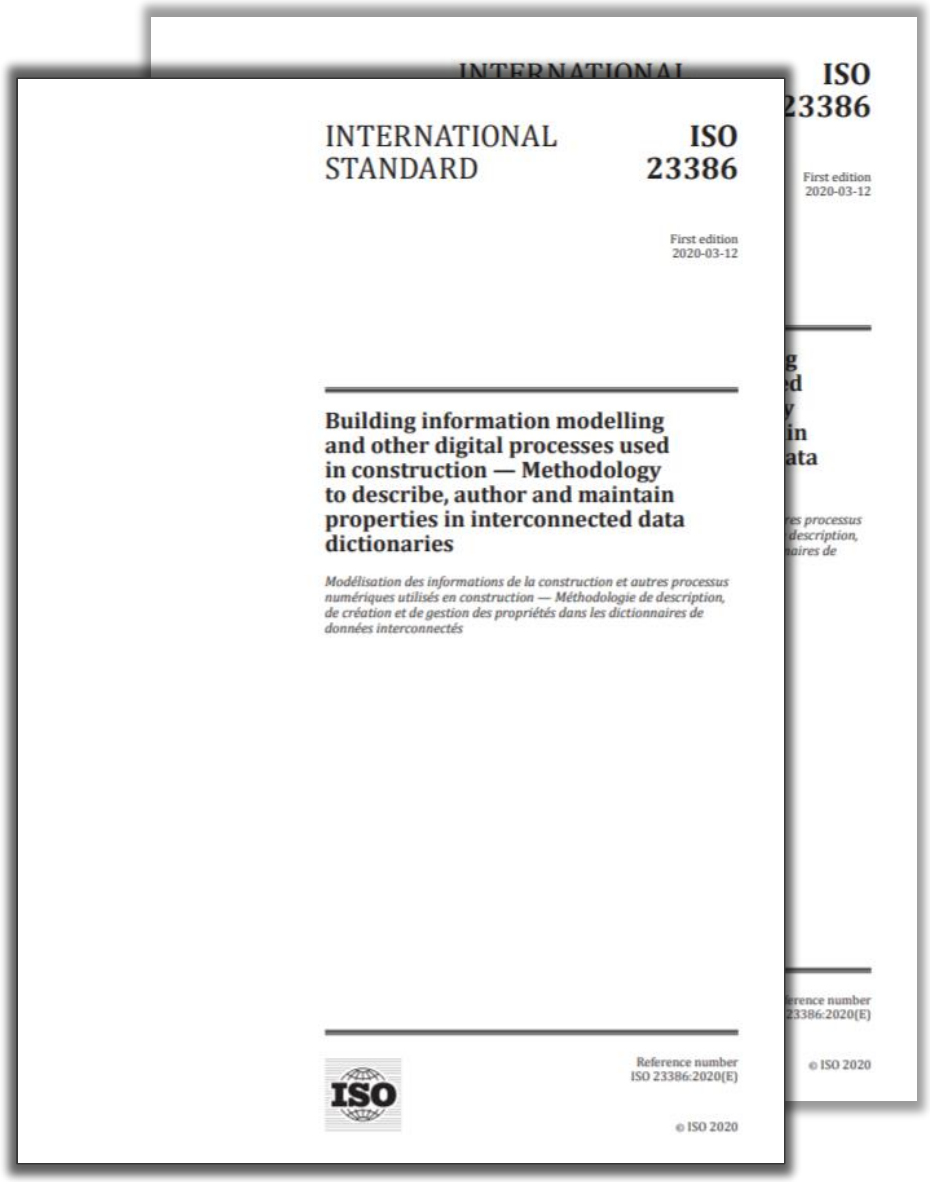
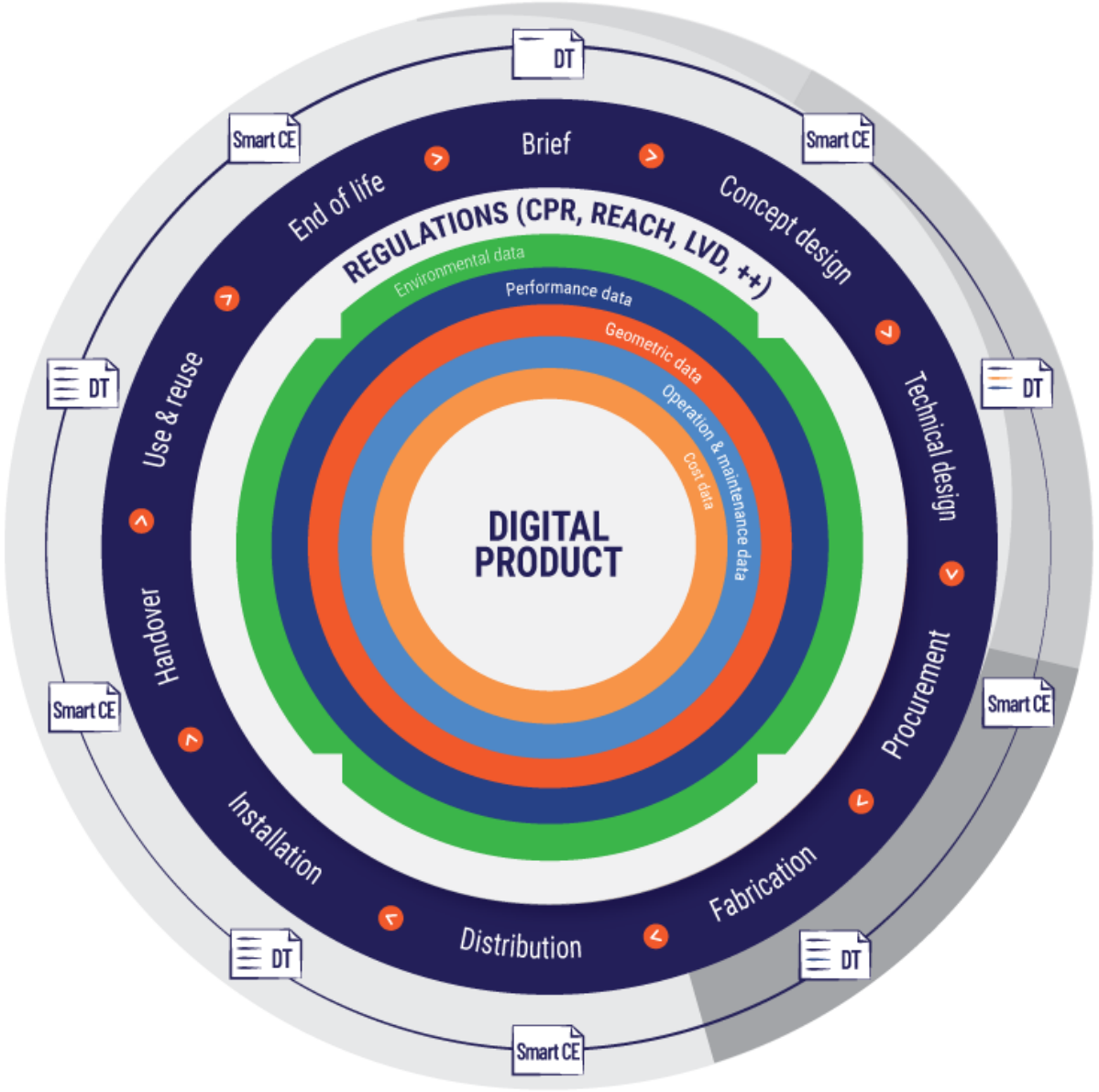
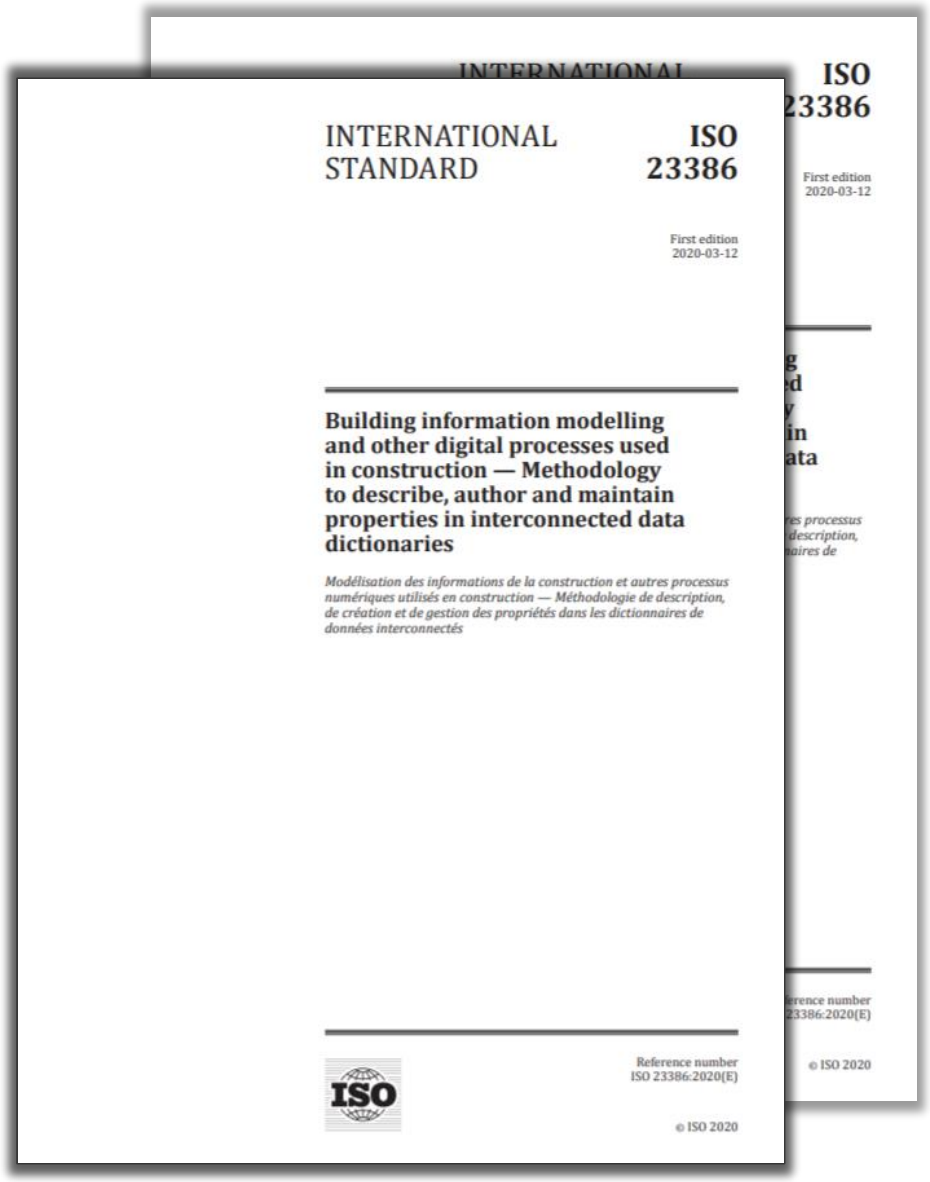
ISO 23387 & ISO 23387 – Standardisation of Properties and Data Templates guide
Manufactures how to develop digital products





builder

ISO 23387 & ISO 23387 – Data Governance for Global, European, National and Manufacturer specific data



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The data template explained

What are we talking about?	Construction object	**Plasterboard**	
What is the context?	1 to n Data templates	A manufacturer shall describe his construction objects according to the data templates to which his construction objects refer. e.g. EN520, EPD, DOP, PCDS,…	
What type of information should it be?	1 to n Property sets	Information relating to acoustic performances, hazard statements, maintenance, recycled content, Chemical composition,…	
More specifically?	1 to n Properties	Chemical composition	Presence of substances of Very High Concern from REACH Candidate list >0.1% by weight
What does it measure ?	Measure	weight fraction	Rate
How do you express that?	Unit	Percentage	Percentage
Are there any predefined value?	Enumerated values	Yes: 0%, >0-10%, >10-25%, >25-50%, >50-75%, >75-95%, >95-99%, >99%	Boolean (True, false)

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Data Template for a construction product

Plasterboard

Standards, regulations, …

DATA TEMPLATE

Data Template ISO 23387

Property attributs (Metadata)

GUID
Name
Definition
…

Dictionary ISO 23386

- Board Edge type
- Is Product CE certified?
- Thermal conductivity coefficient (λ)
- **Chemical composition**
- Exhaustion of abiotic resources (fossils)
- **Presence of substances of Very High Concern from REACH Candidate list >0.1% by weight**
- Thickness
- Reaction to Fire (EN 13501-1)

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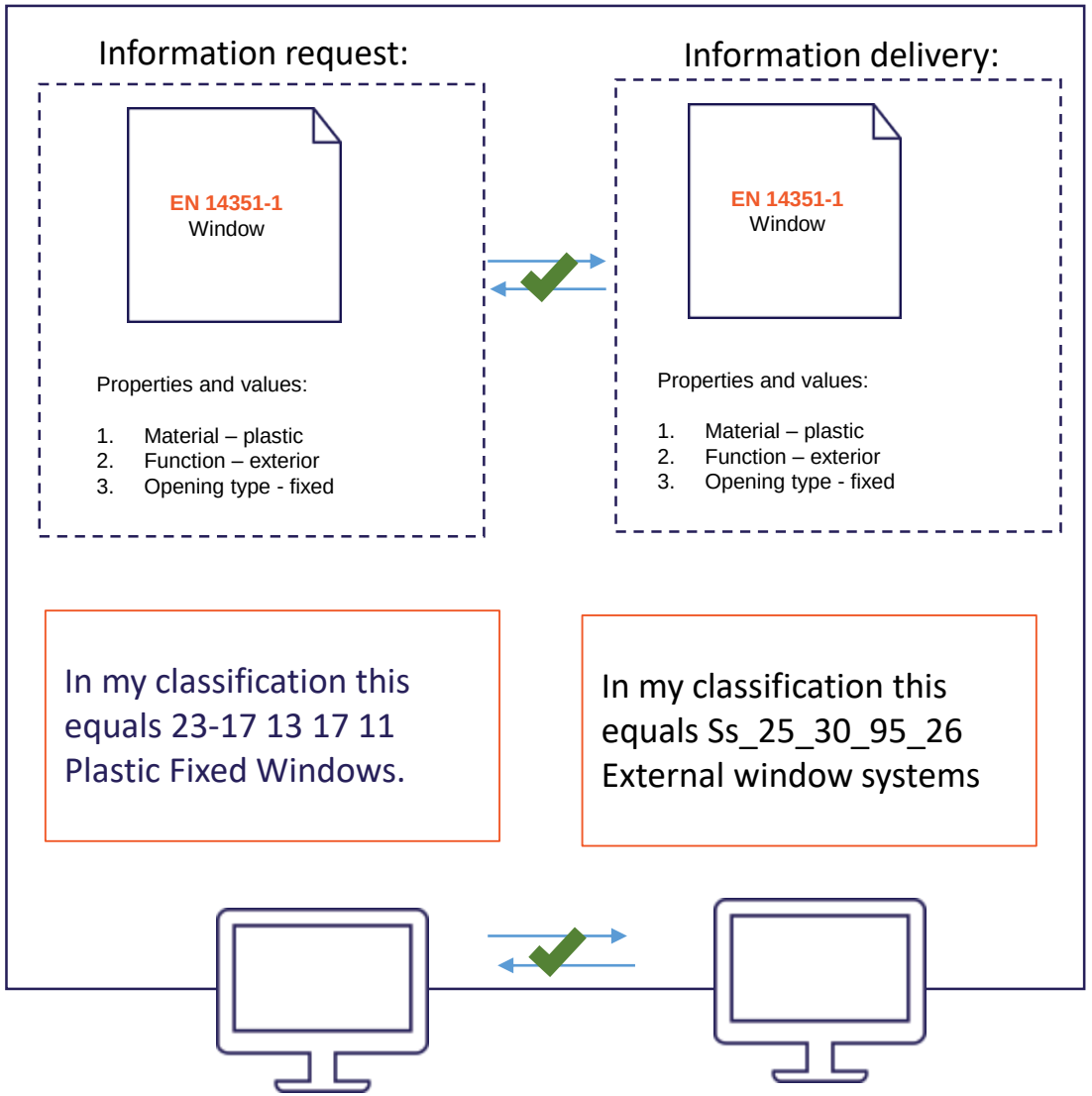
The connecting link:
DT solving the issue with information processing



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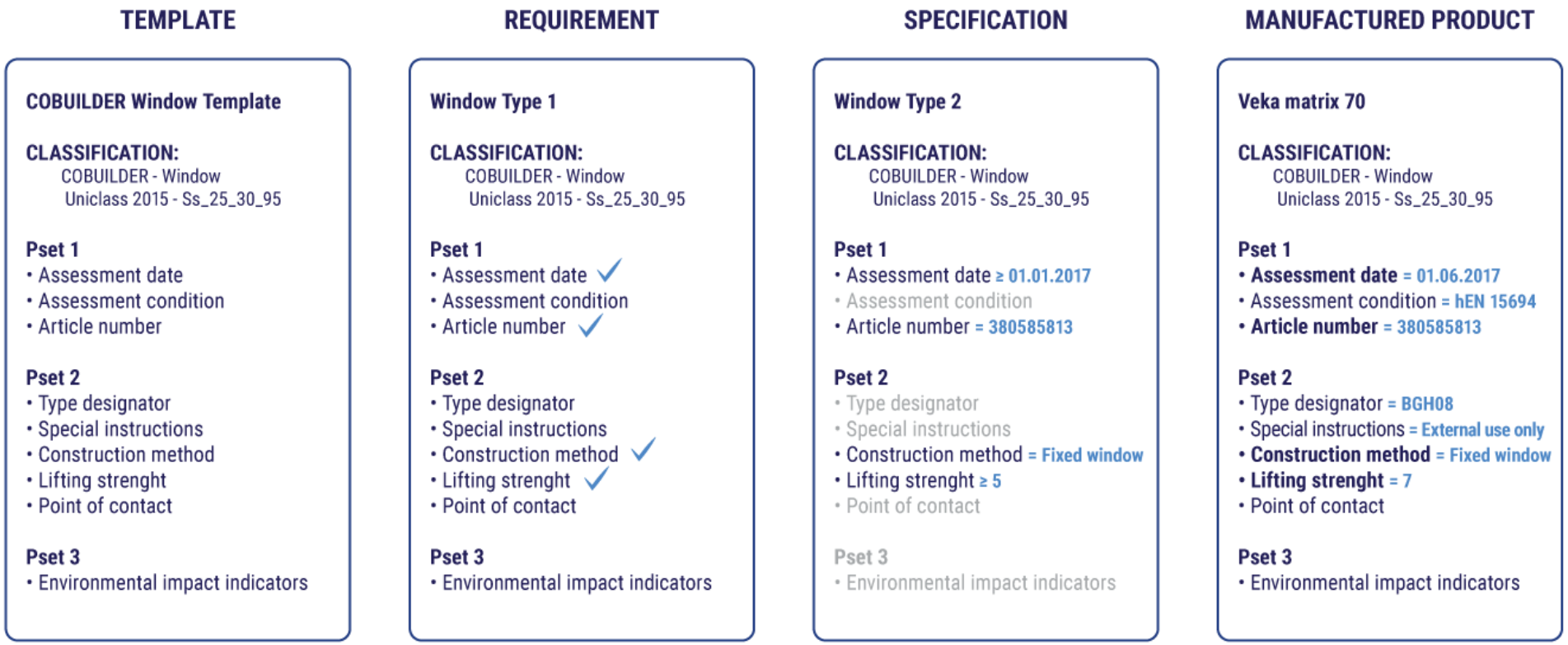
Data Templates for Construction objects – machine readable data that connects all industry actors



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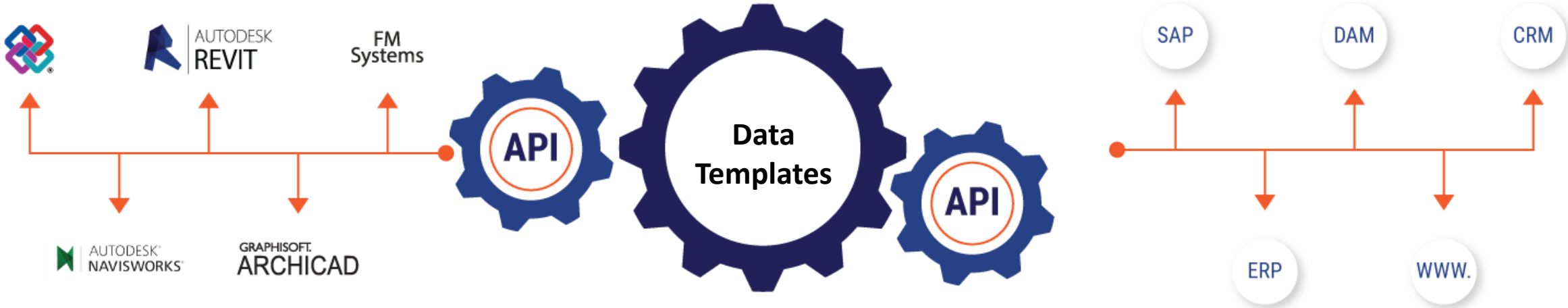
Seamless flow of data through different software without anything being ‘lost in translation’



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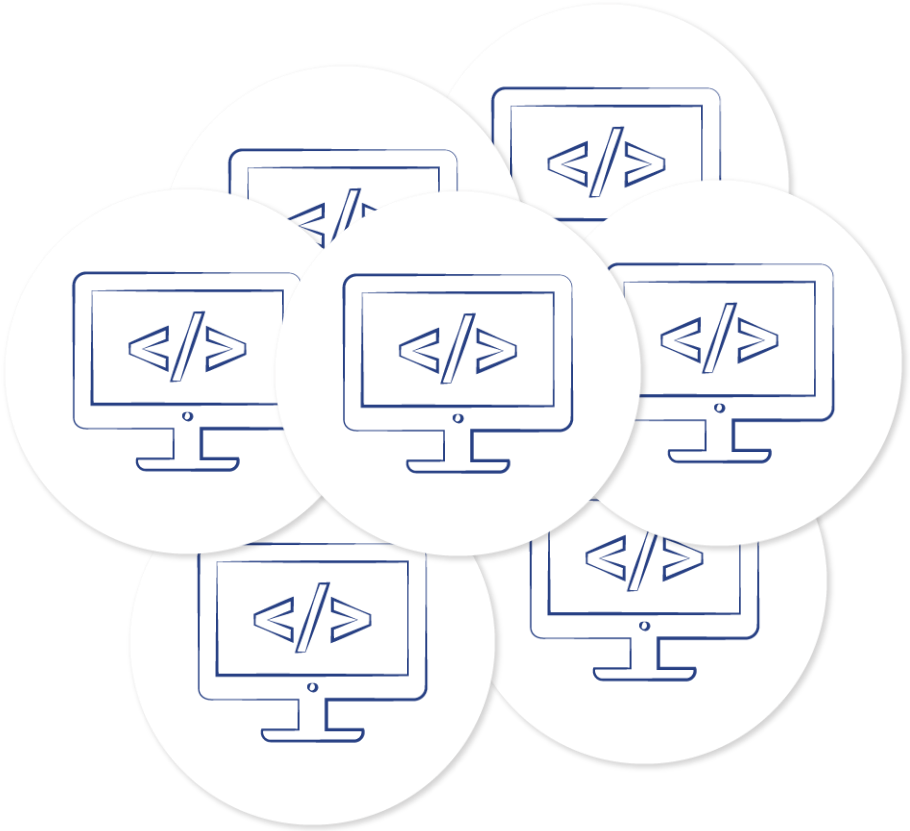
Data Templates helps all construction actors: from software providers to SME's

Software Vendors



End Users

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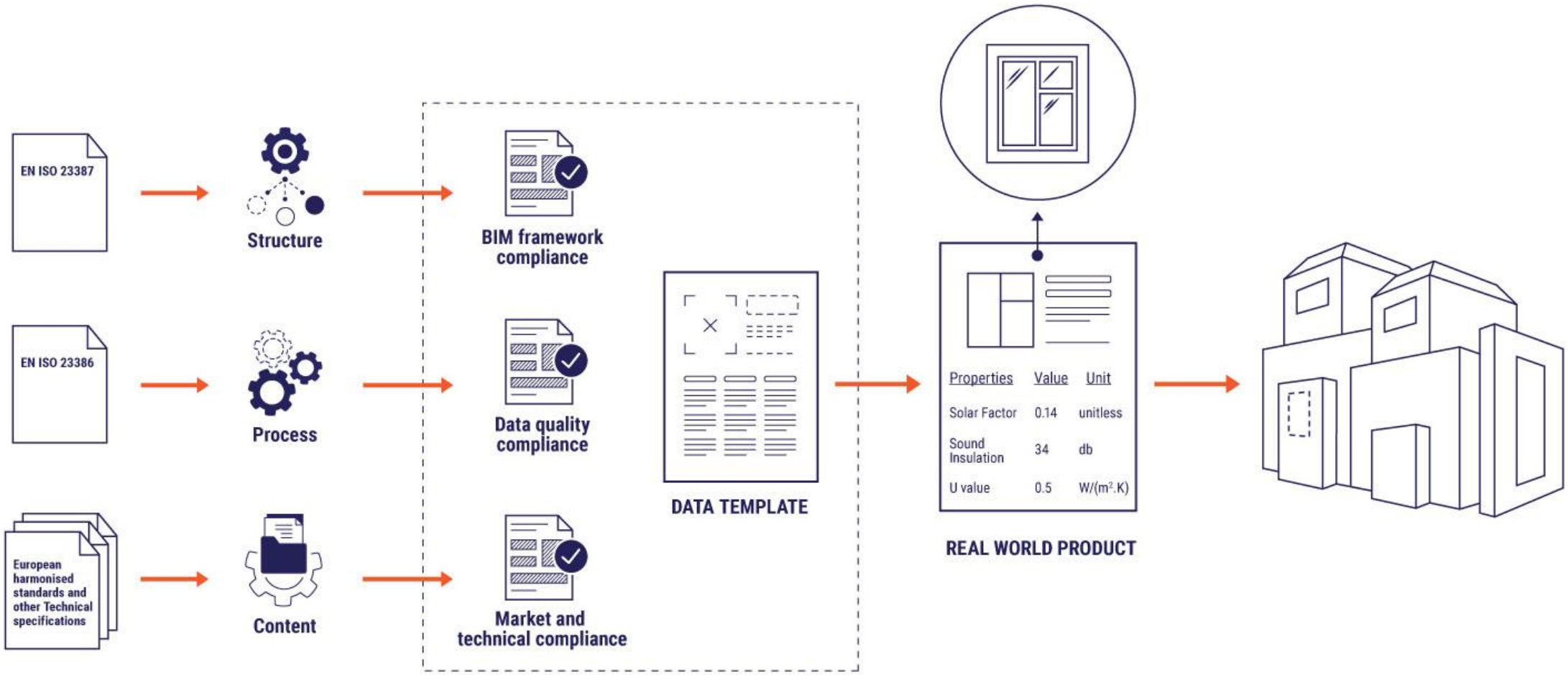
The endgame



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