

## FROM OPEN STANDARDS TO OPEN DIGITAL CONSTRUCTION ECOSYSTEMS

buildingSMART Netherlands Position Paper  
European Rolling Plan for ICT Standardisation 2027  
Chapter 3.4.8 – Construction BIM

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*open standards for a smarter built environment*

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## 1 EXECUTIVE SUMMARY

buildingSMART Netherlands welcomes the European Commission's continued commitment to digital transformation through the **Rolling Plan for ICT Standardisation 2027**. Chapter **3.4.8 – Construction BIM** provides a solid foundation by recognising the importance of Building Information Modelling (BIM), open standards and international collaboration.

However, the digital transformation of the built environment has evolved significantly in recent years. The challenge is no longer limited to exchanging digital models. The next phase requires trusted, interoperable digital ecosystems in which information can be shared, understood and reused throughout the complete lifecycle of built assets.

buildingSMART Netherlands believes that European standardisation should therefore evolve from focusing primarily on **open data exchange** towards enabling **Open Digital Construction Ecosystems** built upon internationally governed open standards and complementary open specifications.

This transition requires stronger emphasis on:

- semantic interoperability;
- machine-readable information requirements;
- lifecycle information management;
- federated data sharing;
- vendor-neutral digital collaboration.

The Netherlands has gained valuable implementation experience through collaboration between public authorities, infrastructure owners, industry, software vendors and knowledge institutes. From this experience, **buildingSMART Netherlands and its Dutch partners** believe they can contribute practical insights to strengthen the European Rolling Plan.

For the purpose of this paper, an Open Digital Construction Ecosystem is defined as an interoperable environment in which internationally governed open standards, complementary open specifications, semantic interoperability and federated data sharing enable trusted digital collaboration throughout the lifecycle of built assets.

## 2 WHY THIS MATTERS

Europe is entering a new phase of digitalisation.

Major European initiatives increasingly depend on reliable, interoperable and machine-readable information, including:

- Construction Products Regulation (CPR)
- Digital Product Passport (DPP)
- Digital Building Logbooks
- Common European Data Spaces
- Artificial Intelligence
- Circular Economy
- Smart Infrastructure
- Digital Twins

These initiatives require more than exchanging BIM models.

They require trusted digital collaboration across organisational boundaries, supported by open standards and common semantics.

Standardisation therefore becomes an essential enabler for achieving European policy objectives related to sustainability, competitiveness, resilience and digital sovereignty.

## 3 CURRENT ASSESSMENT OF CHAPTER 3.4.8

buildingSMART Netherlands recognises several strengths within the current draft.

The chapter correctly highlights:

- IFC as an international open standard;
- ISO 19650 for information management;
- interoperability;
- collaboration between ISO and CEN;
- support for open standards.

These provide a strong foundation.

At the same time, the chapter does not yet fully reflect several important developments that have become central to international openBIM implementation.

The current text gives limited attention to several developments that are increasingly relevant for practical implementation.

These include:

- the use of **Information Delivery Specification (IDS)** expressing, exchanging and validating information requirements in a machine-readable manner;
- semantic interoperability supported by the **buildingSMART Data Dictionary (bSDD)** as an internationally governed open semantic framework;
- lifecycle information management across planning, design, construction, operation and maintenance;
- machine-readable methods for defining, exchanging and validating Asset Information Requirements (**AIR**);
- interoperability between BIM, GIS and Digital Twins;
- federated digital collaboration;
- emerging developments such as the **IFCX** initiative.

## 4 THE DUTCH PERSPECTIVE

The Netherlands has consistently promoted the adoption of internationally recognised open standards for digital collaboration.

Through initiatives led by **buildingSMART Netherlands**, together with public authorities, infrastructure owners, engineering firms, contractors, software vendors and knowledge institutes, valuable implementation experience has been gained in applying open standards within real projects.

These experiences demonstrate that successful digital transformation depends on combining:

- internationally governed open standards;
- complementary open specifications;
- governance;
- semantic interoperability;
- implementation guidance;
- practical adoption.

Rather than creating isolated digital solutions, this **Dutch openBIM perspective** focuses on enabling interoperable digital ecosystems where information can be exchanged once, understood consistently and reused throughout the complete lifecycle of built assets.

This **Dutch openBIM perspective** demonstrates how internationally governed standards can successfully be implemented in practice and may therefore provide valuable input for future European standardisation.

## 5 STRATEGIC RECOMMENDATIONS

**International Standards:** ISO 19650

**Open Standards:** IFC

**buildingSMART Specifications:** IDS/BCF/bSDD/openCDE

**Emerging Developments:** IFCX

buildingSMART Netherlands recommends strengthening Chapter 3.4.8 through the following priorities.

### Recommendation 1

- Recognise the complete **openBIM ecosystem** by distinguishing between:
  - internationally recognised standards, including IFC and ISO 19650;
  - complementary buildingSMART specifications, including IDS, bSDD, BCF and openCDE;
  - emerging developments such as the IFCX initiative.

This distinction improves clarity regarding the maturity and governance of the various components within the openBIM ecosystem.

### Recommendation 2

- Explicitly recognise **Information Delivery Specification (IDS)** as an open buildingSMART specification that complements ISO 19650 by enabling information requirements to be expressed and validated in a machine-readable manner.

### Recommendation 3

- Recognise the **buildingSMART Data Dictionary (bSDD)** as an internationally governed open semantic reference framework that supports

consistent interpretation of information across organisations, software applications and domains.

#### **Recommendation 4**

- Promote lifecycle information management from planning through operation, maintenance and decommissioning.

#### **Recommendation 5**

- Support the development and adoption of **standardised machine-readable methods for expressing Asset Information Requirements (AIR)** throughout the asset lifecycle.

#### **Recommendation 6**

- Strengthen interoperability between BIM, GIS and Digital Twins to support integrated lifecycle information management.

#### **Recommendation 7**

- Align BIM standardisation with emerging European initiatives including the DPP and Circular Economy.

#### **Recommendation 8**

- Promote federated digital ecosystems that enable trusted data sharing across organisations.

#### **Recommendation 9**

- Prepare European standards for AI-ready information models through structured semantics and machine-readable information.

#### **Recommendation 10**

- Continue promoting internationally governed, vendor-neutral open standards and complementary open specifications.

## 6 DUTCH IMPLEMENTATION EXPERIENCE

buildingSMART Netherlands and its Dutch partners have gained practical implementation experience through several national initiatives that demonstrate the value of interoperable open standards.

Examples include:

- implementation of ISO 19650 and openBIM within Dutch infrastructure projects;
- semantic interoperability through the application of bSDD;
- national implementation of Information Delivery Specification (IDS);
- development of federated data sharing initiatives, including DSGO;
- collaboration within the digiGO ecosystem to improve interoperability across the built environment.

These practical experiences can contribute to the further evolution of European standardisation.

## 7 PROPOSED STRATEGIC ACTION

buildingSMART Netherlands proposes adding a new strategic action to Chapter 3.4.8.

Support the development of interoperable digital construction ecosystems by combining open standards, semantic interoperability, machine-readable information requirements and federated data sharing throughout the planning, design, construction, operation and maintenance phases of built assets.

This action complements the existing standardisation activities and reflects the current direction of European digital transformation.

## 8 BENEFITS FOR EUROPE

Strengthening the Rolling Plan in this direction will contribute to:

- improved interoperability;
- higher information quality;
- reduced implementation costs;
- increased software neutrality;
- better lifecycle asset management;
- stronger support for DPP;
- accelerated Circular Economy implementation;
- improved AI readiness;
- greater European digital sovereignty.

These benefits extend beyond construction and contribute to the broader European digital agenda.

## 9 CONCLUSION

Europe has already established a strong international position through open standards such as IFC and ISO 19650.

The next strategic step is enabling these standards to work together as part of interoperable digital ecosystems.

buildingSMART Netherlands believes that digital transformation will increasingly depend on the ability to combine:

- open standards;
- semantic interoperability;
- lifecycle information;
- federated data sharing;
- governance;
- practical implementation.

The proposed enhancements to Chapter 3.4.8 will strengthen the Rolling Plan while remaining fully aligned with European policy objectives.

buildingSMART Netherlands and its Dutch partners are committed to contributing practical implementation experience to European standardisation activities. By

combining internationally governed standards, complementary open specifications and practical implementation knowledge, Europe can accelerate the transition towards interoperable digital construction ecosystems.

This evolution is not about replacing existing standards, but about enabling them to work together more effectively.

## **10 KEY MESSAGE**

The future of European digital construction lies not in individual standards alone, but in interoperable digital ecosystems where internationally governed open standards, complementary open specifications and semantic interoperability work together to enable trusted digital collaboration throughout the asset lifecycle.

## **11 ABOUT BUILDINGSMART NETHERLANDS**

buildingSMART Netherlands is the Dutch chapter of buildingSMART International and promotes open, vendor-neutral standards for the digital transformation of the built environment.

Working together with public authorities, infrastructure owners, industry, software vendors and knowledge institutes, buildingSMART Netherlands contributes to the development, implementation and adoption of internationally recognised open standards that enable interoperable digital collaboration throughout the complete lifecycle of built assets.