European openBIM® Forum Initiative:
Advancing openBIM® Standards for a Digitalised and Sustainable Future

For the built environment sector and the construction industry to take advantage of the opportunities of digitalisation, we need to strengthen our ability to work effectively together. We must become better at exchanging information to achieve the expected societal benefits. Systems and organizations must understand each other's data, information, and processes. This is expressed on a general level in the *European Interoperability Framework, EIF,* and the *Interoperable Europe Act.* For the built environment sector interoperability can be achieved by applying existing standards both regarding data exchange and processes from organizations such as *buildingSMART International*[1] and ISO/CEN. Only with the compulsory use of open standards will the right conditions be created for more efficient utilization of the data volumes built up by different actors and used in applications such as digital twins, connected facilities, and analysis tools. It will also increase the ability to develop robust digital governance and data security.

Despite the EU Public Procurement Directive (EU 2014/24) requiring BIM based on open standards, in the significant majority, openBIM is not yet fully mandated in Europe, with only some countries taking the lead on specifying IFC and openBIM as an exchange methodology. It is a goal of this forum to advocate for more examples of openBIM mandates driving change for the better.

Additionally, different levels of BIM implementation and BIM usage in Europe an countries are not harmonized. There are no common approaches for implementation on a European level.

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[1] buildingSMART International is the worldwide organisation of national associations called Chapters and private mem bers. This non-profit organisation drives the transformation of the built asset industry through creation, development, maintenance and adoption of open- neutral standards (such as IFC, bSDD, and BCF). These rules establishing a common standard allows the AECO community to benefit from a common language to export and import data through the entire project and asset lifecycle.

Several European Chapters of buildingSMART International supported the development of national roadmaps for implementing openBIM standards in their respective countries. At the same time, the EU BIM Task group[2] promotes digital uses in construction for the public market. In this context, the idea of creating the European openBIM Forum emerged to propose initiatives aligned with the EU strategy in digital construction pathway and support the implementation of openBIM in European strategies.

What for?

Accelerate the use of openBIM to create a reliable data lifecycle, responding to asset owners and public policy needs.

The role of the European openBIM Forum is to advocate and share the benefits of openBIM, and encourage more uptake in national and organizations strategies to embrace open integrated with European policies.

Nowadays, commercial solution providers create new tools and IT interfaces at national and international levels. There is a need to have a common approach by standardizing how data is exchanged, managed, and secured, thereby advancing openBIM Standards for a digitalized and sustainable future.

This will enable best practices to be shared and adopted between countries to accelerate the implementation of openBIM-based regulatory processes. This will unlock vast potentials of digitization, such as automation, shareability, and adoption of processes. For example:

- Enable seamless information exchange using openBIM standards and its services for the existing public procurement processes.

- Use openBIM standards to structure and standardize the carbon impact calculation model for all types of constructions. This will leave vendors free to compete, and it will be up to them to develop interoperable tools that meet the specifications.

The benefits of setting up a strategy will entail the following:
- Increase the relevance of openBIM standards in EU directives.
- Increase the relevance of openBIM standards within CEN and ISO committees.
- Recognition of openBIM in procurement for the benefit of the entire construction supply chain.
- Benefit from what is developed on an international level based on openBIM standards.
- Increase the cooperation between European buildingSMART chapters and the respective national governments.

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2   A pan-European approach to best practice in BIM (building information modelling). Bringing together national efforts into a common and aligned European approach to develop a world-class digital construction sector. Mission : Support public clients responsible for the built environment to implement digital transformation in practice. Who's part of it : About – EU BIM Task Group

Why now?

The first measures have been taken in relation to an involvement of BIM Standards for Digitalised and Sustainable Futures but without focus on the use and value of openBIM and its services.

The European Parliament introduced the BIM concept with the 2014 directive. The EU BIM Task Group was created and co-funded by the European Commission in 2016. The EU BIM Task Group published The EU BIM Handbook in July 2017. This led to the identification of national BIM deployment policies (Handbook) and the publishing of a methodological guide for public contracting authorities to initiate BIM projects (BIM Costs Benefits Analysis) in May 2021.

The CEN--standards developed from CEN/CENELEC establish shared and verifiable definitions. The European BIM standardization has now reached the stage where it can offer a neutral, shared environment for all stakeholders:

Between 2014 and 2022, CEN/CENELEC revised certain construction standards to take account of the future climate under the direction of its coordination group on adaptation to climate change, which acted based on a mandate received in 2014 from the Commission. EN ISO 14090:2019 "Adaptation to climate change - Principles, requirements and guide lines" has been developed.

The organization of data and data sharing in the construction and facility management industries, to include data definitions for construction and infrastructure assets over their life cycle as well (EN ISO 16739; IFC4.3 from 2024).

The organization of data information processes (EN ISO 19650); building information models (EN ISO 29481), and the structuring of business knowledge linked to construction objects (EN ISO 23386) already exist, as does the PLCS standard (ISO 10303-239), which enables data to be kept consistent, maintainable, exchangeable and durable, whatever the information systems and throughout the product life cycle.

In 2020, priority was given to sectors facing the most significant challenges - of digitalization and environmental sustainability - including construction. The European Commission has also developed different support policies through projects founded, for instance, in Horizon 2020. So, the European Commission is adopting a new strategy that emphasizes the need to further accelerate the green and digital transitions, increase the resilience of Europe's industrial ecosystems, and advance Europe's competitiveness and sovereignty.

In 2021, a co-creation process was initiated with the High level construction forum. The European Commission continues to make progress on several target construction issues - **digital building permit[3], digital building logbooks (DBL) [4]** - and more generally on **e-procurement**[5], **Taxonomy[6], Level(s) framework[7], CPR**[8]:

- DG GROW is continuing its efforts to link the "digital decade" and the "green deal" with a strategy announced in March 2023: "Transition Pathway for Construction" (https://ec.europa.eu/docsroom/documents/53854). But it is not the only one acting.

- EU funding instruments are supporting efforts to protect the EU's infrastructure against climate change, such as the InvestEU program and the cohesion and re-gional development funds.

- A program for a Digital Europe: **Digital[9].**

- Initiatives at European level as several JRC reports have been published since 2021 on Net Zero Carbon and construction (JRC Publications Repository - Assessing Nearly Zero Energy Buildings (NZEBs) development in Europe (europa.eu)); also the WBCSD's PACT program (Le Partenariat pour la transparence carbone (PACT) jette les bases d'un échange normalisé de données sur les émissions - World Busi-ness Council for Sustainable Development (WBCSD)) is supported by the EU.

However, BIM is mostly encouraged but not mandatory, and the use of openBIM is not specified. openBIM means the use of standards that are independent of any proprietary software.

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3 Cf In program Horizon, the project ACCORD (Rita Lavikka) https://accordproject.eu/, avec DigiChecks (Ignacio Rincòn) and CHEK (Francesca Noardo), des projets nationaux comme BRISE Vienna (Christian Schranz and Harald Urban) and RAV-A3Pro (Anna-Riitta Kallinen) : https://accordproject.eu/accord-at-the-european-network-for-digital-building-permits-eu-net4dbp/

4 http://www.eubim.eu/wp-content/uploads/2022/12/EU-BIM-TG_GA-2022_GROW-Presentation.pdf

5 Guidance on Green Public Procurement (GPP) remains optional for authorities purchasing buildings. Guidance on building design, a process for establishing the appropriate level of adaptation and verification processes for identified risks are currently being developed. Once these criteria are published, they will structure public authorities, and could be used beyond this audience for other construction projects.

6 The EU taxonomy defines a process to be followed so that construction and renovation projects, as well as property investments, can be considered a sustainable economic activity. A risk assessment, as well as adaptation solutions and their implementation in the design, are required for an increasing number of projects.

7 Levels framework: a European Commission initiative developed by the Joint Research Centre (JRC). Published in 2021, it is based on six macro-objectives that address key aspects of sustainability throughout the building's lifecycle. Sustain-ability indicators for each macro-objective describe how building performance can be aligned with EU policy objectives in areas such as energy, materials use and waste, water, indoor air, health and the environment. Two indicators establish a link between climate adaptation and the financial implications for investors, developers and insurers. This tool offers advice on calculating the life-cycle cost of the building and encourages them to examine the relationship between initial costs and costs at the use stage. If future climate risks and energy consumption in response to higher temperatures are taken into account, this exercise reveals the financial implications of current and future design choices.

8 The proposed revised Construction Products Regulations (CPR 2011) include a requirement for the likely lifetime impacts of climate change to be taken into account in the design of construction products, which is equivalent to the anticipation of climate risks legally required in all standards and technical specifications for construction products.

9 https://digital-strategy.ec.europa.eu/fr/activities/digital-programme Item "Accelerating the best use of technology - de-ployment of public services" - 5.2: The program will advance the digitization of governments and public administrations, focusing on the preparation of a European identity and trust ecosystem, the exploitation of public procurement markets for digitization and innovation, the improvement of the interoperability of digital public services, and the digital transfor-mation of justice.

OpenBIM is a viable, proven, and established approach within the European chapters of buildingSMART International which we now need to bring to the consciousness of the European Commission, to support the implementation and use of open standards.

The European chapters of buildingSMART International see an opportunity for their work and support to be pooled, to maximize the beneficial impact of openBIM in Europe.

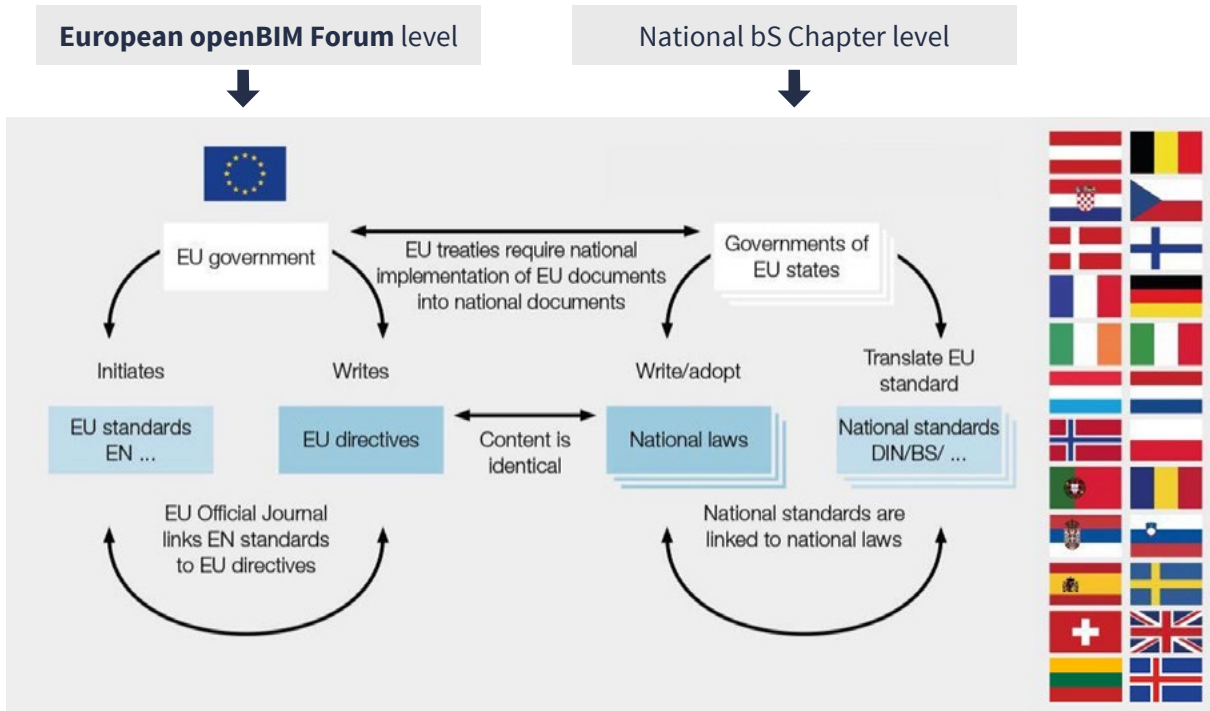## What does the European openBIM Forum want to support?

The European buildingSMART chapters can enhance their efforts by working together through the Forum. As a result, there are many benefits for Europe and buildingSMART chapters, and for the broader buildingSMART community. This is enabled by advancing the global adoption and implementation of openBIM standards.

The chapters' representatives emphasized the need to create a Forum to:

- Support the global effort to reduce the construction industry's carbon footprint and increase material circularity with common standards and practices for digital information as a reliable basis for decisions.

- Leveraging potentials embedded within the digital transformation to strengthen resilience.

- Assist governments in implementing and rolling out Digital Building Permits based on openBIM standards.

- Enhance the skills of construction professionals and promote their open BIM knowledge through certification programs.

- Expand the use of digital twin technology across various sectors including advanced technologies such as AI and blockchain.

- Pinpoint new research areas and challenges that align with primary stakeholder interests, suggesting fresh R&D ideas.

- Encourage the European Commission to fund BIM standardization, knowledge-sharing events, and workshops around open BIM standards.

- Promote unified European standards, services, and tools based on openBIM standards to offer a shared reference for digital construction, benefiting individuals, businesses, projects, and the broad community.

- Pursue funded projects within the European framework.

- Advocate for using open BIM standards in renovating existing European infrastructures.

- Pinpoint the importance of BIM data in a common European security approach.

Who is part of the European openBIM Forum?

The European openBIM Forum is group comprising European Chapters.

European openBIM Forum level	National bS Chapter level

The chapters in the buildingSMART community that have already agreed to establish the European openBIM Forum are the following:

1. Austria
2. Benelux
3. Croatia
4. Czech Republic
5. Denmark
6. Finland
7. France
8. Germany
9. Iceland
10. Italy
11. Lithuania
12. Norway
13. Poland
14. Portugal
15. Romania
16. Serbia
17. Slovenia
18. Spain
19. Sweden
20. Switzerland
21. UK and Ireland

Both buildingSMART International - through the CEO Clive Billiald - and the EU BIM Task Group - through the Chair Jaan Saar - have confirmed their support of forming a European openBIM Forum as a buildingSMART body.

European openBIM® Forum

supported by:

buildingSMART
International

EU BIM
T A S K G R O U P

What is the European openBIM Forum's governance and role?

The European openBIM Forum is a buildingSMART body gathering pan-European chapters.

The work program would be agreed upon, and progress reported to the European openBIM Forum Chapters, governed by a Steering Committee that will be covered by other documents after agreement.

The purposes of the European OpenBIM Forum are:

- To increase the relationship with other European organizations such as the European Commission, national governments, NGOs on sustainability, SME associations, and regional associations.

- To ensure the appropriate standards for EU regulations and directives are included.

- To assist the European organizations to better understand the role of openBIM and support them to establish strategies for their implementations.

- To direct part of the European funds to the implementation of openBIM standards in Europe.

- To participate in European calls and be involved under a unified umbrella of the European chapters.

The key elements of the work of the European openBIM Forum include:

- Representing the buildingSMART community to the EU Commission (providing a unified voice).

- Engaging with European Chapters to understand and collate national perspectives, and using these to inform and support EU legislation and projects.

- Communicating EU developments to European buildingSMART Chapters and buildingSMART International.

- Coordinating European buildingSMART Chapters in their response to EU project calls.

European openBIM® Forum

buildingSMART International

EUBIM TASKGROUP

buildingSMART Austria

buildingSMART Benelux

buildingSMART Croatia

buildingSMART Czech Republic

buildingSMART Danmark

buildingSMART Finland

buildingSMART France

buildingSMART Germany

buildingSMART Iceland

buildingSMART Italy

buildingSMART Lithuania

buildingSMART Norway

buildingSMART Polska

buildingSMART Portugal

buildingSMART Romania

buildingSMART Serbia

buildingSMART Slovenia

buildingSMART Spain

BIM Alliance SWEDEN

buildingSMART Sweden

buildingSMART Switzerland

buildingSMART United Kingdom and Ireland