



EU BIM
T A S K G R O U P

General Assembly

16th Oct 2024

@Federal Ministry for Digital & Transport
Invalidenstr. 44, 10115 Berlin, Germany



- 09:00 - 09:30** **Coffee and arrival**
- 09:30 - 09:45 Opening words
- 09:45 - 10:40 Keynote presentations:
- Christophe Sykes**, Director General of Construction Products Europe
 “Implications of a revised EU legal framework for construction products (CPR)”
- Dr. Thomas Liebich** from buildingSMART Germany
 “Update on IFC and IDS developments”
- 10:40 – 11:00 **Pablo Gutierrez**, DG GROW - Our contribution to EC activities and collaboration with DG GROW, planned activities 2025/2026
- Georgios Kontopoulos**, PwC - "Digitalisation of the built environment" study results
- 11:00 - 11:20 **Anette Persson**, DG ENER - EPBD implications for the future
- 11:20 - 11:40 **Aidan Mercer**, buildingSMART International (bSi) - update on bSi main activities
- Anna Moreno**, buildingSMART Italy - Establishment of the European openBIM Forum
- 11:40 - 12:00 **Jaroslav Nechyba**, EUBTG Workshops overview
- 12:00 – 13:00** **Lunch**

- 13:00 - 13:15 **Dmitrijs Kots** - EUBTG Survey results overview
- 13:15 - 14:15 **EUBTG planning 2025:**
- Changes in EUBTG chair/co-chair positions
 - Establishment of a possible advisory Board for EUBTG?
 - 2025 focus activities (survey comments, on-site discussion)
 - Collaboration with EUBIM Public Officials Group
- 14:15 - 15:15 **Members updates**, updates from last GA, how can the EUBTG support you?
- 15:15 - 15:45** **Networking Coffee break**
- 15:45 - 16:45 **Members updates** continued...
- 16:45 - 17:00 Wrap-up and closing



WHO?

Voluntary group of public clients and policy makers involved with digital construction

WHY?

Smart European Public Clients, who

- save resources
- make decision based on data
- contribute to common EU policy

HOW?

Support public clients responsible for the built environment to implement digital transformation in practice

WHO ARE MEMBERS?

- Austria
- Belgium
- Bulgaria
- Croatia
- Czechia
- Germany
- Greece
- Denmark
- Estonia
- Finland
- France
- Iceland
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Netherlands
- Norway
- Poland
- Portugal
- Slovakia
- Slovenia
- Spain
- Switzerland
- Sweden
- Hungary
- Ukraine





STRATEGIC AND OPERATIONAL ROADMAP

05 key objectives

19 proposed activities

2024 actions

A BENEFITS OF BIM

- A1. Cost benefits analysis
- A2. Pilot project results
- A3. Measurement

B RELIABLE INFORMATION AND GUIDELINES

- B1. Guidelines for public procurement
- B2. Advise EC on PPD
- B3. EU BIM website development
- B4. BIM innovation reward

C STANDARDISATION

- C1. Liaison communication plan
- C2. Open BIM
- C3. Common classification system

D KNOWLEDGE TRANSFER

- D1. Regular meetings between members
- D2. BIM conference for public procurers
- D3. Legal entity
- D4. Network of who is who with expert pool

E SUPPORT MEMBER STATES INITIATIVES

- E1. Unified Digital Platform
- E2. Better Funding
- E3. Data Security
- E4. Built environment Data privacy
- E5. Knowledge transfer – workshops

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CONSTRUCTION PRODUCTS EUROPE
LET'S BUILD AN EFFICIENT EUROPE

EU BIM Task Group

2024 GA - 16th October - Berlin

Who are we?

Lobby organisation established in 1988

Bring whole industry together

Membership of 52 national & EU associations

Topics incl. Single Market, circularity & digital tools

Who do we work with?

European Commission

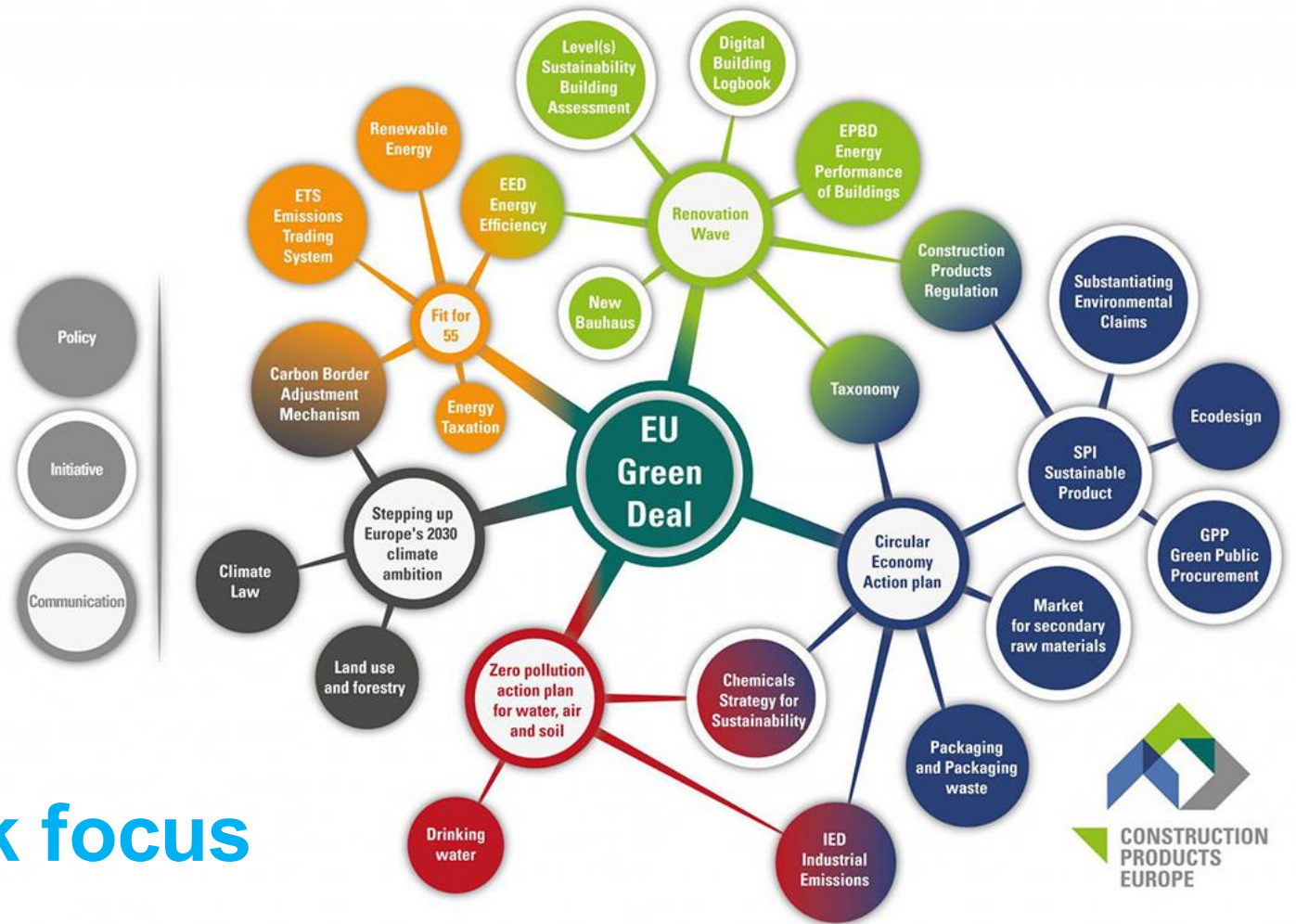
European Parliament

European standardisation (CEN)

Council & Permanent Representatives

Construction ecosystem ...

What do we work on?



EU 2019-2024

Legislative framework focus

(total of 661 proposals)

Changing EU context

ENRICO LETTA

MUCH MORE THAN A MARKET



EUROPE'S CHOICE

POLITICAL GUIDELINES
FOR THE NEXT EUROPEAN COMMISSION
2024–2029

Ursula von der Leyen
Candidate for the European Commission President

The future of European competitiveness

Part A | A competitiveness strategy for Europe

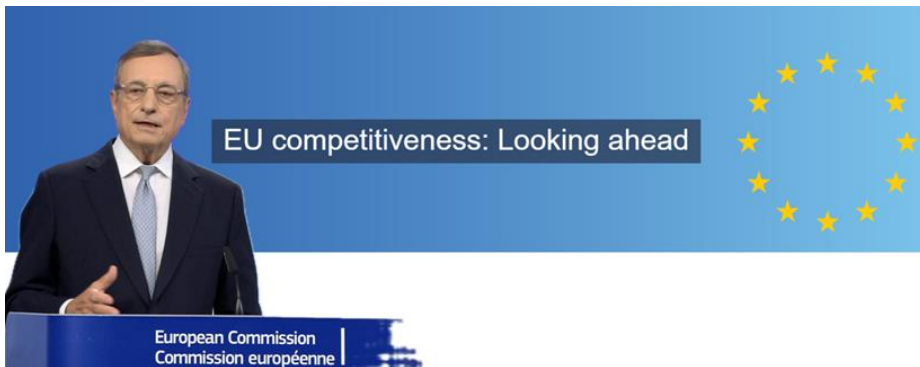
SEPTEMBER 2024



EU 2024-2029
Competitiveness focus

Changing EU context (ii)

EU 2024-2029 Competitiveness focus



Short-term EC timeline summary



Appointment of new European Commission 2024-2029

Suggested question to Dan Jørgensen:

Europe has many assets to lead the sustainable and digital transformation of construction. In your view, what could the announced Affordable Housing Plan and Strategy for Housing Construction do to help resolve the worsening housing and construction crisis? These are resulting in the loss a crucial skilled workforce that will further impact the delivery of housing solutions.

Medium-term EC timeline

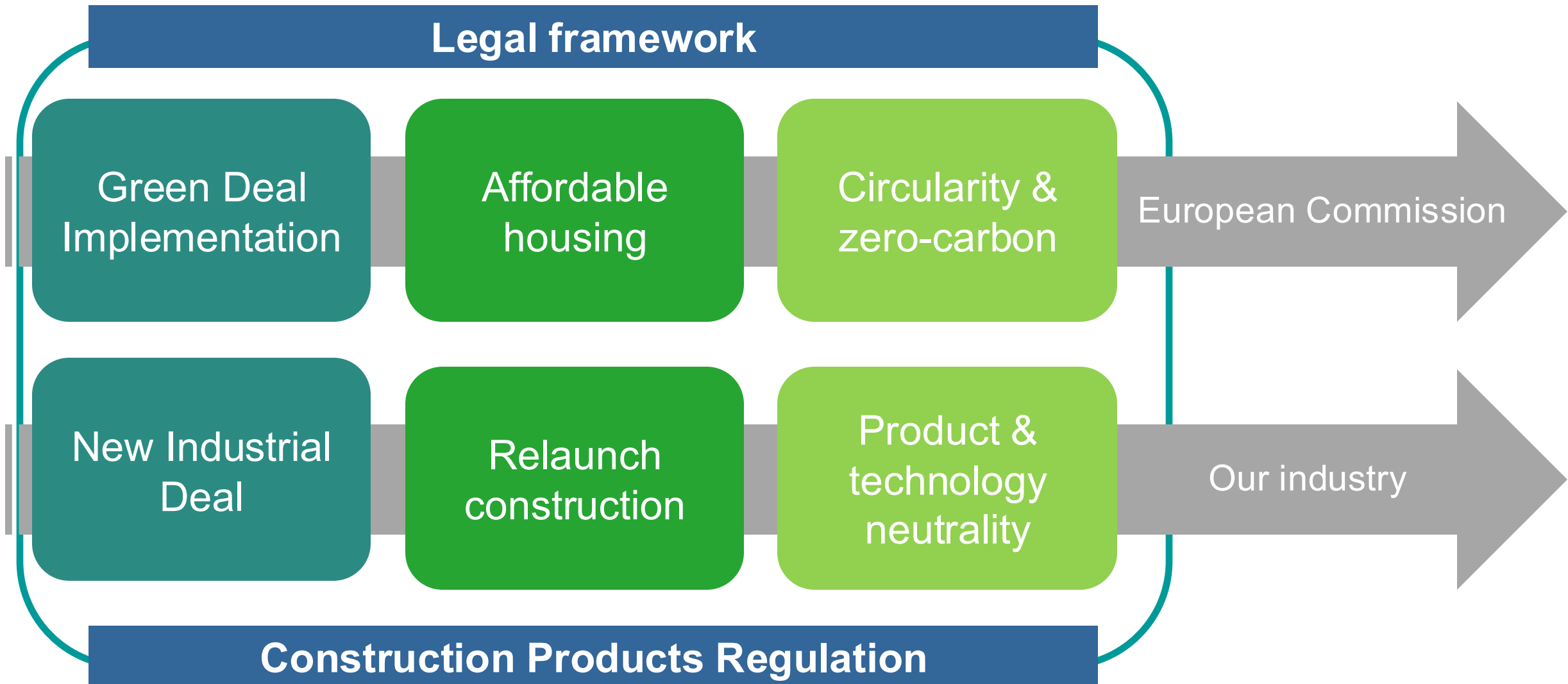


Within first 100 days: new Clean Industrial Deal for competitive industries and quality jobs;

Later: first ever European Affordable Housing Plan (EAHP)

EC sees us as “energy intensive” and excluded us from construction ecosystem transition pathway. Need to change the equilibrium.

2024-2029 Common objectives



**A picture is
worth 1000
words...**

Brussels
Rond-Point Montgomery



Our Sustainability WG experts discussed construction and demolition waste with EC guests ...



... whilst two doors down, they were sorting demolition waste!

Bigger picture



Housing

Infrastructure

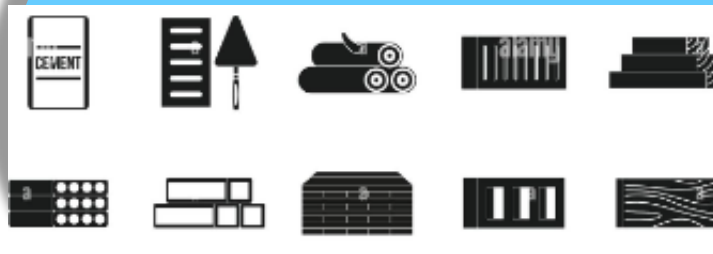


**It is all about our
built environment**

Cities



Products



Overall target for 2025

Dream
BIG
WORK
HARD
make it
happen

The New Industrial Deal supports the promotion of a **full life-cycle** building assessment methodology based on **product and technology neutrality**.

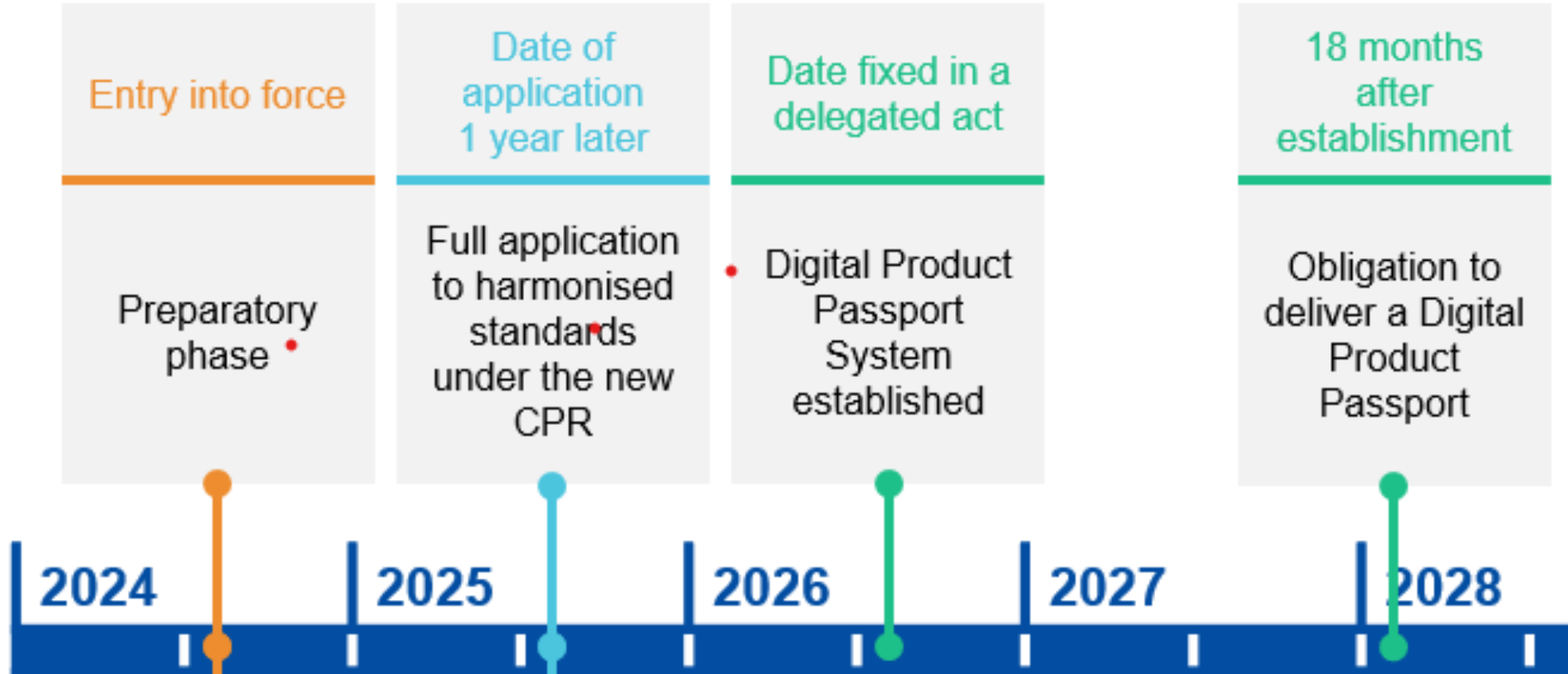


EU CPR leadership

Lead Acquis process, Digital Product Passport, EPDs, ...

- Deliver revised Construction Products Regulation (CPR) guide
- Speak at relevant conferences (EC CPR conference 30th Oct.)
- Guide Acquis process
- Offer expertise for development of Environmental Product Declarations (EPDs)
- Support Digital Product Passport (DPP) development








Construction products DPPs



No DPPs without published revised harmonised standard under new CPR

CPR Acquis process

Fire	1 Precast normal/lightweight/ autoclaved aerated concrete products 1	17 Masonry and related products - Masonry units, mortars, and ancillaries. 9	5 Structural bearings - Pins for structural joints 17	7 Gypsum products 25	6 Chimneys, flues and specific products 33
Dangerous substances	20 Structural metallic products and ancillaries 2	24 Aggregates 10	34 Building kits, units, and prefabricated elements 18	33 Fixings 26	32 Sealants for joints 34
Environmental sustainability	16 Reinforcing and prestressing steel for concrete – Post-tensioning kits 3	10 Fixed fire fighting equipment 11	21 Internal & external wall and ceiling finishes. Internal partition kits 19	3 Membranes, including liquid applied and kits 27	35 Fire stopping, sealing and protective products - Fire retardant products
	2 Doors, windows, shutters, gates and related building hardware 4	23 Road construction products 12	27 Space heating appliances 20	30 Flat glass, profiled glass and glass block products 28	29 Construction products in contact with water intended for human consumption
	15 Cement, building limes and other hydraulic binders 5	19 Floorings 13	22 Roof coverings, roof lights, roof windows, and ancillary products. roof kits 21	8 Geotextiles, geomembranes, and related products 29	36 Attached ladders
	4 Thermal insulation products - Composite insulating kits/systems 6	4 Thermal insulation products - Composite insulating kits/systems 14	12 Circulation fixtures: road equipment 22	11 Sanitary appliances 30	
	13 Structural timber products/elements and ancillaries 7	9 Curtain walling/cladding/structural sealant glazing 15	18 Wastewater engineering products 23	28 Pipes-tanks and ancillaries not in contact with water for human consumption 31	
	26 Products related to concrete, mortar and grout 8	14 Wood based panels and elements 16	25 Construction adhesives 24	31 Power, control and communication cables 32	

-  Horizontal subgroups
-  Standardisation request discussed
-  CPR Acquis ongoing work
-  Other subgroups Fast track possible
-  Other subgroups Fast track not possible
-  Fast track ongoing
-  Priority

Housing & competitiveness focus

Our political focus

- Drive construction into the Clean Industrial Deal
- Help draft EC Affordable Housing Plan & Strategy for Housing Construction
- Discuss affordable & sustainable housing investment EIB platform
 - *Climate Adaptation Plan with nature-based solutions*
 - *Revision of Public Procurement Directive with selective product preference*



10th October mini-conference with European Commission guests

Campaign on circularity & carbon

Active communication

- Circular Economy Act, incl. Single Market for waste & sustainable products
- Assist drafting of End-of-Waste criteria for construction & demolition waste
- Contribute to new Climate Adaptation Plan
- Engage with new EU Bauhaus initiative
 - *Bioeconomy strategy*
 - *Water Resilience Strategy*



November lunch debate with green NGO

How about digital?

*“Europe has many assets to lead the sustainable and **digital** transformation of construction. A whole building life-cycle approach, alongside material and technology neutrality, will help us foster circularity and decarbonisation in construction.”*

Pascal Eveillard, Vice-President



Upcoming actions

From DoPC to DPP

Transforming & transferring digital construction product data

Webinar in preparation

14th January hybrid event
with the support of AIMCC & NVTB

Closing remark

- Revised Construction Products Regulation (CPR) & Acquis process to define Declaration of Performance and Conformity (DoPC), incl. sustainability information.
- CPR & Ecodesign for Sustainable Products Regulation (ESPR) to guide Digital Product Passports (DPP) developments.
- However, multitude of uncoordinated Digital Building Logbooks (DBLs) initiatives may hinder our digital transformation & Single Market objectives.

For latest EU construction news ...



Conference on the
new Construction
Products Regulation
(CPR)

30 October 2024

Follow us on LinkedIn



CONSTRUCTION PRODUCTS EUROPE
LET'S BUILD AN EFFICIENT EUROPE

Christophe Sykes
Director General

CONSTRUCTION PRODUCTS EUROPE AISBL

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RPM Bruxelles - BNP Paribas Fortis BE04 0017 1257 6931

+32(0)472 47 72 23 - info@construction-products.eu - www.construction-products.eu

[website](#) | [twitter](#) | [linkedin](#) | [youtube](#) | [blog](#) | [email](#)

buildingSMART and European Standards

an overview

Dr. Thomas Liebich

AEC3 Deutschland GmbH

EU BIM Task Group Meeting, Berlin, 16.10.2024



About the author

AEC3

Director
BIM consulting company based in Munich, Germany



ISO

Convener ISO/TC 59/SC 13/JWG 12 "Development of construction data related standards"
Lead of German Delegation



CEN

Convener der CEN/TC 442/WG 02 "Information Exchanges"
Lead of German Delegation, Member of Chairman Advisory Group „CEN/TC 442/WG 5“



DIN

Chairman of DIN NA005-01-39AA „BIM“



buildingSMART

1999-2019 Lead of IFC development team (MSG)
Member of the German Board of Directors



Standardization on process, content and format

Open BIM Standardization Challenge

Digitalization (BIM) depends on broad and reliable data access

Data Interoperability

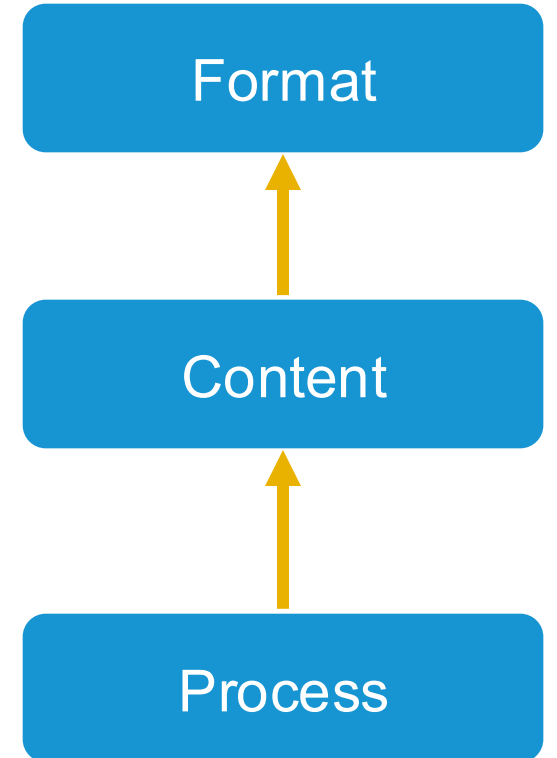
- enforces open formats and interfaces

Information requirements

- ensure reliable data provision

Information management

- organizes the overall process



Benefits from standardization

Using these standards for

Data Interoperability

- Collaboration across system boundaries preventing vendor lock-in

Information requirements

- Certainty for clients to receive contracted information

Information management

- Reliable processes and quality assurance

Existing and developing standards in CEN and buildingSMART

Using these standards for

Data Interoperability

-

Information requirements

-

Information management

-

ISO/CEN

EN ISO 16739 (IFC)
EN ISO 16757
EN ISO 21597 (ICDD)

EN ISO 29481 (IDM)
EN ISO 7817 (LOIN)
EN ISO 23386/87-12006-3

EN ISO 19650
CEN/TR 17439
CEN/TR 17654 (EIR)

buildingSMART



buildingSMART View on standard-based workflow

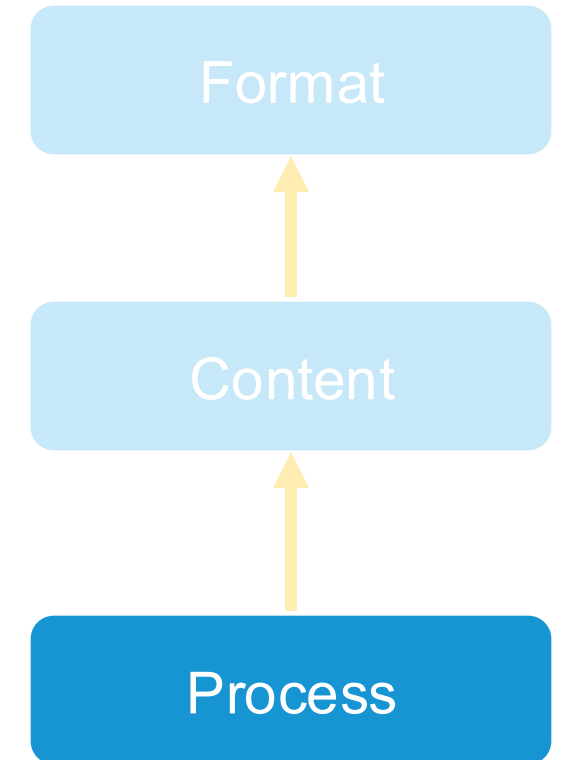
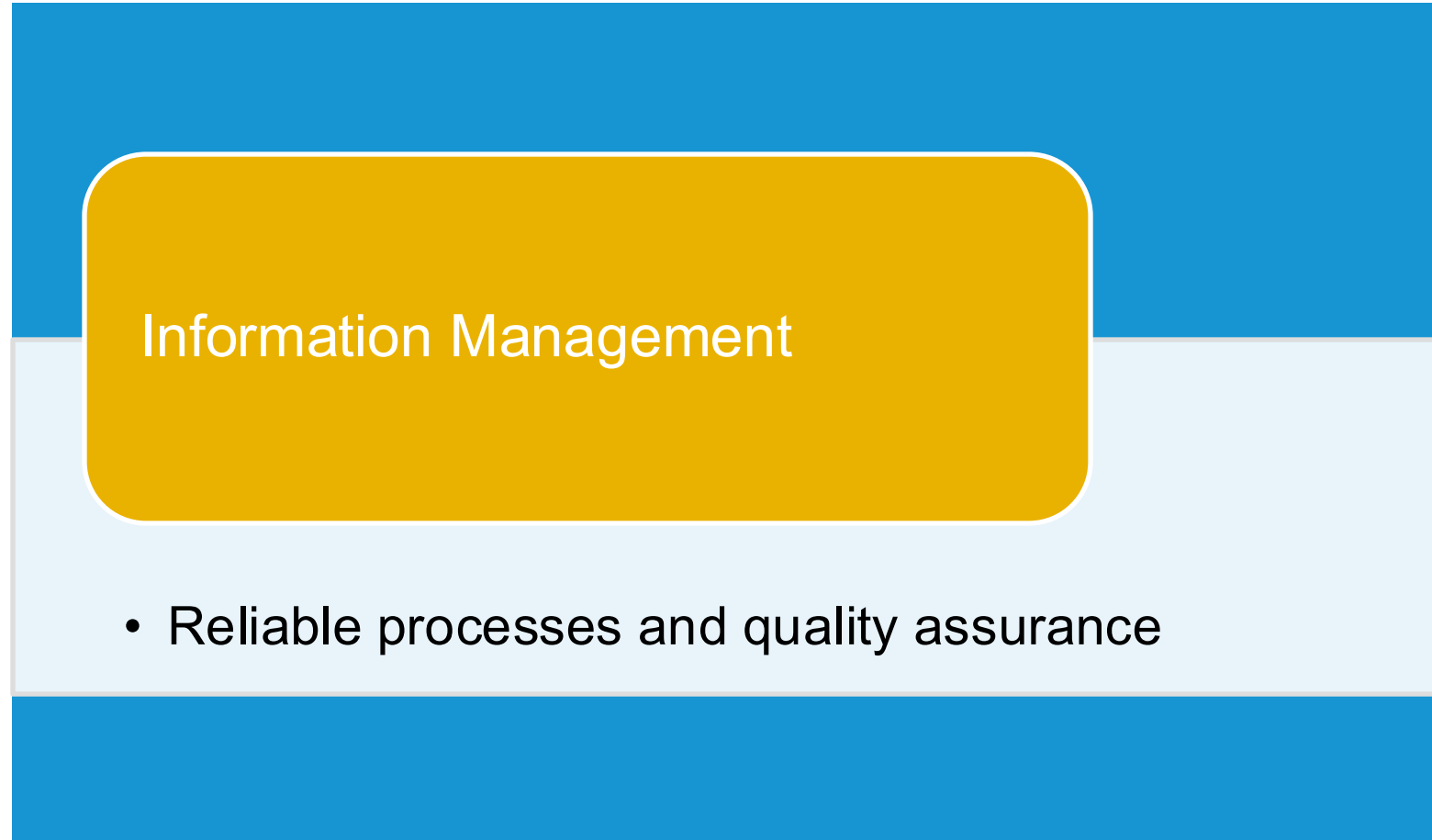
Use different standards in open BIM workflows

- IDS (+IDM) to require information delivery
- IFC to submit the produced information
- BCF to communicate results of (e.g., IDS-based) checks
- openCDE to upload and share sufficient IFC data sets



Process and organizational standards

How to organize and demand a structured and digital information management?



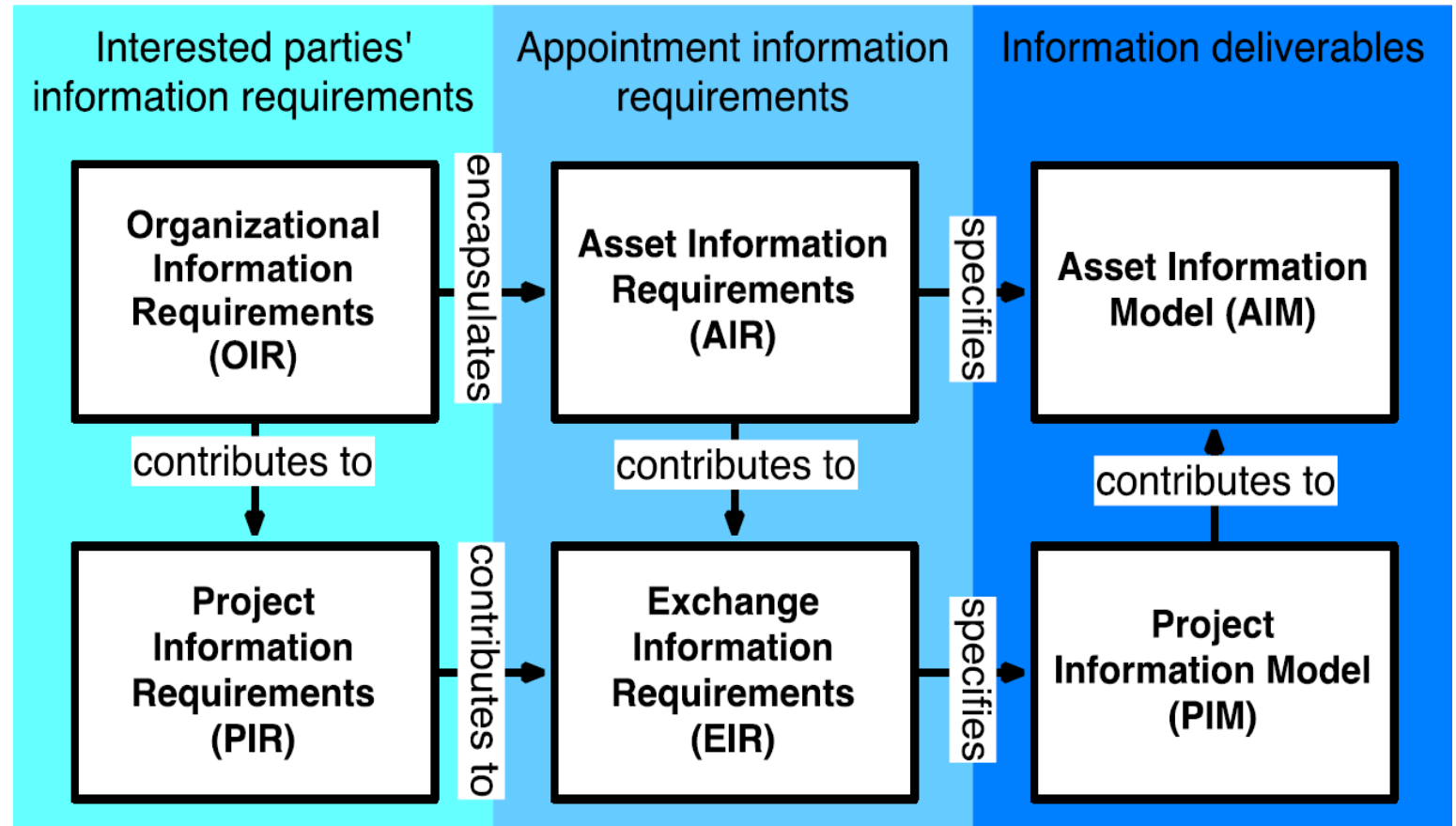
Information management

ISO 19650 series

Recommendations on how to handle construction information using BIM

- Information management principles
- Delivery teams' responsibilities
- Information validation necessary
- Determine Level of Information Need
- Common Data Environment

Information about the asset is as important as the asset itself



Source: ISO 19650-1:2018(E)

Guidance on how to use standards

Technical reports for ISO 19650 (and related) standards

European level specific guidance (recommendations)

■ TECHNISCHE REGEL [AKTUELL]

DIN CEN/TR 17439:2021-05

Anleitung zur Umsetzung von EN ISO 19650-1 und -2 in Europa;
Deutsche Fassung CEN/TR 17439:2020

Englischer Titel:

Guidance on how to implement EN ISO 19650-1 and -2 in Europe;
German version CEN/TR 17439:2020

Ausgabedatum:

2021-05

Originalsprachen:

Deutsch

Seiten:

68

■ TECHNISCHE REGEL [AKTUELL]

ONR CEN/TR 17654:2021-09-15

Leitfaden für die Implementierung von Austausch-
Informationsanforderungen (Exchange information requirements EIR)
und BIM Abwicklungsplänen (BIM Execution Plans BEP) auf
europäischer Ebene basierend auf EN ISO 19650-1 und -2

Englischer Titel:

Guideline for the implementation of Exchange Information
Requirements (EIR) and BIM Execution Plans (BEP) on European level
based on EN ISO 19650-1 and -2

Ausgabedatum:

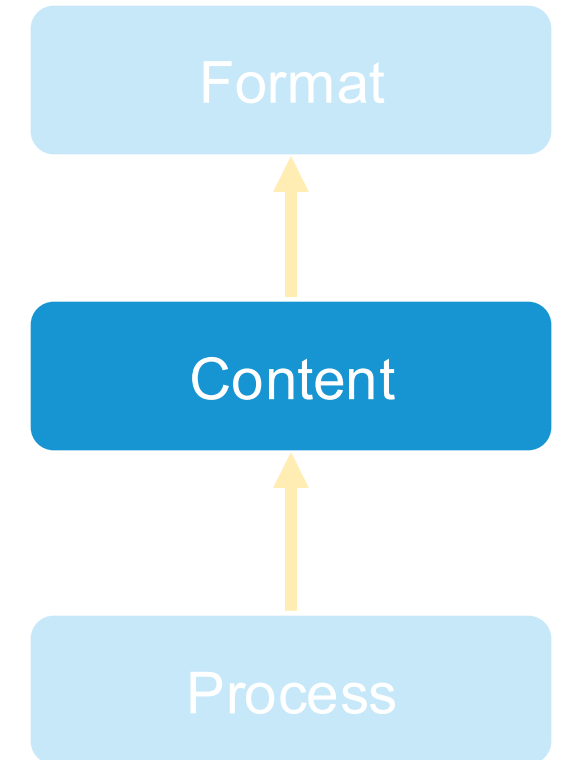
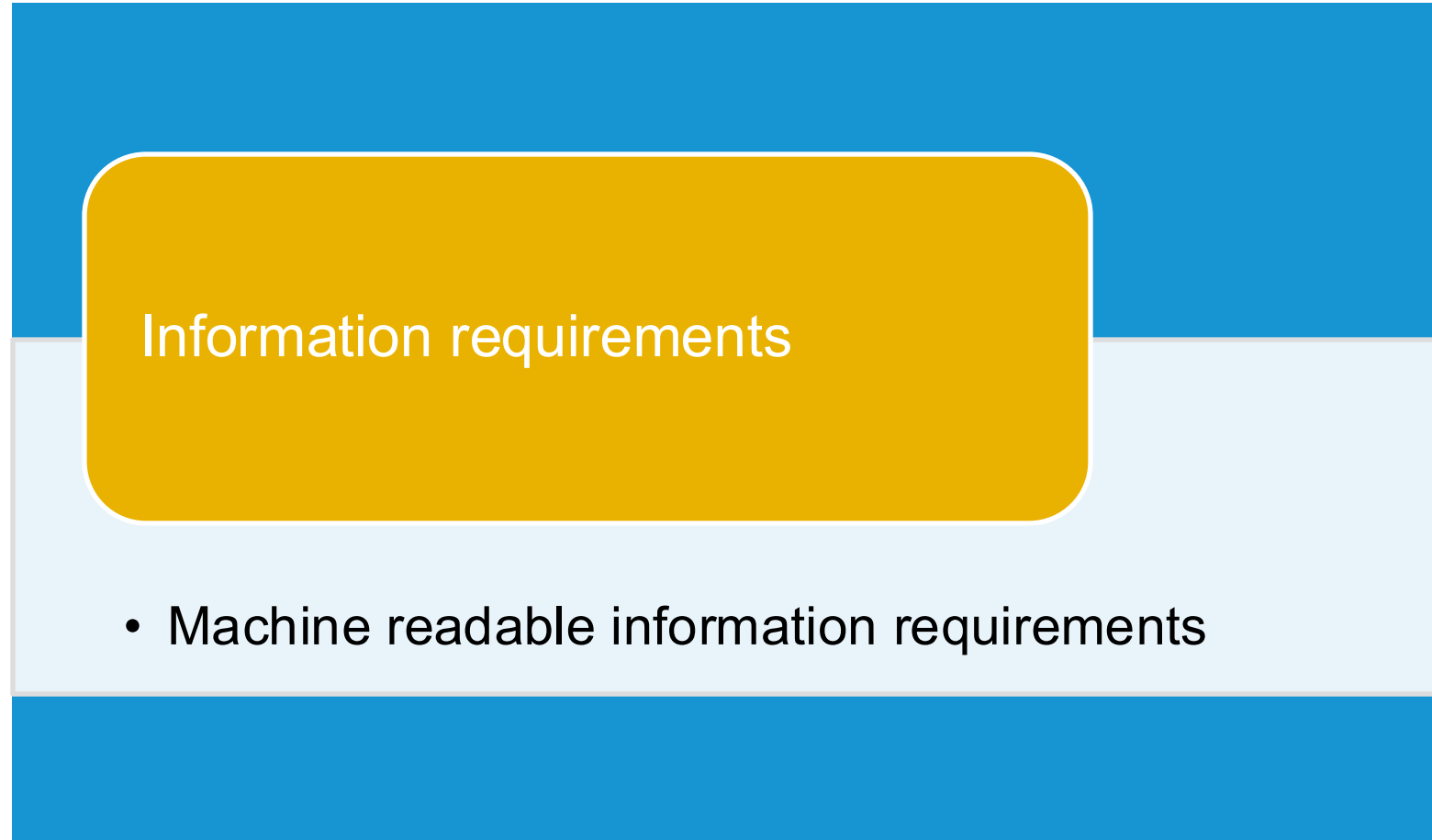
2021-09-15

Originalsprachen:

Englisch

Information requirement related standard

Ensure that contracted information is delivered



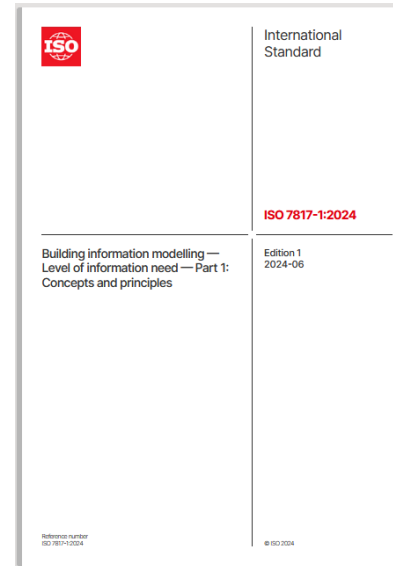
Goal of EN ISO 7817 “Level of Information Need”

Framework to explicitly state the right level of information need

Part 1: Concepts and principles (complete)

Part 2: Guidance for application (ongoing)

Part 3: Data Schema (ongoing)



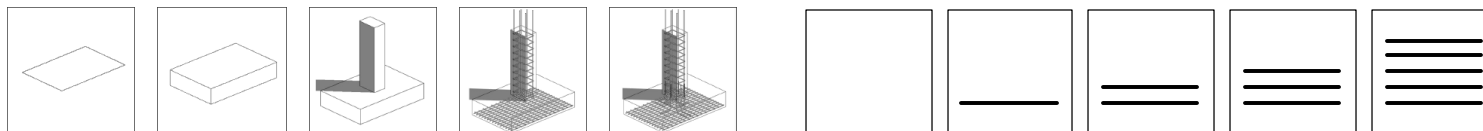
ISO 7817-1:2024

Building information modelling — Level of information need

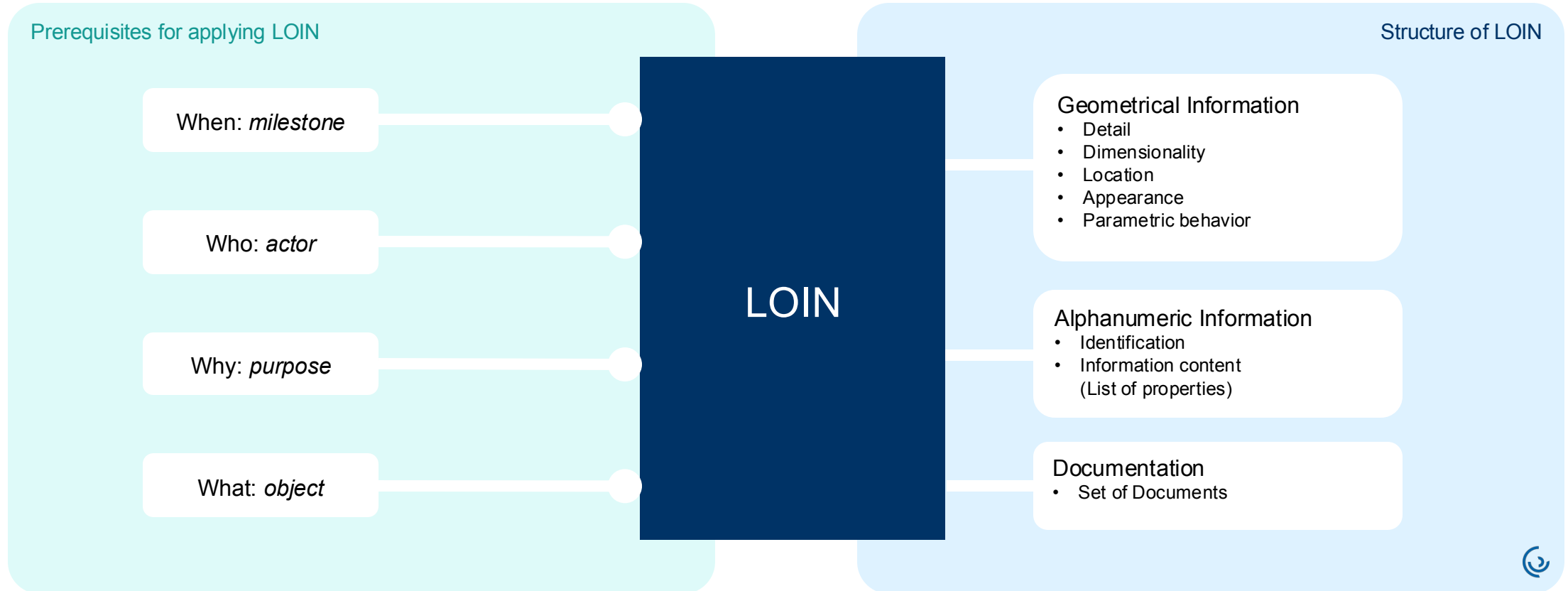
Part 1: Concepts and principles

Published (Edition 1, 2024)

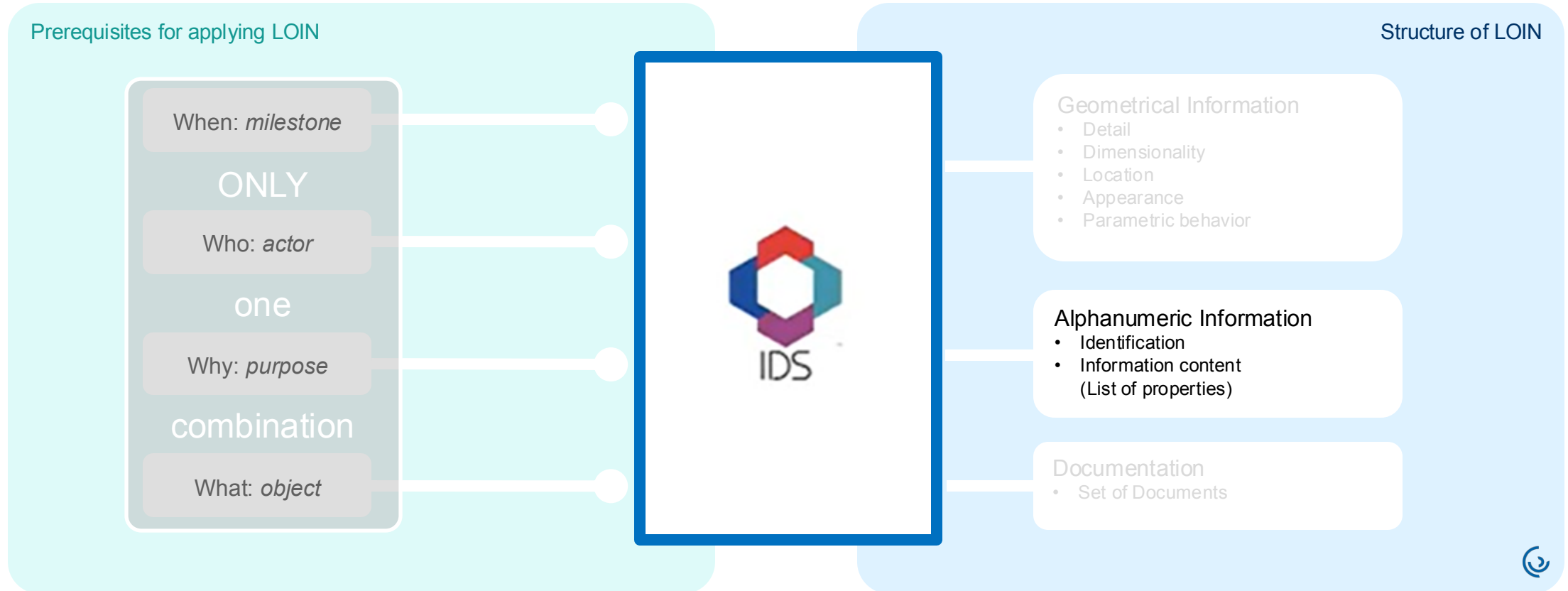
Enhancing the known “formula” $LOD = LOG + LOI$



Information Need – detailed according to EN ISO 7817-1



ISO 7817 LOIN and buildingSMART IDS

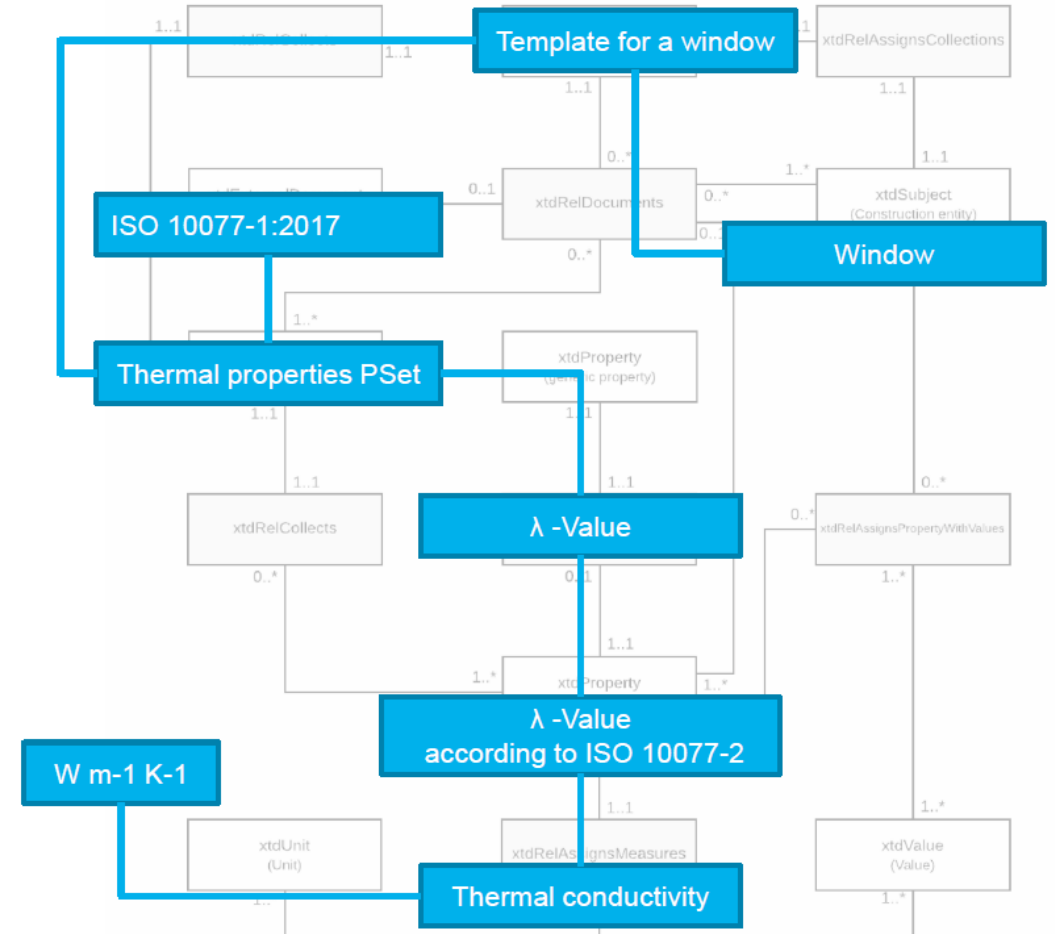


EN ISO 23386 / 23387 and EN ISO 12006-3

Methodology to describe, author and maintain properties in interconnected data dictionaries and data templates for construction objects used in the life cycle of built assets

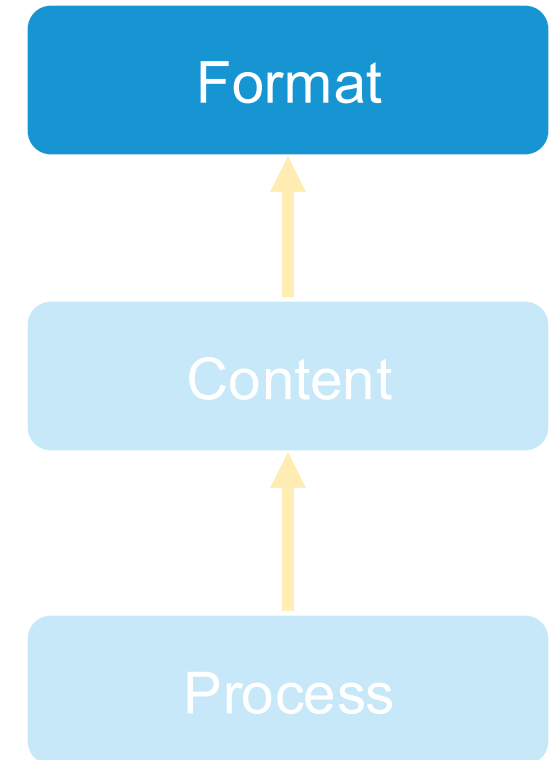
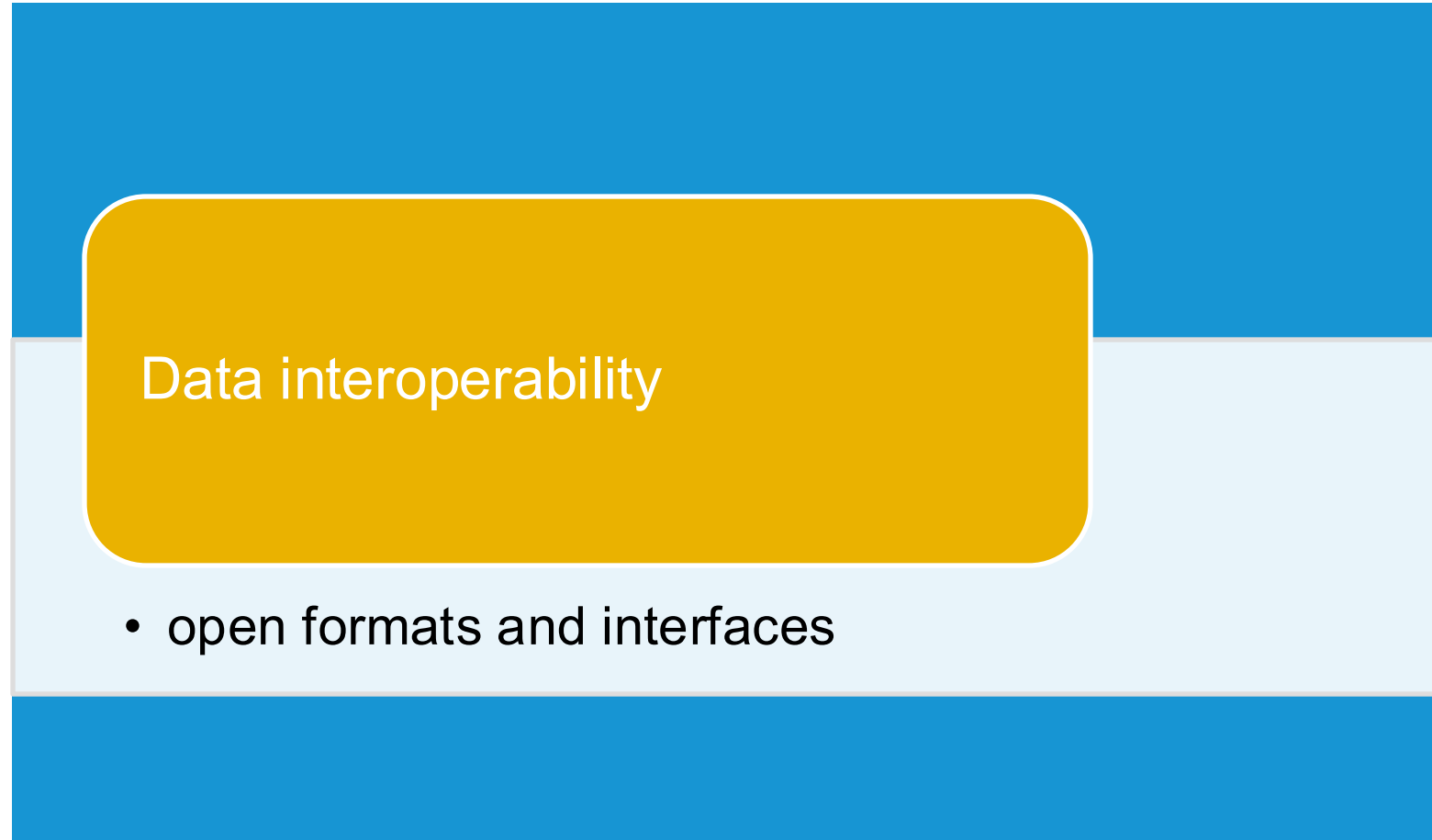
- Description of properties by meta data
- Definition of workflow to publish and maintain property definitions
- Linkage between different data dictionaries

Framework for object-oriented information



Data format related standards

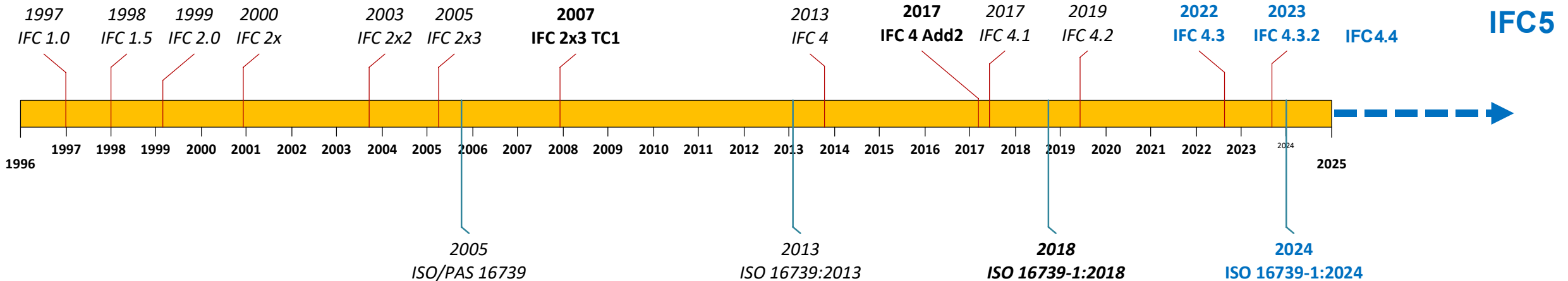
Open access to data / interoperability



EN ISO 16739-1

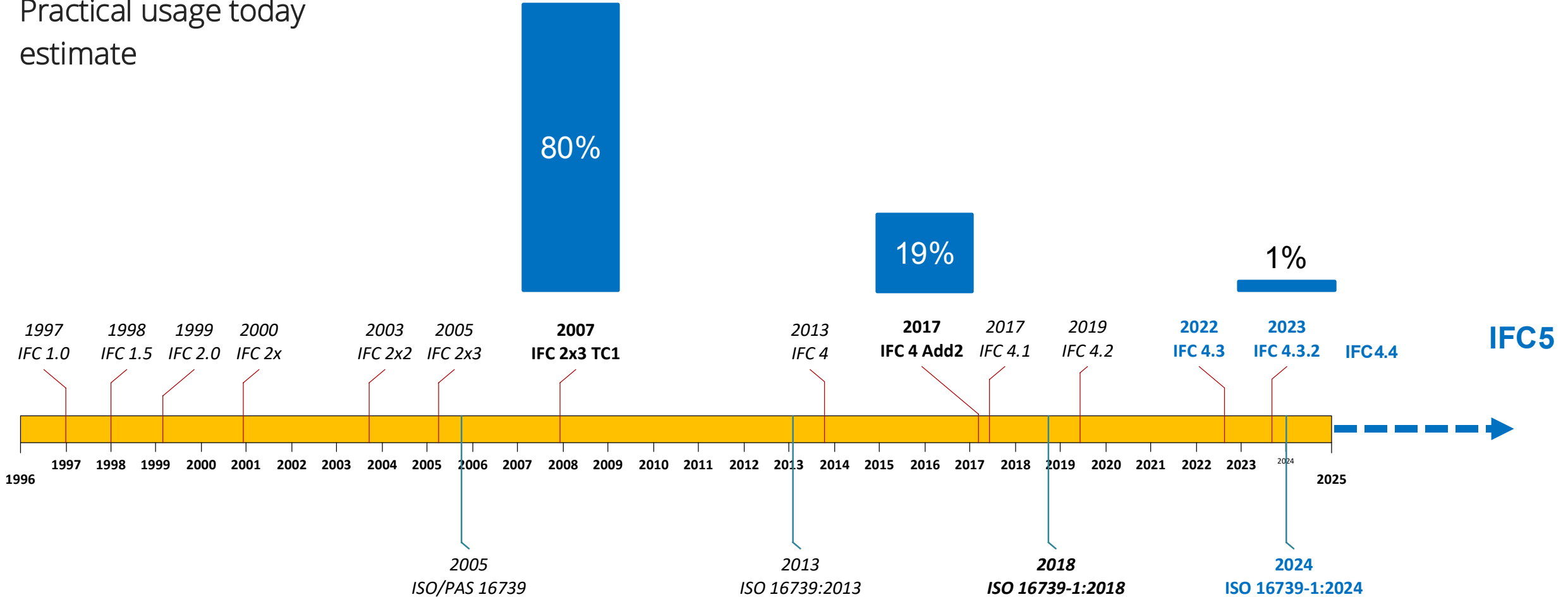
Industry Foundation Classes (IFC) within ISO

Timeline of releases



EN ISO 16739-1 / IFC

Practical usage today
estimate



Looking back – IFC was ahead of its time

IFC is based on objects, objects have an identity

today common place

Mid 90'ies, almost unheard

Globally unique identifier (GUID)

But: file size does matter!

Therefore, compressed GUID |

“2I9E6mGy57TAQifRln7PY3”

what was the maximum file size of a floppy disk?



Floppy disk – what was it?
(Photo by Jakub Sobecki from Freemages)

IFC2x3 / IFC4 – stable versions with large installation base

IFC is about exchanging data - it is not an application format

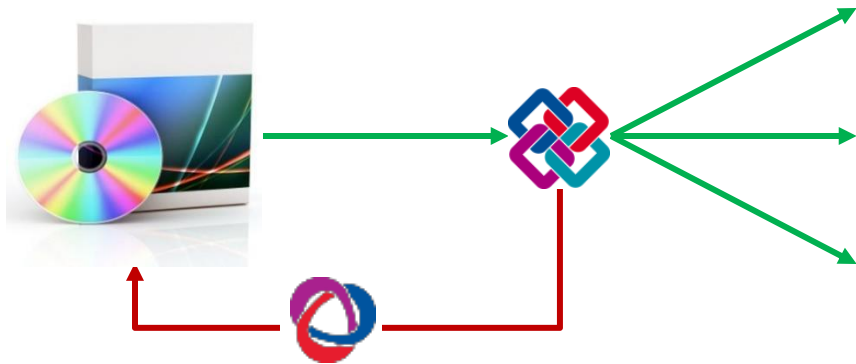
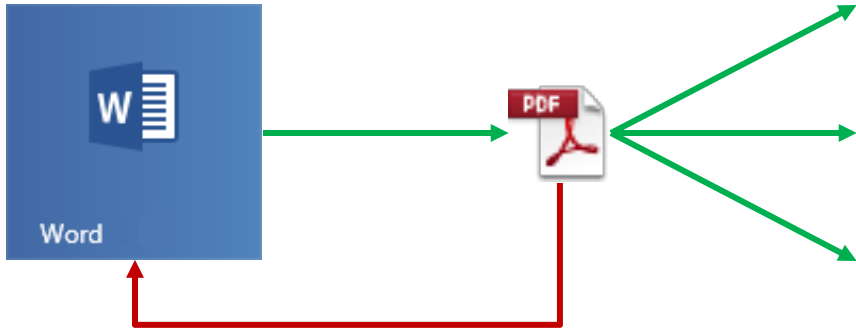
IFC enables the exchange of discipline models between different disciplines to federate, coordinate and reuse building information



„eierlegende Wollmilchsau“

*German mystical creature
“one animal laying eggs, giving milk,
providing wool and delivering pork”*

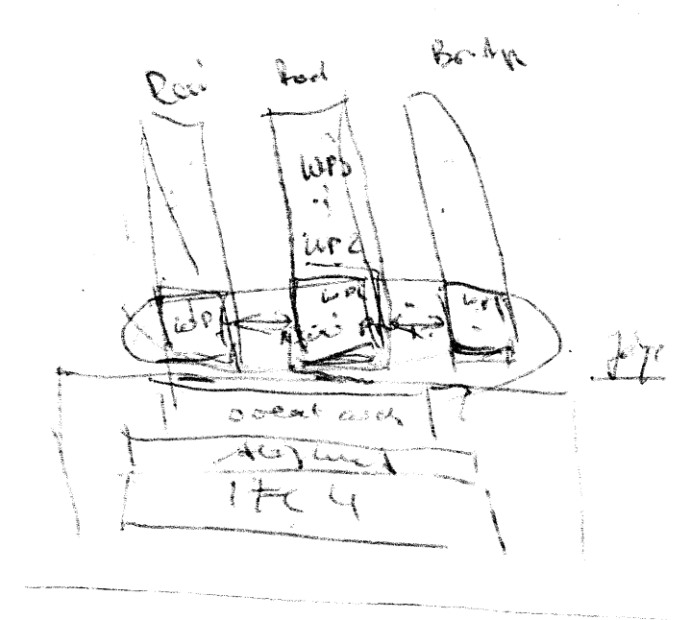
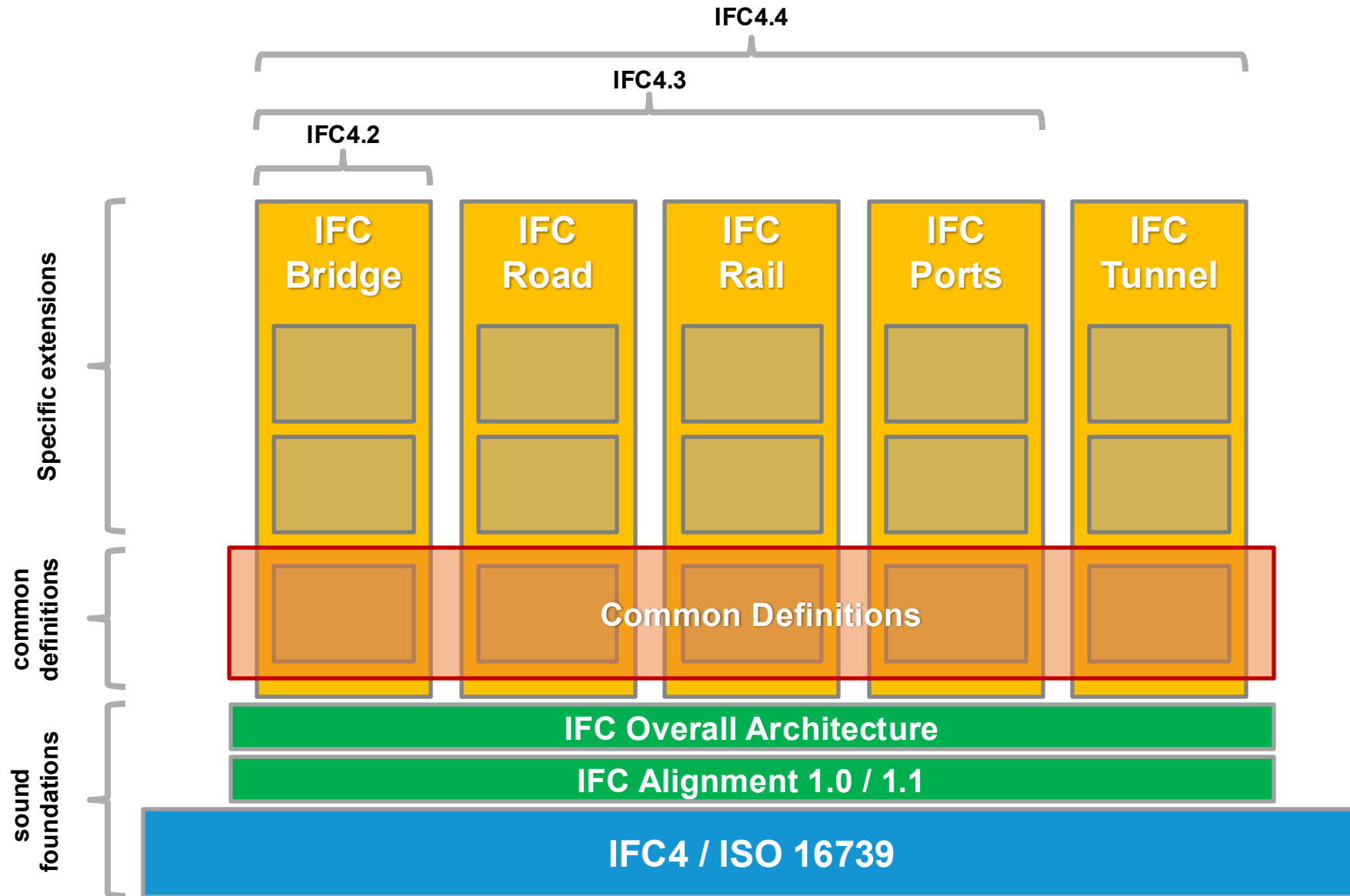
Referencing IFC-models – the established workflow



Use IFC as intended

- Exchange and share BIM Models !
- No replacement of own software format
- Handle change management by BCF

IFC4.x (ff) enhancements for infrastructure



IFC5 – next generation

First experimental developments

Thank you for your attention !

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EU policies supporting a more digital construction industry

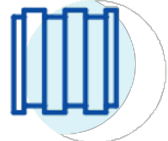
EU BIM Task Group General Assembly

Pablo Gutierrez

Policy Officer, unit H.1 Construction

Directorate-General for Internal Market, Industry, Entrepreneurship & SMEs

Background: the construction ecosystem in EU



Construction and Construction works
9.4% of total domestic carbon footprint



Waste generation
36% from construction,



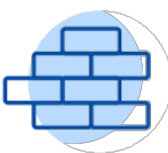
Cement, steel, aluminium and plastics
15% of EU carbon emissions



Building stock
75% is energy inefficient

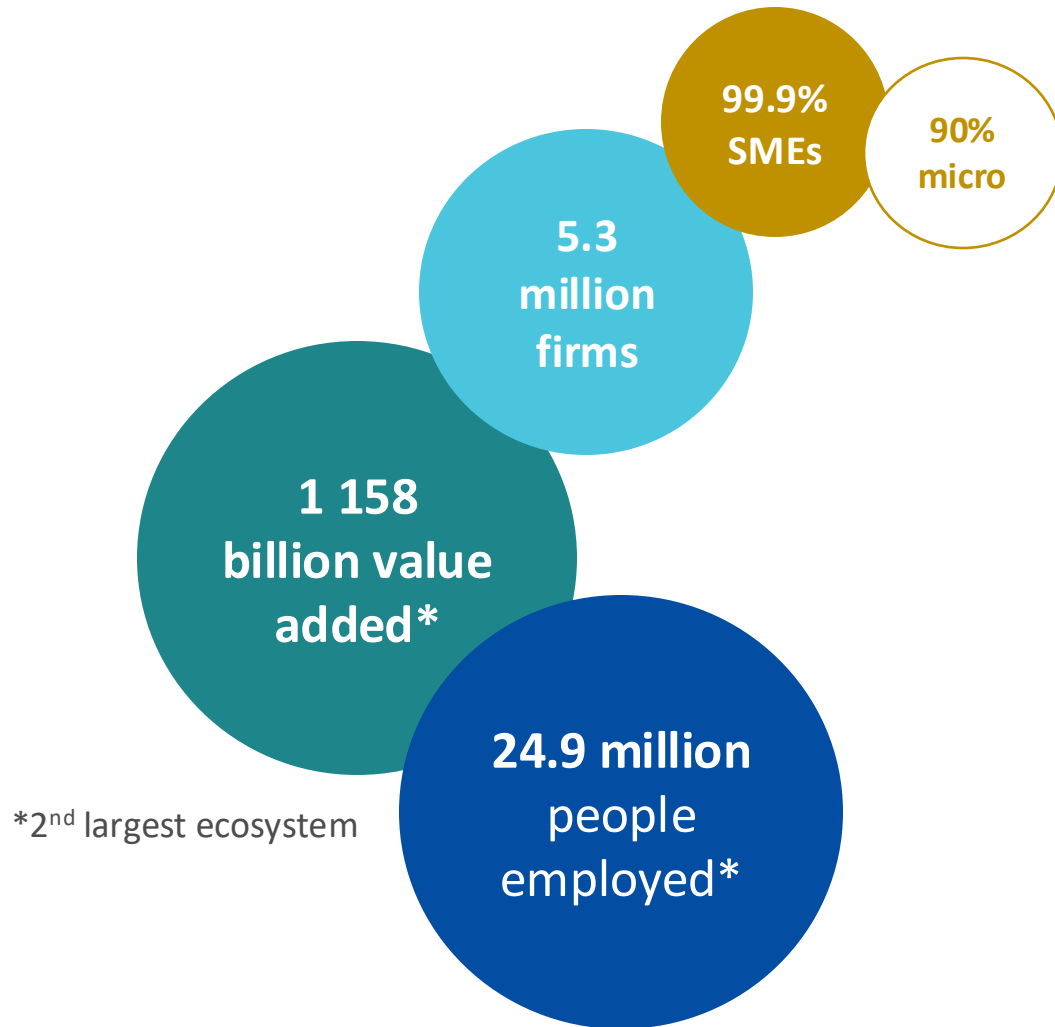


Buildings
40% of the EU energy consumption

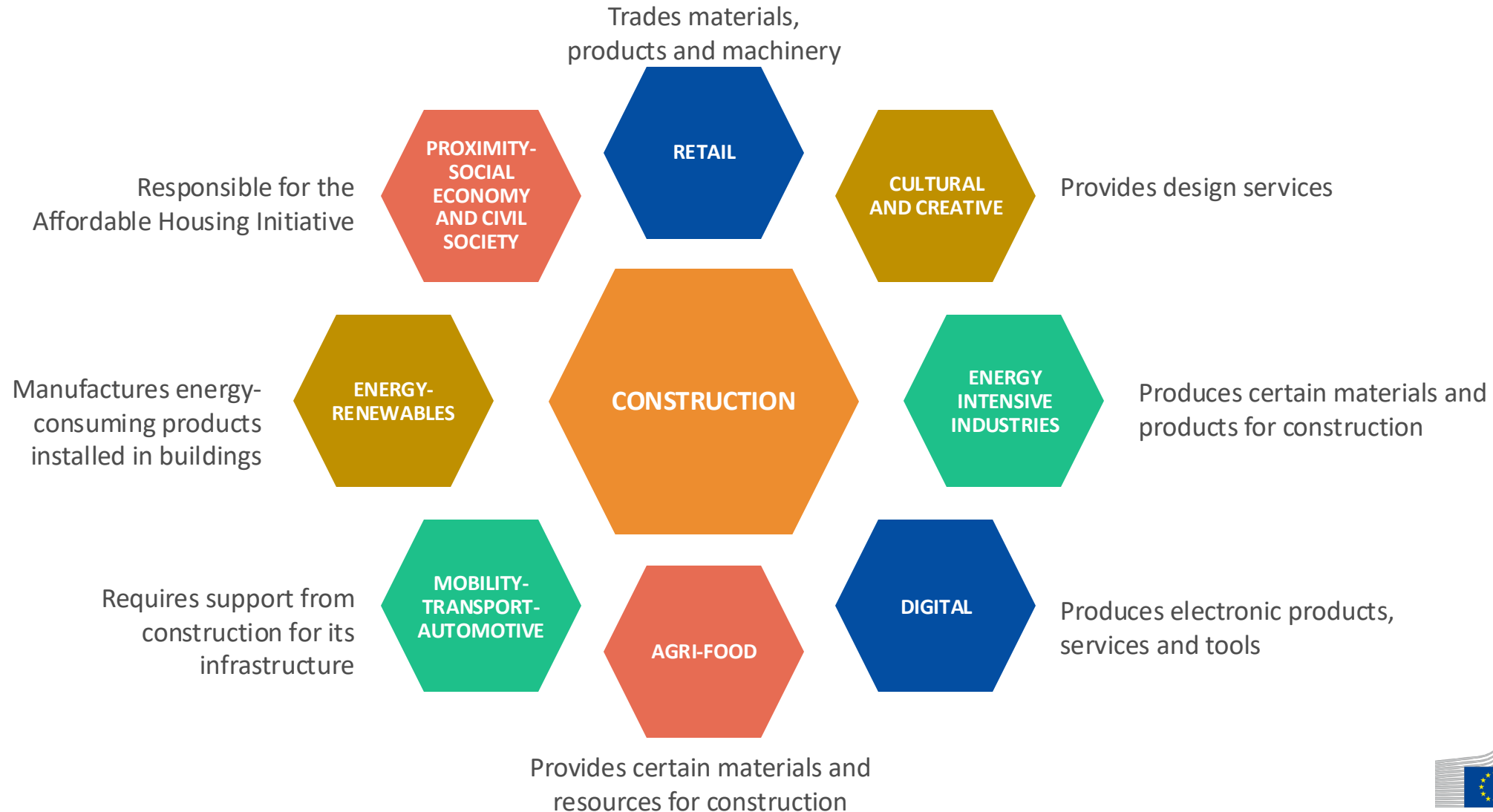


Materials
~50% extracted for construction use

The construction ecosystem



The construction ecosystem





Political Guidelines for European Commission 2024-2029

*“I will appoint a Commissioner whose responsibilities will include housing, and I will put forward a first-ever **European Affordable Housing Plan**.*”

This will address structural drivers, develop a strategy for housing construction, offer technical assistance to cities and Member States and focus on investment.”

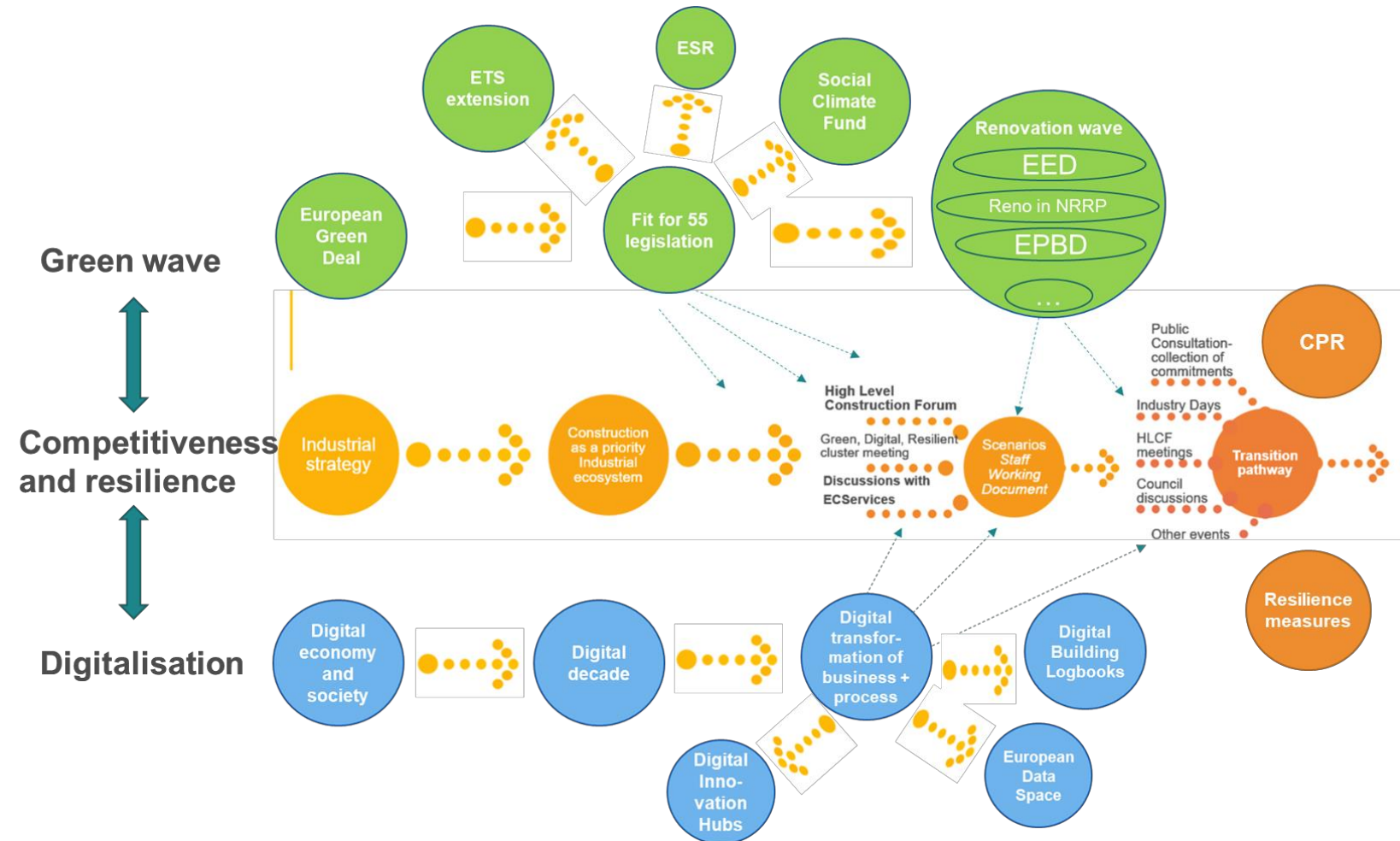
DG GROW - Policy landscape

FIT FOR 55

A package of proposals to make the EU's climate, energy, land use, transport and taxation **policies fit for reducing net greenhouse gas emissions by at least 55% by 2030**, compared to 1990 levels.

POLICY LANDSCAPE FOR CONSTRUCTION

- Competitiveness and resilience at the center of DG GROW work
- Implementation of Green Wave for construction
- Implementation of Digital Strategies for construction



High Level Construction Forum

A platform to **communicate** with stakeholders and Member States

+700 construction **stakeholders** registered

Enabling co-creation for the **transition pathway**

1-2 plenary meetings per year

9+ thematic meetings per year

Newsletter with updates, invitations, events



Join the HLCF and receive the newsletter:

<https://ec.europa.eu/eusurvey/runner/d5823bdd-cd51-798d-ad6d-3807202c4903>

DG GROW – High Level Construction Forum

- Recent work from the HLCF
 - March 2024: webinar organised on Artificial Intelligence, Digital Building Permits and Digital Building Logbooks
 - 24 April 2024: plenary HLCF on
 - monitoring the actions
 - new pledges received from stakeholders
 - general evolutions on the different topics
 - 23 October 2024: Webinar on ‘Indoor Air Quality – from requirements to a toolbox’
 - 21 November 2024: Webinar on offsite construction
 - March 2025: The fifth plenary meeting of the High Level Construction Forum

Transition pathway for Construction

Transition Pathway (March 2023):

<https://ec.europa.eu/docsroom/documents/53854>

- Co-created with industry, Member States and other stakeholders
- A vision for the green and digital transition
- Recommendations of concrete action

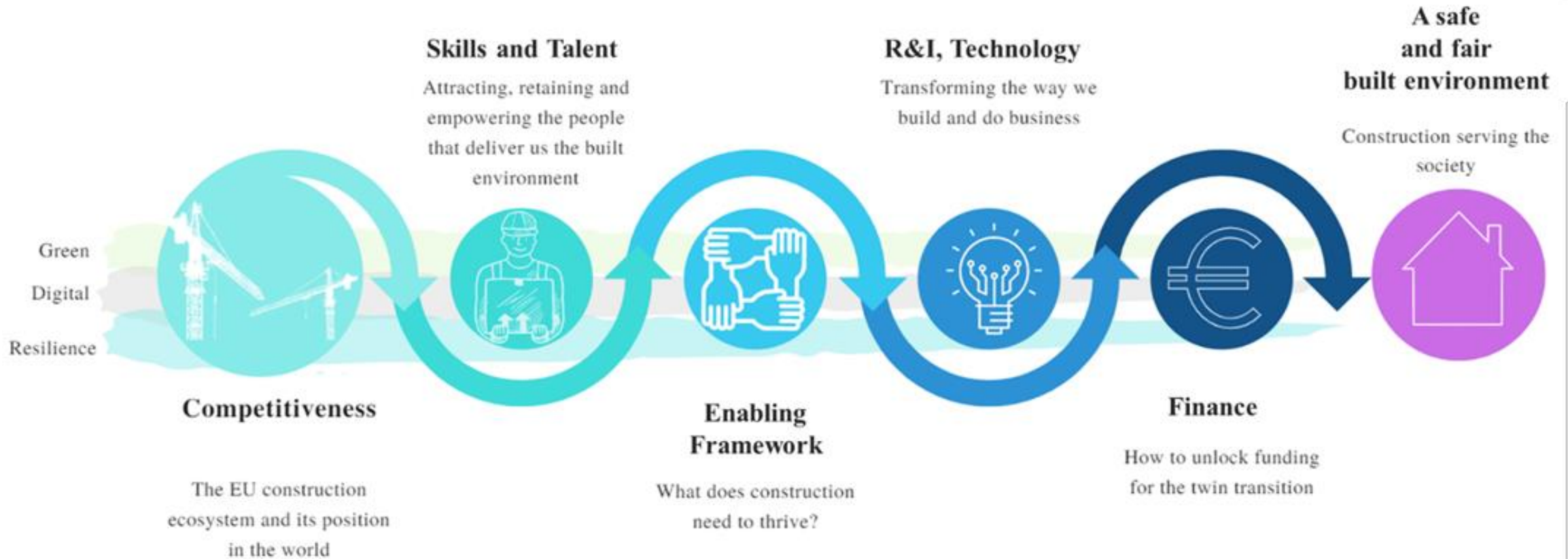
Call for new commitments aligning with the Transition Pathway:

https://ec.europa.eu/eusurvey/runner/TransitionPathwayConstruction_Commitments

DG GROW – Policy – Transition Pathway

- Process in **co-creation** with industry, Member States and other stakeholders
- Further elaboration of the Industrial Strategy
- Via the framework of the **High Level Construction Forum**
- Developing a non-binding but coherent **policy framework** to
 - Test/validate EC policies
 - Encourage all stakeholders to continue working in co-creation towards a transition of the sector
- **“Living document”**:
 - 2021-2022 First Staff Working Document : general views
 - March 2023: current document with visions and **recommended actions** for EC, MS and industry
 - 2023-2024: **further pledges** from industry
 - 2024-... **monitoring** and further follow-up

Transition Pathway Document



Document published in March 2023

<https://ec.europa.eu/docsroom/documents/53854>



Transition Pathway – Building Block 3: Enabling framework

- Enabling the **digital transition** – the digital transition as lever to resilience
 - Cyber-security as a significant concern for SMEs to digitalise
 - Artificial Intelligence Act
 - A construction Data Space
 - Revised Construction Products Regulation
 - Digitalisation of construction SMEs
 - Digitalisation of building permit processes
 - Standardisation



Building Block 3: Enabling framework

- **Standardisation as enabler of digitalisation and as a strategic element of the green transition**, including the concept of digital sobriety.
 - **OpenBIM** should allow the integration of a digital work assuring access and usability throughout its life cycle without depending on a specific proprietary tool.
 - **Open standards** require a commitment and structural support from the public sector. To ensure access to and control over data, tools, and data processes open standards should remain in place to ensure data ownership.
 - The **Construction Products Regulation** provides the necessary instruments and will ensure the exchange of compatible data in BIM systems. To achieve this goal the future CPR is expected to provide a database or system to be used as data source for the assessment of buildings.



Building Block 3: Enabling framework

- **Standardisation as enabler of digitalisation and as a strategic element of the green transition**, including the concept of digital sobriety.
 - The work of **CEN/TC 442 dealing with BIM** is another key element able to ensure a homogeneous implementation across Europe. Issues such as language, different construction traditions and terminology, process and regulatory approaches need to be taken into consideration for the development of European standards related to BIM.
 - The European Commission is working on **harmonization of Digital Building Logbooks**. For the time being mainly through soft policy and through the creation of guidelines for more harmonized use, with an objective to create better interoperability

DG GROW Project: Digitalisation of SMEs

Objective: accelerate digitalisation by SMEs

Finalised in 2023

Deliverables:

- **Maturity scans**
- **50 company cases**
- **Handbook** on different technologies
 - BIM
 - Robots
 - Drone
 - 3D-printing
 - 3D-scanning
 - Mobile Devices
- **Trainings delivered in 2022-2023 in all MS**
 - Specific technologies
 - Digital company culture
 - Digital transformation strategy

<https://digital-construction.ec.europa.eu/>

The image shows a 'Digital Strategy Canvas' template, a strategic tool for digital transformation. It is structured as a grid with various sections for analysis and planning. The top header includes fields for 'For', 'Status', and 'Date'. The main body is divided into several key areas: 'Our Organisation' (Strategic Context), 'Our Digital Programmes' (Management and Governance), 'Our Customers' (Customer Intelligence, Customer Relationships), 'Our Environment' (Key Technologies, Social Media and Digital Services, Peers and Rivals), and 'Our Environment' (Cultural Trends, Local Trends). Other sections include 'Staffing and Resources', 'Monitoring, Support, Maintenance and Development', 'Data use', 'Content', 'Infrastructure', 'Services', 'Value Capture', 'Key Suppliers and Partners', 'Expenditure on Digital', 'Income from Digital', and 'Related Public-Facing Activities'. Each section contains specific questions to guide the user's analysis.

DG GROW Project: Digital Building Logbooks

Aim: development of an EU model for digital building logbooks

“A digital building logbook is a common repository for all relevant building data. It facilitates transparency, trust, informed decision making and information sharing within the construction sector, among building owners and occupants, financial institutions and public authorities.”



Source: Study on the development of a European Union Framework for Digital Building Logbooks (2020)

DG GROW Project: Digital Building Logbooks

- **Data mapping** of existing resources and existing DBLs
- **Creating a framework** for a EU Digital Building Logbook, with a semantic data model and dictionary
 - Semantics and functionalities
 - Interoperability with other systems
 - Interoperability with other databases: DPP (indirect), CPR (indirect), EPC, EPBD,....
- Design and visual identity for an **on-line portal**
- **Guidelines for Member States**
 - **Costs and benefits** from the point of view of implementing this framework by Member States:
 - Estimations of the **resource needs** for MS
 - **Risks** during implementation phase: how to deal with data governance, privacy issues,....

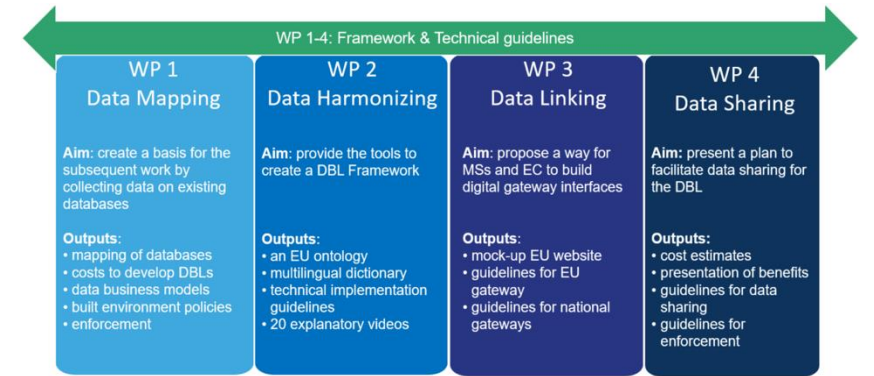
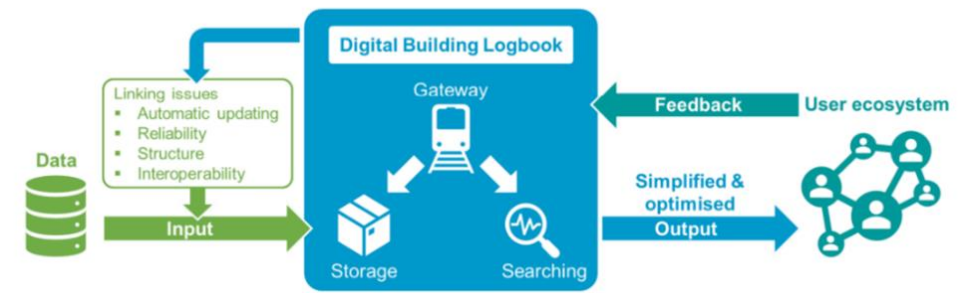
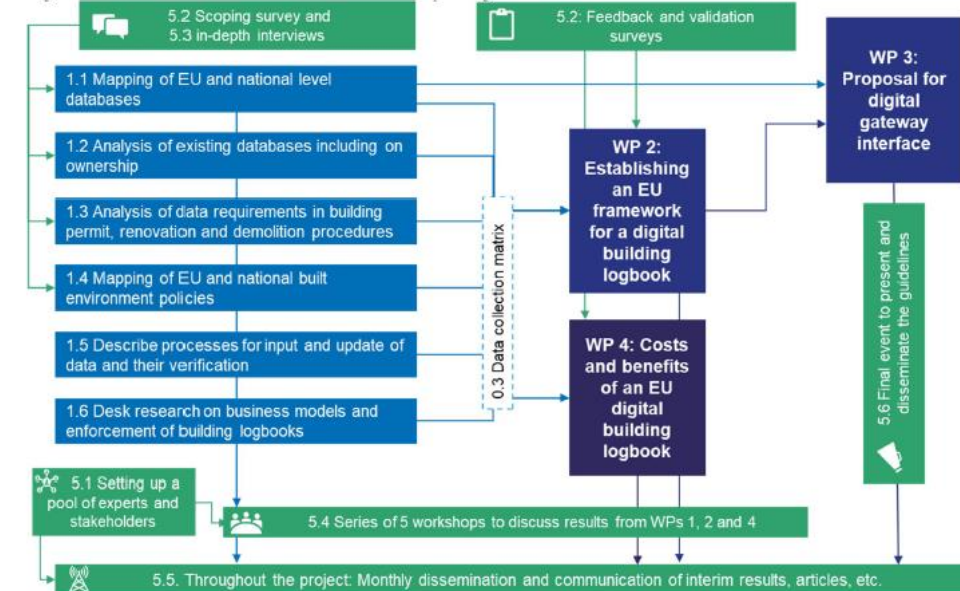
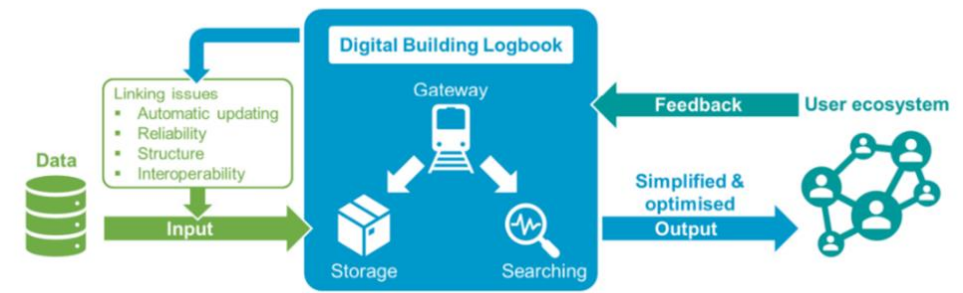


Figure 3.2 Overview of links between the five work packages



DG GROW Project: Digital Building Logbooks



- **Continuation after the end of the project (in 2024)**

- Series of short videos on DBL
- creating an actual EU portal on DBL – will also make all deliverables from the project available
- interaction with MS / target users regarding the use of the deliverables and guidelines
- Further follow-up of **Horizon Projects** and their links with the framework and guidelines
- further **follow-up of Commission developments** regarding building-related data: CPR Revision Building Renovation Passport, EPBD Database, Building Stock Observatory
- linking initiatives at EC level and MS level to the EU framework

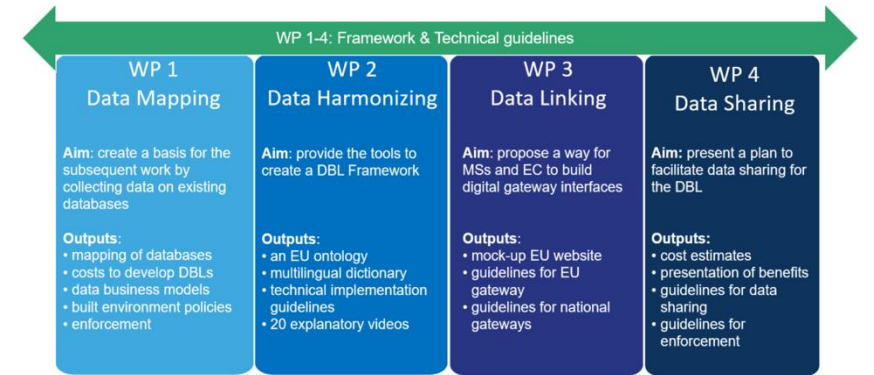
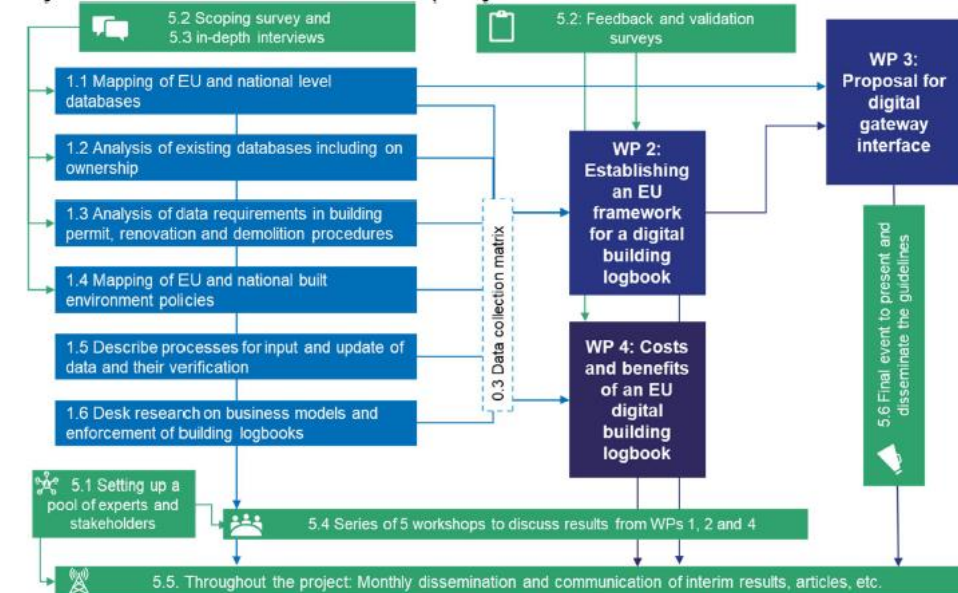


Figure 3.2 Overview of links between the five work packages



DG GROW study “Digitalization of the Built Environment

Work Package 1

Towards a Construction Data Space

2.1.1.1. Main insights from interviews (regarding mapping of initiatives and use cases).

2.1.1.2. Update on the mapping and analysis of existing initiatives.

2.1.1.3. Draft suggestions on the governance, interoperability, trust, data and all other issues.

2.1.1.4. A summary of the ongoing consultations with stakeholders.

Work Package 2

Digitalisation of Building Permits

2.2.1.1. Categorisation of the different digital building permit systems

2.2.1.2. Mapping the state of play on building permit systems across EU

2.2.1.3. Analysis of 10 international front runner cases of digital building permits and use of BIM in the public administration

2.2.1.4. Analysis of challenges and needs regarding digitalisation of building permits

2.2.1.5. Conclusions on the state of play of digital building permits in the EU

2.2.1.6. Report on the creation of the toolkit

2.2.1.7. Report on the approach for the organisation of the trainings

Work Package 3

BIM, digitalisation and sustainability

2.3.1.1. Initial Analysis of state of play in BIM adoption across all EU MS

2.3.1.2. A fine tuning of the methodology to define the different levels of maturity and the assignment of countries to them

2.3.1.3. Report on the establishment of the ‘BIM in public procurement’ community of practice and the consultations with stakeholders

2.3.1.4. Report on the collection of use cases of public projects using BIM



What is the new Construction Products Regulation?

Harmonised rules for the marketing of construction products

- Single market
- Free movement of products (CE marking)
- Common technical language: functionality, safety and environment
- Digital Product Passport

National Building Codes

- Construction works

DG GROW Policy: Construction Products Regulation

Revision of the Construction Products Regulation (CPR)

- Commission proposal from June 2022
- Corrigendum version of the CPR text approved by the EP (8 Oct 2024)
- Key objectives
 - Introduce product requirements for construction products to improve health, safety and environment
 - Improve functioning of the internal market
 - Enhance the sustainability of construction products

What will the new rules bring?



Requirements for greener and safer construction products



Improved digital product information for citizens, businesses and others

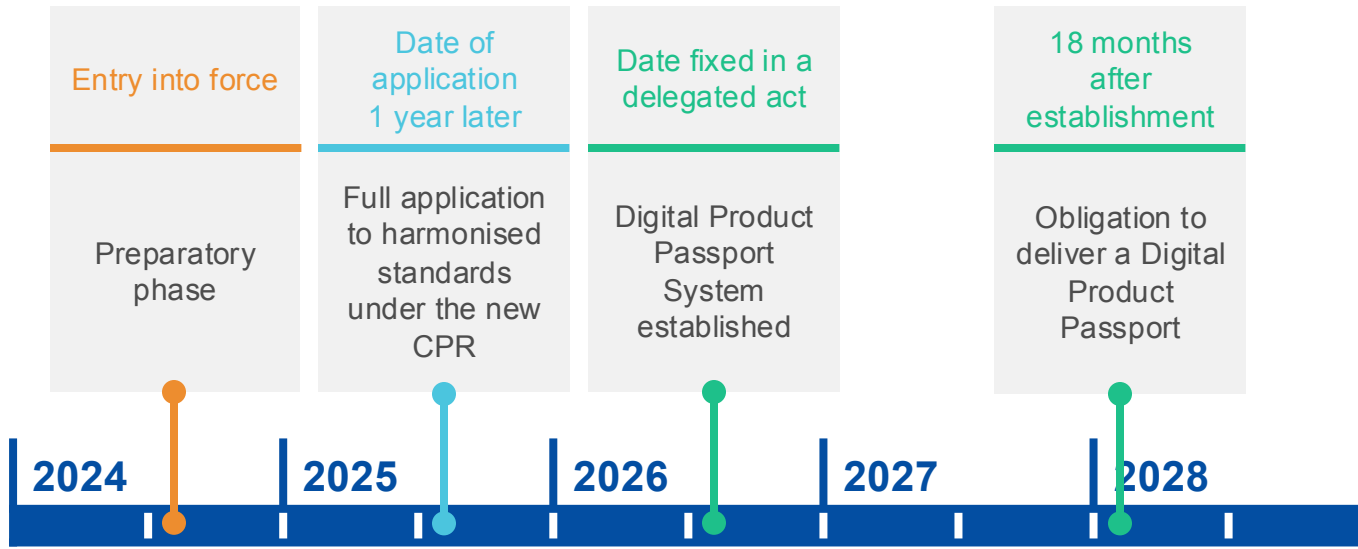


Easier delivery of harmonised standards on the performance of construction products



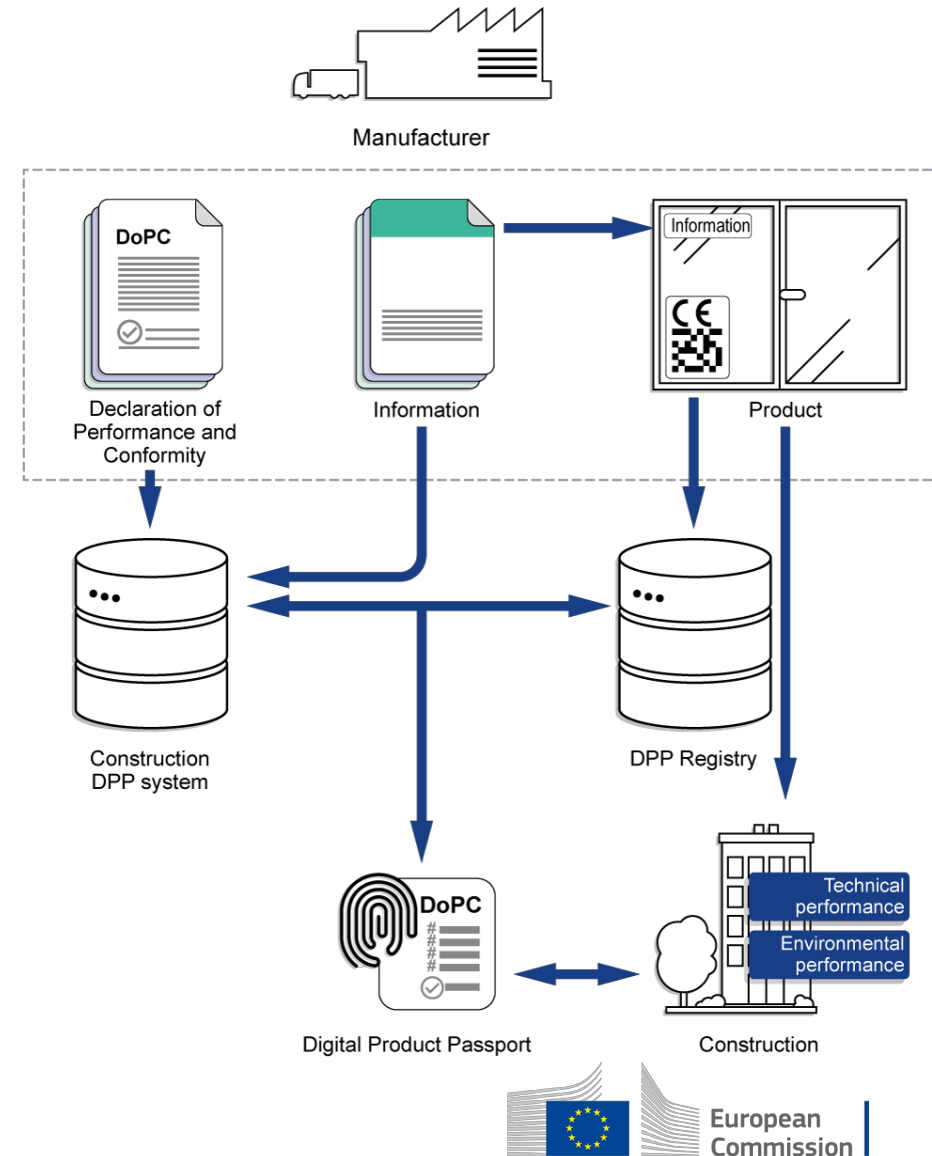
Rules to facilitate innovative business models such as 3D printing

Digital Product Passport



Information

based on open standards	structured
machine-readable	searchable
developed with an interoperable format	transferable through an open interoperable data exchange network without vendor lock-in



Thank you!

 Pablo.gutierrez-velayos@ec.europa.eu

More information

- EU Industrial Strategy: <https://europa.eu/lqD43rd>
- Transition Pathway for Construction: <https://ec.europa.eu/docsroom/documents/53854>
- The Transition Pathway for Construction Process: https://single-market-economy.ec.europa.eu/sectors/construction/construction-transition-pathway_en
- Join the High Level Construction Forum: <https://ec.europa.eu/eusurvey/runner/d5823bdd-cd51-798d-ad6d-3807202c4903>
- Digitalisation of Construction SMEs: <https://digital-construction.ec.europa.eu/>
- Digital Building Logbooks
Definition <https://op.europa.eu/en/publication-detail/-/publication/cacf9ee6-06ba-11eb-a511-01aa75ed71a1/language-en/format-PDF/source-179394366>
- State of play of existing initiatives <https://op.europa.eu/en/publication-detail/-/publication/58580f81-06b7-11eb-a511-01aa75ed71a1/language-en/format-PDF/source-179394366>
- Project on creating an EU Framework: <https://www.ecorys.com/netherlands/our-work/technical-study-development-and-implementation-digital-building-logbooks-eu>
- Construction and built environment
https://ec.europa.eu/growth/sectors/construction/competitiveness_en
- European Construction Sector Observatory
https://ec.europa.eu/growth/sectors/construction/observatory_en
- Renovation Wave
https://ec.europa.eu/info/news/preparing-future-renovation-wave-initiative-have-your-say-2020-jun-12_en
- Digital Innovation Hubs
<https://ec.europa.eu/digital-single-market/en/digital-innovation-hubs>

Support of the digitalisation of the built environment, public procurement and SMEs in construction

Georgios Kontopoulos CEng MICE
Senior Manager at PwC

Berlin, October 2024

Project description and results



Agenda

1 Project's description

2 Overview of the methodology and results





1 Project description

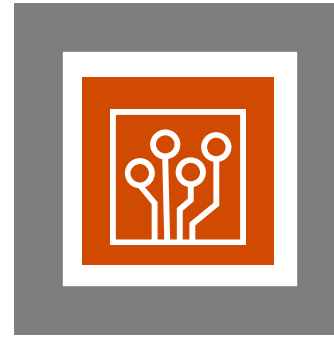
Project's work packages into 3 main objectives

Objective 1



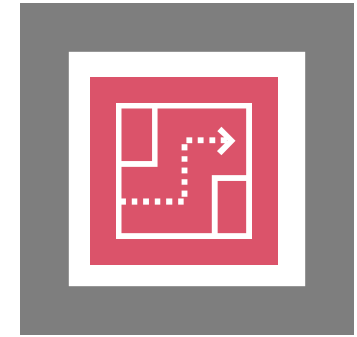
Preparing the
ground for a
**construction data
space**

Objective 2



Support the
**digitalisation of
building permit
systems** across EU27

Objective 3



Support the adoption
of **BIM in public
procurement** across
EU27

Project's structure

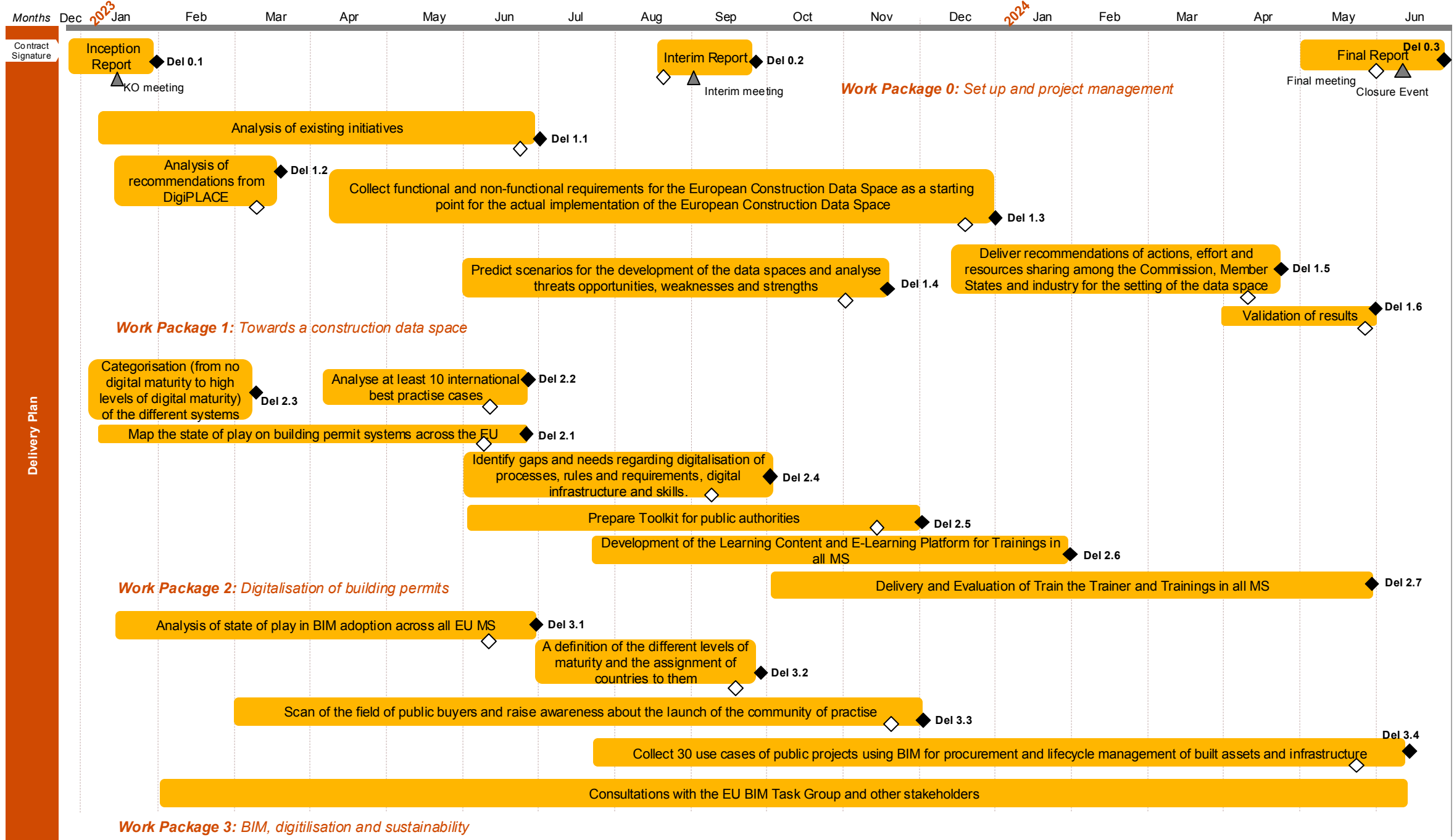


Project's Advisory Group

- EU BIM Task Group
- EUnet4DBP
- buildingSMART
- Construction IT Alliance (CitA)
- Member States' Municipalities
- TU Delft
- European Federation of Engineering Consultancy Associations (EFCA)
- Architects' Council of Europe ACE – CAE
- European Construction Industry Federation (FIEC)
- KiraHub
- Sova3D



Timeline

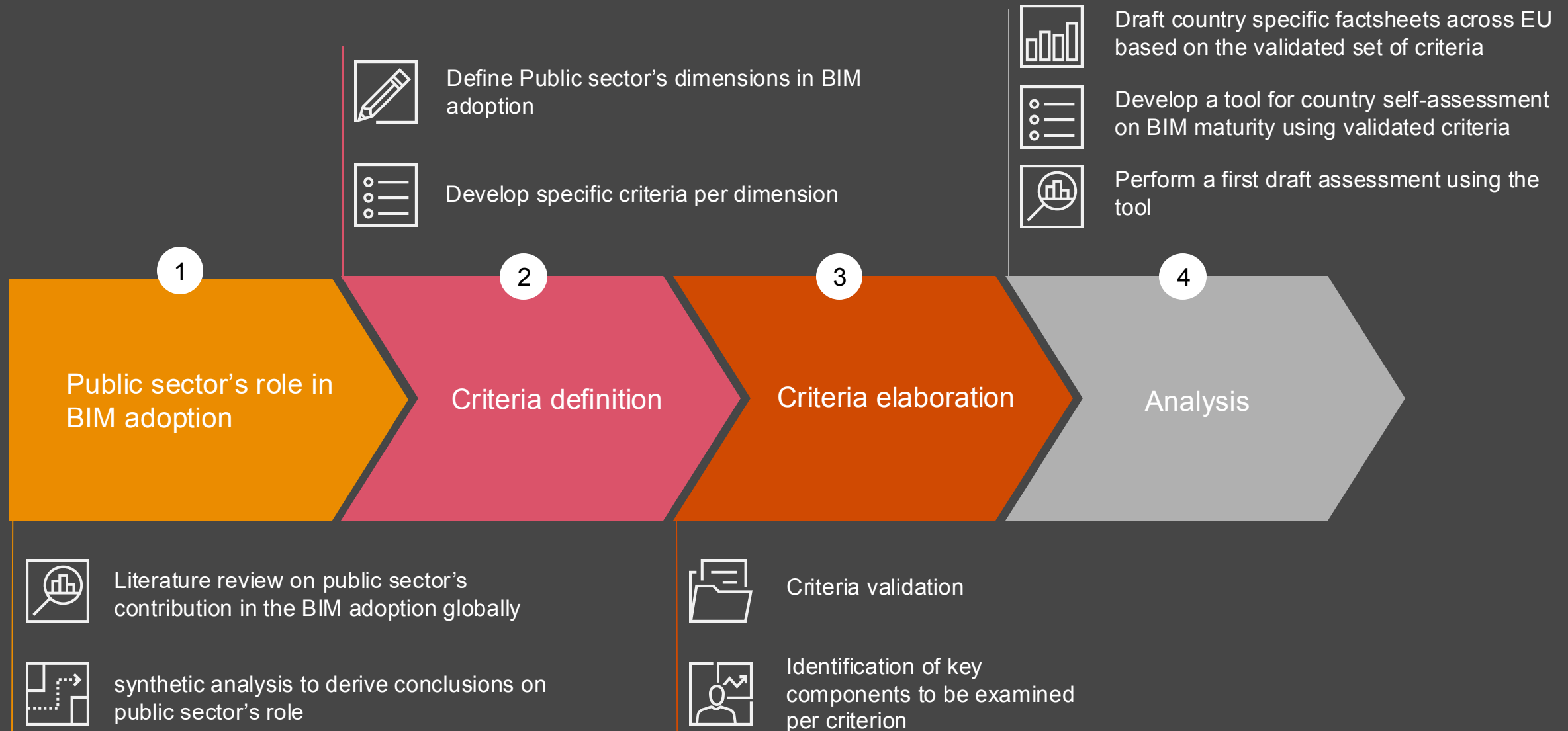




2

WP3: BIM, digitilisation and sustainability

Our methodology



Defining public sector's dimensions



Initiator and Driver

The public sector controls a significant amount of funds, can drive implementation of strategies and promote change



Collaborator

Drive collaboration with the industry fostering consistency and smooth communication among diverse stakeholders



Demonstrator

Demonstrate and showcase the implementation of BIM technology through diverse pilot projects



Regulator

The public sector can regulate BIM adoption, issuing guidelines to standardise its use in construction projects



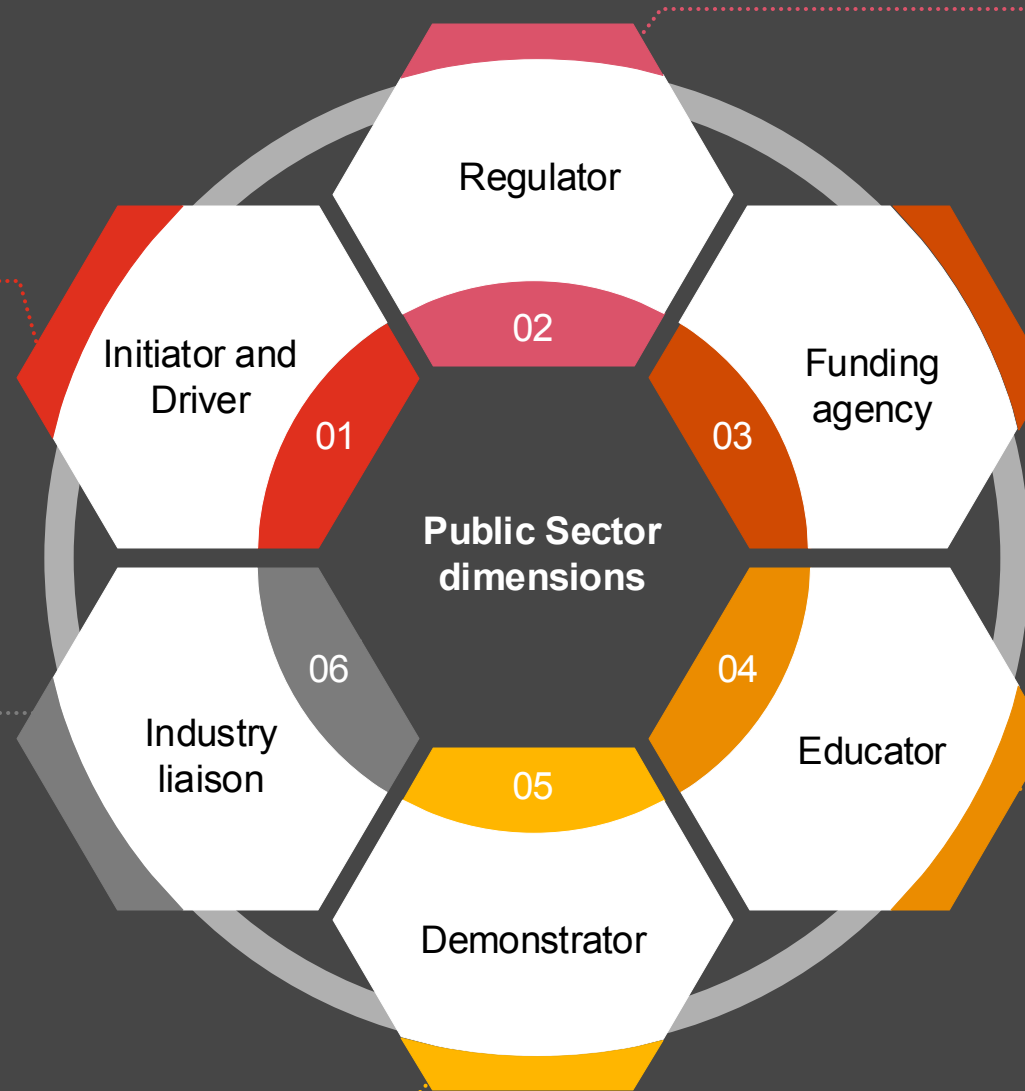
Funding agency

Public authorities should provide financial incentives to promote BIM adoption. Moreover, public sector can fund R&D projects related to BIM



Educator

The public authorities should promote the upskilling of both public servants and industry. Moreover, should promote the consolidation of BIM in the curriculum of universities and technical schools



Dimensions, criteria and components

Dimensions

Initiator and driver

Regulator

Funding agency

Educator

Demonstrator

Industry liaison

Criteria

A



National Strategy

B



Public Procurement

C



Application of standards, protocols and classification

D



Funding schemes

E



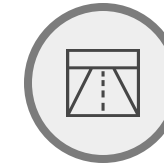
Education

F



Professional skills

G



Lifecycle BIM

H



Collaboration with the industry

Components

- A1.** National Strategy document
- A2.** Strategy milestones
- A3.** Government body established

- B1.** Pilot projects
- B2.** Mandatory BIM
- B3.** Projects type diversity

- C1.** BIM standards
- C2.** National templates
- C3.** BIM requirements
- C4.** Use of OpenBIM
- C5.** Classification tools

- D1.** Technology
- D2.** Upskilling
- D3.** R&D

- E1.** Seminars
- E2.** Undergraduate programmes
- E3.** postgraduate Programmes

- F1.** Professional trainings
- F2.** Nationally recognised certification

- G1.** BIM at Design
- G2.** Construction
- G3.** O&M

- H1.** Private stakeholders promoting BIM
- H2.** Initiatives from industry associations
- H3.** Collaboration between public and private sectors

Interim results: BIM strategies development across EU

📍 14 Member States



Czech Republic



Ireland



Denmark



Latvia



Finland



Netherlands



France



Poland



Germany



Slovenia



Greece



Spain



Italy



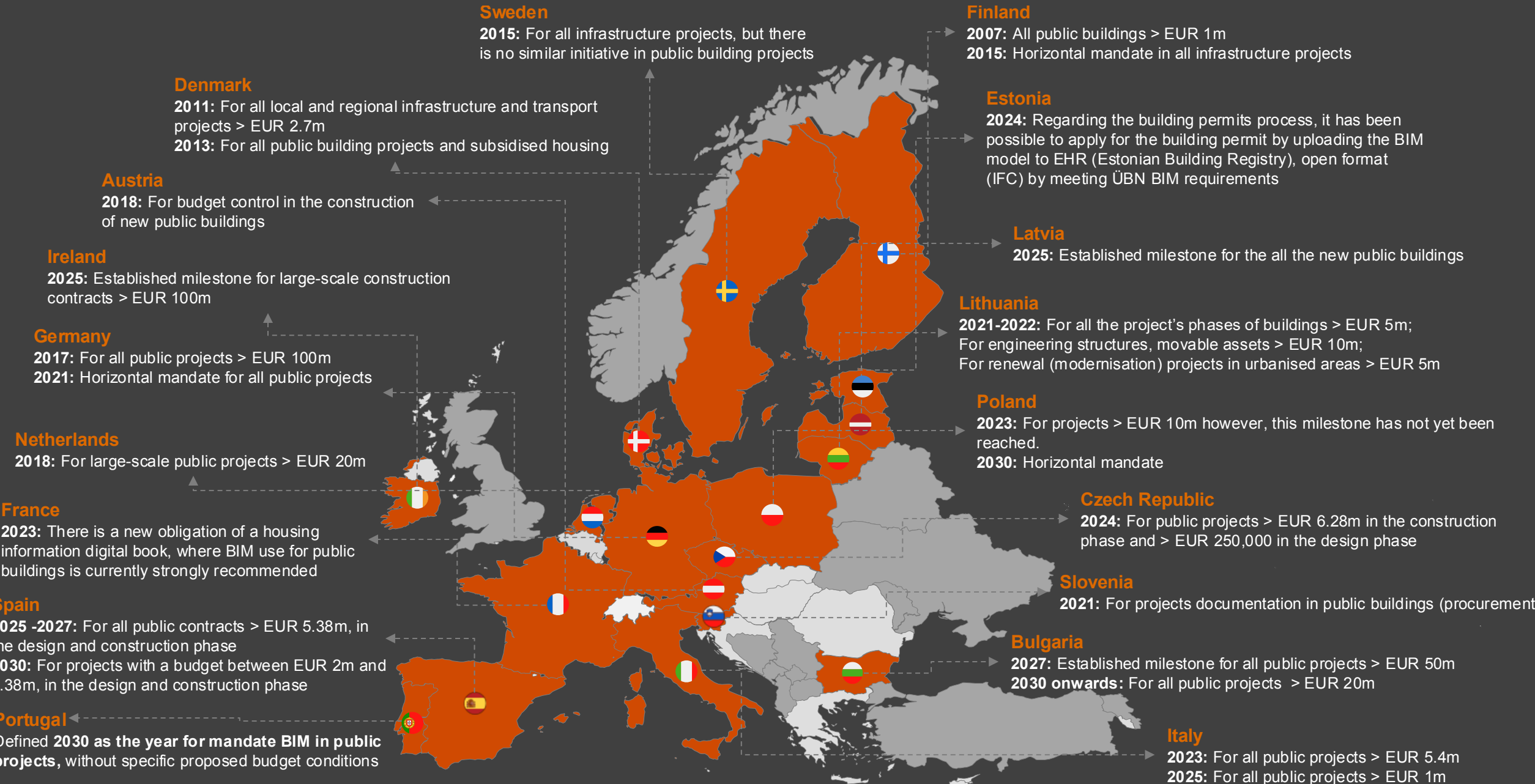
Sweden



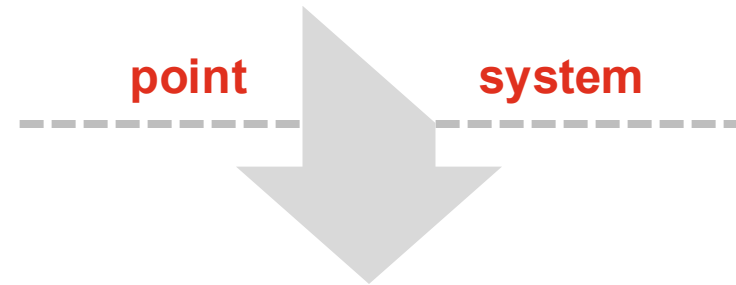
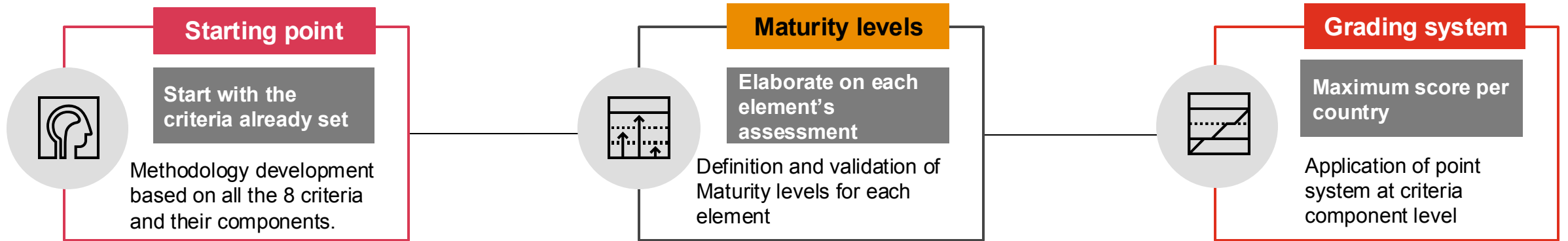
Last data update in June 2024

Interim results: BIM mandate overview across EU

Last data update in June 2024



Use of criteria for developing a self-assessment tool



Score	Maturity levels
0-25%	BIM Premature
26-50%	BIM Beginner
51-80%	BIM Ready
81-100%	BIM Champion

Detailed user guidelines are provided

Criterion



C. Application of standards, protocols and classification

Germany



BIM champion

Components

C1. BIM guidelines - national templates

C2. BIM standards and protocols

Marking

3

2

1

0

3

2

1

0

Guidelines example for point allocation


3 points - explanation: The country has participated in CEN/TC standardisation Committee and has developed its national BIM standards, which act as good practices for other countries.

2 points - explanation: In the country, the international BIM standards have been fully adopted in the national annexes, under several amendments and/or translations according to the country's legal framework.

1 point - explanation: The country has taken some initial steps (e.g. establishing a Committee, collaboration with the private sector) for the development or adoption of BIM standards and protocols.

0 points - explanation: No BIM standards and protocols have been developed and there are no documented proceedings towards their development.

Results overview: BIM maturity of the Member States

 BIM Champion

-  DK
-  FI
-  DE
-  IE
-  NL
-  SE

 BIM Ready

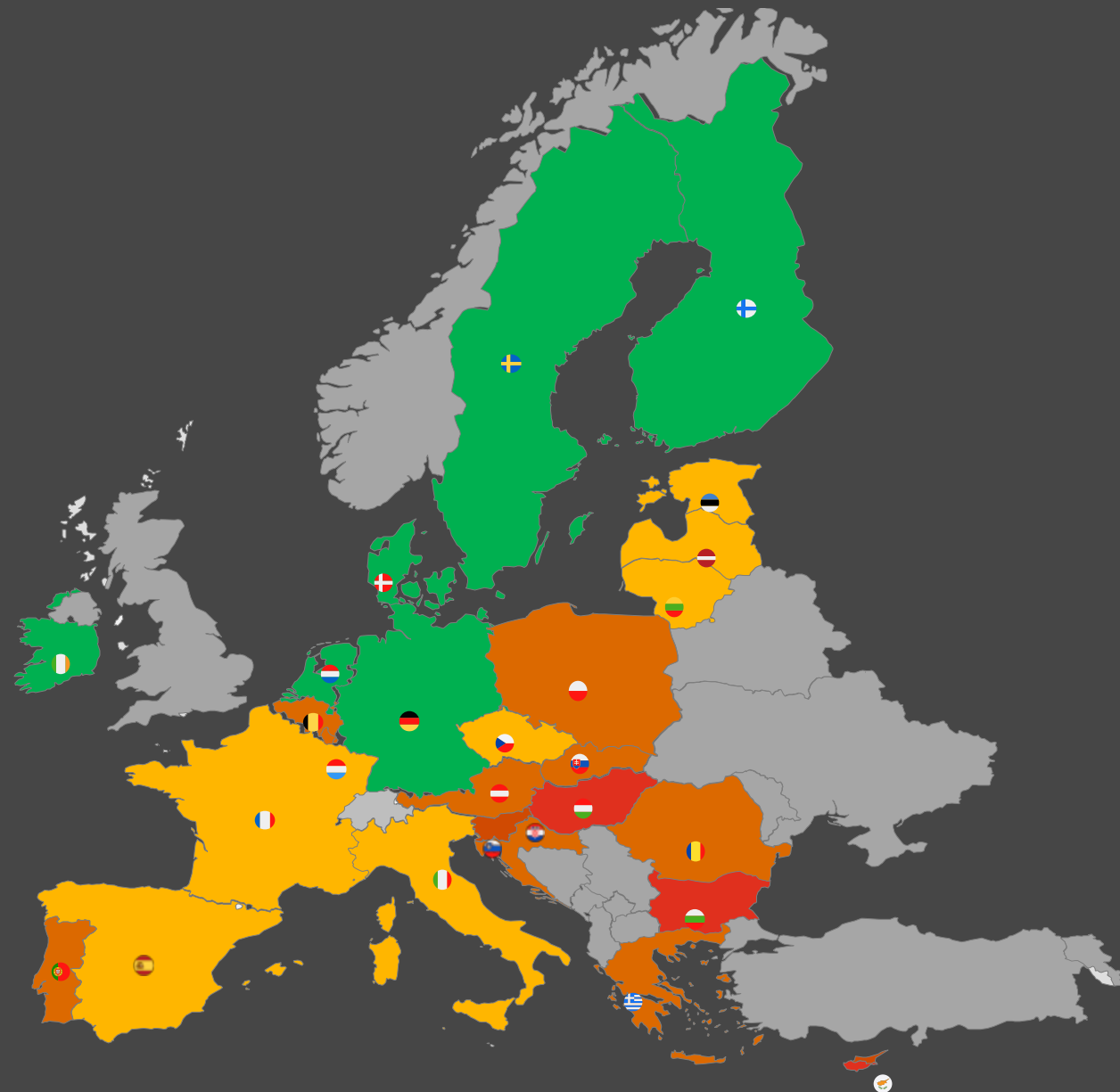
-  CZ
-  EE
-  FR
-  IT
-  LV
-  LT
-  ES

 BIM Beginner

-  AT
-  BE
-  HR
-  GR
-  PL
-  PT
-  RO
-  SK
-  SI
-  LU

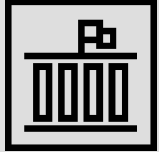
 BIM Premature

-  BG
-  HU
-  MT
-  CY



Last data update in June 2024

WP3 Results analysis on BIM maturity (1/2)



A strategy alone does not indicate maturity

Many countries have developed BIM national strategies, but this alone does not indicate their maturity. BIM champions have fully implemented their strategies monitored against measured milestones from a dedicated government body.

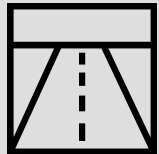
National Strategy



Establishing progressive BIM mandate seems to work

BIM champions countries like Germany, Netherlands, Sweden and Italy have integrated BIM into their national legal frameworks. These countries have set specific budget and time milestones within the mandate framework. Also some countries have mandated BIM in all the public tenders for certain types of projects, often starting with buildings, as seen in Denmark.

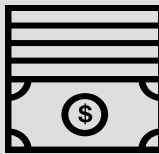
Public Procurement



ISO 19650 is the cornerstone but a National Annex (or similar) is key for adoption

BIM ready countries have fully integrated ISO 19650 and national annexes, with possible amendments and translation in national language. Beyond this, BIM champions have developed their own national standards, like the Finnish COBIE standard or the VDI 2552 BIM standards in Germany. In Spain, the private sector has created national classification systems like GUBIMCLASS v1.2 for building elements.

Standards, protocols and classification systems



Lack of BIM-specific funding schemes

Most countries allocate significant RRF budgets to support SMEs in adopting digital trends, not directly for BIM adoption or R&D pilot projects. A notable good practice for BIM adoption, as funding agency, is Enterprise Ireland, which provides continuous funding and support to SMEs for digital transformation, allowing them to access grants for digital technologies, software, hardware, and infrastructure.

Funding schemes

WP3 Results analysis on BIM maturity (2/2)



BIM Postgraduate course speed up adoption

Multiple BIM champions (Germany, Finland, Sweden, Denmark, Netherlands) provide several BIM master courses in postgraduate level. Moreover, BIM ready countries (France, Italy, Lithuania, Latvia) have fully integrated BIM into their education, especially in undergraduate level.

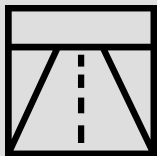
Education



Vocational trainings and buildingSMART facilitate adoption

BIM champions and BIM ready countries provide BIM vocational trainings and have active national buildingSMART chapters providing vocational training for openBIM accompanied with the nationally recognised buildingSMART certification. Additionally, Germany launched the German Centre for the Digitalisation of the Construction Industry in 2020, to develop comprehensive trainings for engineers and architects.

Professional skills



Evolution of BIM to facilitate Operation & Maintenance is challenging

Mainly the BIM champions, such as Finland, Germany, Sweden are leading the way by implementing various BIM applications in the maintenance and renovation of public assets. Moreover, Estonia has developed a spatial database of the Tallin city, for old town's future redevelopment and is the leader of the digitalisation of the building permits initiative with BIM.

Lifecycle BIM

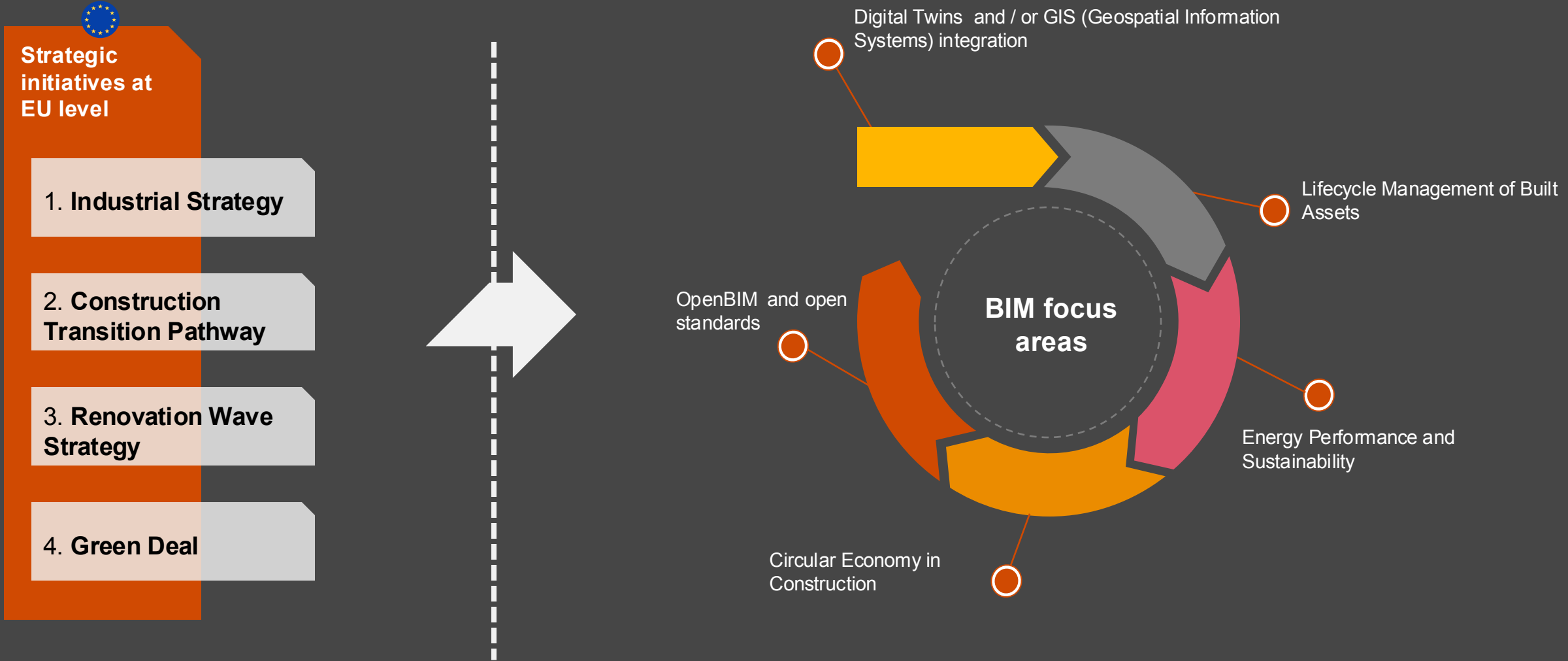


Continuous collaboration with the Industry is key

Most countries that have developed a national BIM strategy have established collaboration between the public authorities and the industry. However, the BIM champion countries maintain this collaboration continuously in order to develop concepts and further tools for BIM adoption in the country, such as the BIM portal in Germany, which provides templates of BIM requirements for the public tenders, among others.

Collaboration with the industry

Collection and analysis of use cases




Methodology for the definition of maturity levels of EU27

Front page summary section following criteria


BIM use cases across Member States

Chorus life

Key information


Project type 

Mixed use


Budget 

€200 million

The project

BIM utilisation 

- ✓ Design
- ✓ Construction
- ✓ Operation & Maintenance

BIM focus area 

Lifecycle management of built assets (creation of digital twin for asset management)




Project specific BIM benefits

BIM benefits in the project

Overall, the implementation of OpenBIM and GIS technologies allowed for real-time project oversight. By utilising OpenBIM, the project team **identified clashes and errors early in the design phase**, preventing costly issues during construction phase. This proactive approach reduced the need for rework, resulting in substantial cost savings. Moreover, the project team leveraged **OpenBIM's collaborative features, enabling seamless communication and coordination** among various stakeholders. **Information exchange was streamlined, minimising misunderstandings and optimising overall project performance.** Through openBIM models of project's drainage systems, the project adopted **sustainable practices aligned with its sustainable initial goals.** Moreover, green features, e.g., green areas etc. were designed in detail with BIM models.

OpenBIM's influence extended to the **operation and maintenance (O&M) phase**, where a comprehensive **digital twin was employed.** OpenBIM supported the creation and utilisation of a digital twin for effective lifecycle management (as-built model). **Predictive maintenance**, enabled by the digital twin, reduced downtime, extended asset lifespan, and optimised ongoing operational costs. Stakeholders and citizens could monitor, analyse, and optimise the asset's performance throughout its lifespan, ensuring long-term efficiency.

BIM benefits for asset owner and end users (based on the BIM Cost Benefit Analysis EC tool²⁰)

	Cost reduction due to early clashes and error detection <input checked="" type="checkbox"/>
--	---

Description (if Applicable)

BEP development from the project's initial phase and openBIM digital models enabled project stakeholders to identify and resolve clashes in the virtual environment before they manifest in the physical construction.

Moreover, the BIM team, around 30 technicians including architects and engineers, carried out an operational analysis on the pre-construction design process and in the executive design phase. From this analysis 6.731 clashes had been detected.

For each clash the BIM team considered a possible average loss of time on site of around a week.

Therefore, considering the possible simultaneity of clashes, they would have had a construction delay of approximately 3 years.

Main analysis of BIM methodology and key challenges

BIM use cases across Member States

System Models (GSM)⁷, the digital environment that collects and transforms the data provided by such as the IoT systems and openBIM models, digitalises the development of the real estate procedures of the area and enhance the user's sustainable behavior that can be monitored by key performance indicators (KPIs). This platform is very flexible and can be customised according to specific needs of the urban area.

It also collects a big amount of data and creates a digital environment because of the technological solutions applied. This implies a constant optimisation of the energetic functions, the sustainability and the quality of life in the smart district.

Energy performance goals

The drainage systems planned for the Chorus Life development will recover annually 1.35 M gallons (42.98 M L) of rainwater, sufficient to irrigate over five hectares of crops. This is just one of the benefits that this future district of Bergamo will create. During periods of extreme drought, such as the one that has affected Italy since early 2022, this is even more significant⁸. In addition to this, the project is built according to the highest environmental and sustainable standards – Chorus Life and powered by renewable electricity produced on-site – the project is a shining example of sustainable urban revitalization done right, with "zero" land consumption⁹.

Project's type		
Infrastructure <input type="checkbox"/>	Building <input type="checkbox"/>	Mixed <input checked="" type="checkbox"/>

BIM Focus area(s) ¹⁰		
OpenBIM and open standards <input checked="" type="checkbox"/>	Energy Performance & Sustainability <input checked="" type="checkbox"/>	Spatial Planning & GIS <input checked="" type="checkbox"/>
Circular Economy <input type="checkbox"/>	Digital twin <input checked="" type="checkbox"/>	Lifecycle Management of Built Assets <input checked="" type="checkbox"/>

Key challenges of the project

Initial challenges:

Efficient land use considering the prior industrial nature of the site

Chorus Life Bergamo faced the challenge of efficiently repurposing a former industrial area spanning 70,000 square meters. The redevelopment project needed to strike a balance between optimizing land use and preserving the environmental integrity of the prior industrial site. Through innovative planning and design, the project successfully transformed disused space into a multifunctional Smart District, showcasing the ability to revitalize industrial zones sustainably.

Implementation of a smart city infrastructure

The project aimed to implement a comprehensive smart city infrastructure, incorporating advanced technologies like openBIM models and as – built digital twin applications through GSM environment. This initiative presented challenges in integrating various systems, such as openBIM models, IoT devices, GIS application and control mechanisms, to create a cohesive and interconnected urban environment. The successful execution of a smart city

⁷ <https://3b3wz5s.rocketcdn.me/wp-content/uploads/2022/10/3SR-ASSET-ChorusLife-Creation-and-maintenance-of-an-openBIM-digital-twin-for-asset-management.pdf>
⁸ https://www.theplan.it/en/whats_on/chorus-life-a-smart-city-that-adds-value-to-its-district
⁹ <https://group.schindler.com/en/media/references/chorus-life-a-smart-city-with-heart.html>
¹⁰ It should be noted that several use cases can be covered by more than one BIM focus area.

30 BIM good practices public projects across EU

Sweden

- 15. Albano project, Campus University
- 21. New Karolinska Solna (NKS) Hospital
- 26. The E4 Stockholm bypass

Denmark

- 22. Royal Arena

Finland

- 12. 4 buildings neighbourhood in the city of Seinäjoki (renovation)
- 24. Office building "Hakaniemenranta 6"
- 28. Helsinki Central Library Oodi

Austria

- 27. Tunnel Angath

Ireland

- 19. Redevelopment of Dublin Airport Central

Estonia

- 2. National Library in Tallin
- 23. Tallinn City Model for Old Town future Redevelopment

Germany

- 10. Futurium House Berlin
- 13. Highway A44 - Eastern Tunnel Chain
- 25. Friendly and Affordable Sustainable Urban Districts Retrofitting (FASUDIR project)
- 29. Elbphilharmonie – Hamburg

Poland

- 20. Zator city bypass

Netherlands

- 5. N280 Roermond - Fast road connection

Hungary

- 18. The National Stadium (Puskás Ferenc Stadion)
- 30. The Hungarian State Opera restoration

France

- 1. Clichy Batignolles
- 4. Tunnel Euralpin Lyon – Turin
- 17. Gironde Estuary project

Slovenia

- 16. Karavanke Tunnel

Spain

- 3. The City of Justice in Cordoba
- 8. Barcelona Sagrada Família Basilica

Greece

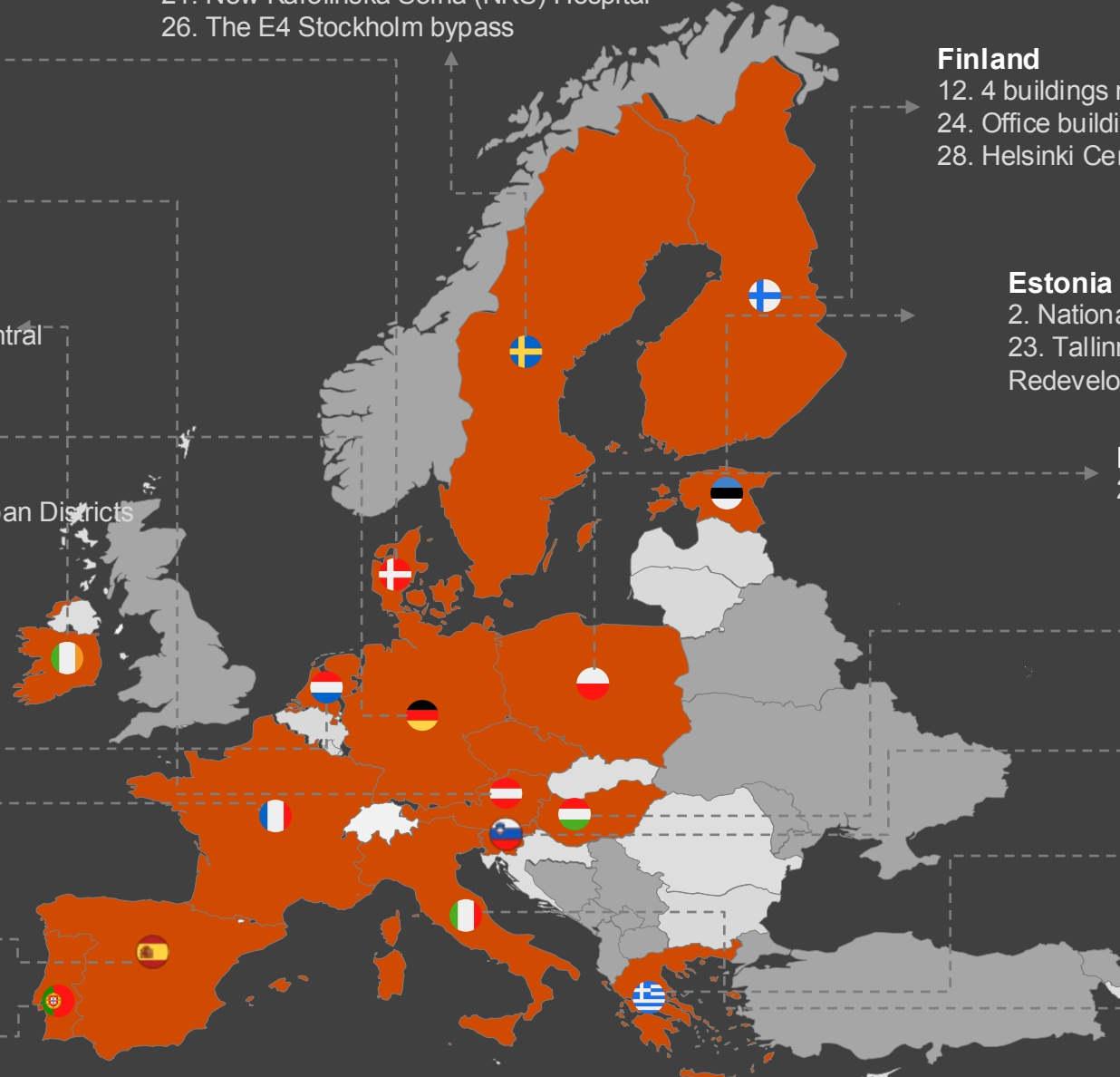
- 9. Athens Metro Line 4

Portugal

- 7. National Palace of Sintra

Italy

- 6. ChorusLife
- 11. OpenBIM for Italian Digital Heritage
- 14. The Napoli Afragola train station



WP3 Use cases' analysis main takeaways

1

Pilot implementation of BIM for several years is key to gain know-how and observe practical benefits. BIM Champions and BIM Ready **have extensively invested in pilot projects** as well as associated dissemination of knowledge.

2

BIM benefits should not only associated with cost and time efficiencies. BIM champions are already experiencing **significant environmental and sustainability-related advantages** thereby contributing to broader ecological and societal well-being.

3

BIM can be the **enabler for the utilisation of advanced technology tools** (e.g. IoT and Augmented Reality). This integration paves the way for the development of true smart city and digital twin solutions, which offer numerous social benefits and significantly enhance the quality of life.

4

The utilization of **BIM throughout the project lifecycle** can produce a substantial multiplier effect, significantly amplifying the total benefits gained within the built environment.

5

OpenBIM enhances data sharing, collaboration, and interoperability, while also **enabling the integration** of customized innovative tools. This leads to significant efficiencies in data management and utilization.





3

WP2: Digitalisation of building permits

Levels of digital maturity of building permits systems

Paper-based or PDFs/online application; 2D;
no interoperable data

Digital interoperable data; 3D model; can include GIS; can
include automatic checks via AI



Level 1

Paper-based

- Submission of physical paper documents, manually reviewed by the municipality
- A website may be available with information to start the procedure is still paper based



Level 2

Digital paper: 2D digital data

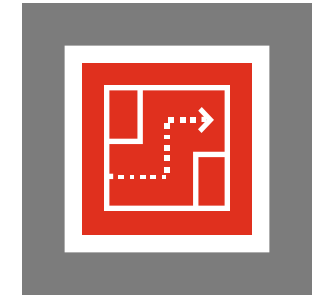
- The building or renovation permission can be obtained submitting 2D documents electronic form
- The process is managed electronically but compliance checks are done manually



Level 3

Digital BIM based process

- The building permission procedure can be performed submitting a BIM 3D model
- Automatic compliance check may be available



Level 4

Digital BIM based process with GIS

- The building permission procedure includes fully the use of BIM, integrated in GIS (GeoBIM)
- It allows automatic checks of the 3D building model and its surroundings

WP2 Results overview: Building permits

Last data update in June 2024

EU Front runners

 Austria

 Estonia

 Finland

 Germany

 Netherlands

 Spain

International Front runners

 Geneva (Switzerland)

 Hong Kong

 Malaysia

 New Zealand

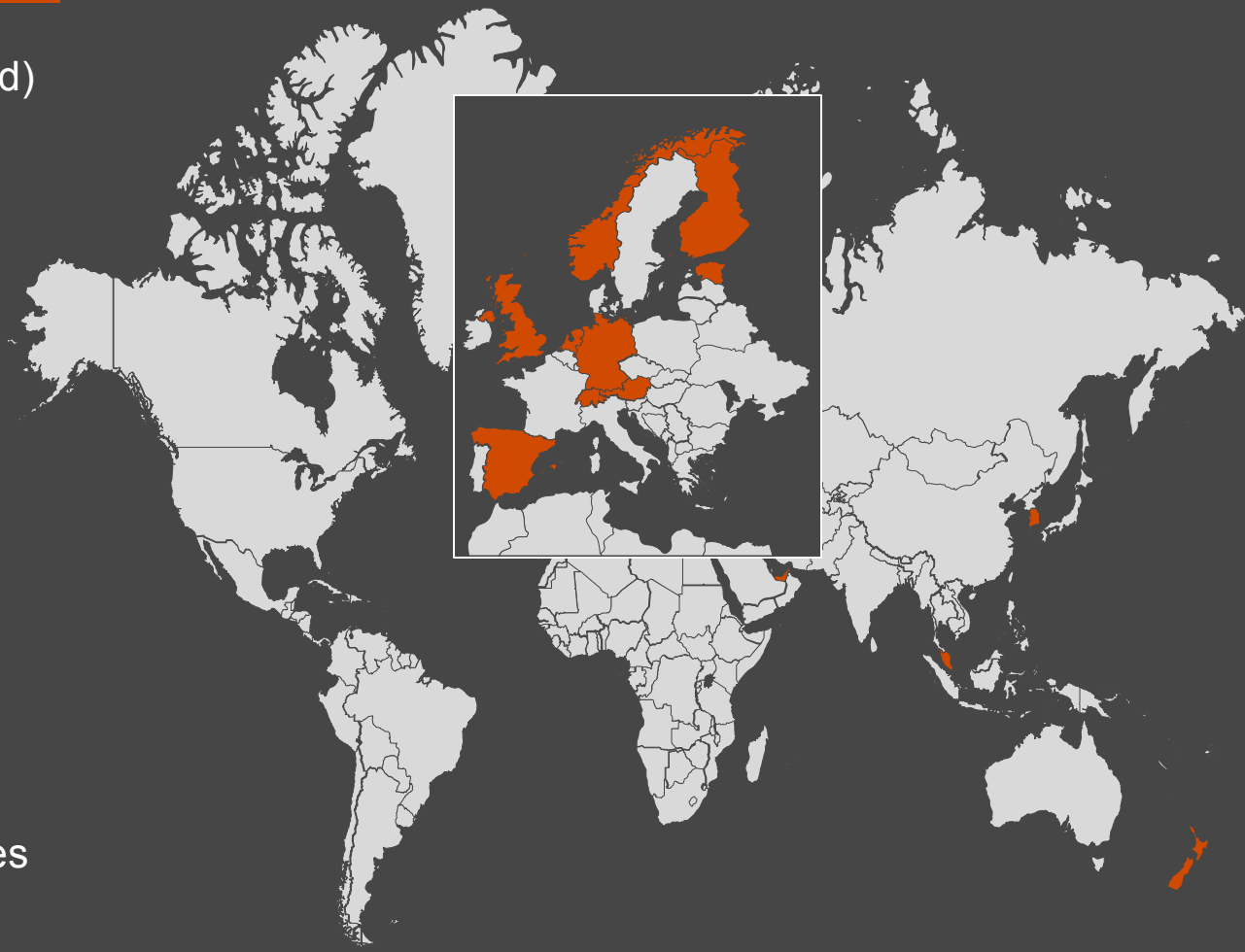
 Norway

 Singapore

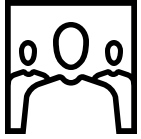
 South Korea

 United Arab Emirates

 United Kingdom



A toolkit was developed aiming to help municipalities in their journey of digitalisation of their building permit system



Target audience

1. Building public authorities at municipal level
2. Mainly municipalities with low/medium levels of Digital Permit System maturity



Objectives

1. Make building authorities understand **what is a digital building permit system**, what are the different levels of maturity and what is **their current level of maturity**
2. Understand **the expected benefits** for the different stakeholders
3. Show what the **frontrunners** in this field are doing in the EU and outside
4. Laying the **foundations for the digitalisation of the building permit system**.
5. Touch upon some of the **technical aspects** of the digitalization, such as making regulations machine readable for automatic compliance check



Content

The toolkit is composed of presentations, questionnaire, good practices and videos, structured in seven modules. The topics addressed are presented on the right.

Technical aspects addressed on the toolkit



Digital building permit roadmap



Stakeholders & resources



Develop partnerships



BIM materials



Identify BIM vendors



Regulations (machine readable)



Measures to support SMEs

Trainings delivered across EU27 | Snapshot

Support of the Digitalisation of the Built Environment, Public Procurement, and SMEs in Construction



EISMEA/2022/OP/0007

1

Target - 500 attendees
Actual - **865 attendees**, across **162 municipalities**

2

Each Country held at least one training, **except France/Luxembourg (3), Lithuania (3) and Slovakia (4)**

3

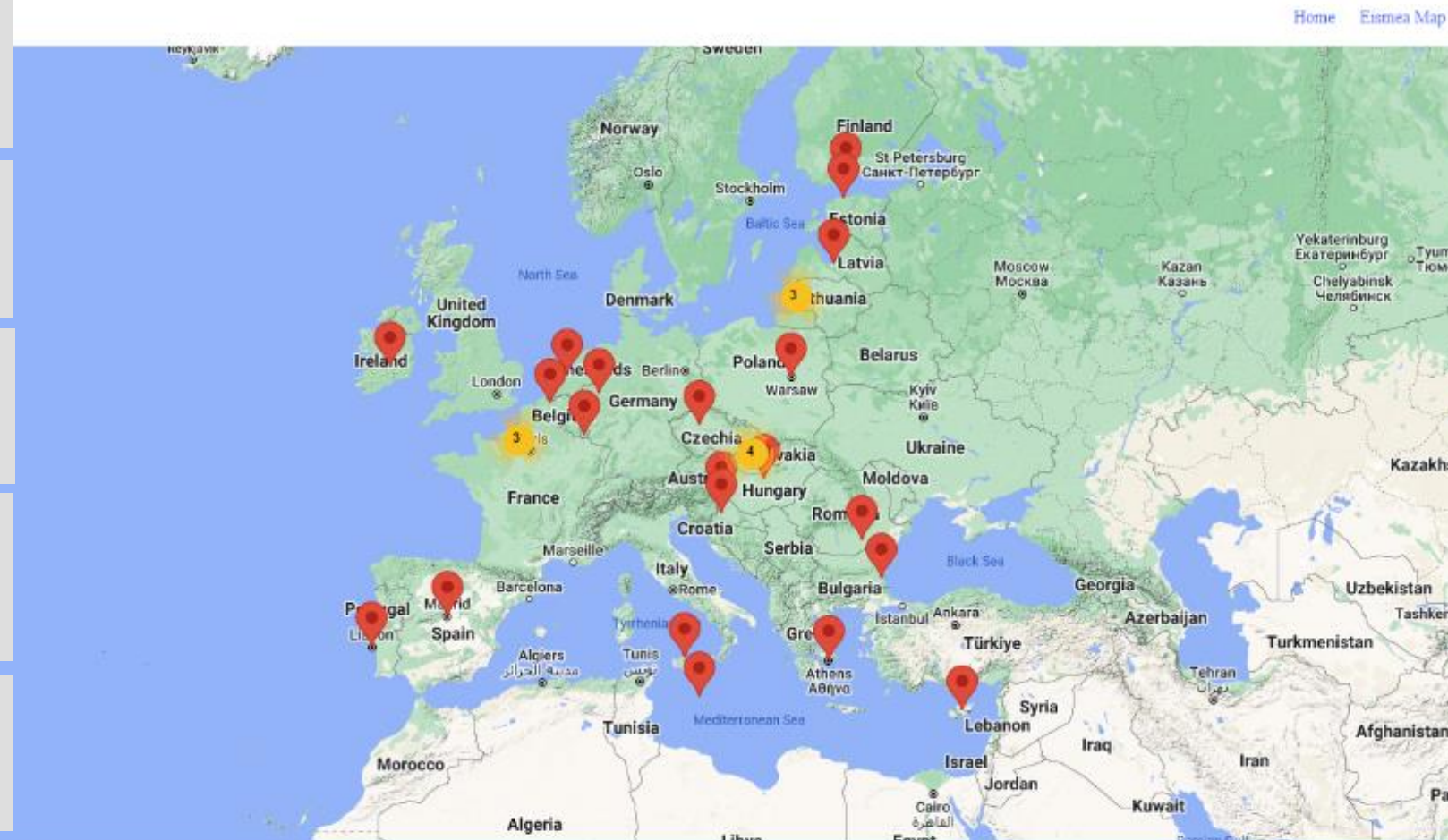
Many member states provided training to **a greater number of attendees than expected**, whilst others were more selective.

4

Staff of **municipalities** attended, also **Government bodies, Ministries**, and experts in BIM and Building Control attended.

5

500+ additional attendees registered on the E-learning Platform, who could not attend the training workshops.



Main conclusions and possible actions to enhance the level of digitalisation of building permit systems of EU's municipalities

1

Most of the EU municipalities provide their citizens with an online platform where they can upload files, but very few leverage the functionalities that BIM can offer. **Some municipalities still rely on paper** to handle their building permits applications. **Introducing an online platform is the first step to digitise the building permit system.**



2

The transition towards higher levels of digitalisation will require **supporting municipalities financially**, allowing them to upskill their staff and purchase the necessary hardware and software.



3

A **clear vision** and support should come from higher levels of government, including simplifying, and upgrading the building regulations. The **government support is crucial to enhance the digitalisation of the building permit system** (funding and adapt regulations). Finland Ministry of Finance and Environment is financing a project called RAV3PRO, which aims to adopt BIM across 33 municipalities.



4

Due to the lack of technological skills as well as BIM knowledge within municipalities, developing a **BIM software** internally with few resources could be very **time-consuming** as well as **costly**. **Most frontrunners outsource the tool**. Also, partnering with organisations, such as BuildingSMART is crucial for its development, especially the implementation and integration of openBIM and IFC standards.



5

Policy interventions at EU level should focus on low digital maturity countries, where the digitalisation of public services – including the building permit process – is lagging. These interventions should focus on firstly providing support in streamlining these countries' digital policies and building regulations.



4

WP1: Towards a construction data space



Selected use cases analysis and key takeaways

Methodological pathway

25

Initial interviews on identified use cases (initiatives, projects, etc.)

2

Dedicated webinars / workshops to analyse the initially collected use cases and gather attendees' feedback

9

In-depth interviews on the selected (2) use cases from the webinars

Aiming to explore how **technologies** and **data sharing** can support the development of a European data space for the construction sector.

Use cases

01

Building permits

“Automating the building permit process using BIM, (South Tyrol, Finland)”

Why this use case?

- Automates the workflow of building permits, improving efficiency and reducing errors.

02

Circular economy

“Circular Economy in construction using digitalisation (Eindhoven University)”

Why this use case?

- Focuses on sustainability, enabling the tracking and reuse of construction materials, aligning with EU circular economy goals.

WP3 main recommendations based on use cases' analysis



Provide continued **financial support for the digitalisation of the construction sector, particularly focusing on increasing the uptake of ongoing initiatives**, such as openBIM, digitalisation of the building permit process.



Support **additional coordination and awareness raising activities**, aiming at promoting the use of existing resources, by providing guidance, **particularly for SMEs**, to navigate among the great number of initiatives



Finance **specific actions to improve the overall awareness of data spaces, their key features and benefits**. This include e.g., features for improved data privacy and security, which currently is a main concern among stakeholders in the sector.



Share good practices and success stories, e.g. projects where the benefits of data sharing linked to the use of BIM has been proven successful.



The long term (>10 years) vision and goal should be the establishment of a common European construction data space. Start with promoting data space development on use case level and/or Member State level. **Such development should not start from scratch, but rather identify and build on what has been done in countries, such as the Netherlands, Finland and Estonia.**



Set up a **Working Group on European level**, with the aim of monitoring ongoing data space and data sharing initiatives and contribute to a unified approach towards a future common European construction data space.

Thank you, questions?

Georgios Kontopoulos CEng MICE
Senior Manager at PwC

Berlin, October 2024

[pwc.com](https://www.pwc.com)

This has been prepared in the context of the closure event of the project “Support of the digitalisation of the built environment, public procurement and SMEs in construction”. You should not act upon the information contained in this publication without obtaining specific professional advice. No representation or warranty (express or implied) is given as to the accuracy or completeness of the information contained in this publication, and, to the extent permitted by law, PricewaterhouseCoopers Business Solutions SA., its members, employees and agents do not accept or assume any liability, responsibility or duty of care for any consequences of you or anyone else acting, or refraining to act, in reliance on the information contained in this publication or for any decision based on it.

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- 12:00 – 13:00** **Lunch**



Energy Performance of Buildings Directive (EPBD) recast

**EU BIM Task Group
General Assembly Meeting
16 October 2024**

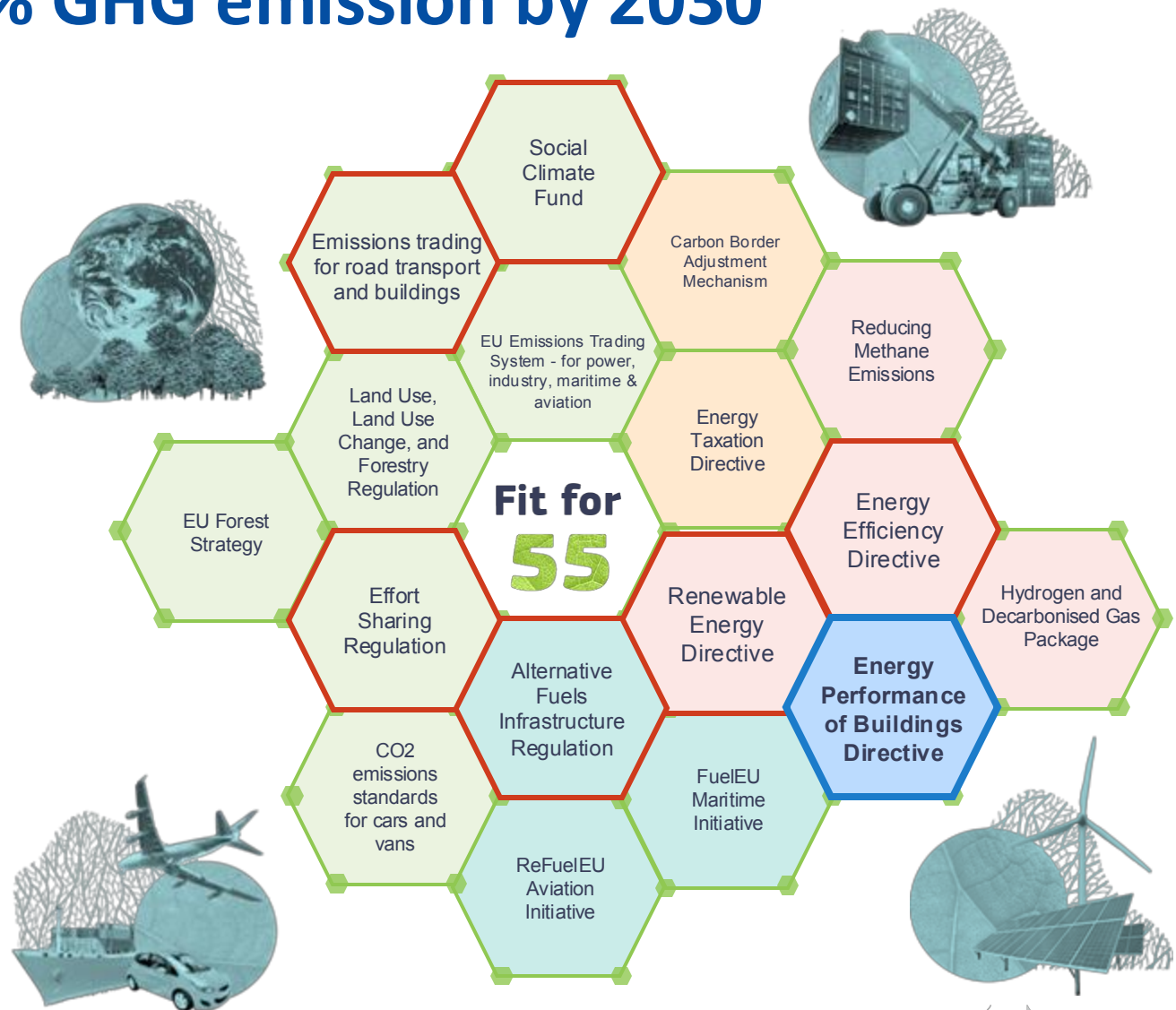
Anette Persson
European Commission – DG
ENERGY

Looking ahead

- Political guidelines 2024-2029
- Mission letter Commissioner designate Energy and housing
- Proper implementation of the Fit for 55-package is a priority.
- Several new initiatives are under discussion:
 - Clean Industrial Deal;
 - European Affordable Housing Plan – technical assistance and focus on investments and skills needed;
 - Electrification Action Plan - the electrification of energy use in buildings and the digitalisation of buildings goes hand in hand.

“Fit for 55” package - 55% GHG emission by 2030

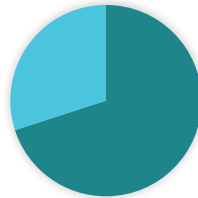
EPBD recast =
effective delivery
mechanism for the
buildings sector



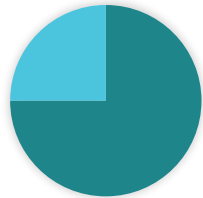
EU building stock

EU building sector is one of the **largest energy consumers** (aprox 42%) in Europe, responsible for **more than one third of the energy-related emissions**.

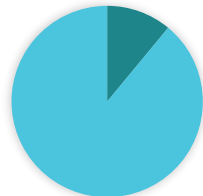
About **24 billion m2** permanently occupied floor area, more than **70 % residential**



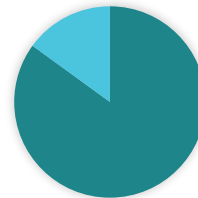
... **75 %** of the building stock has **poor energy performance** ...



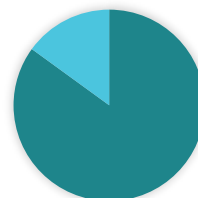
Aprox. **11%/yr** of existing buildings undergo some level of **renovation**, while only about **1%/yr** concerns **deeper energy renovation**



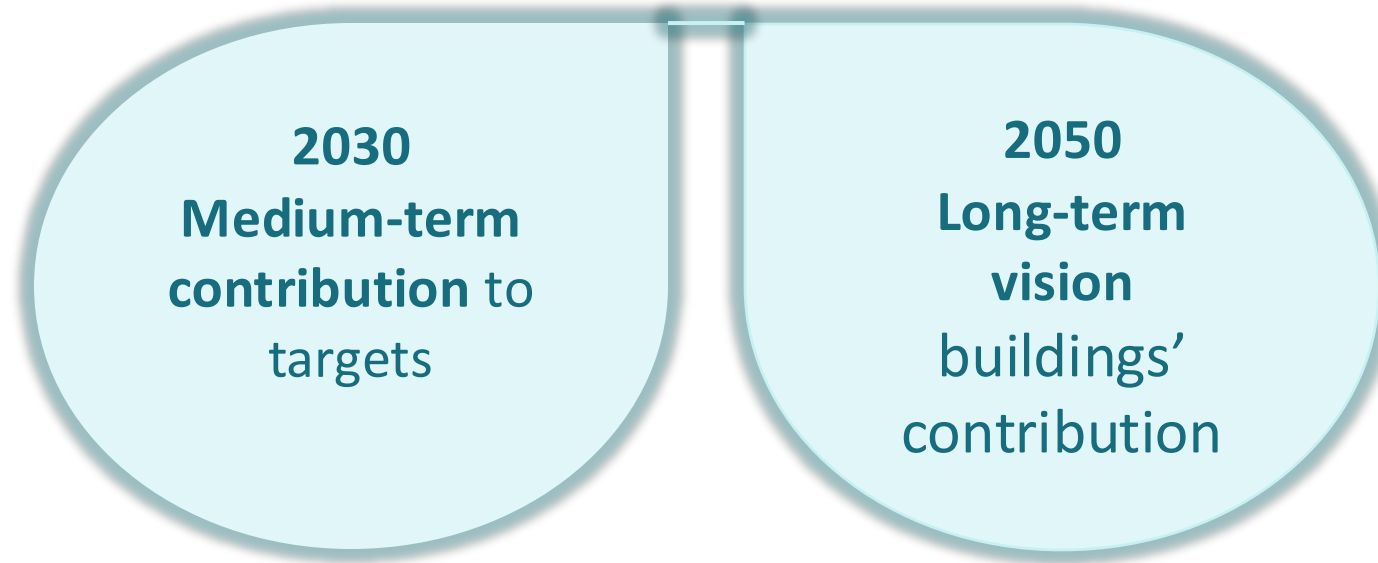
About **85 %** of existing EU dwellings were **built before 2000**, of which ...



... **more than 85 %** of current stock will **still be in place in 2050**



Objectives of the recast EPBD



- Renovation Wave Strategy: aims at doubling renovations by 2030 and foster deep renovations.
- Climate target plan 2030: reduce buildings' GHG emissions by 60%, their final energy consumption by 14% and energy for heating and cooling by 18%.
- 2050 Long Term Strategy: climate neutral economy.
- Climate Target Plan 2040: reduction of 90% of net GHG emissions.

Focus areas of the recast EPBD

Renovation

- Minimum Energy Performance Standards
- National trajectories for the progressive renovation of the residential building stock
- National Building Renovation Plans

Enabling framework

- Strengthened Energy Performance Certificates
- Renovation passports
- Sustainable finance & energy poverty
- One-stop-shops
- Deep renovation standard
- National energy performance databases

Decarbonisation

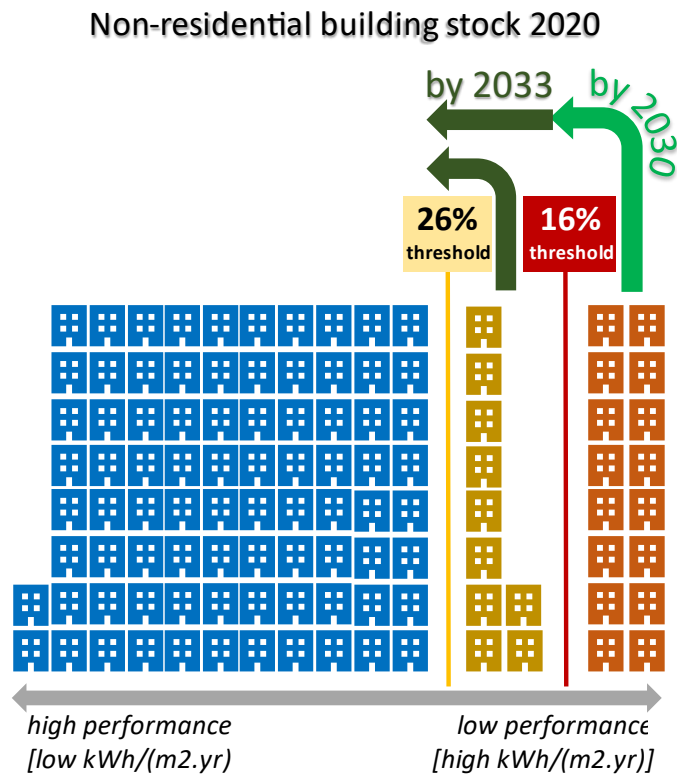
- Introduction of zero-emission buildings as standard for new buildings
- Solar deployment in buildings
- Calculation of whole life cycle carbon
- Phasing out incentives for fossil fuels and new legal basis for national bans

Modernisation & system integration

- Infrastructure for sustainable mobility
- Smart Readiness Indicator
- Indoor air quality: ventilation and other technical building systems
- Digitisation, data access and exchange

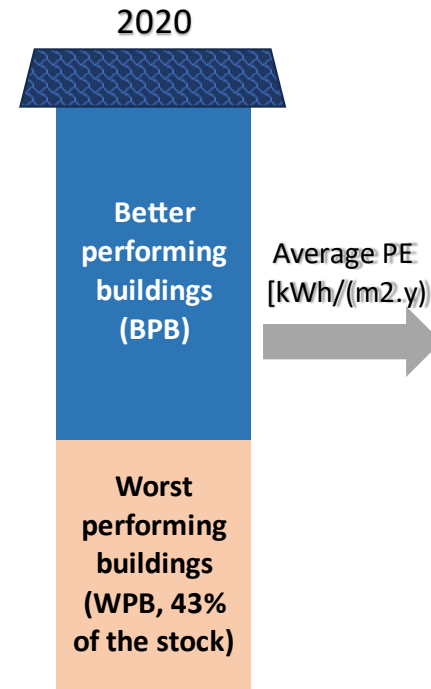
MEPS for non-residential buildings and primary energy use trajectory for the residential building stock (Article 9)

Non-residential: Minimum Energy Performance Standards (MEPS)

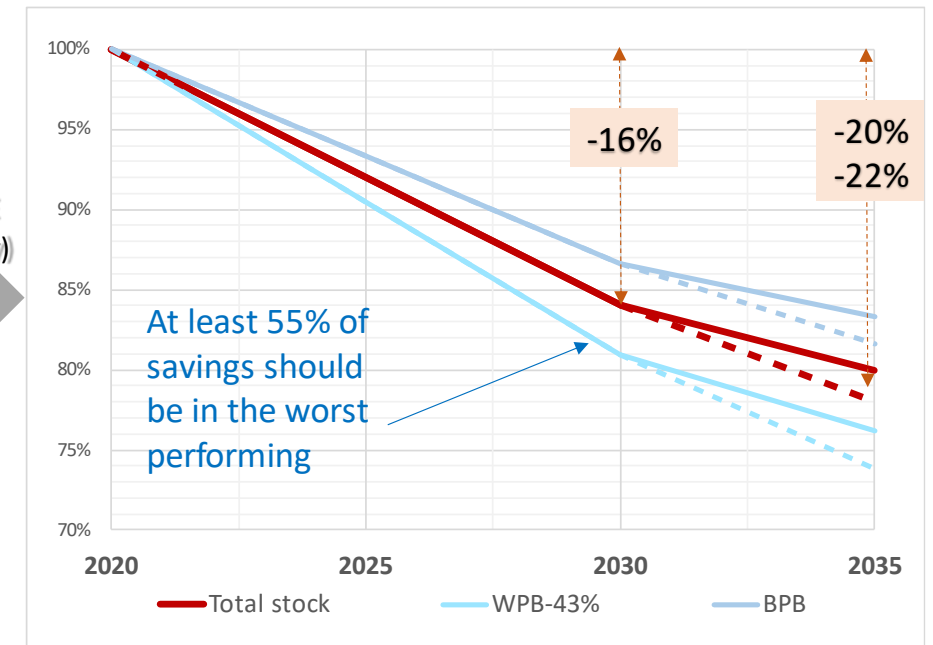


Residential: trajectory to reduce the average primary energy use

Residential building stock



National trajectory for the average primary energy use in kWh/(m2.y)



Exemptions allowed both for non-residential and residential (for protected buildings, temporary use, places of worship, etc.)

Gradual phase-in of solar energy in buildings (Article 10)

- New buildings are designed to optimize their solar energy generation potential
- Deployment of suitable solar energy installations on new buildings
 - By 31 Dec 2026 for new public and non-residential buildings >250m²
 - By 31 Dec 2029 new residential buildings and new roofed car-parks adjacent to buildings
- Gradual phase-in of requirement for existing non-residential, where feasible:
 - For existing public buildings gradually between 31 Dec 2027 – 31 Dec 2030 according to floor area
 - For existing non-residential buildings >500 m² by 2027, based on trigger points (major renovation or works requiring a permit)



Zero-emission buildings (Articles 7, 11, Annex III)

- **All new buildings to be zero-emission buildings (ZEBs):**
 - From 2028 public buildings owned by public bodies
 - From 2030 all new buildings
- **ZEB will require:**
 - **Zero on-site emissions from fossil fuels**
 - **A very low amount of energy with a view to cost-optimal level but at least (NZEB -10%)**
 - **Supplied by:**
 - **renewables from onsite, nearby, renewable energy communities**
 - **energy efficient DH&C**
 - **energy from carbon-free sources**
 - Life cycle GWP calculation (from 2028 for new bldgs >1000m² useful floor area, from 2030 for all new buildings) and disclosure through EPC



Fossil fuel use in buildings: gradual phase-out

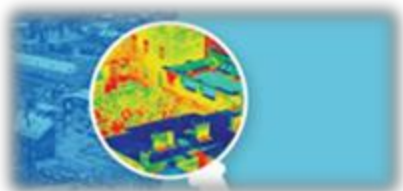
- From **1 January 2025**: no more financial incentives for stand-alone boilers powered by fossil fuels (Article 17 (15))
- **Legal basis for Member States to set requirements** on GHG emissions, share of renewables, type of fuel for heat generators (Article 13)
- Plan policies and measures **with a view to a complete phase-out of boilers powered by fossil fuels by 2040** through the national Building Renovation Plans (Annex II)

Other key provisions & strengthened enabling framework (1)

- **National Building Renovation Plans** (Article 3):
 - Replaces Long Term Renovation Strategies (LTRS)
 - **Common template**
 - **Aligned** with National Energy and Climate Plans (NECPs) cycles
- **Sustainable mobility** (Article 14):
 - **Pre-cabling** and **ducting** for recharging points **become the norm** for new buildings and buildings undergoing major renovation
 - Strengthened requirements on the **number of recharging points** for electric vehicles in new residential and non-residential buildings and large existing non-residential buildings
 - Member States to **remove barriers to the installation of recharging points**
 - Enable **smart charging** and, where appropriate, **bi-directional charging**
 - Sufficient number of **parking spaces for bicycles**, including cargo bikes

Other key provisions & strengthened enabling framework (2)

- **Energy Performance Certificates (EPC)** (Articles 19, 20, Annex V):
 - Energy performance **classes from A to G**
 - **Common template** with energy and GHG indicators
 - **More trigger points** (incl. major renovation) for issuing and accessing EPCs
- **Building Renovation Passports** (Article 12):
 - Scheme **in every Member State** to **guide building owners** in their **staged energy renovations**
- **National databases on energy performance of buildings & Data exchange**



- MS to set up **databases on energy performance of buildings** and report to Building Stock Observatory (Article 22)
- MS to ensure that building owners, tenants and managers can have direct and free-of-charge access to their building systems data (Article 16)

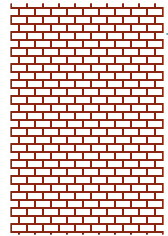
Other key provisions & strengthened enabling framework (3)

Financing, support measures and one-stop-shops (Article 17 and 18):

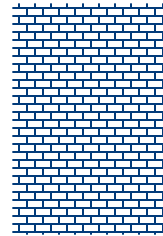
- Clear obligation for Member States to **provide appropriate financing and support** measures and **stimulate private investments**, in line with building renovation plans and 2050 goals
- Financial measures to offer **higher support** to **vulnerable households** and **deeper renovations**
- Member States to provide **safeguards for tenants** and to aim to **distribute the benefits for both owners and tenants** when providing financial incentives
- COM to adopt **delegated act** providing a comprehensive portfolio framework **for voluntary use by financial institutions**, to **increase financing volumes provided for energy performance renovations**.
- Member States to ensure that **EPCs and renovation passports are affordable**
- Member States to establish dedicated **one-stop-shops for energy performance of buildings**



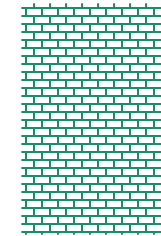
EPBD contributes to:



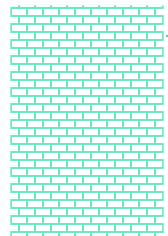
Reduced energy import dependency by reducing demand



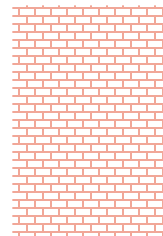
Jobs, added value and economic boost to the construction ecosystem



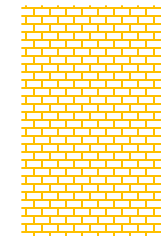
Sustainable buildings and a push to circular economy by addressing whole life-cycle emissions



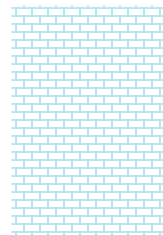
Better air quality and lower morbidity rate due to pollution



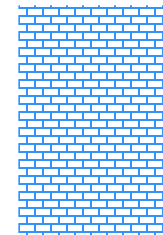
Lower energy bills and exposure to energy prices fluctuation



Alleviation of energy poverty



Better living and working conditions



Consumer empowerment through digital and more accessible tools

Next steps

Next steps – Guidance

- Draft guidance in preparation
- Guidance publication in Q2 2025

Next steps – Delegated Acts

- 8 Delegated acts under preparation
- Deadlines between mid 2025 and 2027



Thank you!

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buildingSMART International

Aidan Mercer
Marketing Director
buildingSMART International

buildingSMART Vision, Mission & Purpose



Vision:

The **seamless exchange of trusted information** across the built environment.



Mission:

To create & maintain **open & reliable digital standards** for the built environment & support their global adoption.



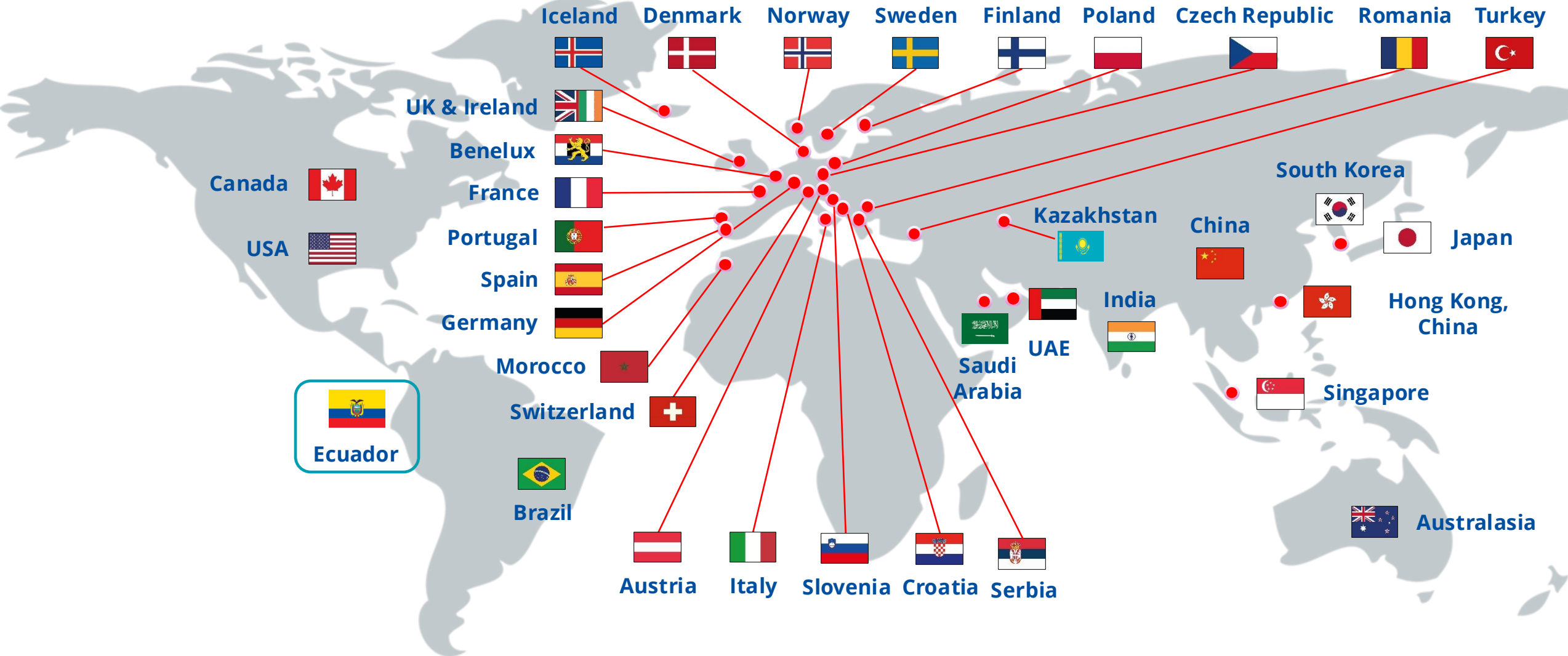
Purpose:

To bring together the global industry to develop & implement open digital standards & services that enhance **automation & decision-making** across the built environment life-cycle, improving **productivity, sustainability & profitability**.

About buildingSMART International



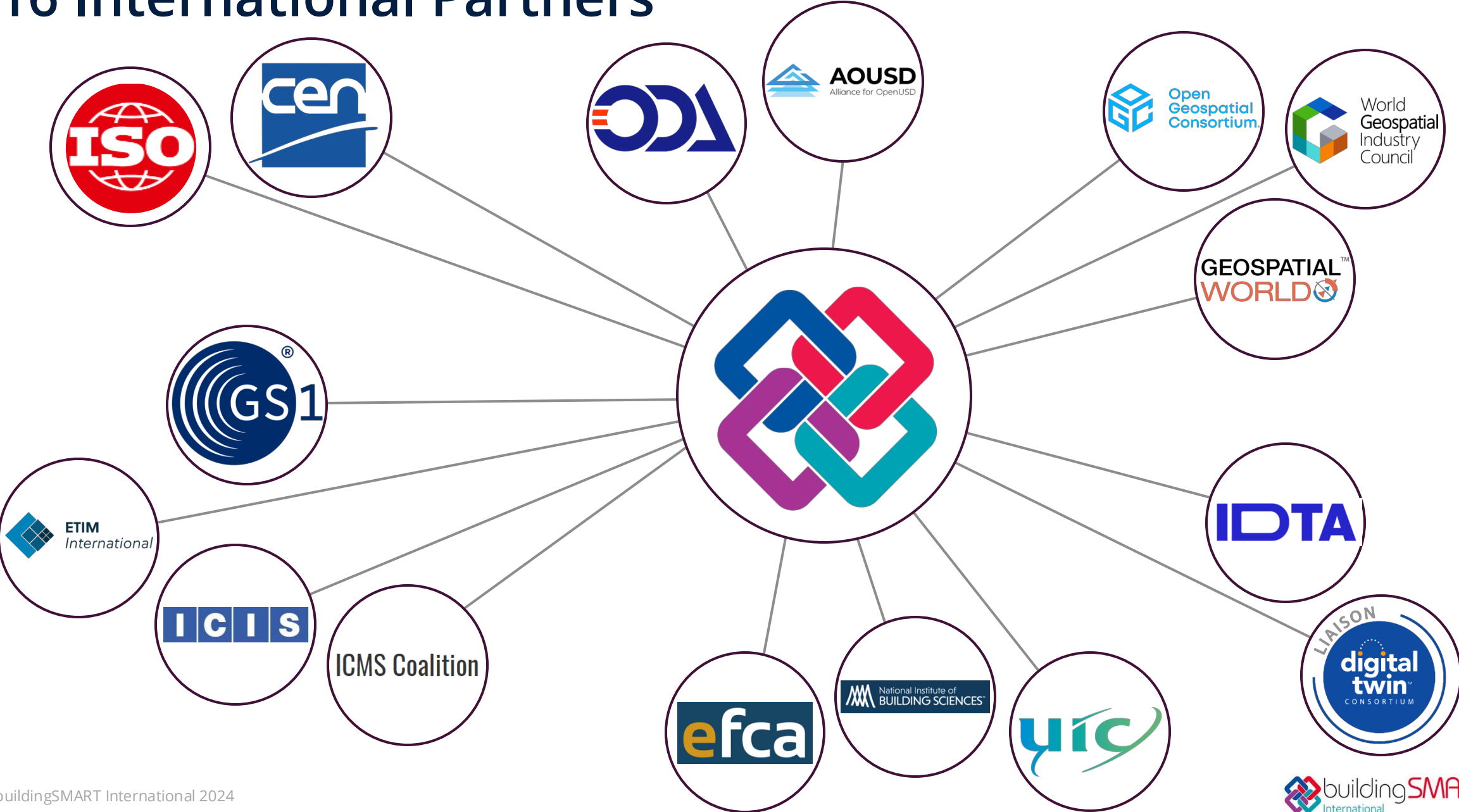
36 National Chapters



70+ International Members



16 International Partners



10 Sector-facing Domains



Airport



Building



Construction

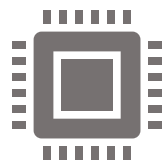


Infrastructure



Electrical

Industry experts from Chapter and Member representatives lead the Domains



Product



Railway



Regulatory

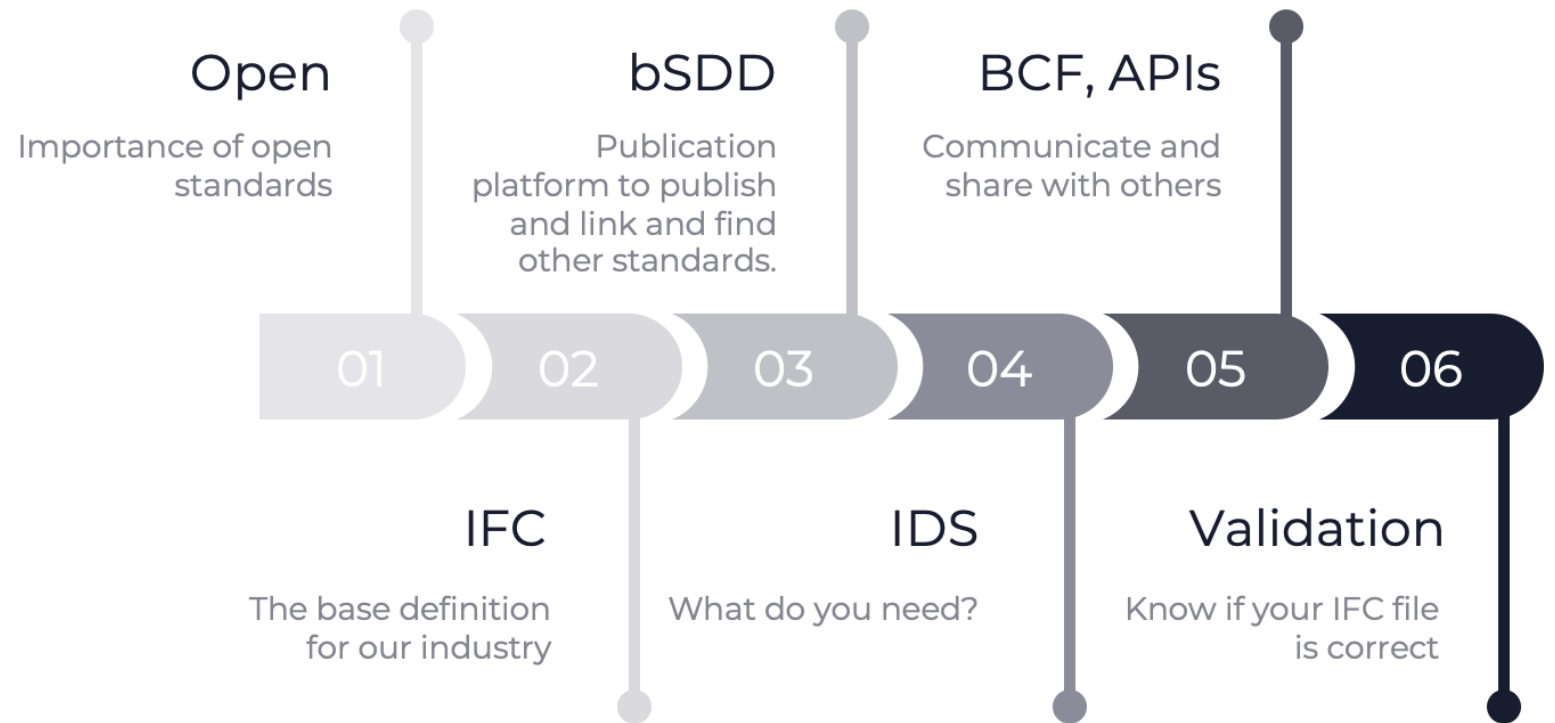


Technical



Maritime

The openBIM Workflow



What is openBIM® and why is it important?

openBIM is a collaboration process that is supported by technology by extending the benefits of data exchange and access to data. It is about **extending the benefits of BIM**.



Vendor-neutral

A vendor-neutral approach to sharing and accessing data



Digital workflows

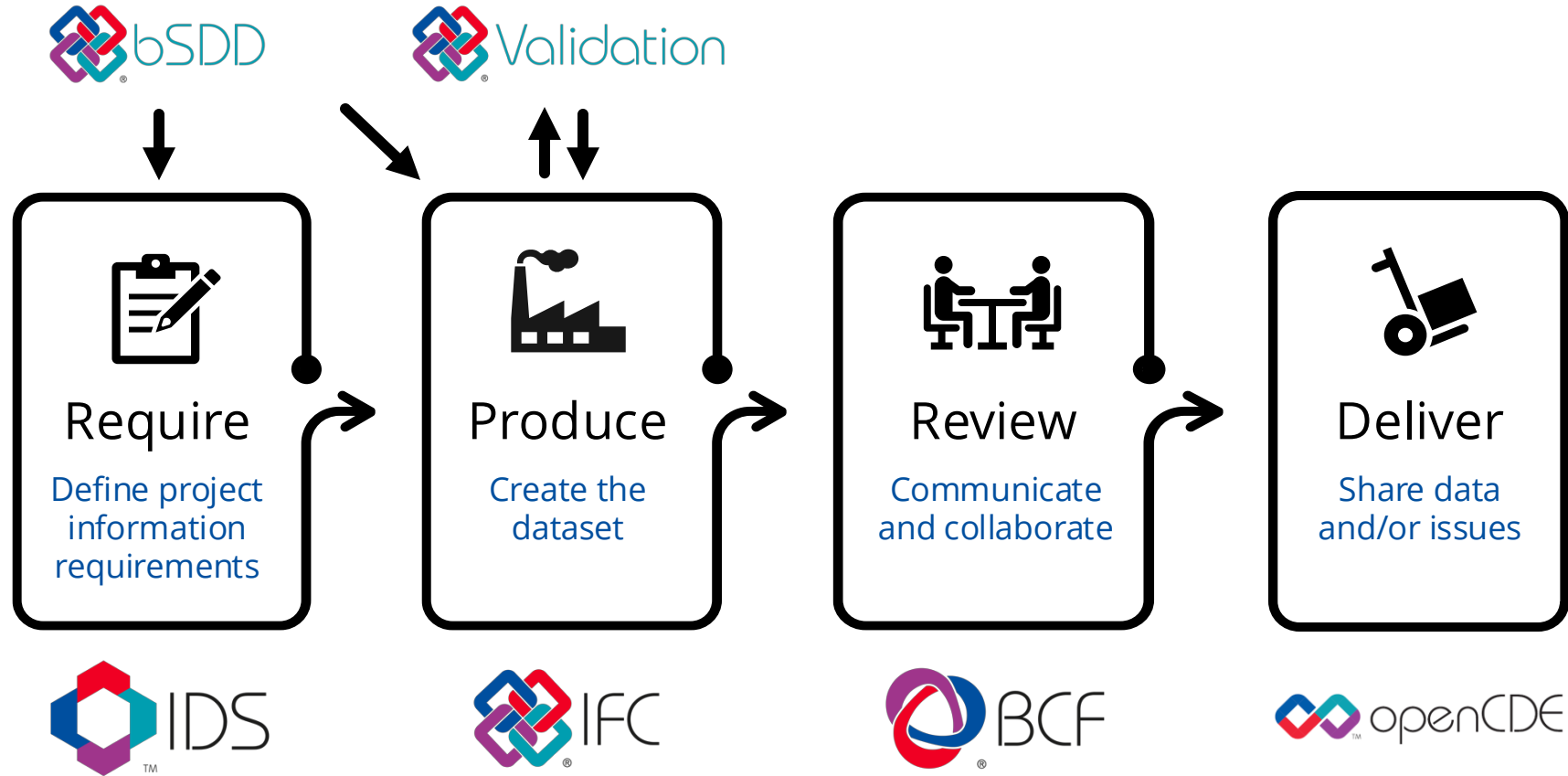
A composition of buildingSMART standards and services to enable industry to digitally transform



Interoperability

An industry drive for better interoperability and automation

openBIM Workflow



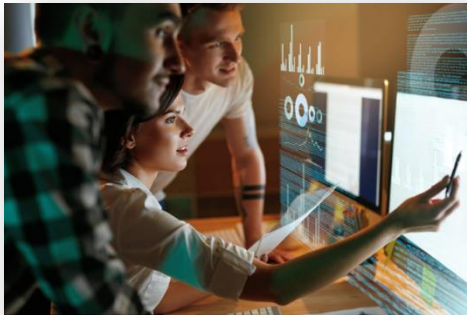
Strategic Projects

Services



bSDD

The buildingSMART Data Dictionary (bSDD) allows users to access definitions and properties, materials and relations through a single portal.



IFC Validation Service

IFC Validation is a service that allows users to validate IFC files to check their validity against the IFC standard.



Software Certification

Global Software Certification allows software vendors to test against the IFC standard giving support to end-users.

Standards



IFC 4.4

Following on from the work done for IFC 4.3, IFC 4.4 aims to further extend the schema to include new use cases such as Tunneling and other infrastructure requirements.



IFC 5

IFC 5 is considered the next generation of IFC, making it part of the era of digital twins, automated ecosystem across design, construction and asset management.

Knowledge



PCERT

With the Professional Certification program you can train and certify your staff in the latest openBIM standards and services that can improve business performance.



Project Enterprise Certification

Develop and certify the openBIM capabilities of your organisation, giving confidence to you, your clients and your partners.



openBIM Game

Train and develop your staff through practical exercises in openBIM workflows aligned with the latest buildingSMART standards.



Business Value Capture

To create a platform to capture business value to show the benefits of openBIM.

Professional Certification Service

Global **training and certification in openBIM**, catering for all levels of expertise.



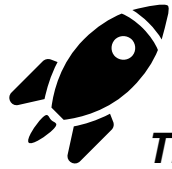
Entry level introduces open standards and openBIM concepts in a simple, clear and straight forward manner. It is aimed at working professionals and students in the built asset industry who have little or no experience with openBIM.

Foundation level training helps building asset owners, designers, consultants, builders and project managers understand the opportunities collaboration within a virtual, openBIM environment offers.

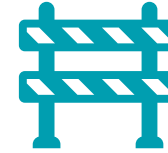
Management level addresses needs of those who must competently, confidently, and productively manage open standards empowered projects without necessarily mastering hands-on production skills.

Practitioner level serves professionals engaged with the delivery of openBIM (in planning, construction and/or operations), who possess considerable theoretical and technical knowledge, as well as some practical project experience.

Professional Certification development



Entry:
Thousands of badges
awarded globally –
join the movement!



Management:
Exciting *new curricula* in
development – stay tuned!



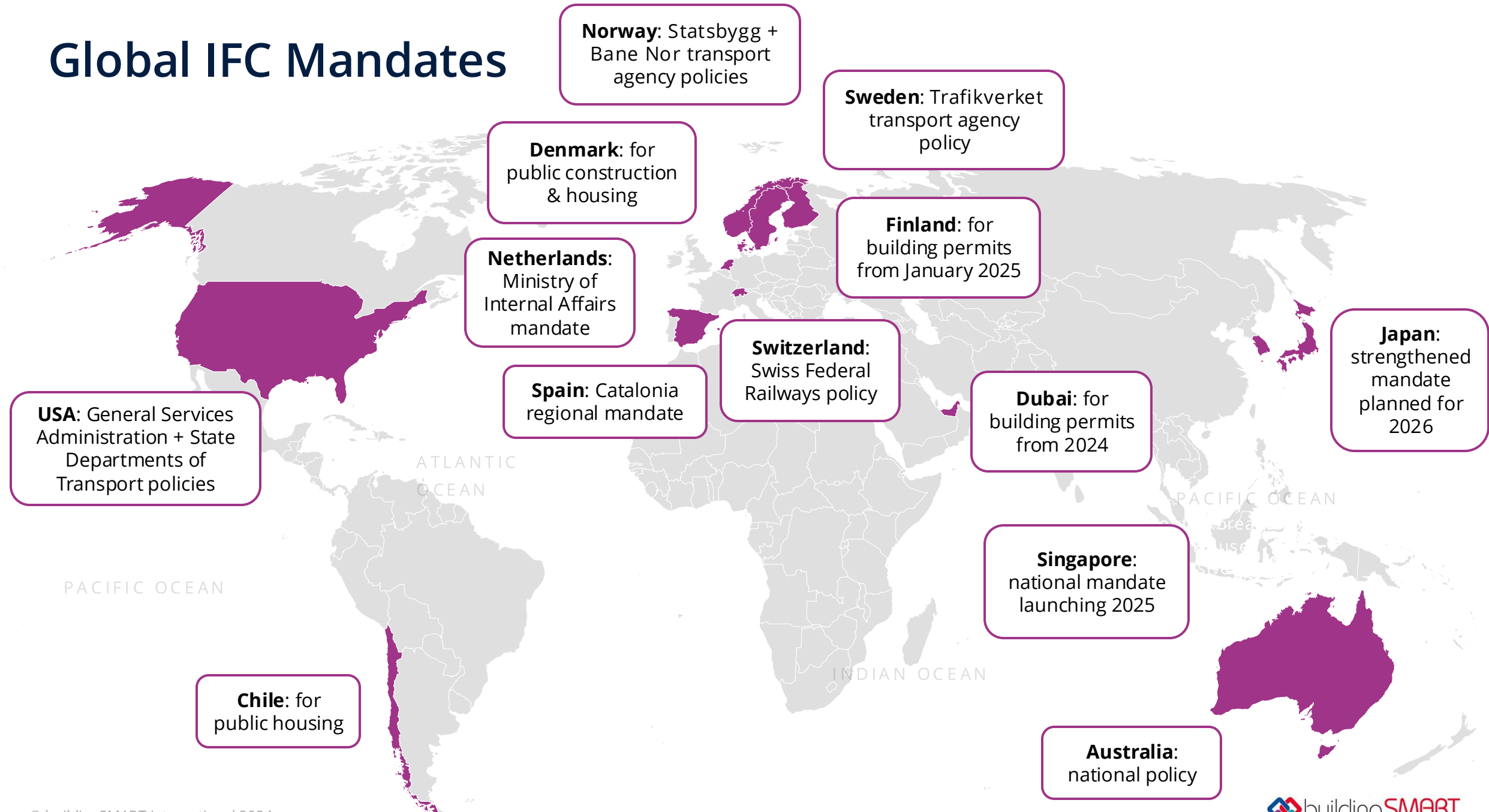
Foundation:
Fresh, updated learning
content now live!



openBIM Practitioner:
launched!



Global IFC Mandates



Mandates Report



Global IFC Mandate report for 2024 published

- Content provided by Chapters
- Outlines the **benefits of IFC and BIM mandates**
- More to be added in 2025



Summits Program



Singapore
18-20 March 2025



Berlin
22-24 September 2025



The European openBIM forum

Anna Moreno,
European OpenBIM forum chair

The European openBIM forum



European openBIM® Forum

supported by:



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

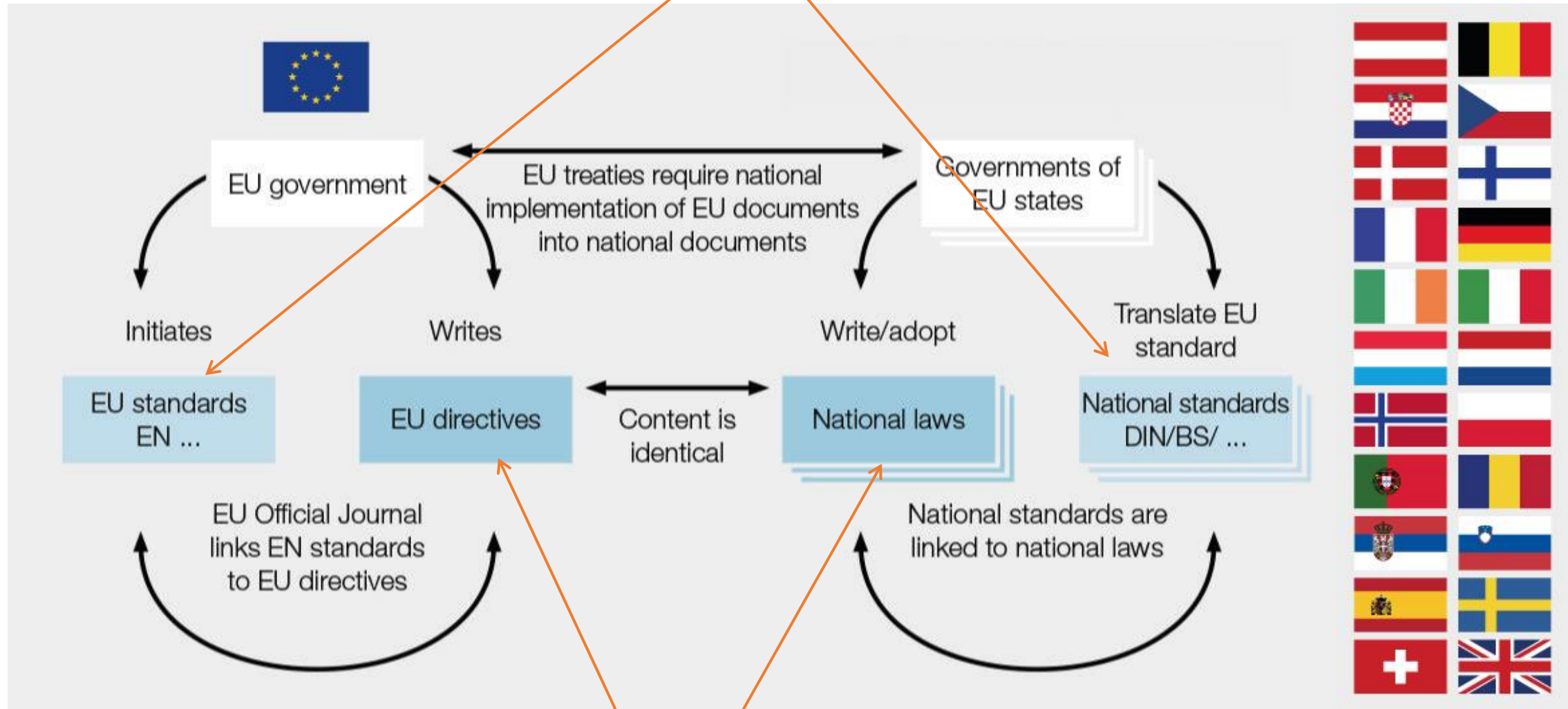


What EOF can do for Europe

- **EOF can be a valued source of advice, including on technical issues, of individual governments as well as the European Commission** in defining methods to accelerate the adoption of openBIM in the construction industry.
- EOF can provide **advices on political agenda and can develop standards** considered necessary for the implementation of openBIM through the entire supply chain
- The collaboration between 21 chapters ensures the **presence of multidisciplinary and complementary experts** to develop standards that are effectively usable throughout Europe.
- Our **members** belong to universities, research centers, enterprises, software houses, individual professionals, big and small enterprises, government representatives, training organizations and all them are openBIM staunch supporters.
- Our chapters have already produced **122 guidelines** that can be shared under European Commission hat to accelerate the **digital and green transformation** and to allow all Europe to reach the same level of digital maturity.
- **Ultimately, we can help to do more with fewer resources, considering the economic crisis, while prioritizing sustainability.**



EOF actual role

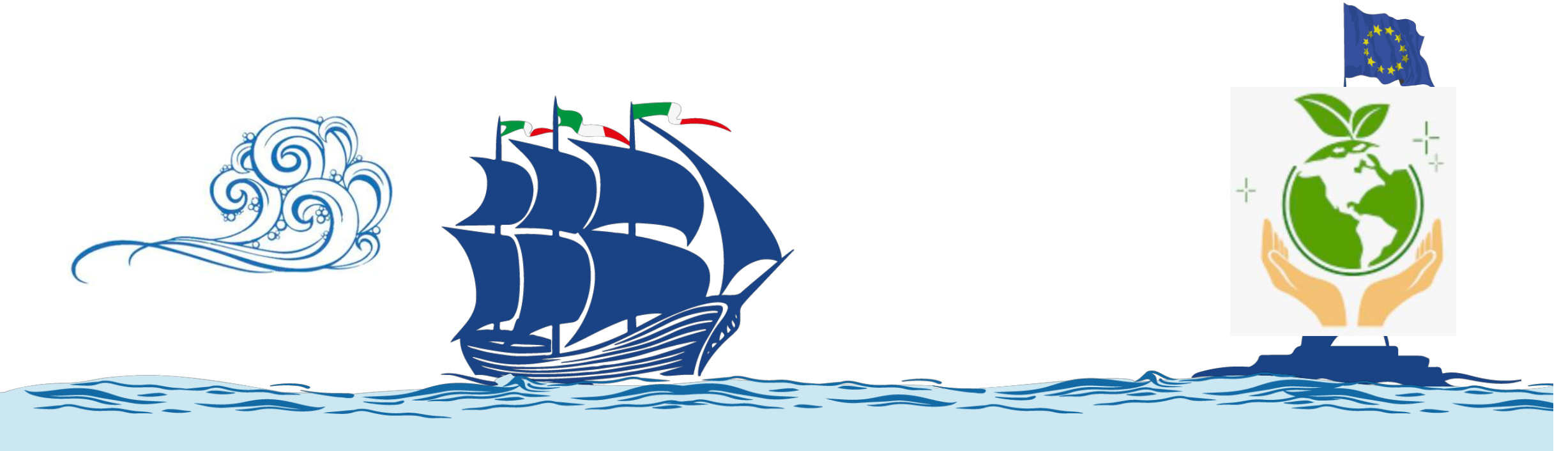


EOF potential contribution

Directives and regulations that could be implemented faster and better by increasing the openBIM maturity in Europe

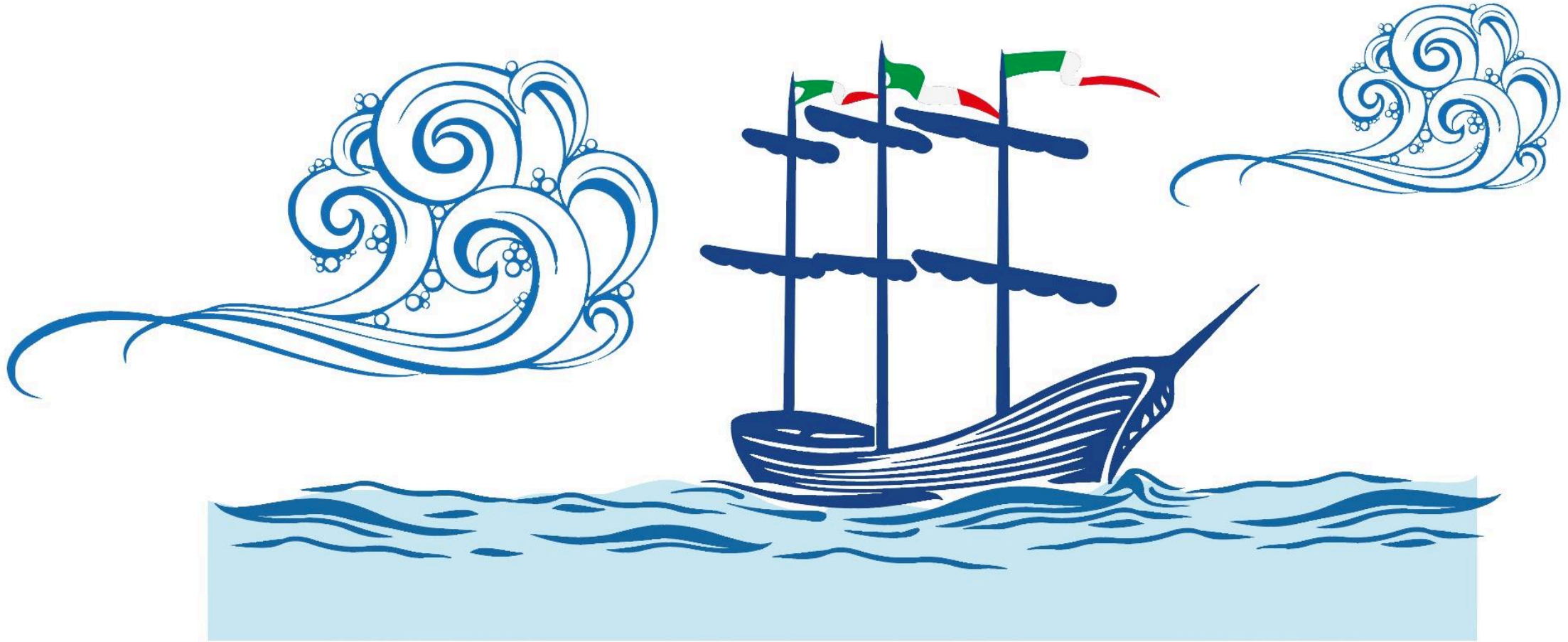
- [Renewable Energy Directive](#) (EU) 2023/2413
 - [Energy Efficiency Directive](#) (EU) 2023/1791
 - [Energy Performance of Buildings Directive](#) (EU) 2024/1275
 - [The EU Public Procurement Directive](#) (2014)
 - [Construction products Regulation](#) (EU) No 305/2011
 - [Ecodesign regulation](#) (EU) 2024/1781
 - [Circular economy communication](#) (EU) 2024/1781
 - [WD investment renovation](#): Commission staff working document (SWD/2020/550 final)
 - [Social Climate Fund \(SCF\) Regulation](#)
-

Implementation of European directive for a sustainable future

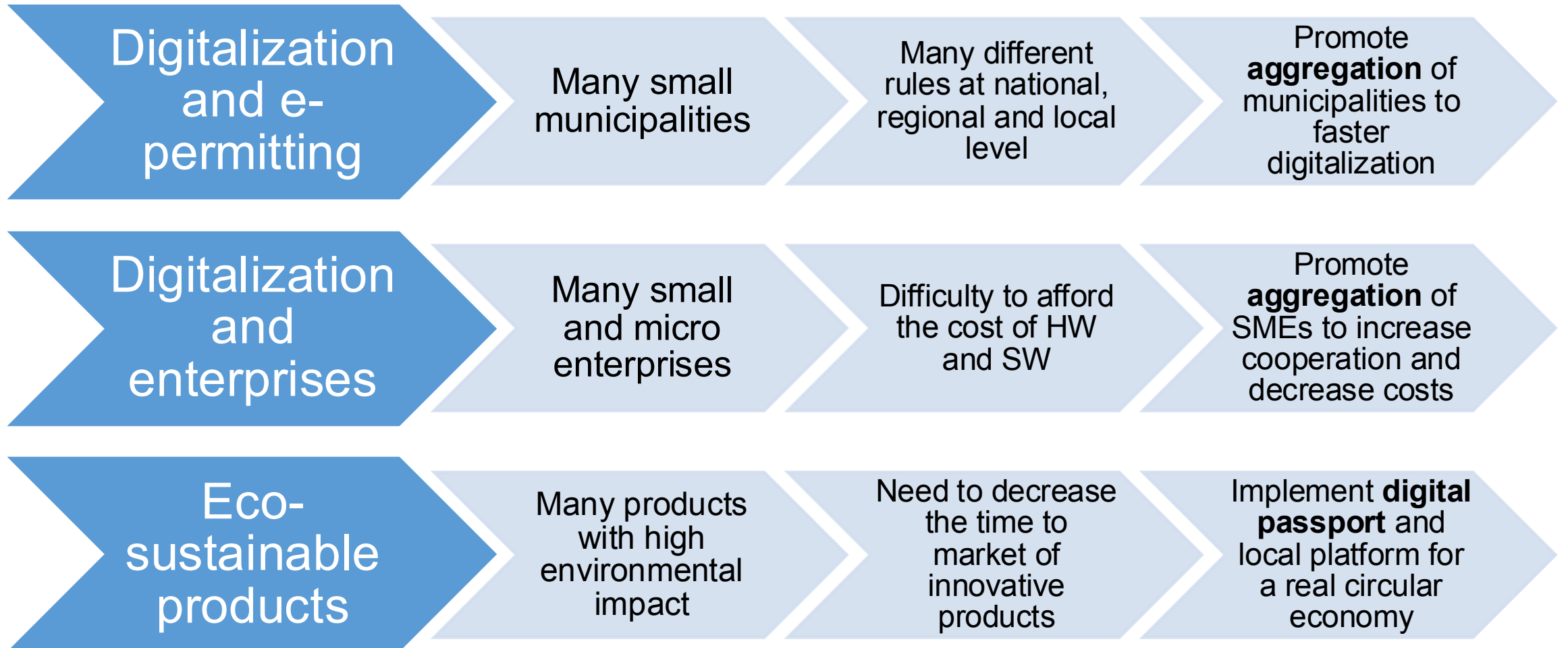


EOF can ensure that the ship steering Europe towards achieving sustainability goals has a stronger and more favorable tailwind.

... but ... if the communication and dissemination of openBIM knowledge is not improved extensively, it's like having the wind at your back but the sails still furled.

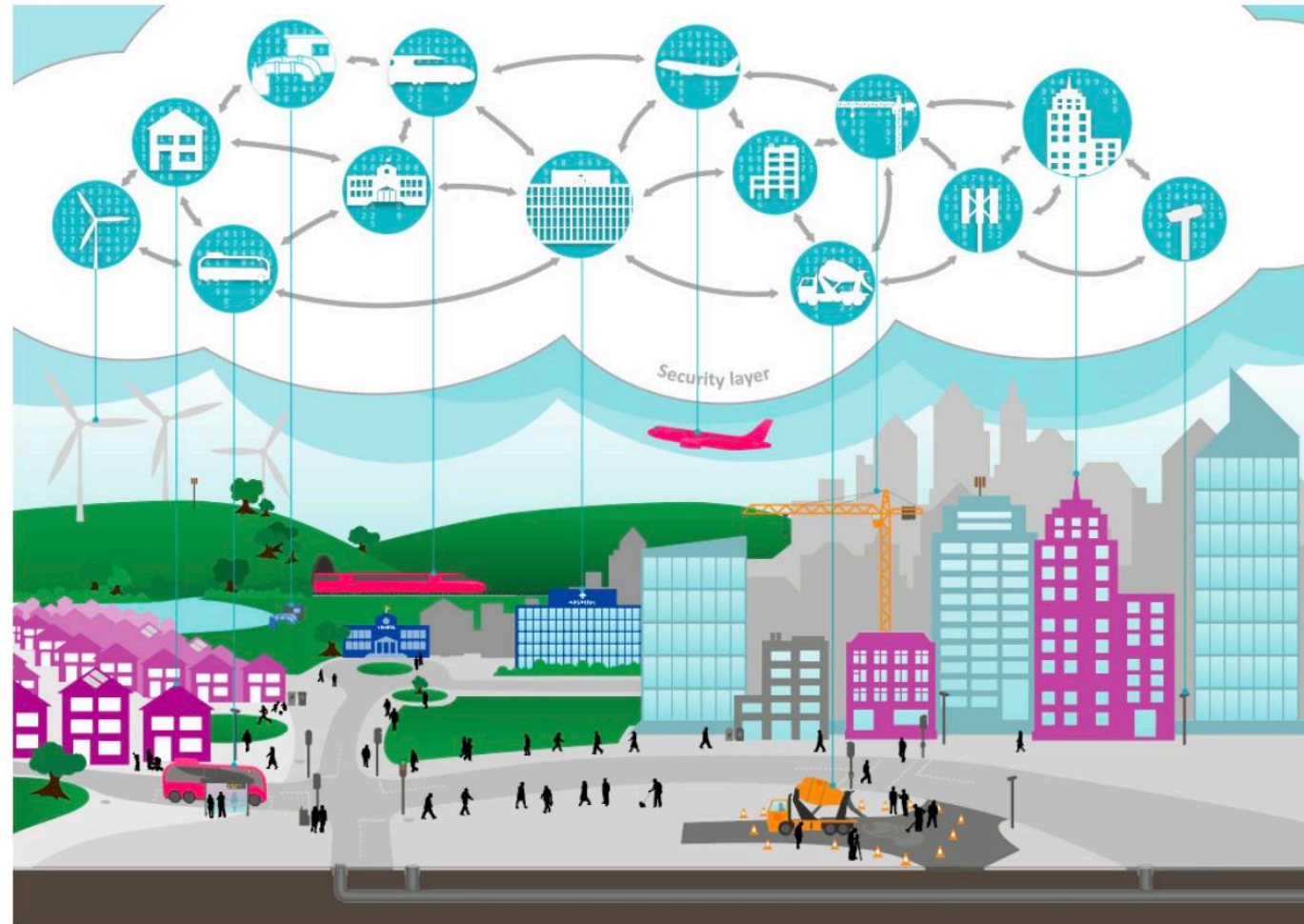


Some main issues to face ... and some possible solutions discussed among the chapters



The world is already interconnected ... now we need to interconnect people with openBIM

Taken from the guideline
On digital twin of
buildingSMART

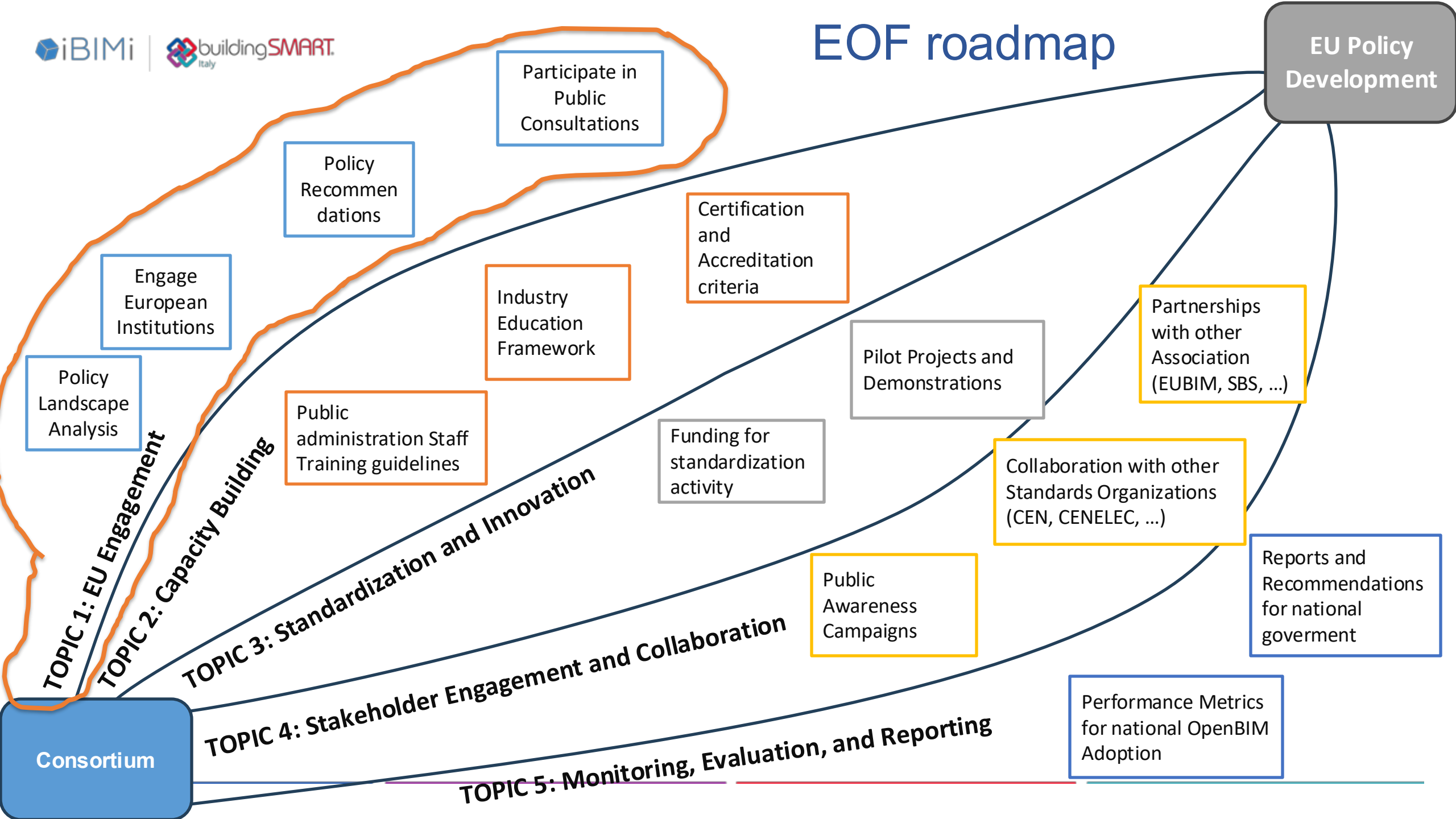


An Ecosystem of Digital Twins



EOF roadmap

EU Policy Development



Consortium

TOPIC 1: EU Engagement

TOPIC 2: Capacity Building

TOPIC 3: Standardization and Innovation

TOPIC 4: Stakeholder Engagement and Collaboration

TOPIC 5: Monitoring, Evaluation, and Reporting

Participate in Public Consultations

Policy Recommendations

Engage European Institutions

Policy Landscape Analysis

Industry Education Framework

Certification and Accreditation criteria

Public administration Staff Training guidelines

Funding for standardization activity

Pilot Projects and Demonstrations

Partnerships with other Association (EUBIM, SBS, ...)

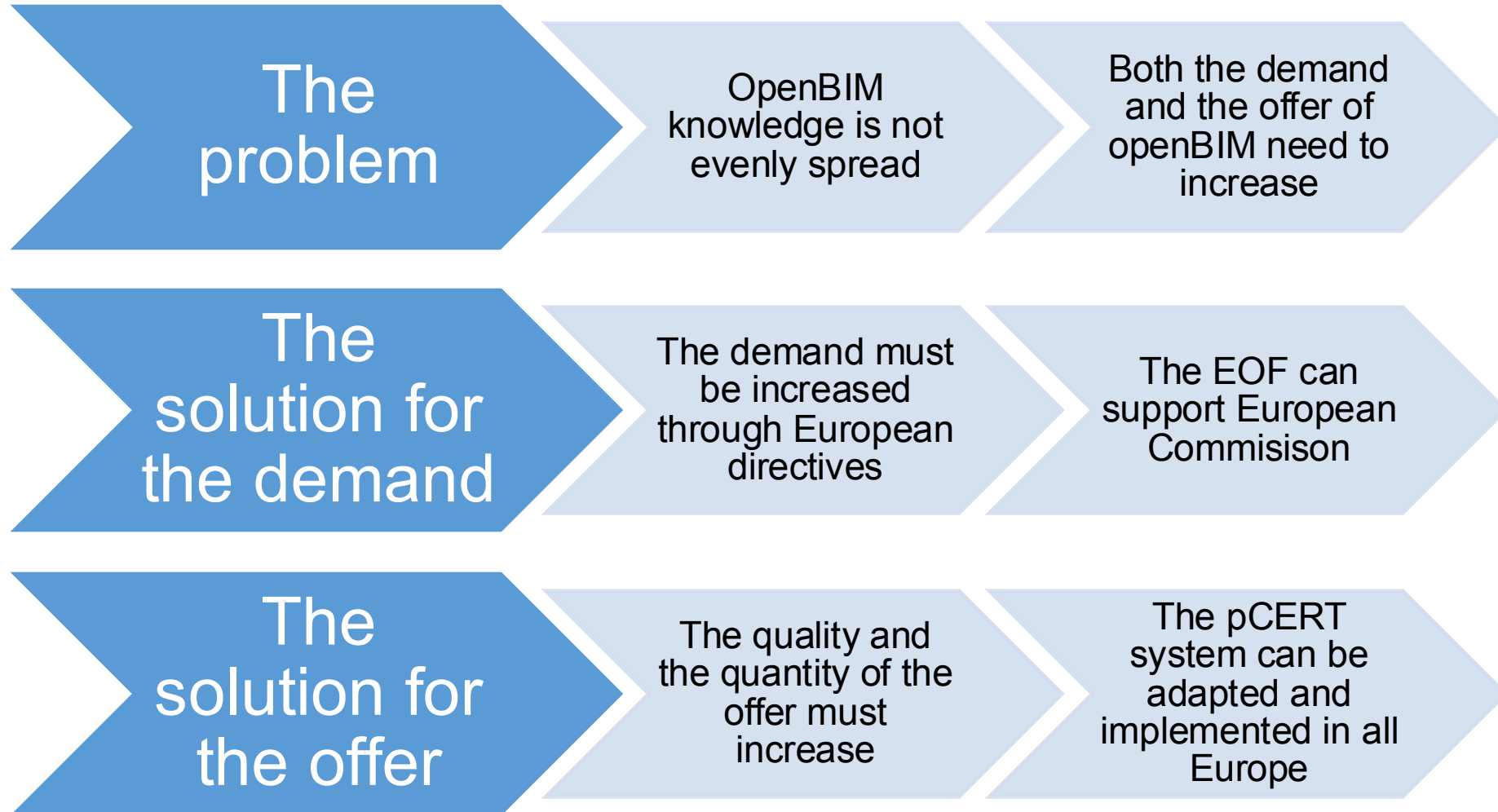
Collaboration with other Standards Organizations (CEN, CENELEC, ...)

Public Awareness Campaigns

Reports and Recommendations for national goverment

Performance Metrics for national OpenBIM Adoption

How to increase supply and demand of openBIM



Increase the demand and the offer for open BIM: two European initiatives

Two complementary initiatives are supporting the dissemination of open BIM in Europe

OFFER

BUILD UP Skills is a strategic initiative supported by the LIFE Clean Energy Transition programme. It is currently managed by the EU Climate, Infrastructure and Environment Executive Agency (CINEA).

EUROPEAN roadmaps for a digital and sustainable built environment

A common European approach will strengthen the market of the sustainable construction industry

DEMAND

DG GROW is laying the foundations for the digitalisation of the building permit system. A common European approach will strengthen the single market for the construction industry and makes easier to deliver information required for their building permit.

Promote the “entry” level bSI course within the municipalities

A common European approach will increase the demand for openBIM

Next step: EOF will provide suggestions for using openBIM standards to faster implement EU directives and regulations

European official documents under study	How openBIM can help
Renewable Energy Directive (EU) 2023/2413	
Energy Efficiency Directive (EU) 2023/1791	
<u>Energy Performance of Buildings Directive (EU) 2024/1275</u>	
The EU Public Procurement Directive (2014)	
Construction products Regulation (EU) No 305/2011	
Ecodesign regulation (EU) 2024/1781	
Circular economy communication (EU) 2024/1781	
WD investment renovation: Commission staff working document (SWD/2020/550 final)	
Social Climate Fund (SCF) Regulation	

Thank you



Chair of openBIM forum
Anna Moreno
a.moreno@ibimi.it

www.buildingsmart.org

<https://openbimforum.eu>



- 09:00 - 09:30 Coffee and arrival
- 09:30 - 09:45 Opening words
- 09:45 - 10:40 Keynote presentations:
- Christophe Sykes**, Director General of Construction Products Europe
"Implications of a revised EU legal framework for construction products (CPR)"
- Dr. Thomas Liebich** from buildingSMART Germany
"Update on IFC and IDS developments"
- 10:40 – 11:00 **Pablo Gutierrez**, DG GROW - Our contribution to EC activities and collaboration with DG GROW, planned activities 2025/2026
- Georgios Kontopoulos**, PwC - "Digitalisation of the built environment" study results
- 11:00 - 11:20 **Anette Persson**, DG ENER - EPBD implications for the future
- 11:20 - 11:40 **Aidan Mercer**, buildingSMART International (bSi) - update on bSi main activities
- Anna Moreno**, buildingSMART Italy - Establishment of the European openBIM Forum
- 11:40 - 12:00 **Jaroslav Nechyba**, EUBTG Workshops overview
- 12:00 - 13:00 Lunch**



Knowledge transfer workshops

for EU BIM Task Group members and public sector





STRATEGIC AND OPERATIONAL ROADMAP

05 key objectives

19 proposed activities

2024 actions

A BENEFITS OF BIM

A1. Cost benefits analysis

A2. Pilot project results

A3. Measurement

B RELIABLE INFORMATION AND GUIDELINES

B1. Guidelines for
public procurement

B2. Advise EC on PPD

B3. EU BIM website
development

B4. BIM innovation reward

C STANDARDISATION

C1. Liaison communication
plan

C2. Open BIM

C3. Common classification
system

D KNOWLEDGE TRANSFER

D1. Regular meetings
between members

D2. BIM conference for
public procurers

D3. Legal entity

D4. Network of who is who with
expert pool

E SUPPORT MEMBER STATES INITIATIVES

E1. Unified Digital Platform

E2. Better Funding

E3. Data Security

E4. Built environment
Data privacy

E5. Knowledge transfer –
workshops

Workshop objectives



Share practical experience on the topic of the workshop to support the knowledge of public clients. Enable new personal connections.

Address and amplify the needs of the public sector to policymakers and standardization bodies and to as well as provide realistic feedback from implementing BIM in practice.

Workshop outcome: EUBTG knowledge and suggestion document

Don't try to solve topics but only specify common needs, experiences and actual challenges. Keep focused on selected topics and aim a discussion to practical conclusions or suggestions.

Less in detail is more than „all“ just on the surface in phases.

KNOWLEDGE TRANSFER WORKSHOPS – 2023

Format: 1-day, in-person, active roundtable discussions, 30 people max, common conclusion.

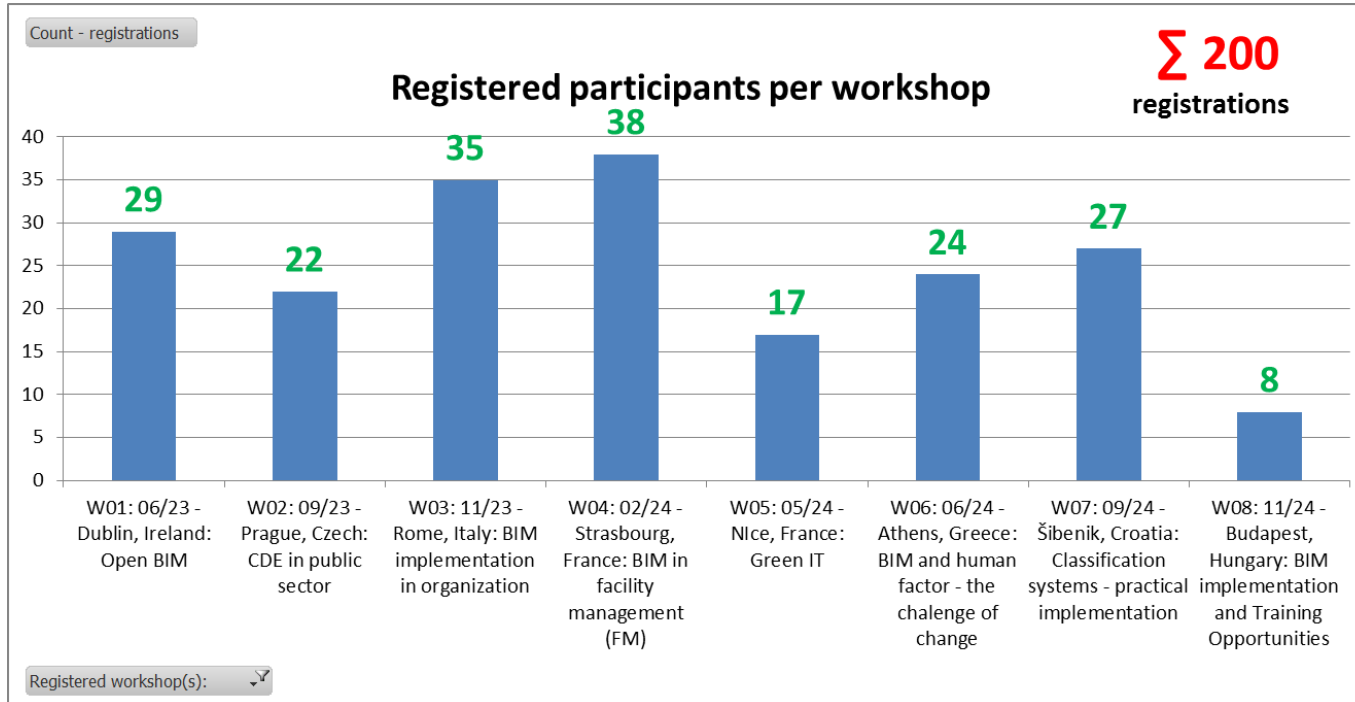
WS1, OpenBIM in procurement and practice (*June/Dublin*)

WS2, Common Data Environment (*Sep/Prague*)

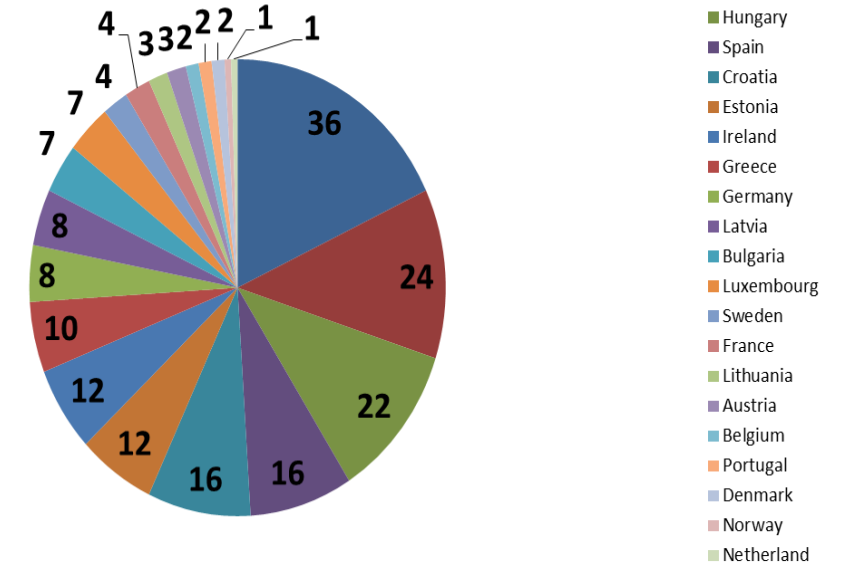
WS3, Implementation of BIM from organizational aspects (*Nov/Rome*)



Workshop statistics



Registrations - per country



Summary:

- 200 registrations (104 EUBTG, 96 non),
- from 21 countries,
- 101 persons (37 pers. at 2+ workshops; 2 pers. at all of them).

Σ 21

countries

Workshop outcomes – website presentation



Home | About | Handbook | Cost Benefits | **Workshops** | Blog | Contact | | |



KNOWLEDGE SHARING WORKSHOPS

One of the main activities of the EU BIM Task Group is the organization of knowledge transfer workshops. The goal of the workshops is to have active round table discussions with on-site participants using the following format:

- Discussion moderated workshop without long boring presentations.
- 20-30 participants maximum to be able to keep discussions interesting and let any participant take an active part in the debate.
- Topics and agenda of the workshop can be in advance shape by registered participants.
- Outcome: Knowledge and suggestion document that will be published on the EUBTG website after the workshop

The workshops are intended for public clients and policy makers. Information about upcoming workshops is communicated through the General Assembly members of EUBTG.

WS1 – OpenBIM



Dublin, 1 June 2023

WS2 – CDE



Prague, 25 September 2023

WS3 – Org. Strategy



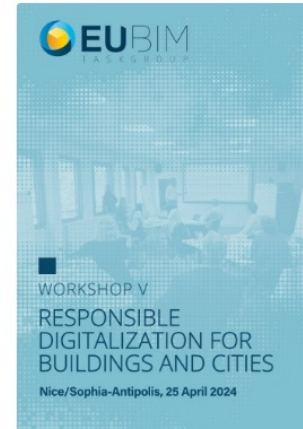
Rome, 7 November 2023

WS4 – BIM in FM



Strassbourg 20th-21st February 2024

WS5-Responsible digitalization



Nice/Sophia-Antipolis 25th April 2024

WS6-Challenge of the change



Athens 19th June 2024



Workshop outcomes - content



**WORKSHOP VI
THE CHALLENGE OF CHANGE - BIM AND HUMAN FACTOR FINDINGS**

- 1 Resistance to change is natural:** working with it during each step of implementing BIM in an organisation is essential. Therefore, it is crucial to include change management as one of the critical implementation processes and set human factor care as one of the highest priorities, along with appropriate communication, collaboration practices, training, integrated technology, and standards.
- 2 Consistently map all actors affected by the change,** both those who see a fundamental change in their work habits and practices and those who see only some of their work practices change. We must include them all appropriately and respectfully in our communication and training plans at the right time and consistently seek their feedback on the benefits and concerns about the change's impact on their jobs.
- 3 For us, the human factor is involved in various specific activities throughout the development process:** leadership and vision to set up strategic direction and change management; workforce training and development with skill enhancement; employee engagement and buy-in securing involvement in the process, incentives and motivators; collaboration and communication supporting interdisciplinary collaboration, stakeholder and supply chain engagement; cultural shift in embracing innovation, adaptability and flexibility; and integrating human factors such as holistic approach, feedback loops, support systems.
- 4 During this and previous workshops, we believe that Kotter's model for change management** could be practically used and adopted into the public client's organisation. Kotter's change model is an eight-step approach to effecting significant change in practice and organisations. This model focuses on **creating urgency to make change happen.** It walks through the process of listening, Managing, and Measuring the change.
- 5 Our organisations live in different countries and at various stages of implementing BIM.** However, we see **similar challenges and barriers** (related to digital human factors), such as resistance to change, lack of training and education, communication and collaboration issues, organisational culture, resistance from leadership, and lack of motivation and engagement.

**WORKSHOP III
PRACTICAL IMPLEMENTATION AND STRATEGY CONCLUSIONS**

- 1** There are different approaches to BIM implementation (focusing on):
 - **strategy development and agile planning and implementation**
 - **practical implementation and pilot projects** (running by client)
 Each approach has its pros and cons, but in any case, it is essential to constantly define and monitor achievable results and strategic goals as part of the BIM implementation process. We found a strategic approach more reasonable with less risk of failure, and smoother implementation to the whole organisation, avoiding the department/team "quick" silo solutions.
- 2** **Organisation BIM strategy** must have two fundamentals:
 - **GAP analysis:**
 - **long-term implemented change management** (not an action plan).
 GAP must contain:
 - all relevant, complete mapping and evaluated AS-IS situations,
 - well-designed forward thinking TO-BE state,
 - and realistic, realistic action plans (short, mid and long-term) with sophisticated systematic feedback for correcting standards, guidance and procedures.
- 3** Running agile action plans based on realistic GAP analysis in the whole organisation process allows smoother and less costly data sharing. It also helps to transfer information and data through different departments and processes. The approach will bring the **long-term architecture for organization-specific CDE** containing legacy or updated systems and software tools from the market for future ITC investments. Connecting it all together brings efficiency and avoids double work and information overlaps (with different content). The routine use of CDE will bring transparent responsibility to all external actors and allow decision makers to get higher self-confidence and efficiency for all the employees involved.
- 4** The well-implemented strategy facilitates the smart application of international standards and the creation of organisational information requirements based on **clearly defined purposes** at each department/process. This makes it possible to achieve minimum requirements and avoid overlaps in the supply chain. Organisational standards based on international standards principles bring efficiency in the representation of various positions, as well as transitions between departments, training and the introduction of new employees.
- 5** The ongoing digital continuity must be supported by **repeated training** for employees to update their knowledge and the routine usage of digital tools for daily work. This approach enables people involved to make better decisions based on trustworthy, valid and connected information.

**WORKSHOP II
COMMON DATA ENVIRONMENT (CDE) IN THE PUBLIC SECTOR
SWOT ANALYSIS**

**WORKSHOP IV
BIM IN FM**

BIM USES (PURPOSES) DEFINE HOW TO ACHIEVE SPECIFIC OBJECTIVES THROUGH THE USE OF BUILDING INFORMATION MODELLING ACROSS THE WHOLE LIFECYCLE OF A FACILITY

**WORKSHOP I
SPECIFIC - STRUCTURED DATA REQUIREMENTS**

**WORKSHOP VI
THE CHALLENGE OF CHANGE - BIM AND HUMAN FACTOR**

**WORKSHOP V
RESPONSIBLE DIGITALIZATION FOR BUILDINGS AND CITIES**

FINDINGS	SUGGESTIONS
1 Reduce / optimize the IT devices & services used in the construction sector.	<ul style="list-style-type: none"> • Characterize green IT criteria for these devices / services: certification, traceability and origins (benefits could be effective for one country but negative effects could affect another country, example: raw materials, mineral, environmental impacts, obsolescence, energy and material consumption, upgrade, reparability, utility for use...) • For each project, describe precisely the existing IT devices / services used within the different construction phases. • Anticipate the future needs of the sector, linked with regulation (ex: sensors to measure energy consumption). • Choose greenest devices and not cheapest on the criteria above, notably for public procurement. • Use already existing generic devices (smartphones or computers) to reduce the need of other specific devices.
2 Greater works with simulation, automation and robotics.	<ul style="list-style-type: none"> • Physical simulation to optimize material and energy consumption, reduce carbon through multicriteria analysis (Life Cycle Cost, Life Cycle Assessment...) • Reduce local environmental impact, optimize transport footprint, avoid defects that lead to the use of more materials and energy (pre fabrication, additive manufacturing...)
3 New opportunities based on AI and IoT for greener construction.	<ul style="list-style-type: none"> • Improve efficiency and foresight within building operations: anticipate maintenance needs within the building operations, to avoid more costly repairs overall. • Use IoT/AI to optimize energy, water consumption, leak detection. • Enhance waste management within a circular economy. • Employ Generative Design and Modelling to help converge toward the best sustainable design. • Optimise the logistics, carbon footprint associated with transport and storage by using IoT, robotics, tracking devices...
4 A (big) need of qualified, reliable, integrated and managed data.	<ul style="list-style-type: none"> • To make these IT opportunities really effective, these new tools need large amounts of well qualified and reliable data, especially labelled data by (non) experts to train or fine-tune AI for each use cases. • The digitalization of buildings is becoming more widespread and less expensive, but this leads to a growing need for data storage, raising concerns about the environmental impact. • Develop reference, reliable and certified datasets for construction, at the EU or national scale, compliant with open standards (for example on API, on semantics and models like Linked Data or BIM models...) • Use these datasets to reduce the use of raw, redundant data. • Develop data governance and management within stakeholders of the construction sector to increase accessibility and interoperability.

KNOWLEDGE TRANSFER WORKSHOPS – 2024

WS4, Facility management
(February/Strasbourg)

WS5, Green IT (May/Nice)

WS6, Human factor (June/Athens)

WS7, Classification systems
(Sept/Šibenik, Croatia)

WS8, BIM Implementation SWOT,
Education (Nov/Budapest, Hungary)



Thank You!

- + Collaboration and transparency is key
- + Make public data accessible and open
- + Use international OPEN standards
- + Be bold and agile!

Jaroslav Nechyba
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LinkedIn profile

+420 603145547

EU BIM TASK GROUP EXPERIENCE SHARING WORKSHOP VIII – Budapest

November 2024

PRELIMINARY AGENDA BIM implementation and Training Opportunities

a common event of KTI [KTI Institute for Transport Sciences]
and EMI [Company for Quality Control and Innovation in Building Industry]

THE WORKSHOP

Participants will share their practical experiences during the small group discussions of the working group, and the summary of each "table" will be shared by the table spokesperson.

Delegated experts from public investment organisations share their own experiences and make recommendations to decision-makers and public actors in a particular area. By sharing the BIM related knowledge, good practices can promote a common approach to BIM implementation at European level.

TOPICS OF WORKSHOP – BIM implementation and Training Opportunities

By sharing national practices and local implementation challenges, the participants can learn from each country's experience in this field, participants will formulate position paper outcome with their experience how to apply BIM-based investment management to public projects with a focus in the training and education.

PARTICIPANTS, ATTENDANCES

- members of EU BIM Task Group, decision makers in public construction and public clients
- 40 participants maximum

DETAILS – IMPLEMENTATION IN THE WORKFLOW

- SWOT analysis of the national BIM implementation
- Challenges, barriers and opportunities
- Best practices, case studies
- Trainings and education
- Opportunities for public engagement

WORKING METHODS

- Short intro – presentation
- Workshop tables – 4-6 persons
- Outline of the topic
- Common statements
- Common action plan
- Networking and knowledge transfer

MODERATOR	Jaroslav Nechyba
DATE AND VENUE	7 November 2024 – Szentendre, Hungary
REGISTRATION	until 20 October 2024 – registration form here



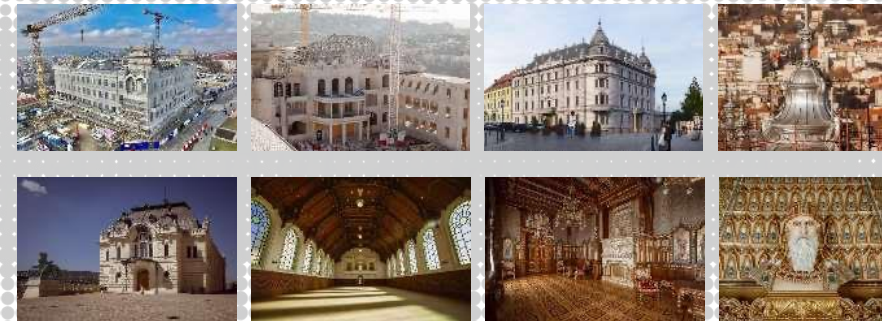
WELCOME PROGRAMS - VISIT AND SITE PRESENTATION

DATE AND VENUE: 6 November 2024 - Castle district, Budapest

We would like to draw your attention to the possibility to participate in a site visit and a dinner on the previous day. Furthermore, after the workshop, participants will have the opportunity to visit the National Model House Park and Visitor Centre (approximately 1,5 hours).

- CONSTRUCTION SITES – start aprox. at 14:30
Building Prince Archduke Joseph, Ministry of Defence, former Red Cross HQ
- RECONSTRUCTED SITES – start aprox. at 16:00
[St. Stephan's hall](#) and [Riding hall](#)

Participation at the event is free of charge, but registration is compulsory.



DINNER – restaurant Hemingway [at own expenses]



[Registration form here](#)

Lunch

12 - 13

- 13:00 - 13:15 **Dmitrijs Kots** - EUBTG Survey results overview
- 13:15 - 14:15 **EUBTG planning 2025:**
- Changes in EUBTG chair/co-chair positions
 - Establishment of a possible advisory Board for EUBTG?
 - 2025 focus activities (survey comments, on-site discussion)
 - Collaboration with EUBIM Public Officials Group
- 14:15 - 15:15 **Members updates**, updates from last GA, how can the EUBTG support you?
- 15:15 - 15:45** **Networking Coffee break**
- 15:45 - 16:45 **Members updates** continued...
- 16:45 - 17:00 Wrap-up and closing



BIM survey 2024

Summary

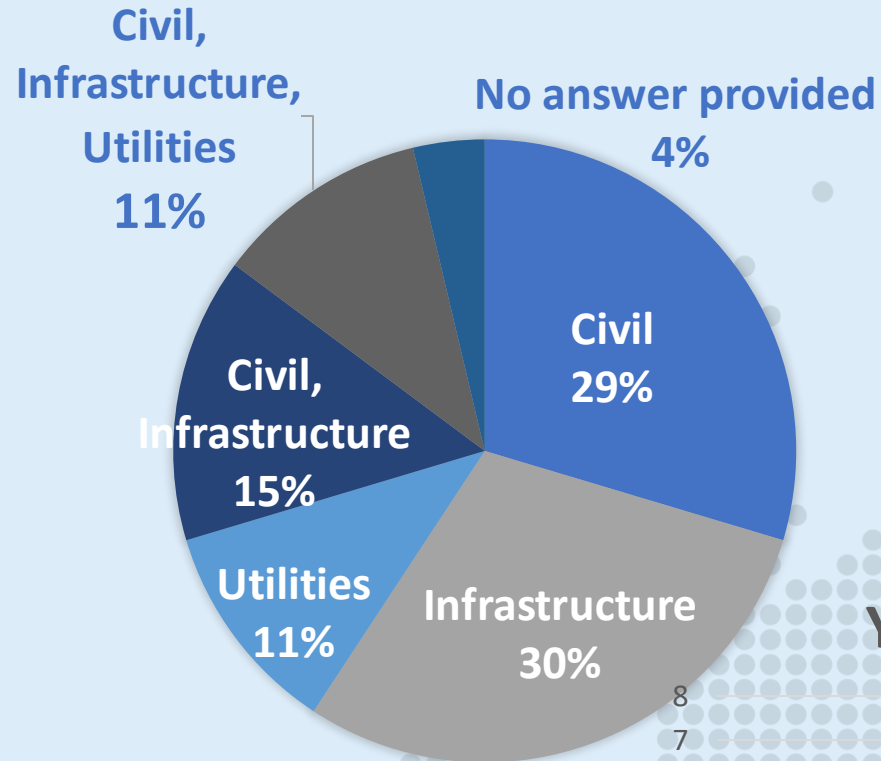
The aim of the survey is to collect information about the main BIM approaches, achievements, and challenges among European public authorities and public sector organisations.

Results will contribute to the exchange of best practices, establishing a common approach, and synergy between the European public sector.

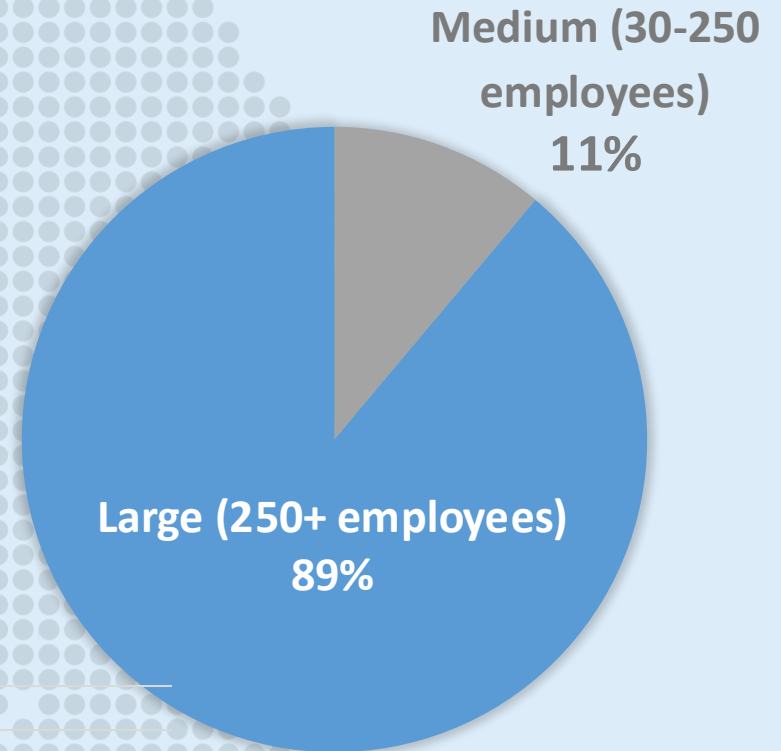
Public client



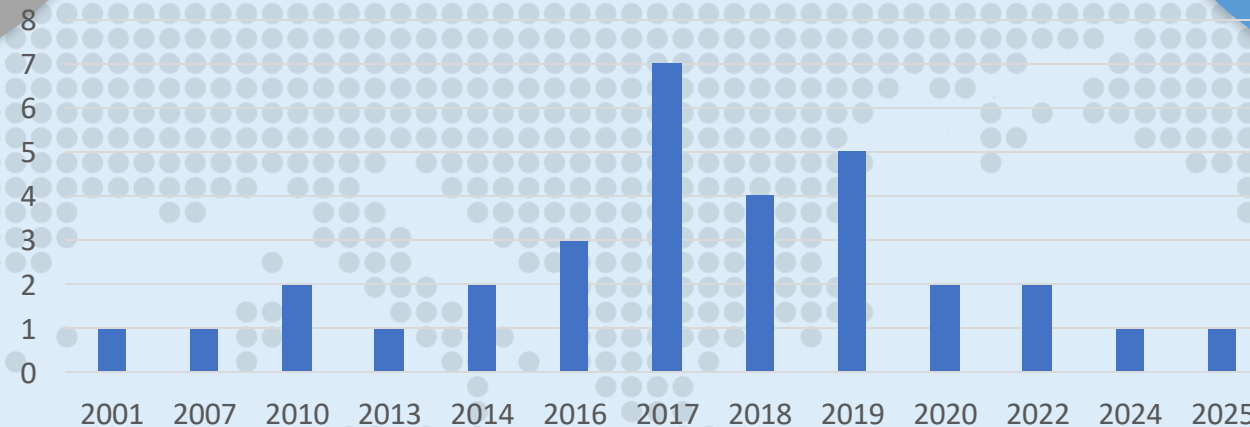
CONSTRUCTION DOMAIN








SCALE OF THE ORGANIZATION



YEAR OF STARTING TO USE BIM

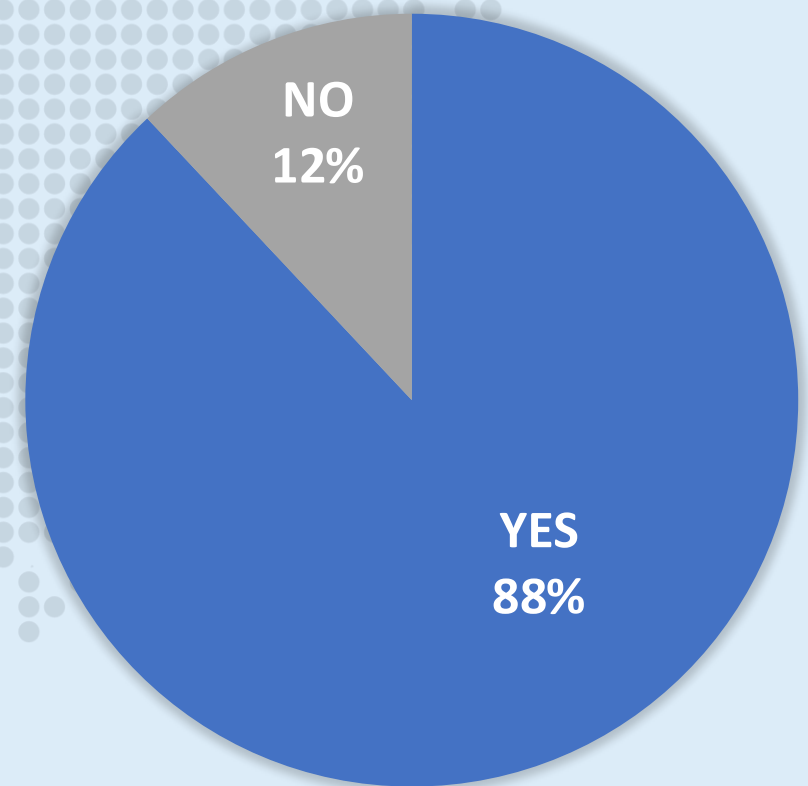
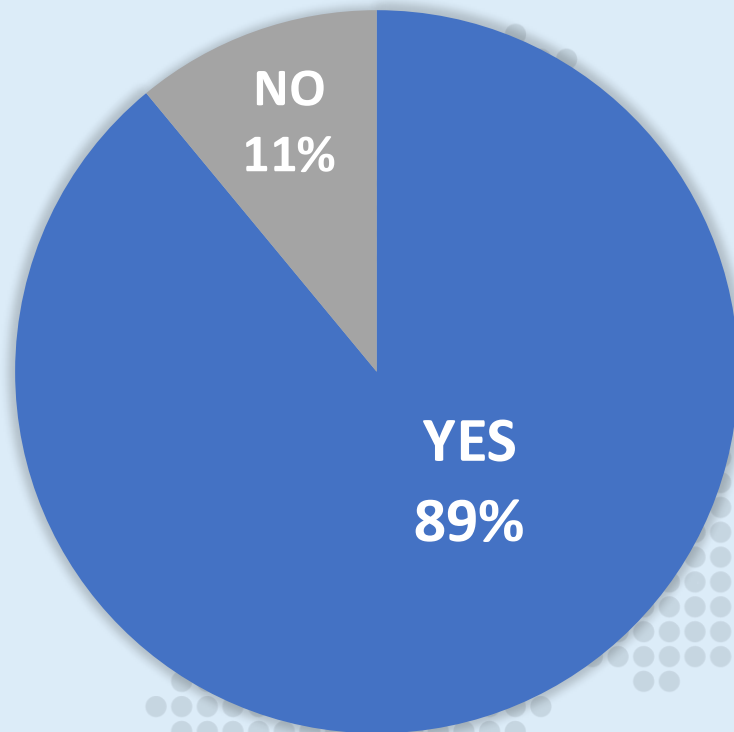


BIM use cases carried out by your organization divided by construction life cycle phases:

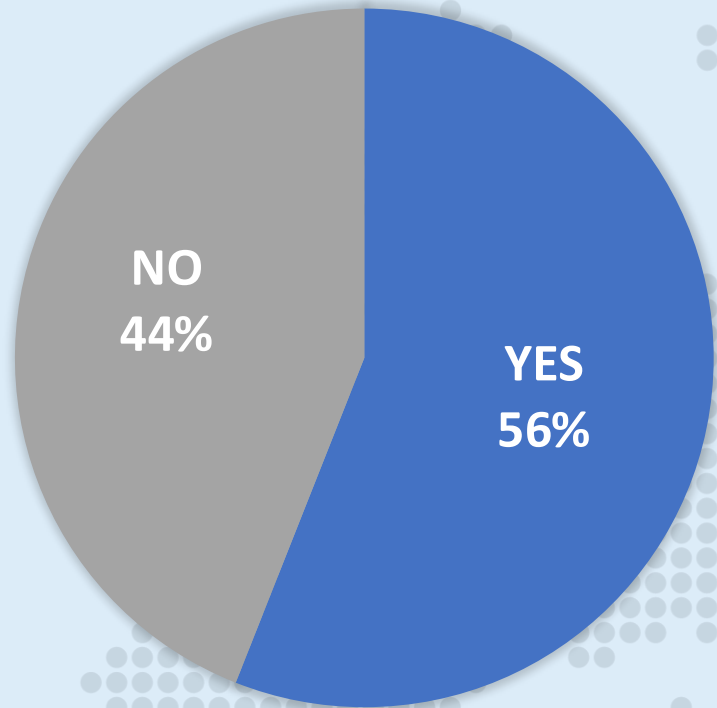
	Project planning 	Conceptual design 	Detailed design 	Construction 	FM and operation 
YES	12	15	19	21	15
NO	15	12	8	6	12
Most frequent use cases	Cost estimation, Risk management, Communication tool, visualization tool, time management tool, fixation of existing situation	Analysis tool, visualization/3D architecture models, drafting support of documents and drawings, risk evaluation, 3D laser scanning.	Ccollaboration, quantification, Modelling/ Graphic elaborations, quality control and review, coordination, drawings, 4D simulation, simulations, plan production	Coordination, as built documentation, data logging, claims, technical requests, construction planning, simulation, design review, quality control and guidance, planning, scheduling	Calculations, asset and cost management, occupation, project management and coordination, visualization, operational analysis, digital twin.

FORMALLY APPOINTED PERSON RESPONSIBLE FOR BIM

A SEPARATE BIM TEAM OR DIGITAL TRANSFORMATION TEAM



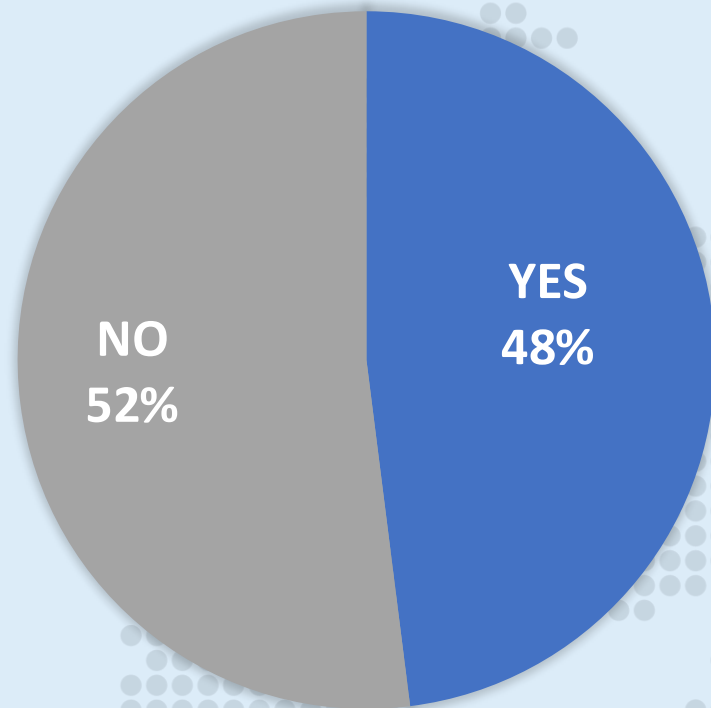
IN-HOUSE QUALITY CONTROL (CLASH DETECTION, INFORMATION CHECKS, ETC.)



Response examples:

- Data validation via Power BI, connection with IWMS systems
- Testing PIM/AIM models in a CAFM tool
- Checks according to EIR
- Checks according to organization requirements
- Clash detection
- Preset checking
- Quantification checking

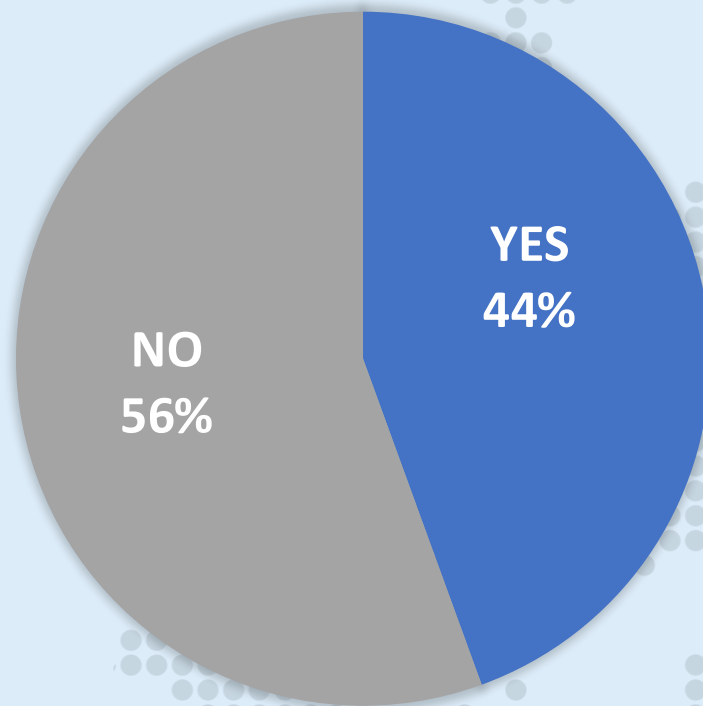
BIM USE IN PROCUREMENT PROCESS (E.G. FOR EVALUATION OF OFFERS)



Response examples:

- Sample models as a most economically advantageous offer criteria "Skills of BIM team",
- Pre-contract BIM execution plan included in the technical offer.
- Qualification questionnaire part of the qualification requirements.
- Specific roles and procedures outlined in procurement documents.
- BIM team can be the point givers in the tender process
- Models are available to the bidding party, use of EIR
- Document bundle as a part of the procurement dossier combined with a maturity matrix. Documents contain demands for offers, based on which Organization can evaluate the candidates.

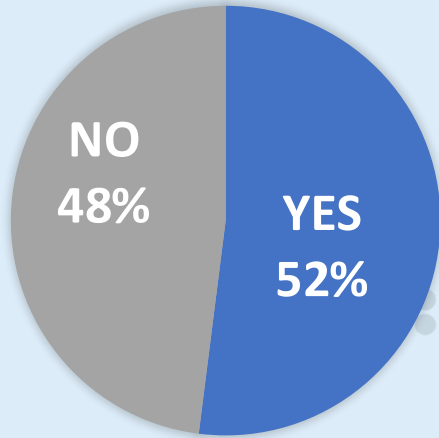
**BIM IN PROJECT MANAGEMENT
PROCESS (SCHEDULING, FINANCE
PLANNING, COMMUNICATION,
ETC.)?**



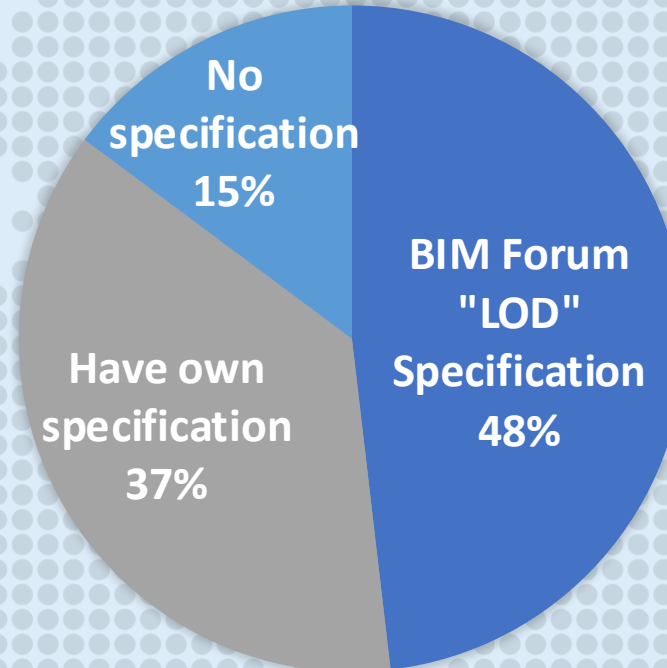
Response examples:

- i Model as a viewer/communication platform for non-technical users, ProjectWise for CDE, Synchro field for RFI's, etc.
- Communication
- Technical requests and Change requests
- Claims
- Scheduling
- BIM project management is outsourced.
- Use of CDE for communication in project, between ordering and contracting parties.

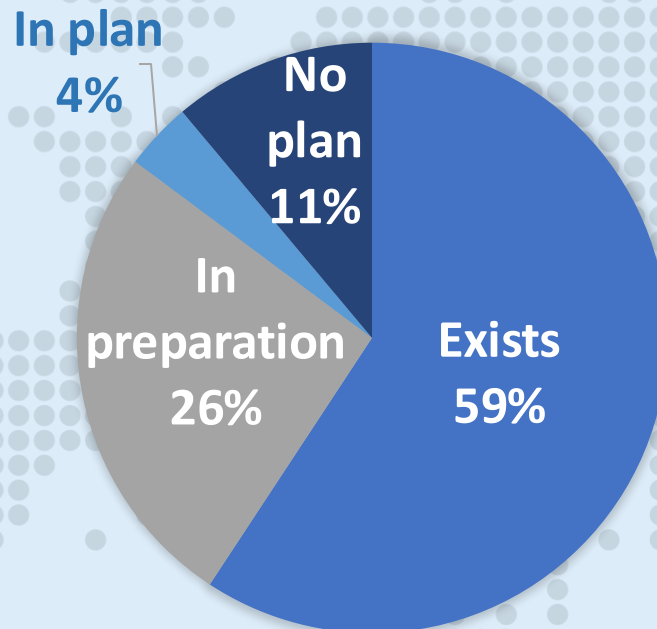
USE OF CLASSIFICATION SYSTEM?



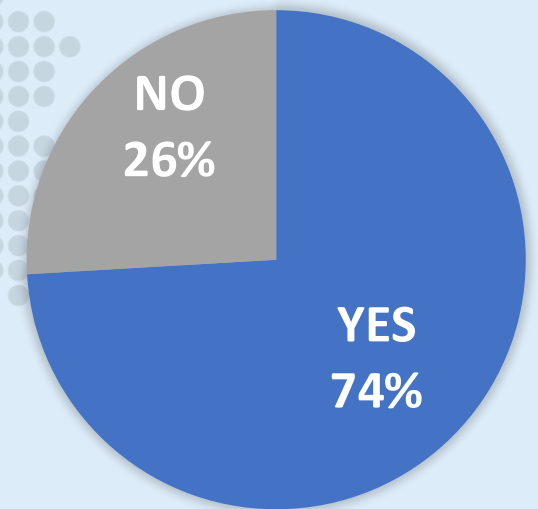
DEFINITION FOR LEVEL OF GRAPHICAL DEVELOPMENT (DETAIL)



APPROVED BIM STRATEGY



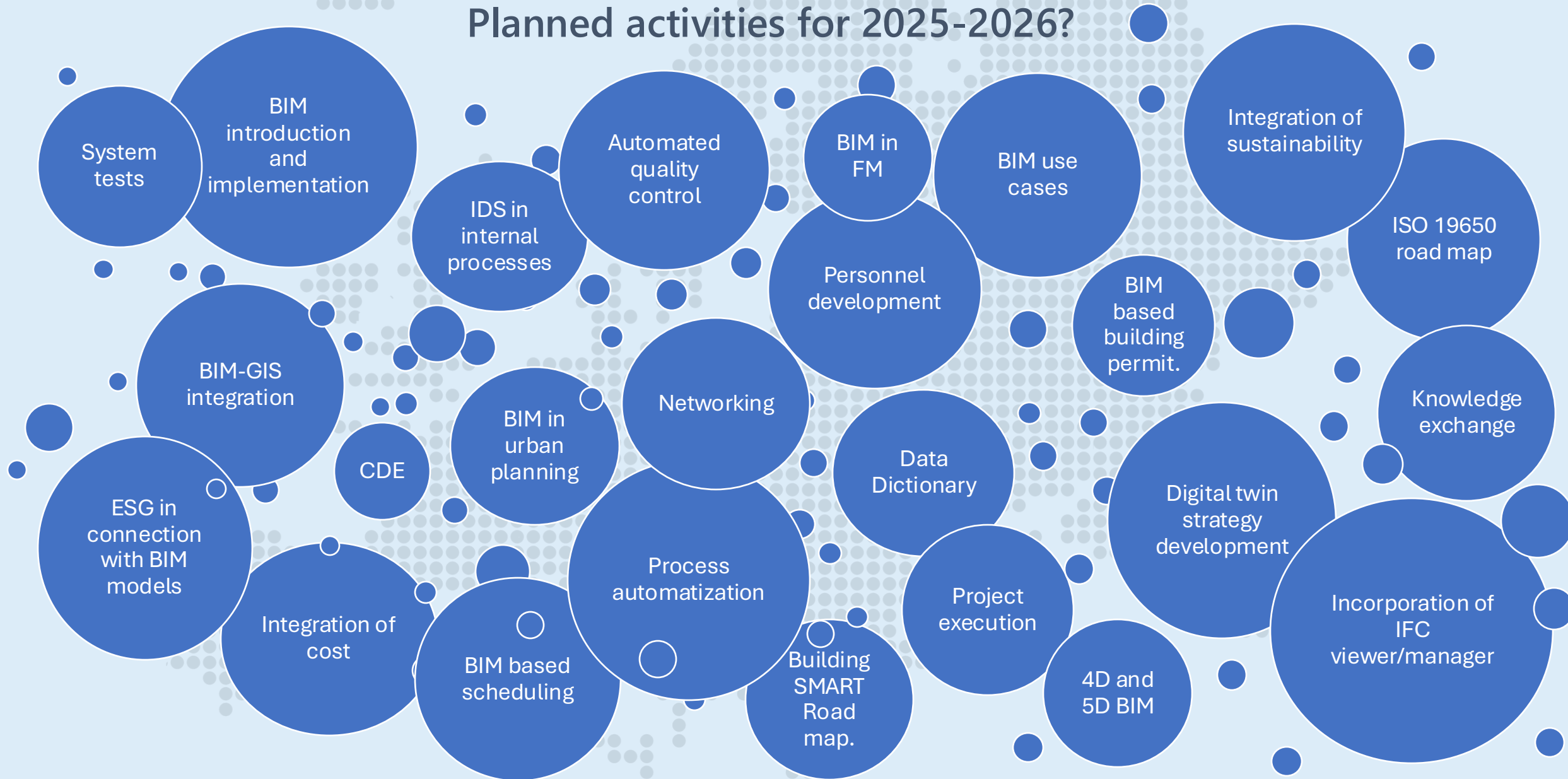
USE OF CDE



Current activities and challenges on BIM implementation for 2024



Planned activities for 2025-2026?



1.

BIM implementation and
integration into FM

- BIM for FM
- FM integration, BIM in daily maintenance
- BIM based building permits, digital twins

2.

Standardization and Digital
tranformation

- ISO 19650
- Moving from IFC2x3 to 4.3
- Internal platforms for requirements management and quality control

3.

Knowledge Tranfer and Scaling
of Expertise

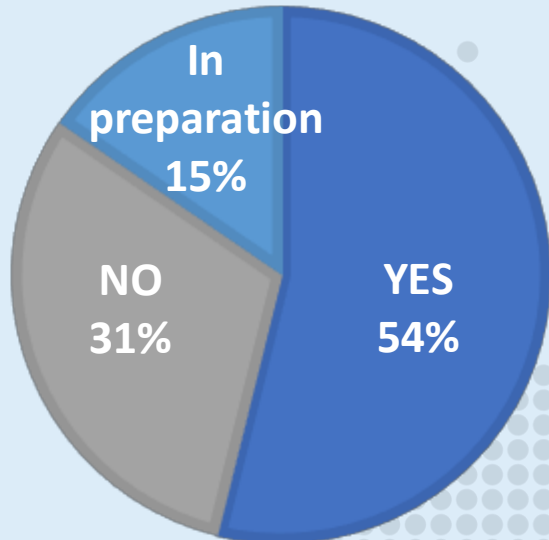
- Employee training
- Knowledge exchange
- Collaboration

Policy maker

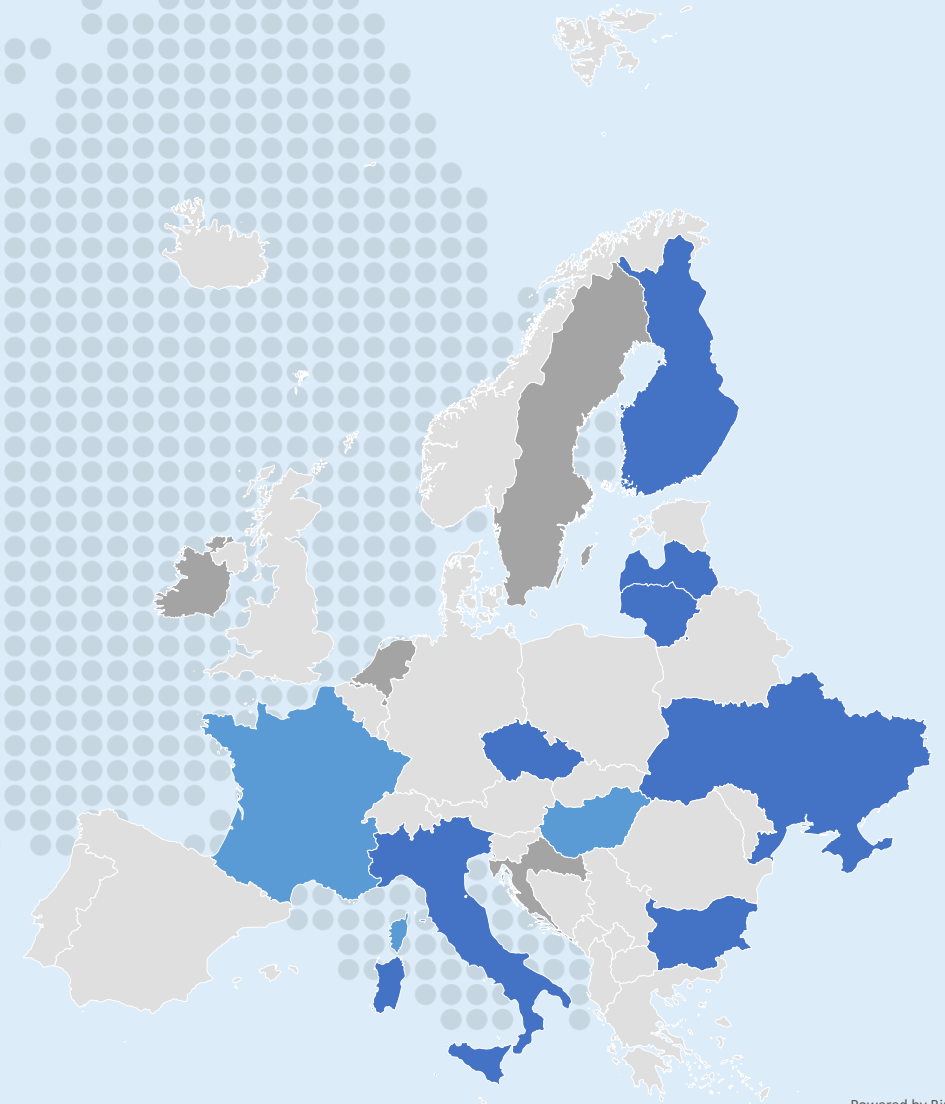
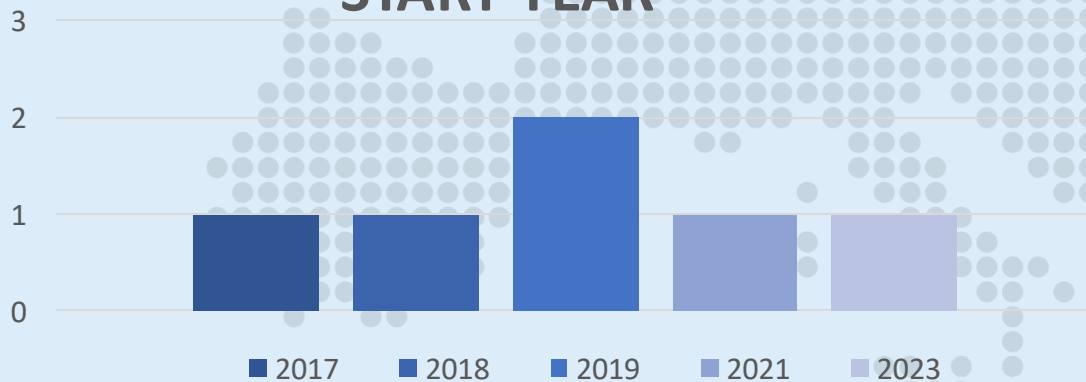


Policy maker – National BIM strategy/road map

DOES A NATIONAL BIM STRATEGY/ROAD MAP EXIST IN YOUR COUNTRY?

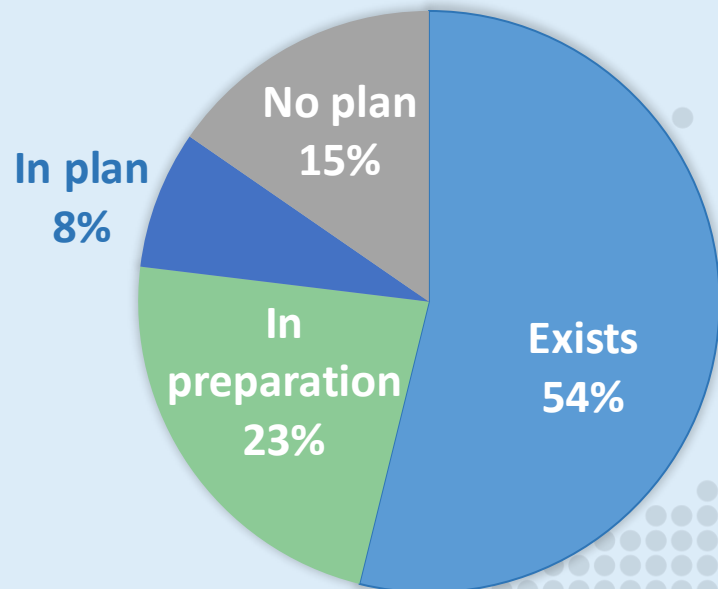


START YEAR

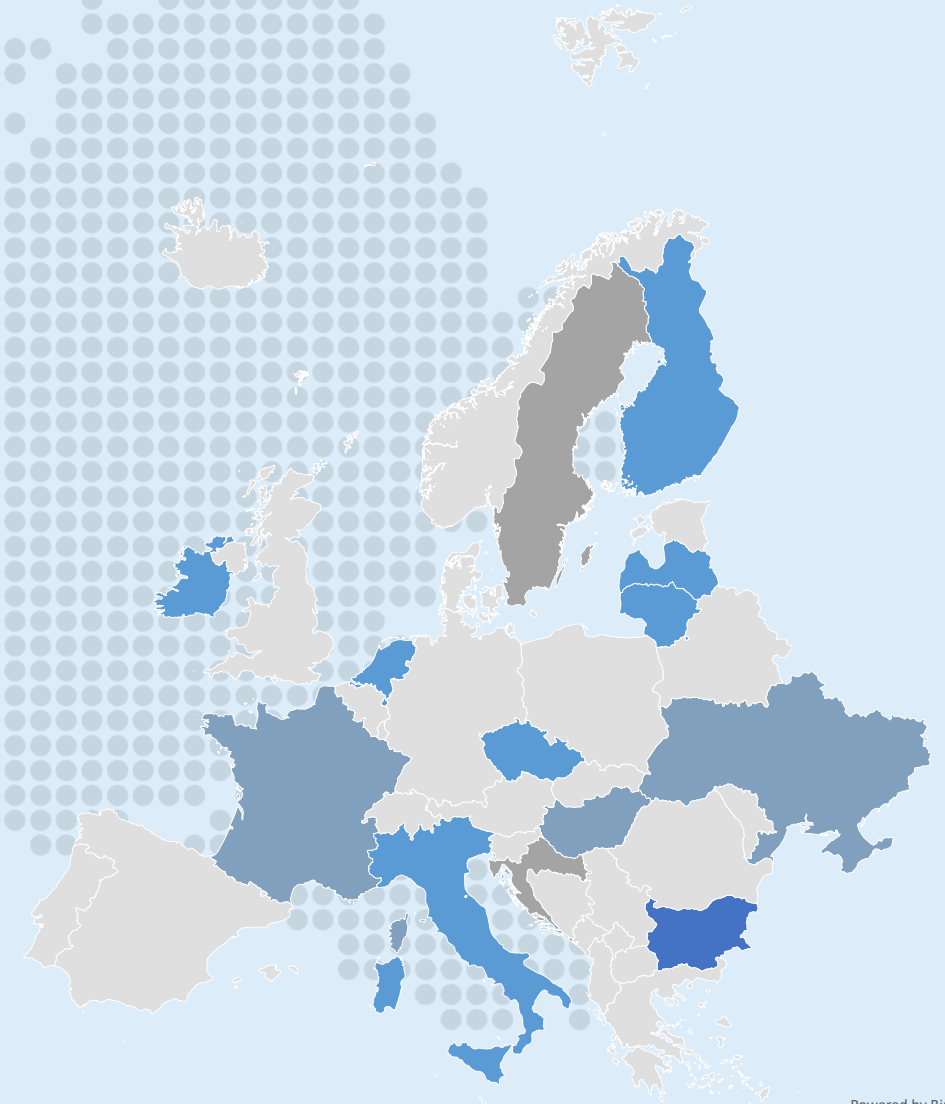
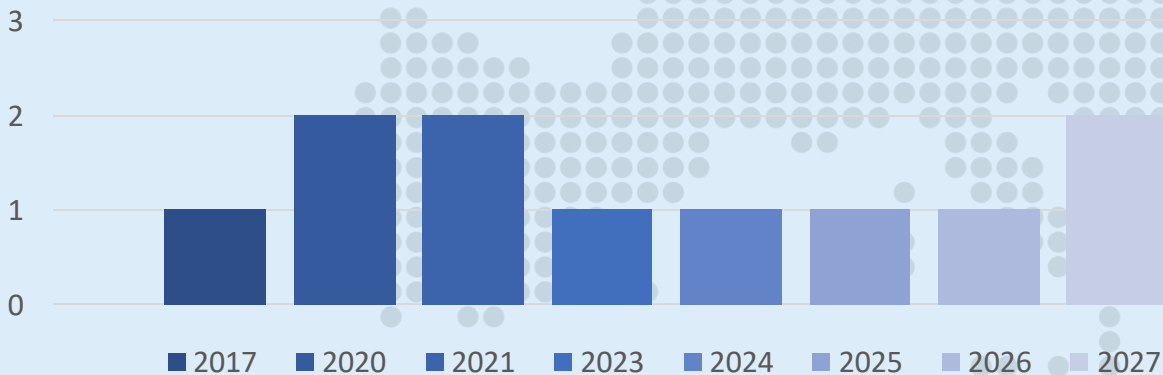


Policy maker – National BIM regulation

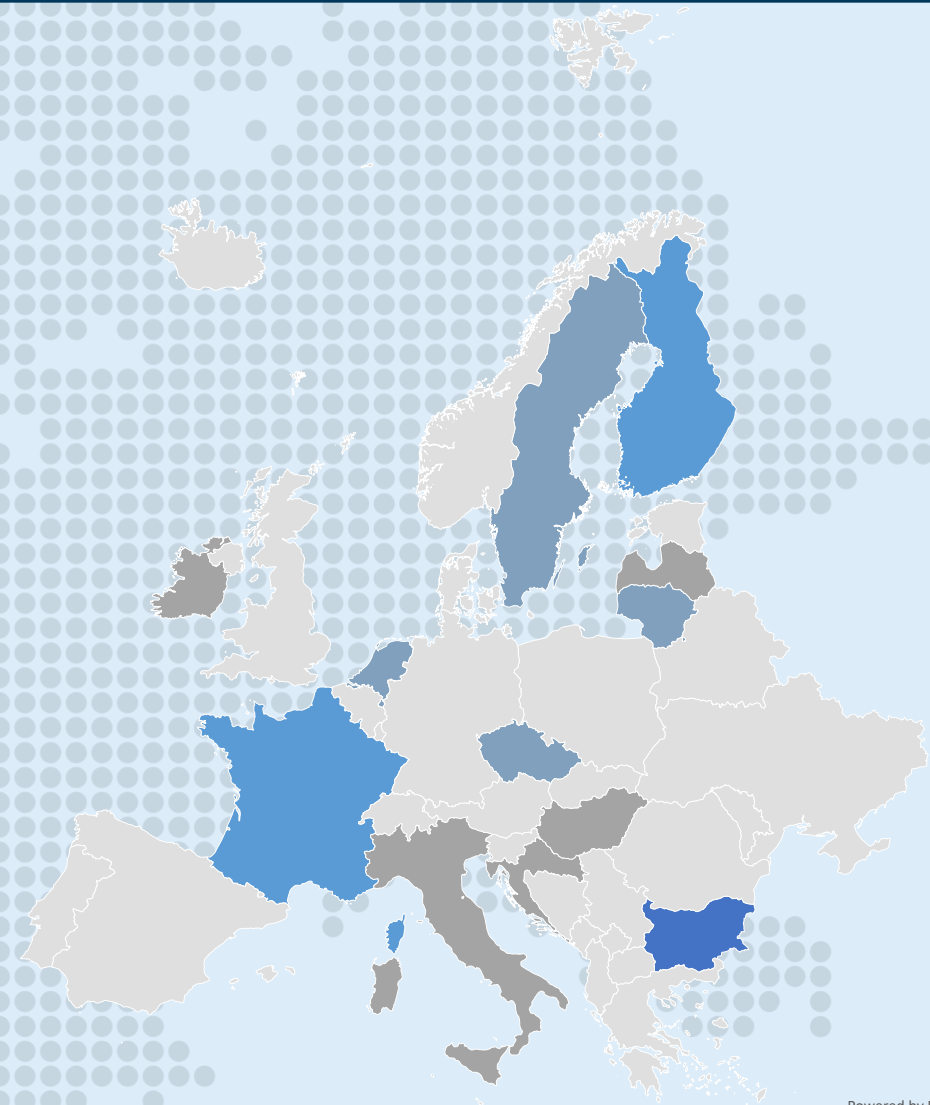
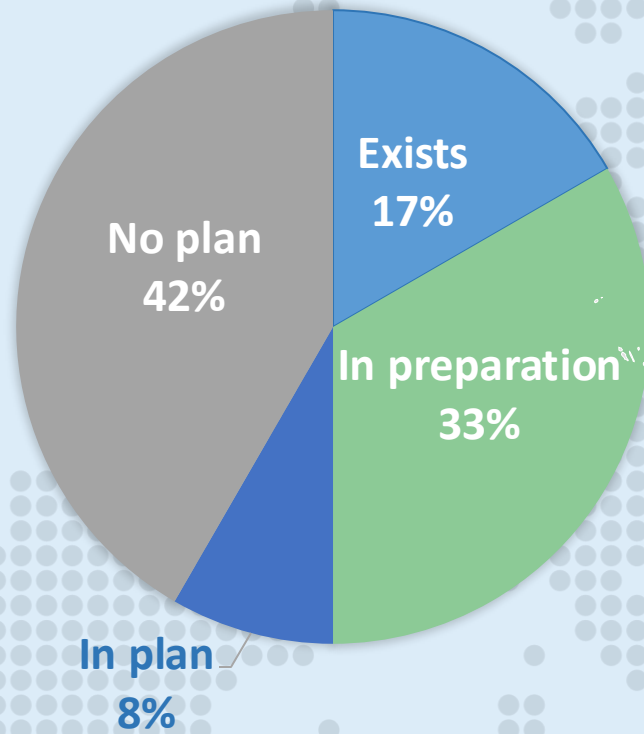
NATIONAL BIM REGULATION (MANDATORY REQUIREMENTS)



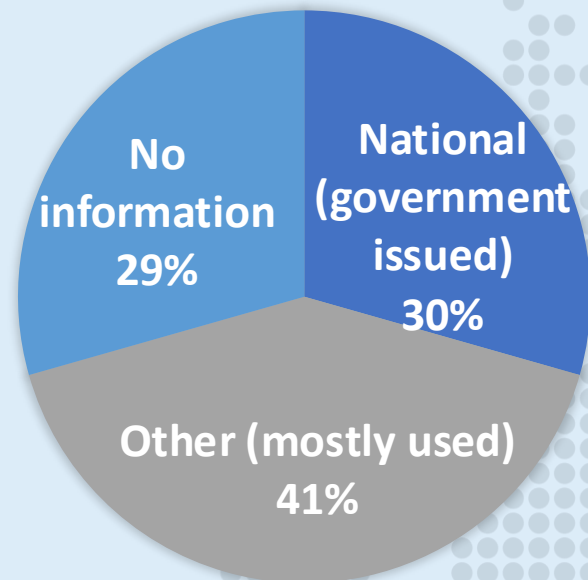
START YEAR



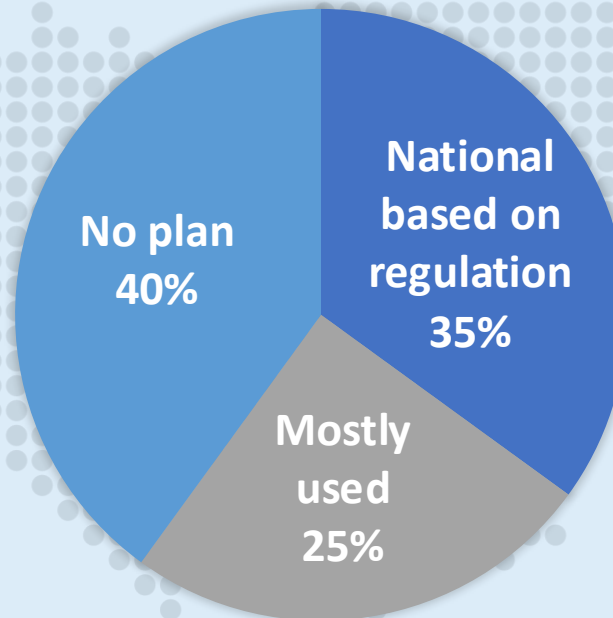
BUILDING PERMITS USING BIM



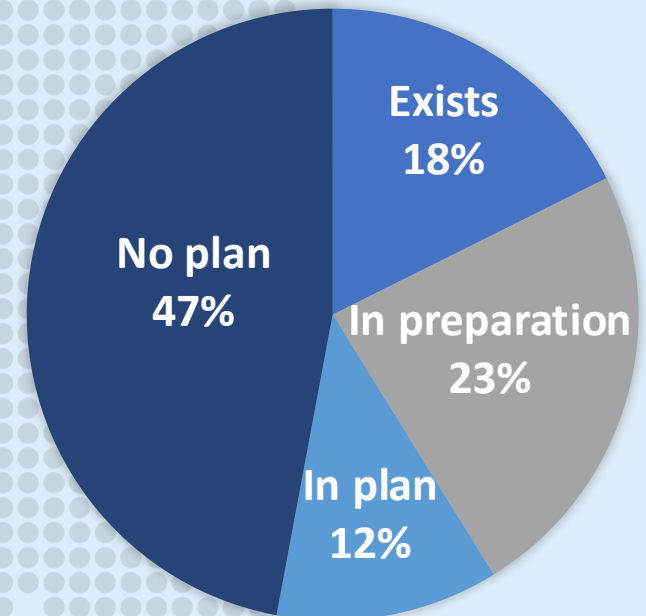
EXCHANGE INFORMATION REQUIREMENTS (EIR) TEMPLATE?



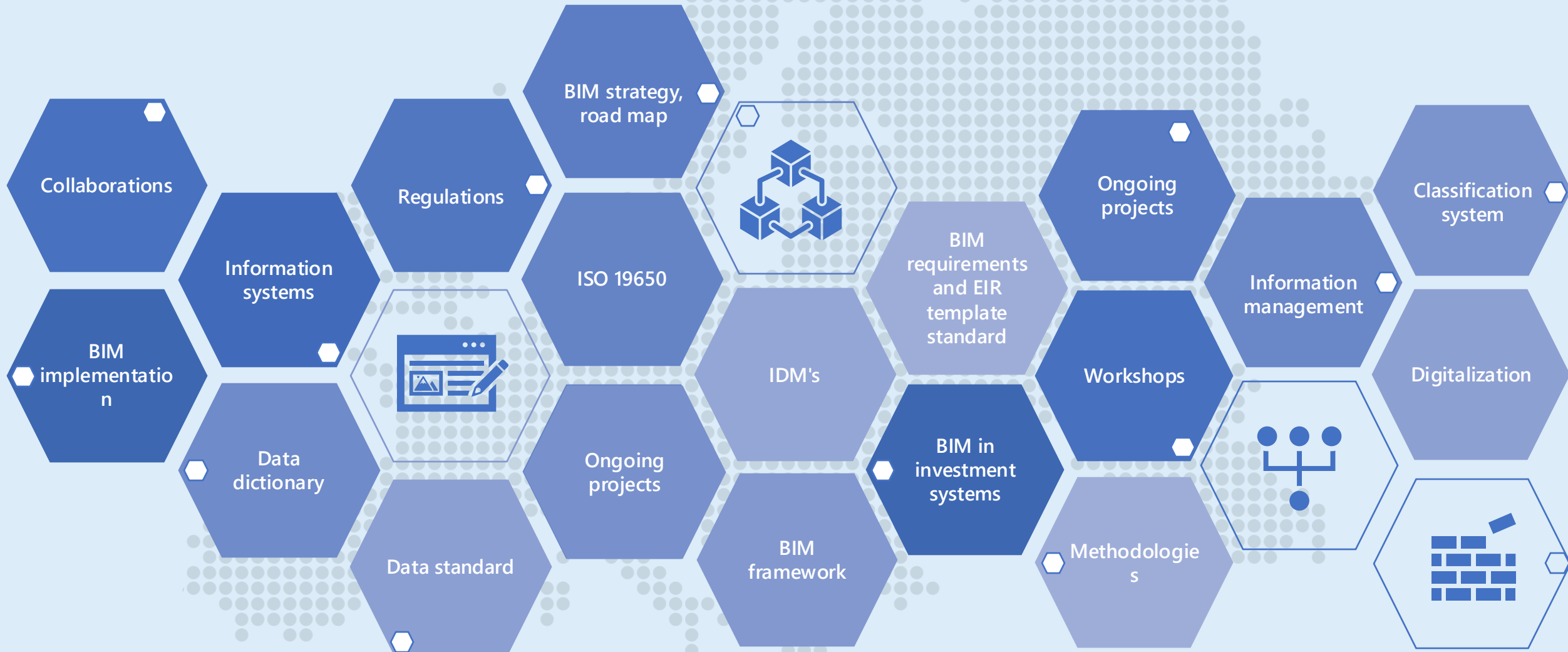
CLASSIFICATION SYSTEM



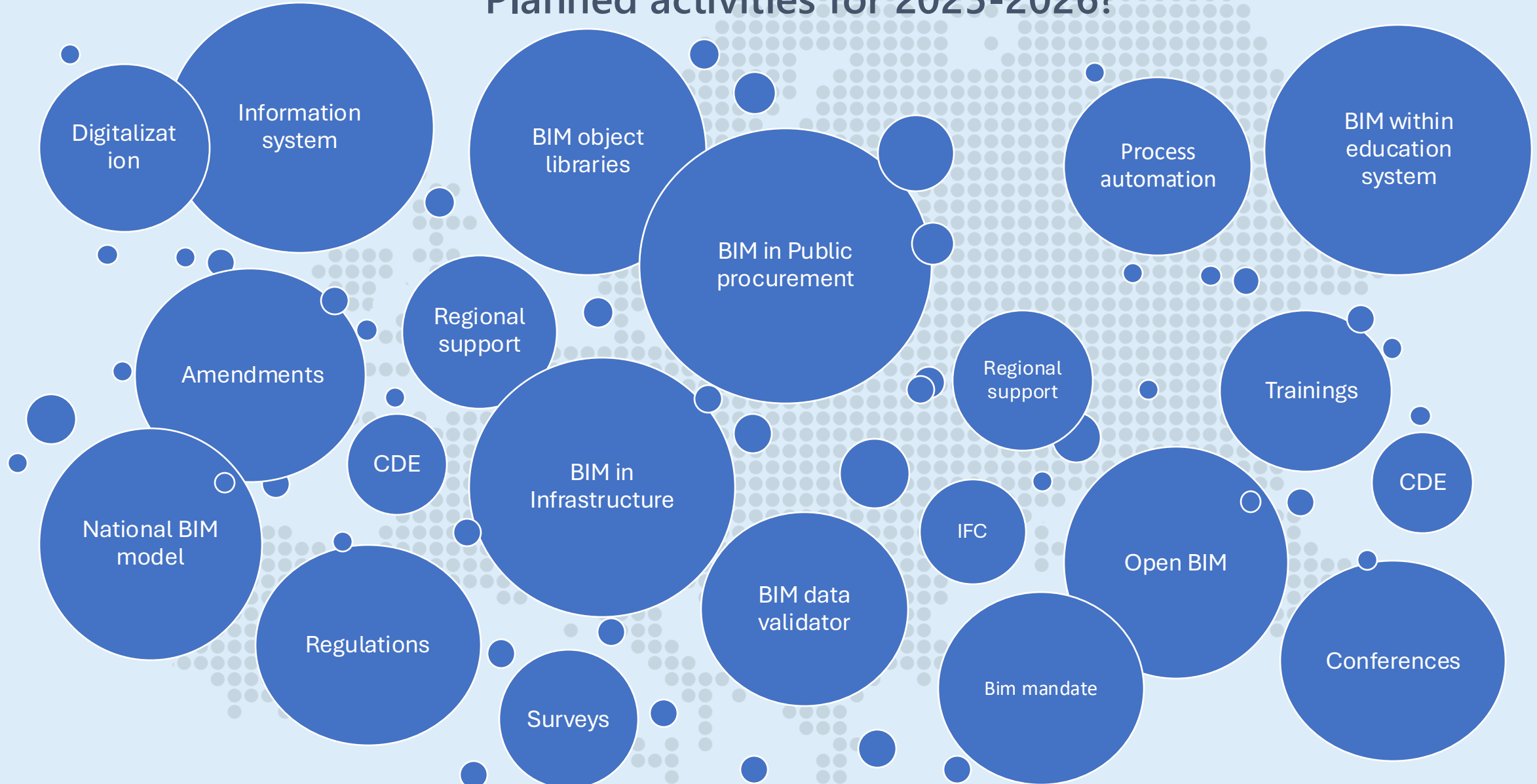
NATIONAL DATA DICTIONARY



Current activities and challenges on BIM implementation for 2024



Planned activities for 2025-2026?



1.

BIM integration in
Public projects

- Unified information system
- Mandatory BIM requirements
- Common Data Environment

2.

Development and Implementation of
National BIM Standards and
Frameworks

- National BIM models, templates, procedures and data libraries
- Public procurement regulations
- Classification system, EIR and legal amendments

3.

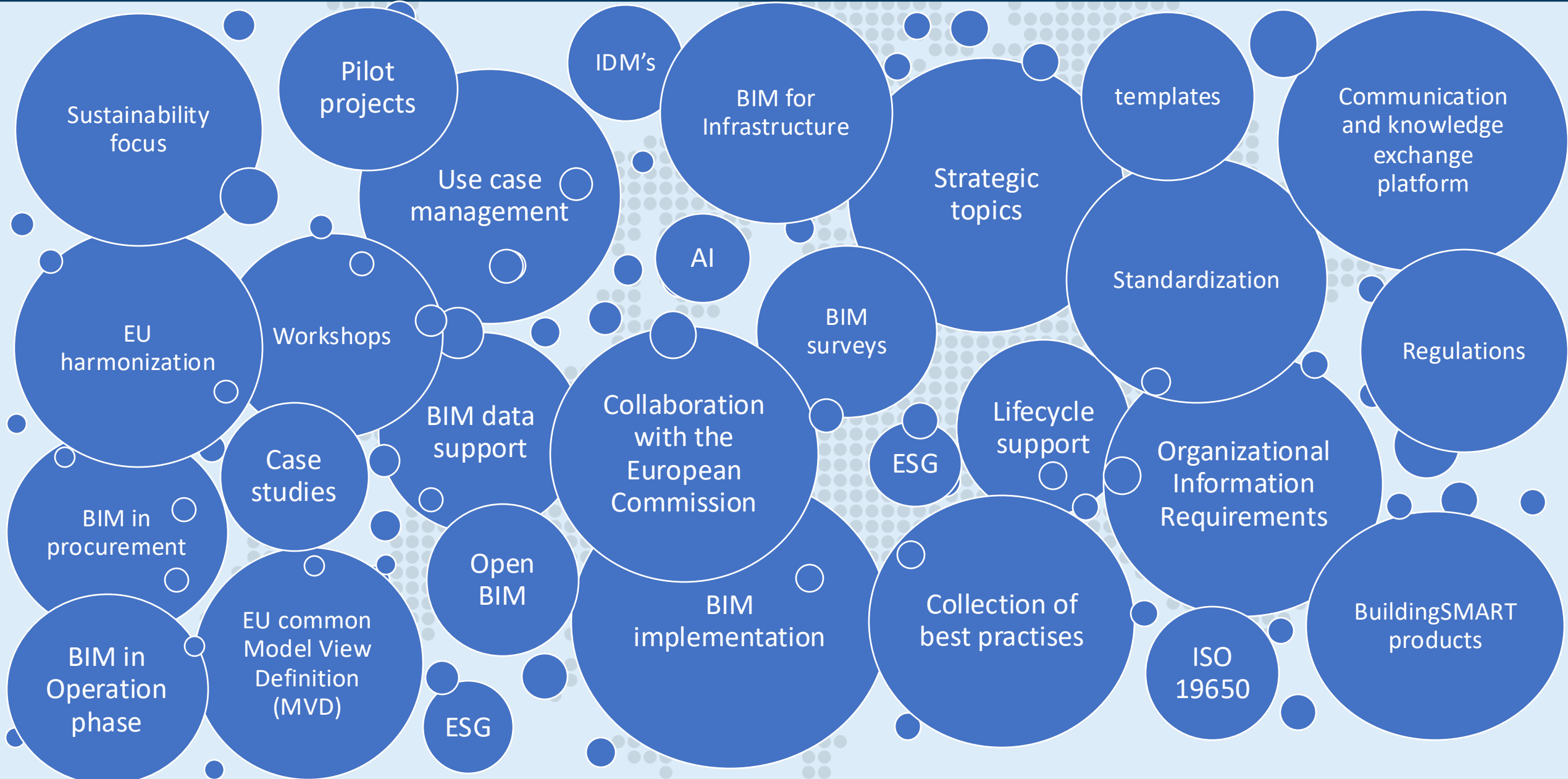
Capacity building and training

- Specialized training, preparation of curricula
- Web- based platforms and manuals



EUBTG FOCUS

EUBTG FOCUS



1.

Standardization and
Data Exchange

- Standardization of BIM and data exchange formats
- EU-wide harmonization of BIM implementation.
- Standardized information requirements and checks.

2.

Knowledge Sharing, Exchange of
Experiences, and
Best Practices

- Sharing experiences and lessons learned.
- Organizing workshops and collaborative platforms
- Creation of model documents, pilot projects, and case studies

3.

Digital Transformation and
Integration Across the
Building Lifecycle

- Full Lifecycle Approach and data sharing across it.
- BIM in FM
- Link BIM data with ESG criteria for sustainability and financial evaluations

Thank you!

For more comprehensive insights visit [EUBIM task group homepage](#) and explore full survey **REPORT**.

The full survey report will be available on the [EU BIM Task Group website](#). This report will include detailed information, including all responses, answers to additional and clarifying questions, and links to publicly accessible documents.

EUBTG 2025?

1. Communication on policy level – regular meetings (quarterly online meetings? Yearly physical meetings), bridge between standards org.
2. Continue workshops on practical level, knowledge transfer in practice
3. Helping to develop common guidelines – support/finance from EC for project-based work
4. Joint piloting – how to apply different national standards in other countries and share knowledge, public buyers platform
5. Information requirements for public procurement and building permitting
6. More agile communication channels? Not just email...
7. New handbook – twin transition and BIM? (Antonio volunteers to lead)

13:00 - 13:15

Dmitrijs Kots - EUBTG Survey results overview

13:15 - 14:15

EUBTG planning 2025:

- Changes in EUBTG chair/co-chair positions
- Establishment of a possible advisory Board for EUBTG?
- 2025 focus activities (survey comments, on-site discussion)
- Collaboration with EUBIM Public Officials Group

14:15 - 15:15

Members updates, updates from last GA, how can the EUBTG support you?

15:15 - 15:45

Networking Coffee break

15:45 - 16:45

Members updates continued...

16:45 - 17:00

Wrap-up and closing

Chairs & Steering Committee 2024

Position	Full name	Country	Organization
Chair	Jaan Saar	Estonia	Ministry of Climate
Co-Chair	Milena Feustel	Germany	Federal Institute for Real Estate Tasks
Co-chair	Jaroslav Nechyba	Czechia	Standards Agency
Steering Committee Members	Souheil SOUBRA	France	CSTB
	Laura Estevez	France	European Parliament
	Ludovica Gammaitoni	Italy (Luxembourg)	European Parliament
	Liana Anagnostaki	GREECE	Technical Chamber of Greece (TCG)
	Dmitrijs Kots	Latvia	State joint-stock company "State real estate"
	Ernesto Sacco	Italy	Anas - Gruppo FS italiane
	Aiden O'Neill	Ireland	Trinity College Dublin, the University of Dublin
	Susana España	Spain	Ministry of Mobility, Infrastructure and Urban Agenda
	Jorge Torrico	Spain	Ineco on behalf of Ministry of Transport
	Sonja	Kolarić	Ministry of Physical Planning, Construction and State Assets

Chairs & Steering Committee 2025

Position	Full name	Country	Organization
Chair	Milena Feustel	Germany	Federal Institute for Real Estate Tasks
Co-Chair	Dmitrijs Kots	Latvia	State joint-stock company "State real estate"
Steering Committee Members	Souheil SOUBRA	France	CSTB
	Christopher Raitviir	Estonia	City of Tallinn
	Ludovica Gammaitoni	Italy (Luxembourg)	European Parliament
	Liana Anagnostaki	GREECE	Technical Chamber of Greece (TCG)
	Peter?	Austria	
	Ernesto Sacco	Italy	Anas - Gruppo FS italiane
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	???		
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- 15:45 - 16:45 **Members updates** continued...
- 16:45 - 17:00 Wrap-up and closing



Who

- **BIG** is Austria's major owner of public real estate and a service provider for the government and governmental agencies.
- BIG is managing and administrating approx. 2.030 properties like *Schools, Universities, Governmental offices, Jails...* with a fair value of almost 17 billion Euros



Status of BIM-implementation

- Since 2017 BIG conducts BIM based competitions and projects.
- Right now, BIG is still evaluating the application of BIM for future projects.
- The focus is on all design stages, from point clouds support preliminary design through to developed design and as built models to support facility management.
- Facility management is in transition from cad-based to BIM-based systems.
- The roll-out of BIM as the standard method of planning and construction in the organization is planned for the future and will be one of the major efforts for next year.

Legal framework

- BIM implementation is based on the Austrian Standards, which BIG is involved in developing.
- In addition to the European standards, the valid standards are those of the A-6241 series of standards (BIM).

[Austrian public clients BIM Working Group](https://www.oiaav.at/arbeitsgruppe-oeffentliche-auftraggeber/) - <https://www.oiaav.at/arbeitsgruppe-oeffentliche-auftraggeber/>

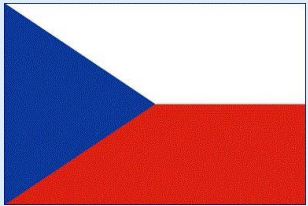


- BIM usage (last research from 2023): 25% of companies use BIM
- Secured EU funds for digitalization and various procurement processes in progress
- Increased application of BIM on public projects, but BIM implementation is not yet standardized



- Publications – final stages





The progress of the key Czech Government initiatives related to the built asset information management and built environment information modelling in 2023-2024 period:

Update of the BIM Implementation strategy in the Czech Republic

- Update of the Strategy approved by Government in 2017 for 10 years.
- Expansion of the original focus on Building Information Modeling to the broader area of built asset information management, including their connections and links within the built environment.
- Utilizing the ISO 19650 series, Level of Information Need, openBIM standards by buildingSMART
- Approved by Government Resolution No. 519 of July 24, 2024.

Submission of the BIM code proposal to the Government

- The Act on the Management of Built Asset Information and the Information Model of Built Asset and the Built Environment.
- The substantive intent of the law was approved in May 2023.
- Submitted to the Government on September 27, 2024.

Data dictionary as a Foundation for the national Built Asset Data Standard

- Initiated as Built Asset Data Standard, priority on the underlying Data dictionary.
- Utilizing the CCS/CoClass/CCI classification, eventually the RDS (ISO 81345).
- Data dictionary to be released by the end of 2024.



- BIM-based building permit live from 14th February
- National BIM Requirements update procurement
- Information Model based Urban Planning prototype
- LCA calculations preparation
- CCI-EE pilot – TalTech Campus
- National DT and Tallinn DT upgrades

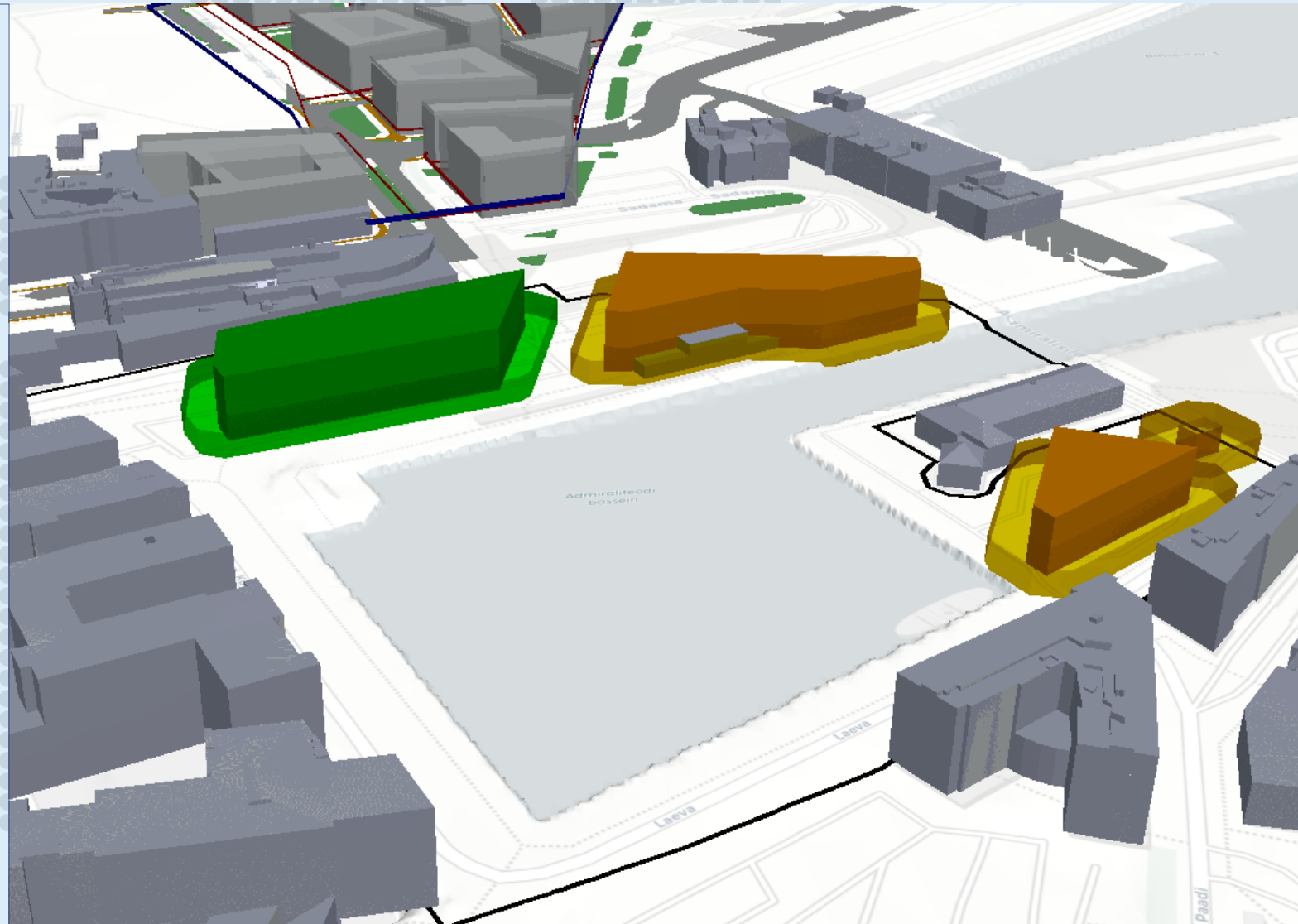
Useful links:

BIM permit project:

<https://eehitus.ee/timeline-post/bim-based-building-permit-process/>

Urban planning PoC:

<https://eehitus.ee/timeline-post/analysis-and-prototype-of-planning-information-model/>





- New Building permit act supports IFC format 1.1.2026 in new and renovation projects (buildings) as a part of building permit process. Still the final definitions on what it accurately means are under construction. <https://ym.fi/en/-/parliament-adopted-acts-that-will-reduce-emissions-from-building-and-promote-digitalisation>
 - The entire building sector on both public and private side is now preparing to adapt to the new law
 - Requires the main building plans to be submitted to building supervision authority as building information models or in otherwise machine readable format
 - The adjacent Act on the Built Environment Information System requires municipalities to provide the gathered data on buildings to a new national information system from **2027 onwards**.
- BuildingSMART Finland has started the Standardisation of the Built Environment Information Modeling project program (https://buildingsmart.fi/en_GB/rytv)
- Finnish Transport Infrastructure BIM-harmonisation program 2025-27
Finnish Transport Infrastructure Guidelines:
 - Road, rail, waterways
 - Bridge
- New [KIRAHub Digital building permit ecosystem](#), also global members are welcome
- After RAVA3Pro project, we have first automatically IFC checking process in implementing phase to use in building permit process.

**Kroqi** - <https://kroqi.fr>

Kroqi is a sovereign and secure collaborative BIM platform that assists all construction stakeholders, from the design phase through to building operation. Initially developed with the support of public authorities, the platform is now managed by a private entity, Kroqi SAS, which oversees its development and commercialization. This transition exemplifies a successful Public-Private Partnership (PPP), where public authorities help launch a project of public interest, and the private sector subsequently takes over to ensure its alignment with market demands.

BIM Plan - <https://www.ecologie.gouv.fr/politiques-publiques/batiment-numerique>

The BIM Plan, launched in early 2022, continues the efforts of the BIM2022 Plan (2019-2022) and the Digital Transition in Building Plan (2015-2018). Its goal is to generalize the use of digital tools in the construction sector and to enhance the skills of professionals. It aligns with the guidelines set by public authorities and reaffirms the government's commitment to actively support and facilitate the digital transformation of the construction industry.

Orélie: the tool to assist in drafting a BIM specification document - <https://www.orelie-bim.fr/>

Developed as part of the BIM Plan, Orélie is a free online platform that supports project owners in drafting their BIM specifications. The platform aims to complement existing BIM guidelines and references by offering an interactive tool that encourages user engagement and reflection.

Many of the outputs from the BIM Plan, as well as from previous plans, are accessible through the platform's general resources.



Since May 2024, the Greek Ministry of Infrastructure & Transportation has officially approved the National Strategy for BIM

The strategy is based on the following 6 Key Pillars:

- ❑ **Leadership from the Public Sector** : Central role in shaping and implementing the strategy, ensuring alignment with national and EU funding programs.
- ❑ **Communication**: Preparing the market for digital transformation and gain support for the adoption of the BIM Nat. Strategy.
- ❑ **BIM Skills Development**: Enhancing the digital skills of the Construction Sector (both public and private) .
- ❑ **Collaborative Framework**: Promoting stakeholder cooperation to effectively apply new regulations that will facilitate the BIM adoption.
- ❑ **Tool Development and Implementation** of open-source tools to ensure data sharing and efficiency throughout the project lifecycle (e.g., *.ifc).
- ❑ **Business Supporting**: through knowledge transfer, digital infrastructure, and BIM technology tools usage.



TEE's Initiatives for BIM Skills Advancement in Greece

- ❑ BIM Training Workshops open to Greek Engineers: Aiming at the skills & knowledge strengthening on BIM:

Topics covered
Introduction to BIM,
BEP,
ISO-19650,
Scan to BIM etc.

Future more specialized topics
BIM in infrastructure projects,
Integrating BIM into structural design,
4D/5D dimensions,
BrIM,
exploring BIM opportunities for Civil Engineers

April 2023 - September 2024

15	1.700
Workshops	Registered Engineers

- ❑ 6th EU BIM TASK GROUP EXPERIENCE SHARING WORKSHOP, *"The Challenge of Change-BIM and Human Factor"*, hosted by TEE in Athens, Greece on 19th June 2024

Followed by

- Workshop open to Greek engineers, with:
Jaroslav Nechyba, Co-Chr, *"Insights and Best Practices from EU BIM Task Group Workshops"*
Dmitrijs Kots, MSC, *"Implementation of BIM in Latvian state's Real Estate"*

- ❑ The BIM Conference, co-organized with TEE for five consecutive years
- 5th The BIM Conference on 9th October 2024:
Milena Feustel, Co-Chr, speech on behalf of EU BIM TG,
Liana Anagnostaki, MSC, insights about BIM in Greece.

2020 – 2024 :

1,000+	130+	270+
Executives	Speakers	Companies



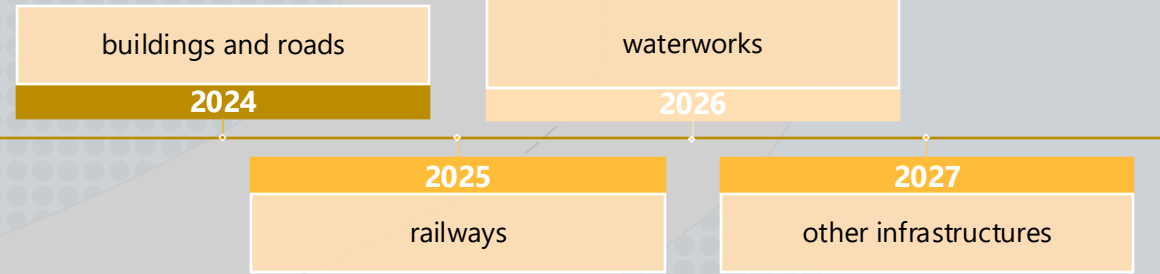
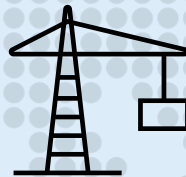
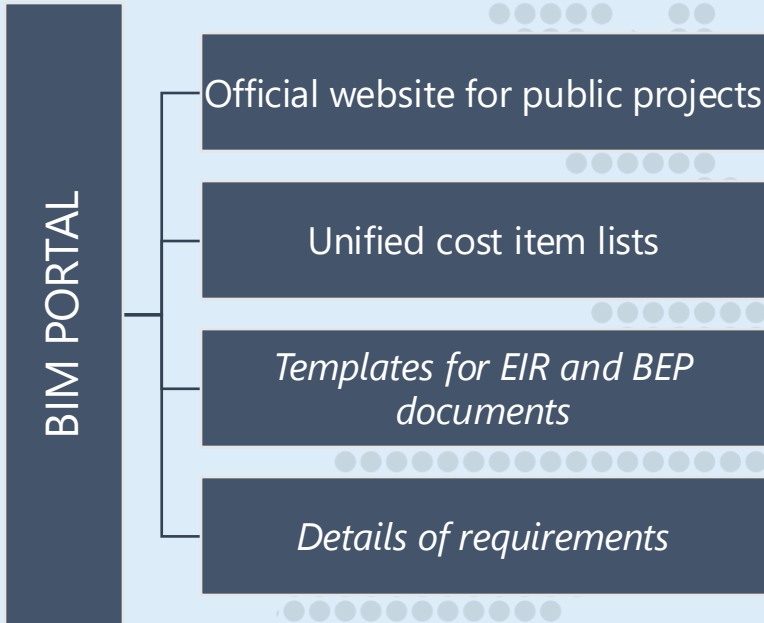
01 Law – Public constructions November 2023


- BIM mandatory for projects over EU public procurement threshold

02 Law – Hungarian architecture December 2023

03 Government decree – BIM framework September 2024

- BIM use case list
- BIM portal
- Focus:
 - Define and maintain BIM framework
 - Cost estimating – unified cost item lists
 - Define and maintain CDE





Roadmap to Digital Transition Ireland 2017 (plan for 2018-2021)

16 activities, 3 parts (regulation, competence, monitoring) / all activities are implemented or at the final phase

Regulation: Irish BIM mandatory (Capital Works Management Framework (CWMF) BIM requirement) from January 2024

Public financed new construction over €100m is required to complete with the BIM requirement, this value will reduce incrementally over a 4-year period.

Mostly used document for BIM in public procurement:

Information Management Plan – Organisational (contains Organisational information requirements (OIR))

Information Management Plan – Asset (contains asset information requirements (AIR))

Information Management Plan – Appointing Party (contains exchange information requirements (EIR))

Information Management Plan – Design Team (contains BIM Execution Plans (BEP))

Classification: the Capital Works Management Framework (CWMF) BIM requirement have required Uniclass adoption.

National Annual Conference 2024 and National Annual Survey 2024 (2023 Survey dashboard available)

The conference will take place in Cork on the 17/10/2024 and the survey will be launched at the conference

Useful links:

Capital Works Management Framework (CWMF) BIM requirement: <https://constructionprocurement.gov.ie/bim/core-bim-requirements/>

BIM Road map: <https://globalbim.org/wp-content/uploads/2024/01/NBC-Roadmap-to-Digital-Transition-updated-2020-2.pdf>

Build Digital templates: <https://www.builddigitalproject.ie/exchange-hub>

Nation annual survey 2023 dashboard: <https://www.builddigitalproject.ie/annual-survey-2023-dashboard>



Regulation: BIM is mandatory in public sector*

Starting from 01/01/2025 it will be mandatory for:

- new construction works and interventions on existing buildings/infrastructures (over € 1 million);
- all ordinary and extraordinary maintenance previously carried out in BIM;
- all projects, whose tender involves the use of BIM as an award criteria, when contracting authorities have accomplished the application requirements.

** A revision of the public contracts code is expected by the end of 2024. No substantial changes to the roadmap are planned*

Application requirements for contracting authorities (tendering and awarding organizations)

The CA must adopt a training plan, a software acquisition plan, a BIM Guide (OIRs and workflows), a common data environment and open formats are mandatory. Each CA must designate the role of CDE Manager and BIM Manager in their organization; a BIM Coordinator must be identified for each project.

Mostly used document for BIM in public procurement (about 1123 public tenders in 2023)

The CA must develop EIRs and PIRs/AIRs for each tender. Final inspection activities must also be carried out on BIM models and BIM documents.

Education: The CAs have to provide training for the roles involved into the information management processes.

Major national standard (UNI 11337) and international standard (ISO 19650):

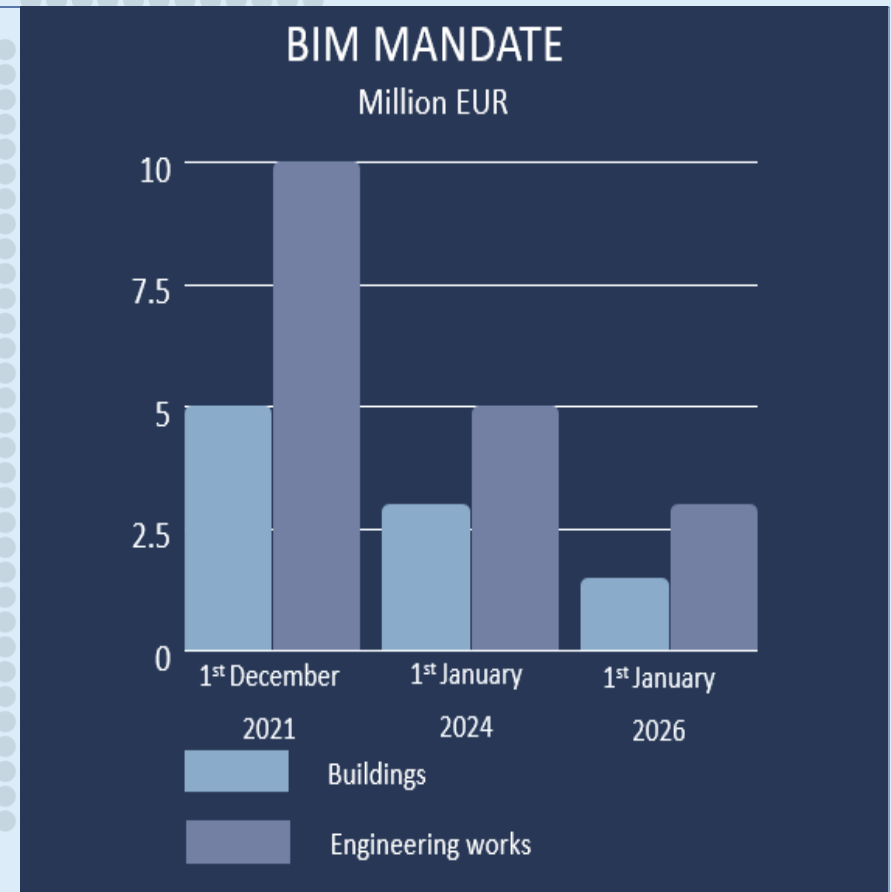
UNI 11337 Standard Series Building and civil engineering works - Digital management of the informative processes: it's ongoing the revision and the development of existing and new chapters including: information management for infrastructures, information management roles and guideline for BIM implementation in the public tender sector

Use cases: Digital Twin adoption for the management of asset information during the whole life cycle, Digitalization of construction site activities and documents

Italian Project and Works planned in the NextGenerationEU can be designed based on Information Management principles. Furthermore, public tenders for projects such as urban regeneration are also developed with a focus on Information Management, which becomes a criterion for awarding points.



- BIM mandate ([Government Resolution](#)) – changed in October 2024
- Based on the [BIM-LT project](#) results, new legislations have been issued:
 - EIR ([adopted](#) by the Minister of Environment) – approved in February 2022, changed in August 2024;
 - National construction information classification system NSIK (based on CCI) – to be approved in 1st November 2024;
 Other results of BIM-LT project:
 - Ecosystem of other BIM normative documents (standards, legal acts);
 - A set of methodological documents for the execution of public procurements.
- Establishment of [Construction Sector Development Agency](#)
- [Building data bank project](#) (1st September 2023 – 1st September 2025);
- Mandatory Digital Logbook for Construction works - 1st May 2023



For more information:
www.construction40.lt



Coffee Break

15:20 – 15:35



www.bimas.sk

Digitization strategy of Construction sector – road map towards 2032 (urban planning, automation of building permissions, fully digitized processes..)

The Authority for Spatial Planning and Construction of the Slovak Republic (<https://stavebnyurad.gov.sk/en/>)

National BIM Strategy – to be presented next week, Initial phase, not supported by government yet

BIM in public projects: No mandate yet, although **growing number of projects** with BIM requirements (public buildings, hospitals, highways, etc.)

Support of Public projects:

- How to define BIM project – EIR (<https://www.bimas.sk/standardy>)
- BEP template,
- Set of recommended nongraphic information.

Classification: Recommended to use IFC 4.3 Classification (ISO 16739) and RDS classification (IEC 81346) /CCI

Education: University level training, incorporated in several curricula. Aim is not to create separate BIM programmes.

Activities:

BIM4FREE - roadshow for students

BIM challenge - University students' competition (8 years)

BIM summit - Conference for high-level management

National BIM Conference - coming next week, 10th anniversary

BIM adoption survey - every year since 2017 (8 years) – overall BIM adoption changed from 17% (2017) to 25% of the market (2024)



On **1. 1. 2025 BIM mandate** will be applied for projects of national importance, as defined in the **Building act**:

- 1. facilities of general social importance:** (sports arenas for over 5000 visitors, cultural buildings for over 1500 visitors, hospitals ...)
- 2. facilities in which protocol services:** state protocols, diplomatic and consular missions,
- 3. facilities that are of particular importance for the security:** government, parliament, defence, police,
- 4. industrial buildings and construction complexes:** power plants over 10 MW, chemical industry, warehouses and tanks with highly flammable liquids, fuel oil storage,
- 5. transport infrastructure:** highways and expressways, main roads, main and regional railway, international and NATO airports and ports, border crossings;
- 6. pipelines and power lines:** oil pipelines with a diameter of 300 mm, gas pipelines with an operating pressure higher than 16 bar, power lines of voltage 110 kV,
- 7. water facilities:** large dams, high-water embankments,
- 8. radioactive waste disposal sites;**
- 9. nuclear and radiation facilities,**
- 10. other facilities** for which the **ministry's jurisdiction** is determined by a special regulation for issuing a building permit.



National BIM Road map 2024: 6 key points: common terminology, incentives, minimal viable deliverables in public procurement, education, collaboration with software developers (public/private collaboration)

Strategies: Trafikverket has published a new strategy; Strategy for Information About Assets Including BIM, which replaces the previous BIM strategy. The new strategy connects BIM with digitalization of asset management. An implementation plan of the new strategy has been developed. Important parts are the use of buildingSMART openBIM workflows and an *interoperable* asset registry for civil works and buildings.

Regulation: Boverket reports a suggestion to implement laws regarding BIM on a high level coupled with ordinances to allow for more detailed regulations being published by specialized government bodies.

Classification: A classification system has been created (CoClass) based on IEC 81346 and further standardization is being assessed.

Education: Most education is vocational training post Ba/Ma in private form. A vast number of guidelines and practices are being developed and published by actors such as Smart Built Environment, BIM Alliance (Swedish chapter of buildingSMART) and Nationella Riktlinjer (National Guidelines).

Use cases: National PoC using IFC Envelope Extractor (CHEK-project) to extract geometry to be used in building permits and updates of national map recourses. Further functionality for data extraction (areas etc.) is under development.

BIM Guidelines: The private initiative BIM Alliance with the support from publicly Smart Built Environment have developed Nationella Riktlinjer and anticipate a new release, focused on BIM implementation, Q1 2025.



Useful links:

Boverket – The National Board of Housing, Building and Planning

BIM-report: <https://www.boverket.se/globalassets/publikationer/dokument/2023/byggnadsinformationsmodellering-bim.pdf> (PDF)

CoClass: <https://byggjtjanst.se/tjanst/coclass>

PoC Byggnadsportalen: <https://byggnadsportalen.se>

Trafikverket – Swedish Transport Administration

BIM Strategy: <https://trvdokument.trafikverket.se/fileHandler.ashx?typ=showdokument&id=8b0b1bab-8c0b-4f5c-ac67-afb885067dcb> (PDF)



Achievements

- 13.11.2019: Public release of official EU BIM Handbook in Ukrainian
- 27.01.2020: Finalization of “Road Map for Implementing BIM in Ukraine“
- 17.02.2021: Decree № 152 of the Cabinet of Ministers of Ukraine on the approval of the Concept of implementation of BIM-technologies in Ukraine and the approval of the plan of measures
- 08.07.2022: Adoption of the draft of the Law on BIM № 6383 in its first reading by the Verkhovna Rada
- Harmonized more than 50 BIM standards (ISO & EN) and 18 are official translation
- In 2024, an international project was launched to develop and integrate digital construction expertise and BIM-based permitting processes into the Ukrainian e-construction platform as a means of accelerating recovery and increasing transparency and accountability (MinRestoration and MinDigital).
- As part of the work on the creation of the Unified System of Classification and Codification in Urban Development, were developed Classifiers of Urban Planning Objects, of Functional Zones for Objects, of Structural Elements
now in progress Classifiers of Construction Products, of Machines and Mechanisms, of Professions, of Business Processes, what should help automate resource information management processes



Plans

- Adoption of the Law of Ukraine ‘On Amendments to the Law of Ukraine “On Regulation of Urban Development Activities” regarding the introduction of building information modelling (BIM technologies) and scientific and technical support at all stages of the life cycle of construction projects, improvement of the procedure for inspecting objects commissioned in accordance with the procedure established by law’
- In 2025, there will be introduction of the national BIM education programs to facilitate the training of qualified specialists using BIM in Ukraine (together with the Ministry of Education)
- Modernization of the software of the Unified State Electronic System in the Field of Construction (USES) for registration of project documentation with the ability to upload files in IFC format (BIM models) and automated verification of some indicators of construction expertise
- Use the databases of the Urban Cadastre at the state level to spatial planning and obtaining construction permits
- Implementation of electronic management of the procedures for approving development plans and issuing construction permits through the Unified State Electronic System in the Field of Construction (USES)



BIM at the European Parliament – general updates and strategy

- BIM as part of the **Annual Work Program** of DG INLO
April 2024: Separation of the 3 sites: Brussels, Luxembourg and Strasbourg
- BIM for **Facility Management** - Strasbourg and Luxembourg
Representation of the facilities (physical and functional characteristics)

3D Architectural model

Graphic representation 3D
LOD: 200/300

Geometric info

Data entry

Database
Fullfilment of parameters

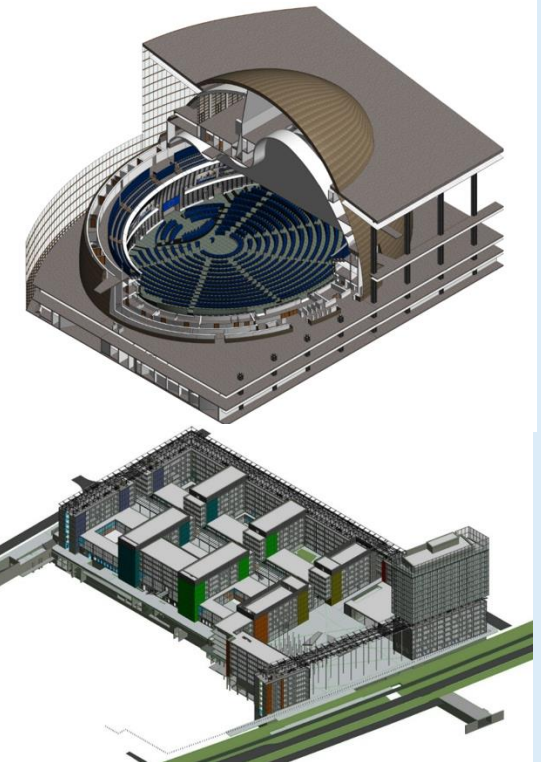
Non geometric info



- Definition of **BIM Uses**
- **Digital Twin**
- **Outside the model**
CDE, data sheets, plans As Built
Power BI for reports and data visualisation
- **Workshop** EUBTG IV – BIM for FM in February 2024

Common strategy

505.000 m² of modelised buildings





1) Overall Policy Goal of the German Federal Government:

BIM deployment at Federal Level as pilot for all government entities, supporting the digital transformation of the infrastructure and construction sector with a focus on the entire life cycle

2) Key Interventions and recent progress

a) BIM Deployment at Federal Level for national infrastructure networks and buildings progressing

b) Knowledge Management and Expertise for the entire Sector: www.bimdeutschland.de

“BIM Deutschland” as a national BIM knowledge center: developing road maps and technical documents for BIM Deployment, open standards and concepts with a focus on public clients

➤ New monthly newsletter, online Seminars, networking activities

c) Federal BIM Portal as technical tool and processes <https://bimportal.bimdeutschland.de>

BIM object templates, module properties, classifications, feature and EIR databases, inspection tools

➤ April 2024: Go Live of the new EIR Module

d) Continued support for BIM Standardization and Harmonization at national and international level

➤ New monthly updates in the BIM Deutschland newsletter

BIM Standardization Roadmap: <https://www.din.de/de/forschung-und-innovation/themen/bim/normungsroadmap-bim>



- 3) Current Progress in Infrastructure (National Rail., Trunk Roads, Federal Waterways) www.bimdeutschland.de
- Active implementation of the sectoral BIM Strategies
 - So far ab 600 Pilot BIM projects implemented for national infrastructure projects
 - Pilots on establishing Digital Twins in infrastructure and aggregate work on documenting/mapping 150 Projects
 - Wide range of research and development projects addressing innovations for BIM deployment, Digital Twins, BIM integration with GIS, AI and new surveying methods and sensor technologies www.bmdv.bund.de

4) Current Progress in the Housing and Building sector

BIM implementation in federal building projects act as a lighthouse models for the entire construction value chain

Digital Building Permit:

Building permit is a focus service within the digitalization of the administrative services which uses a process room as a bidirectional collaboration platform – Roll Out until the end of 2024

Common standards and guidelines for the BIM-based building permit based on researches are being developed

Future roadmap:: Use of AI-based virtual assistants/ Automation of processes to increase efficiency in administration

Digital Building Permit: <https://www.digitale-baugenehmigung.de/>

Digitalization the entire Sector

Support through e.g. research funds, networking, expert groups on AI, automation of the construction processes as in serial housing constructions, development of tools for circular economy such as the digital building resource pass



AOB

Any Other Business?

Thank You!

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T A S K G R O U P