

RDS1

Guidance for Regulators

13 March 2024

Regulatory Domain – Session 1

Presenting the final draft of the "Guidance for Regulators on openBIM"



Franco Coin
Italy Chapter

Code of Conduct - Competition Law

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Full document



Agenda

- Introduction, scope and objectives
- The guide
- Key challenges
- Discussion



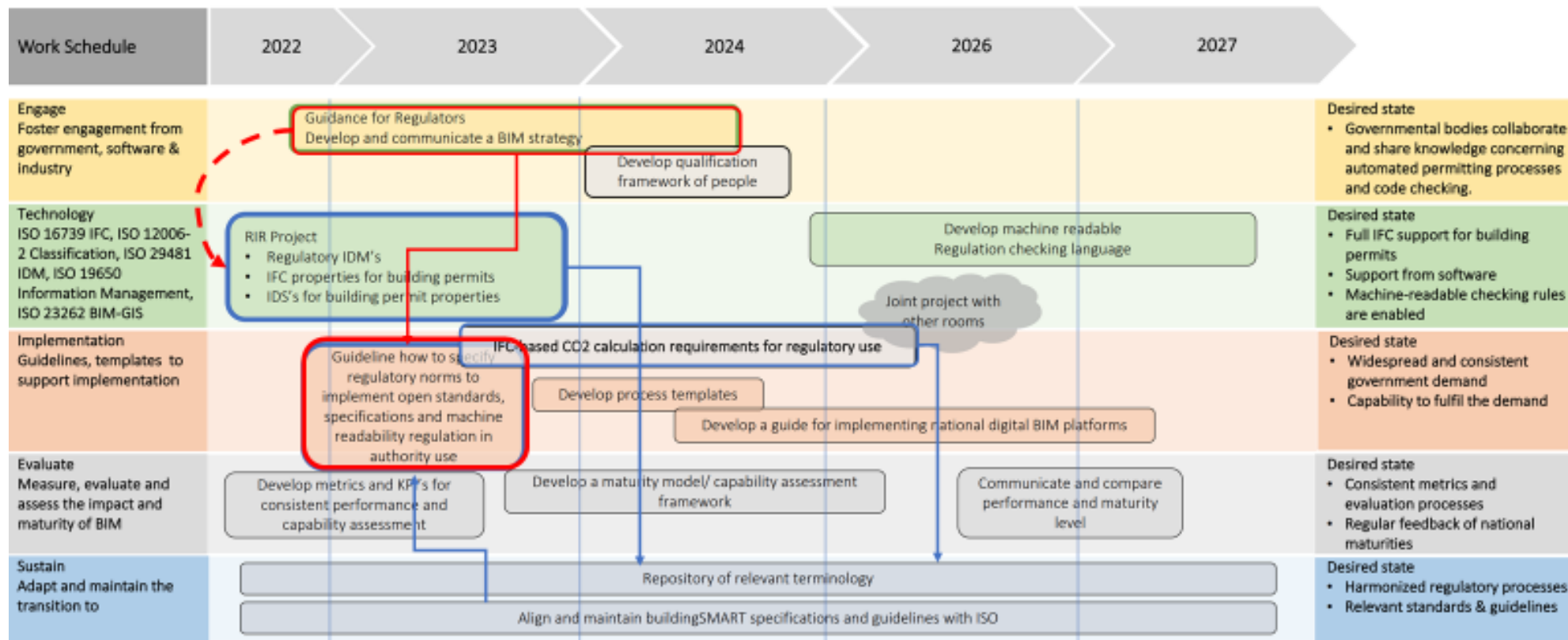
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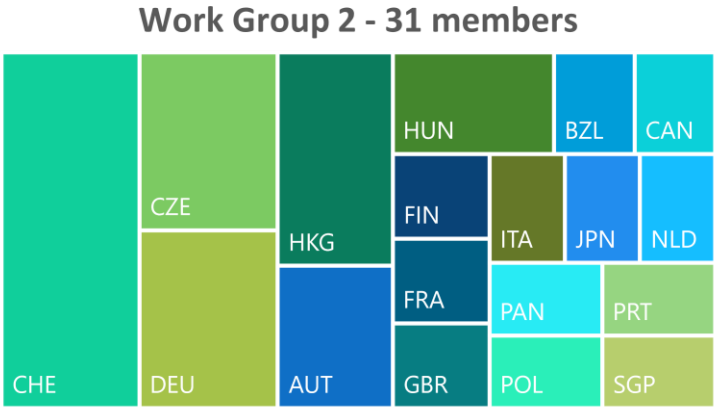
Guidance for Regulators on using OpenBIM [aka G4R]

Work Schedule of the regulatory room Projects



The project has been unanimously approved in November 2022

The G4R team



The G4R Editorial team	
Eduardo Toledo	BRZ
Luis Vargas	CRI
Miguel Azenha	PRT
Sergio Muñoz	ESP
David Fung	HKG
Trajche Stojanov	MKD
Franco Coin	ITA
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Mirbek Bekboliev (BuildingSMART Deutschland)

Francesca Noardo (OGC – Open Geospatial Consortium)

..and a special thank you to our “ghost writers” Warwan Solihin, Rick Klooster and Nick Nisbet

The scope



Clear a narrative text answering the major questions about

Benefits: What does OpenBIM offer Regulators?

Use: What are the steps ?

Support: Are there tips and tricks to meet the challenge of building e-permitting?

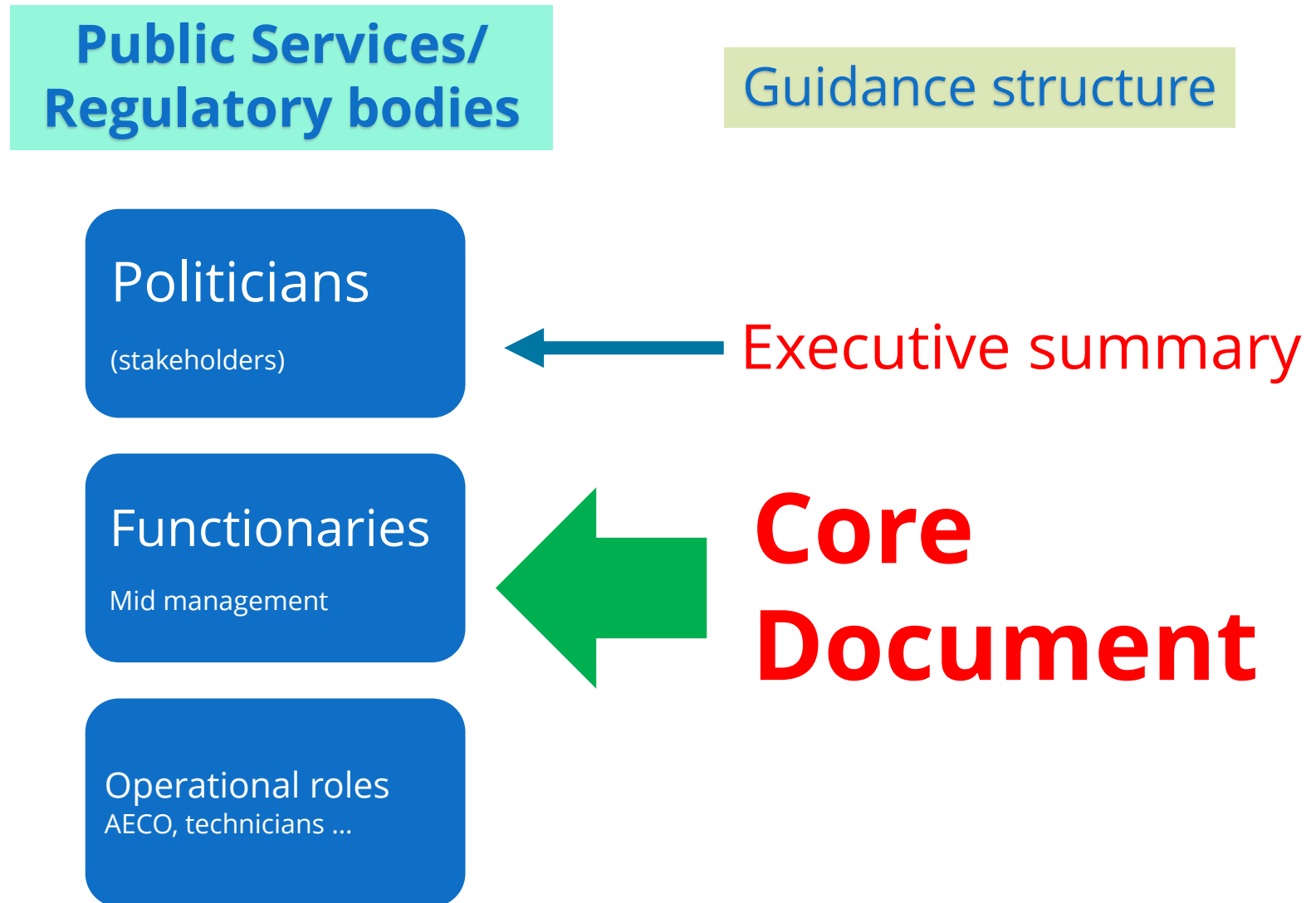


Report examples and illustrations from around the world of how the **digital building permitting** can be achieved



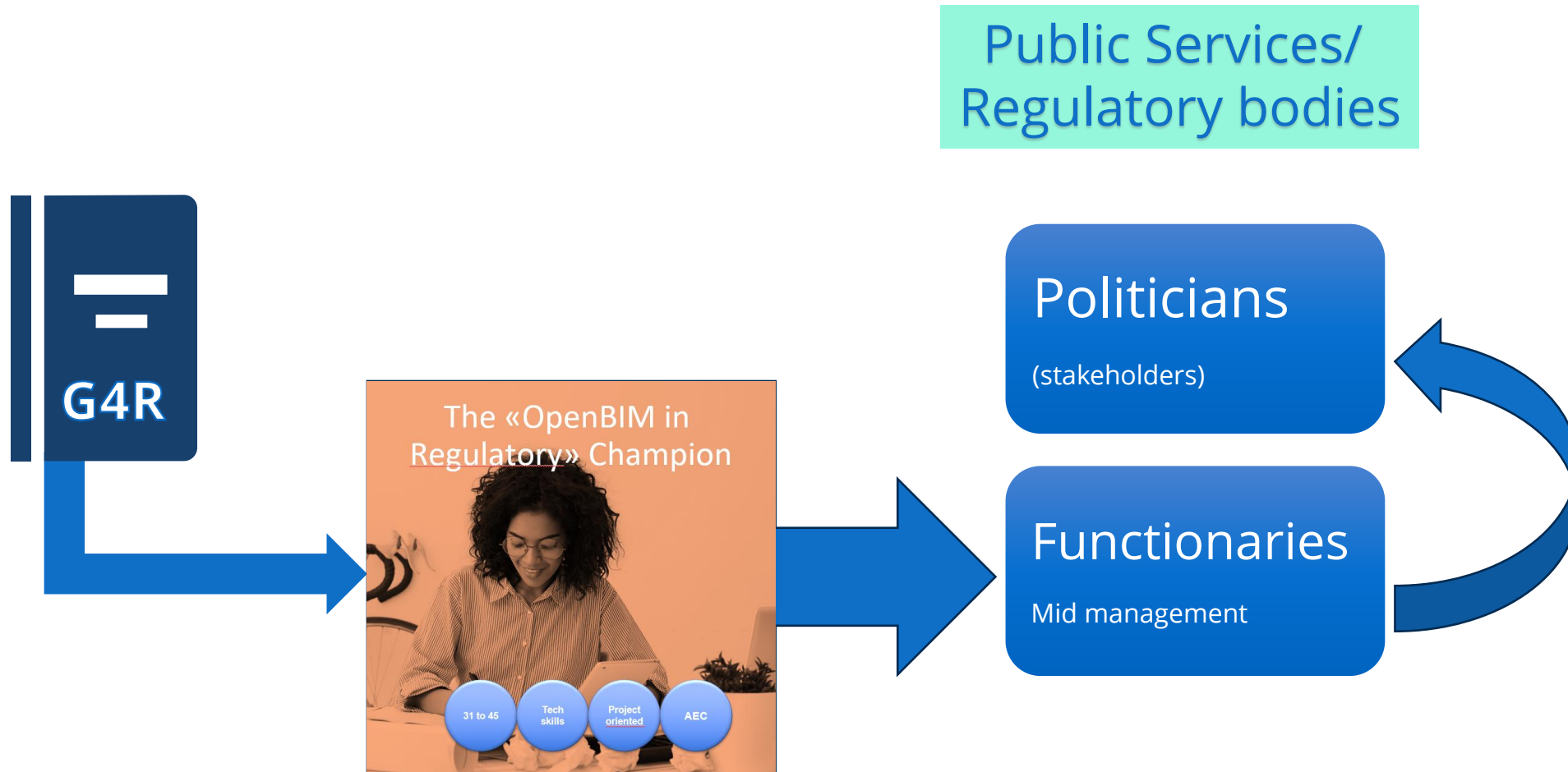
Highlight what is openBIM and how it can help in a proper regulatory digitisation

The target



buildingSMART Guidance for Regulators
led by Franco Coin – Regulatory Domain

The channel



The objectives

To accelerate the global adoption of building e-permitting by

- Addressing the key issues and advocating for a standardised approach to e-permitting for buildings
- Recognising the essential role of openBIM in addressing not only technical, but also legal and regulatory issues.
- Helping legislators recognise the transformative nature of digitisation and adapt regulations accordingly.

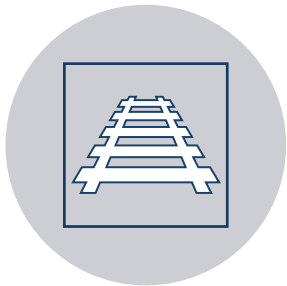
Exceptions



Public Assets
Maintenance
processes



Details of Legal
compliance and/or
assurance



Infrastructure
regulatory
digitalisation



Project management
detailed
recommendations

Agenda

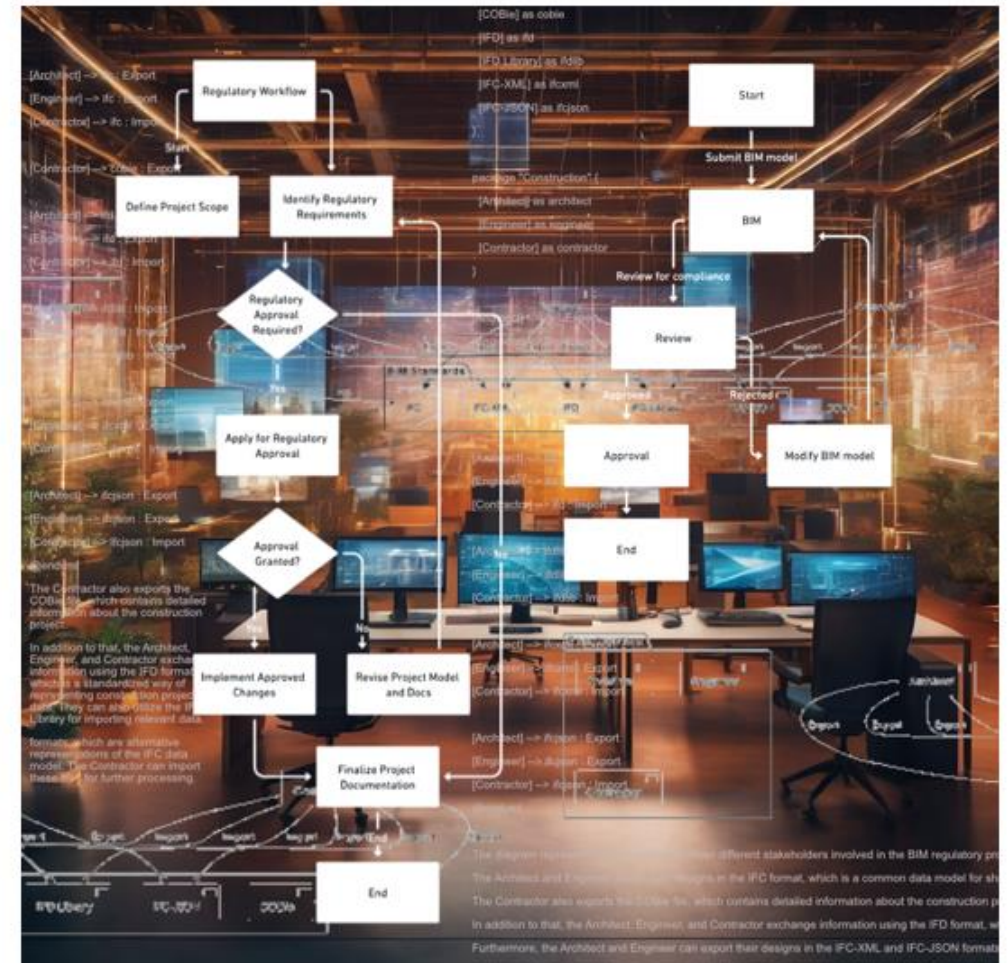
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The GUIDANCE FOR REGULATORS final draft is available!

Ask for a copy to :
regulatory@buildingsmart.org

Guidance for Regulators on use of openBIM



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3	Introduction
3.1	Scope of the guidance for regulators on using openBIM
3.2	Building Information Modelling (BIM)
3.3	openBIM®
3.4	Regulatory bodies & building permitting.
4	Why openBIM helps the regulatory process.
4.2	openBIM advantages for regulators and authorities
5	The current state of use of OpenBIM in regulatory
5.1	Geographical spread
5.2	Data protection and privacy issues
5.3	What built assets does OpenBIM focus on?
5.4	Digital permitting today - perceived advantages and disadvantages
6	Data and standards
6.1	openBIM standards and services
7	The Building Regulatory digital transformation project
7.1	Sponsorship and consensus
7.2	Project scoping
7.3	Change management.
8	Conclusion

45 pages
13K+ words

75+ links
and
quotations

28+ figures

Sample
stories or
information
from 25+
countries

Executive summary

Currently, the construction industry contributes approximately 14% to global GDP, and its volume is expected to double by 2030 due to advancements in emerging markets and technological and sustainability demands. However, the industry faces challenges in productivity and adapting to modernity, mainly due to fragmentation and slow digitalisation. The United Nations Sustainable Development Goal 11 “Make cities inclusive, safe, resilient and sustainable” highlights these issues and emphasises the urgent need for change, while some studies have shown that to date construction remains one of the least digitised industries in the world.

It is a paradox that while virtually all built assets are digitally designed, more and more information and data are captured digitally in so-called Building Information Models [BIM] and home automation is driving the evolution of buildings, the industry lacks comprehensive digital data management systems. This hampers productivity and adaptability as critical information is often stored in isolated paper documents or in their dematerialised formats such as PDF files.

To address this, the industry has sought a standardised digital collaboration strategy, which has led to the development of openBIM, a set of open standards for building data interoperability, through the buildingSMART International association. These open standards enable interoperable digital communication and data exchange, overcoming barriers such as data general readability, long-term archiving of information and vendor lock-in.

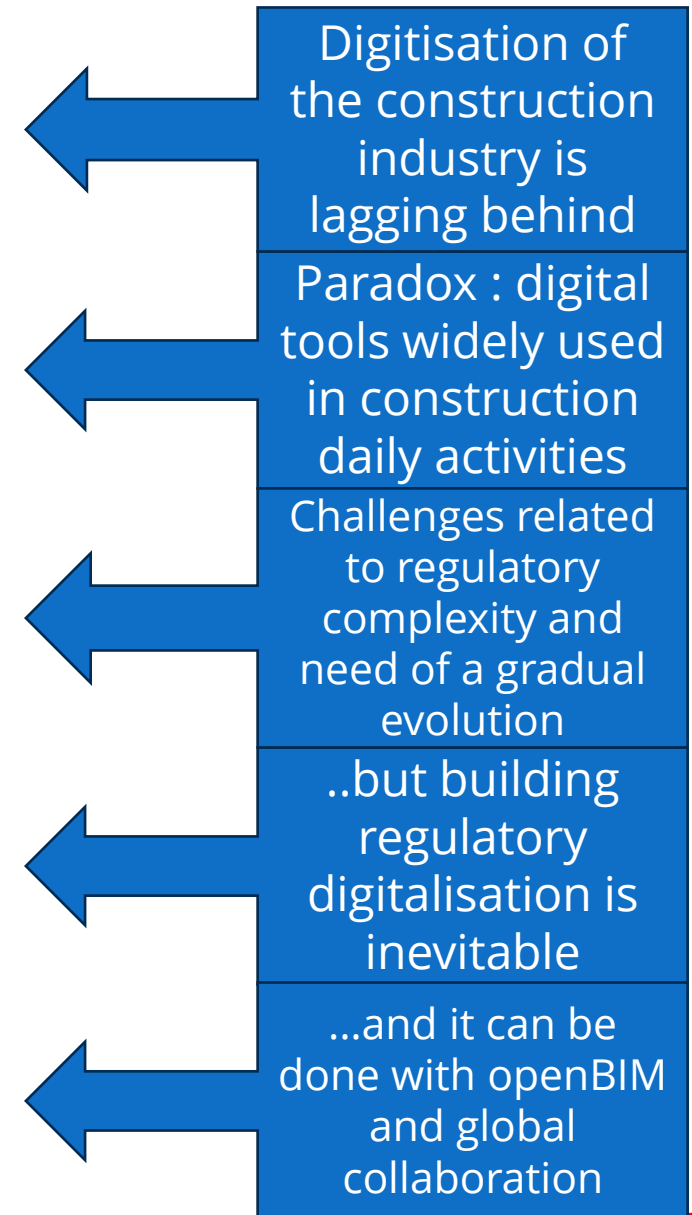
Regulatory complexity poses a significant challenge to digital transformation in the construction sector, requiring an incremental approach to effective management and a legally compliant digital language. OpenBIM addresses these concerns by facilitating communication between regulators and industry stakeholders, ensuring compliance with international standards, and supporting the gradual evolution of processes involving rule change and digital platforms.

The global trend towards digitisation of regulatory processes, accelerated by the pandemic, shows that change is under way and inevitable, and effectively underlines the importance of openBIM standards, which we see forming the basis of automated compliance checks for buildings being rolled out in several countries, including Dubai and Singapore in 2024, with Finland and Estonia next year.

While the path to digitisation is complex, this guide aims to address key issues and advocate for a standardised approach to building e-permitting, including supporting legislators to recognise the transformative nature of digitisation and adapt regulations accordingly.

In summary, the main message we can report from the guidance is that collaboration within the international community of regulators can facilitate the realisation of a productive, transparent, reliable and fully digitised construction ecosystem that includes, or is somehow enhanced by, a digitised regulatory process.

This view is effectively corroborated by the lessons learned from the experience of the first regulators to successfully tackle the challenge of digital e-permitting, and by the trends of change in building regulation that we can see internationally thanks to the ongoing monitoring of building innovation championed by buildingSMART International.



Introduction

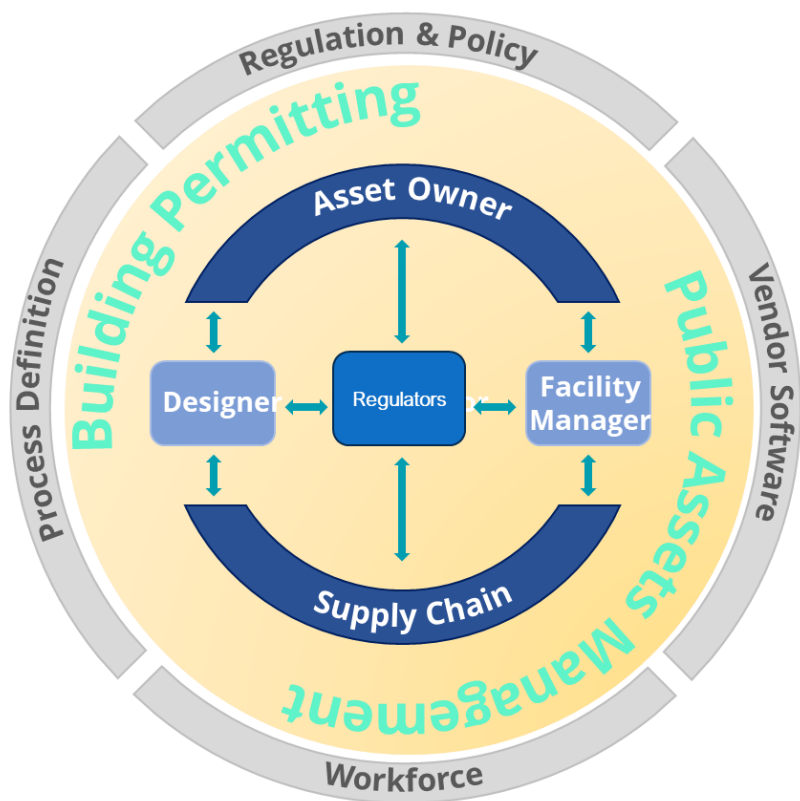
Simple description of BIM, GIS and openBIM



openBIM is valuable because :

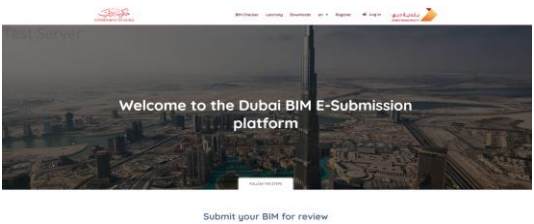
- *Interoperability is key to the digital transformation in the built asset industry*
- *Open and neutral standards should be developed to facilitate interoperability*
- *Reliable data exchanges depend on independent quality benchmarks*
- *Collaboration workflows are enhanced by open and agile data formats*
- *Flexibility of choice of technology creates more value to all stakeholders*
- *Sustainability is safeguarded by long-term interoperable data standards*

Regulatory bodies

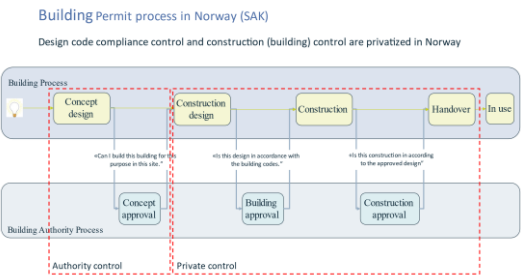


Regulators Point of View

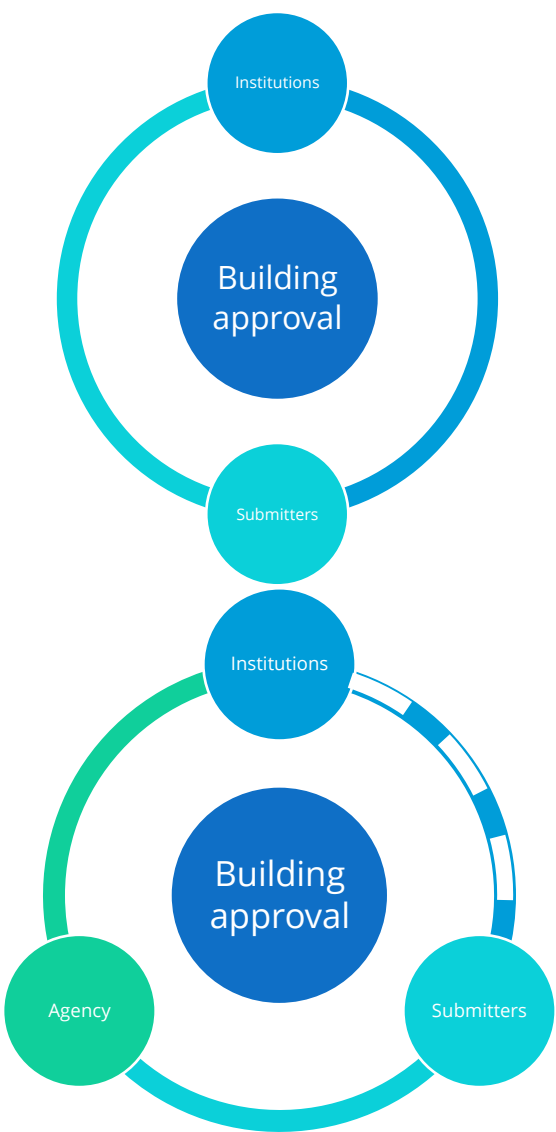
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Two tiers model
Dubai



Three tiers model
Norway



Why openBIM helps the regulatory process

• Benefits for the whole ecosystem

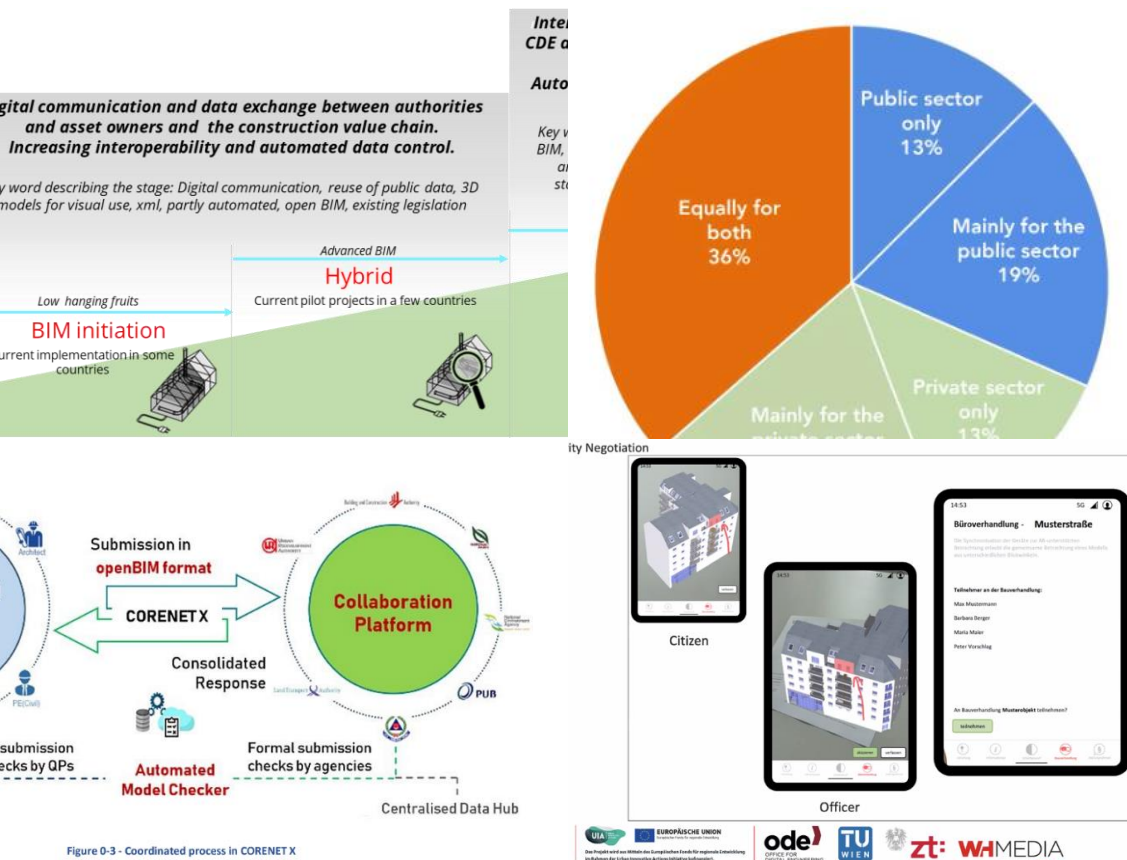
- Interoperability
- Collaboration
- Cost and Time Efficiency
- Data Continuity
- Long-Term Sustainability
- Standardization
- Industry Trends
- Global Adoption

• Historical background

- to confirm that openBIM is a durable and stable standard



Why openBIM helps the regulatory process



Regulators and institutions advantages

- Technological Neutrality
 - *Anti-vendor lock-in*
- Data continuity and long-term sustainability of data and systems
 - MALD – Model As a Legal Document / IFC as a Digital archiving format
- Collaboration with industry
 - EUBIM reports some quantitative advantage estimations
- Regulatory internal harmonization
 - The Singapore CORENET-X case history
- Automatize the permitting process
 - Full chapter(s) highlighting the incremental approach
- Managing and maintaining public assets
 - Data unification, Transparency, Traceability
- Citizens' engagement in urban evolutions
 - CIM/ City of Vienna example

Balance for Regulators
Regulatory Domain

- **An international perspective**
 - A brief review of the state of the Art in several countries
- **Data protection and privacy issues**
 - ISO 19650-5 principles
 - The case history of Estonia security approach
- **Which built assets does OpenBIM focus on?**
 - Only Buildings now, infrastructure in the future
- **Digital permitting today - perceptions**
 - Some highlights from the Estonian DBP pilot
- **Expectations survey**











Data and standards

openBIM standards and services

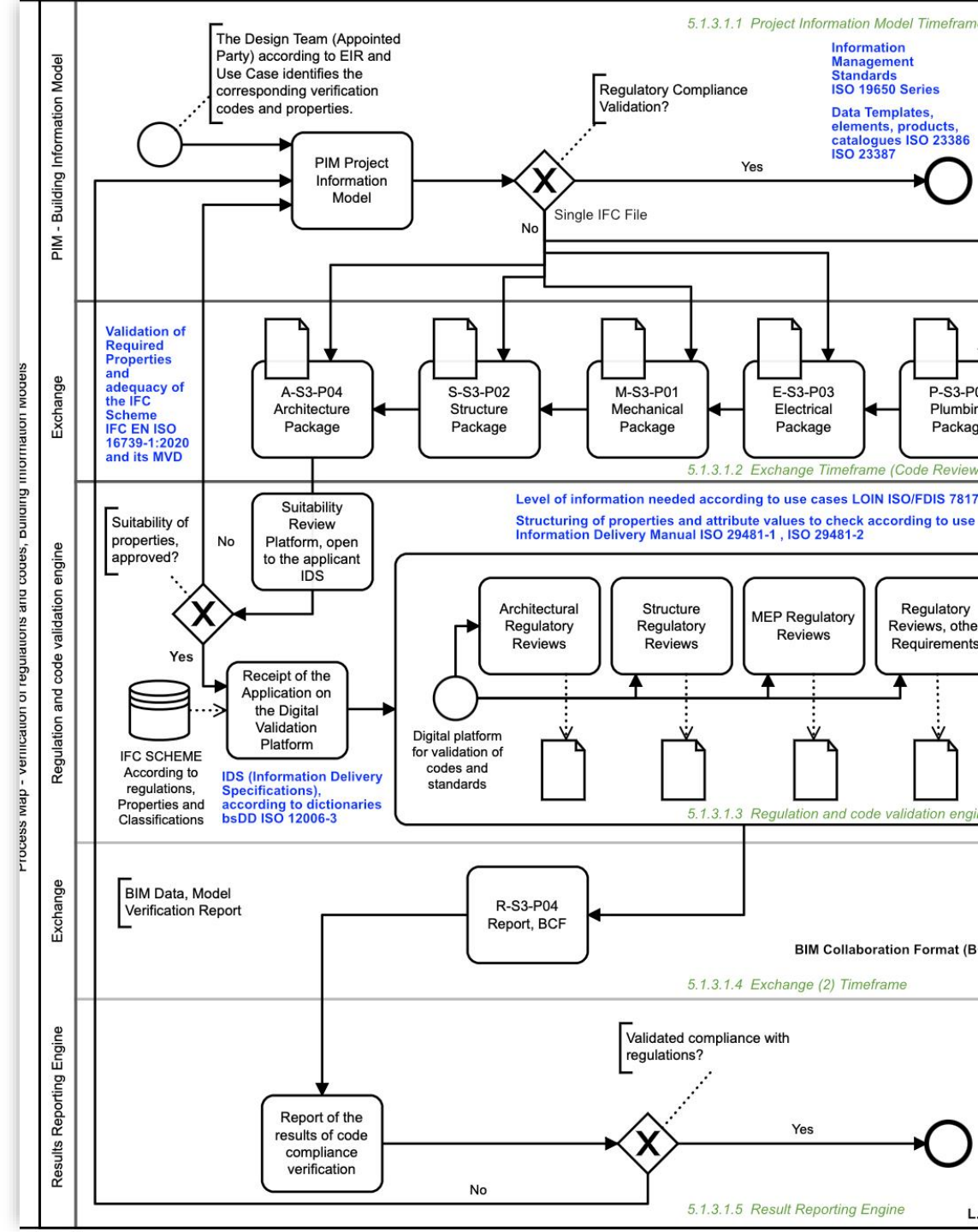
Explaining the openBIM structure like a pizza baking process

The Pizza analogy for OpenBIM Standards and Services

UCM - Use Case Management database	The Cookbook	
BIM-Use Case	The Dish (Pizza → Margherita, Hawaii...)	
bSDD – buildingSMART Data Dictionary	All the available ingredients * in Fridge	
IDM - Information Delivery Manual	The Recipe	
Exchange requirements (with IDS**)	The Dish Ingredients and toppings	
BCF (BIM Collaboration Format)	The Complements and complaints to the chef	
IFC – Industry Foundation Classes (ISO 16739)	The Pizza	
MVD (Model View Definition) ***	A slice of Pizza	
Original Credits: Mirbek Bekboliev, 2020		<p>*in different languages, Dairy Products, Fruits, Vegetables etc. names and Properties like Manuf. Info, Exp. Date, Allergens **IDS – Information Delivery Specification *** IFC4 Reference View</p>

Data and standards

- **Which regulatory information are exchanged with the openBIM Model?**
 - Comments and evidences gathered during the RIR project
- **Step and standards**
 - An example of Digital permitting workflow
- **Automatic checking**
 - More technical stuff
- **How to transform a regulation in machine-operable instructions**
 - Approach, ML and RASE
- **Data archiving**
 - The Finnish declaration 2022 of IFC as archiving format

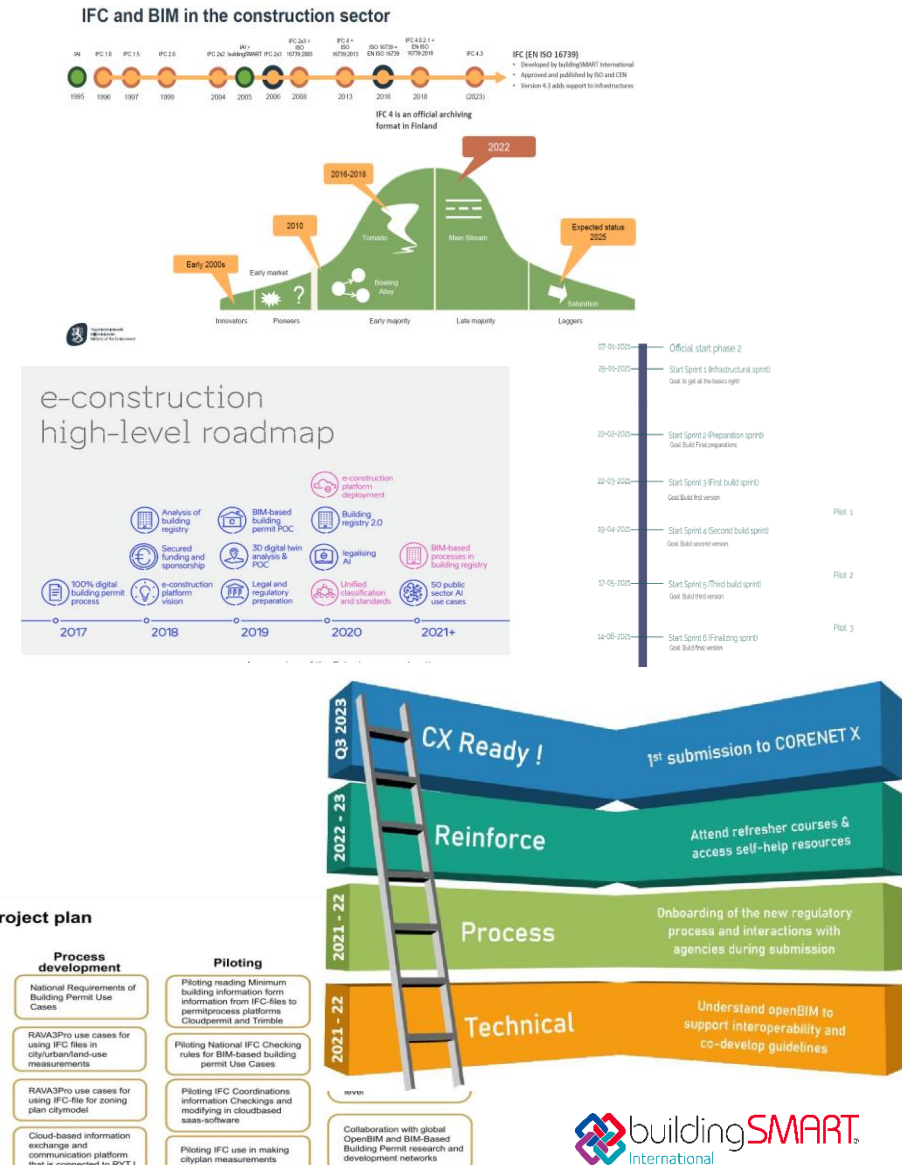


The Building Regulatory digital transformation project

The essentials for setting up a proper project management system

Lesson learned from the pioneers

- **Sponsorship and consensus**
 - Building consensus and trust on using open data (FIN, SGP,)
- **Project scoping**
 - Managing e-permitting projects embedded in wider digital transformation projects
- **Change management**
 - Exploring some project plans (FIN,SIN,EST)
 - A couple of comments about methodology (EST)
- **Training and support**
 - A few tips on how to approach the task



Conclusion

It's increasingly clear that digitizing building regulation processes is an unstoppable trend. At the core of this shift is the digital permitting process, serving as the foundation for the entire digital transformation in building regulation. The construction industry faced first the challenge of embracing digital models to boost productivity in response to globalization, new technologies, and sustainability demands. The complex nature of the building ecosystem, alongside its fragmentation and specificities such as internal complexity, customization, and the vast amount of assets yet to be digitized, highlights the need for a fully open and interoperable digital standard to guide digital evolution strategies.

openBIM, developed by BuildingSMART in collaboration with the construction industry but taking the regulatory into account from the outset, is precisely designed for this purpose, and its features align well with the requirements and logic of regulatory processes too.

As a neutral, open, non-proprietary, interoperable and long-lasting sustainable set of standards, openBIM is the most, if not the only, strategic standard currently available to support a building regulatory digital framework.

As an official ISO standard, it can ensure legal compliance at every stage of the permitting process. Moreover, many countries recognize openBIM as their national digital format for document archiving and exchange.

openBIM not only enhances the productivity and quality of regulatory organizations by fostering dialogue with stakeholders of the construction industry but also streamlines internal processes within regulatory bodies. However, perhaps its most significant advantage lies in its ability to automate project checks during permitting.

These substantial advantages have spurred activities in many countries toward the adoption of e-permitting using openBIM. While experiences from these endeavours underscore the complexity and effort required for digital transformation, they also offer valuable insights and suggestions for regulators at various stages of their projects.

We hope that the content of this guide will help to disseminate these lessons and assist regulators who are starting or are currently involved in similar building permitting initiatives.

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Thank You!



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Is the guide in line with the target?



IS IT TOO TECHNICAL OR TOO
"FOR NOVICES"



IS IT WRITTEN IN A PROPER
LANGUAGE FOR REGULATORS?



DO LEGAL ISSUES GET TOO
LITTLE COVERAGE?

How can we spread the guidance ?



Does it worth to translate it in other languages?

Essential involvement of bSMART chapters for

- Translation
- National *versioning* → *rewriting*



How to promote it on social media?

Do regulators watch (technical) social media?

- Which Social?



How to ignite the spreading process through the “openBIM champions”?

How to contact them

How to stimulate the “word-of-mouth” diffusion.

What comes next



**NATIONAL
VERSIONS**



**VIDEO & OTHER
DOC FORMATS**



EVENTS



UPDATES

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buildingSMART International Summit - Valencia 2024
Hosted by buildingSMART International

Event starting in 6d:13h:37m

Join us
more questions /feedback?
email regulatory@buildingsmart.org



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Thank You!