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3rd BUILDING DIGITAL TWIN International Congress

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Coordinated paths towards digital building permits through the EUnet4DBP

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ORGANIZED BY:

BDTA DigiChecks EUnet4DBP

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Coordinated paths towards digital building permits through the EUnet4DBP

Overview

- Digital Building Permit
- The EUnet4DBP
- The network
- The activities
- Conclusions

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Foto di Mohamed Hassan da Pixabay

Digital Building Permits

Digital Building Permit

The EUnet4DBP

The network

The activities

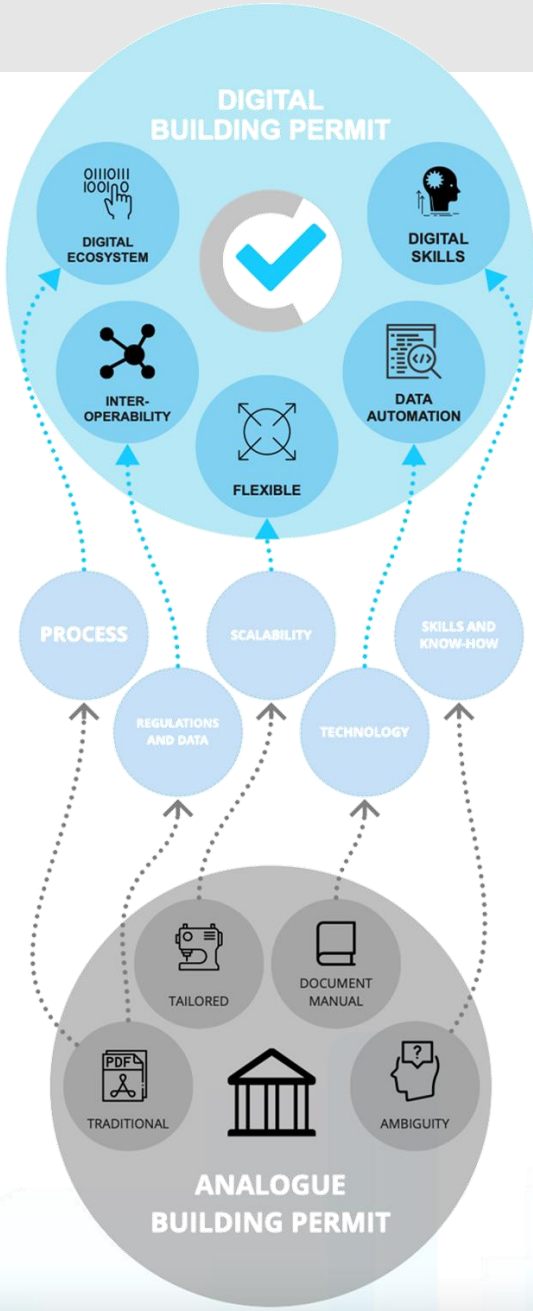
Conclusion

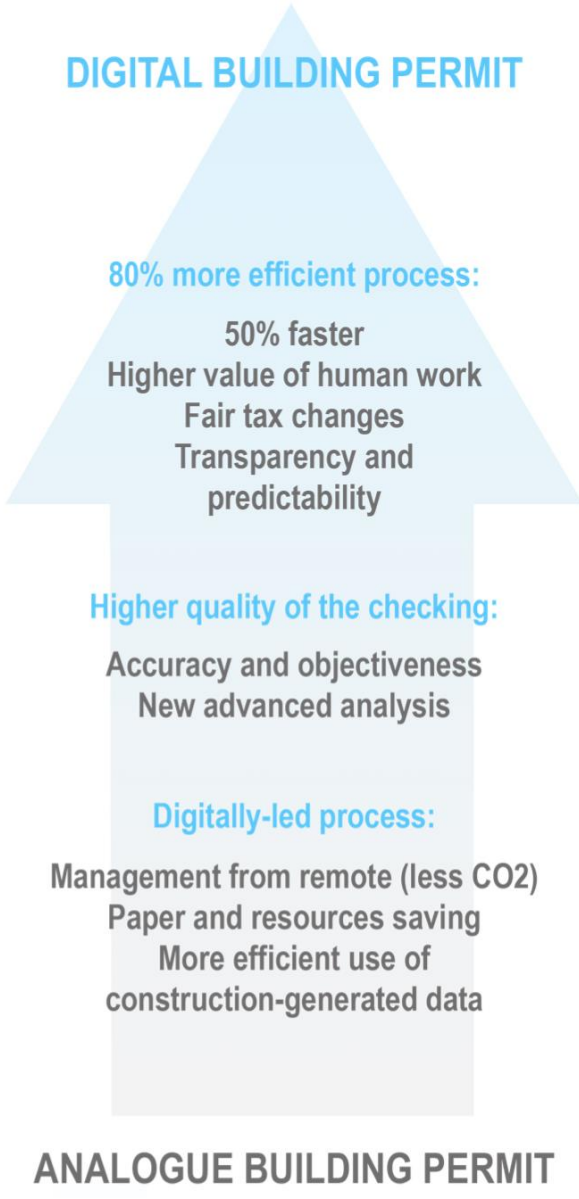
What is a building permit?

Approval for building construction or renovation from building authority after checking compliance to planning and building regulations

What is a digital building permit?

Passing from (analogue) document-based systems to digital data-driven processes.





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CHEK DIGITAL BUILDING PERMIT
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https://chekdbp.eu/

Digital Building Permit challenges

Digital Building Permit

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Conclusion

Need for **intersectoral** collaboration

Need for **multidisciplinary** collaboration

High **diversity**

Need for **interoperability** and standardisation

Digital Building Permit initiatives

https://eu4dbp.net

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Digital Building Permit

The EUnet4DBP

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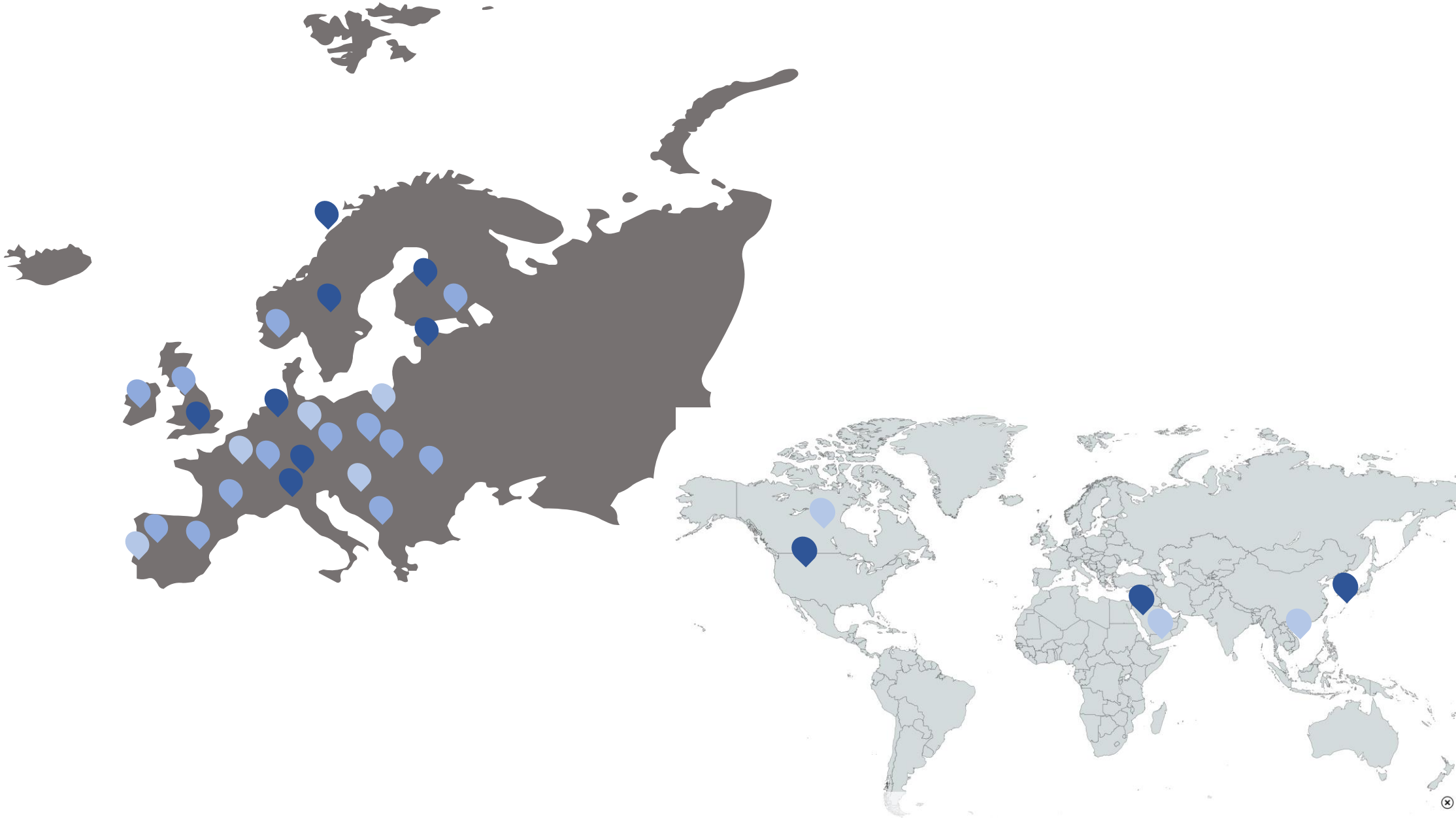

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Digital Building Permit initiatives diversity

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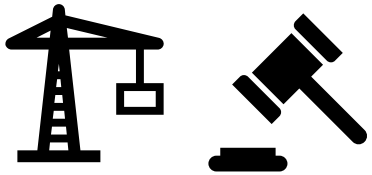
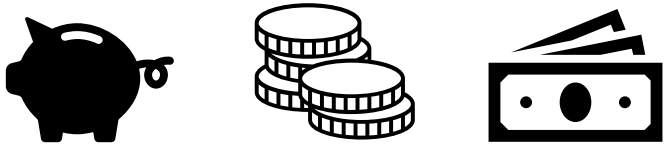
Disciplines involved

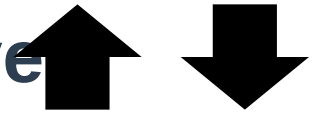


Field of development



Investment

Kind of initiative



Digital Building Permit

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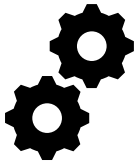
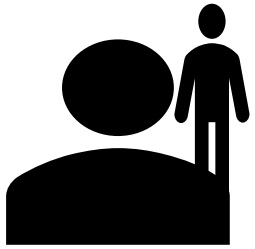
Professional mobility

Tools reuse

Interoperability





Joint efforts (no wheels re-invented, highest achievements)

Best approach choice

Optimise investiments

Digital Building Permit

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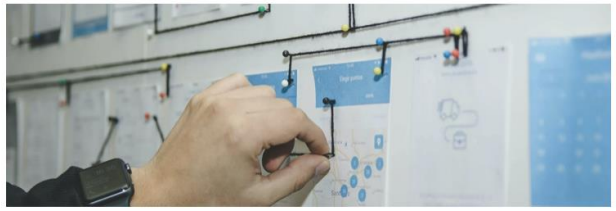
EUnet4DBP

Start 2020

Mission - To **accelerate the digital transformation** of the building permit process.

Vision - Development of **flexible, scalable and re-usable** digital and (semi-) automated building permit tools and methods in a common effort and under the umbrella of an open science framework, by sharing experiences and building-up knowledge.



Process

Including human practices and bureaucratical workflows to be taken into account and likely changed to adopt the new digital approach.

Rules and requirements

As formulation of criteria and guidelines to be followed for the successful achievement of the objectives in all the steps and aspects of the use case, including rule interpretation and model preparation.

Technology

Regarding any aspect related and allowing the successful implementation of the previous ones.

Goal 1

Support the building permit process in becoming more **efficient and automated**.

Goal 2

Support to rule interpretation and information requirements in becoming as **simple** and as **machine readable** as possible in order to guarantee a certain level of automation.

Goal 3

Support the wide adoption of **interoperable** technologies based on open standards.

EUnet4DBP principles

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Digital Building Permit

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Principles

If you would like to participate, read the description and manifesto of the network and the FAQ page. If you agree with them and want to jump in, fill the form:

Commitment to share

We share our knowledge, our experiences, our ideas with the other members of the network in order to turn our Vision into reality.

Commitment to openness

We support the development of open formats, open standards and interoperable software. Our deliverables are open access resources, are published in open channels and all are freely to use them.

Commitment to be collaborative

We voluntarily collaborate with others to grow the network impacts on the digital transformation of the built environment.

Commitment to be ethic

We work together in a fair environment, giving credits correctly to single participants and to the network, and keeping as confidential any un-published shared material.

Commitment to be practical

We develop tools and methods that address the real needs of current and future users.

Commitment to be innovative

We believe in innovation as the only way to improve the quality of our present and future challenges. We aim at providing innovative solution of an innovative word.

Commitment to be competent

We lead activities that require our competences.

EUnet4DBP – the network 2023

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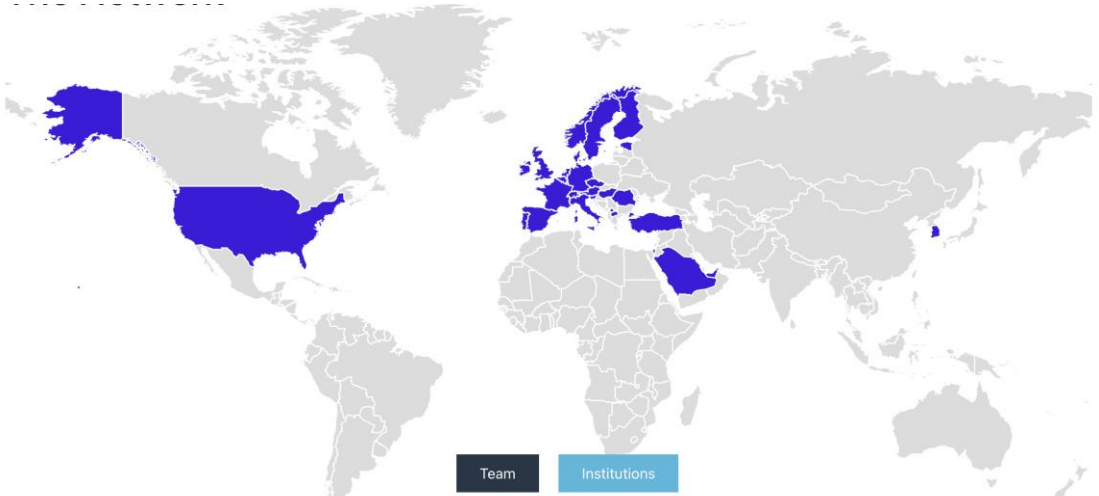

> 80 institutions

	R	G	C
(3D) geoinformation	11	11	5
GeoBIM integration	12	9	8
standardization, interoperability	18	12	14
BIM	24	14	21
AEC	16	4	18
Planning, regulations	16	15	15
Software development	11	4	16

buildingSMART regulatory room
EuroSDR
EU-BIM
OGC

EUnet4DBP – the network 2023

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Projects involved in the EUnet4DBP

HORIZON EUROPE projects HORIZON-CL4-2021-TWIN-TRANSITION-01-10

CHEK DIGITAL BUILDING PERMIT

ACCORD

DigiChecks

EU EISMEA study
BRISE Vienna (Austria)
RAVA3 (Finland)
Rotterdam
Estonia
Geneva
Hamburg

...

EUnet4DBP activities – Quarterly meetings

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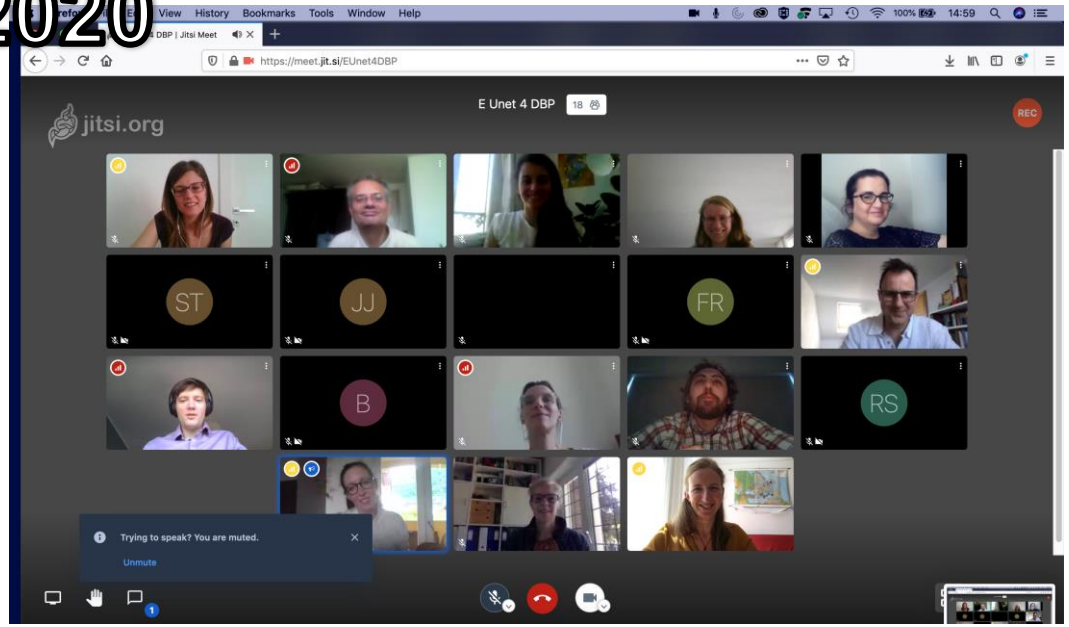
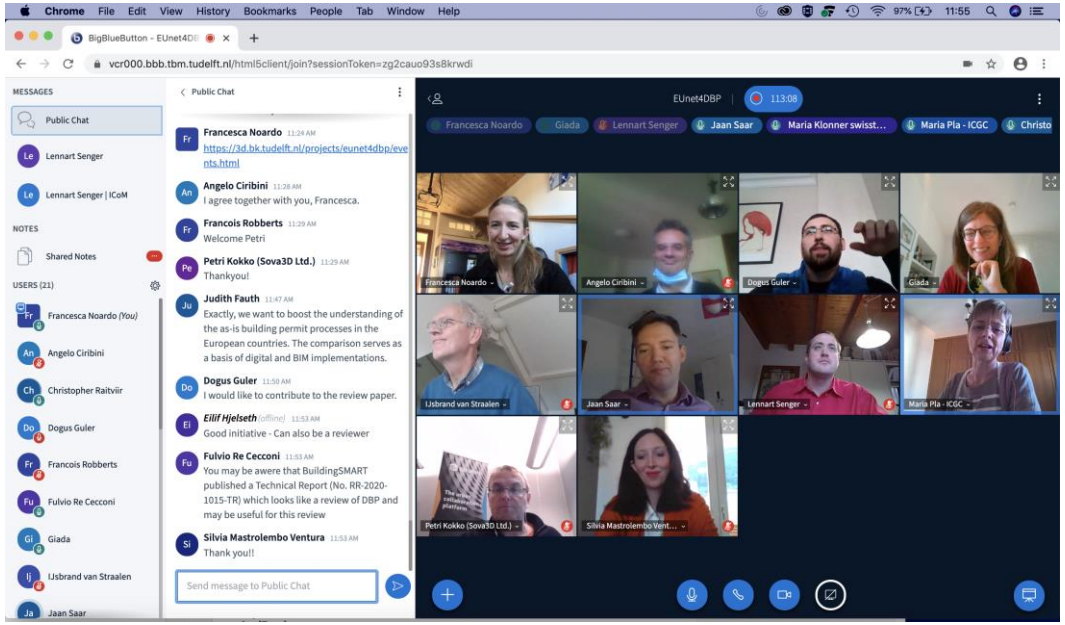
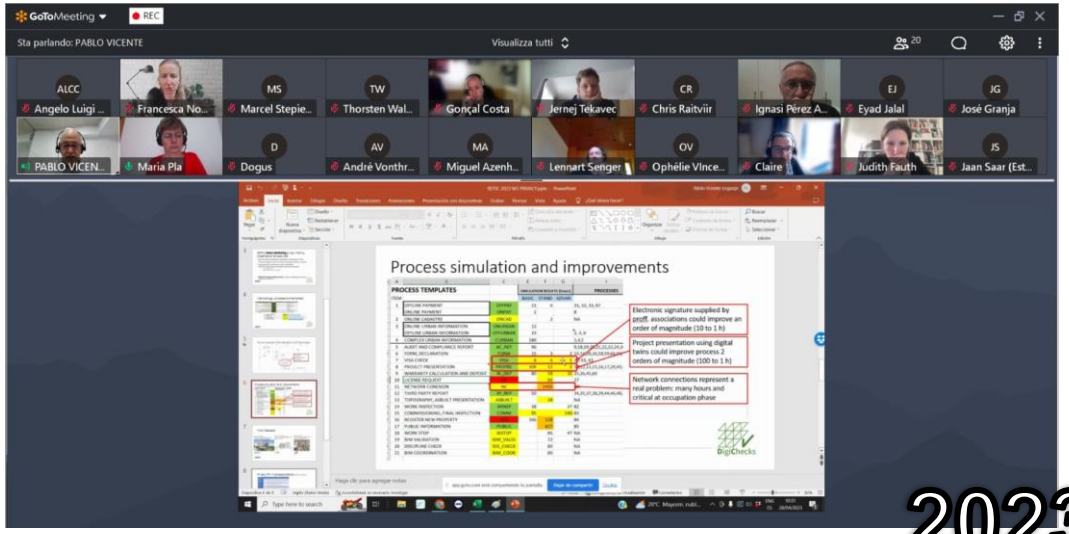
2020







2023

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EUnet4DBP activities – EUnet4DBP talks

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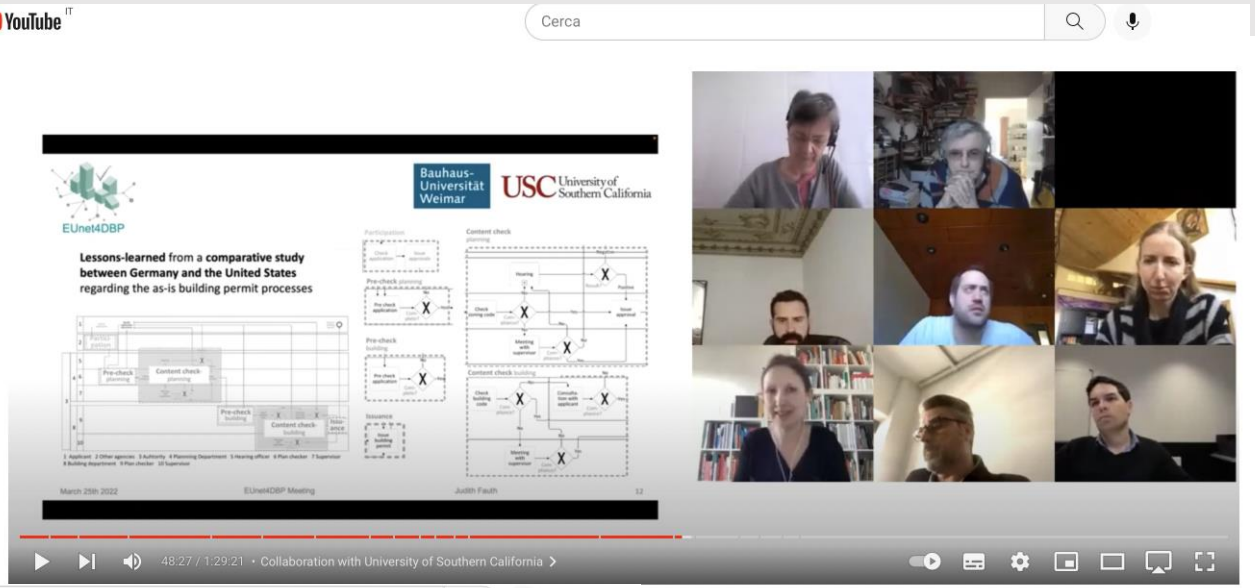

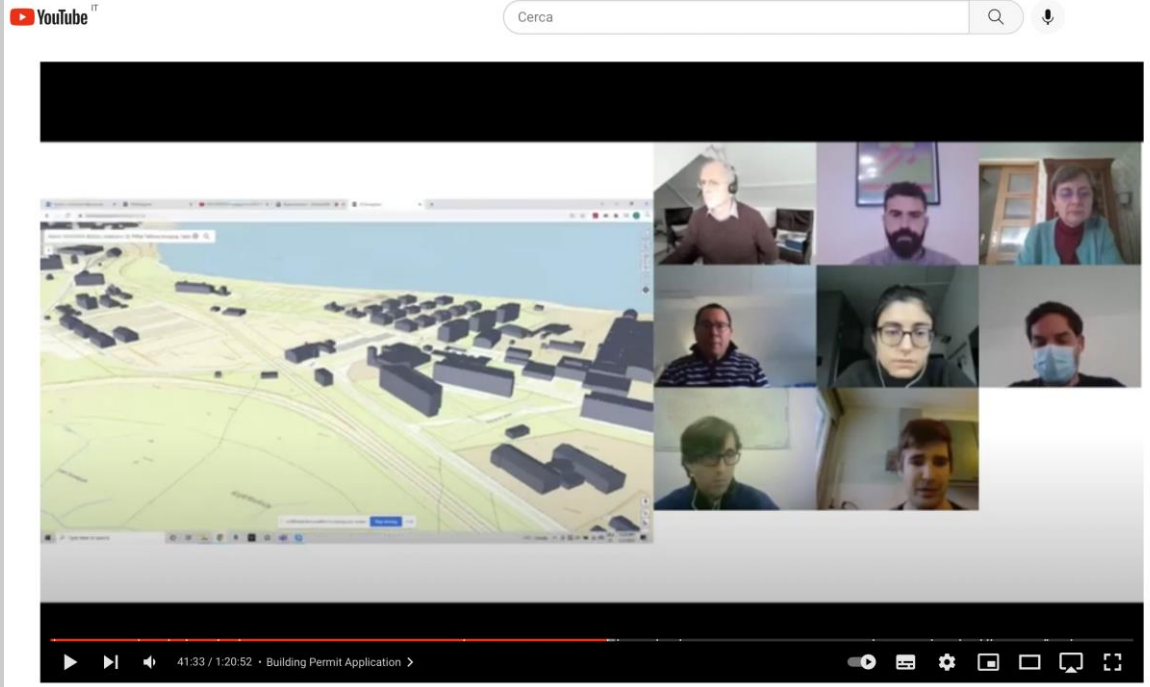

EUnet4DBP talk - Demo session

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EUnet4DBP activities – common papers and studies

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journal homepage: www.elsevier.com/locate/buildenv

Unveiling the actual progress of Digital Building Permit: Getting awareness through a critical state of the art review

Francesca Noardo [a,*], Dogus Guler [b], Judith Fauth [c], Giada Malacarne [d], Silvia Mastrolembo Ventura [e], Miguel Azenha [f], Per-Ola Olsson [g], Lennart Senger [h]

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BIM
GIS
GeoBIM
Compliance checking
Rule checking

ABSTRACT

Growing interest is awarded to the digitalization of the building permitting use case and many works are developed about the topic. However, the subject is very complex and many aspects are usually tackled separately, making it very hard for traditional literature reviews to grasp the actual progress in the overall topic. This paper unveils the detailed state of the art in Digital Building Permitting (DBP) by critically analysing the literature by means of a set of coding tags (research progress, implementation, affected DBP workflow steps, ambitions addressed) assigned by a multidisciplinary team. The executed research shows that the mainly addressed aspects of the digitalization of building permit process are the technologies to check the compliance of design proposals against regulations, followed by the digitalization of regulations. Improvable aspects identified in the entire building permit system are instead e.g. the involvement of officers, scalability of solutions and interoperability of data, intended both as data validation and as integration of geospatial data with building models.

The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Volume XLIV-4/W1-2020, 2020
3rd BIM/GIS Integration Workshop and 15th 3D GeoInfo Conference, 7–11 September 2020, London, UK

INTEGRATING EXPERTISES AND AMBITIONS FOR DATA-DRIVEN DIGITAL BUILDING PERMITS – THE EUNET4DBP

F. Noardo [1]*. G. Malacarne[2], S. Mastrolembo Ventura [3], L.C.Tagliabue [3], A.L.C. Ciribini[3], C. Ellul[4], D. Guler [5], L. Harrie[6], L. Senger[7], A. Waha[8], J. Stoter [1]

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KEY WORDS: Digital Building Permits, 3D city models, BIM, Interoperability, Procedures, Regulations

ABSTRACT:

The digitalization of the process for building permit (involving the use of 3D information systems) is seen as a priority in a wide part of the world. Since it is a very multidisciplinary use case, involving a variety of stakeholders tackling complex issues and topics, some of them joined their efforts and skills in the European Network for Digital Building Permit. The initial activity of the network, after a review of on-going experiences, was a workshop to share knowledge about the topics involved and to identify the main ambitions of the network with respect to three pillars (i.e. Process – Rules and Requirements – Technology) and the related requirements. It was achieved through a collective brainstorming activity guided by digital tools, whose results were further analysed in a post-processing phase. Such results are presented in this paper and will be the base for planning the future network activity.

1. INTRODUCTION

the digitalisation of the building permit process was especially pushed by the Directive 2014/24/EU of the European

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EUnet4DBP activities – in-progress papers and studies

Digital Building Permit

The EUnet4DBP

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The activities

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Judith Fauth at al., Process paper (in progress)

>60 interviews in >20 countries in Europe about as-is building permit process and level of digitalization

Digital Building Permit system Taxonomy development

- *Organizational system*
- *Technological system*
- *Procedural system*
- *Legislative system*

https://docs.google.com/forms/d/e/1FAIpQLSeSiZKYIvfOLgd3twT9izNhhMxlqm6DAL_QAWaw4FM6YYFhTQ/viewform?usp=sf_link

Closed card sort
https://ows.io/os/dtlek9bg

Tree test
https://ows.io/tj/mqzgozpk

Maturity Model

coordinated with CHEK project

Digital Building Permit To-Be Process (white) paper

with BDTA from BDTIC3 workshop with HORIZON sister projects

EUnet4DBP activities - Events

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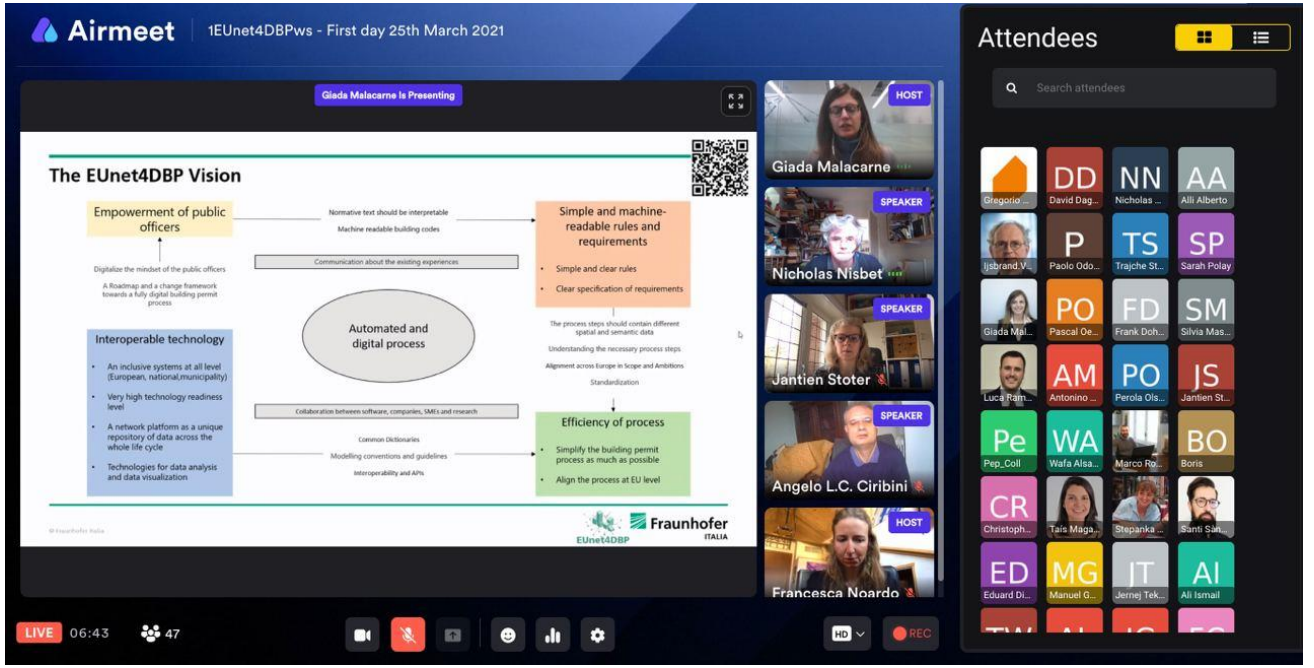

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Conclusions

Digital Building Permit

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Conclusion

- *Enjoy multidisciplinarity and intersectoral views*
- *Common framework and harmonizable results*
- *Find collaborators*
- *New projects*
- *Give momentum to ongoing activities*
- *Wide audience and higher impact of ongoing initiatives*

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Thank you!

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