



WELCOME!



**DigiPLACE
online
information
session**

Moderation

Carole BACHMANN
ERA Manager



DigiPLACE

TOWARDS A EUROPEAN DIGITAL
PLATFORM FOR CONSTRUCTION

29/4/2020

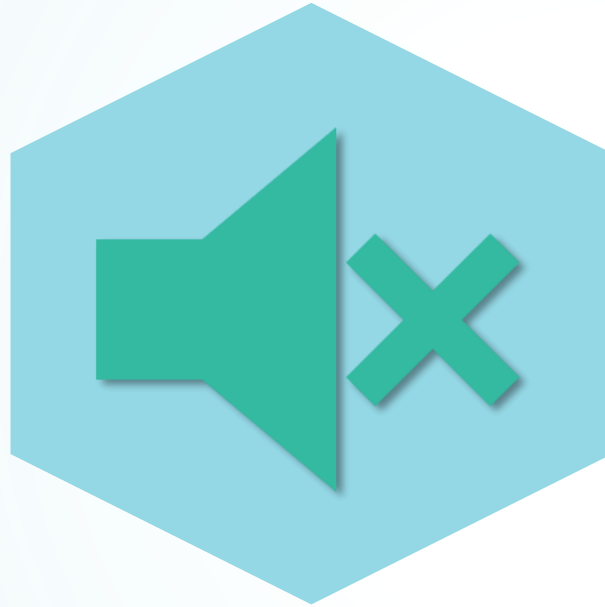


This project has received
funding from the
European Union's H2020
programme under Grant
Agreement N. 856943

Housekeeping rules



no camera



mute



questions



recording

AGENDA



10:00 HOUSEKEEPING RULES BY THE MODERATOR

Carole BACHMANN, ERA Manager

10:05 WELCOME MESSAGES

Niklas NILLROTH, CECE President
Rositsa GEORGIEVA, European Commission

10:10 OPENING MESSAGE

Michel PETITJEAN, ERA Secretary General

10:15 DigiPLACE PROJECT PRESENTATION

Claudio MIRARCHI, Politecnico di Milano, DigiPLACE coordinator

10:30 DIGITAL LEVEL AND COMPARISON ANALYSIS

Alain ZARLI, ECTP Secretary General

10:50 OUTLINING THE DIGIPLACE REFERENCE ARCHITECTURE FRAMEWORK

Nicolas NAVILLE, CSTB

11:10 Q&A SESSION

11:25 CONCLUSION

Riccardo VIAGGI, CECE Secretary General



WELCOME

Niklas NILLROTH CECE President



29/4/2020



WELCOME

Rositsa GEORGIEVA

European Commission



29/4/2020



OPENING MESSAGE

Michel PETITJEAN
ERA Secretary General



29/4/2020



See the video [here](#)

DigiPLACE PROJECT PRESENTATION

Claudio MIRARCHI
Politecnico di Milano
DigiPLACE coordinator



29/4/2020

The call



DigiPLACE

TOWARDS A EUROPEAN DIGITAL
PLATFORM FOR CONSTRUCTION

29/4/2020



This project has received
funding from the
European Union's H2020
programme under Grant
Agreement N. 856943

Horizon 2020 work programme 2018/20 - **Information and Communication Technologies**

Call: H2020-DT-2018-2020

Digitising and transforming European industry and services: digital innovation hubs and platform

Topic: DT-ICT-13-2019

Digital Platform/Pilots Horizontal Activities

Project 1st classified:

DigiPLACE (Digital PLATform for Construction in Europe)

29/4/2020

The starting vision



DigiPLACE

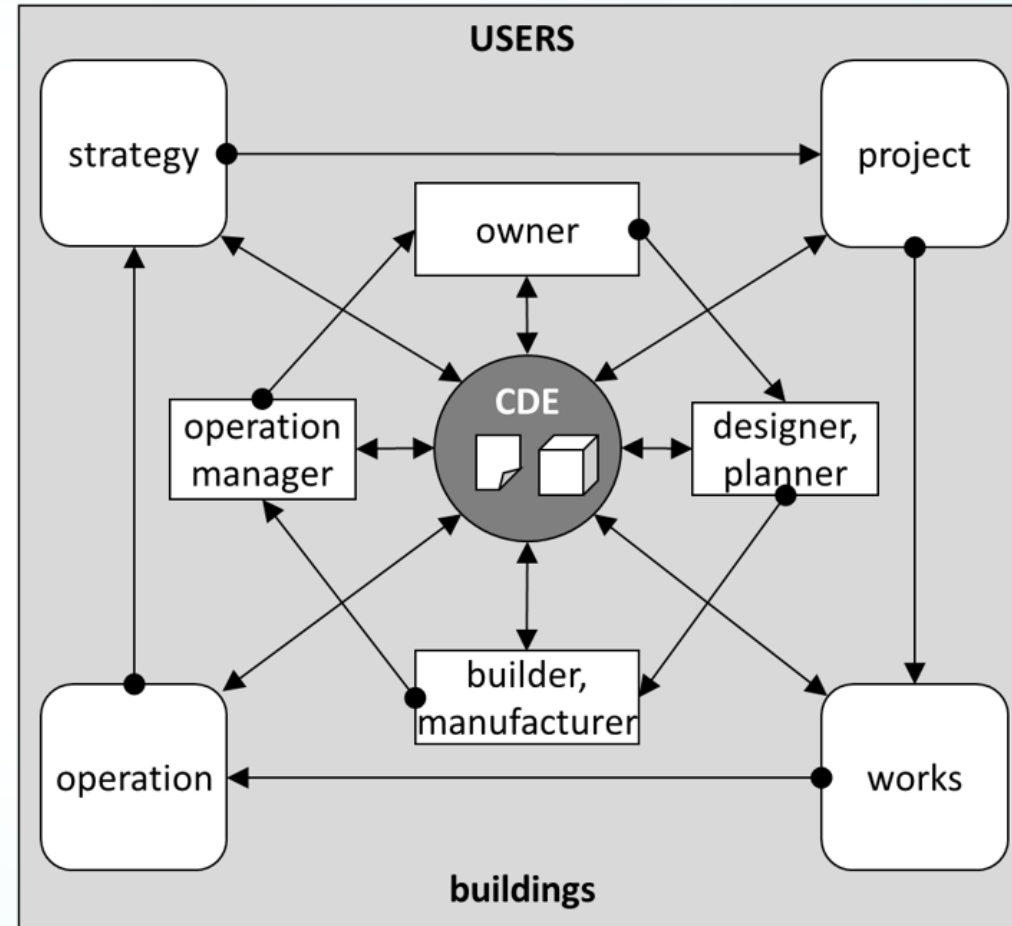
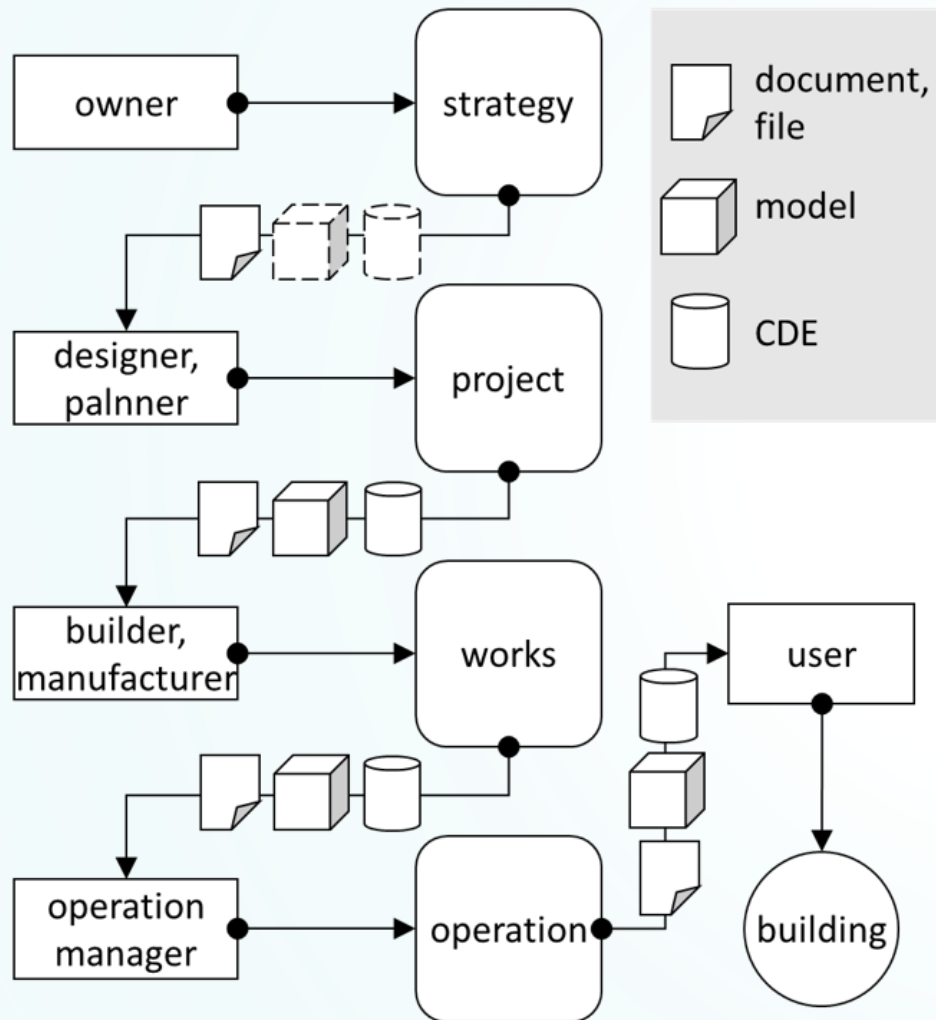
TOWARDS A EUROPEAN DIGITAL
PLATFORM FOR CONSTRUCTION

29/4/2020

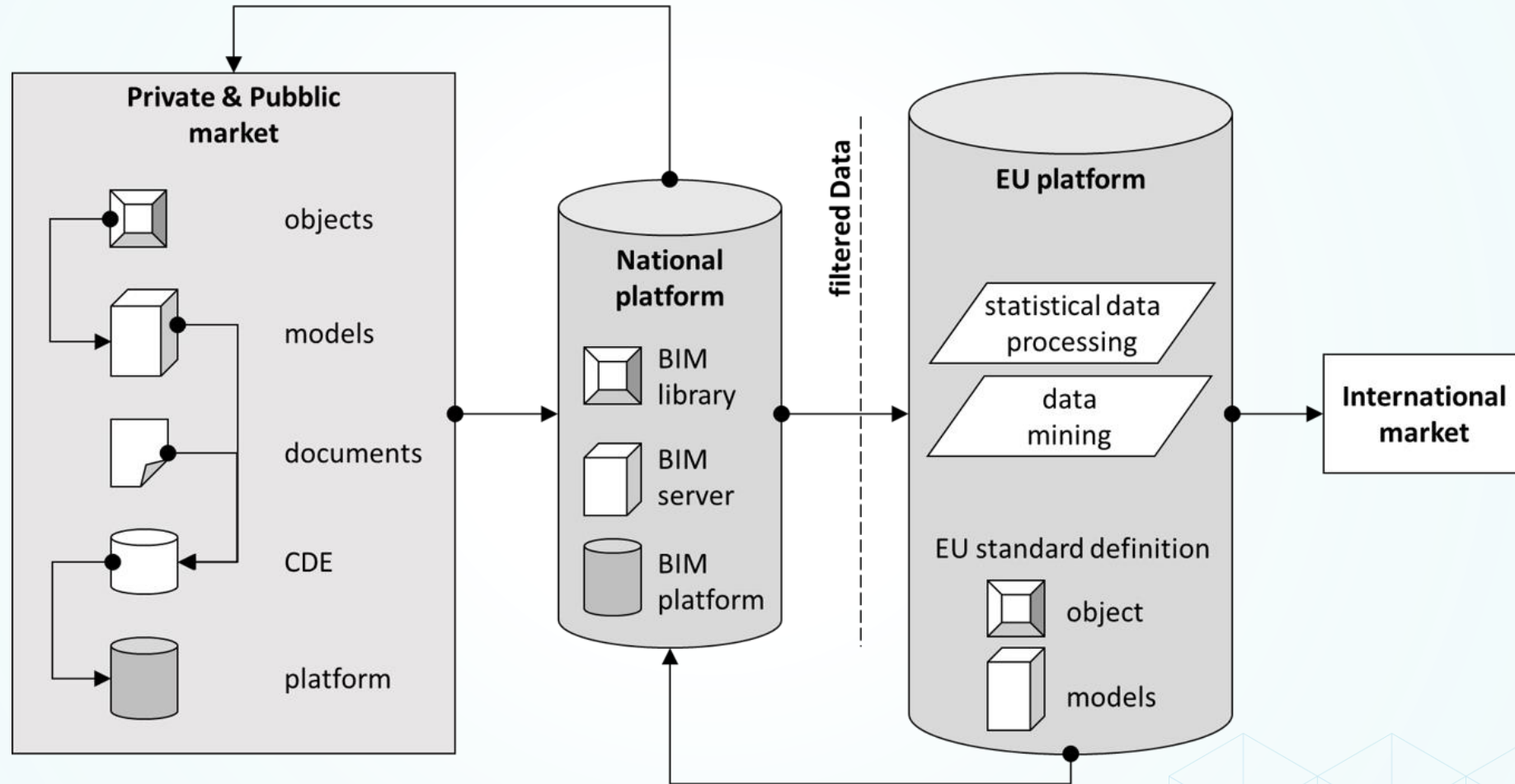


This project has received
funding from the
European Union's H2020
programme under Grant
Agreement N. 856943

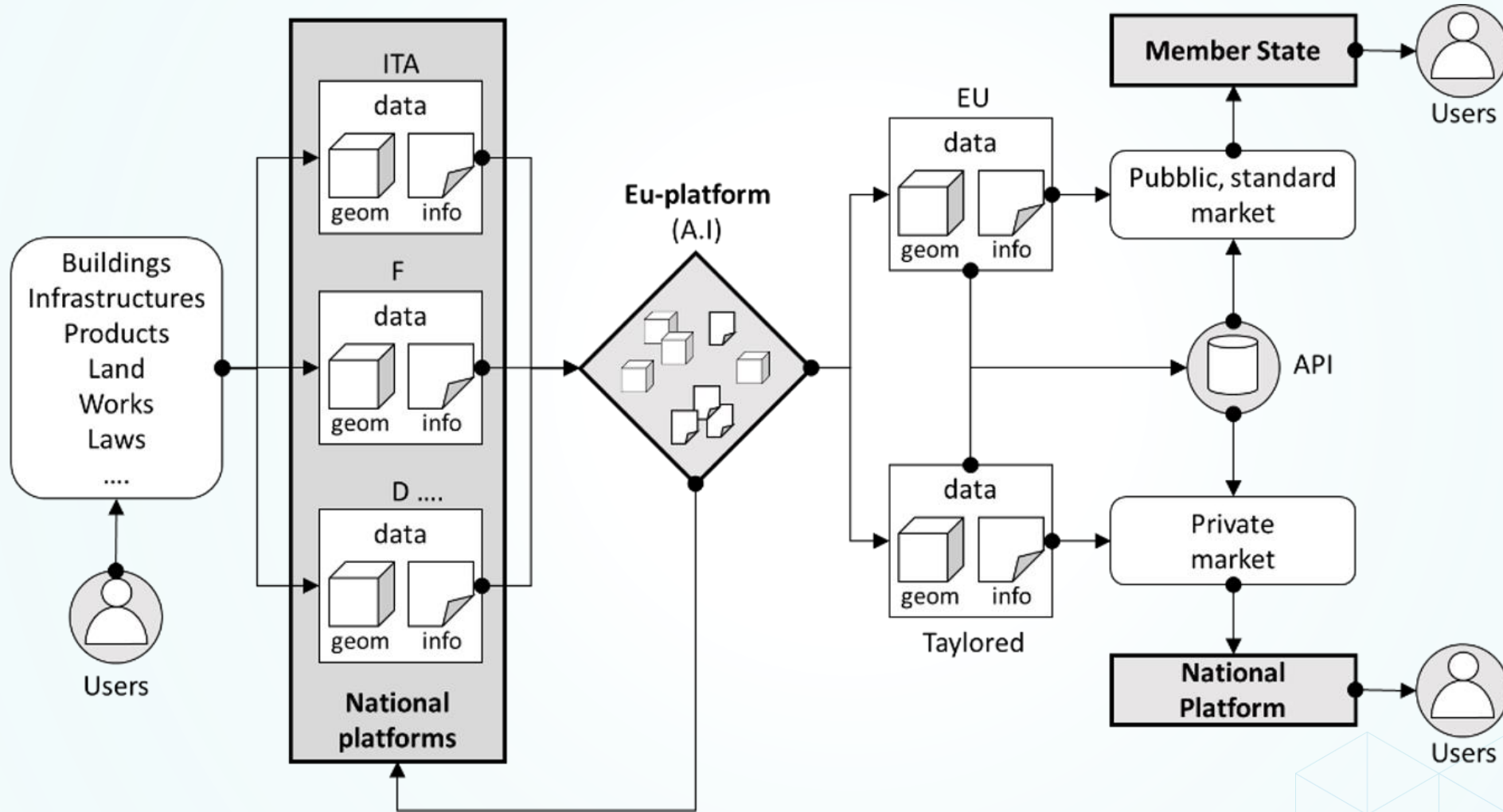
Construction information flow



Private, national, EU information repository and platform



Construction information needs



The project



DigiPLACE

TOWARDS A EUROPEAN DIGITAL
PLATFORM FOR CONSTRUCTION

29/4/2020



This project has received
funding from the
European Union's H2020
programme under Grant
Agreement N. 856943

The DigiPLACE project objectives



The highest-level objective of the **DigiPLACE** project is to create a **Reference Architecture Framework (RAF)** for the **digital industrial platform** for the **construction sector** based on a shared consensus along the entire chain

29/4/2020



Expected impacts



- 01: Increased **productivity and sustainability** of European Construction Industry
- 02: Facilitate the diffusion of a **common language** in the construction sector
- 03: Pave the way for the growth of **smart cities** and **smart infrastructures**
- 04: Strengthening the role of **EU in Global Construction Ecosystem**
- 05: Accelerated and efficient **collaboration between public authorities and industry**
- 06: Validation in usage context of usability, **risk and security assessment ...and sustainability**
- 07: Maintaining and extending an active **eco-system** of relevant stakeholders, **including start-ups and SMEs**
- 08: Promote the diffusion of **knowledge** and facilitate the introduction of **digital practices...**
- 09: Tangible contributions from European key players to actively engage with the platform building Process
- 10: Efficient **information sharing** across the programme stakeholders for horizontal issues of common Interests
- 11: Facilitate the introduction of **...Digital Transformation of the Construction sector**

29/4/2020



DigiPLACE beneficiaries and Linked Third Parties



N.	Beneficiary name	Short name
1	Politecnico di Milano	POLIMI
2	Centre Scientifique Et Technique Du Batiment	CSTB
3	European Construction, Built Environment And Energy Efficient Buildings Technology Platform	ECTP
4	Indra Soluciones Tecnologias De La Informacion SI	INDRA
5	Conseil Des Architectes D'europe	ACE
6	Buildingsmart International Limited	BSInt
7	Committee For European Construction Equipment	CECE aisbl
8	European Builders Confederation	EBC
9	European Federation Of Engineering Consultancy Associations	EFCA
10	Federation De L'industrie Europeenne De La Construction	FIEC

29/4/2020



DigiPLACE beneficiaries and Linked Third Parties

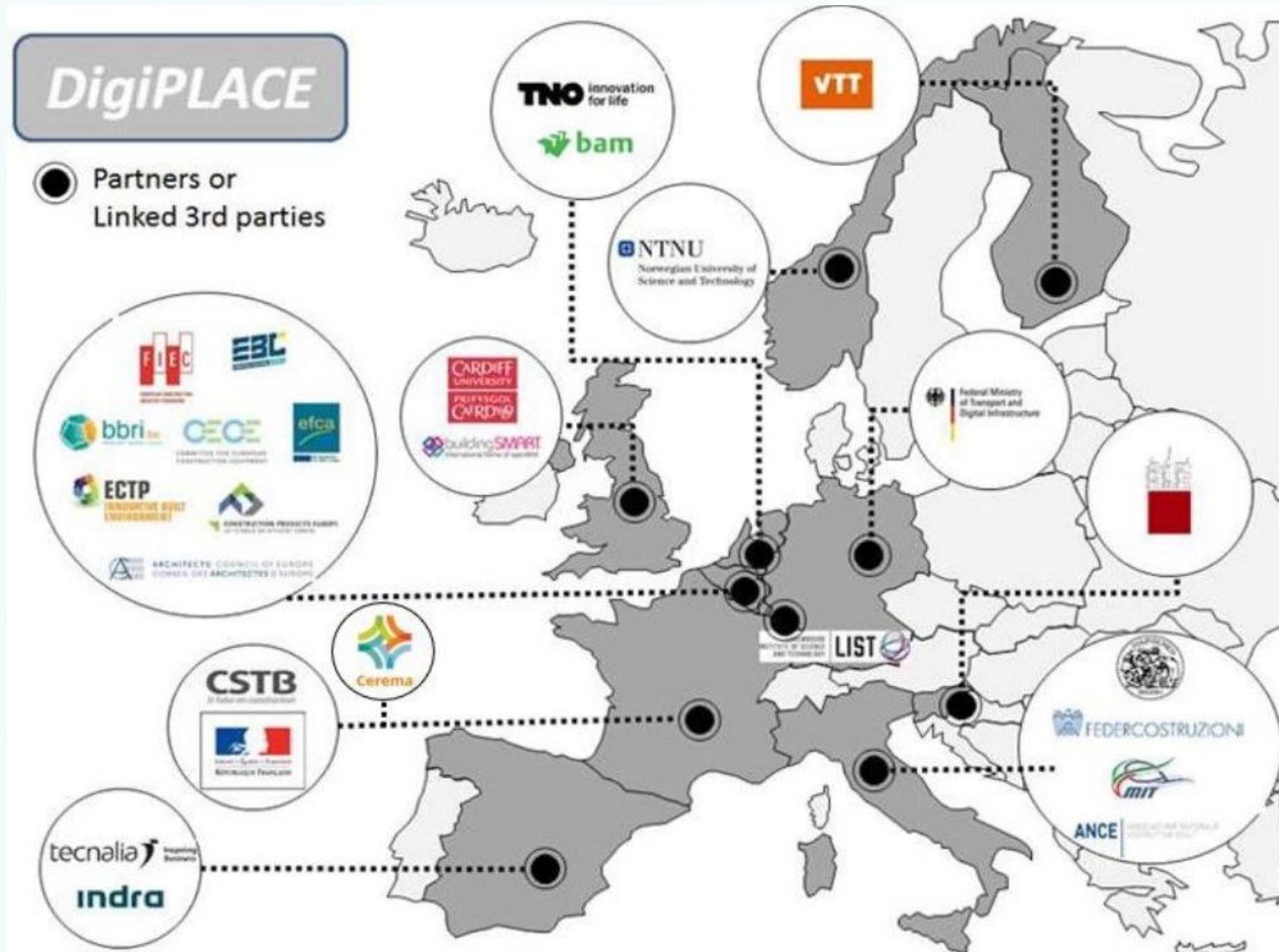


N.	Beneficiary name	Short name
11	Univerza V Ljubljani	UL
12	Federazione Delle Costruzioni	FederC
13	Centre Scientifique Et Technique De La Construction	CSTC
14	Construction Products Europe	CPE
15	Ministere De L'ecologie Du Developpement Durable Des Transports Et Du Logement	MEEM
16	Associazione Nazionale Costruttori Edili	ANCE
17	Bundesministerium Fuer Verkehr Und Digitale Infrastruktur Dig	BMVI
18	Bam Bouw En Techniek Bv	BAM
19	Italian Ministry Of Infrastructure And Transports	MIT

29/4/2020



DigiPLACE beneficiaries and Linked Third Parties

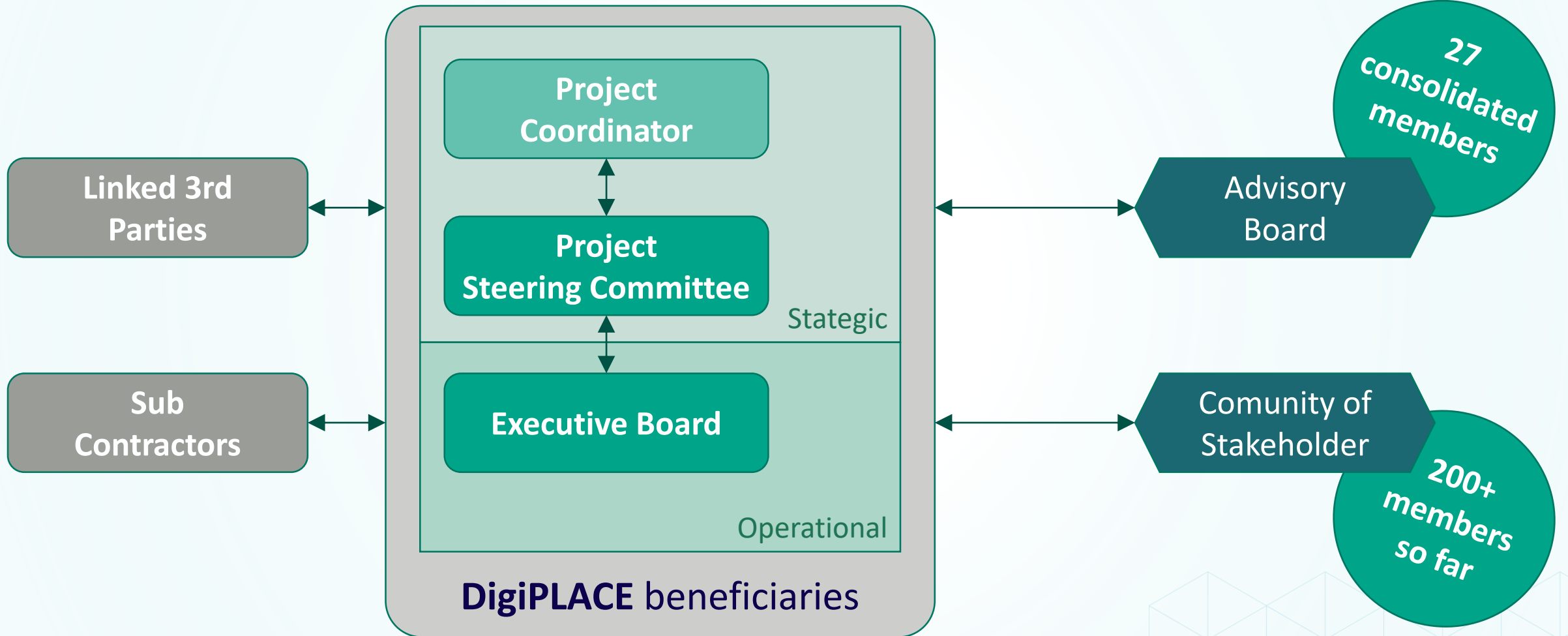


N.	Linked 3rd Parties
1	VTT
2	CU/BRE
3	LIST
4	Tecnalía
5	NTNU
6	TNO
7	CEREMA

29/4/2020



DigiPLACE beneficiaries and Linked Third Parties



29/4/2020



This project has received funding from the European Union's H2020 programme under Grant Agreement No. 856943

DigiPLACE Advisory Board Members



N.	Company name	Referent name
1	McKinsey & Company	Gernot Strube
2	Dassault Systèmes	Gianluca Gonella
3	Ente italiano di normazione - UNI informatica	Alberto Galeotto
4	ADN Construction	Benoit Senior
5	CoBUILDER International	Lars Christian Fredenlund
6	Acca Software s.p.a	Guido Cianciulli
7	Unismart Padova Enterprise S.r.l.	Stefano Carosio
8	International Data Space Association	Lars Nager
9	Estonian Ministry of Economic Affairs and Communications	Jaan Saar
10	Ministry of Construction and Physical Planning (Croatia)	Maja Marija Nahod

29/4/2020



This project has received funding from the European Union's Horizon 2020 programme under Grant Agreement No. 856943

DigiPLACE Advisory Board Members



N.	Company name	Referent name
11	Czech agency for standardization (CESKA Agentura Pro Standardizaci)	Jaroslav Nechyba
12	BIM-architecture	Mr Peter Hyttel Sørensen
13	European Rental Association	Carole Bachmann
14	Platform of Trust	Toni Luhti
15	Finnish Association of Civil Engineers RIL	Miimu Airaksinen
16	European Concrete Platform	Francesco Biasioli
17	Chamber of Construction and Building Materials, Chamber of Commerce and Industry, Slovenia	Joze Renar
18	Neumarkt	Marcus Schreyer
19	Engineering Ingegneria Informatica S.p.A	Lafranco Marasso
20	IBM - International Business Machines Corporation	Paul Surin

29/4/2020



DigiPLACE Advisory Board Members



N.	Company name	Referent name
21	Vinci	Marie Claire Coin
22	Trimble	Jean-François Sourdoire
23	ENCORD	Norbert Pralle
24	Autodesk	Emmanuel Di Giacomo
25	Graphisoft (Nemetschek)	Miklós Szövényi-Lux
26	Ecole de Technologie Supérieur, Québec	Prof. Conrad Boton
27	Allplan (Nemetschek)	Kevin Lea

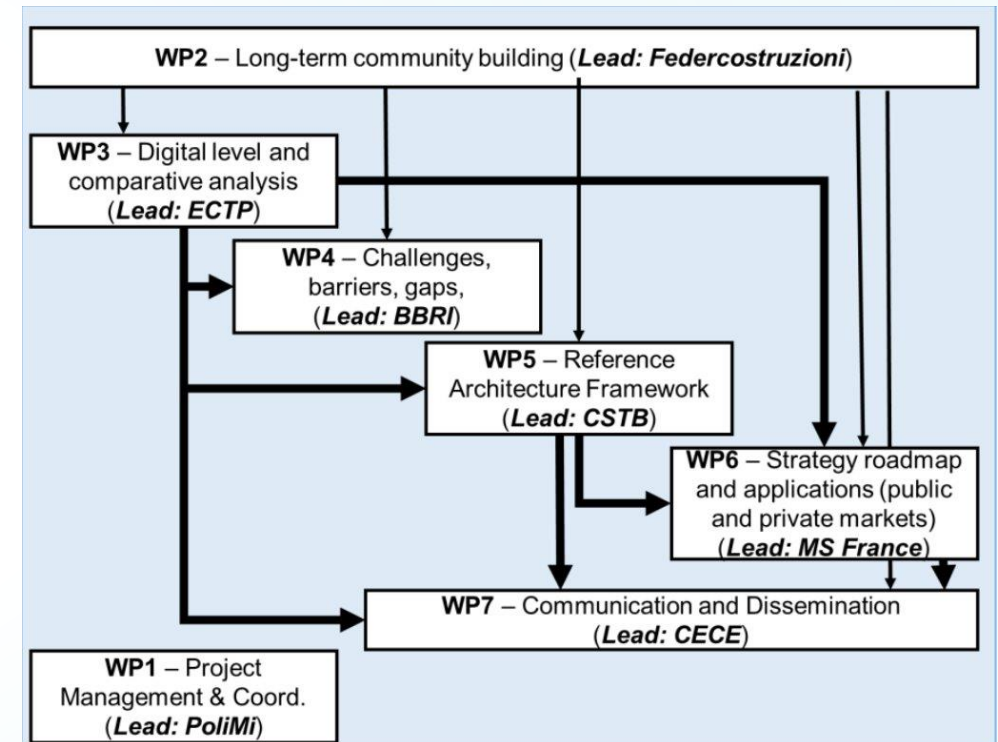
29/4/2020



DigiPLACE project Work Packages



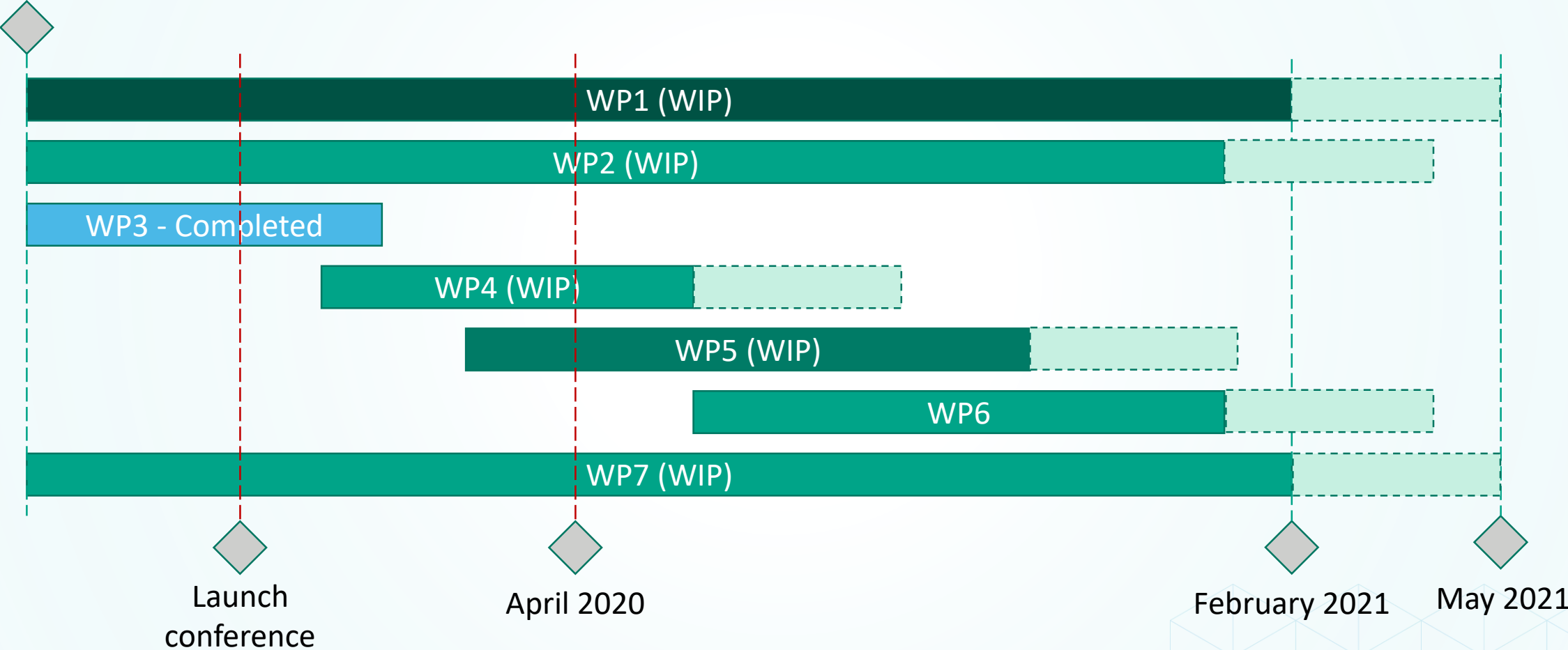
- WP1 – **Project management** - Politecnico di Milano
- WP2 – **Long term community building** - Federcostruzioni
- WP3 – **Digital level and comparison analysis** - ECTP
- WP4 – **Challenge barriers and gaps** - BBRI
- WP5 – **Reference Framework Architecture** - CSTB
- WP6 – **Strategy roadmap** (private and public markets) - MEEM
- WP7 – **Communication and dissemination** - CECE



DigiPLACE project Gantt and state of the art



September 2019



29/4/2020



DigiPLACE project Work Packages



We are waiting you
in the community of
stakeholder:



https://docs.google.com/forms/d/e/1FAIpQLSdvtdZ_C9N-4QrJfF0ahcL0IJ0-TKP-6sLe1ucW5qLF8dR6mA/viewform?vc=0&c=0&w=1

29/4/2020



This project has received
funding from the
European Union's Horizon
programme under Grant
Agreement No. 856943

DIGITAL LEVEL & COMPARISON ANALYSIS

Alain ZARLI
ECTP Secretary General

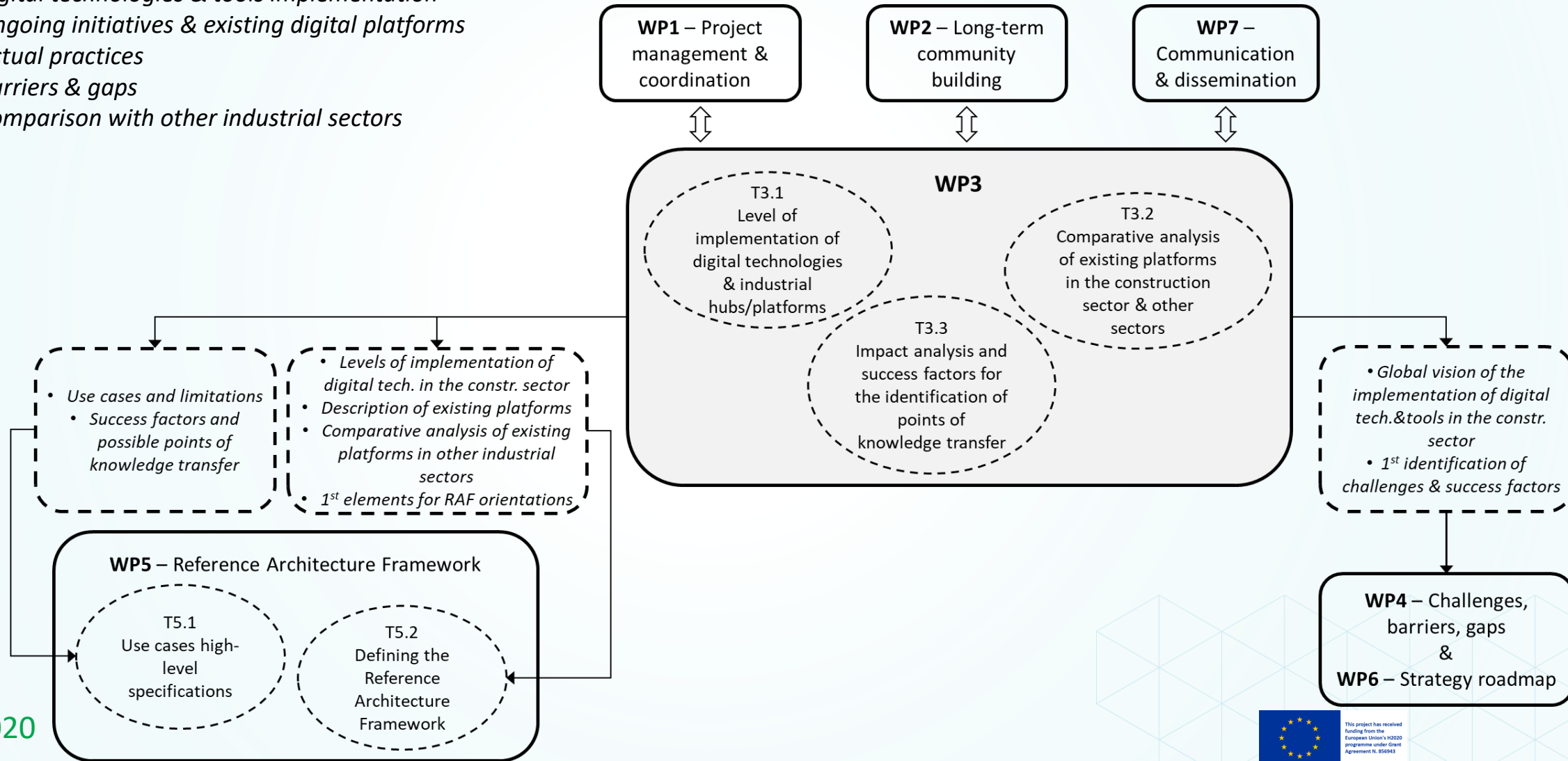


29/4/2020

WP3 - Pave the way for DigiPLACE activities



- Provide a global vision of the level of digitalisation of the Construction sector
 - *Digital technologies & tools implementation*
 - *Ongoing initiatives & existing digital platforms*
 - *Actual practices*
 - *Barriers & gaps*
 - *Comparison with other industrial sectors*
 - ...



29/4/2020

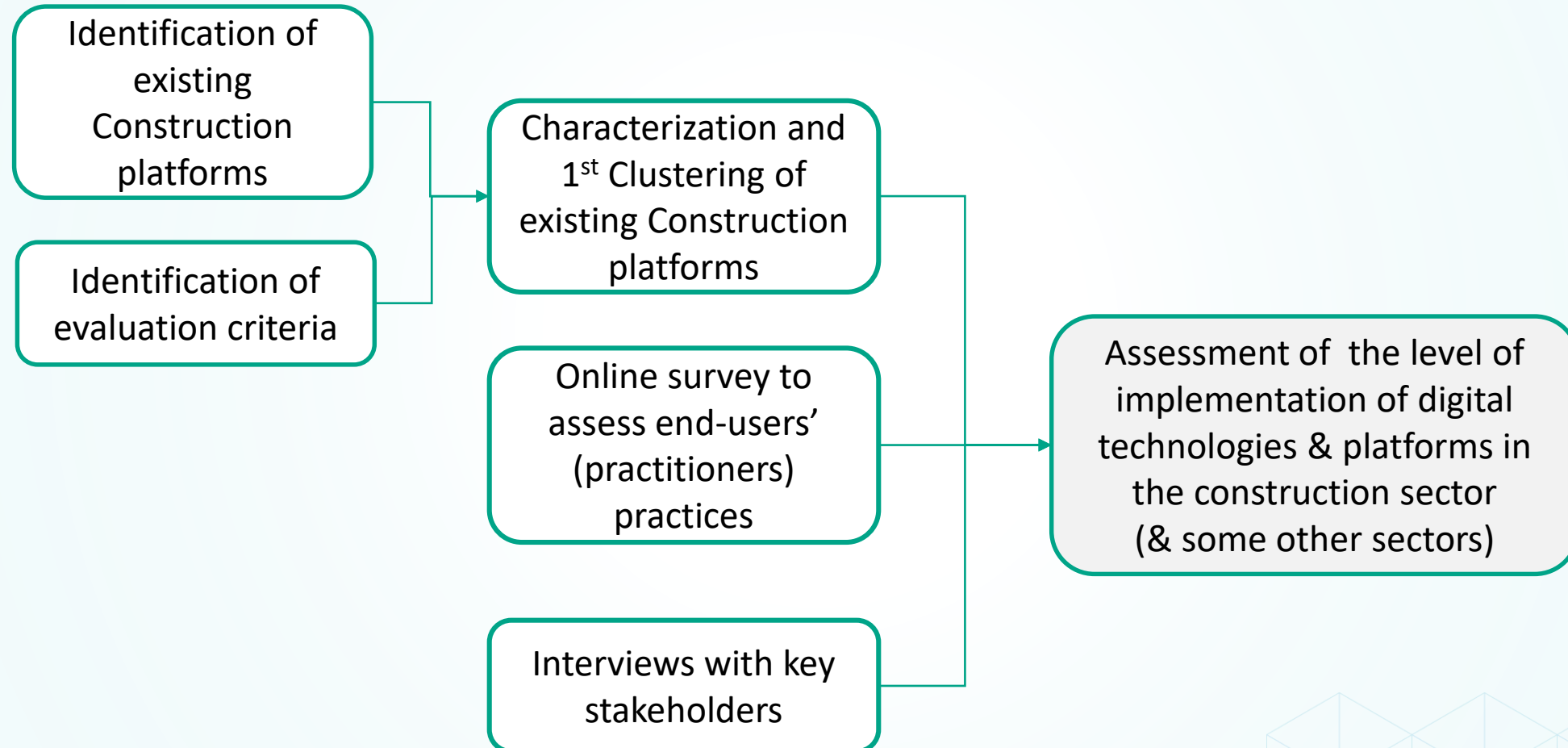


T3.1

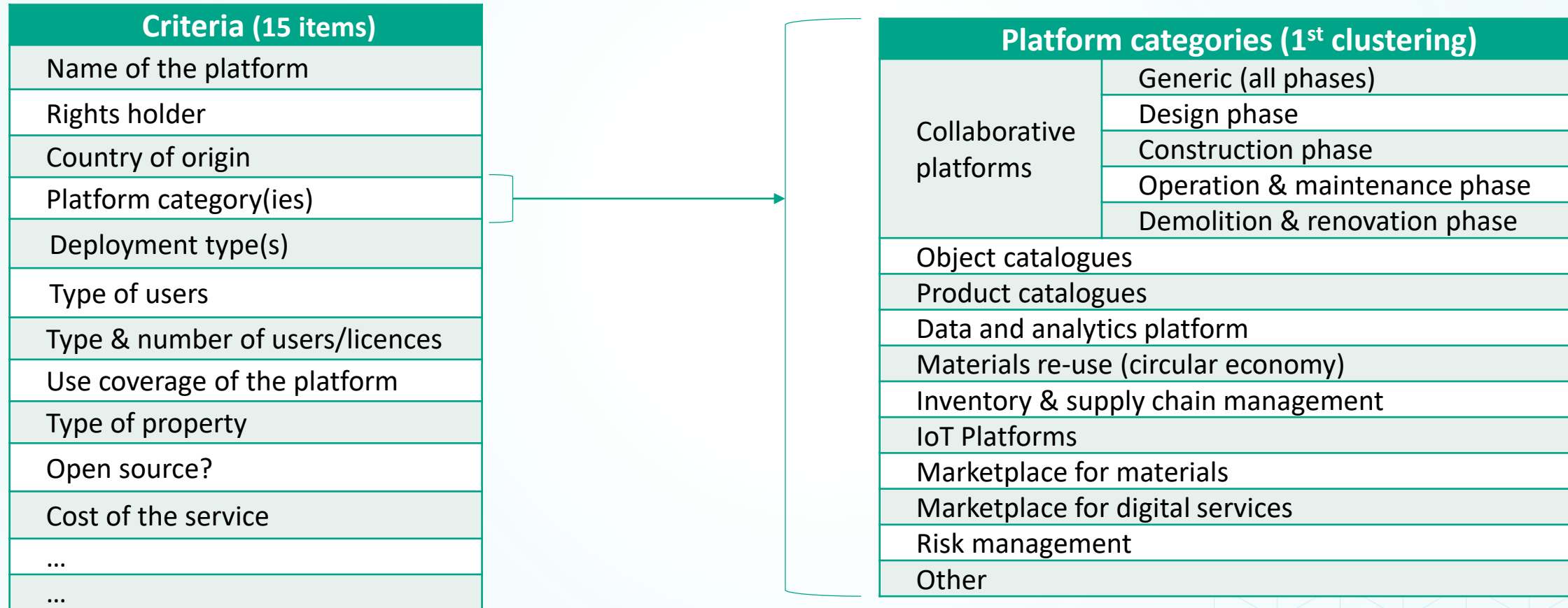
Level of implementation of digital technologies and industrial hubs/platforms in the EU construction sector and in other industrial sectors



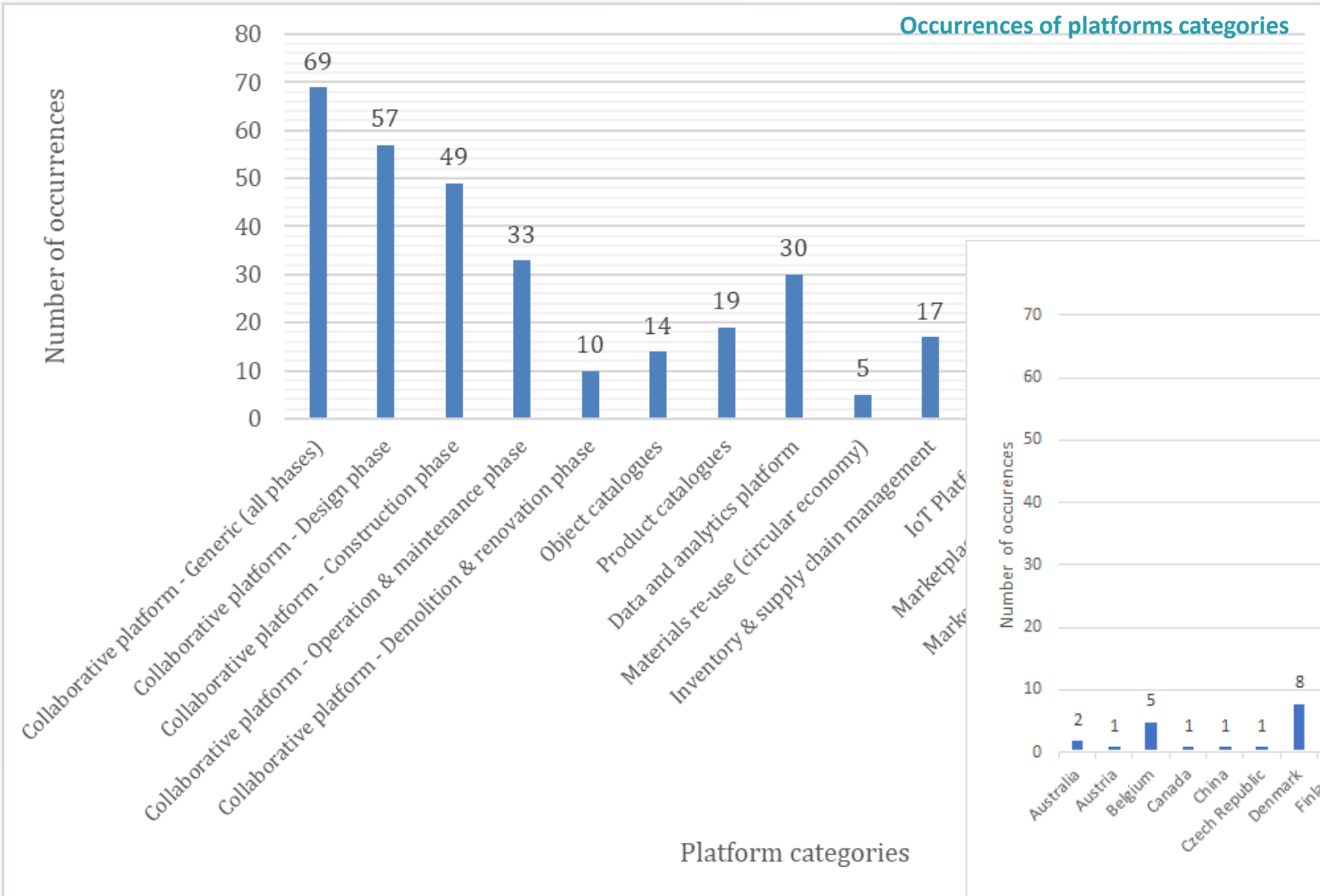
T3.1 – Methodology



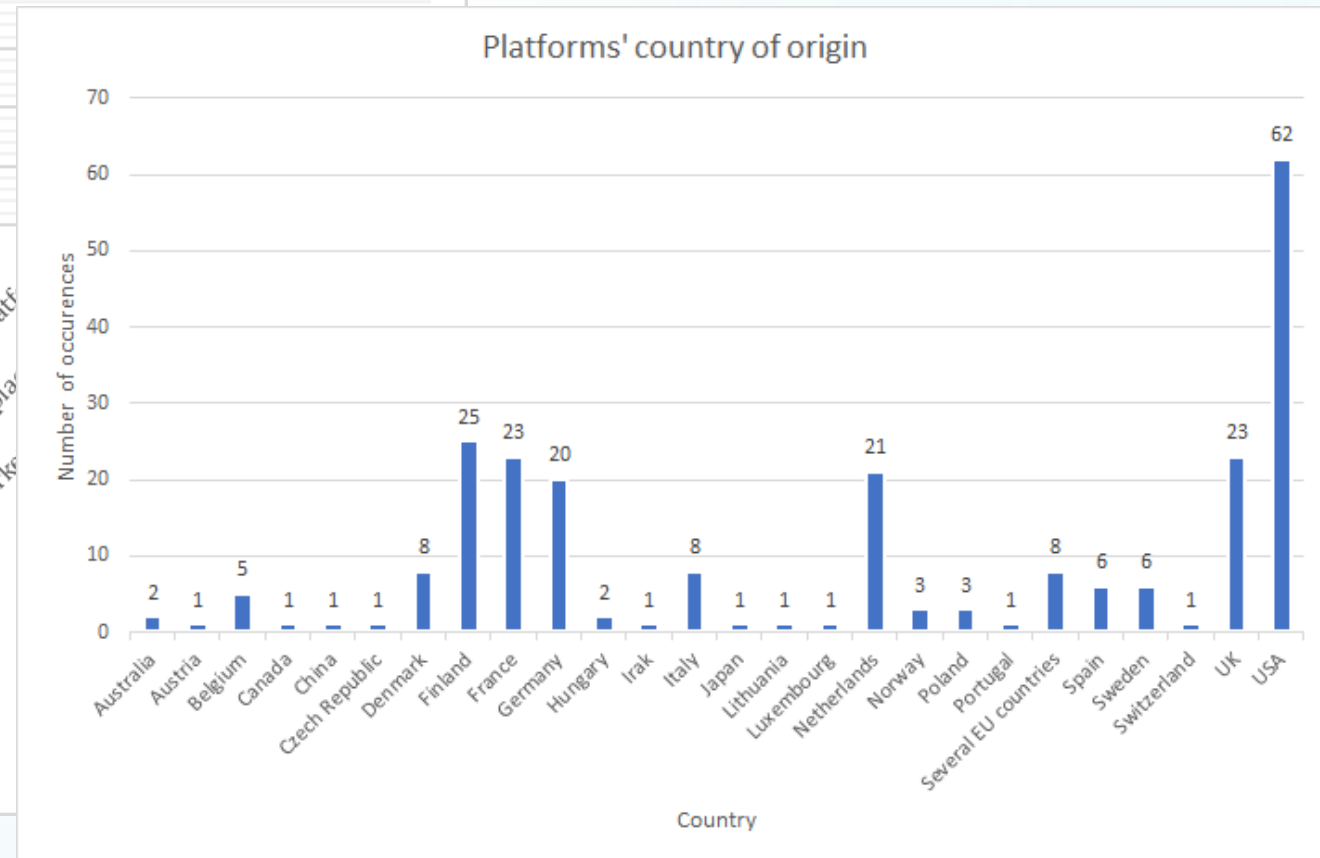
T3.1 – Characterization of existing platforms & 1st clustering



T3.1 – Characterization of existing platforms & 1st clustering



- 300+ digital platforms listed
- Around 200 of them characterised (with the previous criteria) and clustered

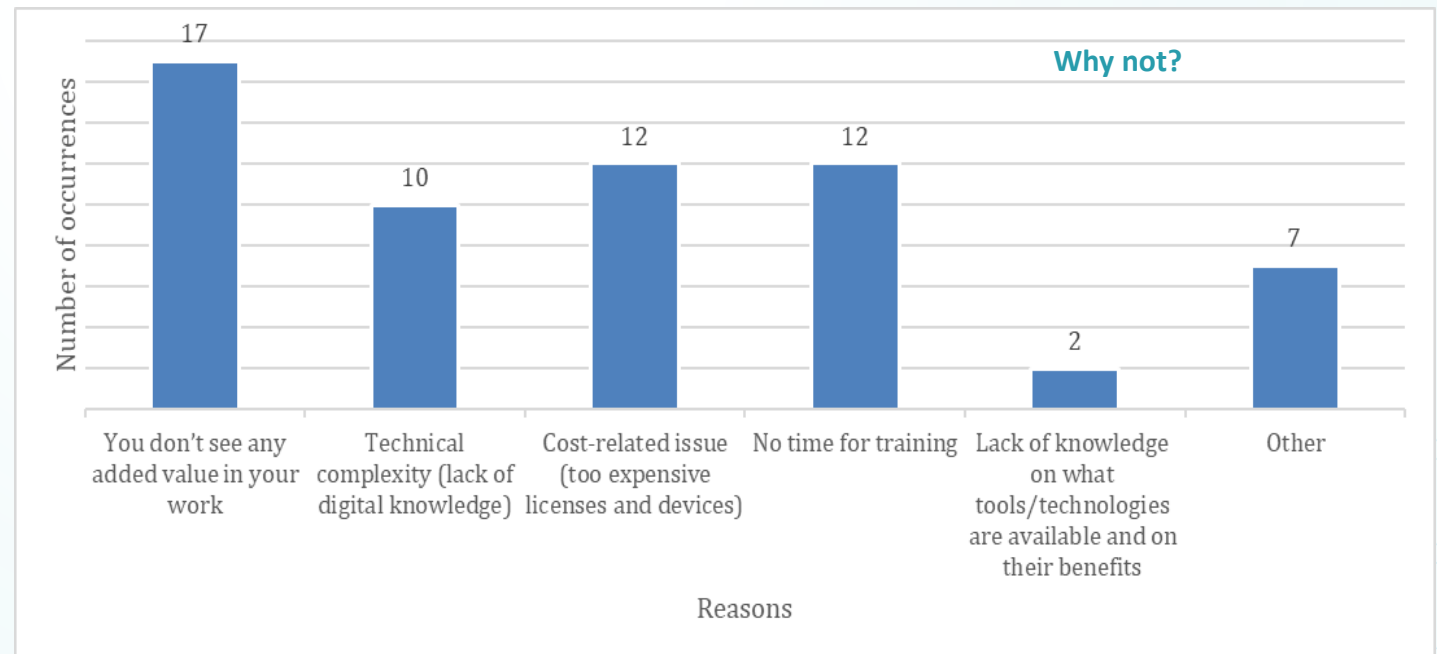
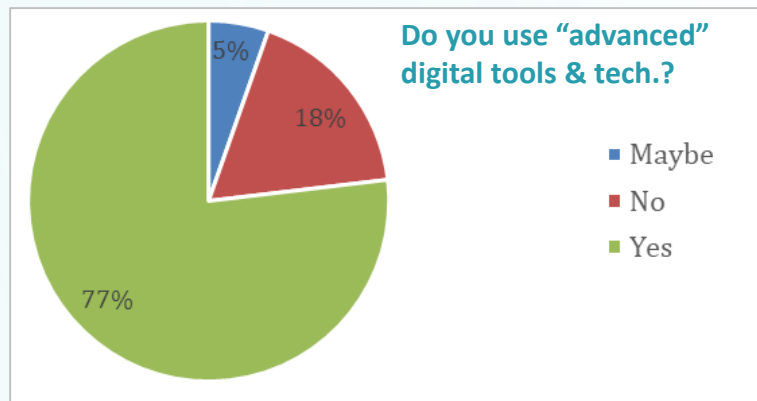
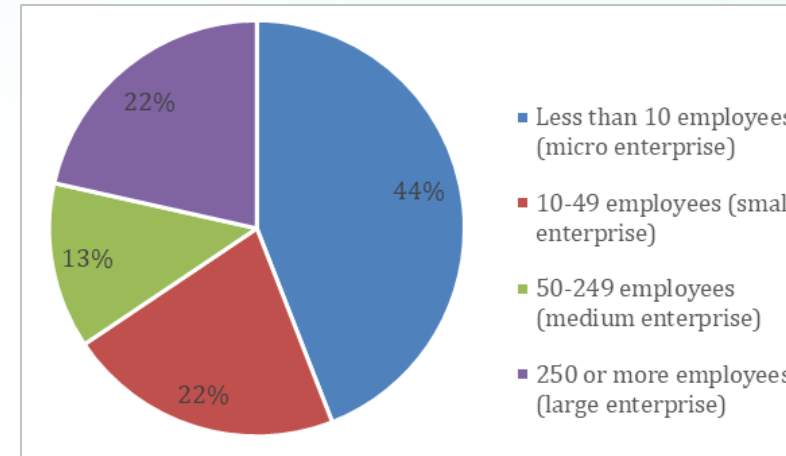


T3.1 – Online survey (1/3)



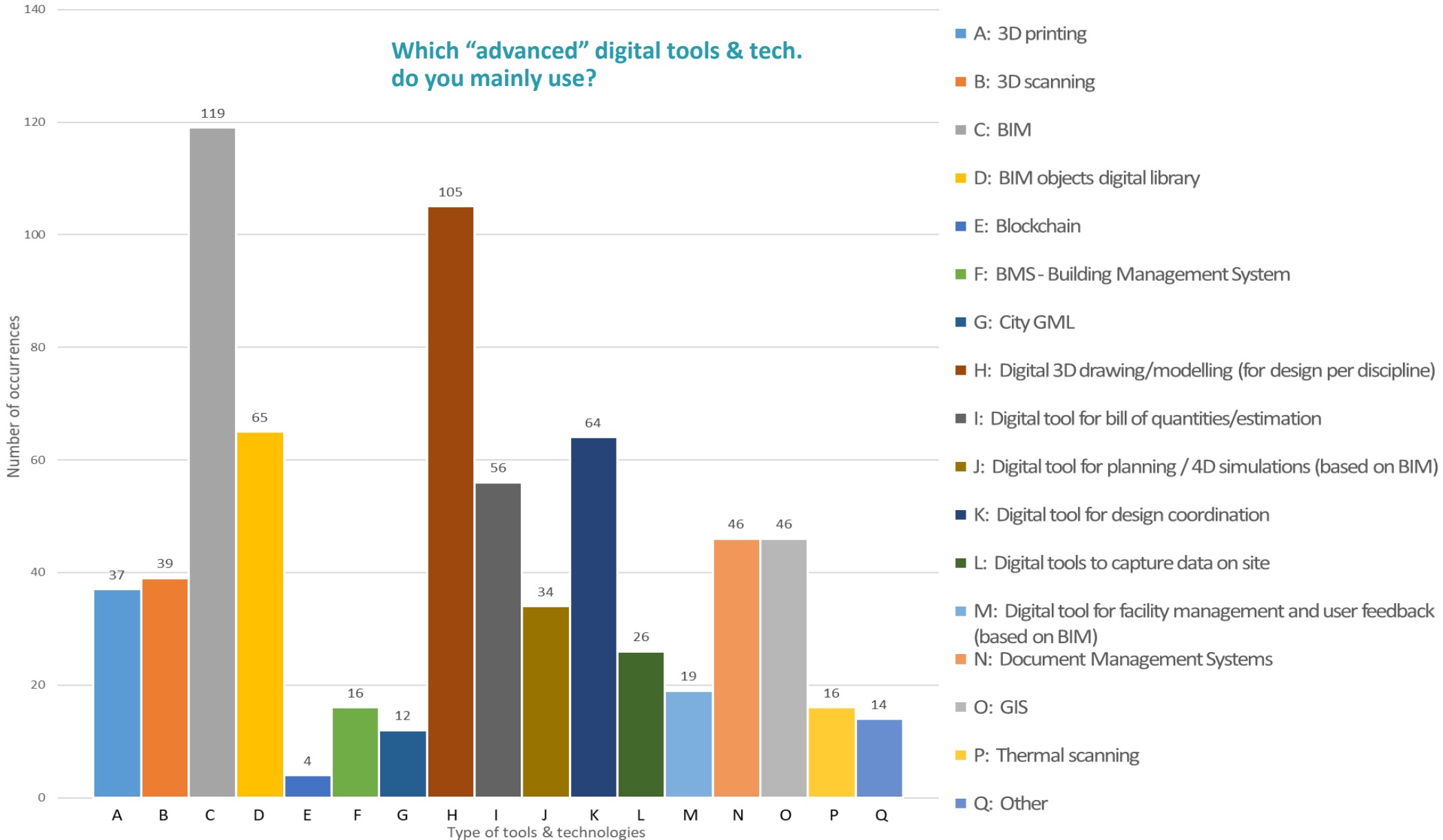
- Disseminated among “practitioners” of the construction sector (*currently still opened [here](#)*)
- 186 responses, in 17 countries
- Provides a snapshot of :
 - Their digital practices in the “real-world”
 - What tools are used, why and how
 - Their vision of digitization and their actual needs
 - Etc.

Size of companies/org. who answered the survey



T3.1 – Online survey (2/3)

Which “advanced” digital tools & tech. do you mainly use?



T3.1 – Online survey (3/3)



Many inputs received on:

- The added value of digital tools & tech. that practitioners see in their work
- The obstacles faced by practitioners in their digitalisation & the features/functionality they actually need

	Added value	Obstacles and missing features/functionality
Main categories of the inputs received	Project efficiency & management (<i>11 items</i>)	Standards and formats (<i>11 items</i>)
	Business/economics advantage (<i>6 items</i>)	Interoperability and connectivity (<i>3 items</i>)
	Service to the client (<i>2 items</i>)	Technical features (<i>5 items</i>)
	Data & technical aspects (<i>2 items</i>)	Cost and accessibility (<i>4 items</i>)
		Lack of knowledge & openness in the construction sector (<i>2 items</i>)

T3.1 – Interviews with key stakeholders across EU



- **Objectives:**
 - Refine (country by country) the digitalisation context of the Construction sector & other sectors
 - Collect examples & good practices
- **Main observations at EU scale for the Construction sector:**
 - Global low level of digitalisation, due e.g. to the cost of technologies/tools or a certain conservatism
 - Major gaps among companies in terms of size and subsectors:
 - Digitalised large companies vs. non-digitalised SMEs
 - Most digitalised: consultancy firms, then Architects, Planners, Engineers, Contactors...
 - Strong incentive to digitalise to increase margins (when applied on the whole value chain), productivity, quality, ..., or simply to comply with clients' demands
 - Need for standards and harmonisation
 - Need to share good practices among public & private stakeholders
 - Large companies (technical & economic capacity)
Tendering obligations (in part. by public authorities)
Clients

Can be drivers for digitalisation, by setting digital practices & rules that SMEs and the whole value chain will have to adopt

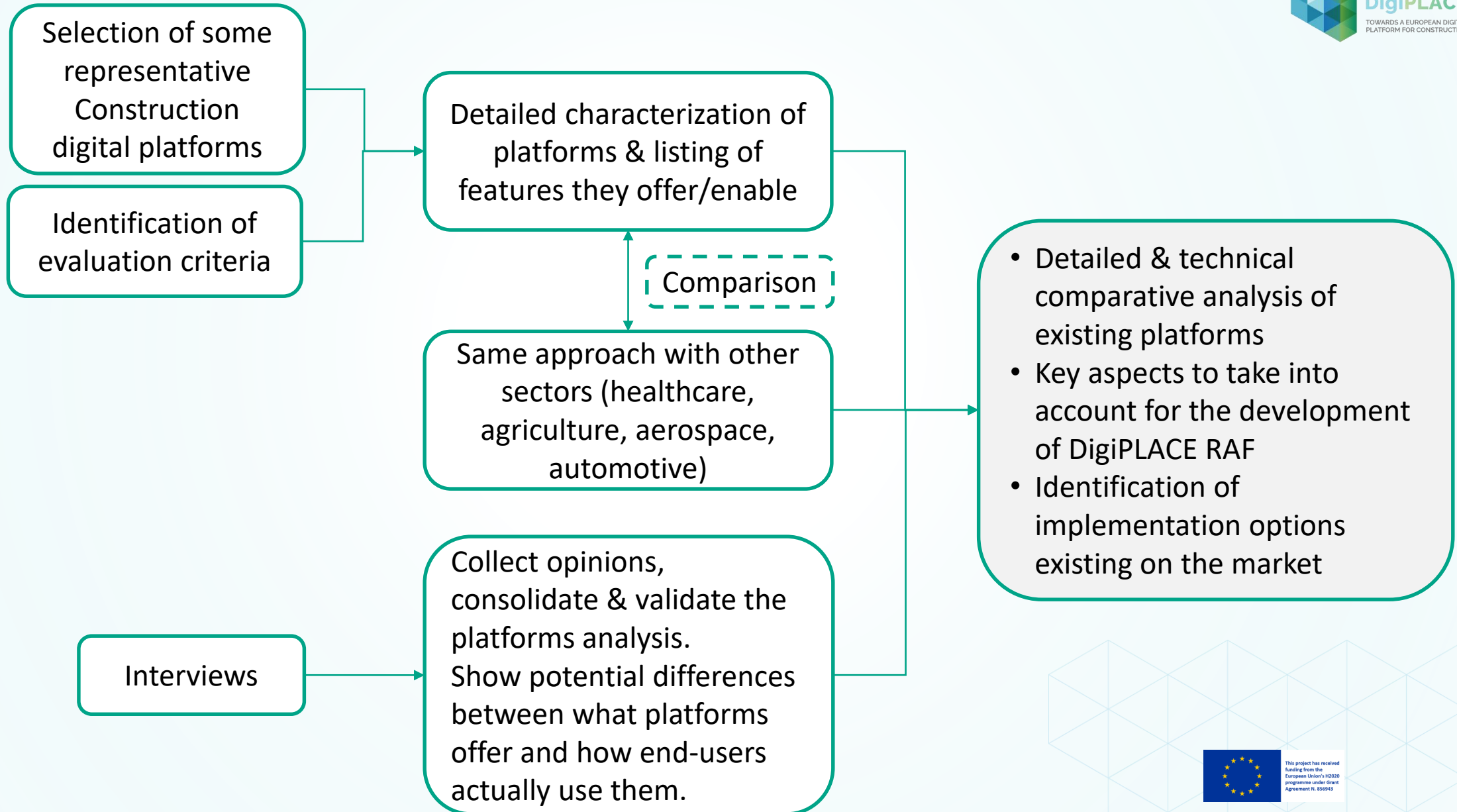


T3.2

Comparative analysis of existing platforms in the construction sector and in other sectors



T3.2 – Methodology



T3.2 – Platforms analysed



- Construction digital platforms and tools analysed:

	Company/organisation that developed the platform	Name of the platform analysed
1	ACCA software	PriMus-PLATFORM
2	ACCA software	usBIM.platform
3	Autodesk	BIM 360
4	Autodesk	Revit
5	Cardiff University	CUSP
6	CSTB	KROQI
7	Dassault Systèmes	3DEXPERIENCE
8	IBM	IBM Built Environment Platform
9	GRAPHISOFT	ARCHICAD
10	GRAPHISOFT	BIMcloud
11	TNO	BIMserver.org
12	Trimble	Trimble WorksManager
13	Government of Estonia	E-Construction

- Global context and a few representative digital platforms for each of the sectors considered: healthcare, agriculture, automotive, aerospace.

T3.2 – Evaluation criteria



- Assess the characteristics of existing platforms (architecture, functionality, services provided, standards, adapted LOD, etc.):
 - Use case and services:** features proposed by the platform and the way they are implemented (40+ items)
 - System functioning:** how the platform works in terms of data management, architecture, etc. (30+ items)
 - Usability:** how the platform is adaptable to different kinds of users and needs (10+ items)
 - Economic factors:** cost of the platform and potential packages available (8 items)
- Some examples for the “System Functioning” criteria:

Technical features	3D modelling
	Calculation/data capacity
	CDE (Common Data Environment) functionalities:
	-->Data format conversion tool availability
	-->Data storage
	-->Data viewing
	-->Linked data
	-->...
	Cloud architecture
	Data sharing and diffusion
Input data	
...	

Data security and GDPR	Compliance with the GDPR
	Data property
	Data storage (Where & how? Possible to chose the hosting country?)
	Property of the system
	Possibility to delete all the user's documents (incl. the backup files)
...	
Robustness	Maturity of the system (incl. support, documentation, etc.)
	Compatibility between different versions
	Compatibility between different softwares
...	

T3.2 – Main observations (1/2)



- The analysis provides a representative listing of what can be found on the market for all these criteria. The RAF will consider them and make recommendations.
- Remarks for Construction platforms:
 - “Collaborative platforms” offer a vast array of use cases & services, under many different forms
 - If not directly integrated in the platform/tool, still often possible to access services through APIs
 - Use of many formats, extensions, linked services, standards, etc. across software
- Major issues for all sectors for the development of a large scale digital platform:
 - lack of standardisation
 - low interoperability of software & services

Further development of IFC standard could be an answer. But other approaches could be considered, e.g. the protocol-based standards in Healthcare.
- Some services/features are not properly answered in the Construction sector (e.g. Machine Learning, Product Lifecycle Management, Requirements for Documentation) and could take example from developments in other more “advanced” sectors such as Aerospace.
- Some interesting concepts identified, especially from the Healthcare sector:
 - Horizontal platforms
 - Integration & development platforms

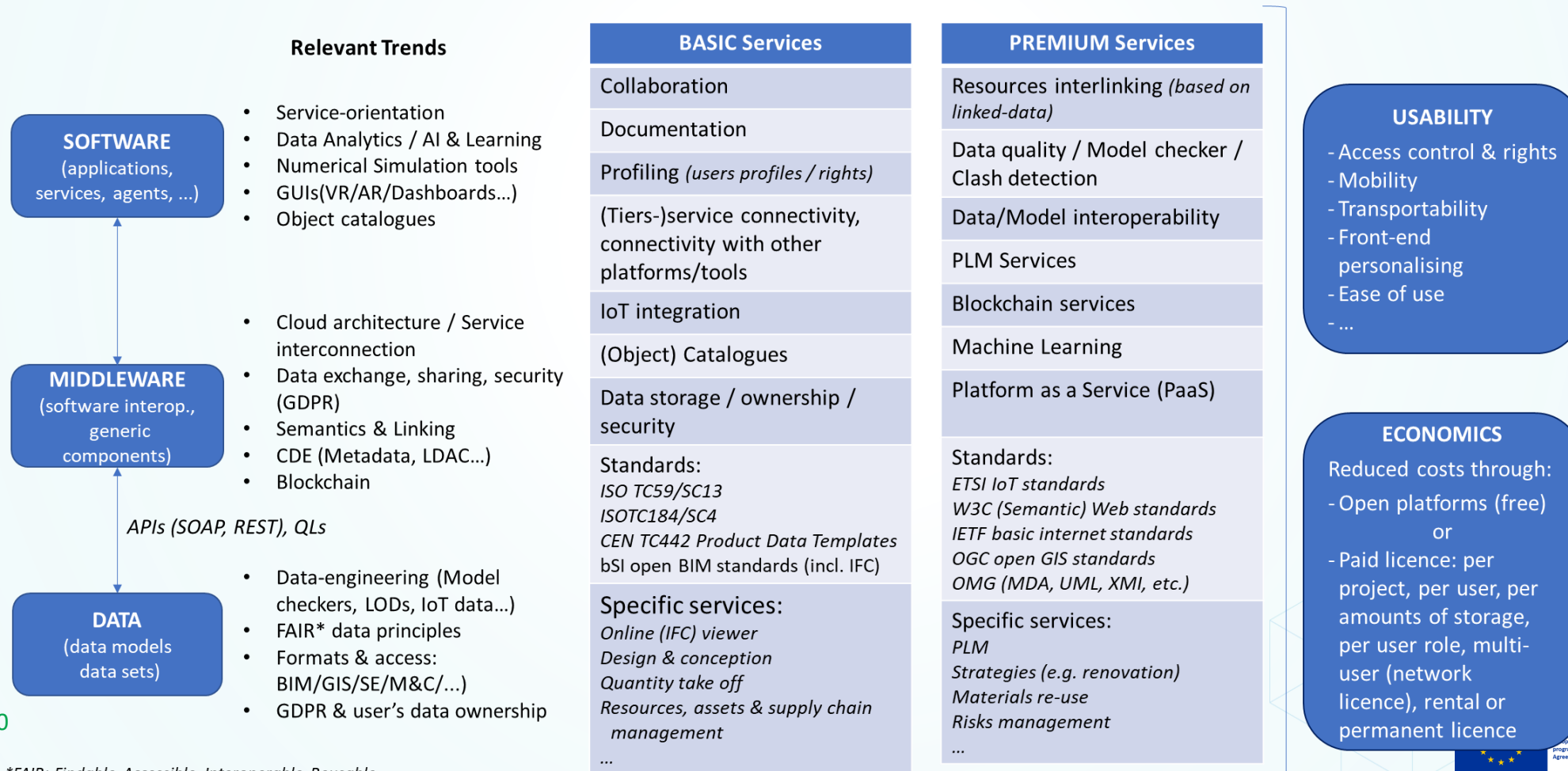


T3.2 – Main observations (2/2)



- Preliminary agreement on the definition of a digital platform - at least in the context of DigiPLACE:

Operating system that enables to plug-in services and to give access to data, with the possibility to connect to other platforms, tools or applications via APIs.



29/4/2020

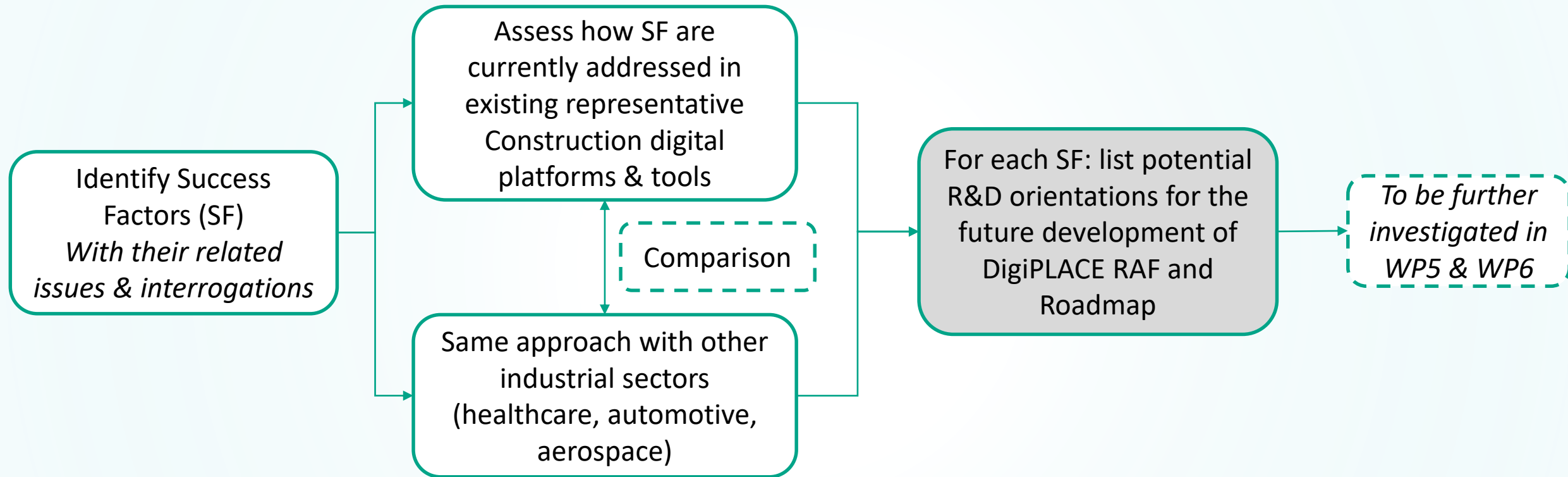
*FAIR: Findable, Accessible, Interoperable, Reusable

T3.3

Impact analysis and success factors for the identification of possible points of knowledge transfer



T3.3 – Methodology



T3.3 – Success Factors



Success Factors: focus points that the DigiPLACE RAF should consider, in order to fulfil the objectives of the DigiPLACE project.

TECHNICAL ASPECTS	
1	Interoperability and sustainability
2	Collaboration enabler
3	Single entry point
4	Capacity to connect several platforms both at regional and national levels
5	Integration of both public and private data
6	Easier circulation of / access to services and products
7	Maintenance of data
8	Maintenance and update of the services
9	Adequate backup of data
10	Be customizable
11	Be scalable and dynamic (provide an environment able to integrate new/existing tools)
12	Efficient and fast data management and data queries

DEMAND / REGULATORY ASPECTS	
13	Capacity to check compliance with regulations & certifications
14	Capacity to answer the demand/needs of every kind of stakeholder
15	Relying on the national level, by interconnecting with national platforms

ECONOMIC ASPECTS	
16	Identification of clear funding mechanisms / systems (analysis of the economic sustainability of the platform)
17	Identification of business cases for all stakeholders
18	Increase of the competitiveness for all the value chain

SECURITY ASPECTS	
19	Information and data security
20	GDPR compliance

T3.3 – Main remarks on the comparison between sectors (1/2)



- Many industries share common elements of context:
 - impetus for digitalisation
 - need for more cross-boarders/sectors cooperation
 - increasing amount and complexity of the data to deal with
 - need to comply with new regulations
 - need to standardise practices and formats, e.g. to facilitate cooperation projects
 - etc.
- Thus, SF added-value is not limited to Construction. SF are addressed in other sectors, e.g. standardisation:
 - All have adopted - or tend to adopt - international standard formats and APIs.
E.g. IFC standard, promoted by many stakeholders in the Construction sector, is also used in Healthcare and Aerospace
 - Some sets of standards are very specific to sectors
E.g. ISO TC184 series for automation process in Aerospace

T3.3 – Main remarks on the comparison between sectors (2/2)



- Major differences in the comprehension of the purpose & characteristics of platforms:
 - The need for interconnected platforms, with an important role for public authorities at regional/national level, seems more adapted to fragmented sectors (Construction, Agriculture) where the markets and regulations have as well mostly remained national.
 - Interconnected national platforms are not really considered in sectors like Aerospace and Automotive, where the market is dominated by fewer & bigger service providers having their own proprietary solutions.
- Inspiration could be taken from other sector for specific feature. E.g. regarding private data protection in Healthcare.
- The concept of RAF, in the sense of DigiPLACE, does not seem to be existing in the other industrial sectors - at least the ones studied here.
- A structure enabling to fulfil the 20 previous success factors (and maybe others) would certainly help the Construction sector to catch up on digitalisation compared to other sectors, as well as to become more attractive

T3.3 – R&D orientations and next steps



- For the future development of an EU digital platform concept, T3.3 has exposed a certain number of:

- Challenges
- Open questions
- Possible ways of implementation

Refer to D3.3 for the complete listing

- Based on these observations and on the expertise of the stakeholders involved in the project, a list of R&D orientations for each Success Factor has been made.

From there and from the other WP3 inputs:

- *WP4 → further descriptions and possible solutions to the barriers identified*
- *WP5 & WP6 → further analyses, compare potential ways of implementation, etc., and ultimately to provide final answers through the development of the DigiPLACE RAF and Roadmap.*
- Crucial questions will have to be answered in priority, since they will necessarily orientate the way to consider many Success Factors. E.g.:
 - Should DigiPLACE foresee the possibility of allowing users to work on a collaborative construction project or not (i.e. from an engineering point of view)?

OUTLINING the DigiPLACE REFERENCE ARCHITECTURE FRAMEWORK

Nicolas NAVILLE
CSTB



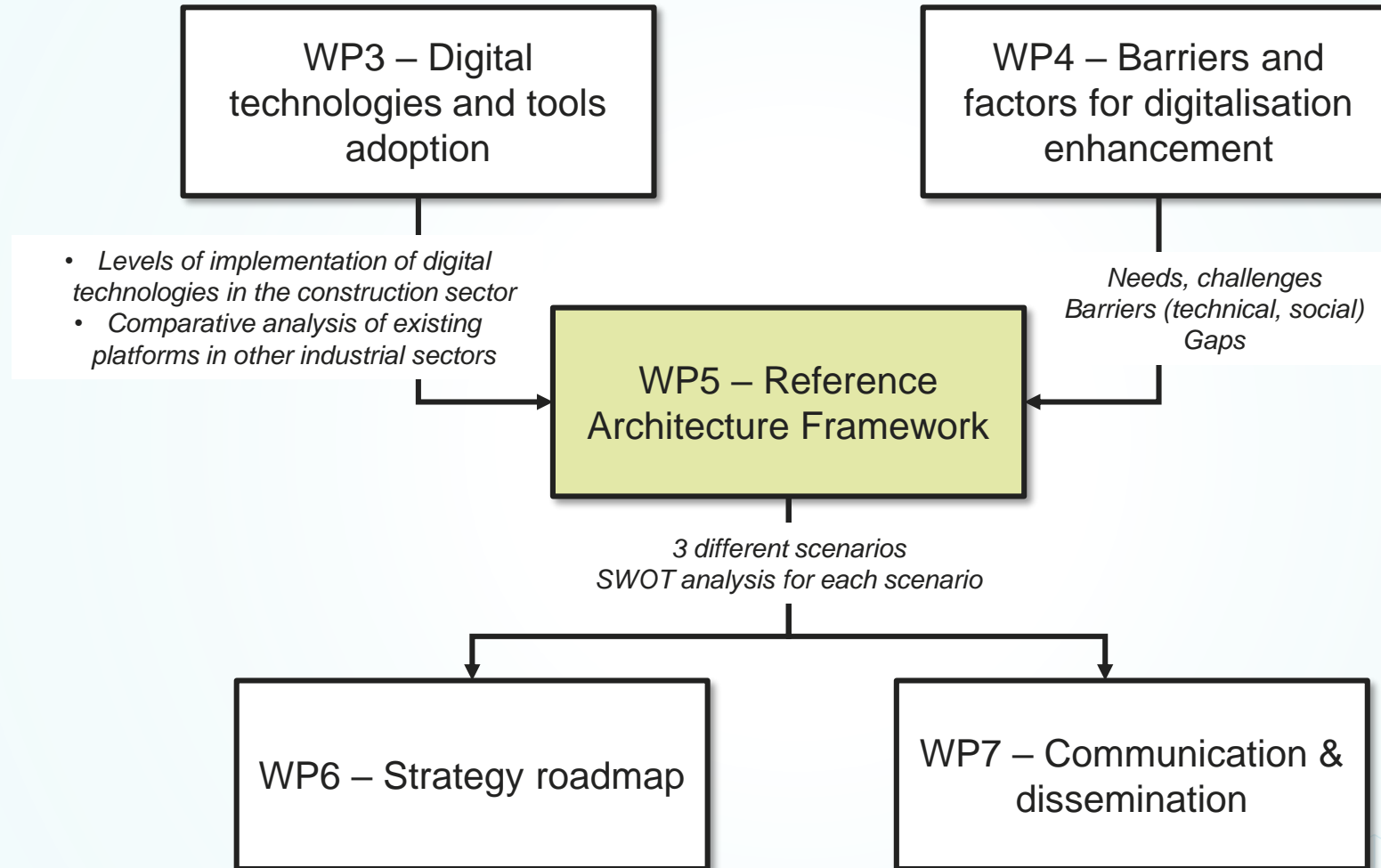
29/4/2020

OUTLINE



- What is DigiPLACE Reference Architecture Framework ?
- Defining DigiPlace key Use Cases

Core of DigiPLACE project



What is the Reference Architecture Framework ?



A new european digital
construction platform ?

Reference Architecture
Framework



Common guidelines for building and
implementing digital platforms for the
construction sector across europe
(public or private, local or european...)

What is the Reference Architecture Framework ?

Reference Architecture
Framework



A new european digital
construction platform ?



Provide common services and tools to help
connect/integrate existing platforms ?



Common guidelines for building and
implementing digital platforms for the
construction sector across europe
(public or private, local or european...)

What is the Reference Architecture Framework ?



Reference Architecture Framework



A new european digital construction platform ?



Provide common services and tools to help connect/integrate existing platforms ?



Common guidelines for building and implementing digital platforms for the construction sector across europe (public or private, local or european...)

Identifying DigiPLACE key use cases



- A Reference Architecture Framework ... to answer Use Cases
- Key use cases of DigiPLACE : WHAT ? WHAT FOR ? HOW ?

Use cases : underlying objectives



- Environmental performance, climate change
- Industry 4.0, productivity gains, common language, interoperability
- Digitalization of SMEs
- Knowledge sharing, mutual learning, best practices exchange
- Data sharing, artificial intelligence tools
- Market integration and strengthening: call for tenders, supply chain management, smart contracts, IPR...
- Integrating other European initiatives : LEVELS, CPR, Building Passport, European Building Stock 2.0...

Use cases definition : several inputs

WP3

3.1 Implementation level of digital technologies

3.2 **Comparative analysis of existing platforms**

3.3 **Impact analysis of technology transfers**

WP4

4.1 Social and technical barriers

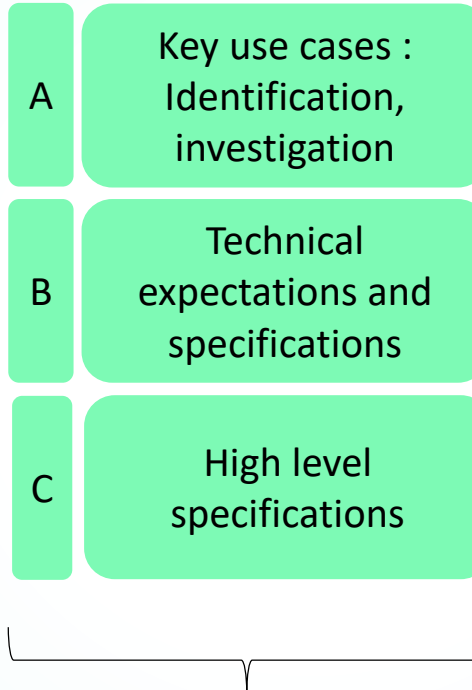
4.2 **Sharing data : willingness and tools**

4.3 **Needs & expectations of stakeholders, SMEs**

4.4 **Measures to mitigate barriers**

4.5 Pilot case studies for proposed measures

T5.1 : Use Cases and specifications



T5.2 : Reference architecture framework (3 scenarios)

Questions to answer :

- Do existing services answer the core objectives, the needs and barriers identified ?
- What is missing in the current situation ? Where are the shortcomings ?
- How to fill the gap ?
- How better european integration can improve things ?
- What should be replicated from other sectors ? Generalized at European scale ?

Use Cases definition : overview of identified topics



Area	Examples of use case categories
Common language, interoperability	Interoperable product/object data databases
	Provide a map of existing digital standards
Regulations	Access to national construction rules, rules checking tools
	Cadastre, urban and real estate data retrieval
Knowledge sharing	Sharing of private data with AI analytics
	Best practices exchange on BIM projects
Collaboration tools	Common guidelines for BIM services to improve interoperability
	Supply chain management (industry 4.0, off-site, link between conception and manufacturing)
Business, market	Dedicated tools/service for SMEs digitalization
	Ease access to Environmental Product Data
Environmental performance (transversal)	Provide LCA tools, collect and analyse LCA data

Next steps



- In progress : brainstorming for the definition and description of key use cases
 - > Identify use cases and build a consensus among European stakeholders
 - > By September 2020
- Building scenarios for the Reference Architecture Framework (T5.2)
- Strategy Roadmap (WP6)

Q&A



CONCLUSION

Riccardo VIAGGI
CECE Secretary General



29/4/2020

Community of Stakeholders



Join the DigiPLACE Community of Stakeholders and actively contribute to building the European Digital Platform for the construction ecosystem.

You have the opportunity to be heard and have your inputs valued!

Go to the [registration page](#) or use the QR code

29/4/2020



Follow us



Digi_PLACE



DigiPLACE



DigiPLACE

www.digiplaceproject.eu



THANK YOU!



This project has received funding from the European Union's H2020 programme under Grant Agreement N. 856943