BIM4EEB

BIM-based toolkit for
Efficient rEnovation in Buildings

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BIM-based fast toolkit for Efficient rEnovation in Buildings

This project has received funding from European Union's H2020 research and innovation programme under grant agreement N. 820660

A EU-funded project in a nutshell

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BIM based fast toolkit **for E**fficient r**E**novation in **B**uildings

Duration:

- 42 months: 1 January 2019 – 30 June 2022

Financial

- Budget 6.933.940 EUR
- 100% funded by the European Commission

15 partners representing main stakeholders

- 3 Universities: PoliMi, UCC, TUD
- 2 Research Institutes: VTT, RISE,
- 2 Public administrations: Lombardy Region / ALER VCBM
- 4 SMEs/ Start-ups: SOLINTEL, SUITE5, OneTeam, VisualLink
- 3 Large Enterprises: CAVERION, GCI Sverige, PROCHEM
- 1 EU Association ACE

The team: 15 Partners from 9 EU countries

Coordinator:
Politecnico di Milano, Italy

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WHY BIM4EEB?

A EU-funded project supporting the renovation industry in retrofitting existing residential buildings with a complete **BIM-based toolkit** to make the flow of information efficient and decrease intervention working time, while improving building performances, quality and comfort for inhabitants.

These tools will allow to **rapidly reconstruct 3D digital models of existing buildings** and to seamlessly integrate semantic data in order to perform advanced evaluations of design options for renovations.

Main results will include **guidelines for BIM implementation** and providing an easy, practical and operational platform as a central repository of information, namely **Common Data Environment (CDE),** with different connected tools.

The BIM4EEB objectives

1. Maximise efficiency in building renovation:

- Renovation working time reduction of 20%
- Renovation costs reduction of 15%
- Building quality control with less than 10% performance gap
- Faster energy audits -50% of time
- Net primary energy use decrease of 10%

2. Accelerate the market uptake across Europe towards a digital built environment:

- Uptake of BIM-based renovation by construction companies by 50%
- Uptake of BIM-based dynamic energy assessment plus 30%
- Connection of BIM and GIS environments
- Implementation of as-built data collection in logbooks

The BIM4EEB objectives

3. Speed-up data gathering and processing

- Fast mapping tools for acquiring data of existing buildings and creating BIM models (30% time reduction)
- Innovative tools for connecting BIM models and BACS
- Improved performance and environmental data monitoring/ analysis to support decision-making on renovation scenarios (30% time reduction)
- Occupant behaviour data monitoring to enhance comfort, performance and building operation
- Enhanced simulation (performance gap of max. 10%)

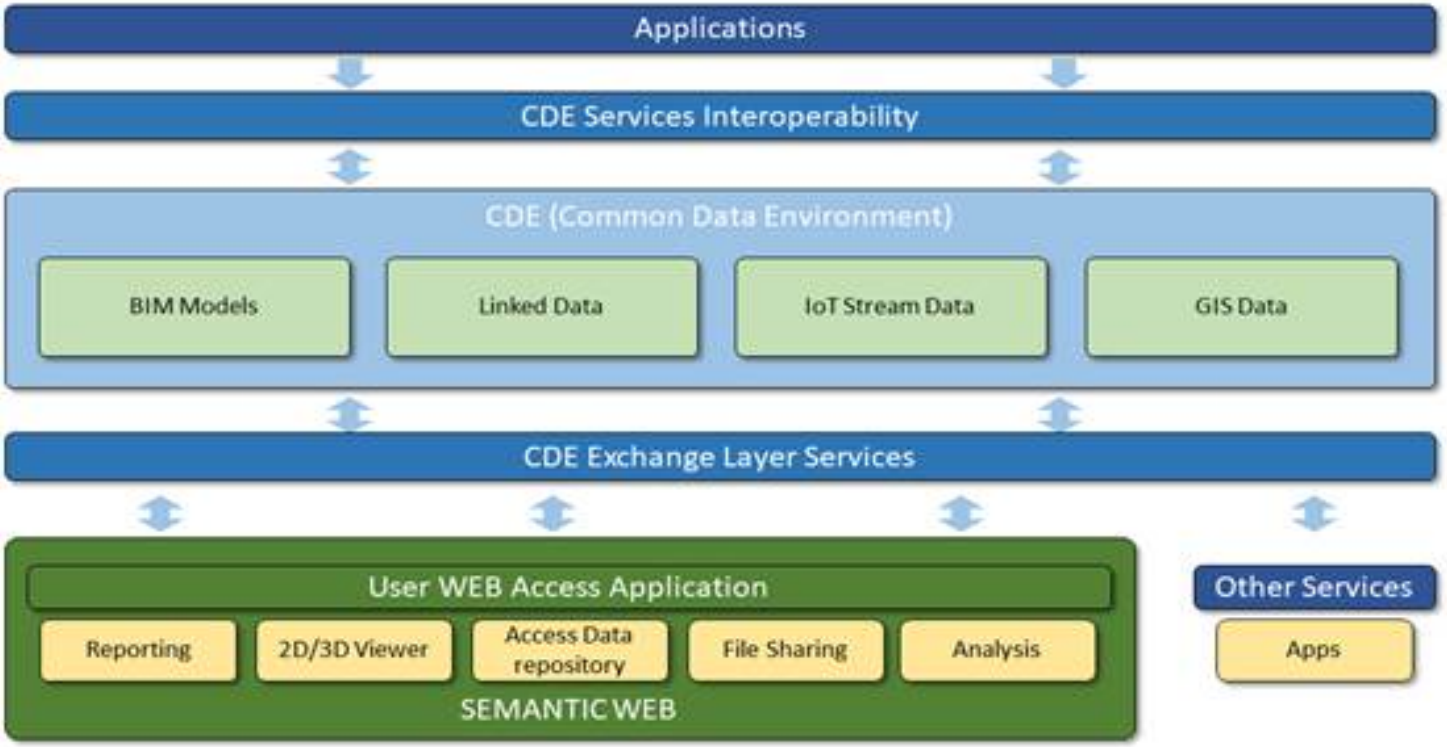
4. Interoperability of different stakeholders and tools, harmonising data exchange formats

- Improve the utilisation of increasingly heterogeneous building data by making it more accessible and interconnected
- Central, accessible, reusable platform for storing information
- Harmonised standardisation for data exchange formats
- Standardise data exchange between BACS and BIM

A multidisciplinary, user-centric approach

- Identification of needs of different stakeholders (i.e. designers, construction companies, service companies, owners and inhabitants)
- Co-designed innovations through workshops at demo sites
- Key social marketing framework based on:
    - AIDA model (attention interest, desire, action)
    - Defra's 4E model (enable, encourage, engage, exemplify)
- E-cooperation/ engagement through attractive and intuitive user interfaces and services/ web
- Enhanced Data Privacy and Protection

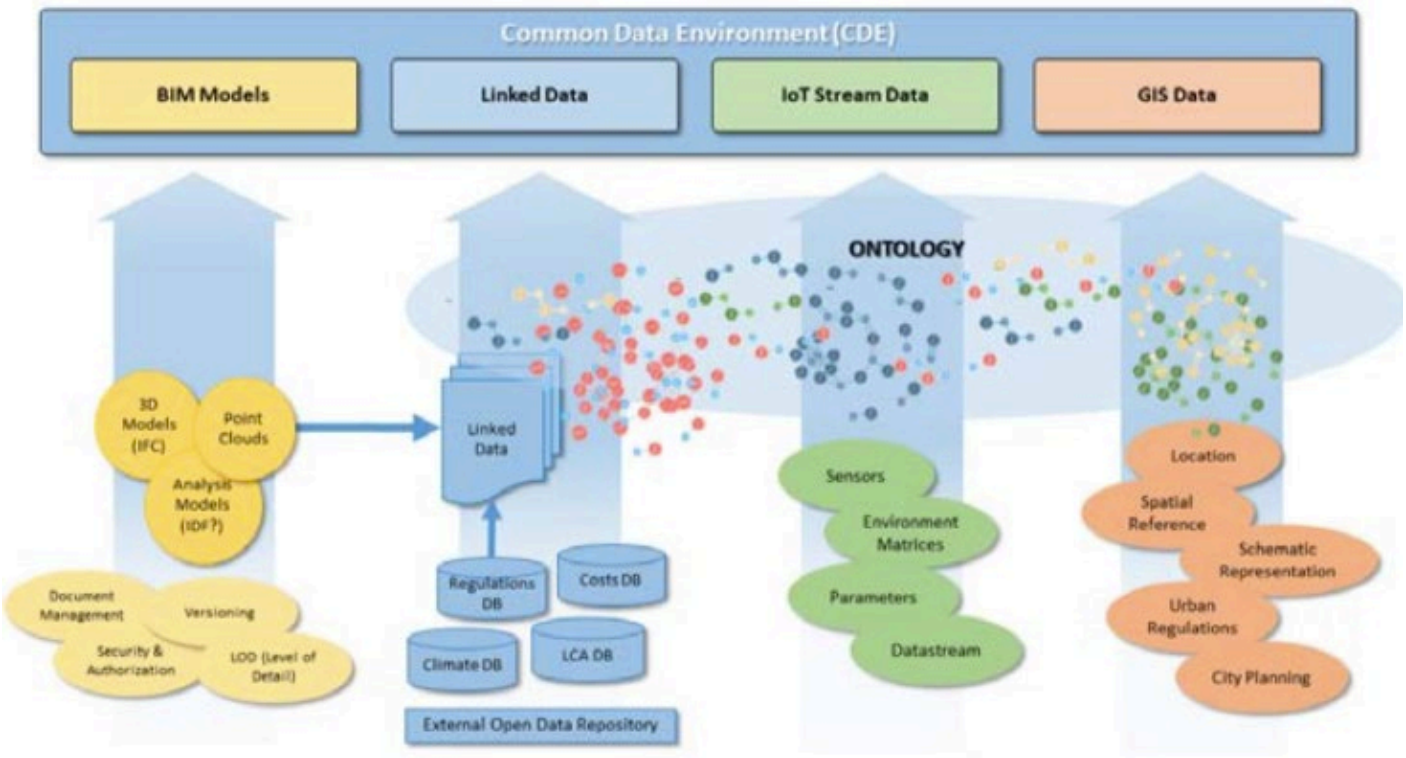
The Common Data environment



(Source: OneTeam)

Establishment of a common data environment within the BIM management system relying on semantic interoperability

The Common Data environment



(Source: OneTeam)

The BIM management system will be composed of a common data environment to share BIM and GIS models, linked data and IoT streaming data from sensors.

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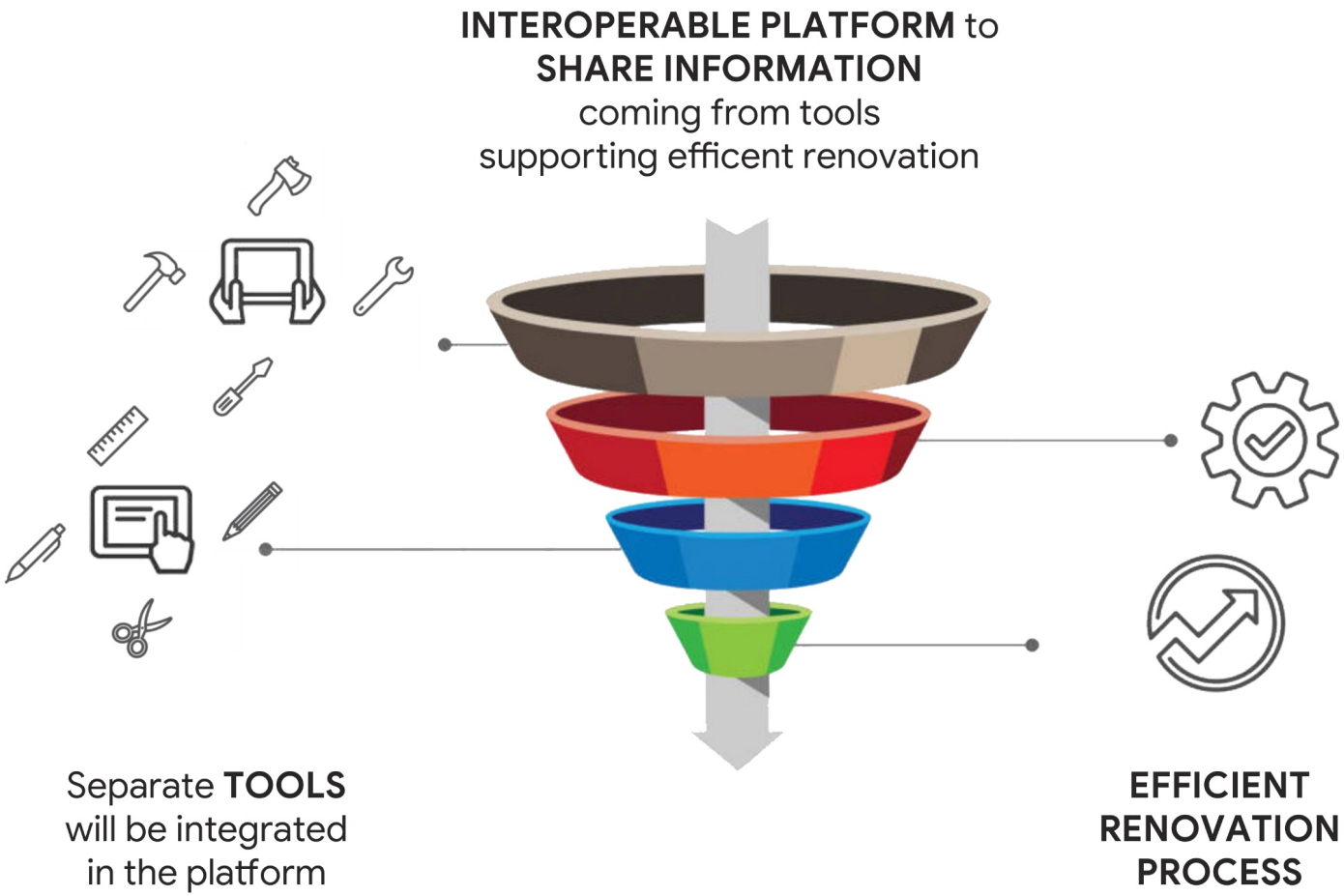
The BIM toolkit



The BIM Tools

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3 demonstration projects in IT, FI, PL

The Italian pilot in Monza

The Polish pilot in Chorzow

The Finnish pilot in Tampere

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YOUR advantages

1. Methods and tools for overcoming current barriers arising in different stages of renovation processes
2. Guidelines for BIM implementation
3. An easy, practical and operational platform as a central repository of information - Common Data Environment (CDE) - with different connected tools
4. Renovation working time reduction by 20%
5. Renovation costs reduction by 15%
6. Building quality control with less than 10% performance gap
7. Fast energy audit -50% of time
8. Net primary energy use decrease by 10%
9. An increase of residential building quality and inhabitants' comfort.

Contact us:

Project Website: Coming soon

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Thank you for your attention!

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