



COGITO

Construction Phase Digital Twin Models and Applications

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COGITO

CONSTRUCTION
PHASE DIGITAL
TWIN MODEL

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COGITO in a nutshell

COGITO will materialise the digitalisation benefits for the construction industry by harmonising *Digital Twins* with the *Building Information Model* and building a digital *Construction 4.0 tool-box* to unleash the untapped potential in *productivity improvement and increased safety*.

COGITO is an **EU-funded project** under Horizon 2020, related to Digital Twinning & Building Information Modelling (BIM).

13 partners from **7 Member States**

Budget: approx. **6€ million**

Project duration: **36 months** (11/2020 - 10/2023)



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Cogito

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Alleviate construction cost / time over-runs - lower costs translate to less energy (indirect benefit)

Digitalise construction phase

Reduce construction site accidents

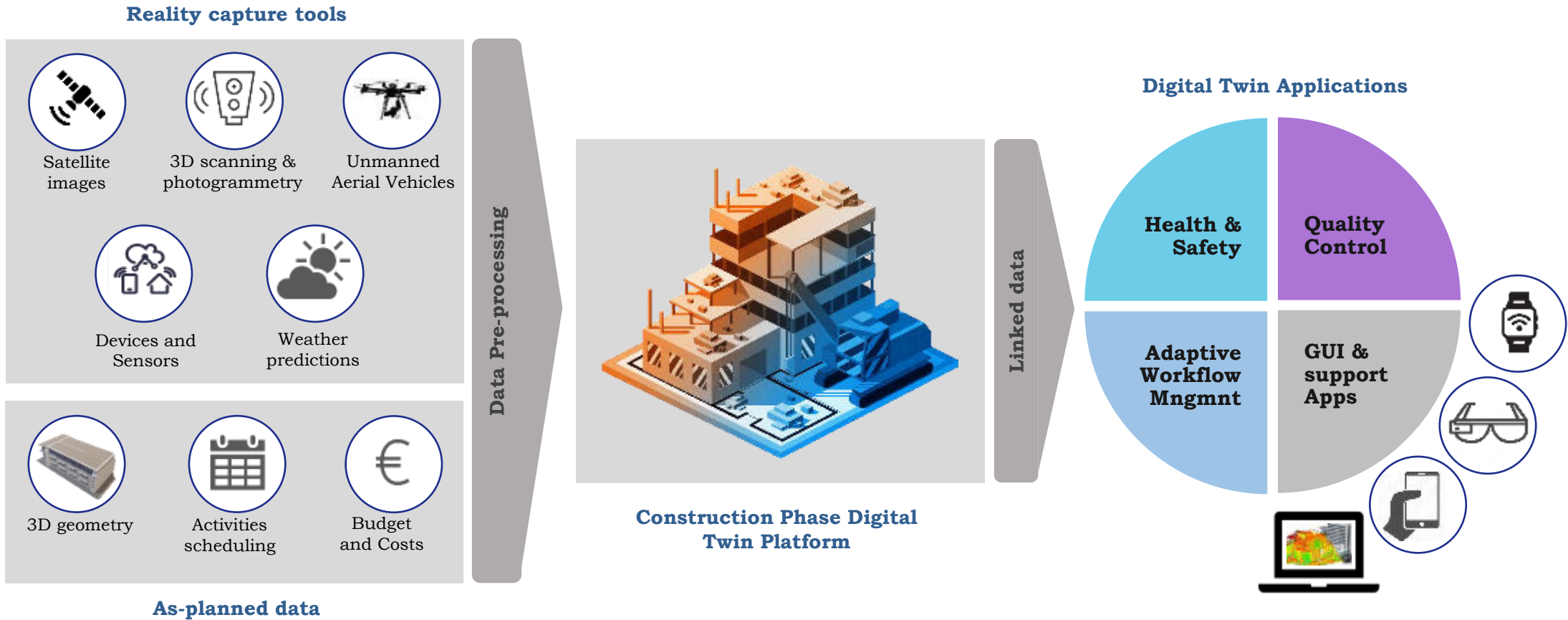
Promote the adoption of COGITO

Demonstrate digital twin in actual construction sites

Promote interoperability of construction digital twins

COGITO Digital Construction 4.0 toolbox

- **Digital Twin** methodology encompassing:
 - **As-planned information**, such as the project Building Information Model (BIM);
 - **As-is information** captured using Reality capture technology;
 - **Integrated data management**
 - **Software Solutions and Digital Applications** to optimise site operations.



COGITO Validation sites

Pre-validation on a testlab for early testing of algorithms and components on real environments.

Validation on two actual construction sites for full experimentation with the COGITO tools and quantification of the benefits.

Testlab - Austria

Partner: Rhomberg Sersa Rail Group
Site: BBW Depot in Wels

Description: 10 parallel tracks and two maintenance halls with more than 500 m rail track length. The area covers tracks, switches, road crossings and a network of survey reference points



Pilot site I - Denmark

Partner: Rhomberg Sersa Rail Group
Site: Copenhagen Metro Network Extension

Description: Approved by the Danish Parliament in February 2015. The extension will be 4.5 km long and includes five underground stations. RSRG focuses on rail infrastructure.



Pilot site II - Spain

Partner: Ferrovial
Site: High-Speed Underground Station

Description: Adapting the current railway corridor for the implementation of High-Speed services and supporting intermodality. The project includes 30.3 million of cubic meters of reinforced concrete, 197.3 thousand square meters of retaining walls, and 734 thousand cubic meters of excavated volume.



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