BUILDSPACE

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BUILDSPACE

Enabling Innovative Space-driven Services for Energy Efficient Buildings and Climate Resilient Cities

BUILDSPACE AIMS TO ALIGN WITH EGNSS SPECIFICATIONS AND COPERNICUS SERVICES AND TO SYNCHRONIZE WITH THE ADVANCES OF DESTINATION EARTH, TARGETING DIGITAL TWIN TECHNOLOGIES AND DATA FEDERATION MECHANISMS

BACKGROUND

Buildings account for 40% of the EU's energy consumption and almost 97% of the EU's building stock is not considered energy efficient

But 75-90% of those buildings standing today will still be in use in 2050, given that the construction rate is overall low, with low demolition rates (0,1% per year), low renovation rates (1.2% per year), and an EU building stock inexorably ageing

AIM OF THE PROJECT

The EU-funded BUILDSPACE project aims to support the Green Deal objectives by developing innovative applications to support buildings' energy efficiency and cities' resilience and sustainability.

PLATFORM AND SERVICES

Added value services (SE) at building and city scale are offered:

- at building scale SE1 and SE2 enable the Digital Twins generation of buildings to support building construction, renovation, monitoring
- at city scale SE3, SE4 and SE5 rely on a mix of Copernicus and IoT data to infer visualisations to facilitate decision-making targeting increased resilience to climate change of the building stock

1 CORE PLATFORM

GALILEO

Applied and demonstrated in Greece, Latvia, Poland Slovenia

1, DIGITAL TWIN GENERATION

SE1 creates detailed 3D digital twin of buildings using locally sourced data, integrating methods to detect and classify building elements.

2. DIGITAL TWINS ENRICHMENT

SE2 integrates thermal imagery from drones and AI-driven analysis to enhance digital twins with critical data on building envelopes.

3. BUILDING ENVIRONMENT CLIMATE SCENARIOS

SE3 estimates current and future building energy demand under different climate scenarios, while promoting retrofitting strategies and solar PV deployment.

4. URBAN HEAT ANALYSIS AND RESILIENCE

SE4 analyses urban heat islands with high-resolution data and combines demographics to assess urban heat risk and social vulnerability.

5. URBAN FLOOD RESILIENCE

SE5 predicts and visualises flood risks and damages under different climate scenarios, supporting cities in planning retrofits and blue-green infrastructures for flood resilience.

Destination Earth

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Implemented by ECMWF esa EUMETSAT

BUILDSPACE Horizon Project

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