HERITALISE

Heritage Buildings and Objects' Digitisation & Visualisation within the Cloud
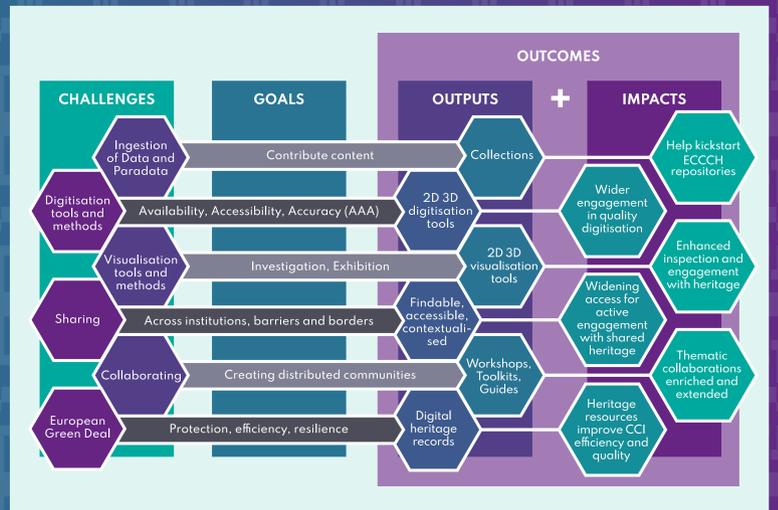
Pioneering Advanced Digital Heritage Solutions

HERITALISE transforms cultural heritage (CH) documentation and preservation through advanced digitization and AI tools, revealing both visible and hidden CH features.
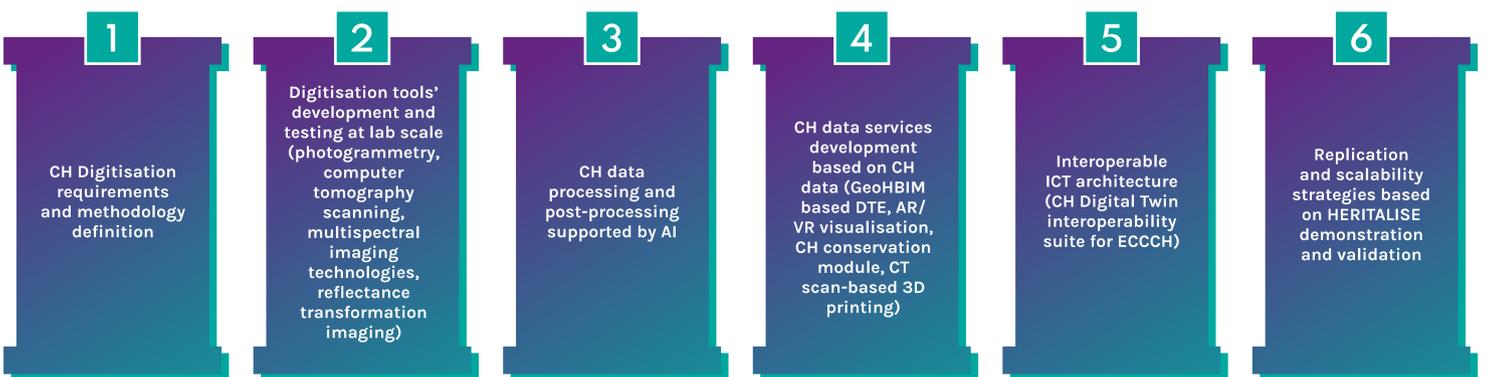
Key Highlights:

- **State-of-the-Art Digitisation:** Captures CH assets in unmatched detail.
- **AI-Driven Post-Processing:** Optimises data integration with machine learning.
- **Knowledge Graph Environment:** A dynamic platform for exploring CH objects and insights.
- **Web-Based Ecosystem:** Supports the European Collaborative Cloud for Cultural Heritage (ECCCH).

HERITALISE empowers professionals with cutting-edge tools and data for CH documentation, preservation, and exploration.

Diagram: CHALLENGES → GOALS → OUTCOMES (OUTPUTS + IMPACTS)

Challenges: Ingestion of Data and Paradata; Digitisation tools and methods; Visualisation tools and methods; Sharing; Collaborating; European Green Deal

Goals: Contribute content; Availability, Accessibility, Accuracy (AAA); Investigation, Exhibition; Across institutions, barriers and borders; Creating distributed communities; Protection, efficiency, resilience

Outputs: Collections; 2D 3D digitisation tools; 2D 3D visualisation tools; Findable, accessible, contextualised; Workshops, Toolkits, Guides; Digital heritage records

Impacts: Help kickstart ECCCH repositories; Wider engagement in quality digitisation; Enhanced inspection and engagement with heritage; Widening access for active engagement with shared heritage; Heritage resources improve CCI efficiency and quality; Thematic collaborations enriched and extended

The Pillars

1 CH Digitisation requirements and methodology definition

2 Digitisation tools' development and testing at lab scale (photogrammetry, computer tomography scanning, multispectral imaging technologies, reflectance transformation imaging)

3 CH data processing and post-processing supported by AI

4 CH data services development based on CH data (GeoHBIM based DTE, AR/VR visualisation, CH conservation module, CT scan-based 3D printing)

5 Interoperable ICT architecture (CH Digital Twin interoperability suite for ECCCH)

6 Replication and scalability strategies based on HERITALISE demonstration and validation

The Impacts

Preserving Cultural Heritage: HERITALISE will speed up interventions by 40%, enhances maintenance, detect risks, and ensure safety with advanced tools like HBIM.

Broad Impact: Aims to serve 2,000 professionals, 100 stakeholders, and 10M users, it will boost museum engagement, support SDGs, and connect audiences.

Efficiency & Innovation: Aims to offer 70% more access to a FAIR-based ecosystem, cut costs by 50%, and create authentic digital twins for tourism, education, and European identity.

Sustainability Focus: Supports the EU Green Deal, remote collaboration, and impactful exhibits, reducing travel and advancing climate goals.

Our Demo Sites

West Highland Museum, Fort William, Scotland

Partners: WHM, USTAN
Building type: Category B listed
Potential outreach: 90,000 in person visitors per year, 200 heritage practitioners
Use Case: Transforming Heritage through Digital Innovation
- Digitising the Jacobite & Carmichael Collections
- Enhanced Digital Exhibits
- Immersive VR Experiences

Timespan Museum, Highlands, Scotland

Partners: HHAS, USTAN
Building type: Museum and landscape
Potential outreach: Small museum and art gallery with international standing
Use case: Immersive Heritage Experiences
- VR Room
- Testbed for visualising artefacts
- Kildonan Landscape
- VR models showcasing Scotland's trade legacy and the 19th-century herring boom.
- Community Engagement through virtual events

Reggia di Venaria Reale, Turin, Italy

Partners: CCRS, CCR, POLITO
Building type: UNESCO site
Potential outreach: strong outreach potential by serving as a testing ground for new digital technologies in CH audience engagement
Use case: Advanced Digital Preservation
- Building Digitisation
- Architectural Analysis
- Landscape Heritage
- Object Documentation through 3D imaging and tomography

Villa Portelli, Kalkara, Malta

Partners: HM
Building type: Historic villa
Potential outreach: 300,000 visitors per year; tens of international stakeholders, restorers, and companies
Use case: Innovating Heritage Through Digital Storytelling and Preservation
- Oral History Digitisation
- Building Digitisation
- Methodology Testing employing LIDAR, photogrammetry, laser scanning, and RTI
- Public Outreach utilising VR/AR, holograms, and projections

Meet HERITALISE – Bridging Heritage and Innovation for a Deeper Cultural Connection

https://heritalise-eccch.eu/