Session

The Future of 3D Cultural Heritage: Are We FAIR Enough? (UHDL)

Chairpersons:

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Description and Motivation:

The field of virtual reconstructions has experienced significant growth across architecture, archaeology, and cultural heritage domains. These reconstructions serve diverse purposes, ranging from popular dissemination to scientific inquiry, and from recreational to commercial applications. Utilizing various visualization methods—2D, 3D, static, or dynamic—they act as pivotal tools for encoding and transmitting knowledge in numerous contexts. Despite their widespread adoption, the absence of common standards and methodological guidelines limits the application of core principles such as transparency, reproducibility, verifiability, and long-term accessibility, aligned with FAIR principles (Findable, Accessible, Interoperable, and Reusable).

This session seeks to investigate the scientific foundations and methodological approaches underpinning virtual and hypothetical reconstructions, specifically within architectural, urban, and archaeological heritage contexts. We aim to gather contributions that address both theoretical frameworks and practical applications, emphasizing the ability to:

· Represent confidence levels in 3D geometric modelling of hypothetical reconstructions,

· Address various degrees of uncertainty while ensuring transparency regarding source data, archival materials, and interpretative conjectures,

· Metadata schemas tailored for 3D cultural heritage models,

· Best practices for archiving and preserving 3D projects,

· Ontologies and data models specific to 3D cultural heritage,

· Developing critical and semantically structured 3D models,

· Ensuring transparency in scientific processes,

· Validating the quality and reusability of 3D models,

· Documenting scientific and operational workflows,

· Proposing documentation standards and protocols,

· Defining Uncertainty Scale to assess hypothetical reconstructions,

· Promoting interoperability of data,

· Defining methods of digital representation and modelling techniques,

· Defining 3D Models typology in the field of Virtual Reconstruction.

Target Audience:

Researchers, practitioners, and scholars in archaeology, art history, architecture, and digital humanities who create, study, or utilise 3D cultural heritage models. The session will also interest those involved in data preservation, repository management, and metadata development.

Keywords:

Hypothetical Reconstruction; Virtual Reconstruction; FAIR Principles; 3D Modelling; Cultural Heritage

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