# Schemas for BIM interoperability: a case for linked urban data


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VIRTUAL ENVIRONMENTS LAB

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# Digital Practices for the Study of Urban Heritage

The UDigiSH Working Group focuses on the study of Digital Methods and Good Practices of heritage and urban change, impact of urban development on cultural heritage, the identity of the city and the role of civil society.

Unlisted historic buildings and heritage are under threat in European cities, with direct impact to the cohesion of their communities and everyday lives of citizens. Challenged by urbanization, economic difficulties, gentrification and migration the experience of historic spaces and buildings is fragmented thus mirroring the disconnected perception of urban societies. The Digital practices for the Study of urban Heritage Working Group acknowledges both the urgency and the complexity of these challenges proposing a holistic and inclusive approach that can be applied to identify and tackle these socioeconomic and cultural issues.

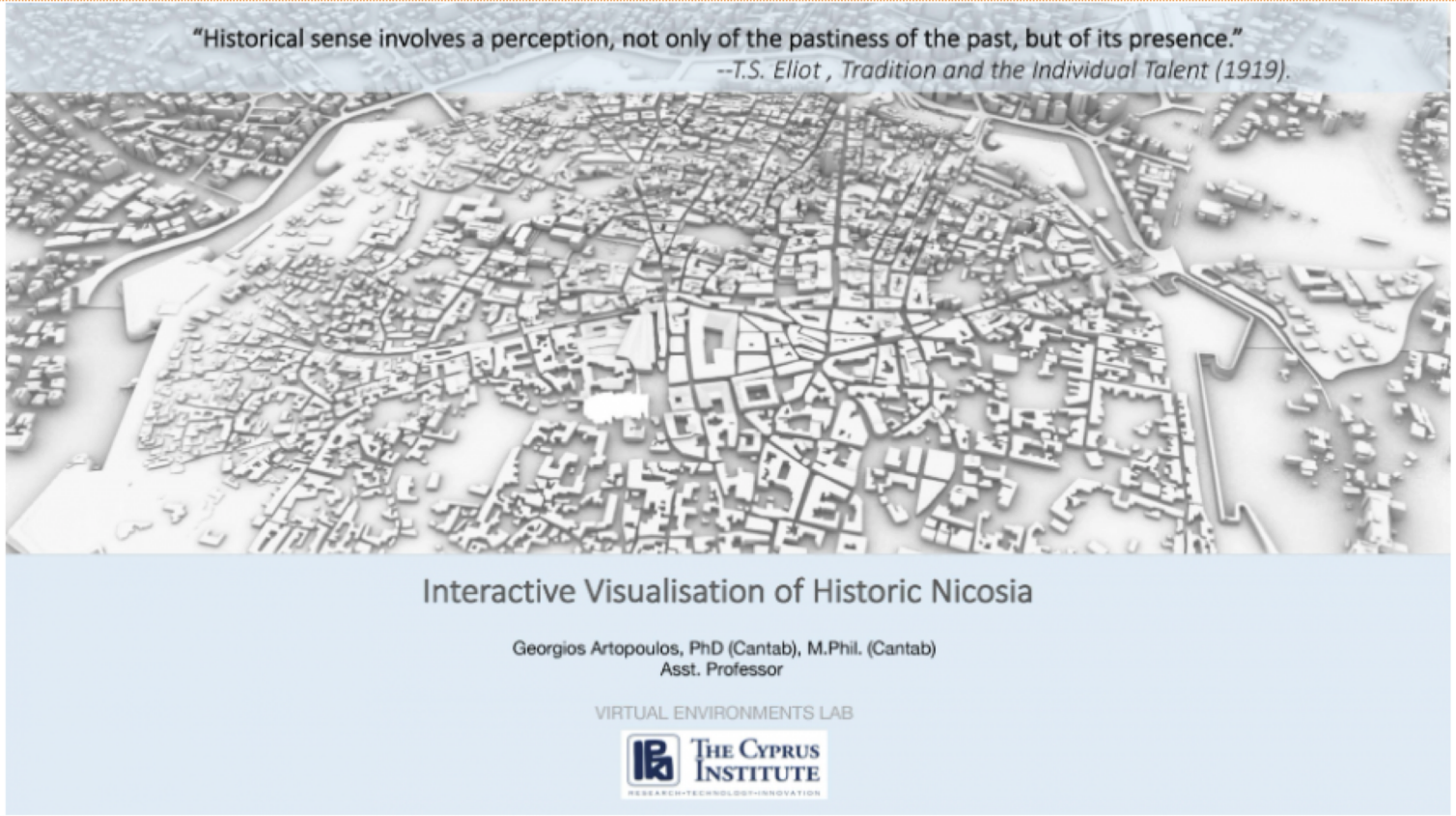
The Working Group discusses the attribution of cultural values to built heritage, towards inclusive, innovative and reflective societies – for example, in conflict spaces the common past and heritage can be established as a bridge for peace. Responding to contemporary pressing challenges of urban environments can only be achieved through the transnational collaboration as the challenges are complex and ill-defined and thus cannot be dealt with at a local scale.

Topics:
- Digital Humanities for the Study of Historic Cities
- A Cloud for the Preservation of Cultural Rights
- Promotion of Cultural Dialogue
- GeoVisualisation of Urban Histories
- Participatory Digital Narratives and Citizen Science in Cultural Heritage: co-creation and co-management of informal stories and memories

Perspectives:
- Cultural Heritage institutions
- Scholars and researchers in Digital Humanities
- City stakeholders and professional associations
- Urban communities and citizen groups

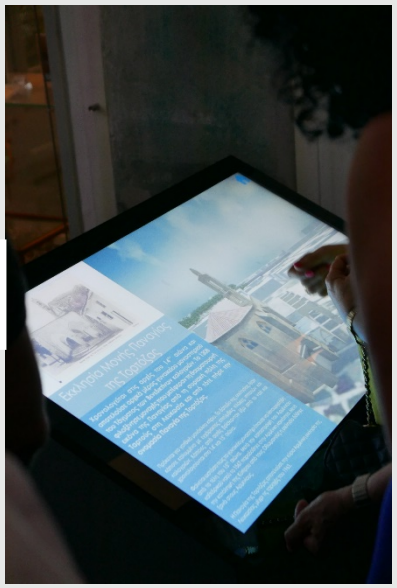
[Left] Immersive visualisation technologies enable researchers at the Virtual Environments Lab (The Cyprus

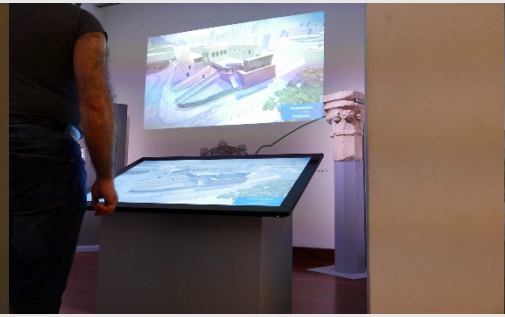
# NICOSIA LOCAL TIME MACHINE PROJECT (PRES. BY GEORGE ARTOPOULOS)

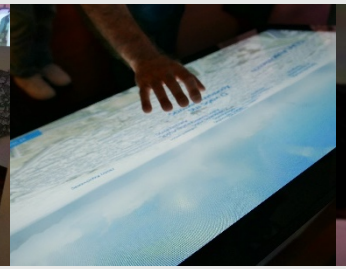


Derelict buildings in old Nicosia collapsing after heavy rains, 2019.

EUROPA NOSTRA





Local Time Machine, installed at the Municipal Museum of Nicosia.

1 Church of Chrysaliniotissa
2 Cathedral of Holy Wisdom
3 Church of the Monastery of the Augustinian Hermits
4 Church of the Monastery of Our Lady of Tortosa
5 Cathedral of Our Lady Hodegetria
6 Church of Saint Catherine
7 Castelliotissa Hall
8 Stavros tou Missericou
9 The Venetian Column
10 Famagusta Gate
11 Kyrenia Gate
12 Paphos Gate
13 The Great Inn (Buyuk Khan)
14 The Large Baths (Buyuk Hamam)
15 Hamam Omeriye
16 The Mevlevi Tekke (Museum of the Whirling Dervishes)
17 St John's Cathedral
18 Archangel Michael Trypiotis Church
19 Agios Antonios church
20 The Old Archbishop's Palace
21 Bayraktar Mosque
22 Agios Loukas Church
23 The Hadjigeorgakis Kornesios Mansion
24 The Axiotheas Mansion
25 The Dervish Pasha Mansion
26 Taht-El-Kale Mosque
27 The Silahtar Aqueduct
28 Sultan Mahmud II Library
29 Arab Ahmed Mosque
30 Agios Savvas church
31 Girls Only School Faneromeni
32 Panagia Phaneromeni Church

List of Monuments

The Leventis Municipal Museum of Nicosia

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LTM Nicosia 2020


0:18 / 1:12

# AR Data on site

wikar

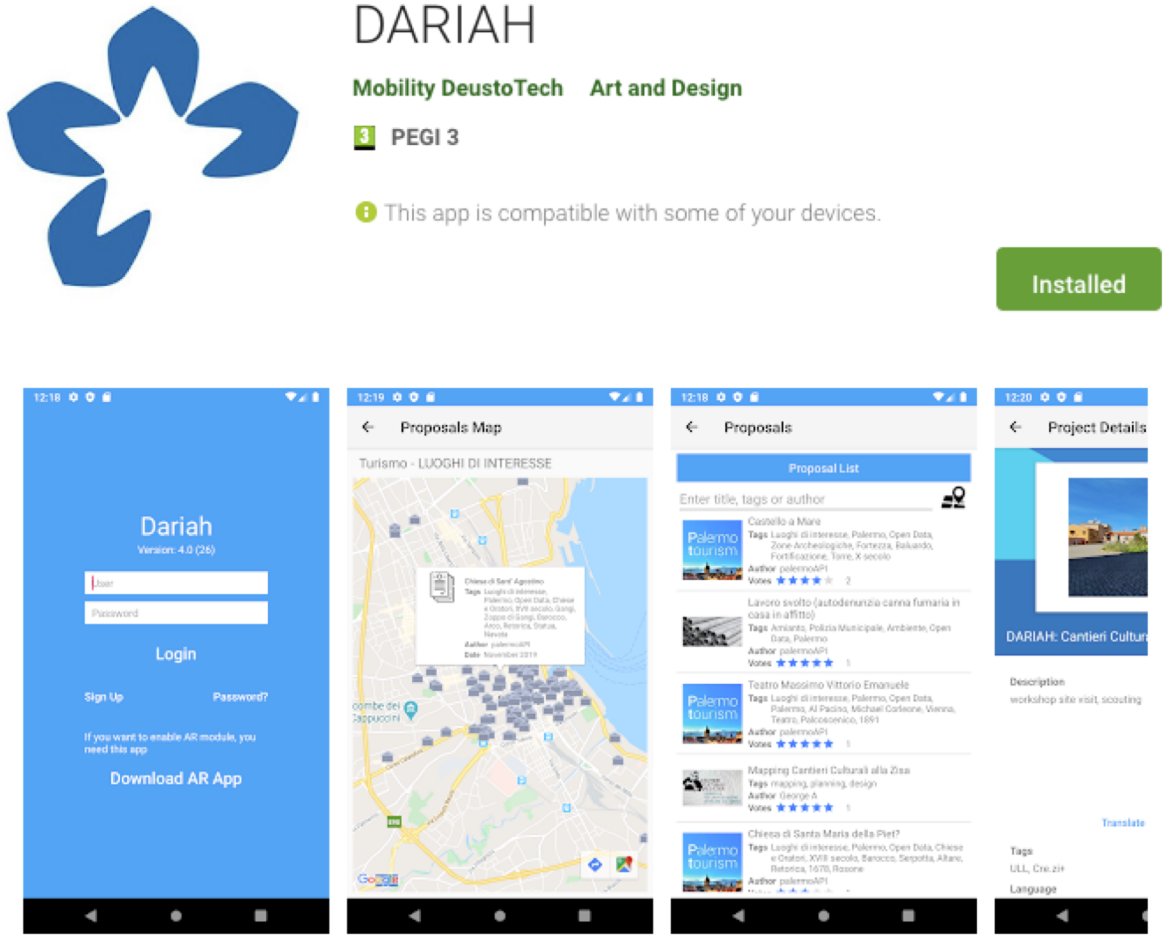
mobile app for AR

NCSA


https://play.google.com/store/apps/details?id=com.NCSA.Wikar

DeustoTech

https://play.google.com/store/apps/details?id=mobility.deustotech.dariah_android&hl=es_419




DARIAH mobile app (developed by DEUSTO TECH) for crowdsourcing, geotagging of digital assets, and commenting on group topics, developed for data collection, in the context of the DARIAH Working Group activities.

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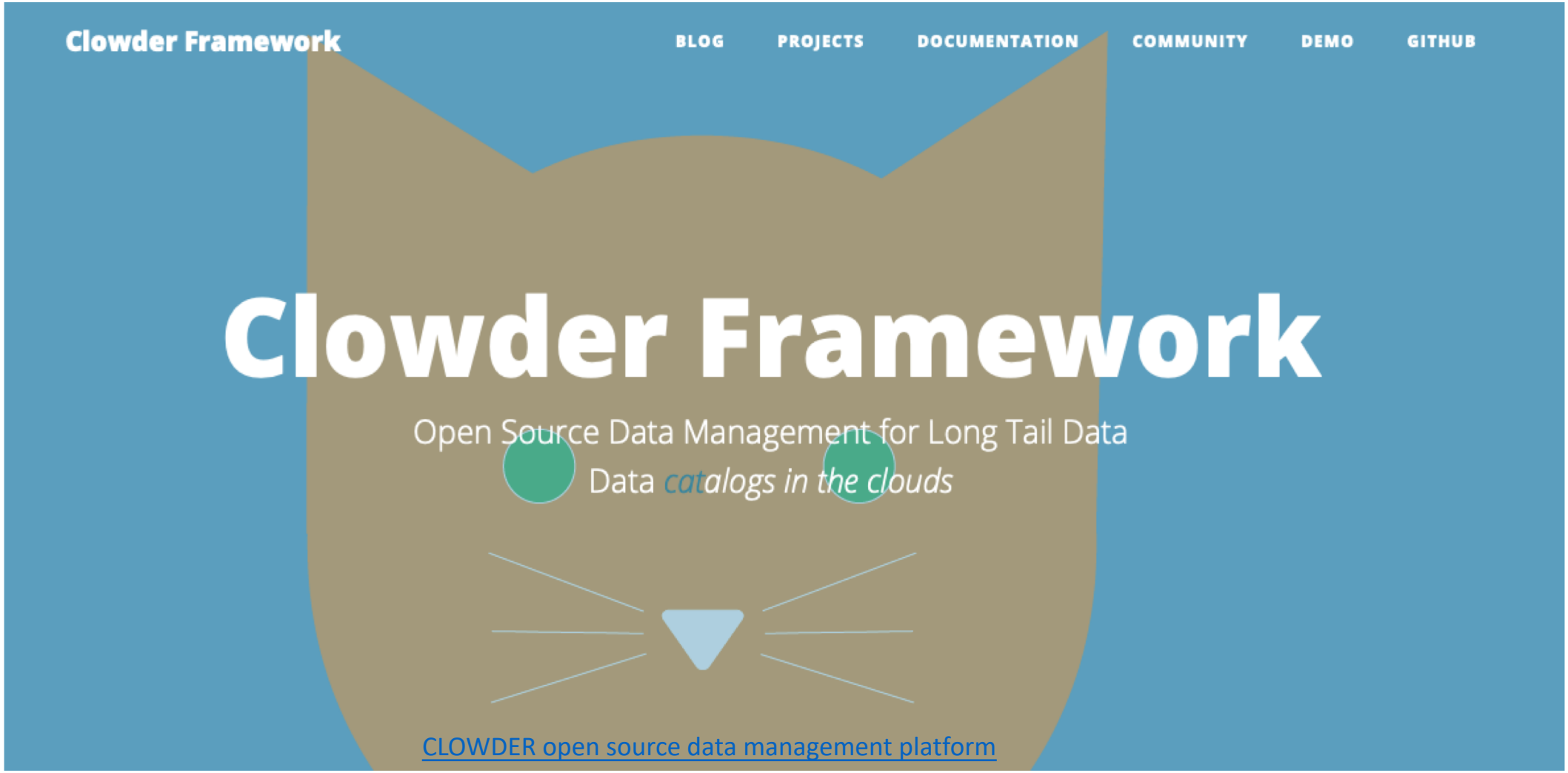


CLOWDER open source data management platform

NCSA

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urban PERISCOPE

PERIsCOPE Portal for hERItage buildingS integration into the COntemPorary built Environment
INTEGRATED/0918/0034

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## KEY EXTERNAL LINKS

- DARIAH ERIC WG Digital Practices for the Study of Urban Heritage
- Digital Practices for the Study of Urban Heritage blog
- ENI CBC MED BEEP
- Department of Antiquities Cyprus
- ICOMOS Cyprus
- Royal Institution of Chartered Surveyors
- JPI Urban Europe

"Historical sense involves a perception, not only of the pastness of the past, but of its presence."

-- T.S. Eliot, Tradition and the Individual Talent (1919).

EUROPEAN UNION
European Regional Development Fund

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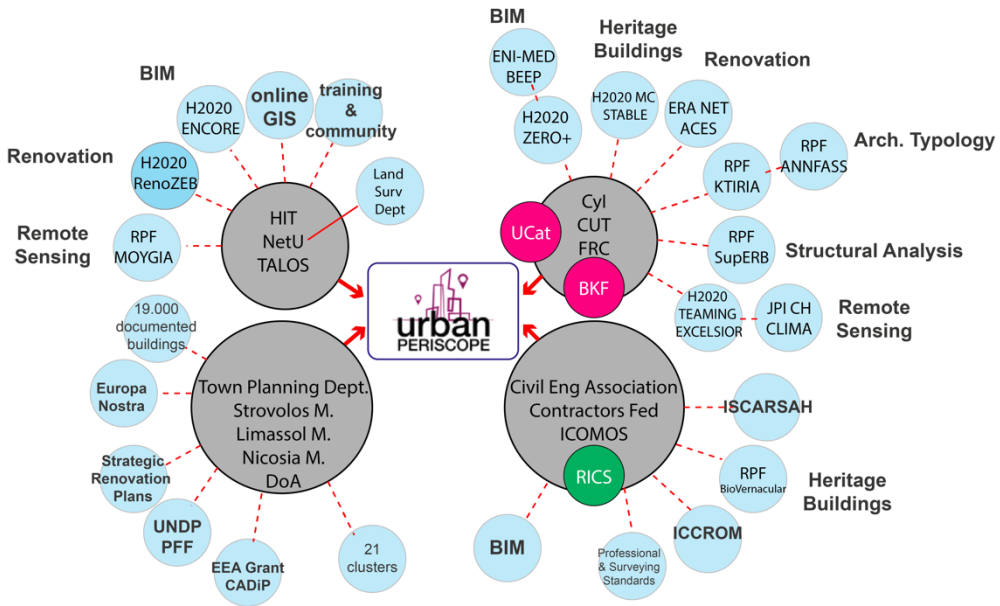
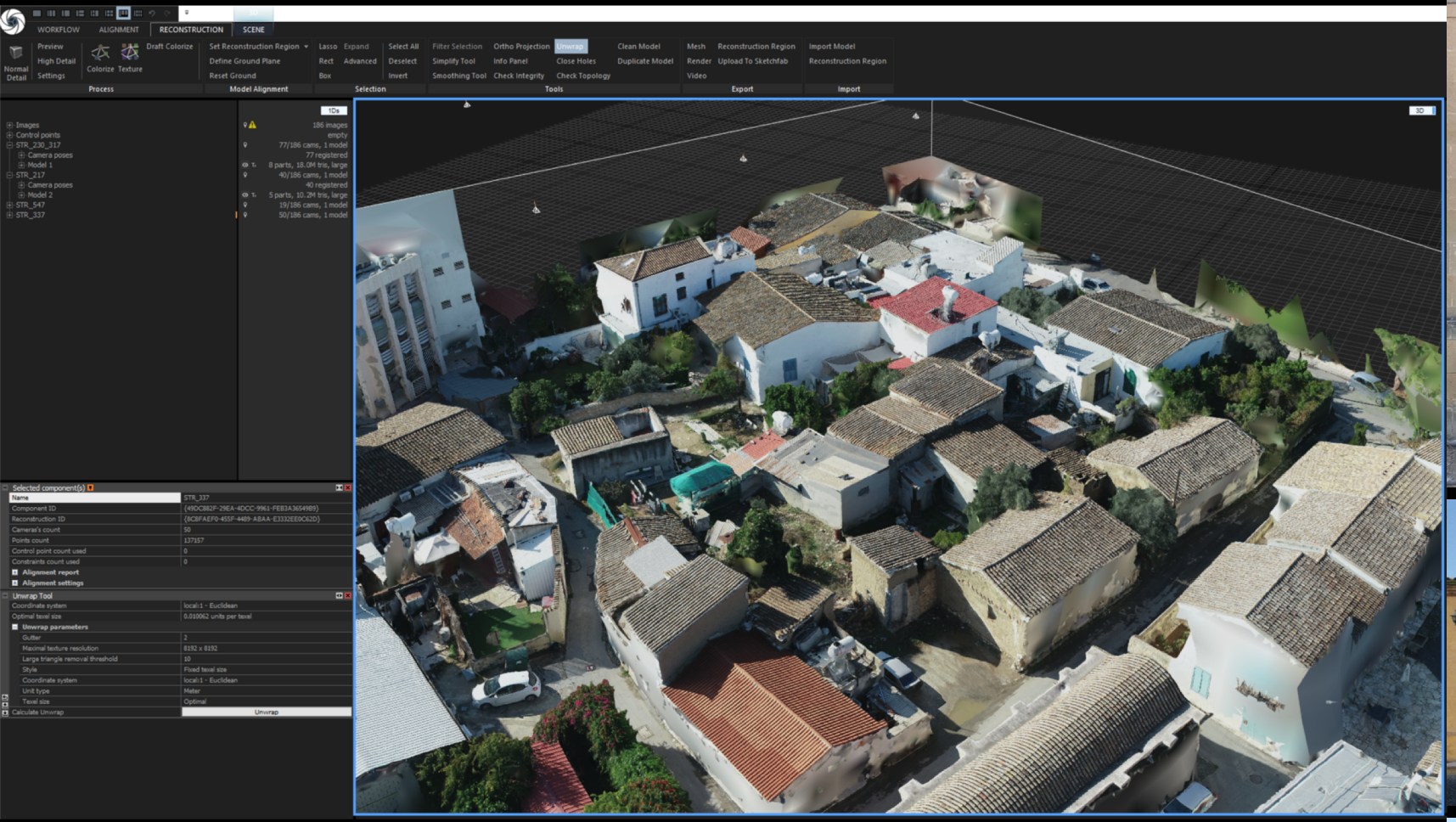
Κυπριακή Δημοκρατία
Διαρθρωτικά Ταμεία στις Ευρωπαϊκές Ένωσης στην Κύπρο






Urban PERIsCOPE


WORKFLOW
ALIGNMENT
RECONSTRUCTION
SCENE
Process
Model Alignment
Selection
Tools
Export
Import
Images
Control points
STR_230_317
Camera poses
Model 1
STR_217
Camera poses
Model 2
STR_547
STR_337
Selected component(s)
Name
STR_337
Component ID
{49DC882F-29EA-4DCC-9961-FEB3A3654989}
Reconstruction ID
{8C8FAEF0-455F-4489-ABAA-E3332EE9C62D}
Cameras's count
50
Points count
137157
Control point count used
0
Constraints count used
0
Alignment report
Alignment settings
Unwrap Tool
Coordinate system
local:1 - Euclidean
Optimal texel size
0.010062 units per texel
Unwrap parameters
Gutter
2
Maximal texture resolution
8192 x 8192
Large triangle removal threshold
10
Style
Fixed texel size
Coordinate system
local:1 - Euclidean
Unit type
Meter
Texel size
Optimal
Calculate Unwrap
Unwrap

# Employer Information Requirements (EIR) for Geometric survey with aerial and terrestrial documentation techniques

# EXCHANGE INFORMATION REQUIREMENTS FOR BUILDING INFORMATION MODELLING (BIM)

## METADATA

The neighbourhood and architectural datasets/collections can be grouped as:

- information about identification of the asset (building/neighbourhood model),
- information about the asset and its location,
- data about documentations and source of the asset – methods used for its representation,
- information about the structure of the building and its component parts,
- information about activities occurred at the moment of the survey
- information about its provenance
- information about storage of asset (reference, repo)
- restrictions of use,
- administrative information.

| 3D ICONS * | MIDAS XML Monument Schema ** | IFC | Notes |
|---|---|---|---|
| **Record information: Unique ID assigned by the content provider.** | Asset ID | Parcel / Αριθμός τεμαχίου - unique code given by the public authorities<br>New Project information parameter: Project Information – Data - Parcel :217 | |
| **Designation: The name of the spatial asset and the identifier (ID) and may be repeated if, for example, a building/spatial structure is known by more than one name or has more than one ID number.** | Building name | Building name given by the UP team<br>Default Project information parameter<br>Project information – Identity Data - Building Name: STR_217 | Plot number and drawing number |
| **Description: Includes the features of the site, building, and the born digital 2D or 3D models.** | | Building Description: info given by the authorities<br>New Project information parameter - Project information – Construction - Building Description | typology |
| **General type: A broad classification of the general type of the physical asset or born digital record intended to enable spaces, buildings and landscape sites to be distinguished from other objects.** | Monument type | Historical style of the building<br>New Project information parameter – Project information – Construction - Historical style: Vernacular/hybrid construction methods | |
| **Actors: Represents the actors involved with the space; actors include for example creators, builders, owners, inhabitants and individual who are associated with the site or building.** | Associated people | Default Project information parameter<br>Project information - Identity Data - Author: MDe / CYI<br>Default Project information parameter<br>Revit: Project information - Other- Client Name (=Owner)<br>Default Project information parameter | |
| | Associated people role | | |
| | Associated organisations | | |
| | Associated organisation role | | |

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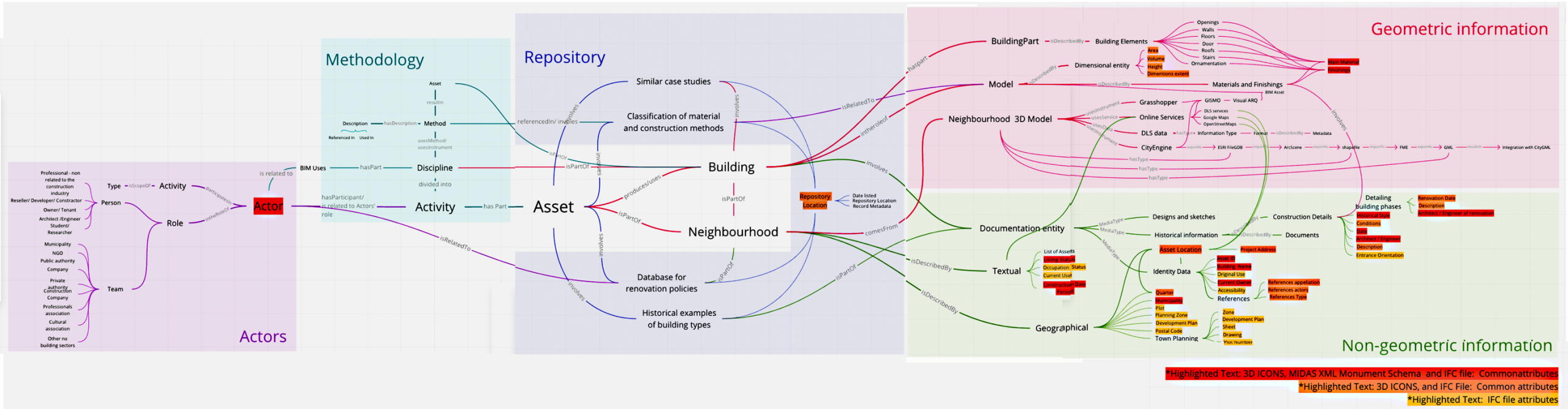
DARIAH-EU

ABOUT NETWORK ACTIVITIES

Digital Practices for the Study of Urban Heritage



Through our participation in the [H2020 project NI4OS ] for the onboarding of new services, we aim to fully aligning our work with ongoing efforts for the Open Science Cloud.