ITN-DCH
www.itn-dch.eu
Initial Training Network for Digital Cultural Heritage

ITN DCH
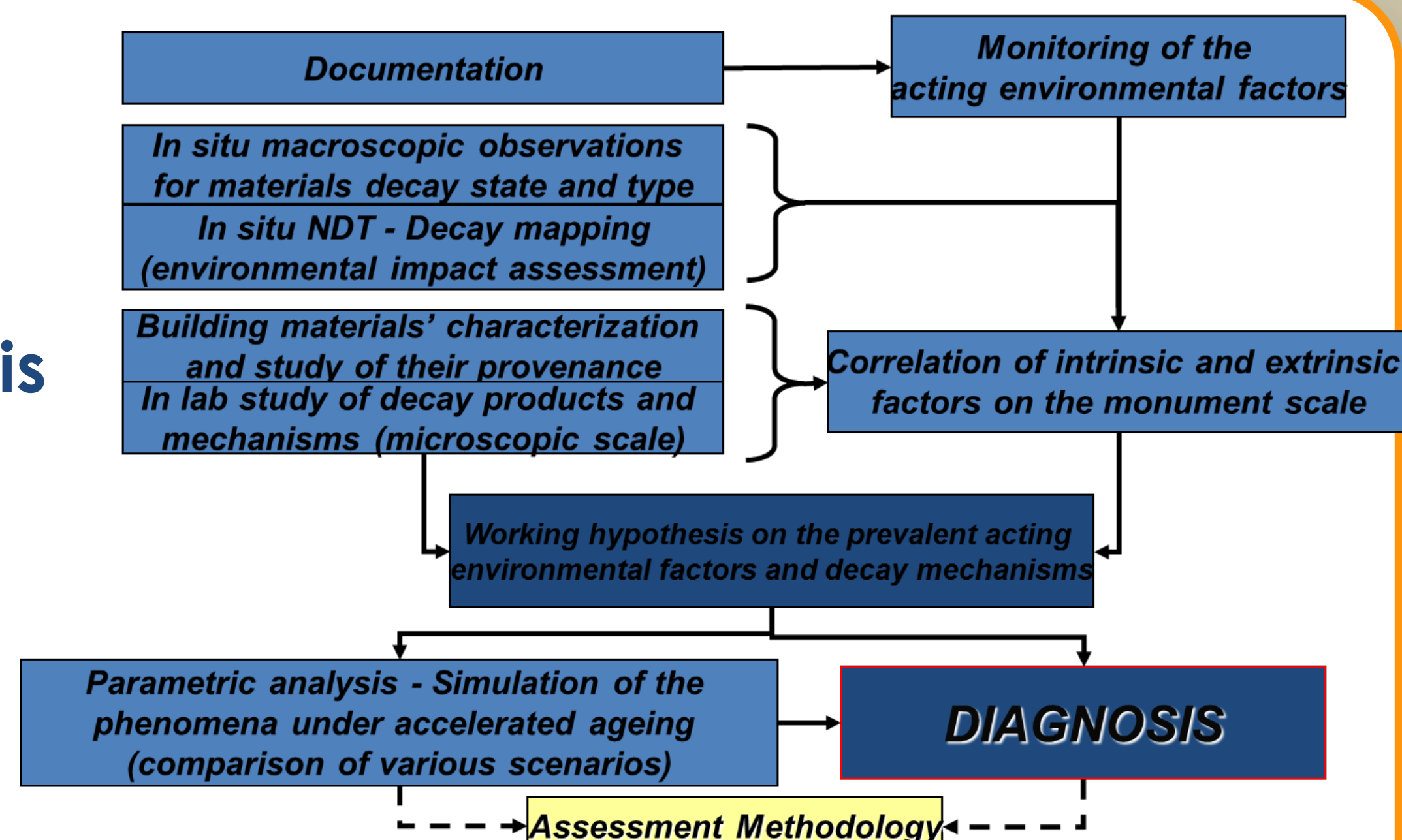
MANOLIS ALEXAKIS, ESR15

Computer Aided Cultural Heritage Protection and Documentation of Monuments

Non-Destructive Testing for Decay Diagnosis
- Infra-Red Thermography (IRT)
- Fiber Optical Microscope (FOM)

3D Reconstruction of Monuments
- Micro and Macro Scale
- Data Fusion

Documentation → Monitoring of the acting environmental factors

In situ macroscopic observations for materials decay state and type
In situ NDT - Decay mapping (environmental impact assessment)

Building materials' characterization and study of their provenance
In lab study of decay products and mechanisms (microscopic scale) → Correlation of intrinsic and extrinsic factors on the monument scale

Working hypothesis on the prevalent acting environmental factors and decay mechanisms

Parametric analysis - Simulation of the phenomena under accelerated ageing (comparison of various scenarios) → DIAGNOSIS

Assessment Methodology
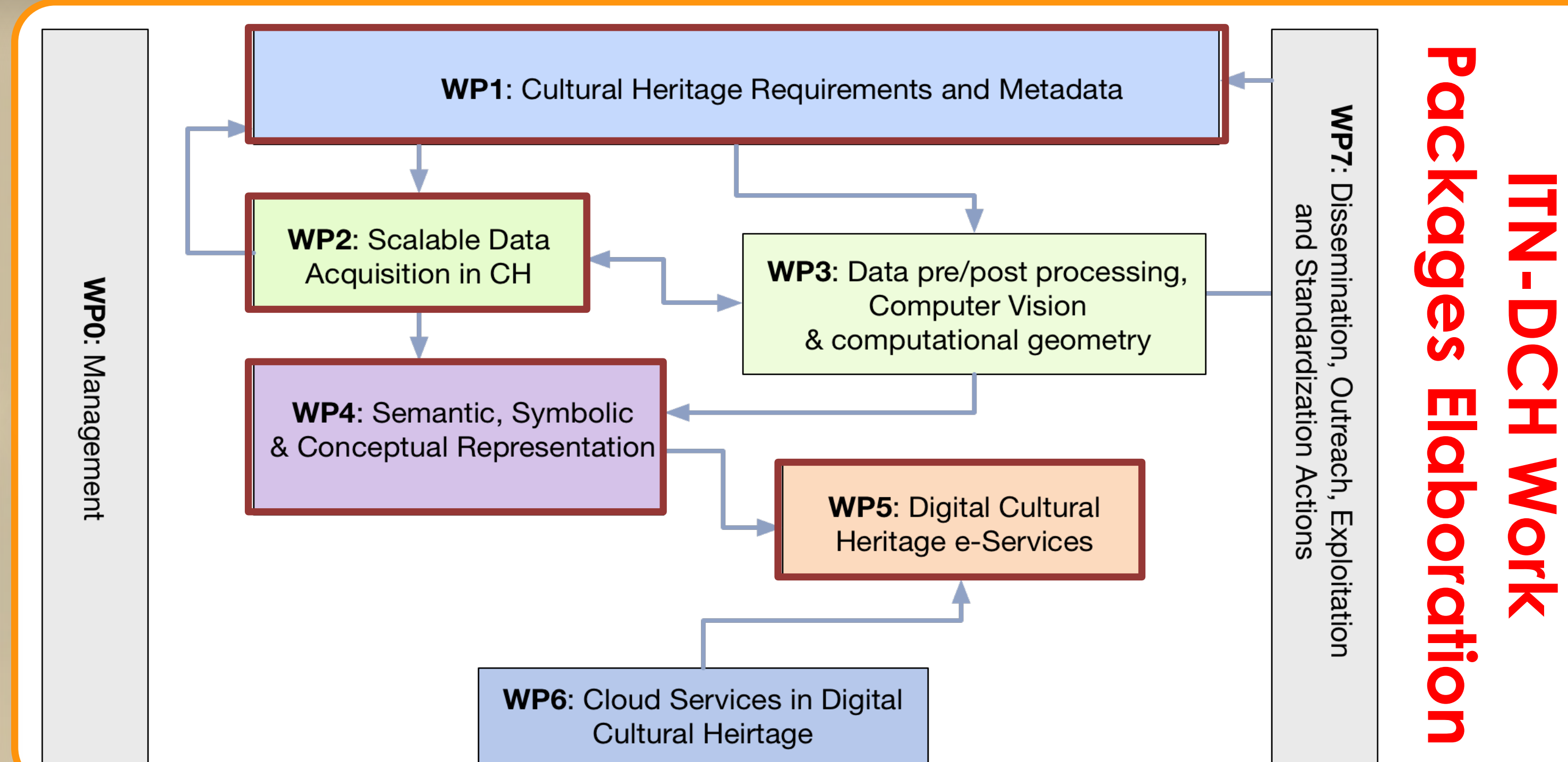
Integrated Diagnosis Methodology

Educational Background
- Diploma in Applied Mathematical and Physical Sciences, National Technical University of Athens, Greece
- MSc in Sustainable Energy Technology, Delft University of Technology, Netherlands

Work Experience
- Academic Assistant in the Reactor Institute of Delft, Netherlands
- Freelancer in Energy Companies from the Construction Sector, Brussels (Belgium), Heraklion, Crete (Greece)

ITN-DCH Work Packages Elaboration

WP1: Cultural Heritage Requirements and Metadata
WP2: Scalable Data Acquisition in CH
WP3: Data pre/post processing, Computer Vision & computational geometry
WP4: Semantic, Symbolic & Conceptual Representation
WP5: Digital Cultural Heritage e-Services
WP6: Cloud Services in Digital Cultural Heritage
WP7: Dissemination, Outreach, Exploitation and Standardization Actions
WP0: Management

Attended Events

Jul 14 Recruited | Apr 15 MCAA Event Athens | May 15 8th NDT Conference, | Feb 16 FORTH SECONDMENT | Mar 16
Aug 14 | Mar 15 Carnuntum ITN-DCH Workshop | Jun 15 Rhodes Summer School | Jan 16 | April 16
Sep 14 Researchers Night | Feb 15 | Jul 15 SEAHA Conference | Dec 15 | May 16 CNRS SECONDMENT, Geneva ITN-DCH Workshop
Oct 14 Stuttgart Summer School | Jan 15 | Aug 15 | Nov 15 Nicosia ITN-DCH Workshop | Jun 16 WARWICK SECONDMENT, Crete Summer School
Nov 14 EUROMED | Dec 14 SEFI, OECD, HCTP, Workshop | Sep 15 Researchers Night, THALES COMASUCH | Oct 15 | Jul 16 End of Contract
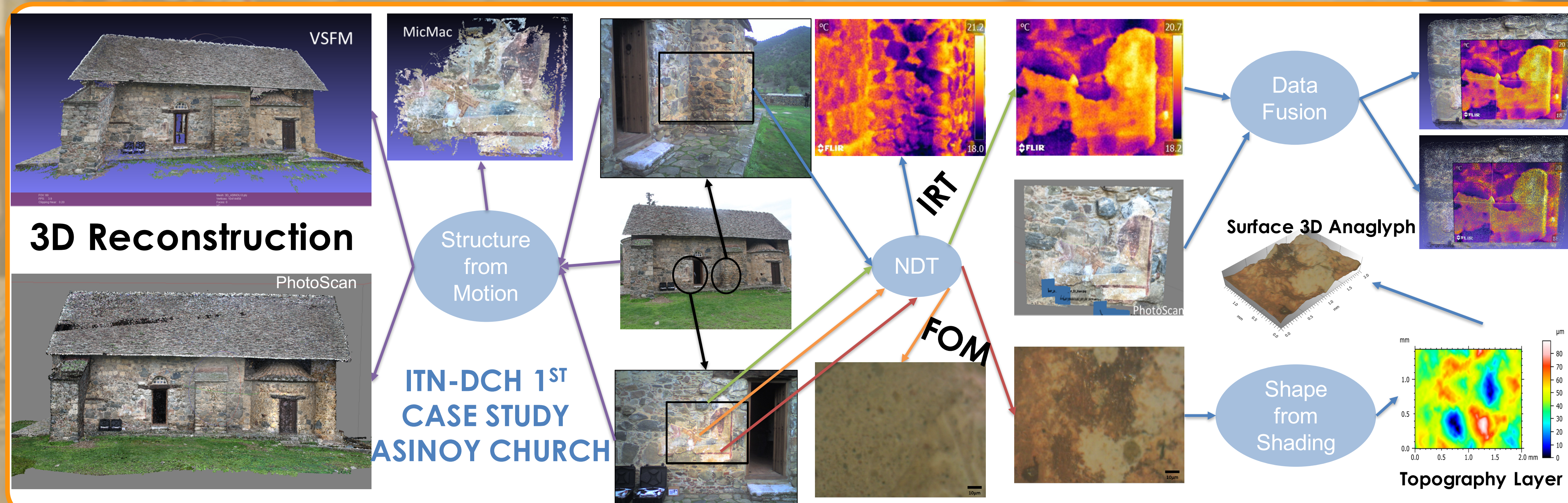
Publications
- 8th National Conference of Non Destructive Testing 2015, Athens
- 6th Conference on Emerging Technologies in Non-Destructive Testing 2015, Brussels
- SEAHA 2015, London
- THALES COMASUCH 2015, Athens

VSFM | MicMac | Data Fusion
3D Reconstruction
PhotoScan
Structure from Motion
IRT
NDT
FOM
ITN-DCH 1ST CASE STUDY ASINOY CHURCH
Surface 3D Anaglyph
Shape from Shading
Topography Layer

Secondments
- FORTH
  - Semantics and Metadata
  - RDF Database Systems
- CNRS
  - Geometric Documentation
  - Data Annotation
- University of Warwick
  - 3D Modelling

Long Term Objective
Acquire my Doctorate

Country of Origin | Host Country | Host Institution

Laboratory of Material Science and Engineering,
School of Chemical Engineering,
National Technical University of Athens
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MARIE CURIE ACTIONS