
**The missing standard for
the 3D documentation**

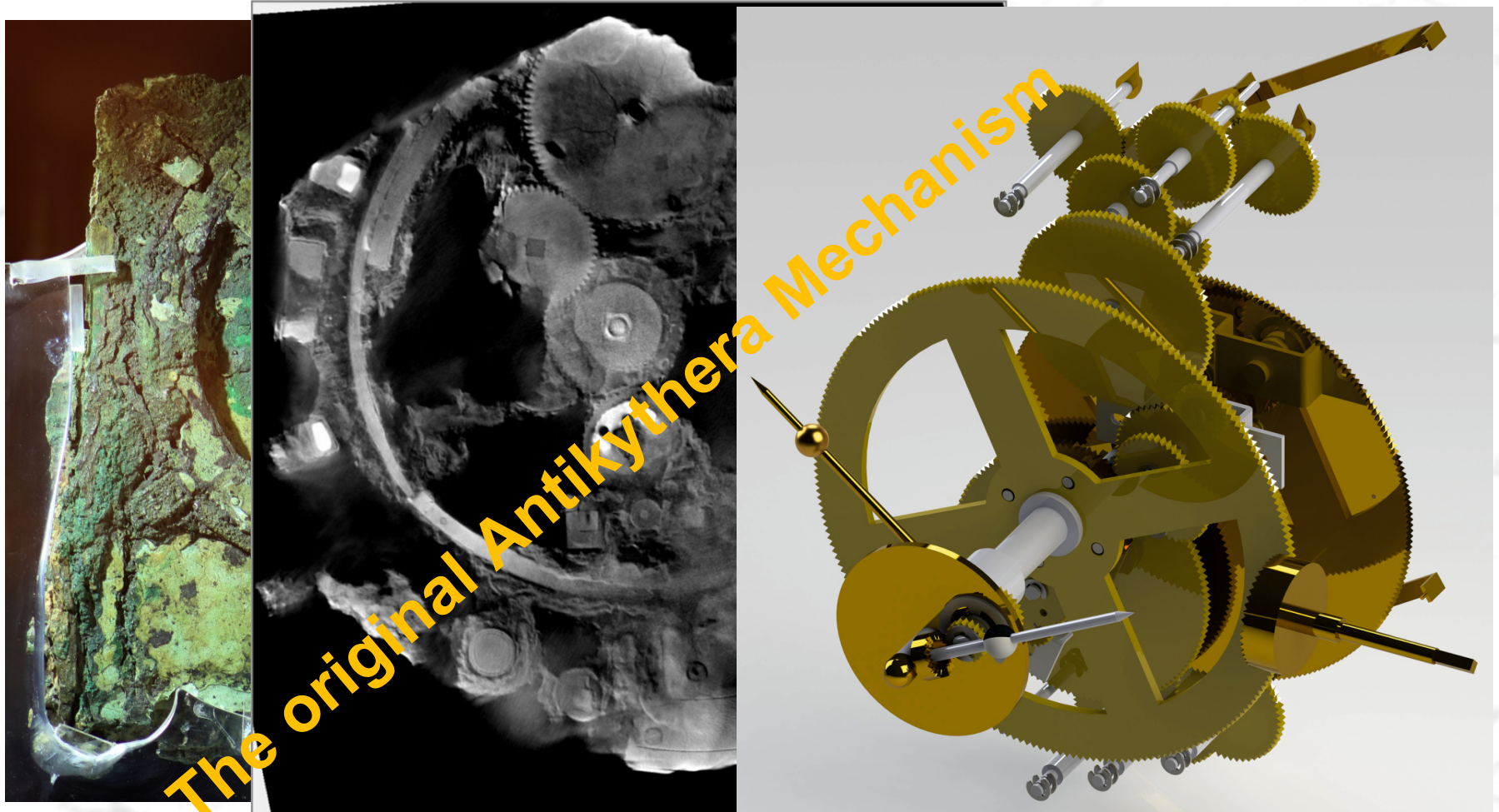
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HERITAGE LAB**



The different versions of 3D Document records

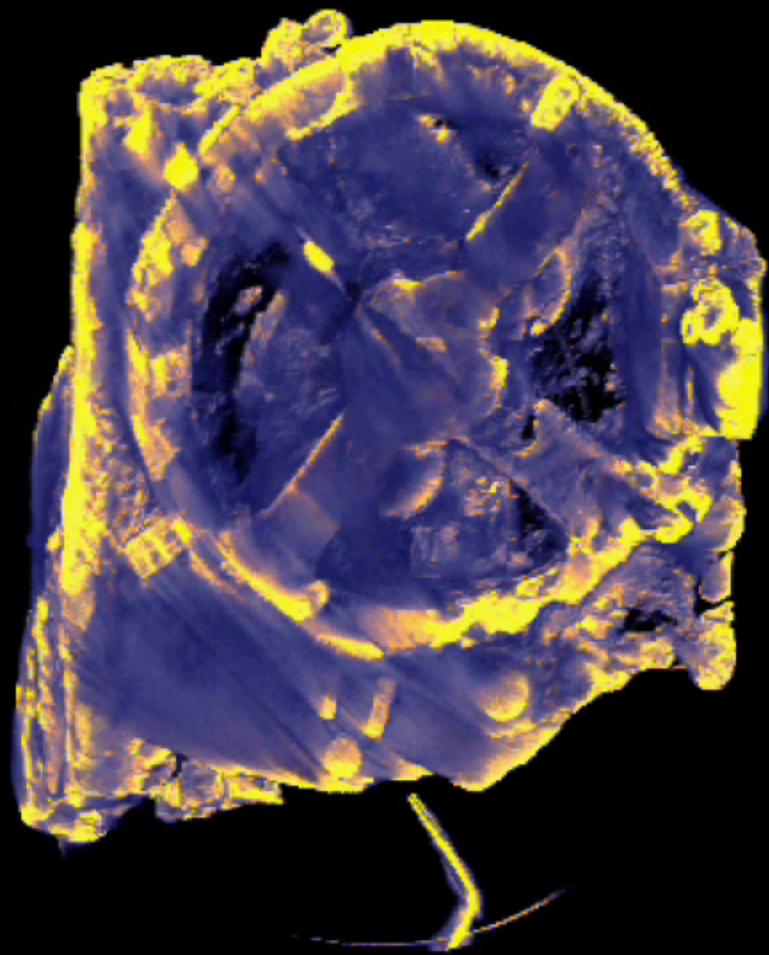


(a) 3D

(b) 2D layers

(c) 3D

The same object in different levels of 3D representation



What about Monuments and Sites?



Temple / Monument

A **monument** is a type of structure that was explicitly created to commemorate a person or important event, or which has become important to a social group as a part of their memory of historic times or cultural heritage, or as an example of historic architecture. The term 'monument' is often applied to buildings or structures that are considered examples of important architectural and/or cultural heritage!

(Source Wikipedia)



Temple / Monument

Another definition:

Building (3D Structure) + Memory

Tangible and Intangible

**Temple/Monument :
A Part of the Story**



Temple / Monument

THEY TALK AND ...

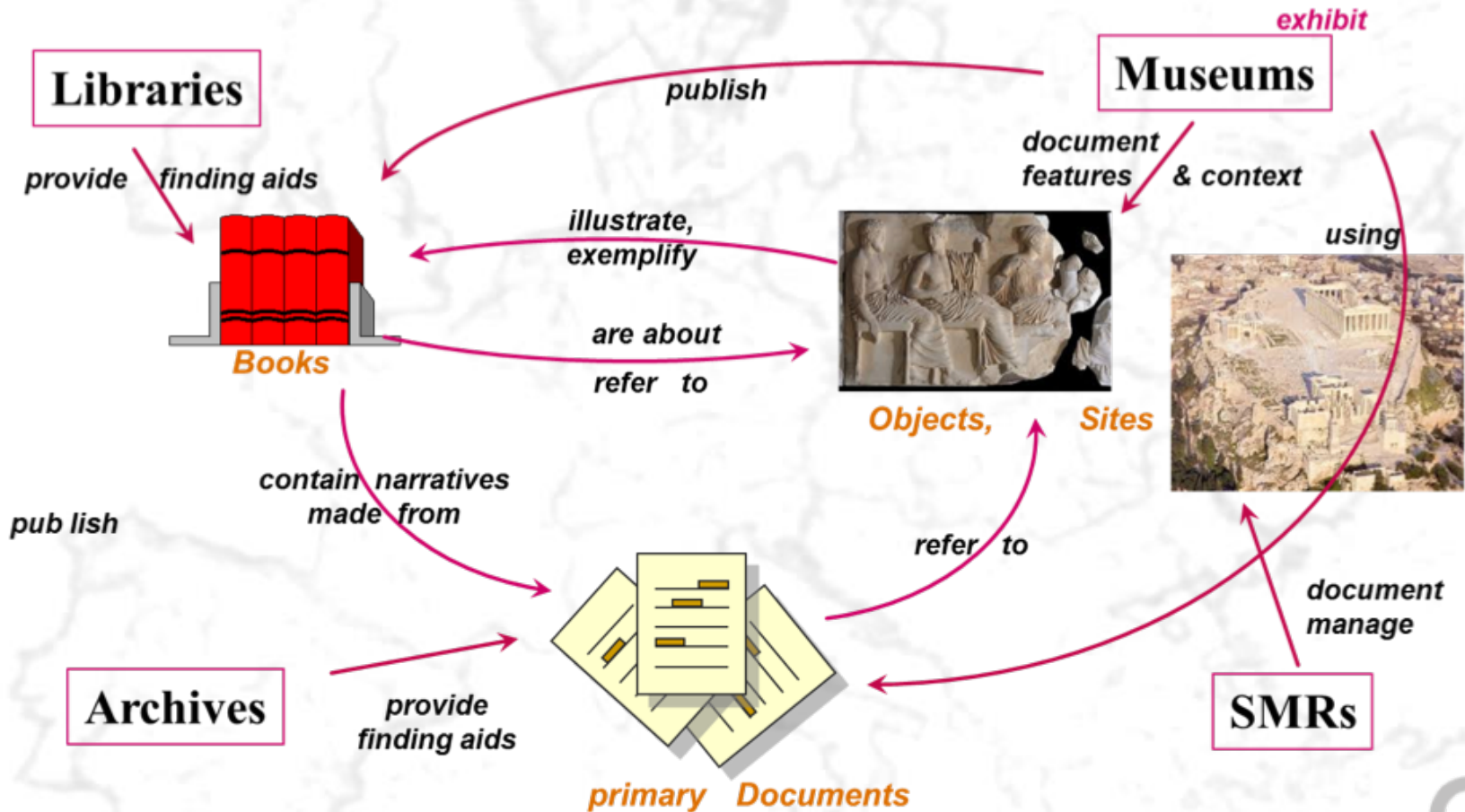
WE CAN NOT LISTEN

**WE DOCUMENT THEM (3D RECONSTRUCTION) AND
WE FORGET TO RECORD THE STORY AND THE KNOWLEDGE**



Holistic Approach

Linked Data for Libraries, Archives and Museums



Who needs the story and the data of 3D digital records?

Historian

Archeologist

Architect

Civil Engineer

Survey Engineer

Mechanical Engineer

Electrical Engineer

ICT Specialist

Computer Scientist

Conservationist

Chemical Engineer

Structural Engineer

UX Designer

Culturalist

Exhibition Designer

Chemist

Physicist

Mathematician

Theologist

Geographer

Urban Designer

**Environmental Engineer/
Scientist**

Anthropologist

Archivist/ Librarian

Restorators/ Conservator

Artist

Curator

Tourist Guide

Teacher

Scholar / Student

Craftsman



**If the 3D record and the STORY are all
about Data and their Management...**

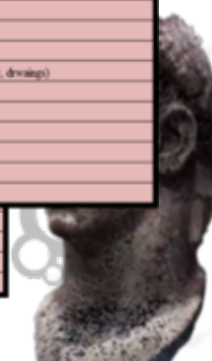


The Problem starts with: Interoperability / The Protocols

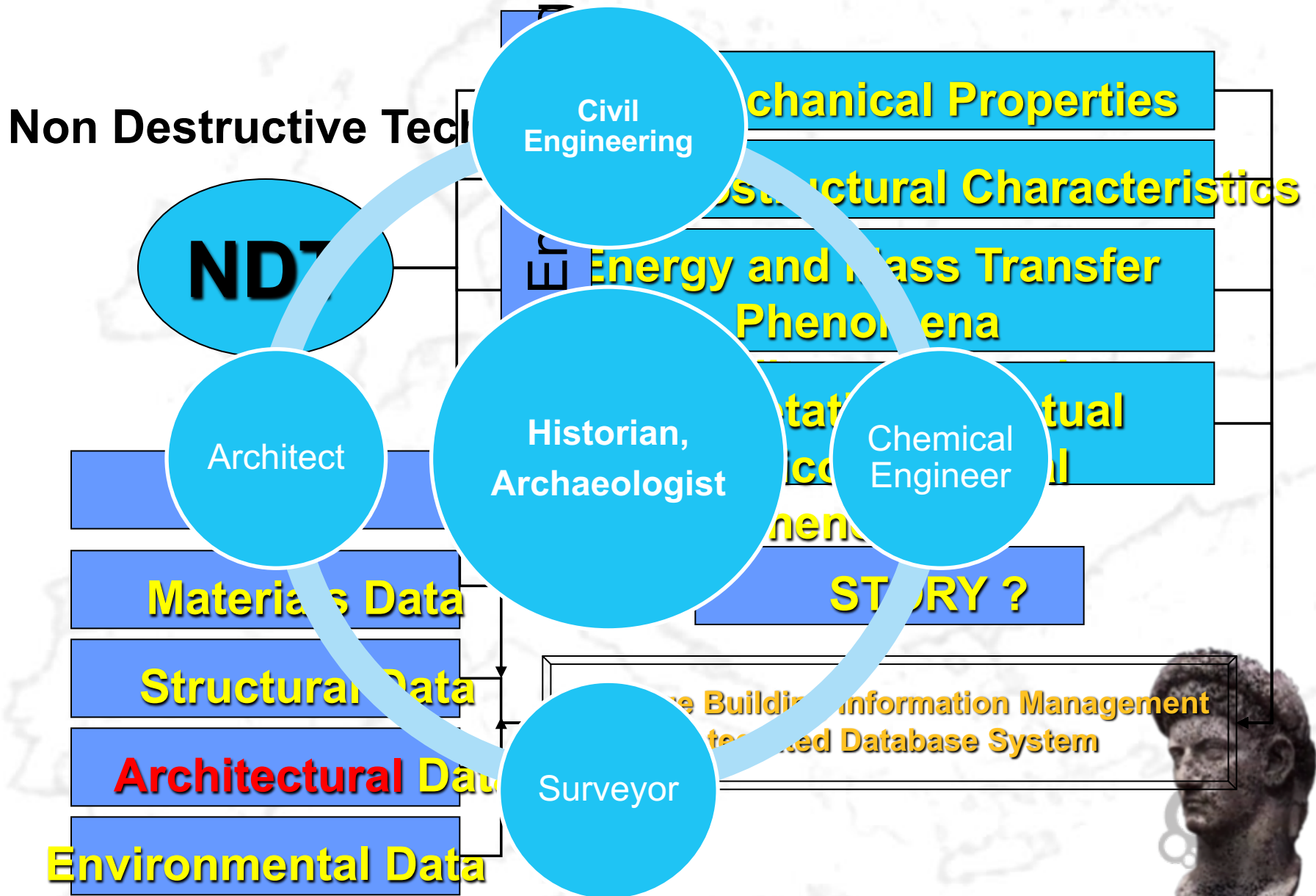
Main categories of data are further analyzed into subcategories
Which are further elaborated and enriched, to serve the needs of integrated documentation protocols.

CATEGORIES		SUBCATEGORIES		PARAMETERS	
EIII	ARCHITECTURAL	EIII1	Typology	EIII1p1	building type
				EIII1p2	synthesis ideas
				EIII1p3	morphology
				EIII1p4	architectural style
				EIII1p5	coverage (m ²)
				EIII1p6	total surface (m ²)
				EIII1p7	total volume (m ³)
				EIII1p8	total construction (m ³)
				EIII1p9	decorative elements
				EIII1p10	decoration materials
				EIII1p11	decoration specifications
				EIII2p1	type and construction of structural system (flus)
				EIII2p2	materials
				EIII2p3	building pattern
				EIII2p4	type of load bearing elements
				EIII2p5	type of load bearing structure
				EIII2p6	secondary elements
				EIII2p7	load bearing elements coupling
				EIII2p8	functions of links
				EIII2p9	building morphology
				EIII2p10	pathogeny
				EIII2p11	local spread of flus
				EIII2p12	chronological span of flus
				EIII2p13	filling construction
				EIII2p14	insulation construction
EII	HISTORIC	EII1	Historic Data	EII1p1	general description
				EII1p2	building description
				EII1p3	basic name
				EII1p4	current name
				EII1p5	construction site
				EII1p6	foundation date
				EII1p7	completion period
				EII1p8	structural entity
				EII1p9	construction cost
				EII1p10	construction layers
				EII1p11	basic content of construction
				EII1p12	construction excavation dates
				EII1p13	apertures
				EII1p14	operation manuals
				EII1p15	assessment values (historic, artistic, technical, scientific, archaeological, ethno-historical)
		EII2	Stakeholders Data	EII2p1	architect name
				EII2p2	stakeholders status
				EII2p3	date of birth
				EII2p4	
				EII2p5	architects related to monument
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				EII2p100	

The Metadata



And continuous with Data Management



Holistic Approach

A new sustainable Cultural Heritage e-documentation

Towards this direction, we are recently working in order to develop Holistic Protocols for Cultural Heritage objects incorporating and supplying with information during its entire life-time in order to provide:

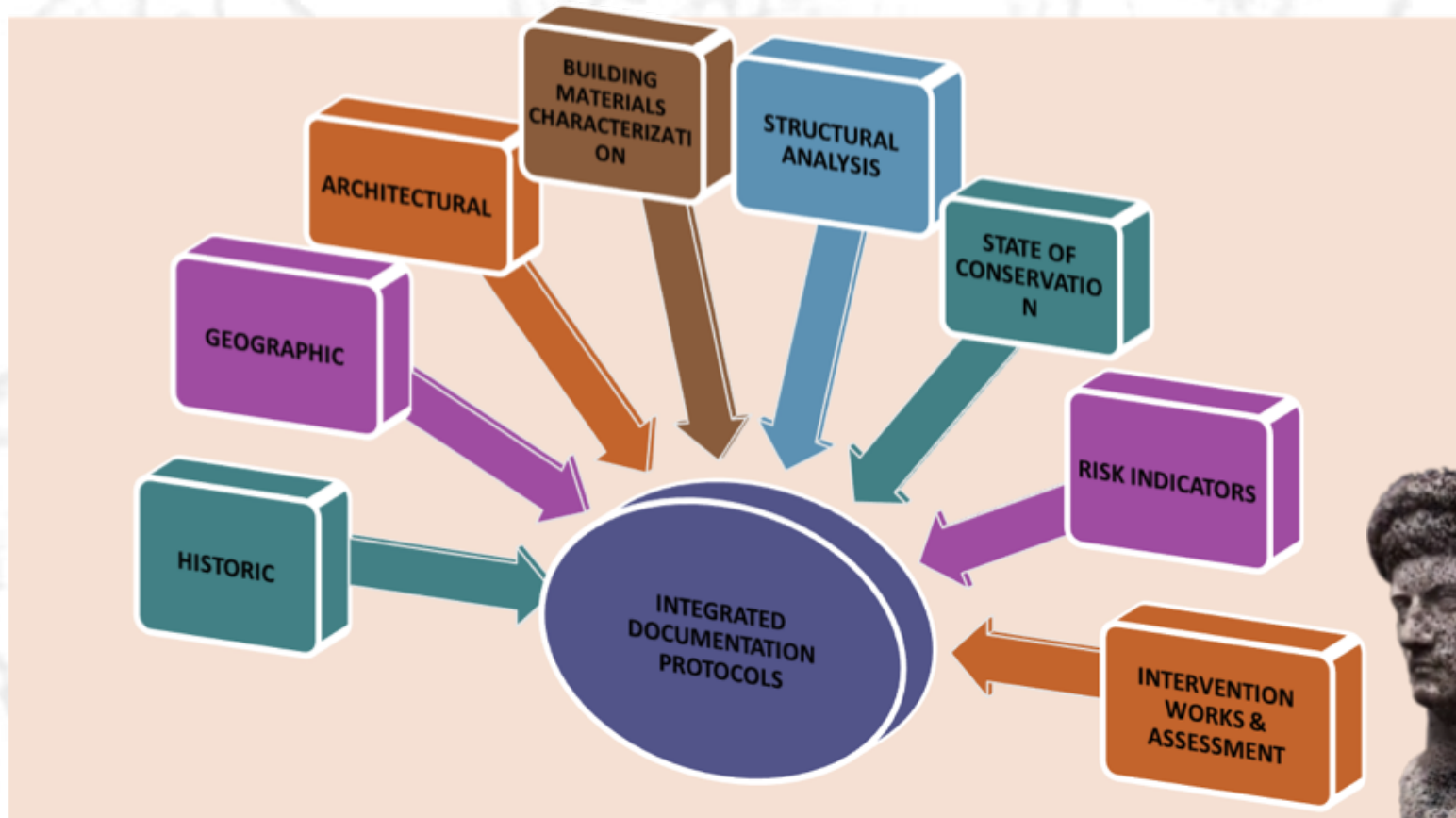
1. with new documentation procedures, advancing the data level in comparison to the current documentation methodologies,
2. with criteria and indicators for risk assessment responding to advanced diagnostics and data management,
3. standard documentation procedures applying same methods and tools, standardized outputs and clearly defined digital libraries entry without any further need for definition and application of a unified documentation terminology.
4. efficient use and re-use of the digital archived content in different areas (especially for the protection/preservation, education, creative industry tourism and the police).

Holistic Approach

- ✓ **ANALYZE AND SPECIFY THE NEEDS,**
- ✓ **DEFINE CATEGORIES, SUBCATEGORIES AND PARAMETERS FOR THE DOCUMENTATION, RECORDING & STORAGE/ARCHIVAL OF DATA,**
- ✓ **DETERMINE THE DATA TYPE (TEXT INFORMATION, PHOTOGRAPHS, DRAWS & MAPS, MATERIALS, MEASUREMENTS , GIS, GPS, etc),**
- ✓ **DEFINE THE METADATA, SEMANTICS, ONTOLOGIES,**
- ✓ **SPECIFIC TECHNIQUES & METHODS WHICH SHOULD BE USED FOR THE e-DOCUMENTATION (for example: Books, Images, Sound, Video, Monuments),**
- ✓ **ARE STRUCTURED BY GUIDELINES, RESULTED FROM THE BENCHMARKING OF EXISTING METHODOLOGIES.**
- ✓ **VISUALISE and PRESENT THE ARCHIVED RECORDS in ALL POSSIBLE DEVICES and PLATFORMS (TV, Smart Devices, PCs, Any kind of Mobile Device, etc)**

Holistic Approach

The proposed protocols must be based on existing experiences and knowledge, have a dynamic open structure, incorporating and supplying with information on the 3D asset during its entire life-time, directly relating to the preservation and sustainability of Cultural Heritage.



Challenges of 3D CH documentation

- Preservation
- Rehabilitation
- Integration in urban and natural environment
- Increase of life quality
- Economic promotion
- Multicultural tolerance
- Spreading of awareness
- Knowledge transfer
- Management, Integrated Documentation



Challenges of 3D CH documentation

Data Quality Assessment
Metadata Quality Assessment

Who is doing it ?



Thank you!

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Digital Heritage Research Lab

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