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# European standards for the documentation of historic buildings and their relationship with CIDOC CRM

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VAST - LAB



17th International Conference on  
Theory and Practice of Digital Libraries

Sharing meaningful information

September 22-26, 2013, Valletta, Malta

# Aim of the research

- Assessment of the state-of-the-art of European actions for architectural dataset integration
- Mapping of European standard and metadata schemata to CIDOC CRM:
  - to overcome the fragmentation of architectural datasets
  - to create interoperability among datasets of historic buildings
- Mapping of the MA/CA (Archaeological Monuments/Archaeological Complex) form of the MIBAC-ICCD to CIDOC CRM

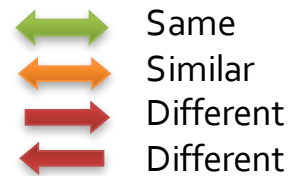
# Built Heritage data harmonizing Actions



# Mapping of BH schemas and standards

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
	EU-CHIC		ICCD MA-CA v. 3.00				ICCD A v. 3.00					MIDAS		CARARE		CARARE V.2		CRM										
		RELAZIONI	STRUTTURA COMPLESSA				RELAZIONI		STRUTTURA COMPLESSA																			
			Livello						Livello																			
			Codice bene radice						Codice bene radice																			
			Codice bene componente						Codice bene componente																			
		Qualifier of relationship	RELAZIONI DIRETTE				RELAZIONI DIRETTE		RELAZIONI DIRETTE																			
			Tipo relazione						Tipo relazione																			
			Tipo scheda						Tipo scheda																			
			Codice bene						Codice bene																			
			Altre relazioni (con beni di diversa natura)						Altre relazioni																			
			luogo di collocazione/localizzazione (è contenuto in)						luogo di collocazione/localizzazione (è contenuto in)																			
			sede di rinvenimento (è stato rinvenuto in)						sede di rinvenimento (è stato rinvenuto in)																			
			esecuzione/evento di riferimento (è coinvolto in)						esecuzione/evento di riferimento (è coinvolto in)																			
			relazione urbanistico ambientale (è in relazione urbanistico ambientale con)						relazione urbanistico ambientale (è in relazione urbanistico ambientale con)																			
			sede di realizzazione (è stato realizzato in)						sede di realizzazione (è stato realizzato in)																			
			bene composto (è riutilizzato da)						bene composto (è riutilizzato da)																			
			fonte di rappresentazione (è documentato in)						fonte di rappresentazione (è documentato in)																			
			ALTRI CODICI				ALTRI CODICI		ALTRI CODICI																			
			Altro codice bene						Altro codice bene																			
			Ente						Ente																			
			Codice						Codice																			
			SCHEDA CORRELATE				SCHEDA CORRELATE		SCHEDA CORRELATE																			
			Ente						Ente																			
			Codice						Codice																			
			Cross-refe Originator of reference																									
			Reference number																									
			Cross-refe Reference number																									
			Originator of reference																									
			Start date of recording event																									
			End date of recording event																									
			Cross-reference to environmental records																									

More than 700 fields with meaning



More than 300 fields covered by ICCD form






# MA/CA form

## Archaeological Monument/Archaeological Complex

- The MA/CA form is used to catalogue archaeological heritage:
  - a single monument (a mausoleum, an amphitheatre, a tower, a church, but also a bridge, a section of road, etc.);
  - a monumental complex formed by a group of constructions or buildings (a fortified town, a shrine, a thermal complex, etc.).
- Includes more than 300 fields (identified by a unique letter code and a name)
- Metadata are grouped in ca. 20 sections:
  - RV – Relationships; LC – Current Location; LS – Historic Location;
  - RE – Way of discovery; DT – Chronology; AU – Cultural Definition;
  - DA – Analytical Data; ISR – Inscriptions...(and more)
- Terminology is based on lists of terms
- Some fields are associated with Authority files

**Scheda**



CD - CODICI	
TSK - Tipo scheda	MA/CA
LIR - Livello ricerca	C
NCT - CODICE UNIVOCO	
NCTR - Codice regione	20
NCTN - Numero catalogo generale	00194930
ESC - Ente schedatore	S09
ECP - Ente competente	S09
OG - OGGETTO	
OGT - OGGETTO	
OGTD - Definizione	insediamento
OGTT - Precisazione tipologica	villaggio nuragico
OGTA - Livello di individuazione	sito localizzato e circoscritto
OGTN - Denominazione e numero sito	Nuraghe Genna Maria
LC - LOCALIZZAZIONE GEOGRAFICO-AMMINISTRATIVA	
PVC - LOCALIZZAZIONE GEOGRAFICO-AMMINISTRATIVA	
PVCS - Stato	ITALIA
PVCR - Regione	Sardegna
PVCP - Provincia	CA
PVCC - Comune	Villanovaforru
GP - GEOREFERENZIAZIONE TRAMITE PUNTO	
GPL - Tipo di localizzazione	localizzazione fisica
GPD - DESCRIZIONE DEL PUNTO	

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# MA/CA form: Relations

## Archaeological Monument/Archaeological Complex

Relates the monument with other catalogued assets of the same or different category:

- *Is contained in*: the monument relates to another monument (MA) or archeological complex (CA), which represents the monument location at the time of cataloguing;
- *Was found in*: this relation links the monument (MA) or archaeological complex (CA) to the site (SI) form or Stratigraphic Survey (SAS) form documenting where the asset was found;
- *Is involved in*: this documents the connection between the monument, and an event (such as a festivity, celebration, rite, etc.), documented in a form pertaining to intangible heritage;
- *Has environmental/spatial relationships with*: links two monuments that are in the same environmental context
- *Was made in*: this relation links the monument to another archaeological monument or archaeological complex which was its place of production
- *Is reused by*: this links to the monument that reuses part of or the whole monument documented in the MA/CA form;
- *Is documented in*: this links the monument with a document (source, paint, picture, coin ...).

# MA/CA form: Relations

## Archaeological Monument/Archaeological Complex

*Is contained in:* the monument relates to another monument (MA) or archeological complex (CA), which represents the monument location at the time of cataloguing;

# RV-Is contained in

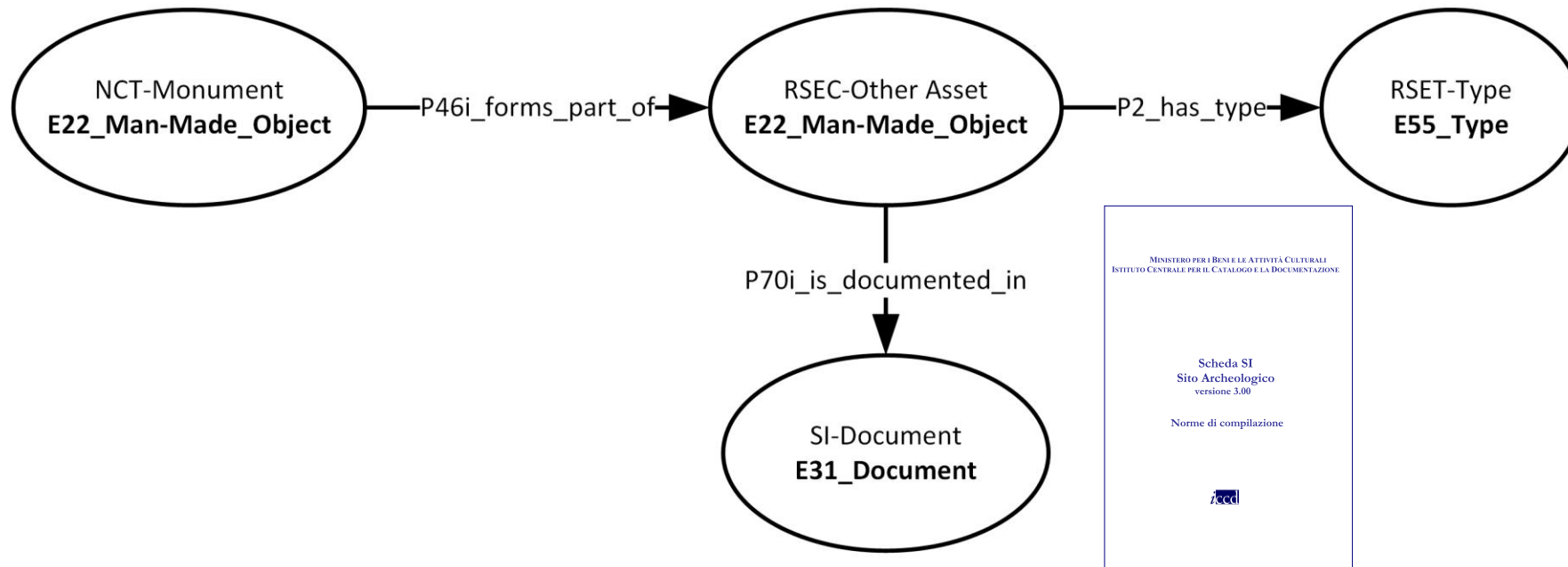
*Amphitheater Paestum*



*Archaeological site of Paestum*



*Site*



*Archaeological Site Form*

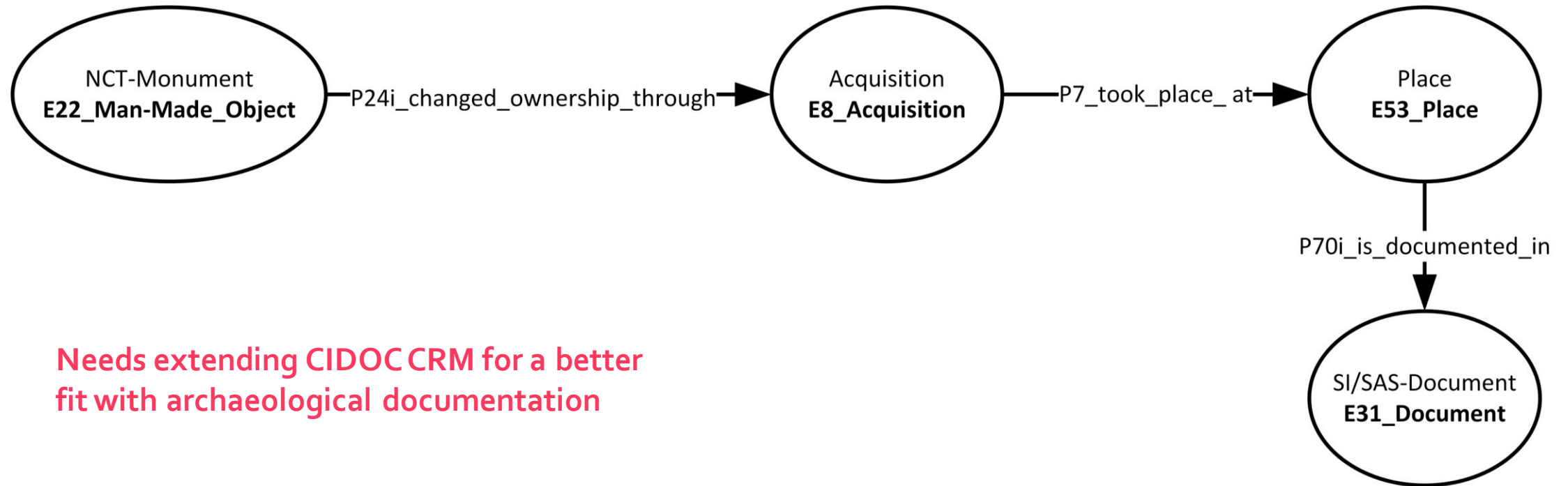


# MA/CA form: Relations

## Archaeological Monument/Archaeological Complex

*Was found in:* this relation links the monument (MA) or archaeological complex (CA) to the site (SI) form or Stratigraphic Survey (SAS) form documenting where the asset was found;

# RV-Was found in



Needs extending CIDOC CRM for a better fit with archaeological documentation



# MA/CA form: Relations

## Archaeological Monument/Archaeological Complex

*Is involved in:* this documents the connection between the monument, and an event (such as a festivity, celebration, rite, etc.), documented in a form pertaining to intangible heritage;

# RV-Is involved in



NCT-Monument  
E22\_Man-Made\_Object

*Obelisco Vaticano*



Event  
E5\_Event

P70i\_is\_documented\_in

BDI-Document  
E31\_Document



Place  
E53\_Place

*Piazza S. Pietro*

P12\_was\_present\_at

P7\_took\_place\_at



# MA/CA form: Relations

## Archaeological Monument/Archaeological Complex

*Has environmental/spatial relationships with:* links two monuments that are in the same environmental context

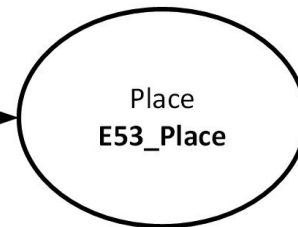
# RV-Has environmental/spatial relationship with



*Obelisco Flaminio*

P54\_has\_current\_  
permanent\_location

*Piazza del Popolo*



P53i\_is\_former\_or\_current\_  
location\_of



*Chiese Gemelle*



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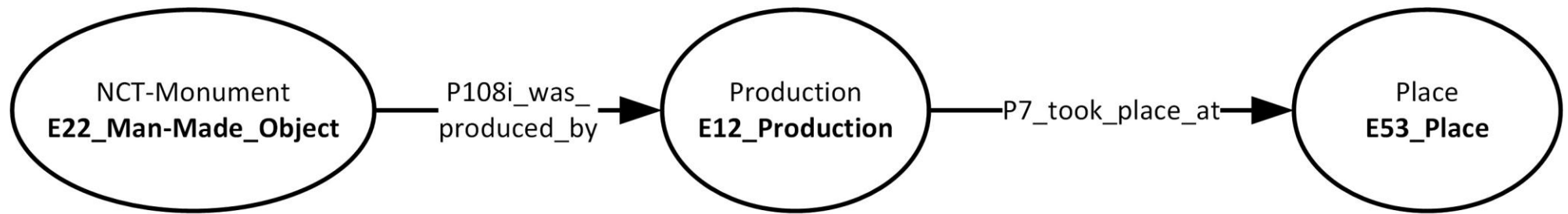
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# MA/CA form: Relations

## Archaeological Monument/Archaeological Complex

*Was made in:* this relation links the monument to another archaeological monument or archaeological complex which was its place of production

# RV-Was made in



*Tomba Diavolino 1*

*Necropolis of Vetulonia*

The "Tomba Diavolino 1" was dismantled and rebuilt in the garden of the Archaeological Museum of Florence in the late 1800s.



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# MA/CA form: Relations

## Archaeological Monument/Archaeological Complex

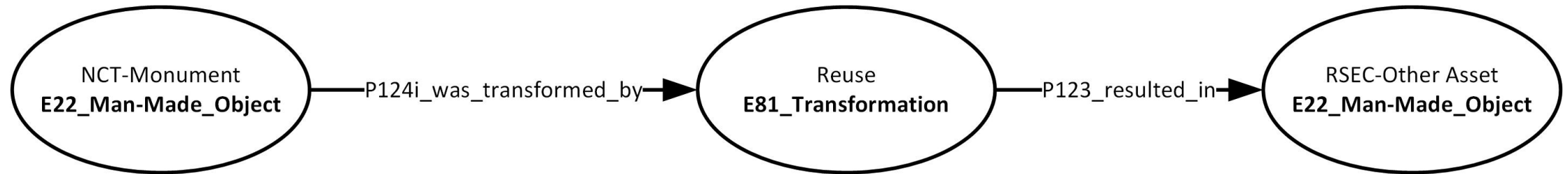
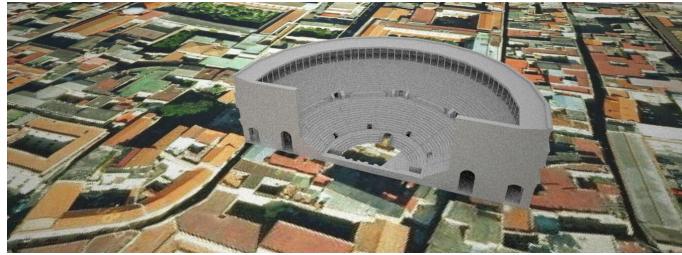
*Is reused by:* this links to the monument that reuses part of or the whole monument documented in the MA/CA form

# RV-Is reused by



Virtual reconstruction of the Neapolis Roman Theatre by Nicola Amico

# RV-Is reused by

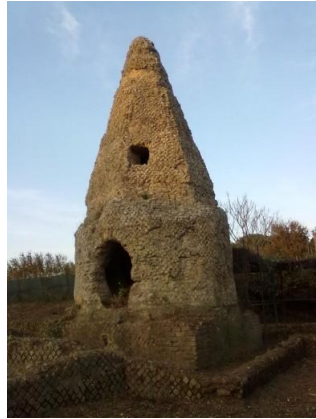


# MA/CA form: Relations

## Archaeological Monument/Archaeological Complex

*Is documented in:* this links the monument with a document (source, paint, picture, coin ...).

# RV-Is documented in

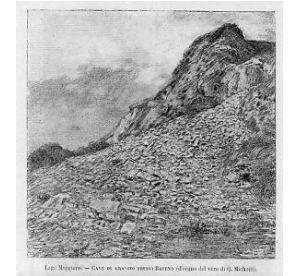


NCT-Monument  
E22\_Man-Made\_Object

P70i\_is\_documented\_in



RSEC-Other Asset  
E31\_Document



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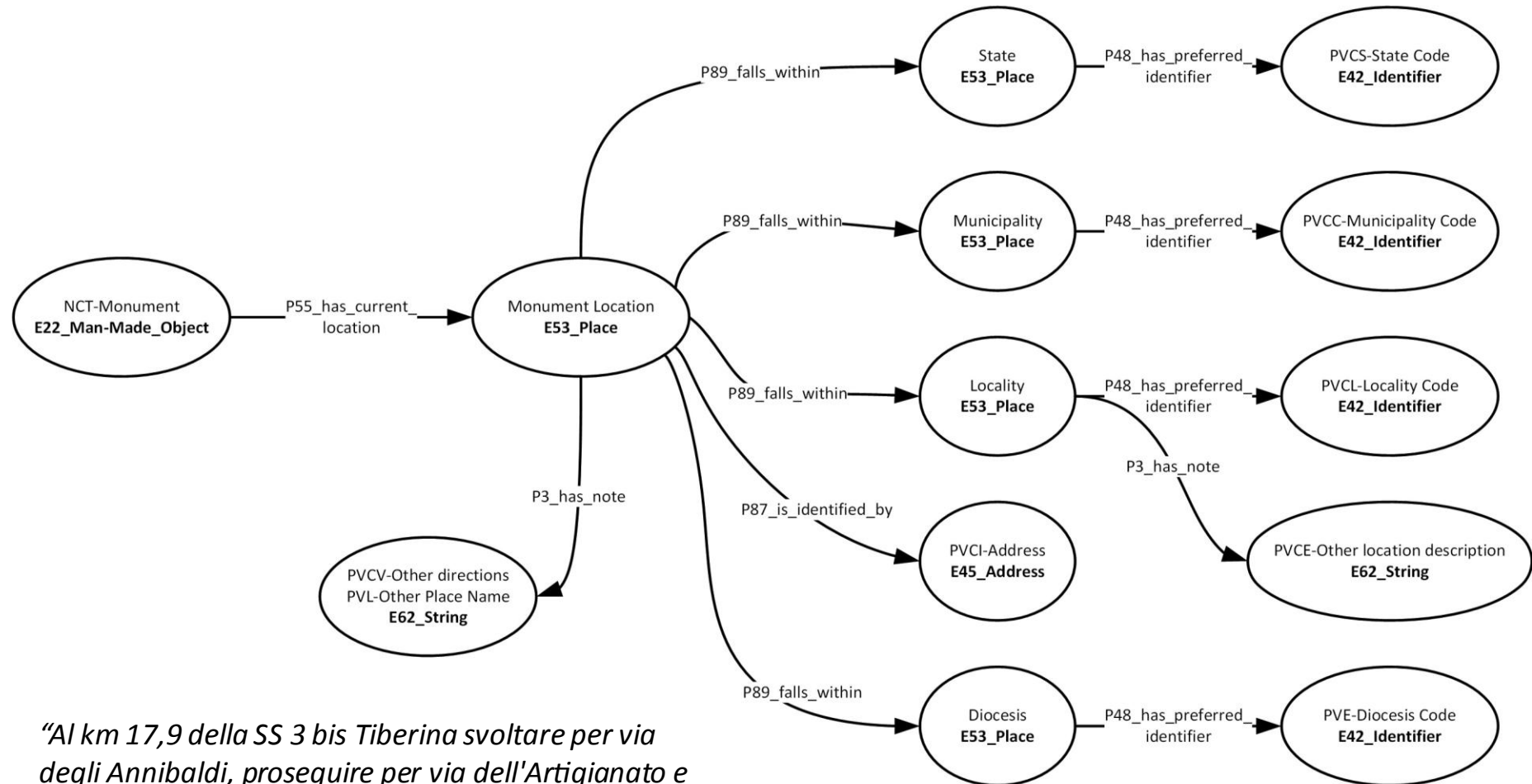


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# LC-Current location

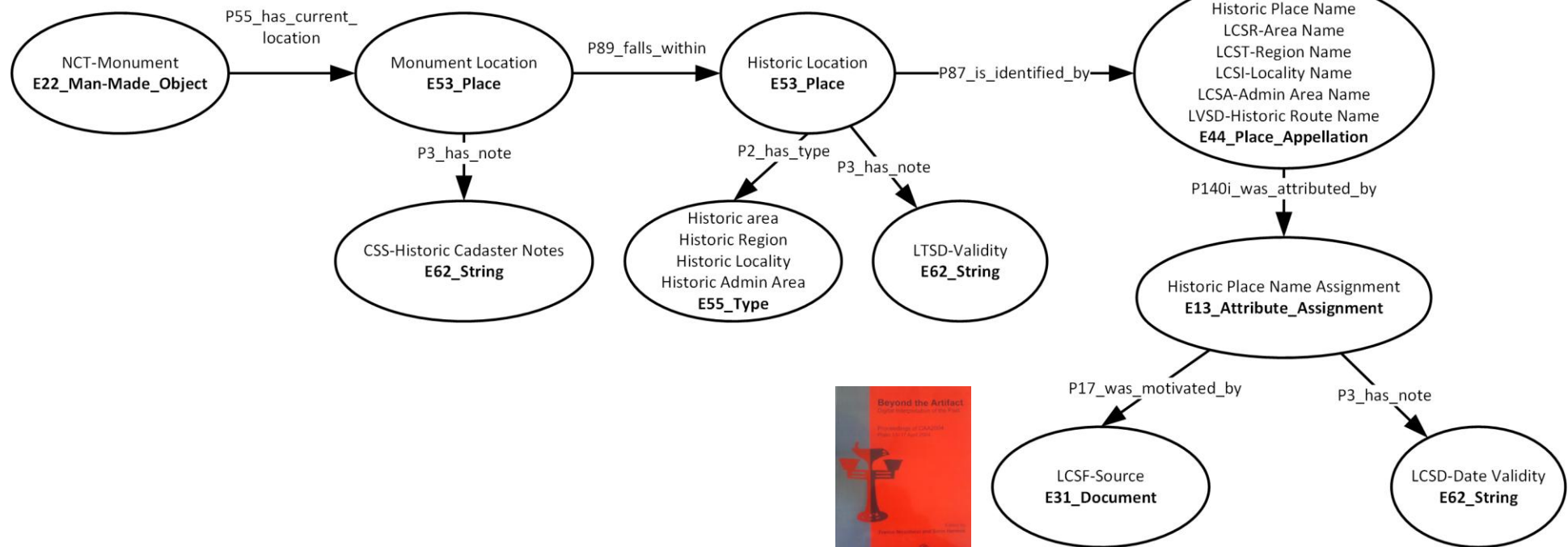


*“Al km 17,9 della SS 3 bis Tiberina svoltare per via degli Annibaldi, proseguire per via dell'Artigianato e via del Pian di Sasso fino a raggiungere la località Sassetta”*

# LS-Historic location

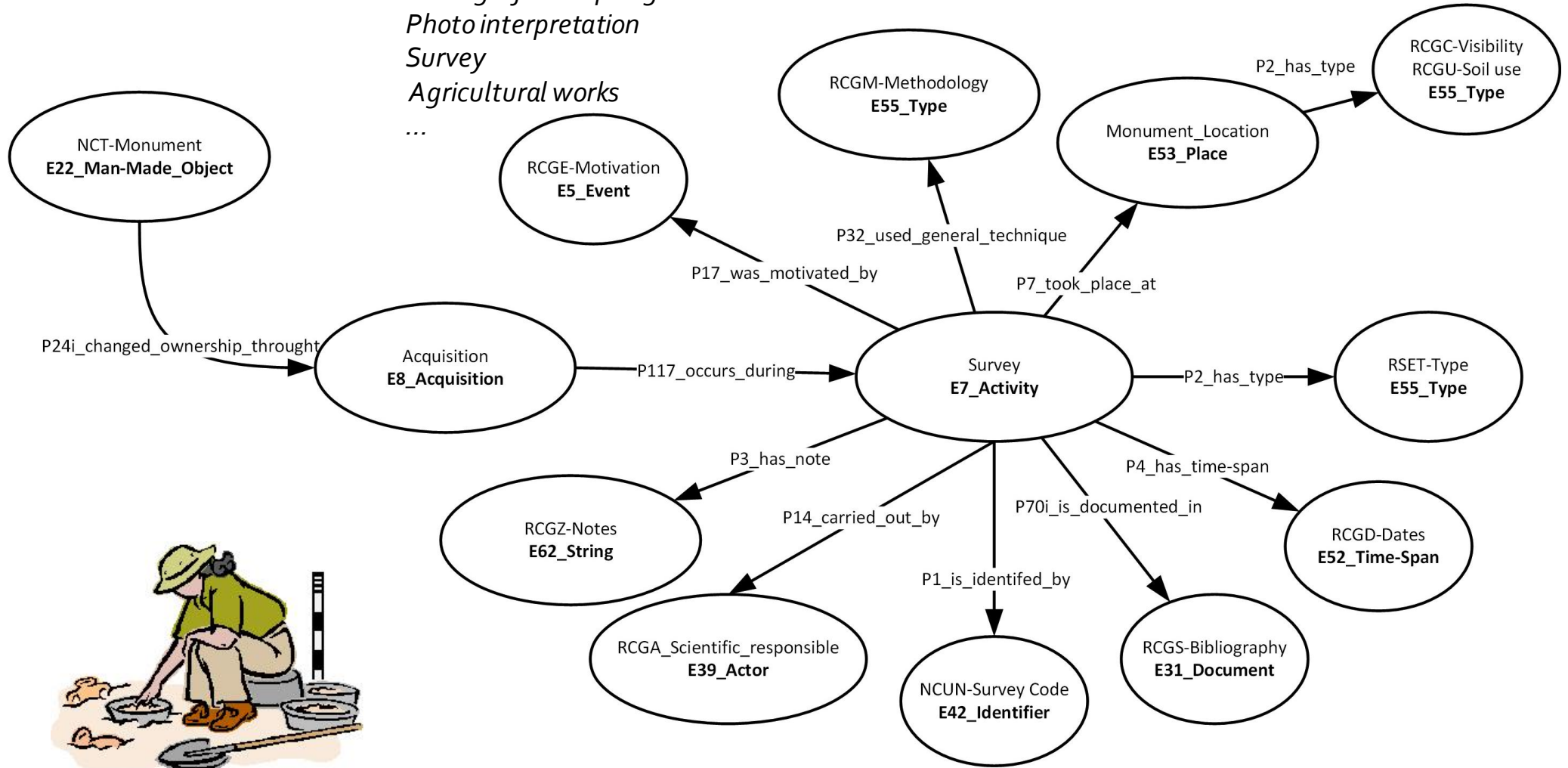


*Lago Prile*



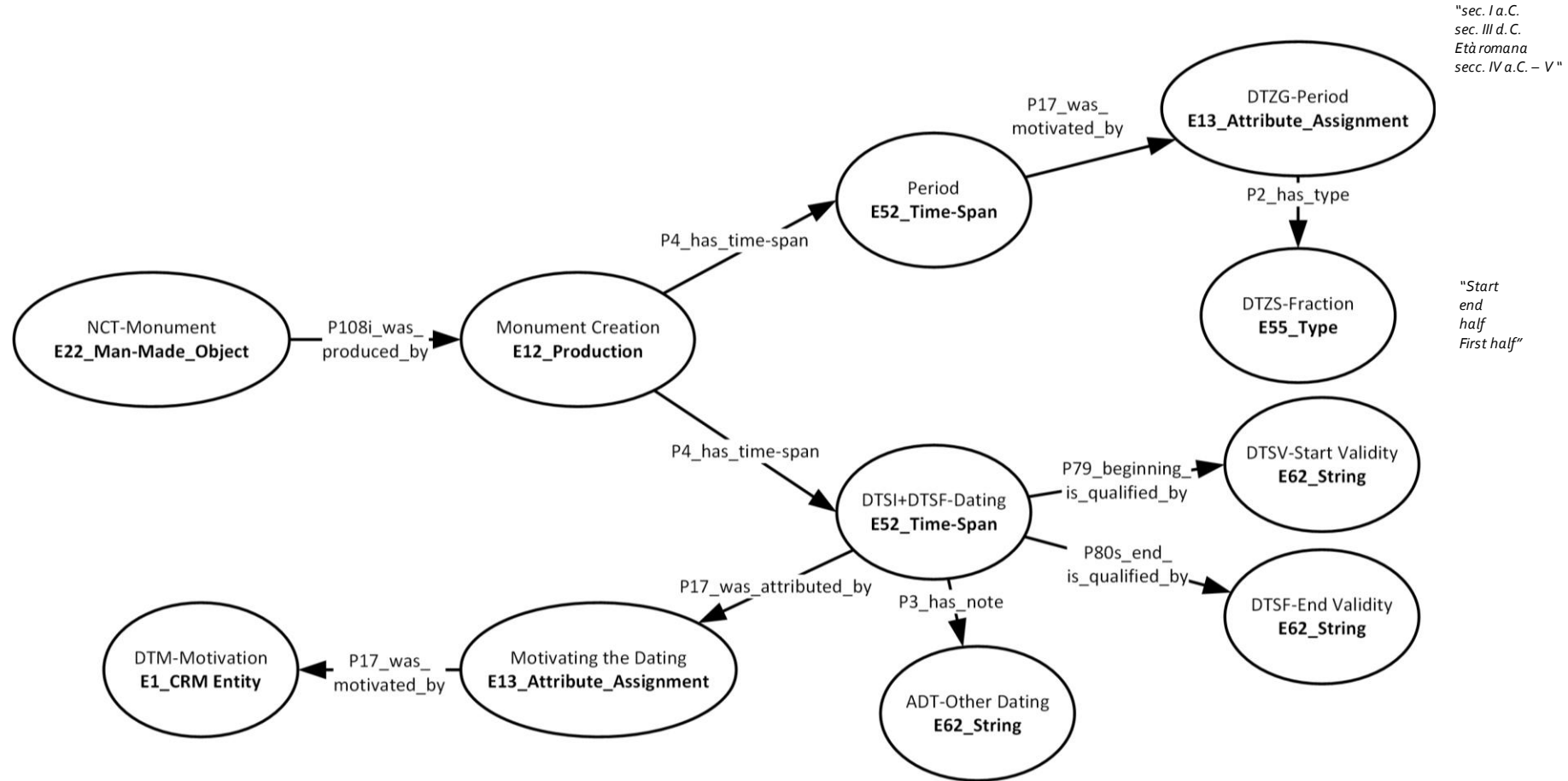
# RE-Way of discovery

*Photografic campaing*  
*Photo interpretation*  
*Survey*  
*Agricultural works*  
 ...





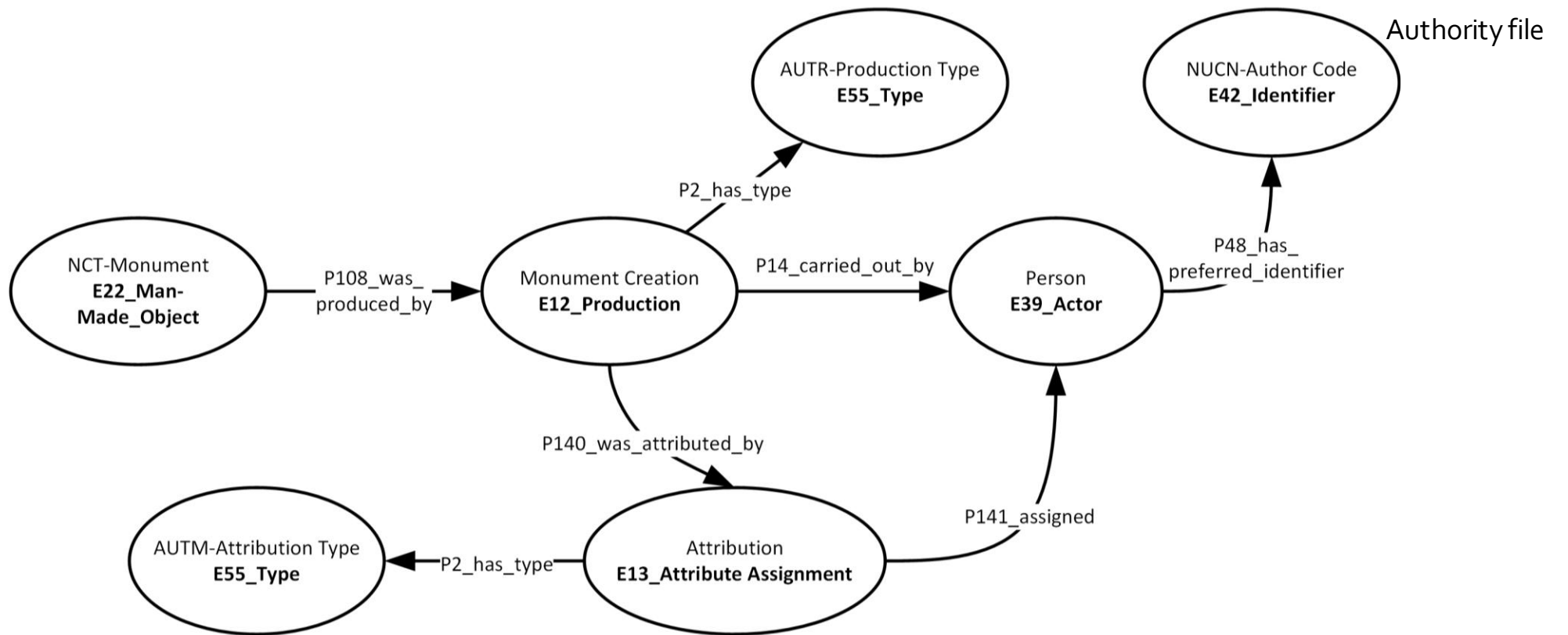
# DT-Chronology



"sec. I a.C.  
sec. III d.C.  
Età romana  
secc. IV a.C. – V"

"Start  
end  
half  
First half"

# AU- Cultural Definition



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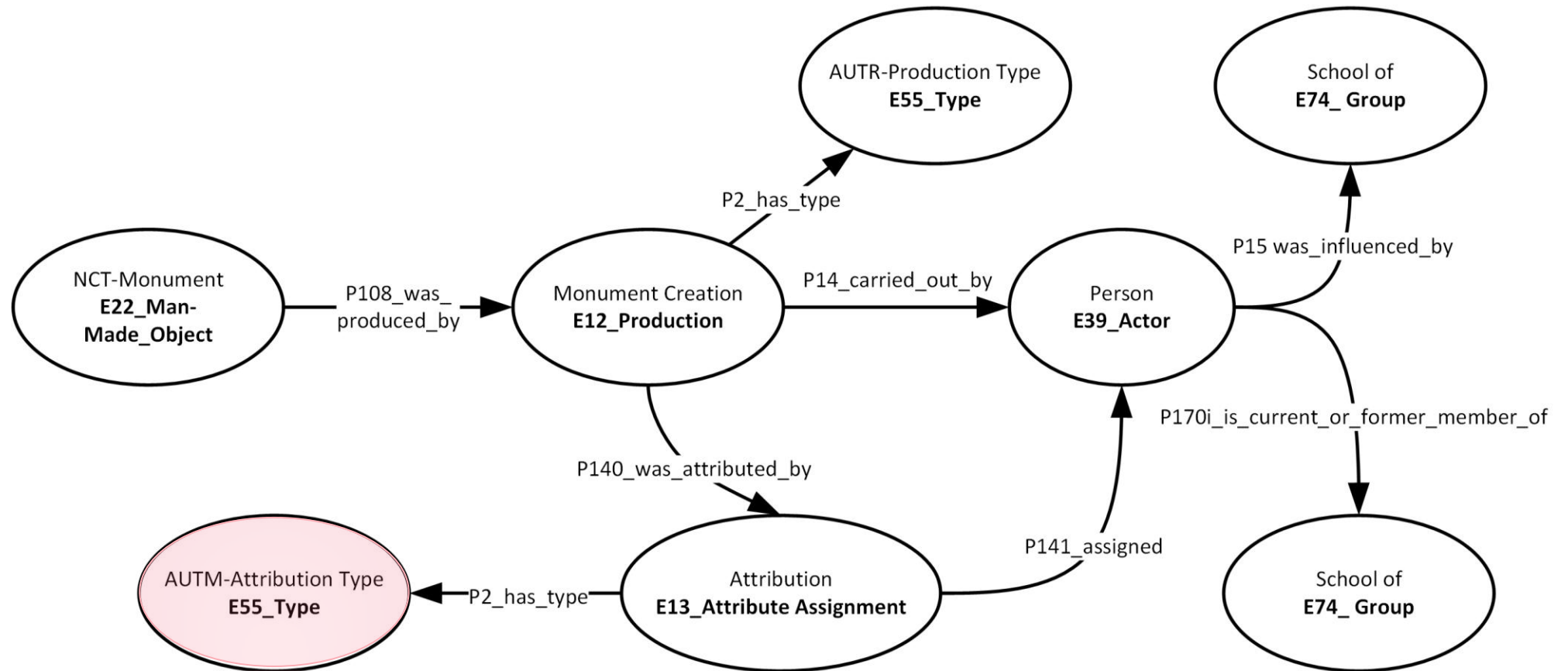


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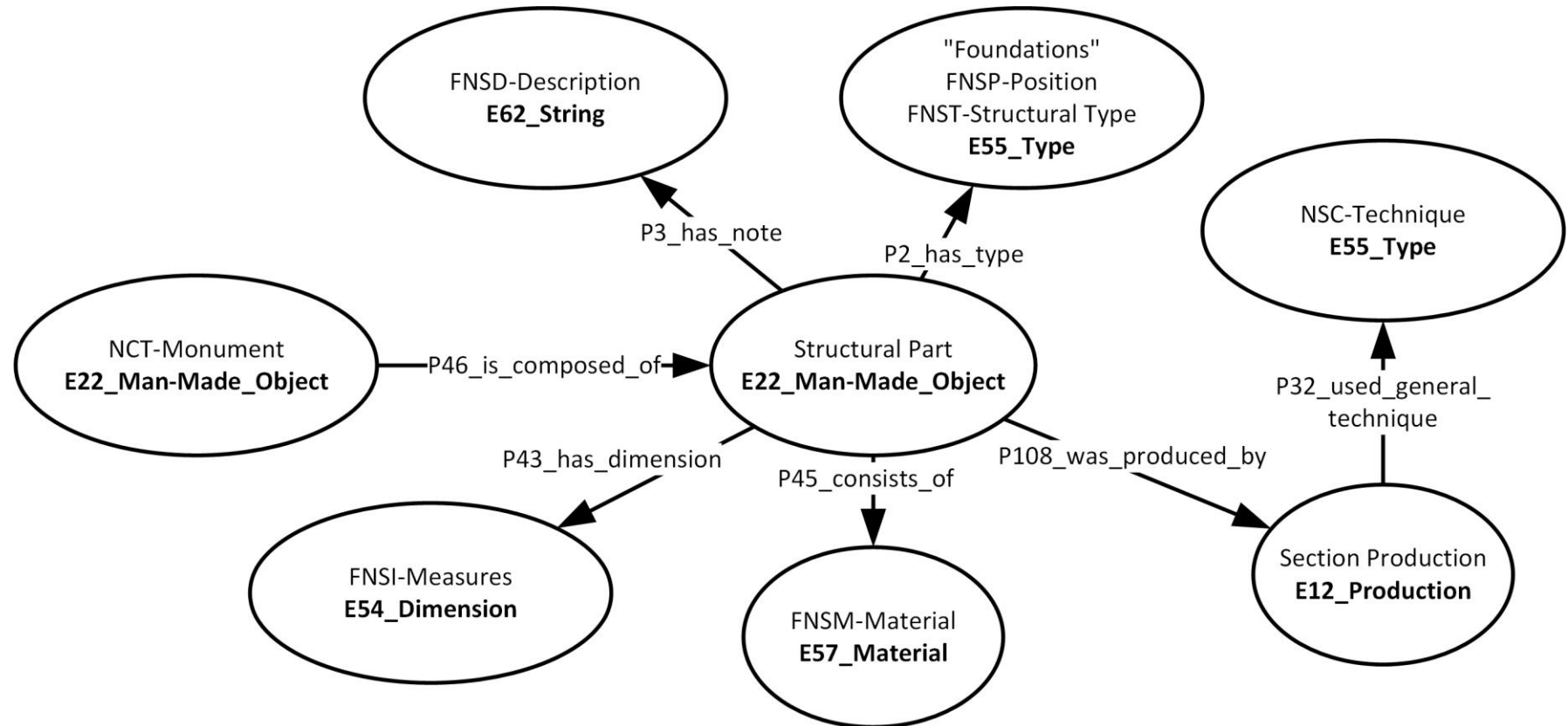
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# AU- Cultural Definition



# DA-Analytical Data



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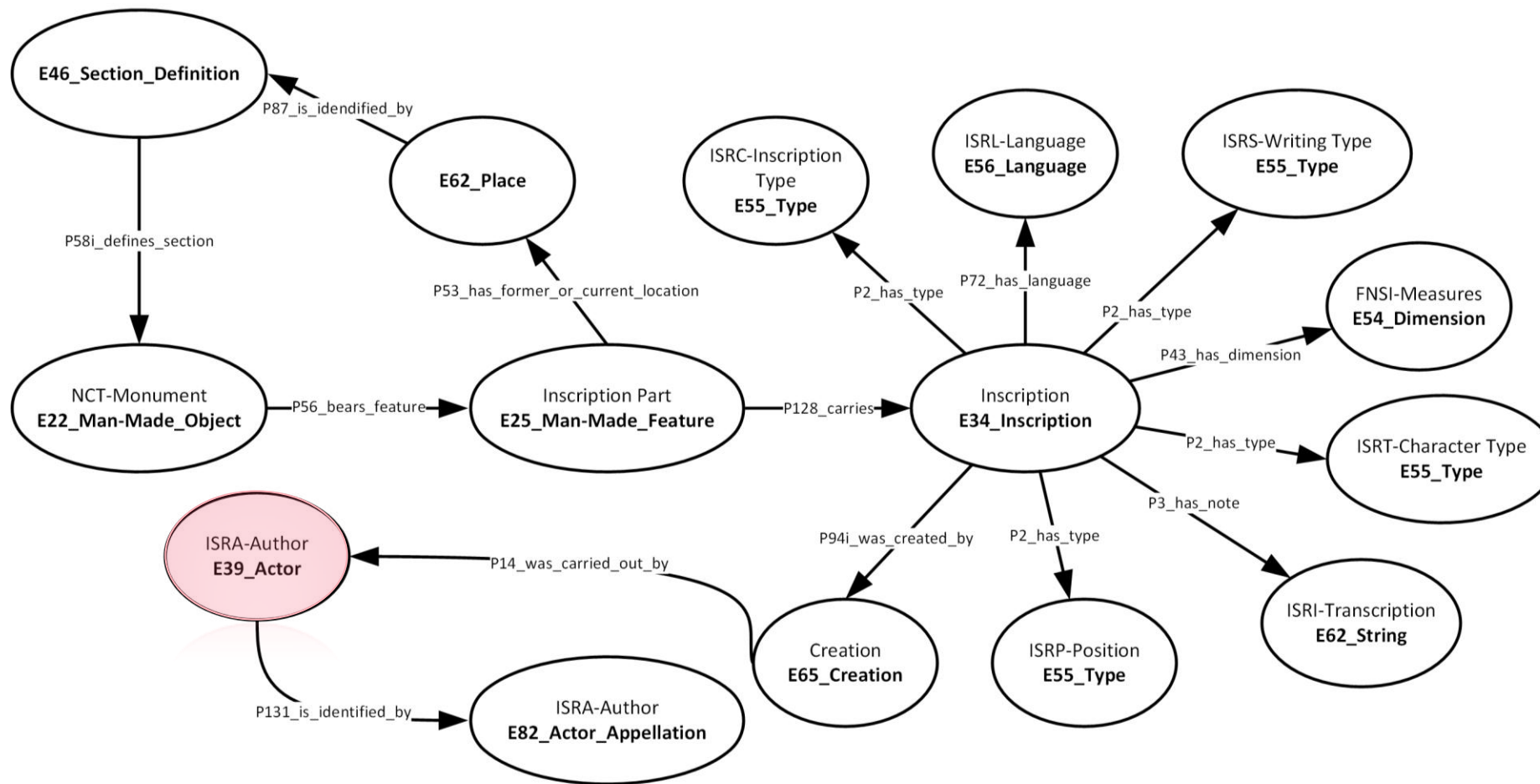


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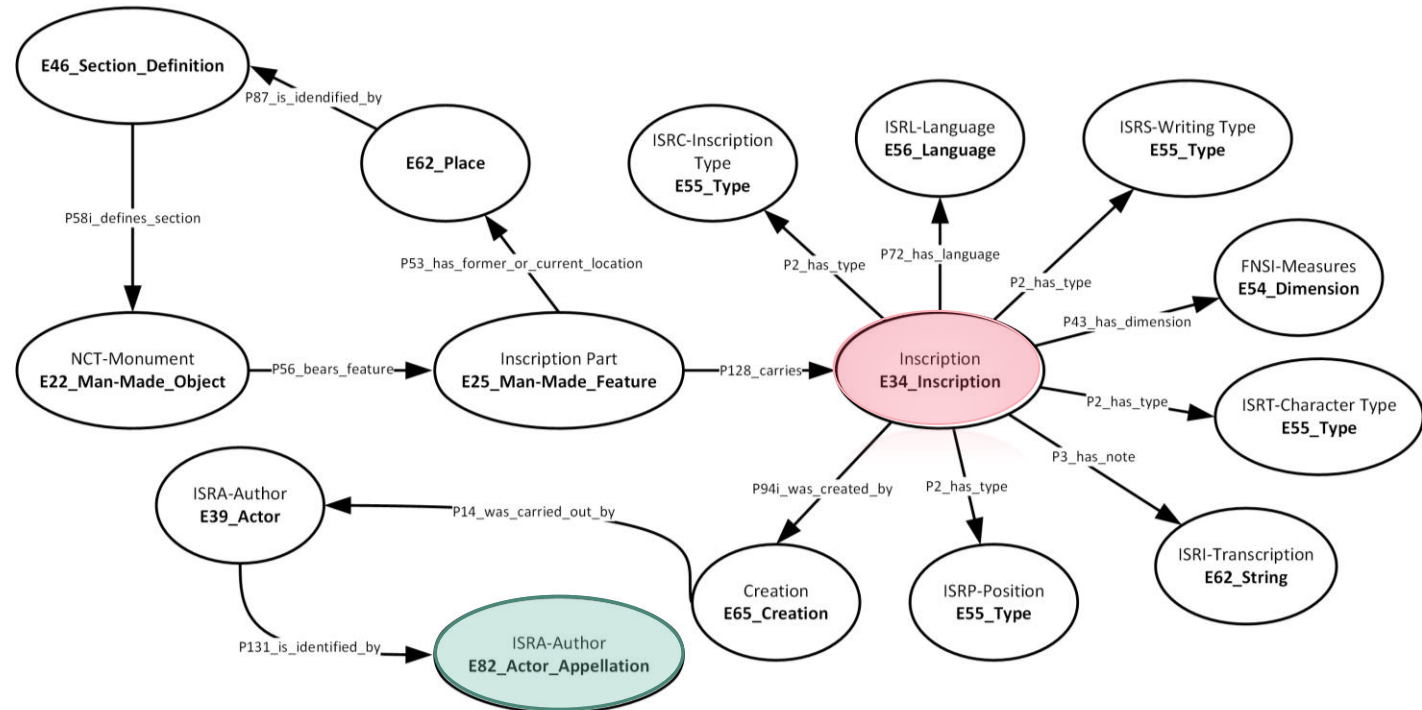
# ISR-Inscriptions



# ISR-Inscriptions

Dominis omnium Gratiano Valentiniano et  
Theodosio Imperatorib(us) Avg(ustis) L(vcivs)  
Val(erivs) Sept(imivs) Bass[us] V(ir)  
C(larissimvs) praef(ectvs) Vrb(is) maiestati  
eorum dicatv[m] [.....]

Marble epistyle dedicated to Graziano  
(Flavius Gratianus - 24.VIII.367-25.VIII.383  
d.C.), Valentiniano I (v.) and Teodosio I (v.) by  
Lucio Valerio Settimio Basso prefect of  
Roma from 379 to 383 d.C.-



# Other MA/CA sections

- CD-AC – Codes;
- OG – Object;
- CS – Cadaster;
- GP-GL-GA – Georeferencing;
- MT – Technical data;
- CO – Conservation;
- RS – Restoration;
- MC – Samples and analyses;
- TU – Legal status;
- DO – Sources;
- AD – Data access;
- CM - Compiler;
- AN – Notes.

# Conclusions and further work

- The mapping shows that interoperability of monuments dataset is feasible and interoperability of these repositories at European level would create an infrastructure useful as the forthcoming archaeological one
- Use the mapping of European Standards and metadata schemata to CIDOC-CRM to reach data interoperability without losing information
- Continue the mapping of other ICCD schemata relating to architecture
- Conversion of data encoded with the MA/CA model in a CIDOC-CRM RDF format
- Addressing conservation and restoration





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Thank you for your attention!

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