Achille presented his homework on supeproperties for CRMarchaeo properties. We discussed his proposal with the following order:

1. The crm-sig discussed the observed clash between the domain of **AP1 produced (was produced by) and the domain of its CRMbase superproperty (P108 has produced (was produced by))** –namely A1 Excavation Process Unit (listed as a subclass of E64 End of Existence) and E 12 Production (listed as a subclass of E63 Beginning of Existence and E11 Modification), respectively.

AF and GB who were assigned to find superproperties to the CRMarcheo properties, worked around the problem by proposing that A1 production be listed as a subclass of E81 Transformation. The crm-sig rejected this solution and proposed that a different solution be explored.

Namely, instead of declaring A1 Excavation Process Unit (the domain of AP1 produced (was produced by)) a subclass of E6 Destruction, it should be declared a subclass of either S1 Matter Removal or S2 Sample Taking, which, in their turn, are to be declared as subclasses of E63 Beginning of Existence, which solves the problem. It’s more likely that the most appropriate superclass for A1 Excavation Process Unit is S1 Matter Removal though, because we don’t expect all the activities in the context of an excavation to be sampling processes. The branch of the relevant classes’ hierarchy could look like this:

A1 Excavation Process Unit isA S1 Matter Removal isA E63 Beginning of Existence.It should work for the other CRMarcheo properties that have A1 as their domain, namely

* AP2 discarded into (was discarded by),
* AP4 produced surface (was surface produced by),
* AP5 removed part or all of (was partially or totally removed by),
* AP6 intended to approximate (was approximate),
* AP10 destroyed (was destroyed by).

**HW**: AF should rework the solution, along the lines proposed in the meeting..

1. The most suitable candidate for a superproperty **to AP3 investigated (was investigated by)** was O8 observed (was observed by), which required the range of AP3 to change into a class that does not clash with S15 Observable Entity (i.e. the range of O8 observed).

It was proposed that the new range for AP3 investigated (was investigated by) be changed from E53 Place to E27 Site.

### AP3 investigated (was investigated by) [old]:

 Domain: [A9](file:///C%3A%5CUsers%5Ctsoulouha%5CDownloads%5CCRMarchaeo_v1.4.7.docx#_A9_Archaeological_Excavation) Archaeological Excavation

Range: [E53](file:///C%3A%5CUsers%5Ctsoulouha%5CDownloads%5CCRMarchaeo_v1.4.7.docx#_E53_Place) Place

Quantification: one to many (0,n:0,1)

Scope note: This property identifies the 3D excavated volume instance of E53 Place, i.e., a three- dimensional volume, that was actually excavated during an A1 Excavation Process Unit.

Examples:

The Excavation Process Unit excavating the Stratigraphic Volume Unit (2) excavated the place where the Stratigraphic Volume Unit (2) was.

In First Order Logic:

Properties:

### AP3 investigated (was investigated by) [new]:

Domain: [A9](file:///C%3A%5CUsers%5Ctsoulouha%5CDownloads%5CCRMarchaeo_v1.4.7.docx#_A9_Archaeological_Excavation) Archaeological Excavation

Range: [E27](file:///C%3A%5CUsers%5Ctsoulouha%5CDownloads%5CCRMarchaeo_v1.4.7.docx#_E53_Place) Place

Quantification: one to many (0,n:0,1)

Scope note: This property identifies the 3D excavated volume instance of **E27 Site**, i.e. a three- dimensional volume that was actually investigated during an A9 Archaeological Excavation.

Examples:

The Archeological Excavation investigating the Stratigraphic Volume Unit (2) excavated the site which the Stratigraphic Volume Unit (2) was part of (P46).

A7 Embedding currently have S16 State as superclass, that exists no more. Decision: to change superclass of A7 to E3 Condition State. E3 needs to be revised to fit properly (George in charge).

1. Regarding the superproperties of CRMarcheo properties whose domain is set to A7 Embedding (a subclass of S16 State):

It was proposed that the restrictions imposed on E3 Condition State be relaxed or alternatively that S16 State be allowed as a suitable range for P44 has condition state (is condition state of). However, S16 State has been deprecated –which means that it is no longer an option. The alternative of changing the scope of E3 Condition State is to be followed.

 It was mentioned that structural characteristics of an object could be seen as extending condition states (f.i. an object with its lid open vs the same object with its lid closed) into phases –the latter are applicable to living beings as well (i.e. not solely confined to conservation contexts).

On the other hand, it was proposed that A7 Embedding is best defined a subclass of E26 Physical Feature rather than S16 State/(extended) E3 Condition State. So, more thought is to be put on the superproperties of CRMarcheo properties whose domain or range is A7 Embedding.

**PROPOSAL**:

* A7 Embedding be declared a subclass of E26 Physical Feature.
* The scope of E3 Condition state be updated taking into consideration physical and structural features of objects (aka Phases). This is to be handled separately either under ISSUE 369 (Timed relations) or under ISSUE 329: States and situations.

**DECISION**: The crm-sig decided to accept this proposal. Furthermore, it was decided that S16 will consistently be changed to an updated E3 Condition State.

**HW**: GB is assigned with consistently changing S16 to an updated E3 Condition State.

1. Rearding the superproperties of AP11 has physical relation (is physical relation of), AP13 has stratigraphic relation (is stratigraphic relation of) and AP14 justified by (is justification of), it was mentioned that they cannot be reduced to subproperties of CRMbase properties. They correspond to .1 metaproperties, which means that only their type needs be specified –not their substance.
2. **AP15 is or contains remains of (is or has remains contained in)**
3. **AP21 contains (is contained in)**
4. The rest of the properties of CRMarcheo were assigned to their respective superproperties without problems:
	1. **AP7 produced** (O17 generated)
	2. **AP8 disturbed** (O18 altered)
	3. **AP9 took matter from** (O18 altered)
	4. **AP12 confines** (O7 contains or confines)
	5. **AP16 assigned attribute to** (P40 assigned attribute to)
	6. **AP17 is found by** (O8 observed)
	7. **AP18 is embedding of (is embedded)** (P44 has condition)