

# The 32nd joined meeting of the CIDOC CRM SIG and ISO/TC46/SC4/WG9 and the 25th FRBR - CIDOC CRM Harmonization meeting

## Conference Room of OeRC

Oxford University e-Research Centre

Oxford, UK

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**Monday 9/2/2015**

### **Spectrum Integration**

The purpose is to have a complete representation in CRM Format.

The first step is to create the mapping and then to review this mapping

We will use the X3ML mapping Formalization. Martin made a presentation for this. In the beginning we will write the mapping in text.

Gordon McKenna, Steve Stead, Richard Light and Thomas will review the mappings. They will send two weeks before the next meeting a summary of the mappings and what will be the open issues. By the end of the year we plan to have the first complete graph with initial scope notes and properties. Gordon will find an adequate spectrum application data example by next week. He may find a complete data base or otherwise it can find records. For the next meeting, they have to go over the 21 procedures and mapping them with Spectrum fields. If we have process model going beyond the spectrum fields, we should discover the knowledge representation that they describe through these processes. We should add to the CIDOC site as a work item.

### **CRM ISSUE 252:**

The scope note of E73 Information Object and the I4 Proposition Set of CRM<sub>inf</sub> have been updated in order to address the name graphs.

### **CRM ISSUE 248:**

The crm-sig decides that we can infer from P9 that the part falls within the spacetime volume of the whole. A generalization to E2 would not allow inferring that. No action should be taken and the issue is closed. Also we decided to post two new issues, the followings:

- a) Put a comment into the introduction of CRM that same label is used if the substance of the property is regarded to be the same, but different constraints apply to their use with a specific class, such as Parts of a period must be periods etc. (to be elaborated by Øyvind)
- b) Put at a visible place the instruction that labels have no meaning

### **CRM ISSUE 255:**

The crm-sig discussed that the shapes are morphological classes. The problem is the colours you may observe are depended by the granularity you look up. Discussing about the physical parameters that the colour depends on, we decided that these are the normalized light source and the surface area selected integrate the light reflections. (HIS dimensions relates to RTI imaging).

The crm-sig assigned to MD to write and Steve Stead to review the FAQ on shape and colour.

### **CRM ISSUE 262:**

The crm-sig decided that this issue is covered by the issue 255, so it should be closed. Also the crm-sig accepted that the notion of the substance of the feature is hidden to E26 Feature. There are features that may have substance. Steve Stead will revise the scope note of E26, E27, E25 to express that.

### **CRM ISSUE 260:**

Actor appellations are problematic “John” maybe actor but also maybe something else.

The crm-sig has noted that a class definition in CRM must not depend on the incidental association of its instances with another entity instance. The sense of subclasses of Appellation has been misinterpreted in that sense. The discourse about inferring the class of something identified by a special kind of identifier appears to be exotic after years of CRM applications.

This would justify putting this stuff into an extension about Named Entity resolution and TEI. Steve, Arianna Ciula, Øyvind, will elaborate this issue by reviewing the subclasses of E41 Appellation..

### **CRM ISSUE 242:**

The interpretation of P150 "defines typical parts of" to be subproperty of P127 "has broader

term" gives wrong deductions. We need P127 to be restricted to "BTG", otherwise we cannot compute how P127 complements superclass hierarchies. There was a typo in the example of P150 which was removed. The issue is closed.

### **CRM ISSUE 241:**

MD noted that up to now we have not touched relations in collective behaviour (such political movements, trading routes), neither in categorical behaviour (such as the interplay of parts of a machine or of a manufacturing procedure). We have not touched emotional, psychological facts, such as love, fear, racism etc. We only model states of affairs that can be described in terms of distinct entities and relationships.

The crm-sig assigned to Dominic with the help of Martin Doerr, George Brusecker, Maria Daskalaki, to write proposals.

### **CRM ISSUE 237**

We decided to create a version 5.0.5 which will be similar to ISO. Differences between these two versions should be issues .

### **CRM ISSUE 238**

The scope note of P89 has been accepted in Hague meeting, the issue is closed.

**Tuesday 10/2/2015**

### **FRBR issues**

On page 19 of FRBR 2.1 version PLB has made a comment about the relationship between broader terms. In more details he said that the following paragraph should state precisely how this broader term relationship is modelled within FRBRoo.

*A broader term relationship is stated within LCSH (an instance of a F34 KOS) between this thema and two other themata, this is encoded in the MARC 21 550 fields (code value g in subfield w indicates broader term). This same authority record shows the use of MARC 21 field 053 to encode the assignment of the nomen QL638.94.L36 to this thema, this time within the Library of Congress Classification (LCC).*

Comments from this discussion are:

This subject concerns particulars and universals. MD said that good practices for thesauri are the BT relation to be an isA relationship. Then we discussed an example from LCSH about "bridges construction" has BT bridges. We noted that bridge's construction is not a bridge. Also we remembered that when we harmonized FRSAD we had agreed that we don't model the subject for the reality it is about and standardizing these things is not a good practice. PLB proposed to introduce a decomposition of conceptual objects. We agreed that Thema can be any entity so we cannot assign ontological distinctions.

Finally the sig proposed to PLB to find out if the current crm practices are in line with the thesauri.

In CRM we have adopted that *thema* is not a thing; *thema* is talking about a thing. For example most persons/places can not be *thema*. Also MD will distribute the definitions adopted by DARIAH thesauri working group.

**On page 20**, on the (g) item from comments of figure 6:

*(g) Additionally, a work can be recognised as being composed of several structural parts. This is also modelled as: F15 Complex Work is a F1 Work, and F15 Complex Work R10 has member (is member of) F1 Work.*

Patrick commented that “*Perhaps a footnote here could state that people who wish to avoid the confusion between structural parts and successive members of complex works can use P148 instead of R10 for structural parts as an alternative?*”

The sig decided that it is a very complex issue and it should be written something about it.

Patrick will write the footnote.

**On page 25**, we discussed the proposal made by Patrick of putting the text in parentheses in a footnote. “*(Not all manuscripts, however, are necessarily produced by an instance of F28 Expression Creation: a perfect copy of a brief text, made by a highly trained scribe from an original, and checked several times with the original to contain no alteration of the text, could be regarded as just the result of an instance of E12 Production; but as a rule, no two mediaeval manuscripts carry exactly the same text).*”

The sig agreed that “creating a text or copying a text is not clear in current practice. Inscribers and archivists consider as two different intellectual creations the creation of the same text in two different manuscripts. Patrick said that the same inscription in two different stones is considered as two different expressions. Also it is accepted that the manual copying is never perfect and it is better to consider ad a derivative. Finally we decided to delete the above phrases in parentheses.

Then we reviewed the scope note of F1 Work, F15 Complex Work.

We change the scope note of R10 has member (is member of) and we introduced again the examples.

We changed the second shortcut of R65 and the scope note of it. The definition of R14 is deleted from the text of FRBRoo. In the amendments we should mentioned the existence of this property and that it has been transferred to CIDOC CRM.

## **CRM ISSUE 273**

The sig distinguished two types of business transactions that may be needed to be modelled.

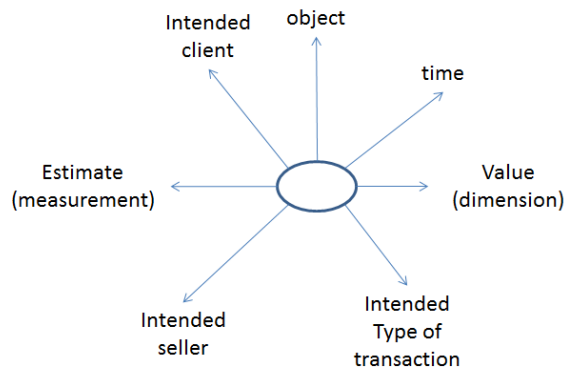
These are

- (a) Sales prices
- (b) Generalizations

Sales prices are in the scope of spectrum. We decided that under the scope of CRM should be the economic evolution of cultural historical studies of economy and factors. The question is the sales prices as a more general question.

Then MD proposed to look at the ontology of Sumerian economic text corpus. Finally we

agreed to examine the business transactions under the aspect of cultural historical studies and as “social compensations activities / transactions”. Firstly we will examine Spectrum and British museum data structure for financial data. We detect notions of offer (plan), valuation (measurement), purchase price (Fact? Or Debt?), funding source. It is a complex subject and we might have reciprocal transactions. We discussed that the price is not a characteristic of the object e.g. Museum prices and Auctions prices. The type of this characteristic depends on planned transaction types. Finally we agreed on the following dependency diagram of object.



We need examples from Dominic.

Complexity: Do Museums make non-monetary compensation business?

Compensations for donations:

Spectrum, KEMU

Siegfried will give examples from his museum

BM

Finally we decide to make a proposal for business transactions and this will be added to the extension for Spectrum.

The question is the purchase price is fact or debt. Also it should be examined if every dimension is a result of measurement and what is the nature of the process that produces a dimension.

The purchase price that comes out of an agreement should we consider as a result of observation?

George, Steve, Dominic, Gordon should elaborate an answer in the view of the above.

Finally we decided to separate this issue into three different issues:

- (a) a general model in cultural historical studies of economy and factors (Nicolas Carboni, Terhi Nurmikko-Fuller, MD, Mathew Vincent)
- (b) Financial transactions
- (c) Coins and banknotes as artistic objects having industrial production.

## CRM ISSUE 254

The sig review the CRMInf. The following changes took place.

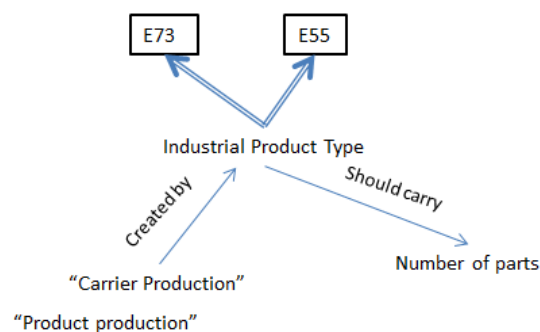
- (1) it is accepted the text for descriptive and empirical science
- (2) The text about the logic of initiation and ending of a belief in the scope note of I2 belief has been moved to 1.1.1 Scope
- (3) The scope note of I5,
- (4) Discussing about trust parameter in I7, we agreed that we have three forms of argumentation. (i) I have seen it (ii) I believe you (iii) I concluded. Finally we accepted that we don't want to relax the notion not to introduce a trust parameter. The scope note of I7 have been changed
- (5) The property J7 is based on evidence from (is evidence for) has been added
- (6) Examples have been added to I1, I2, I3, I4,I5, I6, I7, J1, J2, J3, J4,J5
- (7) Discussing about I6 we agreed that it should be subclass of E59, but we changed the scope note of E59 considering that this model, being an ontology and not a data schema, commits only to the respective abstractions of data types and primitive values, and not on their implementation-induced limitations.
- (8) The new version of CRMInf is 0.7

## CRM ISSUE 230

The sig, reviewing the text provided by Øyvind about co reference between information systems as well as the proposed changes to the existing definition, decided to withdraw the co-reference statement from the text of CIDOC CRM 6.1 and assigned to Øyvind, CEO,MD, Arianna Ciula to revise the definition in order to introduce it to CRMInf.

## CRM ISSUE 268 -269

The sig decided to merge the issues 268 and 269. The working one will be the 268. Then we discussed about mass produced objects and how to model them in a CRM. We made the following design in the board



The sig have assigned to CEO and Patrick to formulate this as a class in CRM

## CRM ISSUE 270

The sig agreed on renaming the name of E78 Collection. A proposal is to rename E78 to "Curated Holdings". The sig have assigned to Dominic of thinking a better name. Martin will send a paper from Europeana to Dominic

## Wednesday 11/2/2015

We started with the presentation by Paola Ronzino about buildings.

The sig decided to adopt classes and properties from CRM<sub>BA</sub> in CRM<sub>archeo</sub>. Then MD said the answers to the following questions may help us for defining good ontological classes and properties.

Question about Substance(S) of a class or property: What is the essential substance a thing is made of? This should not be mistaken with physical matter, for instance the substance of a text is characters and spaces. What are the substantial traits necessary for something to be an instance of a particular class?

Question about Identity (I) of a class or property: How to recognize manifestations of individual instances in the world (at different times or places) as being the same? Does this amount of substance of a class represent one or more instances of this class? How to recognize if two references to instances of a class existing at the same time refer to the same or different instances?

Question about Existence (E) of a class or property: Through which kind of process does an instance of a class begin to exist (e.g. through birth, creation, production) and by what does its existence end (e.g. through death, destruction, dissolution or transformation)?

Question about Unity (U) of a class or property: How do I recognize all parts of an instance? What are the temporal or spatial boundaries of an instance? What is in or out of an instance? Note that it is not necessary that for all potential parts of a thing we can decide if they are a part or not of it [Wiggins 2001]. E.g. , a mountain may be well defined even though we don't know precisely where its boundaries are.

Comments and proposals about the presentation are:

- To discuss about "function", if there is a notion of a state
- To discuss about "equal to", may should be a notion of colocation
- We should look at a more complete model of inference, how CRM<sub>inf</sub> is related to this (Paola, Paul Cripps and Steve will work on this)
- The notion of re-use is interested, there is a notion of "re-purposing"
- "connected": to define the transitivity of connections
- Constitutes, forms part of, adjacent should be some constraints

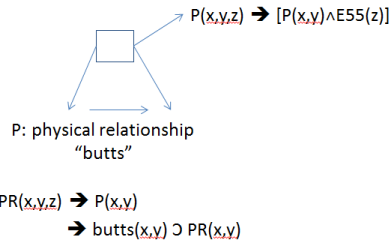
Paul Cripps said that we have different properties on stratigraphic units in the sense of domain and range

Then we discussed about two subjects

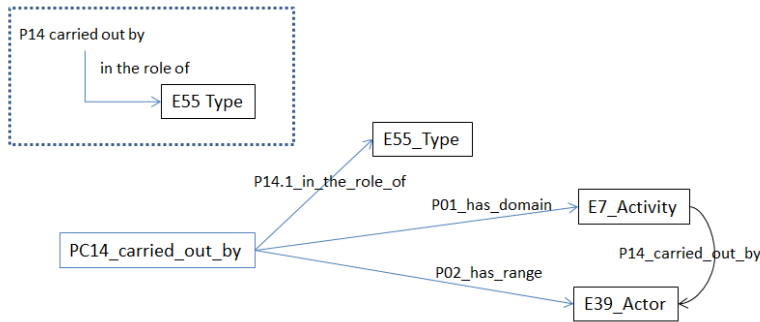
(a) properties of properties versus subtyping, how to implement that?

(b) The stratigraphic sequence versus temporal Allen. Is it possible to have an operator for describing stratigraphical layers before or after?

About properties of properties, we designed the following:



supset -> subproperty of

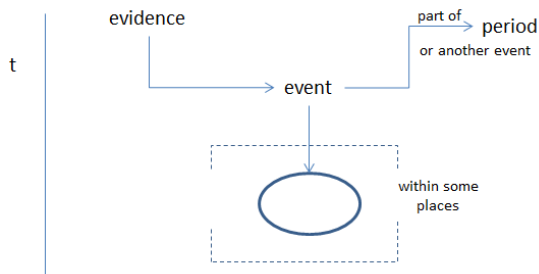


The question is if topological relationships can be fixed globally for understanding mereology



We argue that physical relationships are an open world. Recording physical relationships is more important than standardizing. Standardizing is counterproductive. The terminology can be converted to subtyping whenever it is required. Finally we agreed on consolidation of different vocabularies. Also temporal relationships are question of consolidation.

Then MD continued by presenting a fuzzy volume topology.



The event must be part of another event. We argue that Allen's operators are based on precise time, while we have orders of magnitude of fuzziness. The impression of indeterminacy is due to observation.

Then MD presented the temporal relations on space-time volumes. The sig concluded that



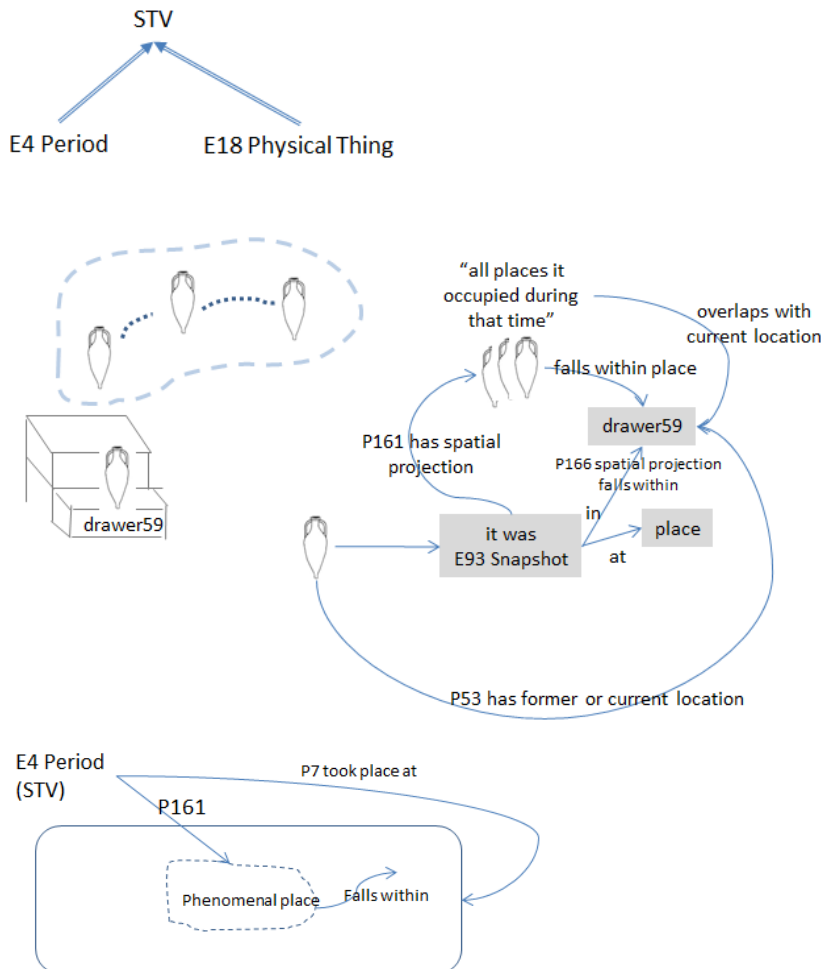
- (i) we should modify the definitions of P118,P119, P120
- (ii) we regard very important class the “periods” since one after another all are pointing in space, thus the temporal projection of a meeting is archaeological meaningless.
- (iii) we have to revise the spatiotemporal relationships in CRM with respect to fuzziness
- (iv) we need a spatiotemporal entity

Finally, the sig assigned to Achille and Paola to revise the introduction of CRM*archo*, to add text to the figures. The examples should be from a real or fictitious excavation and in collaboration, they will improve the scope note and the examples.

Two weeks before the Nuremberg meeting, they will send a new version of CRM*archo* without buildings. Then we will have a second version with the buildings.

### CRM ISSUE 234

We discussed if Thing is a space time volume (STV)? We proposed that phenomenal STV and E4, E18 are existentially and extensially precisely collocated 1:1. STV depends by identity on E4 and E18.



Finally we decided the following:

- to revise the scope note of E4 and to define P166.
- P158-P159 should be deleted

- MD will elaborate a definition E53, P7, E4, P18, P53, P55 in terms of E93, P166.
- to think Allen operators in respect of space time volume.
- to find another name for E93 Snapshot maybe E93 Presence?
- to add/revise properties:
  - E93 Presence. P168 was a presence of (had presence): E92 Space Time Volume,
  - E93 Presence.P164 during: E52 Time Span,
  - E92 Space Time Volume. P161 has spatial projection:E53 Place,( becomes P166)
  - E93 Presence.P167 was at (was place of) E53 Place

### **CRM ISSUE 243**

Discussing about types and periods, we decided to accept the MD's proposal about introducing a link from E55 Type.PXX objects of a type appear in: E4 Period.

Also we decided to add this link in CRM CORE. This has been assigned to Dominic and Achille.

### **CRM ISSUE 235**

Due to the new evidence we leave this issue open for review. MD, Manos Papadakis, Paul Crips and Steve Stead will review it.

### **CRMarcheo issue**

The crm-sig accepted that the AP14 cannot be implemented in RDF. It is decided that this issue remains open .

### **CRM ISSUE 250**

It is decided that this issue remains open until someone is interested about the mapping between CRMgeo and TGN.

### **CRMinf**

The crm-sig approved the CRMinf

**Thursday 12/2/2015**

### **New CRM ISSUE**

Discussing about the name of E93, we discuss that maybe we need a place primitive analogously to time primitive. The E53 Place should not be contiguous. It may consist of finite

sets of non-contiguous areas. The CRM-SIG decided to introduce a place primitive. This is an assignment for Øyvind.

## CRM ISSUE 199

Discussing about family relations and association roles, we discussed that that family relations appear as a cultural historical fact with no information about a person and an activity. The proposal is that we should not model the social relations and we may consider them as types.

The sig accepted the quantification and the examples. The issue is closed.

## CRM ISSUE 256

From the examples posted in the list we distinguished the following type of relations.

1. group induced relations ( a married couple can be seen as a social group)
2. activity induced relations (property of activity): friends, business, partners, reciprocal, by virtue acting together (interacting)
3. Unilateral: fun of
4. Family relations (kinship)

Kinship primitives: birth, fatherhood, adoptions, marriages,

Kinship relation : as transitive derivatives and then we can type(classify) them

Finally, it is proposed to treat unilateral relation as pursuit and t think if we should have an activity induced relationships.

The crm-sig assigned to Anja Masur and Christian Emil to elaborate more this issue

## Membership in CRM-list

The SIG discussed the existing rules for including or excluding someone from the crm-sig list. It was accepted by the CRM-SIG that members should be excluded from the list if they do not behave properly or cause conflicts with declared goals of the SIG.

Then the SIG discussed the preliminarily exclusion of Vladimir Alexiev from the crm-sig list until the next (present) SIG meeting. The crm-sig confirmed the exclusion.

The SIG decided to assign to Dominic Oldman and Christian Emil to formulate explicit business rules about how the members of crm-sig should communicate in order to avoid in the future any ambiguities about the use of the mailing list."

## CRM ISSUE 266

The crm-sig decided to exist an official version of CRM in OWL. We agreed in the following definitions:

- (1) instance of : only between classes
- (2) subclass of transitivity
- (3)  $P1(x,y) \supset x \in \text{Domain}, y \in \text{Range}$
- (4)  $P1 \supset P2 \Rightarrow \text{Domain}(P1) \supset \text{Domain}(P2), \text{Range}(P1) \supset \text{Range}(P2)$

(5) inverse of  $P1(x,y) \supset P^{-1}(y,x)$

We should test if we can make a link to RDF literal be subproperty to P1

Also we should check if the proposal about supporting the property of property by adding the extra classes pollute our mapping tools.

Also we decided to add a separate module about the implementation of property of property in rdfs in the CRM and FRBRoo.

### **P165 incorporates (is incorporated in)**

The examples transferred from FRBRoo are accepted. It is assigned to Steve and Øyvind to elaborate the scope note.

### **CRM ISSUE 258**

The quantification of the property P72 changed. The issue is closed.

### **CRM ISSUE 195**

Reviewing the scope note of P134, the sig decided a proposal to be made about a set of temporal relation primitives which are based on fuzzy temporal relations. Also it is decided to be introduced the notion of temporal distance. MD and Manos Papadakis will elaborate this issue

### **CRM ISSUE 257**

This issue is considered obsolete. The sig assigned to Christian Emil to prepare a list of shortcuts in order to be expressed in FOL.

### **Collective Activity**

The sig discussed the collective activity and decided that other concepts of collective activity are

- FRBRoo Pursuit
- Issuing a coin => Industrial Product Production
- “Activity induced relation” => “business relation, friendship.

### **CRM ISSUE 229**

Discussing about CRMsci, it is stated that there incompatibilities between CRMsci and CRM. Chryssoula will prepare a list of them

### **CRM ISSUE 251**

It is postponed, no work on this.

### **CRM ISSUE 264**

The sig discussed how we talk about ontologies. Christian Emil will sent something from Stanford Encyclopedia. Also Maria Daskalaki will elaborate a text.

## **CRM ISSUE 161**

This issue is considered obsolete. The issue is closed.

## **CRM ISSUE 236**

It remains open. Chryssoula should send to Steve from the minutes the text for the extensions.

## **FOL**

The representation in FOL should be in the text of CRM under the examples. Also Chryssoula will prepare the FOL in the extensions.

## **Next meeting**

The members of the sig proposed the next meeting in Nuremberg to be between 19<sup>th</sup> – 22<sup>nd</sup> of May instead of 18<sup>th</sup> – 21<sup>st</sup>. The sig accepted the change.