13th CIDOC CRM Special Interest Group Meeting

Venue: Germanisches Nationalmuseum, Nuremberg, 14-15th November 2005

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14 November 2005

The meeting step by step

1. Martin Doerr welcomed the Group to the business meeting and he made the tutorial of CIDOC CRM.
    a. In the general slide presented the CIDOC CRM Martin Doerr remarked that the purpose makes the difference and create problems. So we need a purpose independent language to describe notions.
    b. There was a general remark that in the CIDOC CRM site wasn't the last version of CIDOC CRM
2. Martin Doerr presented the translated DTD for museum objects which is compatible with CIDOC CRM and has been adopted by the "Information Society Programme" in Greece.
3. Discussion about the creation of a multilingual version of CIDOC –CRM.

   a. Martin Doerr proposed to give to anyone who wants to do more about that the existing TMX version of CIDOC – CRM that has been developed by ICS.
   b. We decided to collect the CIDOC CRM terms in German, Greek, French etc in Excel files
4. How to help third parties to use the CIDOC CRM. Tyler Bell proposed the development of a server based application. This application should consist of a
   a. CRM – Engine. This engine should manage the CIDOC CRM terms and the scope notes
   b. Web service which provides a protocol to ask questions about properties and scope notes
5. A CIDOC CRM mapping tool was discussed.
   a. This tool should provide storage for the mappings and visual comprehensible user interface language for declaring mappings.
   b. We should examine mappings to Dublin Core, EAD, Midas, ABC etc. as examples in order to determine the necessary complexity of a mapping language and mapping tool.
6. Martin Doerr presented the CRMCore dtd.
   a. We discussed the event identifier. Normally, events are recognized by a combination of place, date, involved persons, items and kind of event. Only important events acquire proper names. We decided however that an event identifier should be used to support duplicate removal. It should be the event name or a URI. Therefore we added an element 'Identification' and an attribute 'Name_space' to this element which assigns a notion of URI to the identification. (changes made online to the martin's copy of CRM – CORE dtd)
   b. We had to clarify how an event is related with another event. We added to the event an element 'RelatedEvent' which has the subelements 'Role in event' and 'Identification' (changes made online to the Martin's copy of CRM – CORE dtd). There will not be a recursive structure.
   c. We decided that all URI type entities should have a name scope attribute. Therefore we add the attribute 'Name_space' to the Elements "Event_Type" , "Participant" "Participant_Type" "Thing_Present" "Thing_Present_Type" "Place" . (changes made online to the Martin's copy of CRM – CORE dtd)

15 November 2005

7. Discussion about documentation at the Categorical Level ("MetaCRM"). Martin Doerr presented again the presentation that he gave in Nuremberg Dec. 2004 with the title "Supporting the documentation at the Categorical level":
   a. In ethnological, biological and archaeological collection management systems frequently data about particular things are combined with data about categories of things, without there being a theory how these things connect. The basic observation is, that the same properties appearing at the factual level (e.g., "was used for") appear also at the categorical level (e.g.: Wedding Dresses *are used for* Weddings). Therefore it seems that a uniform logical operation can transform the CRM for particulars, as it is now, into a model for categorical information as needed for these applications. We need to give examples to examine the best logical interpretation of the new categorical relationships.
   b. We discussed the distinction of 'usually' from 'typically', and if this distinction is relevant for a MetaCRM.
   c. Martin Doerr presented a proposal of new CRM metaproperty names applying the term usually. (see Working Drafts of the CRM Website)

d. The opinion was expressed that elaborate, distinct operators, such as “usually”, “typically”, “necessary” are probably not necessary for our purpose. As the CRM serves information integration, a relatively comprehensive definition of a metaproperty is necessary, which subsumes more restrictive forms such as “necessary”.
e. Then we discussed how to proceed. We decided first to formulate examples of categorical documentation.
f. An issue here was that a lot of documentation in relevant museum fields concerns the categorical level , therefore we agreed to continue working and making the MetaCRM more robust.
g. We all recognized here, that there is a deep intellectual problem because the distinction between factual and categorical knowledge is often confused in practice.
h. We agreed that we should study operators for documenting the “confirmed”, “possible”, “impossible” and “necessary “
i. Up to next meeting, Martin Doerr will prepare a proposal for the above operators, Stephen Stead will prepare the scope notes, and the other members will prepare the examples.

8. Martin Doerr proposed the following changes, which were being accepted
    a. P33 to move to E7
    b. P33 to be subproperty of P16
    c. P125 to be a superproperty of P32
    d. The inverse name of P35 becomes “was identified by”
9. At the end of the CRM SIG meeting, advanced questions of event modelling were discussed. Martin Doerr presented the paper by Martin Doerr, Dimitris Plexousakis, Katerina Kopaka, Chrysoula Bekiari**,** *Supporting Chronological Reasoning in Archaeology*, 2004, Computer Applications and Quantitative Methods in Archaeology Conference, CAA 2004, 13-17 April, 2004, Prato, Italy

    In this discussion there were arguments about:
    a. My birthday is not an event.
    b. A question is posed if the events can be non-contiguous. The answer was that we have two choices. The first was to consider the any event must be contiguous (example “the creation of the Kölner Dom” would then be at least two events.) and the second was to consider that events can be non-contiguous. We accepted that the second choice is too complex, and we took the decision to deal only with contiguous events.
    c. We agreed that one cannot observe that two events take place at precisely the same time. The only declaration that we can make is that beginning or end of event A may happen before or after beginning or end of an event B.
    d. We regard all events as processes. Martin Doerr presented the example of car moving and thereby crossing an imaginary point. We remarked that we cannot observe the precise time of crossing the certain point, but we can only say that something happens before or after the crossing. We regard the observer and the observation as part of this event. The crossing itself is not regarded as a change of state.
    e. After that we made the following decisions: (1) time is not discrete (2) it is impossible in historical records to describe primary knowledge about a real event without an observer belonging to the event. If it were without an observer, it would be based on other primary knowledge which again requires an observer.

f. The presented model assumes that we do not have means to observe the exact beginning and the end of an event, because they are fuzzy. The model proposes to replace the fuzziness of the beginning and end by assuming a precise begin and end which cannot be observed. Rather, for any point in time, we can say: it is before the beginning/end of an event, after the beginning/end of an event , or we don't know.

g. Another argument made about the event duration, open intervals and assumptions. "If we have no assumption about the natural duration of a kind of event, any open interval results in infinite life time". This causes problems in practical reasoning systems. E.g. if the birth of a person is known, but the death is unknown, the death should be marked to be within a 115 years limit, and not as "unknown", which would cause a machine to assume the person may still live.

h. Another subject discussed was about an event signature. What can be considered as an event signature? There were many propositions such as combinations of "place, date, type" or "place, date, actors". Finally we accepted that we can't make an assumption what would be a minimal characteristic of an event.

i. Another argument was about the existence of elementary events in a cultural-historical sense. Martin Doerr presented the example of a car changing parking slots as an elementary event. We noticed that the elementary events are characterized by the absence of a relevant subprocess (whatever "relevant" means). The question is about how to avoid an infinite recursion of beginning and end of an event, if these were only defined by other subevents, such as a battle by the first killing, the first killing by the first stroke, the first stroke by the rising hand, and so on.

j. Finally we decided that the next steps will be:
    i. to make a proposition what is an elementary event
    ii. to define how events are combined into larger events
    iii. to define how we can compare events and decide about identity, overlap or containment
    iv. to find how we do observe continuous processes
    v. to collect event examples, and examples of independent descriptions of the same event.
    vi. to make a CIDOC CRM wiki about event modelling

Follow-up and plans for the future

List of Decisions :

We decided :

1. to collect the CRM terms in German, Greek, French etc in Excel files (3b)
2. to add an Identification element as an identifier to the Event in the CRM CORE (6a)
3. that all URI type entities should have an name scope attribute in the CRM CORE (6c)
4. that Event should have a Related Event with sub elements 'Role_in_Event', and 'Identification' in CRM CORE(6b)
5. To present the translated DTD for museum objects based on CIDOC CRM adopted by the "Information Society Programme" in Greece as paradigm or best practice (2)

6. that the new version of CIDOC CRM CORE dtd is the version attached to this document (6) (see Appendix A)
7. improve the Meta CRM (7f)
8. to define operators declaring assurance, possibility, impossible, necessary(7h)
9. to prepare examples of categorical level documentation(7i)
10. to work on the model of contiguous events as a further elaboration of the CRM (9b)

List of Actions :

1	Martin Doerr	1. Put on the CIDOC – CRM site the existing TMX version that the ICS has already. (3a) 2. add to CIDOC CRM site the latest version of the CRM (1b) 3. to put to the wiki the Excel file with the Greek and English terms of CIDOC CRM (3b) 4. to put the translated dtd for museum objects based on CIDOC CRM and adopted by the "Information Society Programme" in Greece to the CIDOC CRM wiki forum (2) 5. prepare a proposal for operators about assurance, possible, impossible, necessary (7i)
2	Chryssoula Bekiari	Write the minutes
3	Tyler Bell	Design the server Based Application(4)
4	All	Give mapping examples about Dublin Core, EAD, Midas, ABC(5b)
5.	All	Give the CRM terms in German, Greek, French etc in Excel files (3b)
6	Stephen Stead	will prepare the scope notes for the operators about assurance, possible, impossible, necessary (7i)
7	Stephen Stead Dolores Lorizzo Siegfried Krause Karl-H Lampe Chryssoula Bekiari	Give examples about the use of categorical relationships (7i)
8	All	make propositions (9ki-iii) i. what is an elementary event j. how we can combine events into events k. how we can observe continuity
9	All	collect examples on the CIDOC CRM wiki about event identity(9.k.iv)

Notes:

In the Fifth FRBR CIDOC CRM Harmonization meeting, a proposal have been made for the next CIDOC CRM SIG meetings.

a. **March meeting:** Time: 30 of March, Place: Imperial College, London, Organizer: Dolores Lorizzo
b. **October Meeting:** : Time: 23-24 of October, Place: ICS-FORTH, Heraklion, Organizer: Martin Doerr
c. We should present CRM Core on the Dublin Core Conference

Appendix A

The latest version of CIDOC CRM Core

```
<?xml version='1.0' encoding='UTF-8' ?>
<!--Generated by Turbo XML 2.4.1.100.-->

<!---->
<!--#DOCUMENTATION:Represents the described CRM Entity. Corresponds to Dublin Core resource.-->
<!ELEMENT CRM_Core (Category+ , Classification* , Identification+ , Description? , Event* , Relation*)>

<!--#DOCUMENTATION:One of the CIDOC CRM Classes, or a mapping to/from DCMI Type Vocabulary. General term to characterize the nature of the described item.
Compatibility: DC.Type, CIDOC CRM class system.
                        -->
<!ELEMENT Category (#PCDATA)>

<!--#DOCUMENTATION:Any category classifying the described item. Preferrably from controlled vocabularies.
Compatibility: CIDOC CRM P2 has type. E55 Type. Includes: DC.Format, DC.Language
                        -->
<!ELEMENT Classification (#PCDATA)>

<!ATTLIST Classification  name_space CDATA  #IMPLIED >
<!--#DOCUMENTATION:Any name or identifier used for the particular item described.
Compatibility: DC.Title and DC.Identifier. CIDOC CRM P1 is identified by: E41 Appellation
                        -->
<!ELEMENT Identification (#PCDATA)>

<!ATTLIST Identification  name_space CDATA  #IMPLIED >
<!--#DOCUMENTATION:An account of the nature or content of the described item.
Compatibility: DC.Description, CIDOC CRM P3 has note: E62 String
                        -->
<!ELEMENT Description (#PCDATA)>

<!--#DOCUMENTATION:Any Event the described item was present at. (In generalization any period the object existed in ?)
Compatibility: CIDOC CRM E5 Event
Allows for expressing DC.Creator, DC.Publisher, DC.Contributor, DC.Date, DC.Coverage
                        -->
<!ELEMENT Event (Role_in_Event* , Identification+ , Event_Type* , Participant* , Participant_Type* , Thing_Present* , Thing_Present_Type* , Date? , Place? , RelatedEvent*)>

<!--#DOCUMENTATION:Role of the described Item in the Event:
```

```
Compatibility: Any subproperty of CIDOC CRM P12B was present at.
Allows for connecting DC.Creator, DC.Contributor, DC.Publisher, DC.Coverage DC.Date.
                        -->
<!ELEMENT Role_in_Event (#PCDATA)>

<!--#DOCUMENTATION:Classification of the Event, e.g. Publication, Production, Creation, Finding, Use)
Compatibility: subclasses of CIDOC CRM E5 Event, and compatible E55 Type
                        -->
<!ELEMENT Event_Type (#PCDATA)>

<!ATTLIST Event_Type  name_space CDATA  #IMPLIED >
<!--#DOCUMENTATION:Any Actor participating or being present in the Event.
Compatibility: DC.Creator,DC.Publisher,DC.Contributor, DC.Relation if an Agent is referred.
CIDOC CRM P12B was present at: E39 Actor
                        -->
<!ELEMENT Participant (#PCDATA)>

<!ATTLIST Participant  name_space CDATA  #IMPLIED >
<!--#DOCUMENTATION:Any kind of Actor participating or being present in the Event. This expresses incomplete
knowledge.
Compatibility: CIDOC CRM P12B was present at: E39 Actor. P2 has type: E55 Type
                        -->
<!ELEMENT Participant_Type (#PCDATA)>

<!ATTLIST Participant_Type  name_space CDATA  #IMPLIED >
<!--#DOCUMENTATION:Any Stuff being present in the Event.
Compatibility: DC.Relation
CIDOC CRM P12B was present at: E70 Stuff
                        -->
<!ELEMENT Thing_Present (#PCDATA)>

<!ATTLIST Thing_Present  name_space CDATA  #IMPLIED >
<!--#DOCUMENTATION:Any kind of Stuff being present in the Event.
Compatibility: DC.Relation
CIDOC CRM P12B was present at: E70 Stuff
                        -->
<!ELEMENT Thing_Present_Type (#PCDATA)>

<!ATTLIST Thing_Present_Type  name_space CDATA  #IMPLIED >
<!--#DOCUMENTATION:A time date range constraining the event related to the described item.
Compatibility: CIDOC CRM P4 has time-span:E52 Time-Span.P82 at some time within: E61 Time Primitive.
 Includes: DC.Date, DC.Coverage depending on the role of the item in the Event (Role_in_Event)
                        -->
```

```
<!ELEMENT Date (#PCDATA)>

<!--#DOCUMENTATION:A time date range constraining the event related to the described item.
Compatibility: CIDOC CRM P7 took place at E53 Place.
 Includes: DC.Coverage depending on the role of the item in the Event (Role_in_Event)
                                -->
<!ELEMENT Place (#PCDATA)>

<!ATTLIST Place  name_space CDATA  #IMPLIED >
<!--#DOCUMENTATION:Any not event-mediated relation. Restricted to: part of, reference, similarity for which
causal events are not established.
Compatibility: subset of DC.Relation
                                -->
<!ELEMENT Relation (To+ , Relation_Type)>

<!ELEMENT To (#PCDATA)>

<!ATTLIST To  name_space CDATA  #IMPLIED >
<!ELEMENT Relation_Type (has_part , part_of , refers_to , referred_to_by , shows_features_of)>

<!ELEMENT refers_to EMPTY>

<!ELEMENT referred_to_by EMPTY>

<!ELEMENT part_of EMPTY>

<!ELEMENT has_part EMPTY>

<!ELEMENT shows_features_of EMPTY>

<!ELEMENT RelatedEvent (Role_in_Event , Identification)>
```

Appendix B

Property id	Property Name	New Property Name
P1	is identified by (identifies)	P1 is usually identified by (usually identifies)
P47	- is identified by (identifies)	P47 is usually identified by (usually identifies)
P48	- - has preferred identifier (is preferred identifier of)	P48 usually has preferred identifier (is usually preferred identifier of)
P78	- is identified by (identifies)	P78 is usually identified by (usually identifies)
P87	- is identified by (identifies)	P87 is usually identified by (usually identifies)
P102	- has title (is title of)	P102 usually has kind of title (is usually kind of title of)
P131	- is identified by (identifies)	P131 is usually identified by (usually identifies)
P2	has type (is type of)	P2 usually has type (is usually type of)
P3	has note	P3 usually has note
P79	- beginning is qualified by	P79 beginning is usually qualified by
P80	- end is qualified by	P 80 end is usually qualified by
P4	has time-span (is time-span of)	P4 usually has time-span (is usually time-span of)
P5	consists of (forms part of)	P5 usually consists of (usually forms part of)
P7	took place at (witnessed)	P7 usually takes place at (usually witnesses)
P26	- moved to (was destination of)	P26 usually moves to (is usually destination of)
P27	- moved from (was origin of)	P27 usually moves from (is usually origin of)
P8	took place on or within (witnessed)	P8 usually takes place on or within (usually witnesses)
P9	consists of (forms part of)	P9 usually consists of (usually forms part of)
P10	falls within (contains)	P10 usually falls within (usually contains)
P12	occurred in the presence of (was present at)	P12 usually occurs in the presence of (is usually present at)

Property id	Property Name	New Property Name
P11	- had participant (participated in)	P11 usually has participant (usually participates in)
P14	- - carried out by (performed)	P14 is usually carried out by (usually performs)
P22	- - - transferred title to (acquired title through)	P22 usually transfers title to (usually acquires title through)
P23	- - - transferred title from (surrendered title through)	P23 usually transfers title from (usually surrenders title through)
P28	- - - custody surrendered by (surrendered custody through)	*P28 custody is usually surrendered by (usually surrenders custody through)*
P29	- - - custody received by (received custody through)	*P29 custody is usually received by (usually receives custody through)*
P96	- - by mother (gave birth)	P96 usually by type of mother (usually gives type of birth)
P99	- - dissolved (was dissolved by)	P99 *usually dissolves (is usually dissolved by)*
P16	- used specific object (was used for)	P16 *usually uses type of object (is usually used for)*
P25	- moved (moved by)	P25 usually moves (usually moved by)
P31	- has modified (was modified by)	P31 usually modifies (is usually modified by)
P108	- - has produced (was produced by)	P108 usually produces (is usually produced by)
P110	- - augmented (was augmented by)	P110 usually augments (is usually augmented by)
P112	- - diminished (was diminished by)	P 112 usually diminishes (is usually diminished by)
P33	- used specific technique (was used by)	P33 usually *uses kind of technique (is usually used for)*
P92	- brought into existence (was brought into existence by)	P92 usually brings into existence (is usually brought into existence by)
P94	- - has created (was created by)	P94 usually creates (is usually created by)
P135	- - - created type (was created by)	P135 usually creates types (is usually created by)
P95	- - has formed (was formed by)	P95 usually formes (is usually formed by)
P98	- - brought into life (was born)	P98 usually brings into life (is usually born by)
P123	- - resulted in (resulted from)	P123 usually results in (usually is result from)

Property id	**Property Name**	**New Property Name**
P93	- took out of existence (was taken out of existence by)	P93 usually takes out of existence (is usually taken out of existence by)
P13	- - destroyed (was destroyed by)	P13 usually destroys (is usually destroyed by)
P99	- - *dissolved (was dissolved by)*	*P99 usually dissolves (is usually dissolved by)*
P100	- - was death of (died in)	P100 is usually death of (usually dies in)
P124	- - transformed (was transformed by)	P124 usually transforms (is usually transformed by)
P15	was influenced by (influenced)	P15 is usually influenced by (usually influences)
P16	- *used specific object (was used for)*	*P16 usually uses kind of object (is usually used for)*
P17	- was motivated by (motivated)	P17 is usually motivated by (usually motivates)
P134	- continued (was continued by)	P134 usually continues (is usually continued by)
P136	- was based on (supported type creation)	P136 is usually based on (usually supports type creation)
P19	was intended use of (was made for)	P19 is usually intended use of (is usually made for)
P20	had specific purpose (was purpose of)	P20 usually has kind of purpose (usually is purpose of)
P21	had general purpose (was purpose of)	P21 usually has general purpose (usually is purpose of)
P24	transferred title of (changed ownership through)	P24 usually transfers title of (usually changes ownership through)
P30	transferred custody of (custody transferred through)	P30 usually transfers custody of (usually have custody transfer through)
P32	used general technique (was technique of)	P32 usually uses general technique (is usually technique of)
P43	has dimension (is dimension of)	P43 usually has dimension (is usually dimension of)
P44	has condition (condition of)	P44 usually has condition (is usually condition of)
P45	consists of (is incorporated in)	P45 usually consists of (is usually incorporated in) no change of range!!
P46	is composed of (forms part of)	P46 is usually composed of (usually forms part of)
P49	has former or current keeper (is former or current	P49 usually has kind of keeper (is usually

Property id	Property Name	New Property Name
	keeper of)	kind of keeper of)
P50	- has current keeper (is current keeper of)	P50 usually has current keeper (is usually current keeper of)
P51	has former or current owner (is former or current owner of)	P51 usually has kind of owner (is usually kind of owner of)
P52	- has current owner (is current owner of)	P52 usually has current owner (is usually current owner of)
P53	has former or current location (is former or current location of)	P53 usually has kind of location (is usually kind of location of)
P55	- has current location (currently holds)	P55 usually has current location (usually currently holds)
P54	has current permanent location (is current permanent location of)	P54 usually has permanent location type(is usually permanent location type of)
P56	bears feature (is found on)	P56 usually bears features (is usually found on)
P57	has number of parts	P57 usually has number of parts no change of range!!
P58	has section definition (defines section)	P58 usually has section definition (usually defines section)
P59	has section (is located on or within)	P59 usually has section (is usually located on or within)
P62	depicts (is depicted by)	P62 usually depicts (is usually depicted by)
P67	refers to (is referred to by)	P67 usually refers to (is usually referred to by)
P70	- documents (is documented in)	P70 usually documents (is usually documented in)
P71	- lists (is listed in)	P71 usually lists (is usually listed in)
P129	- is about (is subject of)	P129 usually is about (is usually subject of)
P138	- represents (has representation)	P138 usually represents (usually has type of representation)
P68	usually employs (is usually employed by)	P68 usually employs (is usually employed by)
P69	is associated with	P69 is usually associated with
P72	has language (is language of)	P72 usually has language (is usually language of) no change of range!!
P74	has current or former residence (is current or former residence of)	P74 usually has type of residence (is usually type of residence of)

Property id	Property Name	New Property Name
P75	possesses (is possessed by)	P75 usually possesses (is usually possessed by)
P76	has contact point (provides access to)	P79 usually has contact point (usually provides access to)
P81	ongoing throughout	P81 is usually ongoing throughout
P82	at some time within	P82 usually at some time within
P83	had at least duration (was minimum duration of)	P83 usually has at least duration (is usually minimum duration of)
P84	had at most duration (was maximum duration of)	P84 usually has at most duration (is usually maximum duration of)
P86	falls within (contains)	P86 usually falls within (usually contains)
P88	consists of (forms part of)	P88 usually consists of (usually forms part of)
P89	falls within (contains)	P89 usually falls within (usually contains)
P90	has value	P90 usually has value
P91	has unit (is unit of)	P91 usually has unit (is usually unit of)
P97	from father (was father for)	P97 usually from father (is usually father for)
P101	had as general use (was use of)	P101 usually has as general use (is usually use of)
P103	was intended for (was intention of)	P103 usually is intended for (is usually intention of)
P104	is subject to (applies to)	P104 is usually subject to (usually applies to)
P105	right held by (has right on)	P105 usually held by (usually has type of right on)
P106	is composed of (forms part of)	P106 is usually composed of (usually forms part of)
P107	has current or former member (is current or former member of)	P107 usually has type of member (is usually type of member of)
P109	has current or former curator (is current or former curator of)	P109 usually has type of curator (is usually type of curator of)
P111	added (was added by)	P111 usually adds (is usually added by)
P113	removed (was removed by)	P113 usually removes (is usually removed by)
P114	is equal in time to	P114 usually equals in time to
P115	finishes (is finished by)	P115 usually finishes (is usually finished by)
P116	starts (is started by)	P116 usually starts (is usually started

Property id	Property Name	New Property Name
		by)
P117	occurs during (includes)	P117 usually occurs during (usually includes)
P118	overlaps in time with (is overlapped in time by)	P118 usually overlaps in time with (is usually overlapped in time by)
P119	meets in time with (is met in time by)	P119 usually meets in time with (is usually met in time by)
P120	occurs before (occurs after)	P120 usually occurs before (usually occurs after)
P121	overlaps with	P121 usually overlaps with
P122	borders with	P122 usually borders with
P125	used object of type (was type of object used in)	P125 usually uses object of type (is usually type of object used in)
P126	employed (was employed in)	P126 usually employs (is usually employed in)
P127	has broader term (has narrower term)	P127 usually has broader term (usually has narrower term)
P128	carries (is carried by)	P128 usually carries (is usually carried by)
P65	- shows visual item (is shown by)	P65 usually shows type of visual item (is usually shown by)
P130	shows features of (features are also found on)	P130 usually shows features of (usually features are also found on)
P73	- has translation (is translation of)	P73 usually has translation (is usually translation of)
P132	overlaps with	P132 usually overlaps with
P133	is separated from	P133 is usually separated from
P137	is exemplified by (exemplifies)	P137 is usually exemplified by (usually exemplifies)
P139	has alternative form	P139 usually has alternative form
P140	assigned attribute to (was attributed by)	P140 usually assigns attribute to (is usually attributed by)
P34	- concerned (was assessed by)	P34 usually concerns (is usually assessed by)
P36	- registered (was registered by)	P36 usually registers (is usually registered by)
P39	- measured (was measured by)	P39 usually measures (is usually measured by)
P41	- classified (was classified by)	P41 usually classifies (is usually classified

Property id	Property Name	New Property Name
		by)
P141	assigned (was assigned by)	P141 usually assigns (is usually assigned by)
P35	- has identified (identified by)	P35 usually has identified (is usually identified by)
P37	- assigned (was assigned by)	P37 usually assigns (is usually assigned by)
P38	- deassigned (was deassigned by)	P38 usually deassigns (is usually deassigned by)
P40	- observed dimension (was observed in)	P40 usually observes dimension (is usually observed in)
P42	- assigned (was assigned by)	P42 usually assigns (is usually assigned by)