CRM archeo
Excavation model

Definition of the CRMarchaeo

An Extension of CIDOC CRM to support the archaeological excavation process

Proposal for approval by CIDOC CRM-SIG

Version 1.3

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Currently Maintained by PIN S.c.R.L.

Contributors: Martin Doerr, Achille Felicetti, Sorin Hermon, Gerald Hiebel , Athina Kritsotaki, Anja Masur, Keith May, Paola Ronzino, Wolfgang Schmidle, Maria Theodoridou, Despoina Tsiafaki, and others.

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Introduction <heading 1>

This document describes work which uses and extends the CIDOC Conceptual Reference Model (CRM, ISO21127). The CIDOC-CRM definition document should be read before this document. References to the CRM in this document are taken from CRM version XX maintained by CIDOC.

Scope

Status

< Current Family model> class hierarchy, aligned with portions from the <other Family model> and the CIDOC CRM class hierarchies

This class hierarchy lists:
• all classes declared in **<Current Family model>**
• all classes declared in <**other Family model/s**[1]> and CIDOC CRM that are declared as superclasses of classes declared in the **<Current Family model>**,
• all classes declared in <**other Family model/s**> or CIDOC CRM that are either domain or range for a property declared in the **<Current Family model>**,
• all classes declared in <**other Family model/s**> and CIDOC CRM that are either domain or range for a property declared in <**other Family model/s**> or CIDOC CRM that is declared as superproperty of a property declared in the **<Current Family model>**
• all classes declared in <**other Family model/s**> and CIDOC CRM that are either domain or range for a property that is part of a complete path of which a property declared in **<Current Family model>** is declared to be a shortcut.

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<table>

[1] It should be clearly mentioned the versions of other models. For example: CRM <family model name> ver. XX

<Current Family model name> property hierarchy, aligned with portions from the <other Family model/s> and the CIDOC CRM property hierarchies

This property hierarchy lists:
• all properties declared in **<Current Family model>**,
• all properties declared in **<Other Family model/s>**[2], and CIDOC CRM that are declared as superproperties of properties declared in **<Current Family model>**,
• all properties declared in **<Other Family model/s>** and CIDOC CRM that are part of a complete path of which a property declared in **<Current Family model>**, is declared to be a shortcut.

<table>

[2] It should be clearly mentioned the versions of other models. For example: CRM <family model name> ver. XX

<Current CRM family model name> Class Declarations

A1 Excavation Process Unit

Subclass of: S4 Observation
Superclass of:
Scope Note: This class comprises activities of excavating in the sense of archaeology which are documented as a coherent set of actions of progressively recording and removing matter from a pre-specified location under specific rules. Typically, an excavation process unit would be terminated if significant discontinuities of substance or finds come to light, or if the activity should be interrupted due to external factors, such as end of a working day. In other cases, the termination would be based on predefined physical specifications, such as the boundaries of a maximal volume of matter intended to be excavated in one unit of excavation.
Depending on the methodology, an instance of A1 Excavation Process Unit may intend to remove matter only within the boundaries of a particular stratigraphic unit, or it may follow a pre-declared spatial extent such as a trench. It may only uncover, clean or expose a structure or parts of it.
The process of excavation results in the production of a set of recorded (documentation) data that should be sufficient to provide researchers enough information regarding the consistence and spatial distribution of the excavated Segment of Matter and things and features embedded in it. Some parts or all of the removed physical material (S11 Amount of Matter) may be dispersed, whereas others may be kept in custody in the form of finds or samples, while others (such as parts of walls) may be left at the place of their discovery. The data produced by an instance of excavation process unit should pertain to the material state of matter at excavation time only and should well be distinguished from subsequent interpretation about the causes for this state of matter.
Examples:

The activity taking place on 21.9.2007 between 12:00 and 13:00 that excavated the Stratigraphic Volume Unit (2) of Figure 4 and created the surface S1
The activity that excavated the first 20 cm of a spit excavation on 21.7.2007 created the surface S2 in Figure 4.

In First Order Logic:

$A1(x) \supset S4(x)$

Properties:

AP1 produced (was produced by): S11 Amount of Matter
AP2 discarded into (was discarded by): S11 Amount of Matter
AP3 excavated (was excavated by): E53 Place
AP4 produced surface (was surface produced by): S20 Physical Feature
AP5 cut (was cut by): A8 Stratigraphic Unit
AP6 intended to approximate (was approximated by): A3 Stratigraphic Interface
AP10 destroyed (was destroyed by): S22 Segment of Matter (Segment of Matter that happened to be at the Excavated Place)

<Current CRM family model name> Property Declarations

AP1 produced (was produced by)
Domain: A1 Excavation Process Unit
Range: S11 Amount of Matter
Subproperty of:
Superproperty of:
Quantification: one to many (0,n:0,1)

Scope note: This property identifies the S11 Amount of Matter,e.g., a basket, that is preserved (part or total of) from an A1 Excavation Process Unit for further examination or evidence keeping.

Examples:

The Excavation Process Unit excavating the Stratigraphic Volume Unit (2) produced an amount of black turf with wood inclusions

In First Order Logic:

AP1(x,y) ⊃ A1(x)
AP11(x,y) ⊃ S11 (y)

Properties:

Amendments

Class xx

In the crm-sig xxx , the class XX changed from

Class XX
….

TO
Class XX
……