Summary of pending issues

# Pg iii –yellow highlight

|  |  |
| --- | --- |
| instance | An instance of a **class** is a real world item that fulfils the criteria of the **intension** of the class. Note, that the number of **instances** declared for a class in an information system is typically less than the total in the real world. For example, you are an instance of Person, but you are not mentioned in all information systems describing Persons.  For example:  The painting known as the “The Mona Lisa” is an instance of the class Man Made Object.  An instance of a **property** is a factual relation between an instance of the **domain** and an instance of the **range** of the property that matches the criteria of the **intension** of the property.  For example:  “The Louvre *is current owner* *of* The Mona Lisa” is an instance of the property “*is current owner of”.* |

# Pg viii- purple highlight

|  |  |
| --- | --- |
| Transitivity | Transitivity is defined in the standard way found in mathematics or logic: A property P is transitive if the domain and range is the same class and for all instances x, y, z of this class the following is the case: If x is related by P to y and y is related byP to z, then x is related by P to z. The intention of a property as described in the scope note will decide whether a property is transitive. For example overlaps in time or in space are not transitive, while “occurs before” is transitive. Transitivity is especially useful when CIDOC CRM is implemented in a system with deduction. |

# Pg ix

## Property Quantifiers (in yellow highlight)

Quantifiers for properties are provided for the purpose of semantic clarification only, and should **not** be treated as implementation recommendations. The CIDOC CRM has been designed to accommodate alternative opinions and incomplete information, and therefore **all** properties should be implemented as optional and repeatable for their domain and range (“many to many (0,n:0,n)”). Therefore the term “cardinality constraints” is avoided here, as it typically pertains to implementations.

The following table lists all possible property quantifiers occurring in this document by their notation, together with an explanation in plain words. In order to provide optimal clarity, two widely accepted notations are used redundantly in this document, a verbal and a numeric one. The verbal notation uses phrases such as “one to many”, and the numeric one, expressions such as “(0,n:0,1)”. While the terms “one”, “many” and “necessary” are quite intuitive, the term “dependent” denotes a situation where a range instance cannot exist without an instance of the respective property. In other words, the property is “necessary” for its range. ~~(see also~~ Meghini, C. and Doerr, M. (2015) **A First-Order Logic Expression of the CIDOC Conceptual Reference Model**. Available online at: http://new.cidoc-crm.org/sites/default/files/20150805-document.pdf)

## Pg xi: About the logical expressions of the CIDOC CRM

In yellow highlight the following

(forall x) [E21(x) implies E20(x)]

(reading: for all individuals x, if x is a E21 then x is an E20). In the specifications, universal quantifiers are omitted for simplicity, so the above axiom is simply written:

E21(x) implies E20(x)

Likewise, the above domain constraint on property *P152 has parent* can be formulated in logic as the axiom:

P152(x,y) implies E21(x)

(reading: for all individuals x and y, if x is a P152 of y, then x is an E21).

# Extensions of CIDOC CRM

## Pg xiv

The following text is in yellow highlight along with a comment by TV

The CIDOC CRM models with priority the kinds of facts one would like to retrieve and relate from across heterogeneous content from different institutions, in contrast, for instance, to administrative practices internal to an institution.

# Monotonicity

## Pg xv

The following text is in yellow highlight along with a comment by TV

At the model level, new classes and properties within the CIDOC CRM’s scope may be found at any time in the course of integrating more documentation records or when new kinds of relevant facts come to the attention of its maintainers.

## Pg xvi

In the middle of the 7th paragraph there is the following highlighted text

This ability to integrate information with different specificity of description in a well-defined way is particularly important for large-scale information integration.

# Introduction to the basic concepts

## Pg xvii

In the forth line of the 4th paragraph there is the following highlighted text

similar to the role of action verbs in a natural language phrase.

## Pg xviii

The notion of identity is key in the application of CIDOC CRM. The properties and relations it provides are designed to allow the accurate historical description of the evolution of real world items through time. This being the case, classes and properties are created in order to provide a definition which will allow the accurate application of the classes or properties to the same real world items by diverse users. Identity in the sense of the CIDOC CRM, therefore, means that informed people are able to agree that they refer to the same, single thing, according to the scope note of the respective CIDOC CRM class it is regarded to be an instance of. For example, the Great Sphinx of Giza may have lost part of its nose, but there is no question that we are still referring to the same monument as that before the damage occurred, since it continues to represent significant characteristics and distinctness from an overall shaping in the past, which is of archaeological relevance. Things lacking sufficient stability or differentiation, such as atmosphere, soil, clouds, waves, are not instances of E77 Persistent Item, and not suited for information integration. Discourse about such items may be documented with concepts of the CIDOC CRM as observations in relation to things of persistent identity, such as places.

# Temporal Relations

There are comments by TV

Figure 5: *reasoning about temporal information*

*Topological Relations*:

# Applied Form – update formats

The CIDOC CRM is an ontology in the sense used in computer science. It has been expressed as an object-oriented semantic model, in the hope that this formulation will be comprehensible to both documentation experts and information scientists alike, while at the same time being readily converted to machine-readable formats such as RDF Schema, KIF, DAML+OIL, OWL, , etc. It can be implemented in any Relational or object-oriented schema. CIDOC CRM instances can also be encoded in RDF, XML, DAML+OIL, OWL and others.

# E66 Formation

Subclass of: [E7](#_E7_Activity) Activity

[E63](#_E63_Beginning_of_Existence) Beginning of Existence

Scope note: This class comprises events that result in the formation of a formal or informal E74 Group of people, such as a club, society, association, corporation or nation.

E66 Formation does not include the arbitrary aggregation of people who do not act as a collective.

The formation of an instance of E74 Group does not require that the group is populated with members at the time of formation. In order to express the joining of members at the time of formation, the respective activity should be simultaneously an instance of both E66 Formation and E85 Joining.

Examples:

* the formation of the CIDOC CRM Special Interest Group
* the formation of the Soviet Union (Pipes, 1964)
* the conspiring of the murderers of Caesar (Irwin, 1935)

In First Order Logic:

E66(x) ⊃ E7(x)

E66(x) ⊃ E63(x)

Properties:

[P95](#_P95_has_formed_(was formed by)) has formed (was formed by): [E74](#_E74_Group) Group

[P151](#_P51_has_former) was formed from: [E74](#_E74_Group) Group