## 623-55th SIG; minutes

TV walked the SIG through the editorial changes that need be implemented in CRMsci before the release of v2.0. The following subtopics have been identified:

### Clause about the location of an S2 Sampling Activity (Introduction section, short description for Figure 3).

**Proposal** to add the clause in blue to the short text description above Figure 3, to distinguish S2 Sample Taking from S19 Encounter Event. For details see right below:

#### Clause about the location of an S2 Sampling Activity (Introduction section, short description for Figure 3)

***Sampling***

The process of taking a sample can be described by the class S2 Sample Taking, a specialisation of the more general class S1 Matter Removal, as shown in figure 3. The activity of sampling removes matter from something and creates a new identifiable entity which can be described as an instance of the class S13 Sample. This is similar to the CIDOC CRM construct of removing parts from solid things through the class E80 Part Removal. CRMsci generalises this construct allowing sampling of fluids and other non-solid things. During sampling it is important to record the location on the sampled thing from where the sample was taken (e.g. collecting a pigment sample from the area of a canvas where an apple was painted). This can be described using the property O4 sampled at. This is distinct to the location that the sampling activity was taking place in general (e.g. the conservation studio where the sampling was done). The location of the sampling activity contains the location from where the sample was taken. In contrast, during instances of S19 Encounter Event (see section on Observation below) the two locations are the same. Partitive relationships between instances of S10 Material Substantial can be described using the property O25 contains, which generalises the CIDOC CRM property P46 is composed of used for solid things.

Outcome of the vote to add the clause in blue above.  
In favor: 12 (9 in person, 3 online)  
Against: None  
(12 participants abstained)

#### Decision:

introduce clause in blue in CRMsci v2.0.

### Diagram of S19 Encounter Event (also contains instances)

Proposal to add the clause in blue to describe Figure 8 –the diagram for S19 Encounter Event in the Introductory section (about S4 Observation). Details right below:

#### Diagram of S19 Encounter Event

***Observation***

[…]

The class S19 Encounter Event can be used to describe the observation of entities of particular interest relevant to the research study. This can be used in species surveys or finds in archaeological excavations. It serves documenting the fact that someone has seen the entity of interest as existing at the particular place and time. Figure 8 shows the relevant properties and includes a set of instances as examples from the field of ecology.

[…]

Figure 1: Classes and properties for describing the observation of an entity at a particular place and time.

#### Outcome of the vote to add the clause in blue and the diagram concerning S19 Encounter Event

In favor: 11 (8 in person, 3 online)  
Against: None  
(13 participants abstained)

#### Decision:

introduce clause in blue & Figure 8 in CRMsci v2.0.

### S2 Sampling (examples tidying up)

The following example is missing a reference. Nobody knows anything about how it got admitted in the model.

* the collection of specimen ‘FHO – Benth. - 1055’ from a plant of the species ‘spiciformis’ in Zambia by Bullock, A.A. in 1939 (S2)

**By CRMsci** Editors’ decision: keep it despite lacking a reference.

### Wrong inheritance from E16 Measurement in the scope-note of S3 Measurement by Sampling

S3 Measurement by Sampling IsA S2 Sampling **and** IsA S21 Measurement. Given that E16 Measurement IsA E21 Measurement (according to decisions for Issue [537](https://cidoc-crm.org/Issue/ID-537-how-does-reducing-the-range-of-p39-affect-crmsci)). Proposal to edit the scope accordingly (see right below –clauses in blue).

#### Wrong inheritance from E16 Measurement in the scope-note of S3 Measurement by Sampling

Edit the inheritance, alter scope note:

##### To (NEW)

Scope note:

This class comprises activities of taking a sample and measuring or analyzing it as one unit of activity, in which the sample is typically not identified and preserved beyond the context of this activity. Instances of this class describe the taking of one or more samples regardless whether they are explicitly identified in documentation or preserved beyond this activity. The dimensions observed by the respective measurement of this particular sample are regarded as dimensions of the instance of S10 Material Substantial at the place from which the samples were taken. Therefore, the class S3 Measurement by Sampling inherits the properties of S2 Sample Taking, O3 sampled from: S10 Material Substantial and O4 sampled at: E53 Place, and the properties of S21 Measurement O24 measured: S15 Observable Entity. It needs not instantiate the properties O5 removed: S13 Sample and O24 measured: S15 Observable Entity, if the sample is not documented beyond the context of the activity.

##### From (OLD)

Scope note:

This class comprises activities of taking a sample and measuring or analyzing it as one unit of activity, in which the sample is typically not identified and preserved beyond the context of this activity. Instances of this class describe the taking of one or more samples regardless whether they are explicitly identified in documentation or preserved beyond this activity. The dimensions observed by the respective measurement of this particular sample are regarded as dimensions of the instance of S10 Material Substantial at the place from which the samples were taken. Therefore, the class S3 Measurement by Sampling inherits the properties of S2 Sample Taking, O3 sampled from: S10 Material Substantial and O4 sampled at: E53 Place, and the properties of S21 (E16) Measurement. P40 observed dimension: E54 Dimension, due to multiple inheritance. It needs not instantiate the properties O5 removed: S13 Sample and O24 measured: S15 Observable Entity, if the sample is not documented beyond the context of the activity.

#### Outcome of the vote to change the scope-note.

In favor: 11 (8 in person, 3 online)  
Against: None  
(13 participants abstained)

#### Decision:

Implement in CRMsci v2.0

### Properties of S4 Observation update

On the grounds of having decided not to include Sxx Observable Situation in v2.0 (see issue [611](#_Issue_611:_Scope)), the property linking to it from S4 Observation cannot be introduced in v2.0 either.

A proposal has been made to ultimately substitute S4 Observation. O9 observed property type: S9 Property Type **and** S4 Observation. O16 observed value: E1 CRM Entity, with S4 Observation. *Oxx observed*: Sxx Observable Situation.

**CRMsci Editors’ decision:** The specifics of the proposal have not been worked out yet, so O9 and O16 are to be kept in CRMsci v2.0.

### References to papers in scope-note formulations

In general, citing papers for scope-note formulation goes against the SIG’s practices. However, given that S11 Amount of Matter heavily draws on:

* Gangemi, A., Guarino, N., Claudio, M., Oltramari, A. & Schneider, Luc. (2002). Sweetening ontologies with DOLCE. Proceedings of the 13th European Conference on Knowledge Engineering and Knowledge Management. 2473. 166-181

There should be a way to document this fact.

**Proposal**: Add a clause stating that “This follows the principles outlined in Gangemi et al. …”. Then reference the paper.

**How to proceed**: TV (**HW**) to add this clause and put the reformulated scope-note up for an evote.

### Missing reference in S14 Fluid Body

Fluid bodies need to be defined in terms of geological formulations, nobody in the SIG has been able to provide such a definition thus far.

**By CRMsci editors’ decision**: Leave the scope-note as it is for CRMsci v2.0, and if there is active interest in changing it, start a new issue on S14.

### Missing reference in an example for S15 Observable Entity

* the flight of a crow observed over the waters of Minamkeak Lake during the summer of 2015 (E5)

**HW**: It’s most likely that MD came up with this example, he should provide the reference for it. If he hasn’t made note of it, then just leave it unreferenced.

### Missing reference in an example for S20 Rigid Physical Feature

* the surface Surf13 (created by the excavation process on 3/3/2003) the surface Surf313 (created by the excavation process on 3/3/2003) the surface Surf313 (created by the excavation process on 3/3/2003)

By CRMsci editor’s decision the example will be deleted, as it is most likely a fictitious one. To be substituted by a suitable example from CRMarchaeo, one that

**HW** assigned to CEO to provide an example from CRMarchaeo for uncovered surfaces

### S22 Segment of Matter missing an example

**HW** assigned to SdS, MD, and CEO to check in CRMarchaeo for a suitable example

### O3 sampled from (was sample by) – example approval

* Water Sample Taking 74001(S2) *sampled from* the acquifer (S10) that overlaps with borehole 10/G5 (Lucchese et al., 2013 and Kritikos et al., 2013)

The SIG voted to admit the proposed example.   
**Outcome of the vote.**  
In favor: 8 (6 in person, 2 online)  
Against: None  
(16 participants abstained)

### O4 sampled at (was sampling location of) -example approval

* Water Sample Taking 74001(S2) *sampled at* borehole 10/G5 at depth 0 which falls within the water district 10/G5 in Central Macedonia (E53) (Lucchese et al., 2013 and Kritikos et al., 2013)

The SIG voted to apprve the proposed example.   
**Outcome of the vote.**  
In favor: 7 (5 in person, 2 online)  
Against: None  
(17 participants abstained)

### O5 removed (was removed by) -approve scope note and example (add references)

Scope note:

This property associates an instance of S2 Sample Taking with the instance of S13 Sample that was taken during the activity

Examples:

* + Lithology Sample Taking 201 (S2) *removed* sample 2B (S13) (Lucchese et al., 203 and Kritikos et al., 2013)

**Discussion points**:

* + The two referenced papers form project deliverables. The database that recorded the samples is no longer maintained, following the conclusion of the project, so looking for Lithology Sample Taking 201 and Sample 2B would not return anything. The paper has been cited instead, which is suboptimal.
  + Reintroduce the original reference to the database, despite it not being maintained. Make sure to add [accessed on: “date”] in the bibliography. Keep the references to the two papers as well.

The SIG voted to approve the scope-note and example.   
**Outcome of the vote.**  
In favor: 8 (5 in person, 3 online)  
Against: None  
(16 participants abstained)

### O6 is former or current part of – example review

* J.K.’s blood sample 0019FCF5 (S12) *is former or current part of* J.K.’s blood (S14) (fictitious)

The SIG voted to approve the proposed (fictitious) example.   
**Outcome of the vote.**  
In favor: 7 (5 in person, 2 online)  
Against: None  
(17 participants abstained)

### O7 confines (is confined by) – label mismatch with examples

The examples were previously in the past tense (“confined”).

The CRMsci editors have decided to change the label on the examples to the present tense, in accordance with what seems to be the practice elsewhere (a property whose domain and range are both endurants is not likely to have an eventive interpretation).

The CIDOC CRM definition document states that:

Properties with the character of states are named in the present tense, such as "has type", whereas properties related to events are named in the past tense, such as "carried out". (v7.2.2, p.21)

### O8 observed (was observed by) – reformulation of the example to use the forward going property

**Proposal** to change the example from the inverse to the forward form of the property, & minor reformulations

* **(NEW)**  
  The engineers’ observation on the slope of Panagopoula coastal site, near Patras, on the 25th-26th April 1971 and the 3rd May 1971 (S4) *observed* the rotational landslide at the same site (S15) (Tavoularis et al., 2017)
* **(OLD)**  
  The rotational landslide that *was observed by* engineers on the slope of Panagopoula coastal site, near Patras, on the 25th April 1971 and the 3rd May 1971 (Tavoularis et al., 2017).

The SIG voted to approve the reformulated example.   
**Outcome of the vote.**  
In favor: 6 (3 in person, 3 online)  
Against: None  
(18 participants abstained)

**Decision**: edit example in CRMsci v2.0

### O10 assigned dimension – update example

Proposal to reformulate the example to make it consistent with the semantics of the range class (E54 Dimension, which is not just a number).

* **(NEW)**  
  The shock wave recording (S6) carried out by EPPO in 1999 *assigned dimension* PSA\_10 (E54) [The dimension had value 0.0008.] (Lucchese et al., 2013 and Kritikos et al., 2013)
* **(OLD)**  
  The shock wave recording (S6) carried out by EPPO in 1999 *assigned* PSA\_10 with value 0.0008 (E54) (Lucchese et al., 2013 and Kritikos et al., 2013).

The SIG voted to approve the reformulated example.   
**Outcome of the vote.**  
In favor: 8 (5 in person, 3 online)  
Against: None  
(16 participants abstained)

**Decision**: edit example in CRMsci v2.0

### O11 described – approve examples

* The quantitative analysis of Munsell colour data carried out by C.T. Brown in 1999 in Yucatan, Mexico (S6) *described* the slipped sherds of Mayapan period ceramics (S15) (Puck and Brown, 2015).
* The linear extrapolation of overall figure height from the size of the fingers (S6) described the statue of Hercules (S15) [The statue is located in Amman] (‘Temple of Hercules (Amman)’, Wikipedia, 2022).

The SIG voted to approve the examples.   
**Outcome of the vote.**  
In favor: 8 (5 in person, 3 online)  
Against: None  
(16 participants abstained)

**Decision**: add examples in CRMsci v2.0

### O13 triggers (is triggered by) –determine the tense on the property label & approve the examples

The tense marking of the property is a mismatch with the eventive nature of its domain and range class. The guideline listed under “Naming Conventions” in the CIDOC CRM specification document states as much.

**Discussion points**: Before editing systematically, we should make sure that the present tense marking is indeed an oversight. If there is a specific reasoning dictating that it be in the present, then it should make it into a guideline for everyone to know.

**Proposal**: change the tense on the property label to the Present in the examples (to match the label on the property declaration) for CRMsci v2.0. Reconsider for later releases. Eventually treat the label mismatches in a systematic way.

Examples:

* + - The earthquake of Parnitha in 1999 (E5) *triggers* the rotational landslide that was observed along the road on the same day (E5). (fictitious)
    - The explosion at the Montserrat massif in 2007 (E5) (near Barcelona, Spain) *triggers* the rock fall event (E5) which happened on 2007-02-14 (Vilajosana et al., 2008).
    - The 1966 flood in Florence (E5) *triggers* mould growth on books (E5) stored in flooded library rooms (Rubinstein, N., 1966)

The SIG voted on the proposal. The examples are considered consistent with the current scope note and can be voted on (in their current form)   
**Outcome of the vote.**  
In favor: 9 (7 in person, 2 online)  
Against: None  
(15 participants abstained)

**Decision**: Implement in CRMsci v2.0

### O15 occupied (was occupied by) reformulation

**Proposal** to reformulate the definition as follows:

* Take out the equivalence with *P156 occupies (is occupied by)* from the class declaration, on the grounds of consistency.
* Add a clause in the scope note stating the equivalence between the two properties
* Add an FOL axiom for the equivalence between O15 and P156, if the domain of O15 is restricted from S10 Material Substantial to E18 Physical Thing. (**HW**: CEO)

Details right below:

#### O15 occupied (was occupied by) –reformulation of the definition

##### NEW

**O15 occupied (was occupied by)**

Domain:

[S10](#_toc2522) Material Substantial

Range:

[E53](#_E53_Place) Place

Scope note:

This property associates an instance of S10 Material Substantial with the instance of E53 Place that this substance occupied. It describes the space filled (occupied) by a physical matter. This property is the development of the shortcut expressed in the proposition of classification: “S20 Physical Feature” IsA “E53 Place”. This property is equivalent to P156 occupies (is occupied by) with domain E18 Physical Thing and range E53 Place.

Examples:

* The layer of pink plaster that *occupied* the block 30 floor of the area X. on 2009-02-03. [The plaster covered the floor] (fictitious)

In First Order Logic:

O15(x,y) ⇒ S10(x)

O15(x,y) ⇒ E53(y)

O15(x,y) ∧ E18(x) ⇔ P156(x,y)

##### OLD

**O15 occupied (was occupied by)**

Domain:

[S10](#_toc2522) Material Substantial

Range:

[E53](#_E53_Place) Place

Equivalent to:

E18 Physical Thing. P156 occupies (is occupied by): E53 Place

Equivalent to:

[E18](#_E12_Production_) Physical Thing. [P156](#_P156_occupies_(is) occupies (is occupied by): [E53](#_E53_Place) Place

Scope note:

This property associates an instance of S10 Material Substantial with the instance of E53 Place that this substance occupied. It describes the space filled (occupied) by a physical matter. This property is the development of the shortcut expressed in the proposition of classification: “S20 Physical Feature” IsA “E53 Place”.

Examples:

* The layer of pink plaster that *occupied/covered /covered* the block 30 floor of the area X. 3/2/2009. (fictitious)

In First Order Logic:

O15(x,y) ⇒ S10(x)

O15(x,y) ⇒ E53(y)

#### Outcome of the vote (move equivalence axiom from property declaration to scope note; reformulate example)

In favor: 7 (3 in person, 4 online)  
Against: None  
(17 participants abstained)

#### Decision:

Implement in CRMsci v2.0

### O17 generated (was generated by) – unreferenced example

* The introduction of my copper samples in the salt-spray apparatus (S17) *generated* new corrosion layers of cuprite and malachite (E18)

The example has been marked as fictitious, despite being documented in TV’s PhD dissertation, which has not been published as a book.

**Proposal**: reference it as A.Velios (personal communication, DATE) or directly reference the Thesis.   
**HW** to TV to provide the reference.

The SIG voted to approve the example   
**Outcome of the vote.**  
In favor: 9 (5 in person, 4 online)  
Against: None  
(15 participants abstained)

### O18 alterered (was altered by) –revise and approve examples

* The death of the trees caused by beetle infestation in 1995 (S18) *altered* the Brazilian forest (E18) (Paine, 2008).
* The application of tension (S18) *altered* the humidified parchment of the Lanhydrock Pedigree (E18) (Pickwoad, 2010).

The SIG voted to approve the examples   
**Outcome of the vote.**  
In favor: 12 (9 in person, 3 online)  
Against: None  
(12 participants abstained)

### O19 encountered object -replace fictitious example

* The preservation followed the in situ finding (S19) that *encountered object* 18 arrowheads (E18) from Lerna in Argolis in 1994 (fictitious)

**Discussion points**:

* The preservation event is extraneous to the property and should be omitted.
* CEO can provide an example from a Viking ship excavated in 1911
* It is weird for “in situ” to characterize the encounter event. It’s more closely related to the preservation event -hence irrelevant for the example as it is.

**HW**: CEO

### O20 sampled from type of part – examples review

* The sampling (S2) of tissue for DNA analysis of human remains in an archaeological site, sampled from type of part molar tooth (E55 fictitious).
* The sampling (S2) undertaken by Joyce Plesters in June 1963 while she was working on the painting ‘Cupid complaining to Venus’ (Cranach), sampled from type of part paint (E55). (The National Gallery, London, 1963)

The SIG voted to approve the examples.   
**Outcome of the vote.**  
In favor: 9 (5 in person, 4 online)  
Against: None  
(9 participants abstained)

### O21 encountered at (witnessed encounter) -add new example -discuss FOL

* The current example has no references to it, CEO will reformulate the example he provides for O19 encountered object to match the semantics of O21.
* The property declaration contains some difficult to read FOL axioms, which have also been rendered into natural language statements. The statements have been introduced in the FOL section, but that’s a new one –nowhere else in the CRMbase and/or compatible models have we introduced suchlike expressions.
* O21(x,y) ⇒ (∃z)[ E53(z) ∧ P161(x,z) ∧ P89(y,z)] : There exists a place z which is the spatial projection P161 of the encounter event S19, and contains P89i the place of encounter.
* O21(x,y) ⇒ (∃z,v,w)[ E93(w) ∧ E18(z) ∧ E52(v) ∧ O19(x,z) ∧ P195(w,z) ∧ P4(x,v) ∧ P164(w,v) ∧ P197(w,y)] : The presence E93 of P195 the encountered object O19 at the time E52 of P4 the encounter P197 covered parts of (or P167 was within) the place of encounter.

**Discussion points:**

* Issue [570](https://cidoc-crm.org/Issue/ID-570-fol-statements-in-prose-appropriate-section-of-classproperty-definitions) discusses FOL re-expression into natural language. CEO and TV to propose a way to describe this (and a template for future possible uses).
* Since there is an unresolved issue about re-expressing FOL statements, the proposal is to remove the statements from CRMsci v2.0 and reintroduce them (probably in the text of the scope note) as determined by 570. See [minutes of 52nd CIDOC CRM SIG meeting](https://cidoc-crm.org/sites/default/files/52nd%20joint%20meeting%20of%20the%20CIDOC%20CRM%20SIG_minutes.pdf) (p.7-8) for the current state of affairs. It is a recurrent problem (ensuring that class/property definitions are uniform throughout the CRM family models –also check **Overall Comments** section for Issue 588 ([55th CIDOC CRM SIG meeting](#_How/where_to_provide)).

**HW**: CEO to provide the example and (together with TV) to reconsider the place of the FOL axioms expressed in natural language (to be applied to all examples) –relates to issue [570](https://cidoc-crm.org/Issue/ID-570-fol-statements-in-prose-appropriate-section-of-classproperty-definitions) and issues [494](https://cidoc-crm.org/Issue/ID-494-scope-note-guidelines) (guideline for writing scope notes) and [384](https://cidoc-crm.org/Issue/ID-384-template-for-family-models) (template for [family models](https://cidoc-crm.org/Issue/ID-384-template-for-family-models)).

### O23 is defined by (defines) –reformulate and approve example

**Proposal** to reformulate the example into (changes in blue):

* The accumulation zone (S22) of the landslide *is defined by* the evolution of the landslide of Santomerion village in 2008 (E92) (Litoseliti et al., 2014).
* The example used to be (v1.8):   
  This google earth image marks in red the accumulation zone (S22) of the landslide which *is defined by* the evolution (E92) of the landslide of Santomerion village in 2008 (Litoseliti et al., 2014).

The SIG voted to approve the example.   
**Outcome of the vote.**  
In favor: 6 (3 in person, 3 online)  
Against: None  
(12 participants abstained)

### O25 contains (is contained in) -add example

The example is missing, CEO, AG tasked with providing one from excavation data, or geology: a stone embedded in some other material.

**HW**: CEO, AG to propose an example for this. Put it up for an evote

### O28 is conceptually greater than –approve example

Proposal to approve example below:

* In the condition survey of the manuscripts of the library of the Saint Catherine Monastery, the option ‘supple’ (E55) *is conceptually greater than* the option ‘stiff’ (E55). [These options are used for assessing parchment on page 2, section 2 of the survey form and within the context of the dry conditions of the Sinai desert where the Monastery is, ‘supple’ is considered better because it is less brittle] (Pickwoad, 2004)

**Discussion points:**

* The scale is context-specific. It’s potentially counterintuitive to uniformly represent characterizations of situations that lie on the positive (or simply non-negative) end of a spectrum as “conceptually greater than”. If the variable at hand is “Fire Danger Forecast” then “Extreme” is conceptually greater than “Very Low”, but it’s definitely not better. An evaluation of the represented situation (in a good-bad scale) should not be part of the relation of the ordinal values. In the example listed, one needs to first map the values ‘supple’ and ‘stiff’ to evaluation of a condition state, before one understands what the scale is.

The SIG voted to approve the example.   
**Outcome of the vote.**  
In favor: 7 (3 in person, 4 online)  
Against: None  
(11 participants abstained)

## Overall issue for v2.0 that’s still pending

The Present tense marking on O13 triggers (is triggered by). **MD** to indicate whether this is on purpose or a misnomer. See issue [620](https://cidoc-crm.org/Issue/ID-620-temporal-proximity-of-events-for-o13-triggers).