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TMRM -13250-5 Issues

JTC 1/SC 34 WG 3
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1. Reflexivity of isa - 1

- isa is defined to be non-reflexive in the TMRM (TMRM, Clause 5, sub-paragraph b)
- It has been said that the TMDM defines isa as reflexive, but that is far from clear. (TMDM, Clause 7.2, first paragraph). Which reads in part: “A topic type may itself be an instance of **another topic type**, and there is no limit to the number of topic types a subject may be an instance of. ” (Emphasis added.)

1. Reflexivity of isa - 2

- Defining isa as reflexive or irreflexive is a choice that should be reserved for legends.
- Suggested resolution: Remove definition of isa from the TMRM along with related expressions.

2. Subclass-Superclass

- The definitions of the subclass-superclass relationship in the TMRM runs afoul of the same issues as the isa relationship.
- The nature of subclass-superclass relationships, such as reflexivity and transitivity should be reserved for legends.
- Suggested resolution: Remove the definition of subclass-superclass from the TMRM along with related expressions.

3. Class-Instance

- The proxies for which labels are references should be defined as classes, of which the values which appear with them are instances.
- The only ontological commitment of the TMRM should be the existence of this class-instance relationship.
- The definition of a class and its rules determined by a legend.
- This relationship should be defined and inserted by the editors.

4. Proxies and Multisets I

TMRM, 4, third paragraph says in part: “A proxy is a finite set of properties, $\{p_1, \dots, p_n\}$, with $p_i \in P$ (see Fig. 1).”

- TMRM, 4, third paragraph says in part: “(Keys can occur more than once in a proxy with different values).”
- Issue: Implies that a property class could not allow for multiple occurrences of the same key/value pair in a proxy.

4.Keys and Multisets II

- The collection of properties that constitute a proxy should be a multiset in the TMRM, subject to further restriction by a legend.
- Suggested correction: Revise “A proxy is a finite set of properties, $\{p_1, \dots, p_n\}$, with $p_i \in P$ (see Fig. 1).” to: “A proxy is a finite multiset of properties, $\{p_1, \dots, p_n\}$, with $p_i \in P$ (see Fig. 1).”

4.Keys and Multisets III

- Remove “(Keys can occur more than once in a proxy with different values).” and “(Also particular values may appear more than once in one proxy.)” (Implied by being a multiset.)
- Remove “NOTE 2 One proxy may contain several properties which all share the same key but have different values; or share the same value, but have differing keys.”
- Make remaining language consistent with this understanding

5. Set Union and Maps 1

- TMRM, Clause 4, paragraph 7, reads in part: “A subject map (map) is a finite set of proxies. The set of all such maps is denoted as M . As maps are simply sets of proxies, generic merging of maps is achieved via set union, $m \sqcup m'$.”
- Issue: Implied set comprehension and therefore merging of proxies based on some test of “identical” properties. In the absence of a legend, there is no such test.

5. Set Union and Maps 2

- Suggested resolution: Revise text to read:
A subject map (map) is a finite multiset of proxies. The set of all such maps is denoted by M .

6. Merging – Sets 1

- TMRM, Clause 8, first paragraph reads:
“Generic merging of maps only combines two (or more) proxy sets. Application-specific merging includes a second aspect. A mechanism has to be found to state whether—in a given map—two proxies are regarded to be about the same subject. Then all such equivalent proxies have to be actually merged.”

6. Merging – Sets 2

- The prior changes to multisets makes it clear that there is no “generic” merging. What merging occurs is solely under the control of one or more legends applied to a map.
- Suggest: “The equivalence of proxies, that is that they are regarded to be about the same subject is defined by one or more legends applied to a map.”