Collection-OS

// Metadata

Name	Collection-0S
Keywords	Collection, Collective, Member
Creation date	September 11th, 2008
Creator	Gilles Kassel
Used ontology engineering methodology	OntoSpec
Is of type	Core ontology
Natural language	English
Has ontology language	OntoSpec
Has formality level	Semi-informal
Ressource locator	http://www.laria.u-picardie.fr/IC/site/IMG/pdf/Collection-OS.pdf
Version	1.0
Number of concepts (classes)	5
Number of relations (properties)	8
Description	This ontology is a simplified version of the ontology of collections and collectives proposed in [Bottazzi *et al.*, 2006].

// Relations

Has for member during

Properties

[EP/R1 & R2 & R3] A COLLECTION *has for member* an ENDURANT *during* a TIME INTERVAL. [EP/IVL] c *has for member* x *during* t mutually implies that x *is a member of* c *during* t.

Comment

[DIV] The temporal relation *has member during* holding for COLLECTIONS must be distinguished from the atemporal relation *has for element* holding for SETS.

[DIV] The relation is antireflexive and antisymmetric.

Is extensionally equivalent to

Properties

[EP/DR & RR] A COLLECTION *is extensionally equivalent to* a COLLECTION. [EP/NSMC] c_1 *is extensionally equivalent to* c_2 iff at any TIME INTERVAL t, x *is member of* c_1 *during* t iff x *is member of* c_2 *during* t.

Comment

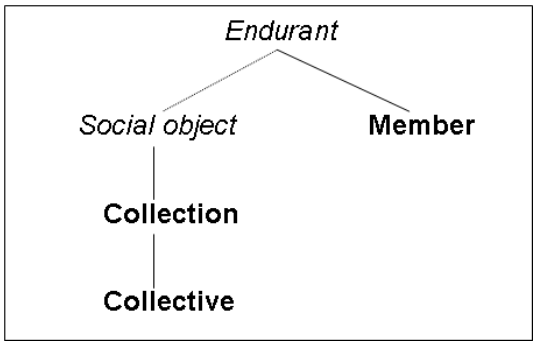
[CIT] [Bottazi *et al.*, 2006, p. 198] “Two or more collections can be extensionally equivalent and still not be the same collection, since each collection needs a unifying description […] which provides it intensional identity criterion.”

Is member of during

Properties

[EP/R1 & R2 & R3] An ENDURANT *is member of* a COLLECTION *during* a TIME INTERVAL. [EP/NSMC] x *is member of* c *during* t iff at least one CONCEPT cpt exists such that cpt *classifies* x *during* t. [EP/IVL] x *is member of* c *during* t mutually implies that c *has for member* x *during* t.

// Concepts



Collection, plural entity

Meta-properties

COLLECTION is RIGID (**+R**). COLLECTION is CARRYING AN IDENTITY CRITERION (**+I**). COLLECTION is not CARRYING A COMMON UNITY CRITERION (**-U**). COLLECTION is EXTERNALLY-DEPENDENT (**+D**). COLLECTION *one-sided generically constantly depends on* MEMBER. COLLECTION *one-sided specifically constantly depends on* CONCEPT.

Properties

[EP/SLD] A COLLECTION is a SOCIAL OBJECT which, *at* any TIME INTERVAL it is *present*, has at least two MEMBERS, and the MEMBERS of which are all *classified* by the same CONCEPT.

[EP/NMC] If x is a COLLECTION then there does not exist an ENDURANT z such that if y *is a member of* x *during* a TIME INTERVAL t then y is *a proper part of* z *during* that t.

Comment

[CEX & CIT] [Bottazzi *et al.*, 2006, p. 197] “Collections are very different from sets in the sense of Set Theory […]. This is true for the following reasons: 1) a set is uniquely determined by its members, i.e. it changes when its members or its cardinality change (axiom of extension), while a collection is not, unless explicitly specified; and 2) any two sets can be summed forming a union (axiom of union), while this is not tenable for any two collections; and 3) sets do not need an identity criterion for members (axiom of specification does not apply to all sets), while collections do (there is at least one property P that is true for all members); and 4) sets can be empty or singletons, but no empty or singleton collections are allowed; and 5) (hyper)sets can be members of themselves (anti-foundation axiom), while collections do not; and 6) sets are abstract, having no space or time, while collections (indirectly) exist in time, and are localized.”

[CIT] [Bottazzi *et al.*, 2006, p. 197] “Since collections are considered here as cognitive or social objects, but they also depend on their members, their space-time behaviour is peculiar. Collections can participate in actions or processes either ‘on a member basis’ or ‘on a whole basis’. For example, some cows step on a guy, and the guy recognizes a moving

herd ‘stepping on him’: the herd steps on the guy ‘on a member basis’. An opposite example: in 1914, some Serbian terrorists assaulted and killed Archduke Franz Ferdinand, and Austria found Serbia (‘collectively’) guilty. In this case, Serbs were judged to have killed ‘on a whole basis’, and the collective (moral and political) responsibility was distributed across all members.”

Collective

Meta-properties

COLLECTIVE is RIGID (**+R**). COLLECTIVE is CARRYING AN IDENTITY CRITERION (**+I**). COLLECTIVE is not CARRYING A COMMON UNITY CRITERION (**-U**). COLLECTIVE is EXTERNALLY-DEPENDENT (**+D**). COLLECTIVE *one-sided generically constantly depends on* MEMBER. COLLECTIVE *one-sided specifically constantly depends on* CONCEPT.

Properties

[EP/SLD] A COLLECTIVE is a COLLECTION the *members of* which are necessarily AGENTIVES.

Member

Meta-properties

MEMBER is ANTI-RIGID (**~R**). MEMBER is not CARRYING AN IDENTITY CRITERION (**-I**). MEMBER is not CARRYING A COMMON UNITY CRITERION (**-U**). MEMBER is EXTERNALLY-DEPENDENT (**+D**). MEMBER *one-sided generically constantly depends on* COLLECTION.

Properties

[EP/SLD] A MEMBER is an ENDURANT which *is member of* a COLLECTION *during* a TIME INTERVAL.