Enrichment of Schema.org to enable controlled vocabularies web publication with a SKOS description of concepts and schemes.

Change history	Version 1 – October 15th 2012	
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We propose to introduce a new sub-class of Intangible : Concept, mapped with skos:Concept.

The class Enumeration is considered as equivalent to skos:ConceptScheme. We propose to add a property to Enumeration : hasTopConcept.

Open questions:

1. Should we keep Concept a subclass of Intangible? There is an implicit disjunction between Intangible and other “tangible” classes (Person, CreativeWork, etc). This could raise issues with the fact that SKOS does not endorse such a disjointness (http://www.w3.org/TR/skos-primer/#seccombining). It is not very clean conceptually, sure, but some case may welcome the possibility to have a resource typed both as a Person and a Concept.

2. Should we keep ConceptScheme as equivalent to Enumeration, following the practices hinted at http://blog.schema.org/2012/05/schemaorg-markup-for-external-lists.html and http://www.w3.org/wiki/WebSchemas/ExternalEnumerations , or should we create an new sub-class to put the emphasis on a new type of resources?

schema.org

Thing > Intangible > Concept

A concept can be viewed as an idea or notion; a unit of thought. However, what constitutes a unit of thought is subjective, and this definition is meant to be suggestive, rather than restrictive. The notion of a concept is useful when describing the conceptual or intellectual structure of a knowledge organization system, and when referring to specific ideas or meanings established within a KOS (such as thesauri and classification schemes) (from http://www.w3.org/TR/2009/REC-skos-reference-20090818/#concepts, as for the description of the attributes below)

Property	Expected Type	Description
Properties from Thing		
`additionalType`	URL	An additional type for the item, typically used for adding more specific types from external vocabularies in microdata syntax. This is a relationship between something and a class that the thing is in. In RDFa syntax, it is better to use the native RDFa syntax - the 'typeof' attribute - for multiple types. Schema.org tools may have only weaker understanding of extra types, in particular those defined externally.
`description`	Text	A short description of the item.

Property	Expected Type	Description
Properties from Thing		
image	URL	URL of an image of the item.
name	Text	The name of the item.
url	URL	URL of the item.
Properties from Intangible – NONE		
Properties from Concept		
altLabel	Text	An alternative lexical label for a resource.
hiddenLabel	Text	A lexical label for a resource that should be hidden when generating visual displays of the resource, but should still be accessible to free text search operations.
inEnumeration	Enumeration	A concept may be a member of more than one Enumeration.
topConceptOf	Enumeration	Relates a concept to the Enumeration that it is a top level concept of.
broader	Concept	Relates a concept to a concept that is more general in meaning. Broader concepts are typically rendered as parents in a concept hierarchy (tree).
broadMatch	Concept	broadMatch is used to state a hierarchical mapping link between two conceptual resources in different Enumerations.
closeMatch	Concept	closeMatch is used to link two concepts that are sufficiently similar that they can be used interchangeably in some information retrieval applications.
narrowMatch	Concept	narrowMatch is used to state a hierarchical mapping link between two conceptual resources in different Enumerations.
relatedMatch	Concept	relatedMatch is used to state an associative mapping link between two conceptual resources in different concept schemes.
notation	Text	A notation, also known as classification code, is a string of

Property	Expected Type	Description
Properties from Thing		
		characters such as "T58.5" or "303.4833" used to uniquely identify a concept within the scope of a given concept scheme.
changeNote	Text	A note about a modification to a concept.
definition	Text	A statement or formal explanation of the meaning of a concept.
editorialNote	Text	A note for an editor, translator or maintainer of the vocabulary.
example	Text	An example of the use of a concept.
historyNote	Text	A note about the past state/use/meaning of a concept.
scopeNote	Text	A note that helps to clarify the meaning and/or the use of a concept.

Thing > Intangible > Enumeration

Lists or enumerations—for example, a list of cuisines or music genres, etc.

Property	Expected Type	Description
Properties from Thing		
additionalType	URL	An additional type for the item, typically used for adding more specific types from external vocabularies in microdata syntax. This is a relationship between something and a class that the thing is in. In RDFa syntax, it is better to use the native RDFa syntax - the 'typeof' attribute - for multiple types. Schema.org tools may have only weaker understanding of extra types, in particular those defined externally.
description	Text	A short description of the item.
image	URL	URL of an image of the item.
name	Text	The name of the item.
url	URL	URL of the item.
hasTopConcept	**Concept**	**Relates, by convention, a Enumeration to a concept which is**

Property	Expected Type	Description
Properties from Thing		
		topmost in the broader/narrower concept hierarchies for that Enumeration, providing an entry point to these hierarchies.

More specific types

- BookFormatType
- ItemAvailability
- OfferItemCondition
- Specialty

Mapping table

Schema.org	Skos	Skos label	Skos definition
name	prefLabel	preferred label	The preferred lexical label for a resource, in a given language
inEnumeration	inScheme	is in scheme	A concept may be a member of more than one concept scheme
Enumeration	ConceptScheme		