

CIMI Reference Model

Updates & Proposed Changes 1.0.6 > 1.0.8

Scottsdale F2F jan-2013

www.github.org for issues distilled from the discussions
[cimi-modelling-taskforce] google groups list for general discussions
<https://groups.google.com/d/forum/cimi-modelling-taskforce>

Strategy & Key Design

- CIMI Reference Model requirements include:
 - Move clinical content to clinical models and patterns
 - RM captures structure of information
- As a general **rule** we want to minimise complexity
 - e.g. recursion, deep nesting and other anti-patterns
 - Each part of the model should have a relevant use-case - if not, then remove the element
- Consistency
 - Class names capitals
 - Attribute names lower and '_'
 - Enumerations PascalCased + 'Enum' or 'RefSet' if it is a reference
 - All names singular

Recap of work

- *Create the CIMI Reference Model in UML using EA*
 - *Imported the OpenEHR RM XML as starting point*
- *Discuss RM via GitHub & F2F*
- *Work around XML issues*
- *Documentation clarifications*
- *Valuesets are documented but missing in the model*
- *To use the ADL Workbench to edit Clinical Models*
 - *requires a Basic Meta-Model (BMM) “config” file generated from CRM UML*

The Parts of the CRM

- The full CIMI Reference Model consists of
 - Core Reference Model
 - Data Type Value Types
 - Demographics Model
 - Supporting Classes
 - *Primitive Types*

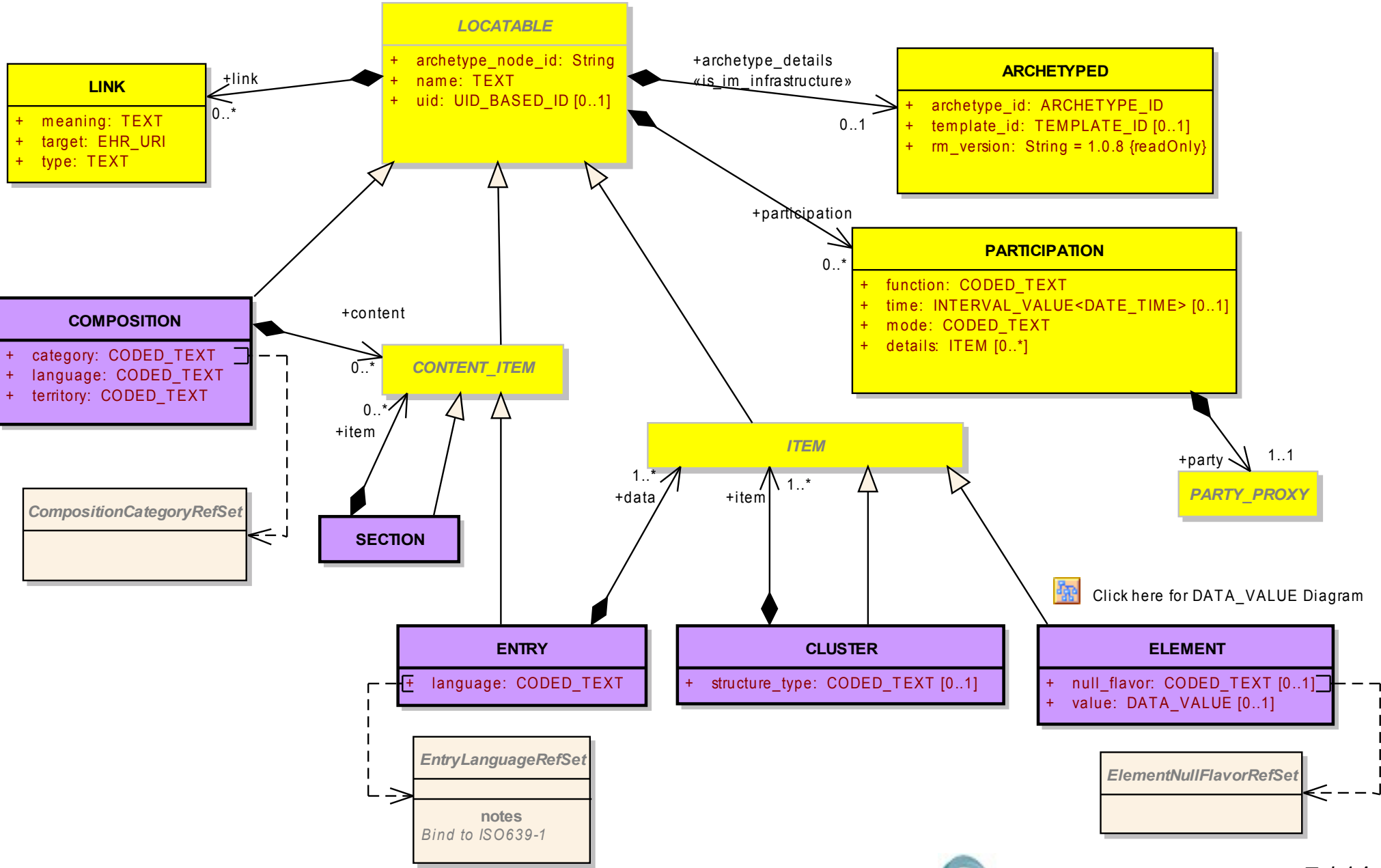
A	B	C	D	E
TERMINOLOGY REFERENCE SETS				
Id	Name	Terminology	Model	Model attribute/element
1	CIMI action type refset	SNOMED CT	CIMI-CLUSTER.action	action type
2	CIMI composition category refset	CIMI value set (non-clinical)	CIMI-RM	COMPOSITION.category
3	CIMI finding status refset	SNOMED CT	CIMI-CLUSTER.observation_result_item	finding status
4	CIMI formalism refset	CIMI value set (non-clinical)	CIMI-RM	PARSABLE.formalism
5	CIMI identifier type refset	SNOMED CT	CIMI-RM	IDENTIFIER.type
6	CIMI language refset	ISO-639-1/2 [+ISO-3166-1] (e.g. 'en', 'en-GB', 'en-US')	CIMI-RM	COMPOSITION.language ENTRY.language TEXT.language
7	CIMI link meaning refset	SNOMED CT	CIMI-RM	LINK.meaning
8	CIMI link type refset	SNOMED CT	CIMI-RM	LINK.type
9	CIMI mapping purpose refset		CIMI-RM	TERM MAPPING.purpose
10	CIMI media type refset	IANA media types (e.g. 'html', 'csv', 'jpeg')	CIMI-RM	MULTIMEDIA.media_type
11	CIMI null flavour refset	HL7 v3 Null flavors	CIMI-RM	ELEMENT.null_flavor
12	CIMI observation interpretation category refset	SNOMED CT	CIMI-ENTRY.observation CIMI-CLUSTER.observation_result_item	results/interpretation_category interpretation_category
13	CIMI observation result refset	SNOMED CT	CIMI-CLUSTER.observation_result_item	name
14	CIMI observation result group refset	SNOMED CT	CIMI-ENTRY.observation	results/result_group name
15	CIMI participation function refset	SNOMED CT	CIMI-RM	PARTICIPATION.function
16	CIMI participation mode refset	CIMI value set (non-clinical)	CIMI-RM	PARTICIPATION.mode
17	CIMI party relationship refset	SNOMED CT	CIMI-RM	PARTY_RELATED.relationship
18	CIMI procedure status refset	SNOMED CT	CIMI-CLUSTER.action_information CIMI-ENTRY.procedure CIMI-ENTRY.observation	action/action_status procedure/status observable/status
19	CIMI proportion type refset	CIMI value set (non-clinical)	CIMI-RM	PROPORTION.type
20	CIMI structure type refset	CIMI value set (non-clinical)	CIMI-RM	CLUSTER.structure_type
Index	Action type (refset)	Composition category (refset)	Finding Status (refset)	Formalism (refset)
				Identifier type (refset)
				Language (refset)
				Link meaning (refset)



Changes to Core Ref Model

- Set default value of ARCHETYPED.rm_version to "1.0.8"
- As a rule, use singular names for attributes
 - e.g. CLUSTER.item and LOCATABLE.link
- Consistent Style: DATA_VALUE changed to attribute
- PARTICIPATION.details added to support extension
- Added example RefSet binding, eventually need RefSet for all CODED_TEXT attributes

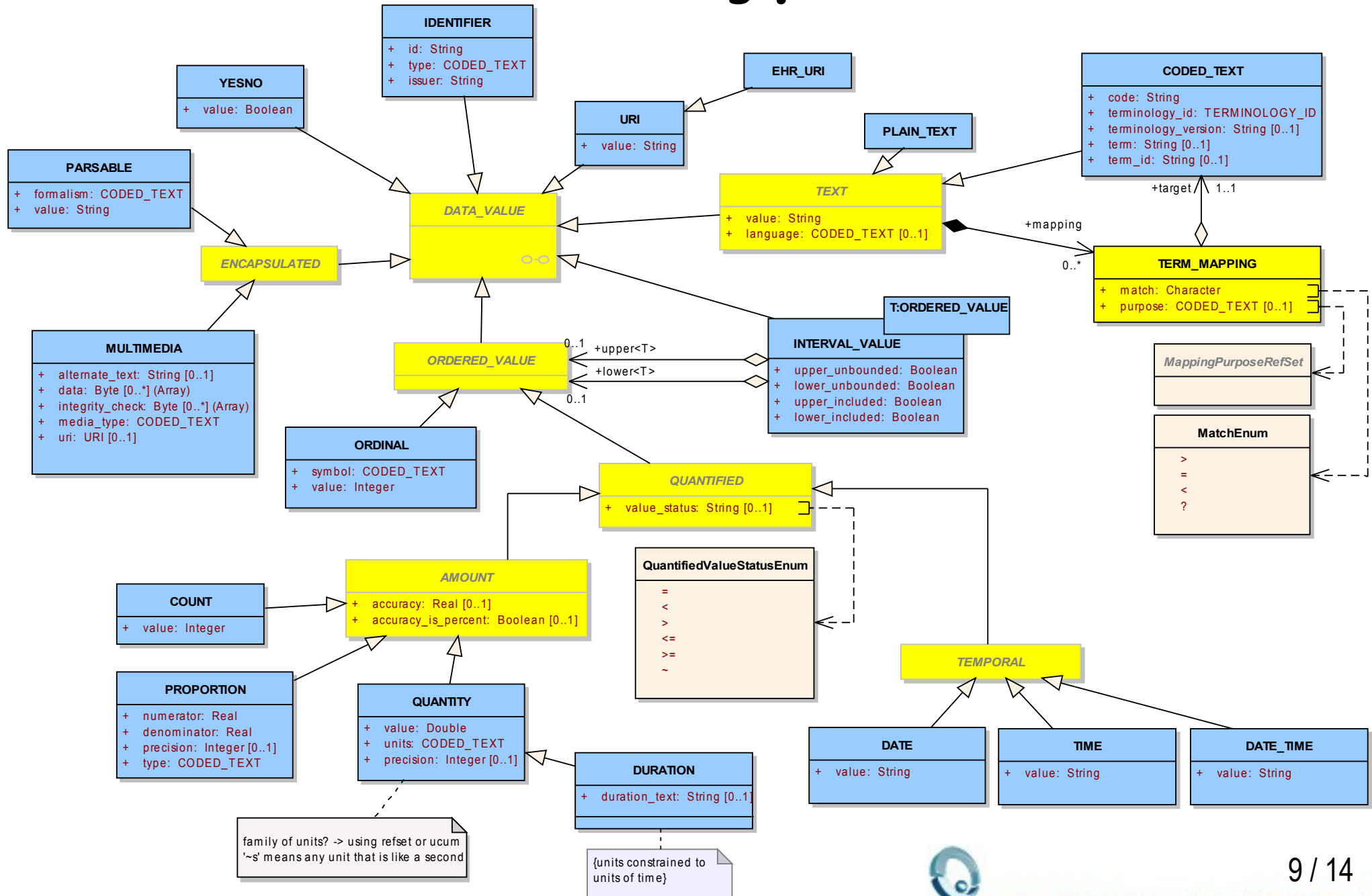
Core Reference Model 1.0.8



Changes to Data Value Types

- Enumeration added:
 - TERM_MAPPING.match
 - QUANTIFIED.value_status
- TEMPORAL types use ISO8601 string as value
- DURATION moved as subclass of QUANTITY
 - units constrained to time units RefSet
- Renamed magnitude to value
- Removed empty abstract class
 - ABSOLUTE_QUANTITY

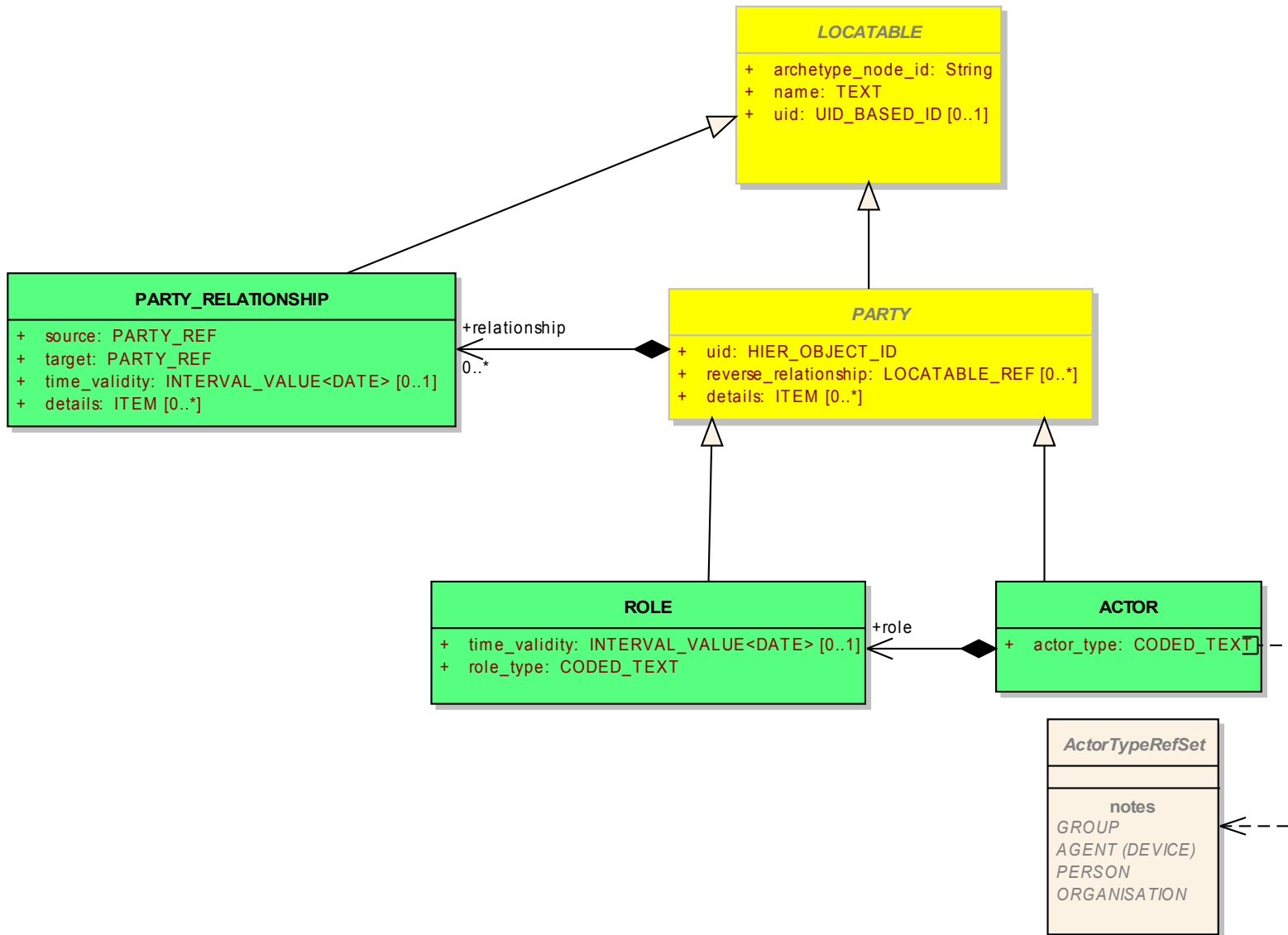
Data Value Types 1.0.8



Changes to Demographics

- Principle:
 - RM describes structure of information
 - Clinical patterns and models describe content.
- Demographic content moved from RM to clinical patterns and models
 - CAPABILITY, ADDRESS, CONTACT, IDENTITY
- ROLE.role_type and ACTOR.actor_type introduced
 - Collapsed actor types into terminology – e.g. GROUP, PERSON, AGENT
 - Role types represented in terminology – e.g. PATIENT, PROVIDER
- CIMI RM uses extension points
 - “details: ITEM” attribute for PARTICIPATION, PARTY and RELATIONSHIP

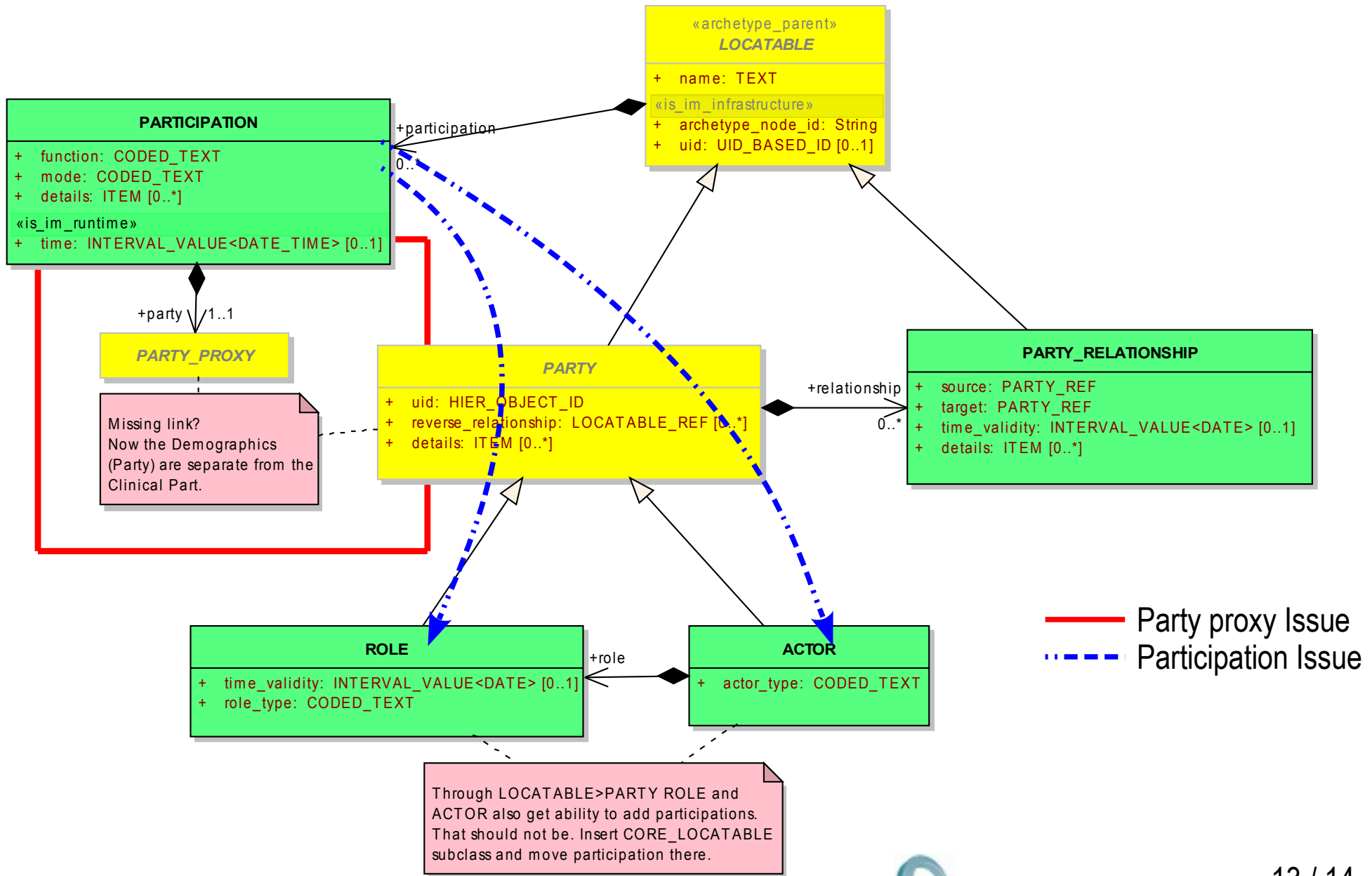
Demographics 1.0.8



Issues

- Still can't do Enumerations and RefSets in BMM
 - Link to the SNOMED URI
- RM should make sure things are done in the same way
 - Relies on clinical patterns for consistency
- Because ACTOR and ROLE are specializations of LOCATABLE, based on core model they can have PARTICIPATIONS
 - Suggest adding CORE_LOCATABLE as subclass
 - Move PARTICIPATION to CORE_LOCATABLE

2 new issues?



Next steps

- CIMI RM
 - Complete RefSets
 - Prepare the CIMI RM for the UML Profile (AML)
 - Update & Publish CIMI RM & Documentation
- Tooling
 - ADL Workbench – Add support for RefSets & Enums?
 - XMI/eCore for EA and MDHT
- Creating Models will “test” the CIMI RM