

AML RFP Response

Status Update

Archetype Modeling Language

The objective of this RFP is to provide a standard for modeling Archetype Models (AMs) using UML, to support the representation of Clinical Information Modeling Initiative (CIMI) artifacts in UML. Archetypes are Platform Independent Models (PIMs), which are developed as a set of constraints on a specific Reference Model (RM). This RFP solicits proposals for an UML Profile, to be known as the "Archetype Modeling Language" (AML). The AML Profile will be developed as an aggregation of three sub-profiles, which together meet the requirements of archetype modeling. The three sub-profiles of the AML Profile will include: - Reference Model Profile (RMP): This profile will enable the specification of reference models, upon which archetypes can be based. - Constraint Model Profile (CMP): This profile will support the specification of constraints on a given reference model, to enable the development of archetypes, including Clinical Information Models (CIMs). - A Terminology Binding Profile (TBP): This profile will support the binding of information models to terminology, with optional support for binding to CTS2. Terminology bindings will include:

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AML Specification Sections

Metamodel – what we are trying to accomplish

Profile – how we accomplish it

XMI – formal representation of profile

Approach

Define *five* metamodels

1. Reference MetaModel

1. Primitive Types – data types that are common between RM and AM instances
2. Basic Constructs – parts of the UML model that AM addresses (class, property, type, cardinality, generalization)

Approach

Define *five* metamodels

2. Constraint Model

- Object / attribute / cardinality
- Constraint ADL (cADL)
- Paths and names

3. Terminology Binding Model

- node Identifiers
- Enumerations
- Value sets

Approach

Define *five* metamodels

4. Rules Model

- OCL subset and ADL Assertions compliance

5. Metadata Model

- Who, what, why, where, when
- Potential 11179 harmonization

Initial Submission

Will address

- Reference Metamodel
- Constraint Model
- Terminology Binding

Rules and Metadata will (probably) be subsequent revision or separate proposa.

Approach

1. Start with AOM 1.5

- Remove implementation artifacts (many methods, calculated properties, etc)
- Refactor in places where a lot of text is required (cardinality/multiplicity/optionality, tuples, siblings, paths)
- Harmonize with CTS2 / ISO 11179 concept and value set representation

Approach

2. Use ADL 1.5 to create metamodel instances
 - Provides many examples for submission
 - Validates model completeness and compatibility
3. Turn metamodel into formal profiles
 - Some transformation required (primitive types map to UML types, RM to UML Metamodel, potential refactoring of profiles)

Approach

4. Take examples from step 2 and re-represent as profile instances
 - Further documentation
 - Validates correct transformation

Submission

- Most (if not all) of the submission is being developed using Rational Software Architect (RSA)
- Text being generated using BIRT tool

Submission Timeline

- Initial RFP submission will be on Feb 24
 - As complete as possible, but not final
- Review and update at OMG meeting March 27
- Final RFP submission ~May 16
- Update and (hopefully) vote OMG meeting June 16-20
- Finalization Task Force – implement and use
 - Target submission ~June 2015

Submission Team

- Thomas Beale – the prime creator
- Dave Carlson – Initial profile and proof of implementation
- Harold Solbrig, Deepak Sharma, Jay Lyle
 - Metamodel
- Robert Lario, Harold Solbrig, Deepak Sharma
 - Profile
- Angilique Cortez
 - Task Master and herder of cats
- Stan Huff, Joey Coyle, Pat Langford, Senthil Nachimuthu

Issues and Resolution

- Archetype Identifiers
 - First class terminology identifiers, with scoping archetype being the namespace
 - Must be unique within the context of the archetype
- Paths
 - Explicit representation w/ “specializes” relationship

Issues and Resolution

- Assumed and default values
 - Work still underway
- OCL vs. ADL Assertions
 - Separate profile
- Regular expressions
 - Part of RM profile, so separable
- Paths as identifiers (“id13.1.1”, “id13.0.1”) – decoding/encoding out of scope, but representable