

Semantic Infrastructure Concept of Operations Initiative 3 Rules

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Rules management and contracts support (behavioral semantics)

Business and policy rules management components are largely a new resource area. A means for authoring and managing rules (as described in RM-ODP and the "Contract Design" section of these pages) for behavioral semantics is needed. Much of clinical care information exchange is mediated by service contracts reflecting HL7 conventions. Contracts are vital to environments where regulatory, privacy, and business considerations must be enforced. The contract specifications (refer to the [diagram of semantic components](#) described elsewhere in these pages) need to be persisted and managed over their life-time and some provision made must be made by each implementation for run time support of contracts (refer to the [contract design diagram](#) described elsewhere in these pages). A Policy and Rules Management resource would enable definition and storage of the enterprise-level business activities and role relationships between actors. The roles, behaviors and conformance points and other factors required to persist contract definitions for access by would be implementations. This initiative will define the rules management architecture and design and implement an initial Policy and Rules Management resource. This will involve resolving numerous open issues. For example there are alternative approaches to rule representation (OCL, SBVR etc.)

The initiative will analyze them and match them against available use cases.

Rules management must provide for predictable transformation of pre-described rules in user applications. Development of this capability is the principal focus of this Initiative.

In addition, however, some form of concept resolution is required for Rules Management. Determination of the semantic equivalence of concept expressions means that information model primitives to be matched share an underlying ontology, or have access to a cross-ontology mapping (a driver for [Initiative 5](#)). ISO 19763 is a framework in which domain-specific ontology is used to provide semantics for policy and rule expression. Refer to [RGPS Metamodel Framework for Interaction Between Cloud and Client presentation](#) .

This would limit the ability of the Rules Management service to recognize equivalent concepts expressions to contexts in which the business case for creation of expensive maps is justified or in which regulation requires all to use a single terminology. However there may be opportunities to use machine learning or other software engineering techniques and frameworks to reduce the burden of manual ontology mapping, or to use federated ontologies to largely escape the need for maps. Therefore this Initiative will also include limited testing and analysis of alternative approaches to making Concept Resolution more semantically capable and less dependent on expensive mapping activities, although its applicability and usefulness in a Policy and Rules environment may be limited due to the very nature of the need for precise interpretation of contracts.

Requirements

[Initiative 3 section of the Requirements Initiatives Master List](#)

Forum

[Initiative 3 - Rules management and contracts support \(behavioral semantics\)](#)



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