

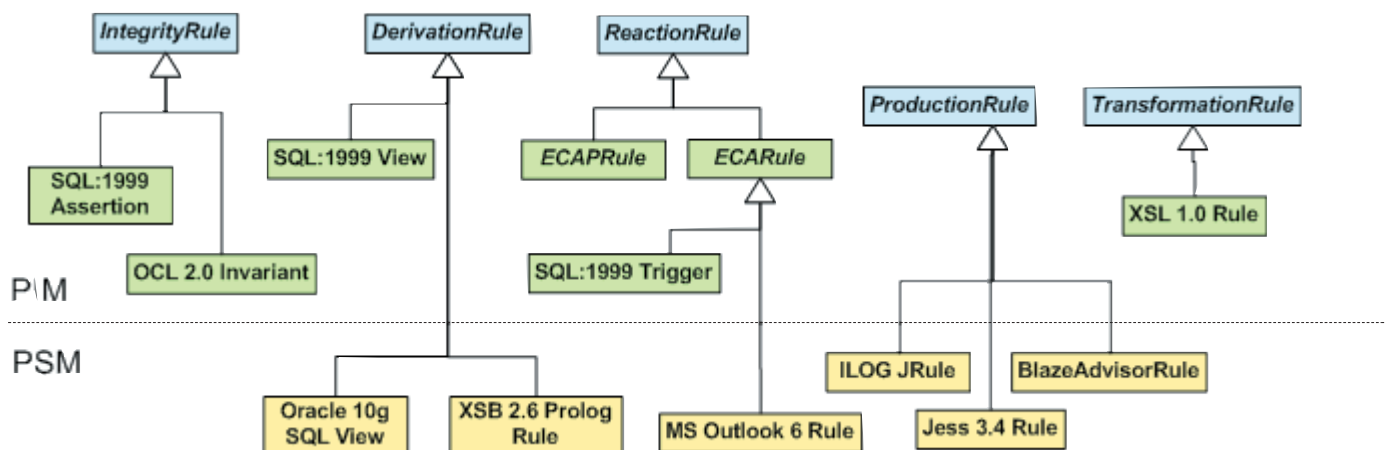
# Rule Modeling and Markup

## Abstract

In spite of the large number of markup languages for the Web and for the Semantic Web, there is still little knowledge on how to define the markup of such languages. The REWERSE working group on "Rule Modeling and Markup" aims at gathering such knowledge for Web reasoning languages on the basis of a rule modeling language that provides a metamodel, or abstract syntax, for rules.

## Mission

The mission of the working group "rule modeling and markup" is to facilitate the use of rule formalisms and technologies for inference-enabled Web applications by developing an integrated modeling, visualization, verbalization and markup framework that is supported by tools.



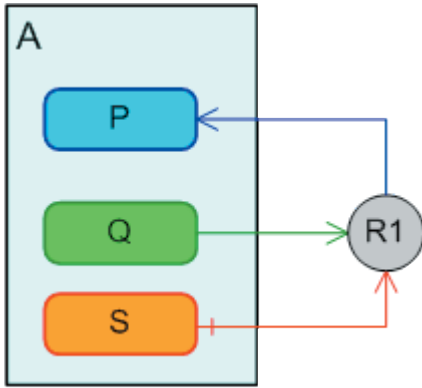
Platform-independent (blue) and platform-specific (yellow) rule concepts or languages. Inbetween them (in green) are platform-class-specific concepts/languages

## Use Scenarios

Suppose that a new Web application, e.g. for constructing a mortgage loan offer, is to be built on the basis of formalized business vocabularies and a set of formalized business rules in order to support the required forms of reasoning with business facts and rules.

Such an approach requires to capture the vocabularies, facts and rules formally, preferably in a visual model that allows to automatically generate verbalizations of facts and rules in a controlled natural language. Both visualization and verbalization help to communicate with non-technical experts and to validate the used vocabularies and rules with the help of these experts.

For publishing the vocabularies and rules on the Web and for being able to interchange them between different systems and tools, suitable markup languages based on an abstract syntax and semantics are needed. Established Web ontology languages such as RDF Schema and OWL, possibly with certain extensions, may provide a suitable markup language for a mortgage loan business vocabulary. But for publishing and interchanging mortgage loan business rules we need to develop a markup language that is based on the modeling formalism used and is able to interface seamlessly with the vocabulary markup language.



Rule R1  
 Forall x in A: P(x) if Q(x) and not S(x)

## Description of Research

The REWERSE working group on "Rule Modeling and Markup" will perform extensive research in the areas of metamodeling, visualization, verbalization and markup of rules. Planned research activities include both the development of formalisms and the development of tools, which support the reasoning languages developed in REWERSE.

## Tools & Technologies

A rule modeling tool will be developed as an extension of a UML class modeling tool. This tool will be supplemented with components for verbalization and markup generation.

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