Update on the OMG PRR Standard

RuleMarkupLanguages 2008 Conference

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I DON'T NEED TO KNOW THE DETAILS. JUST GIVE ME THE HIGH ALTITUDE VIEW.

FROM A HIGH ALTITUDE WE'RE ALL A BUNCH OF TERMITES TRYING TO EAT THE SAME LOG.

MAYBE DRILL DOWN A LITTLE MORE.

THE TERMITES HATE EACH OTHER.
Why am I here?
(Where do Standards Fit in Commercial IT Tools?)

Product

Best Practices

Technical Partner

Service Partner

Partner Support & Infrastructure

Standards

Experienced Implementation team

Methodology

Widespread Market Acceptance

Competitors muscle in

Product-Market Lifetime Monitor
Rule
Where do Standards fit in a current Software Tool?
Where do Rules fit in Software Tools?

- **Business Rule statements**
  - Decision Models
    - Graphical
      - Linear
        - Decision Table
      - Cyclic
        - Decision Tree
    - Algorithmic
      - Analytical
        - Neural Net
  - Formal Structured Text
    - Policy-level (e.g. SBVR)
    - Operational-level (e.g. BRMS)
- **Documentation**
- **Executable Code**
  - Rules
  - Activities
Where do Rule Types fit in Software Tools?

- Rule
  - Integrity Rule
  - Derivation Rule
  - Reaction Rule
  - Production Rule
  - Transformation Rule
  - State Model Rule

- SQL Assertion
  - SQL View

- ECA Production Rule
  - ECA Rule
  - Inference Rule
  - Procedural Rule
  - XST Rule
  - State Transition Rule

- OCL 2.0 Invariant
  - ~ query
  - preprocessor rulefunction
  - rule with event declaration

- SQL Trigger
  - BRE Rule
  - Script Rule
  - XML mapper
  - ~ rulefunction
  - rule
  - state transition rule
Where do Standards fit in rules?

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Who’s who...

- **Cross-domain / domain of software technology**
  - OMG = focus on modeling + includes BPMI
  - W3C = focus on web technologies including semantic web
  - OASIS = focus on application of technologies

- **Domain specific (sometimes location specific)**
  - MISMO = mortgage industry
  - ACORD = insurance industry
  - RosettaNet = supply chain industry
  - Etc etc
OMG Production Rule Representation

- Production Rule Representation is a cross-vendor rule modeling representation
- Consortium of developers and supporters from

- RFP (2003)
- Development (2004-7)
- Adoption (2007)
- Finalization (2007-8)

Business Semantics
What is OMG PRR?

1. **Formal UML model for production rules**
   - Defined in UML
   - Extends UML so production rules are *1st class citizens* alongside objects
   - Provides an XML format (XMI) for model interchange

2. **Vendor-neutral UML-friendly rule representation**
   - Rules specified via tools, not manually!
PRR 1.0 defines

- **2 rule “semantics” (types):**
  - Forward chaining inference rules (e.g. Rete-model)
    - For commonly-used PR rule engines
  - Sequentially processed procedural rules (e.g. scripts)
    - For tools that separate out simple business logic as non-inference production rules

- **Import/export for rule modeling via XMI**
  - Import / export rules between UML tools and BRMSs

- **Issues faced**
  - No generic metamodel for generic rules in UML
  - No expression language for conditions and actions
FYI: How Rete-driven Production Rules

- **Declarative Rule definition**
  - Defined in terms of RuleVariables
  - Each combination tuple of such variables + the instantiated rule condition and action represents a “rule instance”

- **Scope / declaration**
  - Classes / Events relevant for the rule

- **Conditions**
  - Filters on declarations
  - Joins across declarations

- **Actions**
  - What to do for each tuple that satisfies the conditions…
package 7.4.2 Overview of PRR-Core Production Ruleset

Figure 7.2 - PRR ProductionRuleset Classes

- ComputerExecutableRuleset
  - ruleInRuleset: Contains 0..1
- ProductionRule
  - Priority: Integer
  - 1 variableForProductionRule
  - Binding
    - productionRuleBoundRuleVariable
- RuleVariable
  - productionRulesetBoundRuleVariable
  - Scope
- ProductionRuleset
  - operationalMode: ProductionRulesetMode
  - 1 variableForProductionRuleset
PRR Summary

- PRR provides a standard metamodel for production rules as used in popular rule engines for business automation
- PRR is constrained to the types of rules executed by rule engines

**Implications:**
- UML modeling tools can become “rule-aware”
- UML tools and business rule mgmt tools can cooperate on the rule development lifecycle
- Standardized model for production rules for other users (eg interchange, DSL domain-specific languages, etc)

**But:**
- PRR does not standardize rule management / business syntax for rules
- XMI basis for PRR implies model/SDLC interchange not runtime interchange
The End!