Reaction RuleML

**Scope of Reaction RuleML**

**Reaction RuleML** is a general, practical, compact and user-friendly XML-serialized language for the family of reaction rules. It incorporates different kinds of production, action, reaction, and KR temporal/event/action logic rules into the native RuleML syntax using a system of step-wise extensions. In particular, the approach covers different kinds of reaction rules from various domains such as active-database ECA rules and triggers, forward-directed production rules, backward-reasoning temporal-KR event/action logics, event notification & messaging and active update, transition, process and transaction logics.

**Layered Reaction RuleML Language**

**Core Syntax**

- **Reaction RuleML**: General, practical, compact, and user-friendly XML serialization syntax for reaction rules
- **Supports**: Expressive with minimal, syntactic and orthogonal language design
- **Supports different reaction rule types such as**: ECA rule, active rules, production rules, temporal KR event/action logics, state processing and transition rules, update transactions etc.
- **Intended for (Semantic Web) based Event-Driven Architectures (EDAs) and Service-Oriented Architectures (SOA)**
- **Supports e.g.**:
  - Real-time Enterprises (RTE)
  - Business Activity Management (BAM)
  - Service Level Management (SLM),
- **Tool support via Validators, Translators, Editors**
- **Layered Uniform Schema Design**
  - Easy to learn and understand
  - Guidance to vendors which need smaller subset
  - Easier to maintain and extend

**Glossary**

- **Reaction**: General reaction rule construct
  - @exec: Denotes execution style of the reaction rule: "active | passive | reasoning"; default = "passive"
  - @kind: Required attribute denoting the kind of the reaction rule, i.e. the rule pattern which defines the constituent parts of the reaction rule
  - @eval: Attribute denoting the interpretation of the reaction rule: "strong | weak"; default="strong"

**Syntax**

**event, body, action, postcond, alternative**: Role tags for the reaction rule parts which might be omitted (see RuleML role and type tags)

**Example**

```xml
<Reaction exec="active" kind="ecapa">
  <event>
    <Atom>
      <![CDATA[...]]>
    </Atom>
  </event>

  <body>
    <Atom/>
  </body>

  <action>
    <![CDATA[...]]>
  </action>

  <postcond>
    <![CDATA[...]]>
  </postcond>

  <alternative>
    <![CDATA[...]]>
  </alternative>

</Reaction>
```

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