ODRL Generic Rule Evaluation Flow

(revision 3, 2018-01-08)
Based on the ODRL Information Model (IM) Proposed Recommendation of 4 January 2018, https://www.w3.org/TR/odrl-model/
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This document covers how a Logical/Constraint, a Duty, a Permission or a Prohibition should be evaluated in a generic way.

Legend:
- Process or decision boxes in **blue**: evaluated as defined by the IM
- Process or decision boxes in **grey**: considered as black box, generating/retrieving these values is not part of a Generic Rule Evaluation, only their state is considered.
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  - **blue** = an evaluation process covered by this document and/or the IM
- Casing:
  - **properties** start with lower case (constraint, duty, obligation, consequence, remedy)
  - **classes** start with upper case (Rule, Duty, Permission, Prohibition)
Any Rule with constraint(s)

For each constraint:

Is a Constraint referenced

- yes
- no

Is a Logical Constraint referenced

- yes

Constraint class instance

- Compare 2 operands by an operator as defined by the IM and the specific LeftOperand instance

Logical Constraint class instance

- Compare 2 or more Constraint class instances by a logical operator as defined by the IM

State of a constraint evaluation: Not-/Satisfied

Generate final state by ANDing the states of all constraints

Satisfied

Not Satisfied
**Duty Evaluation**

- **Duty Rule Core Evaluation**: Applies to obligation, duty, consequence remedy “round 1”
  - Evaluate all constraints
    - All Satisfied
      - (refined) action exercised
        - yes → Duty: Fulfilled & Active
        - no → Duty: Not Fulfilled & Active
      - 1 or more Not Satisfied

- **Duty Rule With consequences Evaluation**
  - 1 or more consequence(s)
    - yes → Duty Rule Core Evaluation (again)
      - Not Active
        - Duty: Not Active
      - Fulfilled
        - Evaluate all consequence Duties
          - All active consequences Fulfilled → Duty: Fulfilled & Active
          - No consequence is active → Not Fulfilled
    - no → Not Fulfilled

Optional next step: new evaluation including consequences. Can be done with obligation and duty only
Prohibition Evaluation

Prohibition

Evaluate all constraints

- Not Satisfied
- Satisfied

(refined) action exercised

1 or more remedies

- yes → Evaluate all remedy Duties
- no → No remedy is active

Prohibition: Infringed & Active

- or: 1 or more active remedies Not Fulfilled

Prohibition: Not Infringed & Active

Prohibition: Not Infringed & Not Active

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