

ODRL 2.0 Revisited

Koblenz, 19.09.2013

Stefan Becker*

Benjamin Hück

Katharina Naujokat*

Arne Fritjof Schmeiser*

Andreas Kasten

University of Koblenz-Landau



Outline

Motivation

Summarizing ODRL

Analyzing ODRL

Improving ODRL

Conclusion

Outline

Motivation

Summarizing ODRL

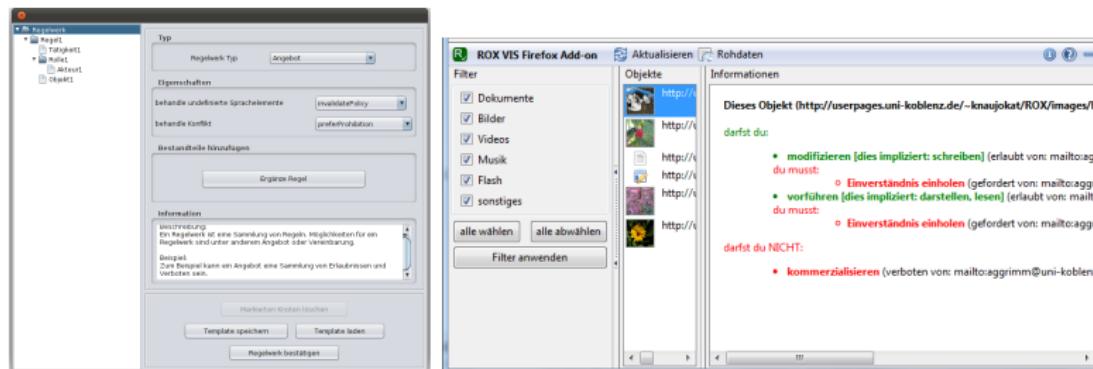
Analyzing ODRL

Improving ODRL

Conclusion

Motivation

- we participated in the student project ROX [BBH⁺12]
- we developed tools to express usage rights on websites
- rights definition was based on ODRL 2.0 [IGPK12]
- this process showed us some shortcomings of ODRL 2.0



Outline

Motivation

Summarizing ODRL

Use case

Structure

Core Model

Common Vocabulary

Example

Analyzing ODRL

Improving ODRL

Use case

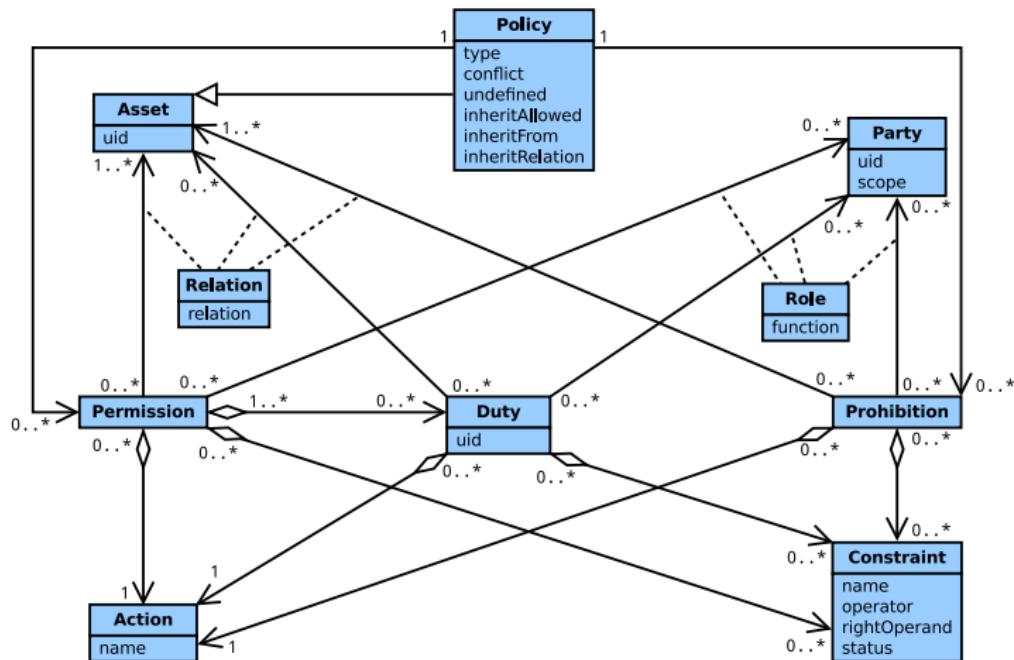
- general description of usage rights
- REL applicable for different use cases
- greater expressiveness than other RELs

Structure

- Core Model [IGPK12]
 - ▶ contains basic entities
- Common Vocabulary [IG12]
 - ▶ contains vocabulary terms
- different encodings [Ilan12, Ö13, McR13]
 - ▶ e. g. XML, JSON, OWL

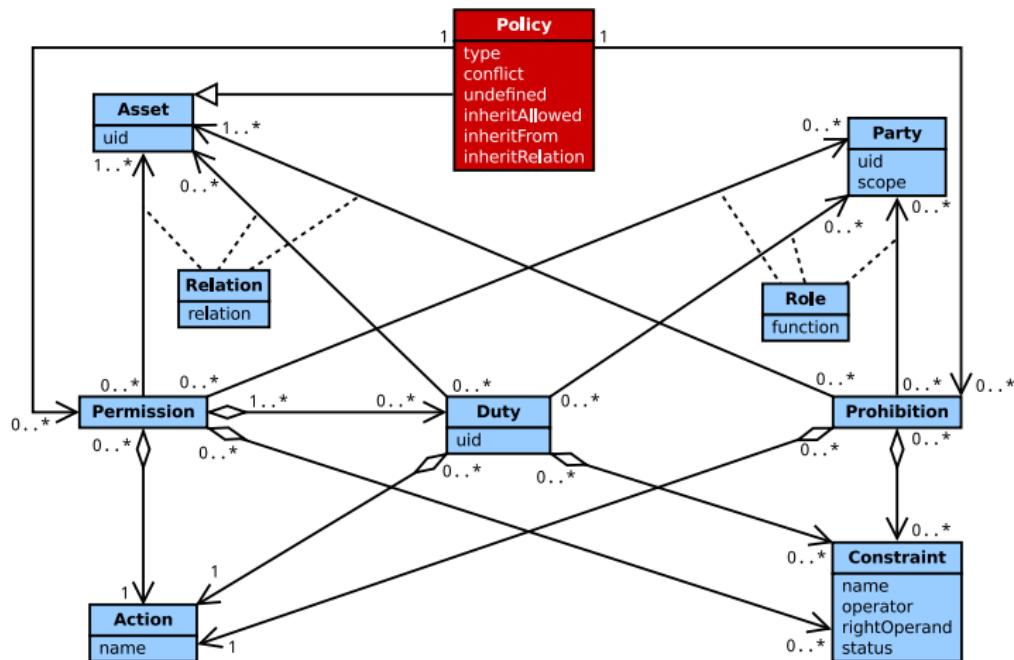
Core Model

[IGPK12]



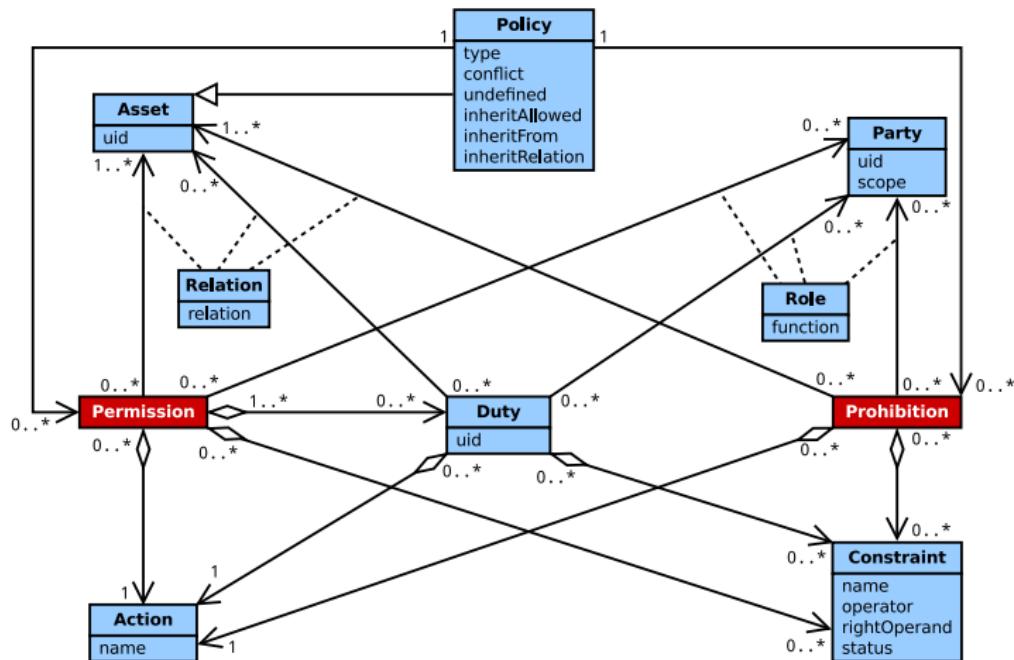
Core Model

[IGPK12]



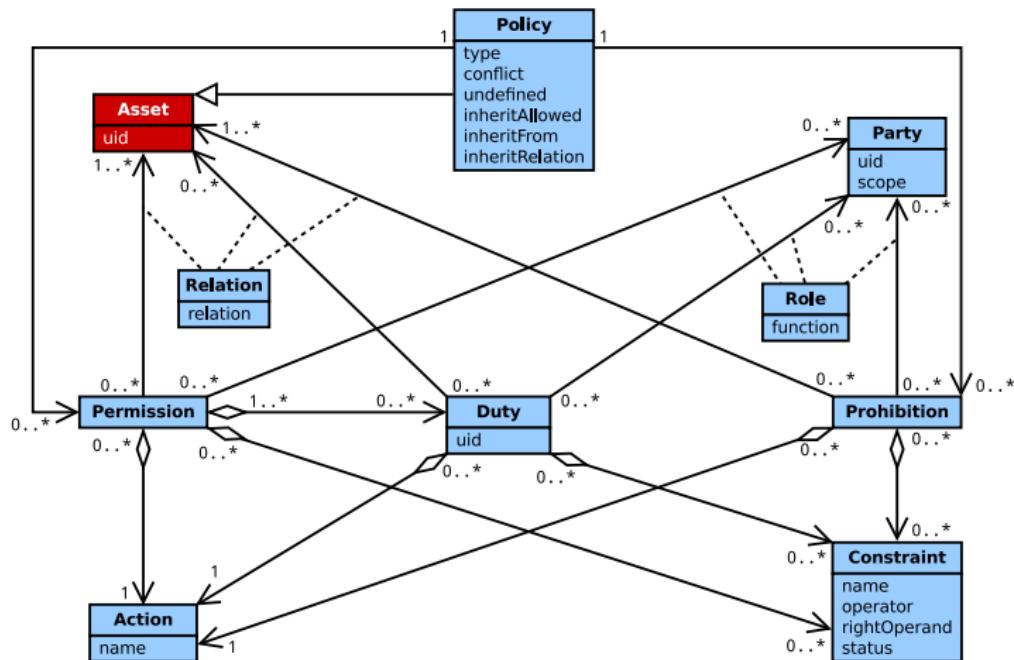
Core Model

[IGPK12]



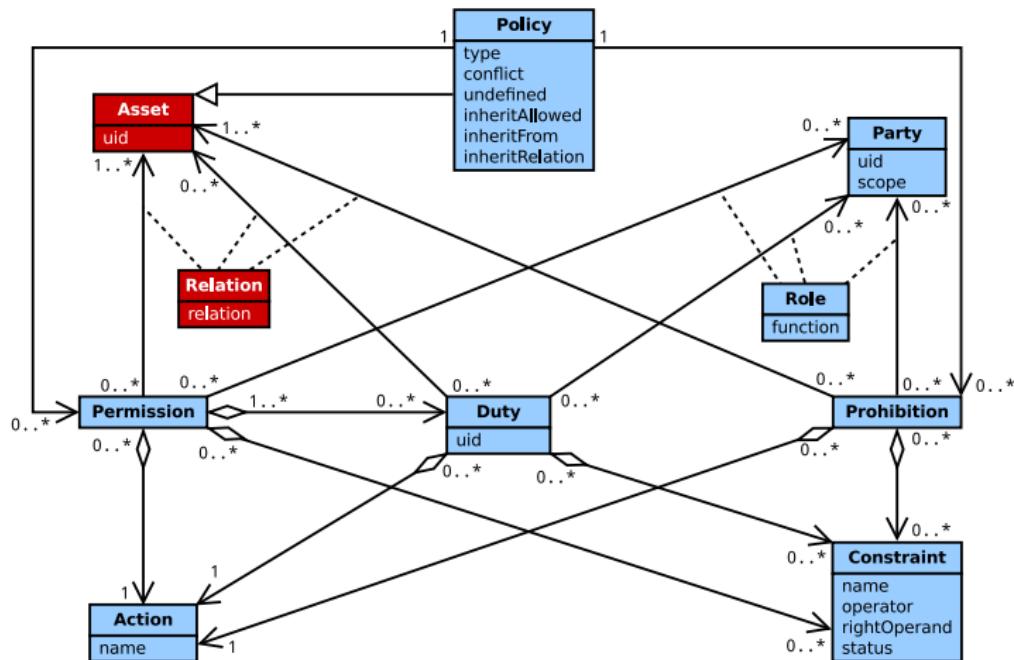
Core Model

[IGPK12]



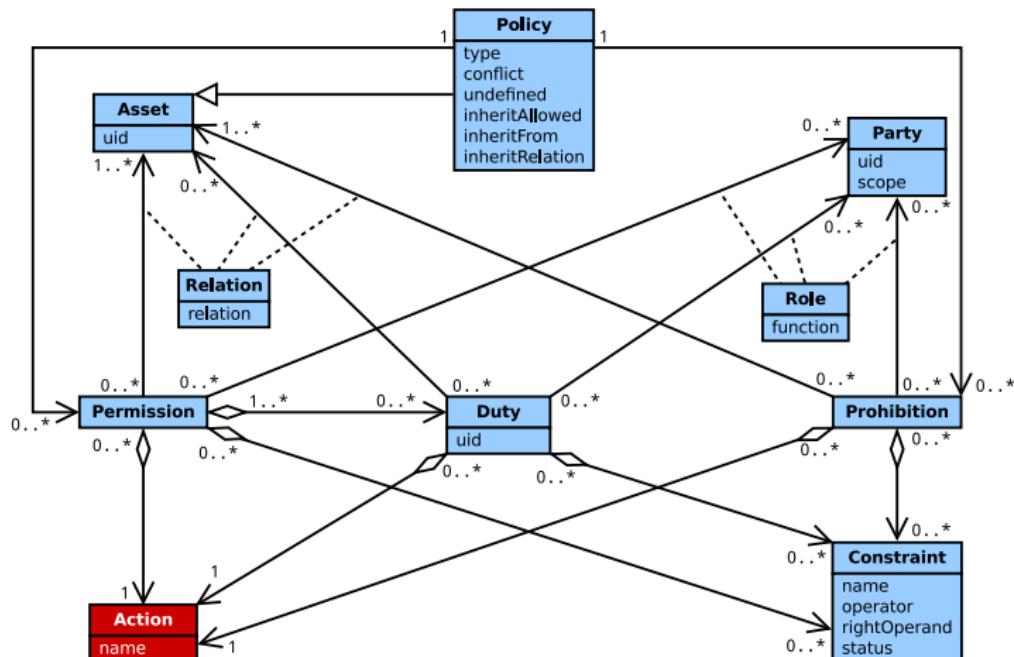
Core Model

[IGPK12]



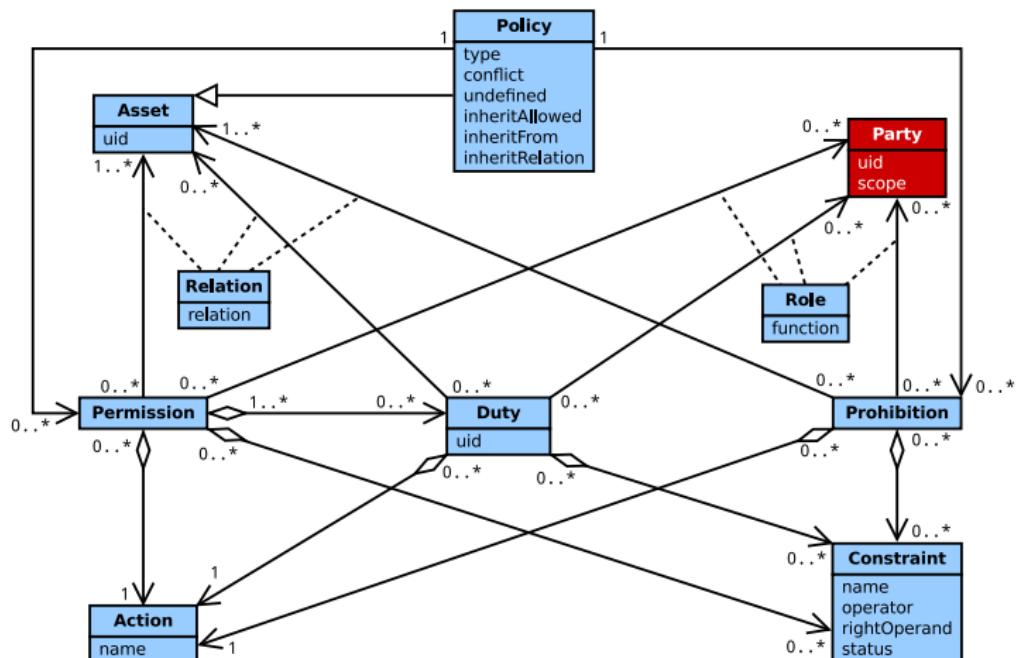
Core Model

[IGPK12]



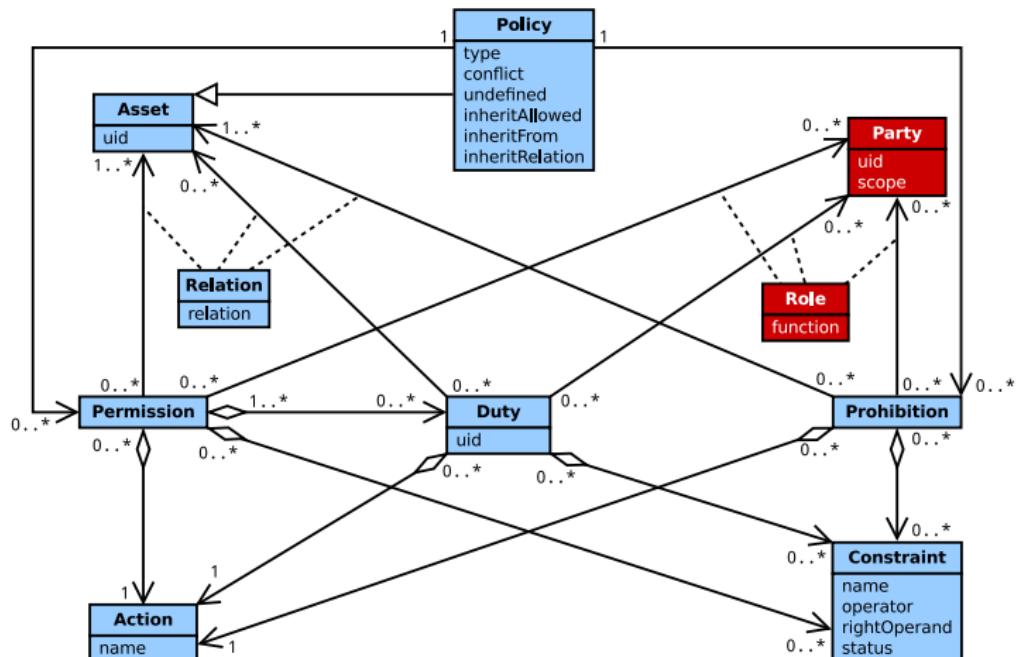
Core Model

[IGPK12]



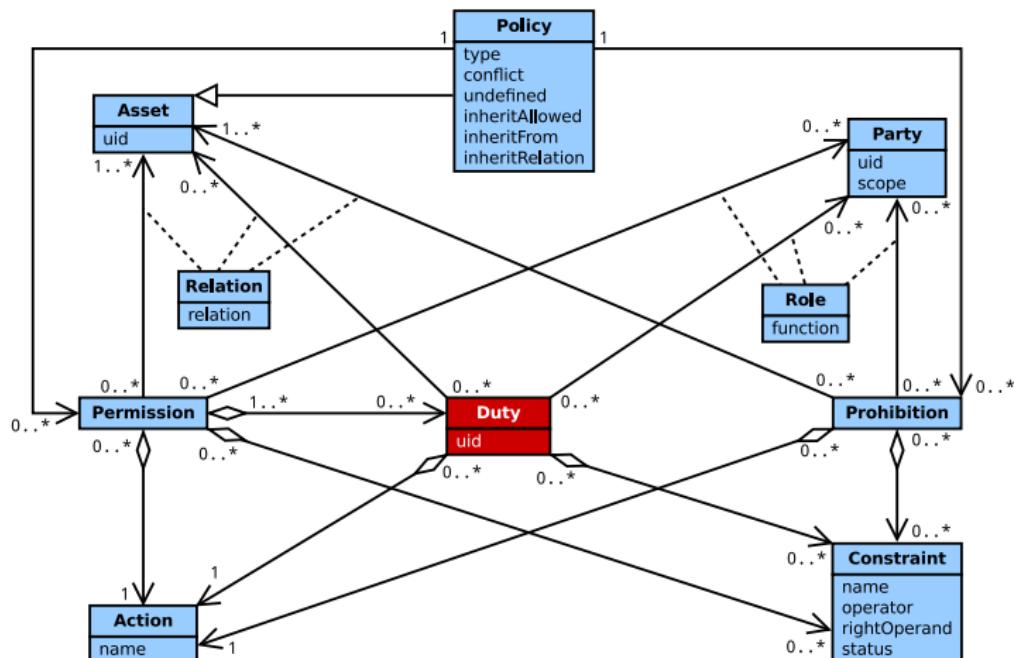
Core Model

[IGPK12]



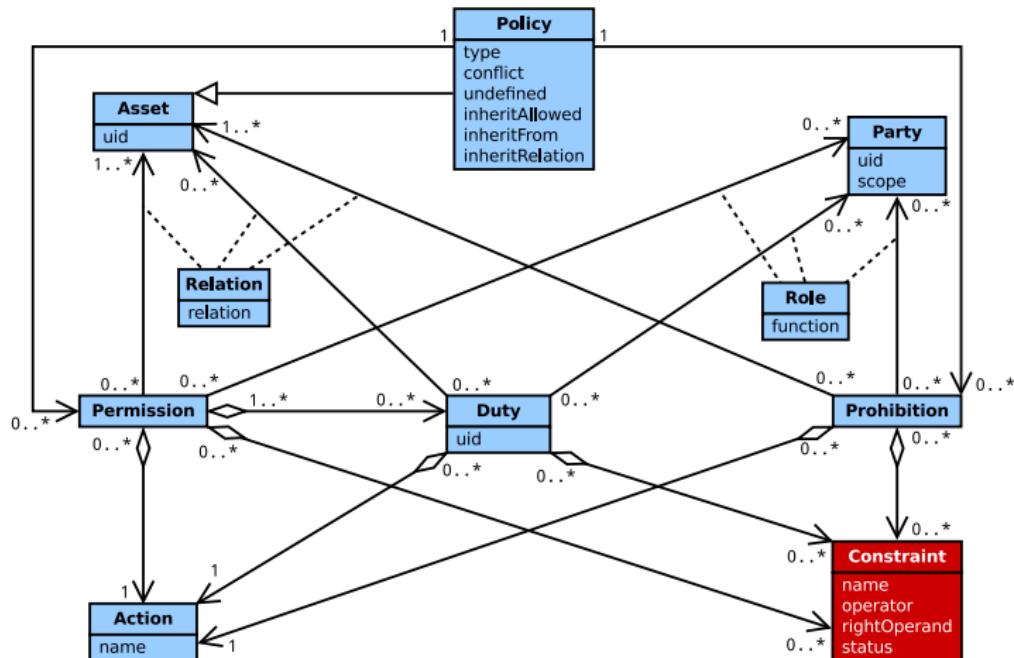
Core Model

[IGPK12]



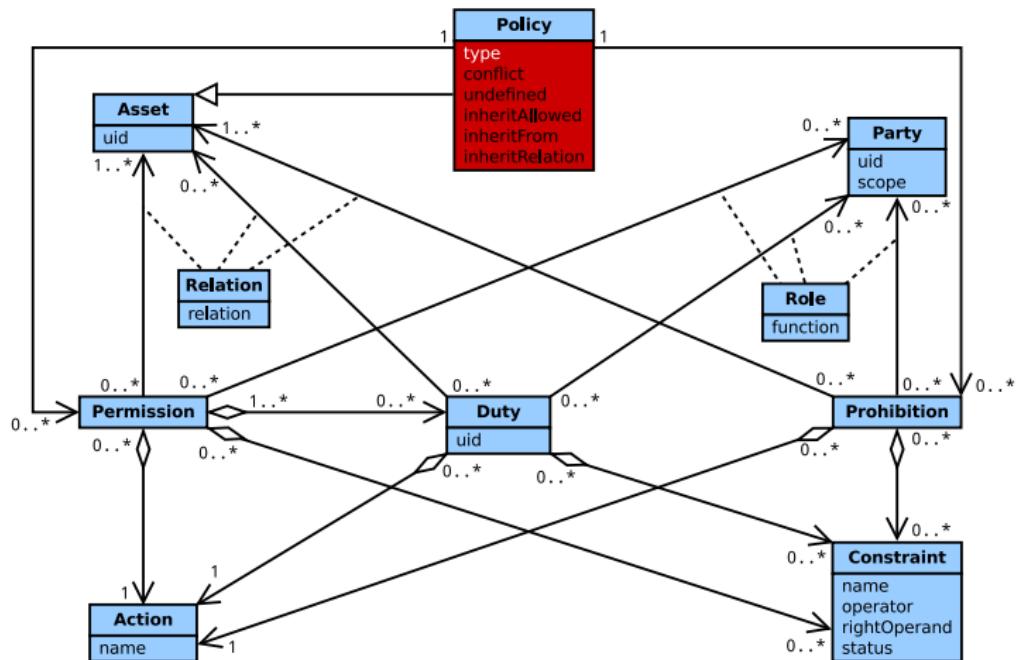
Core Model

[IGPK12]



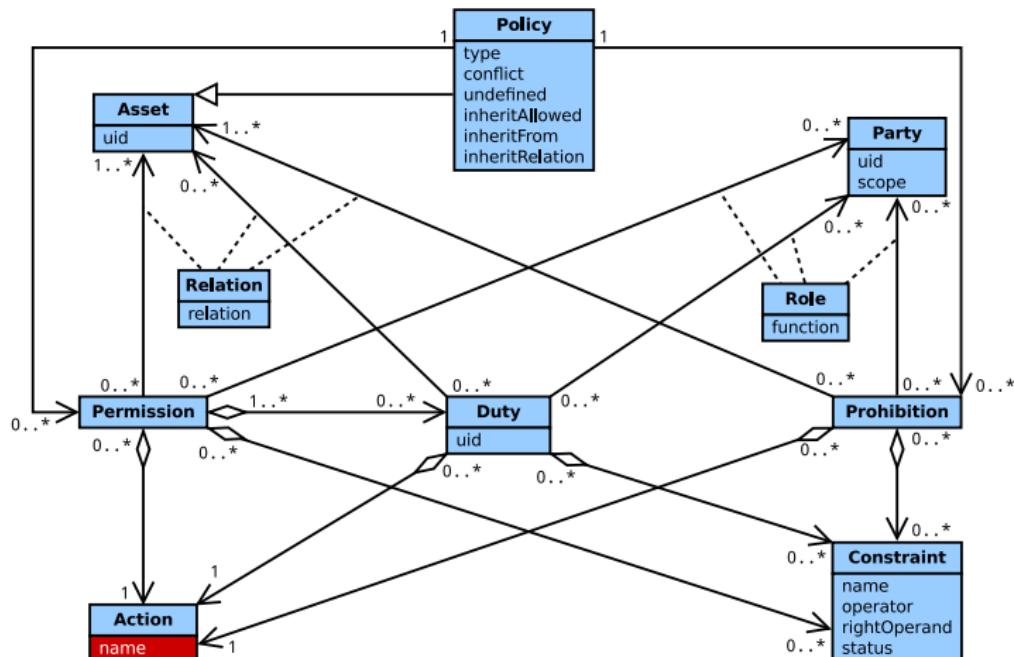
Core Model

[IGPK12]



Core Model

[IGPK12]

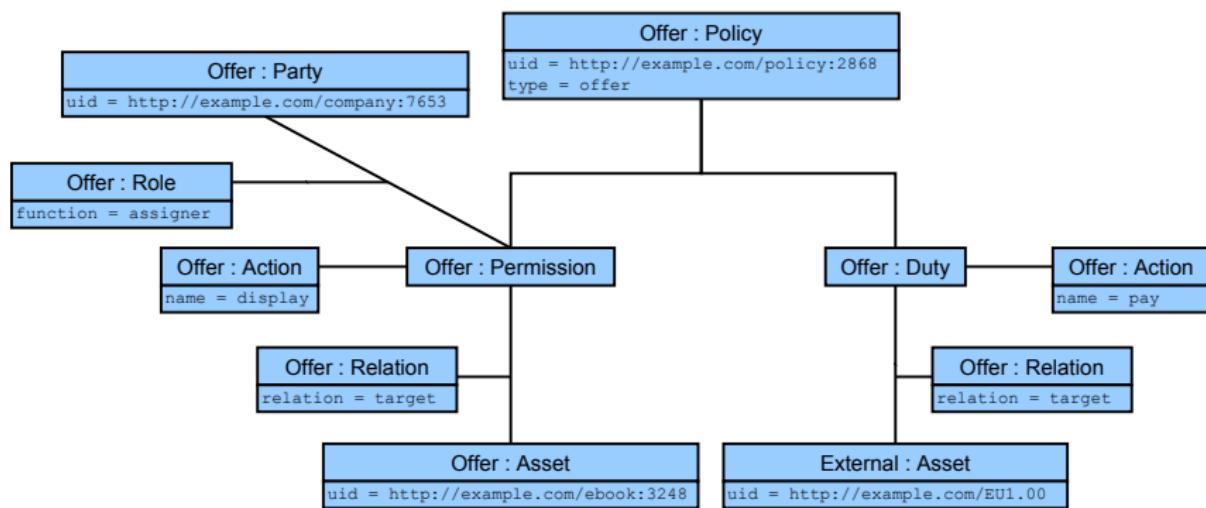


Common Vocabulary

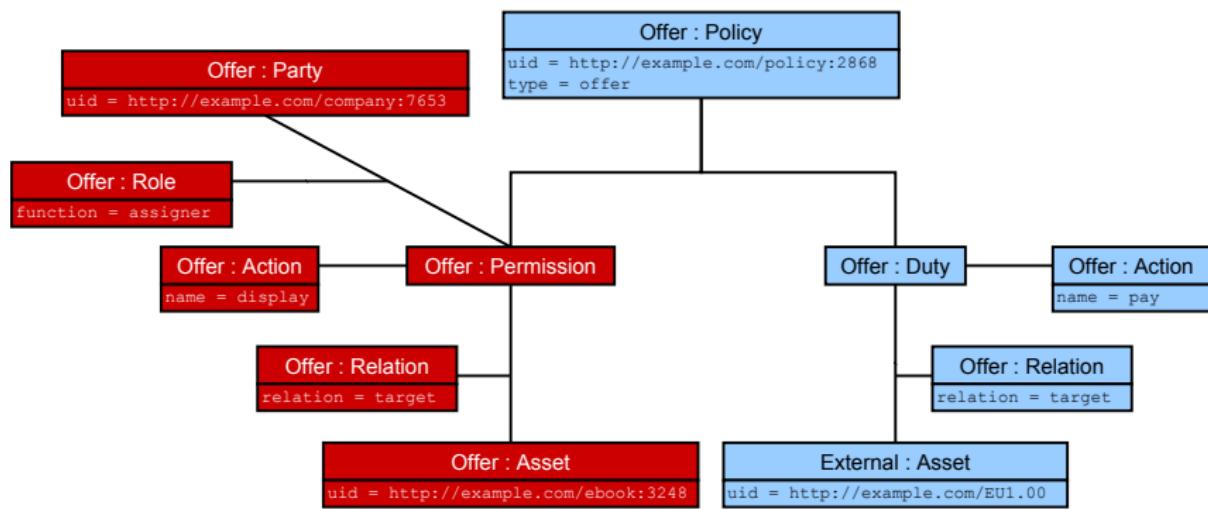
Excerpt of possible actions [IG12]

| Identifier | Semantics | Comment |
|----------------|---|---|
| acceptTracking | The act of accepting that the use of the asset may be recorded | The collected info is sent to a Party with responsibility |
| adhocShare | The act of sharing the asset to parties in close proximity to the owner | This action may be triggered by a user |
| aggregate | The act of using the asset (or parts of it) as part of a composite collection | |
| annotate | The act of adding notations/commentaries to the asset | A new asset is created |
| anonymize | The act of anonymising the asset | For example, to protect privacy purposes. |
| append | The act of adding to the end of an asset | For example, the asset is extended |

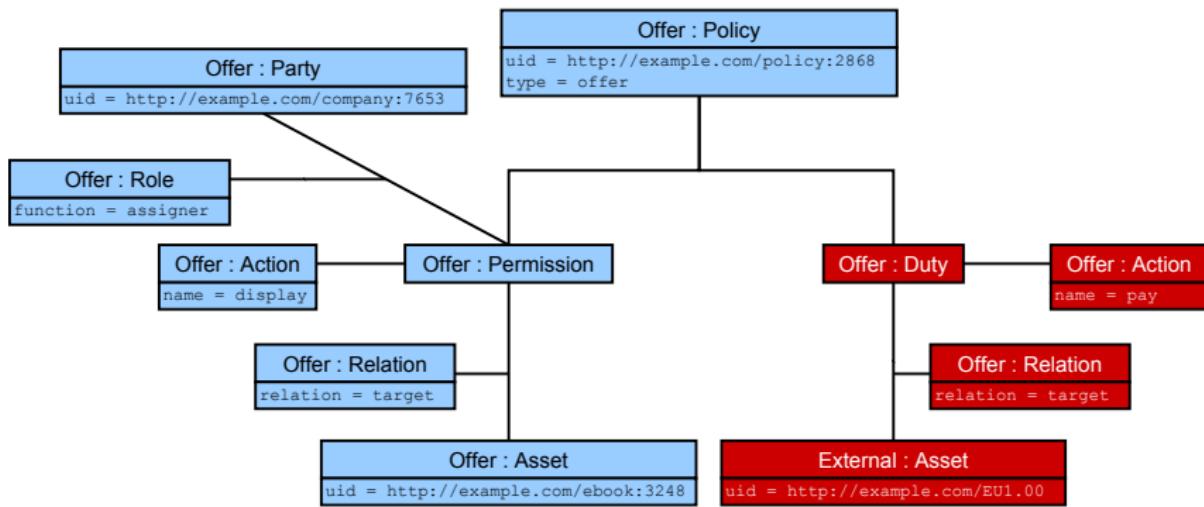
Example



Example



Example





Outline

Motivation

Summarizing ODRL

Analyzing ODRL

Modelling

Actions

Constraints

Expressiveness

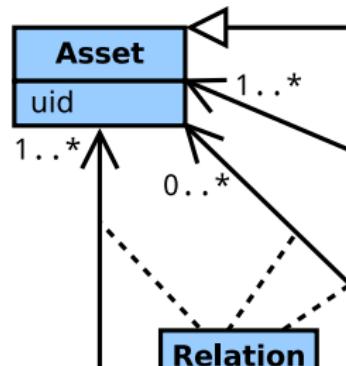
Improving ODRL

Conclusion

Modelling

Different approaches within the Core Model

- roles and relations
 - ▶ e.g. association class "relation"



Modelling

Different approaches within the Core Model

- roles and relations
 - ▶ e.g. association class "relation"
- constraints with properties
 - ▶ e.g. language gt German

| Constraint |
|--------------|
| name |
| operator |
| rightOperand |
| status |

Modelling

Different approaches within the Core Model

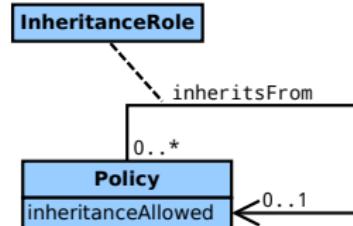
- roles and relations
 - ▶ e.g. association class "relation"
- constraints with properties
 - ▶ e.g. language > German
- attributes instead of roles/relations
 - ▶ e.g. inheritance (re-use of policies)

| Policy |
|-----------------|
| type |
| conflict |
| undefined |
| inheritAllowed |
| inheritFrom |
| inheritRelation |

Modelling

Different approaches within the Core Model

- roles and relations
 - ▶ e.g. association class "relation"
- constraints with properties
 - ▶ e.g. language \gt German
- attributes instead of roles/relations
 - ▶ e.g. inheritance (re-use of policies)



Actions

Clearly defined set of terms describing activities.
Currently some actions replace other entities.

Actions

Clearly defined set of terms describing activities.
Currently some actions replace other entities.

Ensure Exclusivity

Constraint?

Actions

Clearly defined set of terms describing activities.
Currently some actions replace other entities.

EnsureExclusivity

Constraint?

ExtractChar/ExtractWord/ExtractPage

Same action? + Constraint!

Actions

Clearly defined set of terms describing activities.
Currently some actions replace other entities.

EnsureExclusivity

Constraint?

ExtractChar/ExtractWord/ExtractPage

Same action? + Constraint!

AttachSource

Creative Commons: whole policy!



Constraints

Refine the expressions made by other entities.

As they relate to different entities, there should be different constraints (asset, party, action).

Constraints

Refine the expressions made by other entities.

As they relate to different entities, there should be different constraints (asset, party, action).

Language

The natural language applicable to the asset usage. [IG12]

→ **asset constraint**

Constraints

Refine the expressions made by other entities.

As they relate to different entities, there should be different constraints (asset, party, action).

Language

The natural language applicable to the asset usage. [IG12]

→ **asset constraint**

Recipient

The party that receives the result of the Action on the Asset. [IG12]

→ **party constraint**

Constraints

Refine the expressions made by other entities.

As they relate to different entities, there should be different constraints (asset, party, action).

Language

*The natural language applicable to the **asset** usage.* [IG12]

→ **asset constraint**

Recipient

*The **party** that receives the result of the Action on the Asset.* [IG12]

→ **party constraint**

Count

*The numeric count indicating the number of times the corresponding **entity** may be exercised.* [IG12] → **action constraint**

Expressiveness

- missing default modality
 - ▶ actions not listed in policy: allowed or forbidden?

Expressiveness

- missing default modality
 - ▶ actions not listed in policy: allowed or forbidden?
- inheritance insufficient for re-use
 - ▶ missing template system

Expressiveness

- missing default modality
 - ▶ actions not listed in policy: allowed or forbidden?
- inheritance insufficient for re-use
 - ▶ missing template system
- preconditions / postconditions
 - ▶ duties before or after permission?

Outline

Motivation

Summarizing ODRL

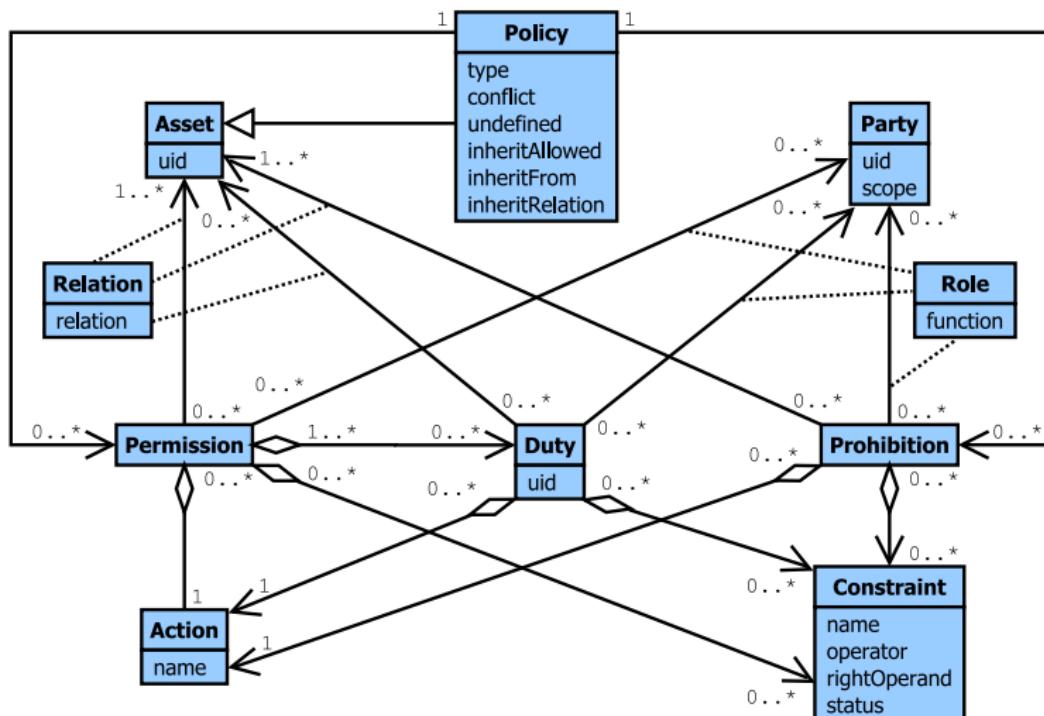
Analyzing ODRL

Improving ODRL

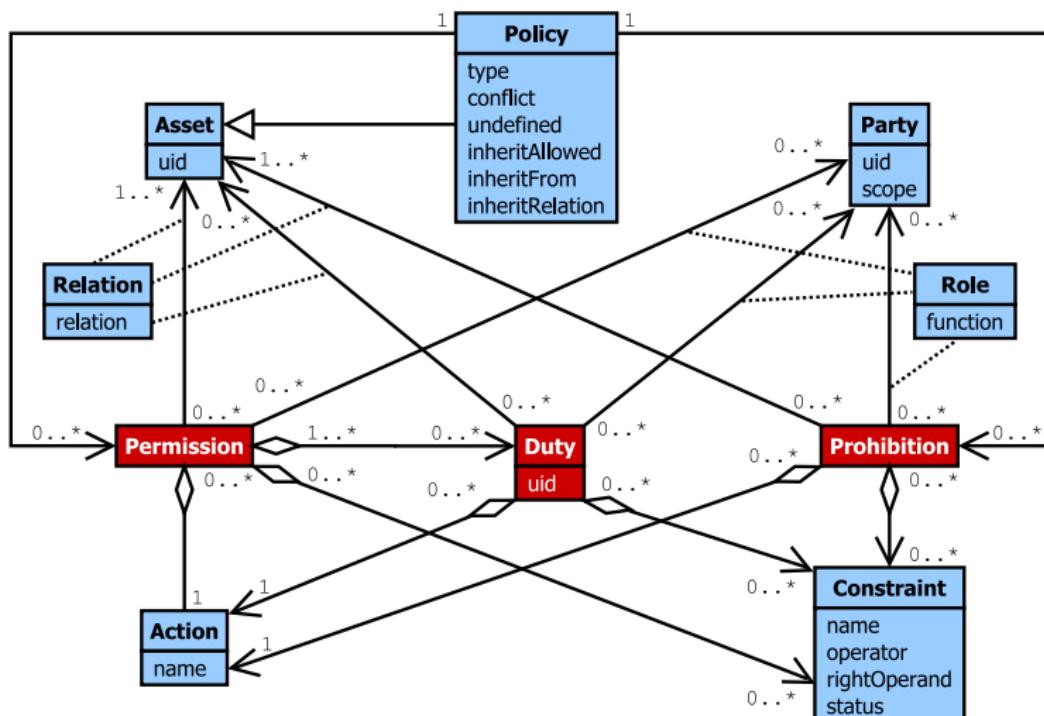
new Core Model

Conclusion

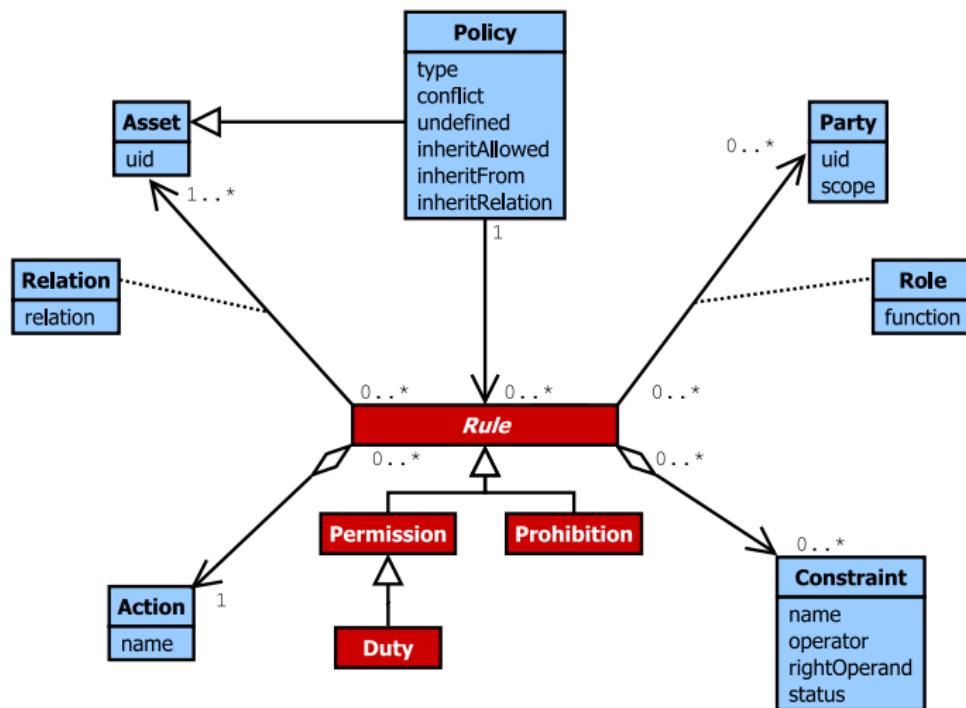
Improving the Core Model



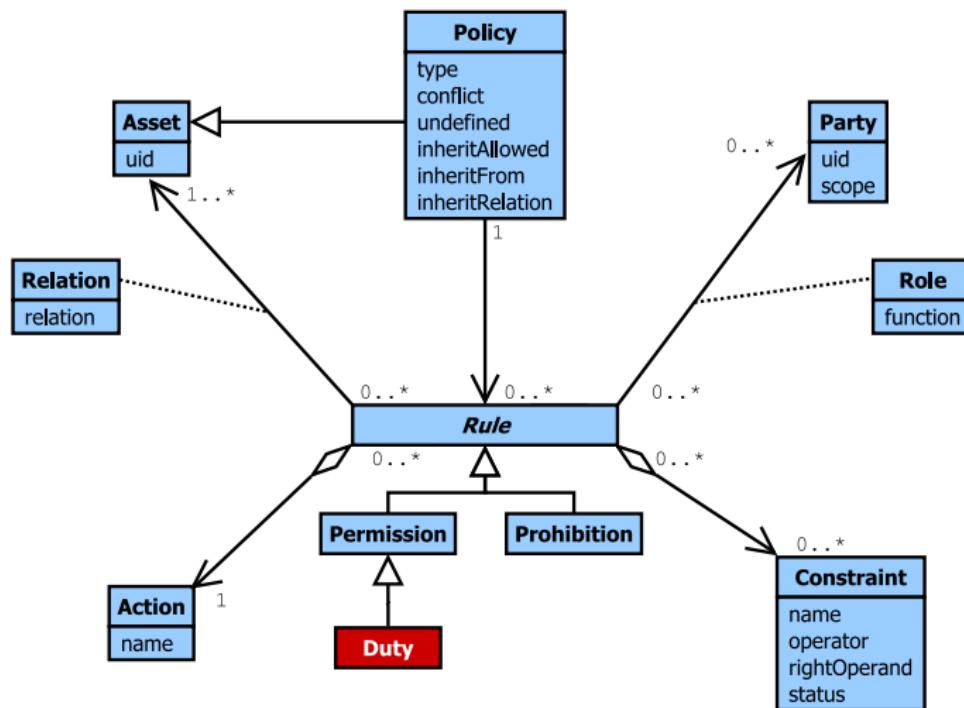
Improving the Core Model



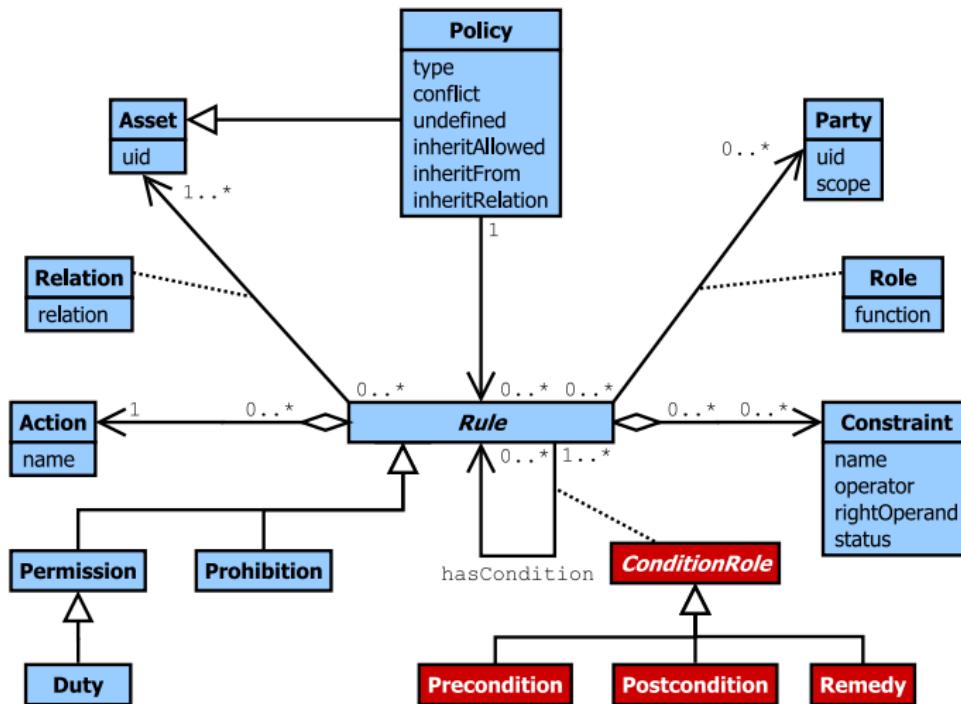
Improving the Core Model



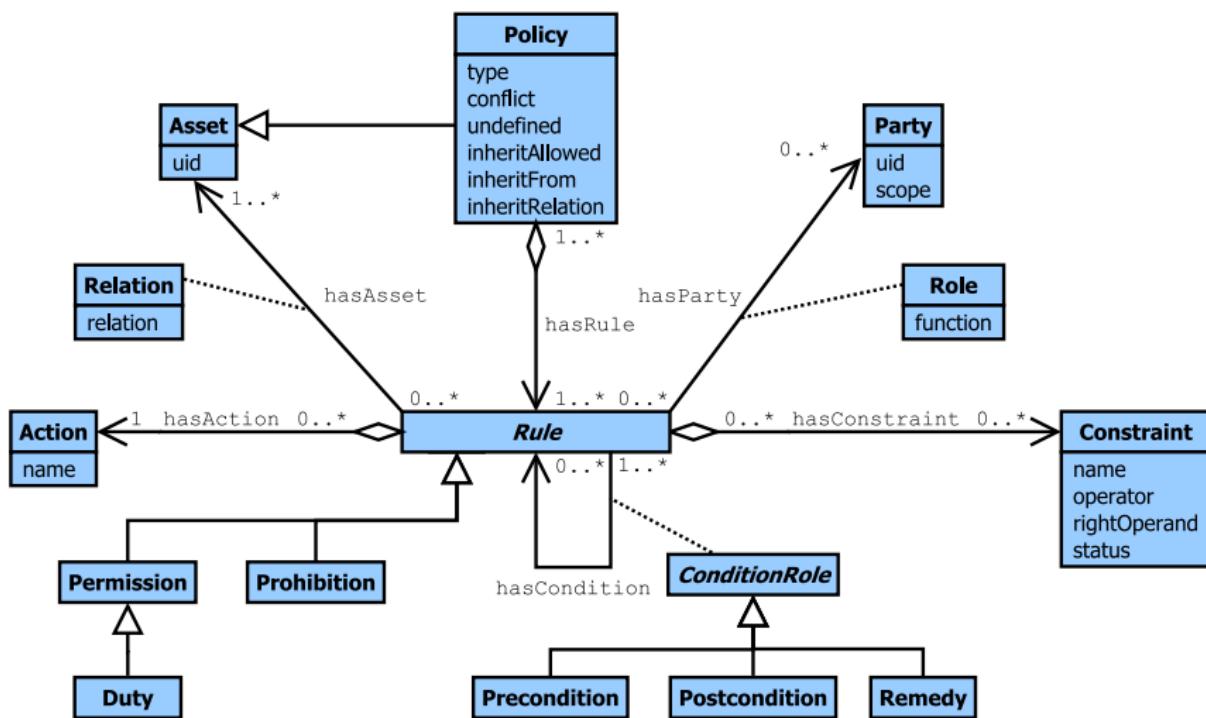
Improving the Core Model



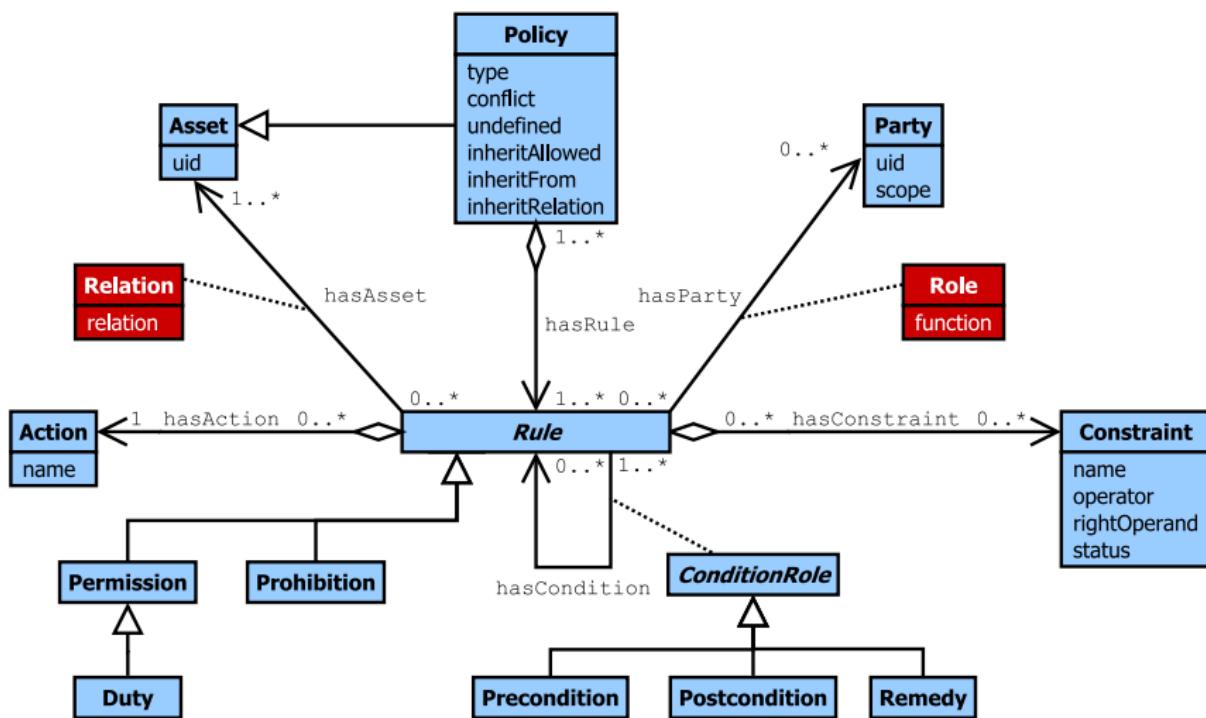
Improving the Core Model



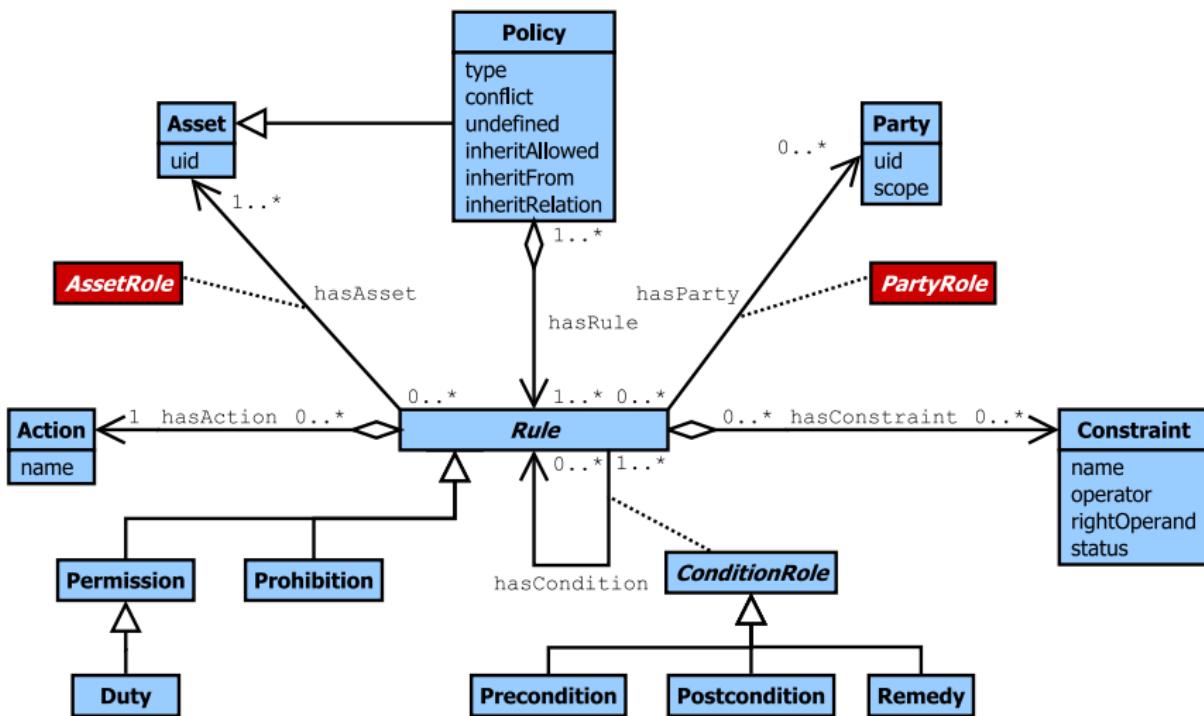
Improving the Core Model



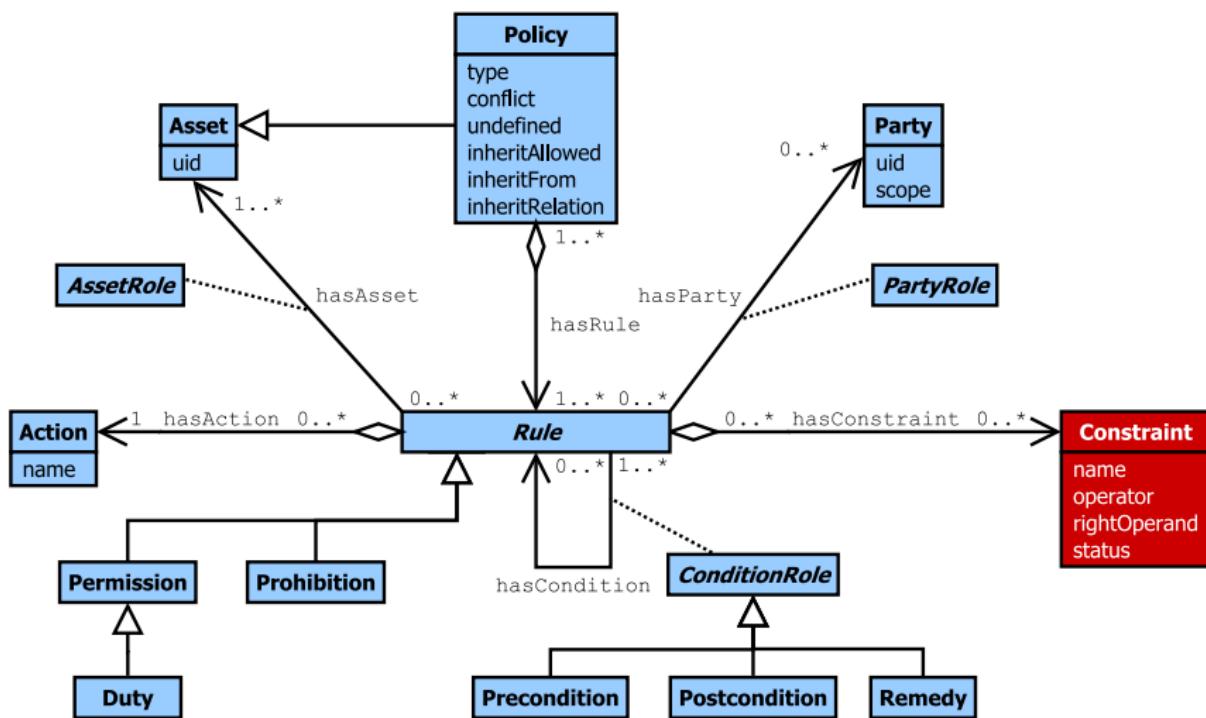
Improving the Core Model



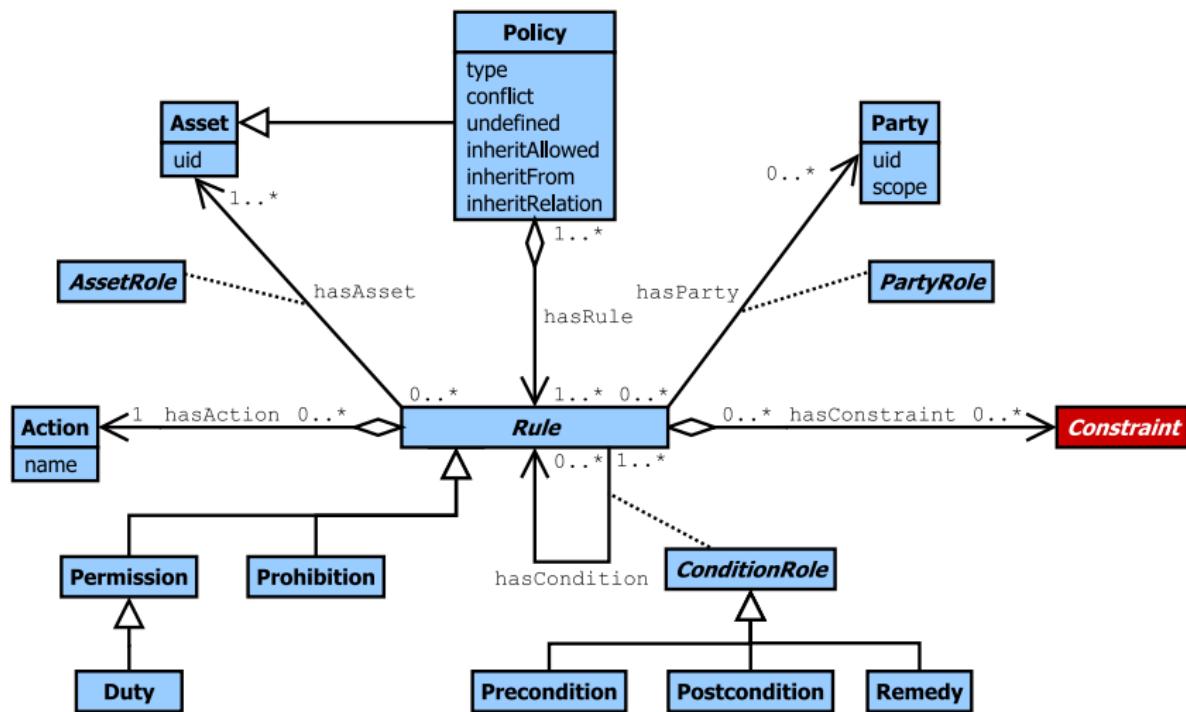
Improving the Core Model



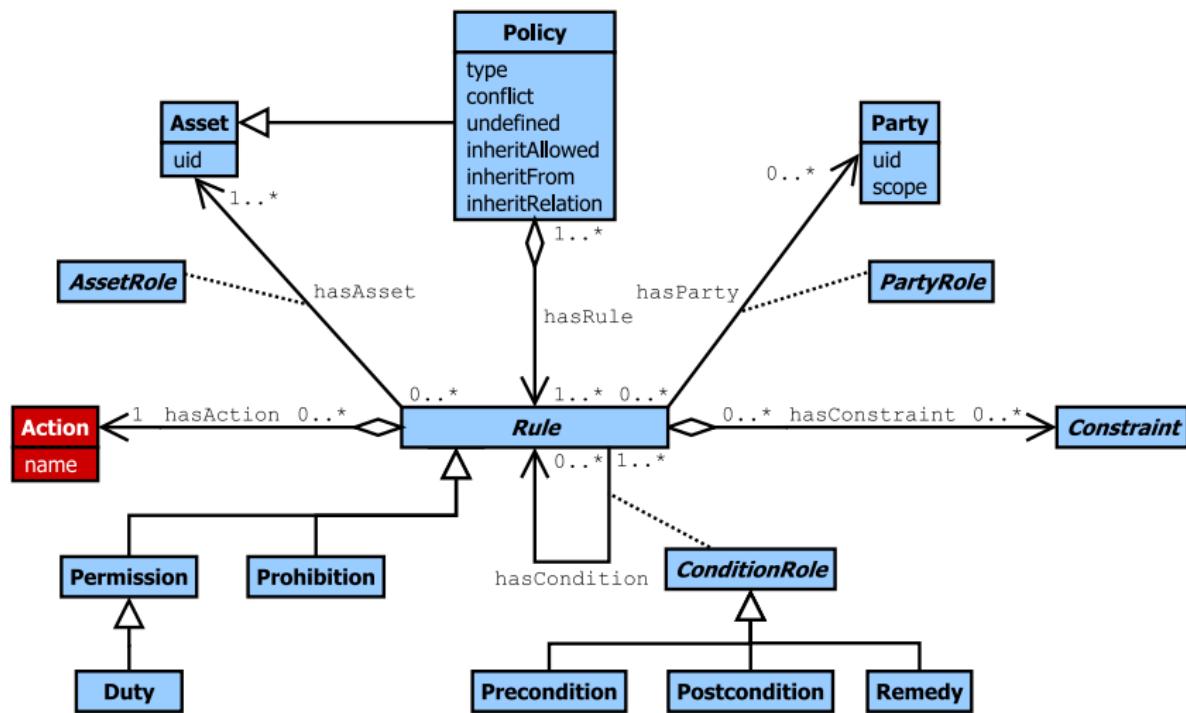
Improving the Core Model



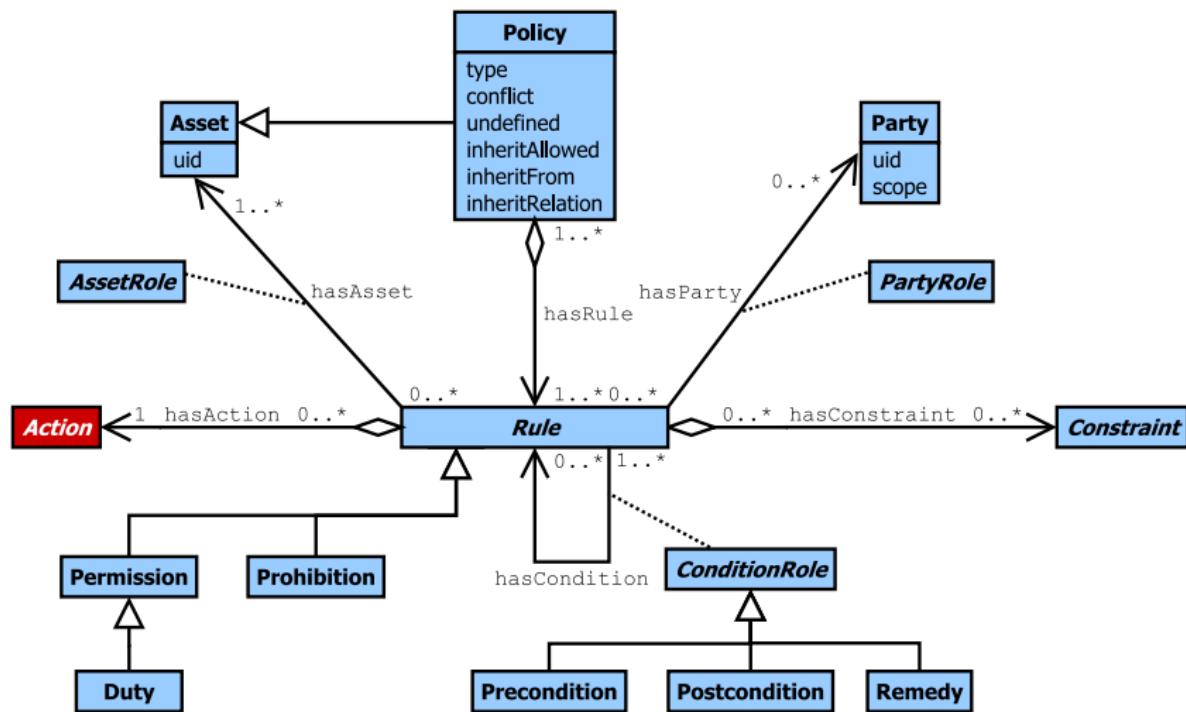
Improving the Core Model



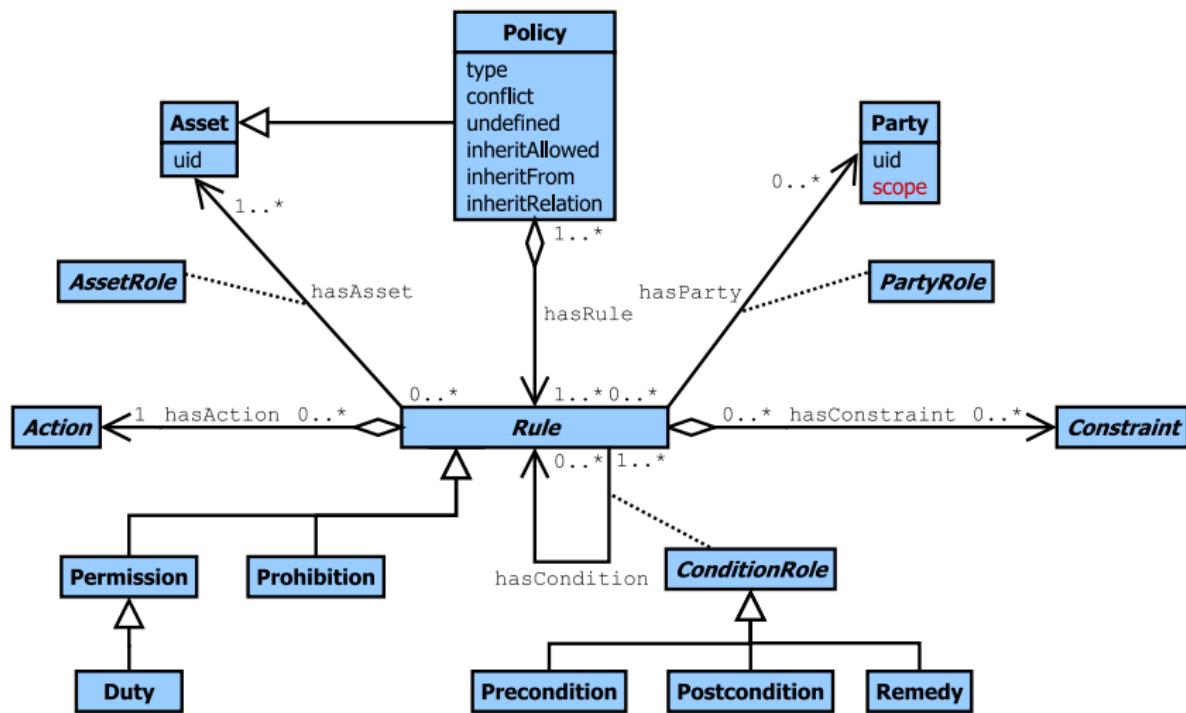
Improving the Core Model



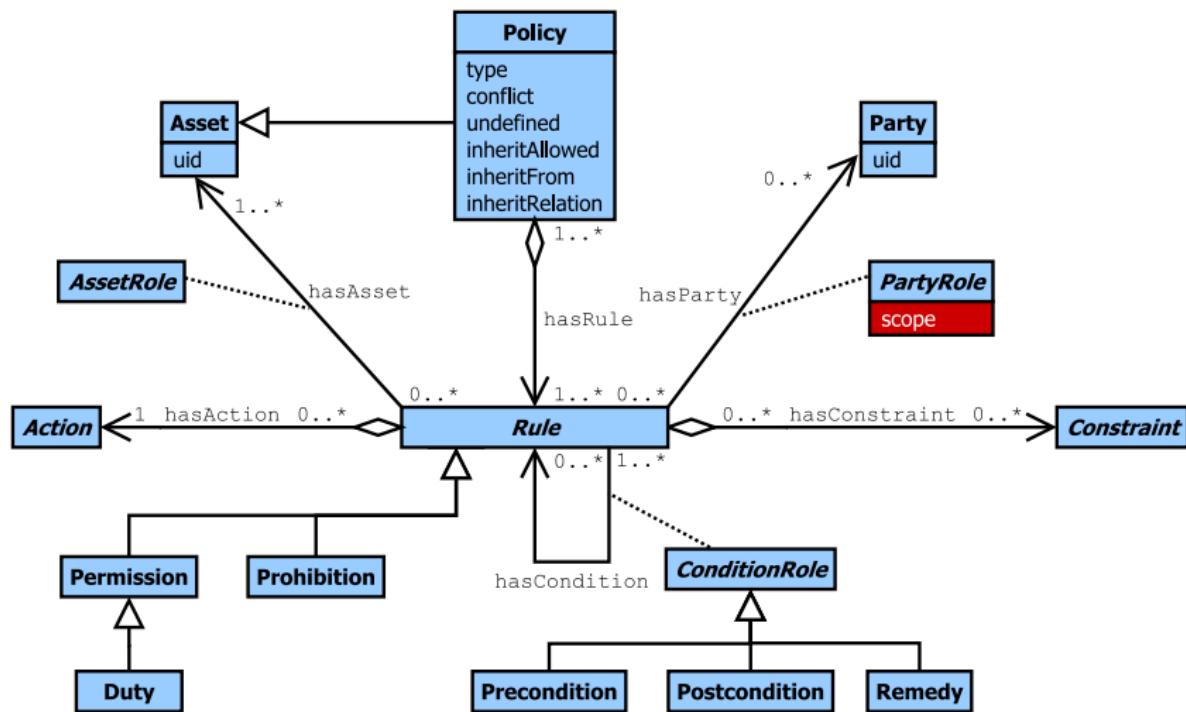
Improving the Core Model



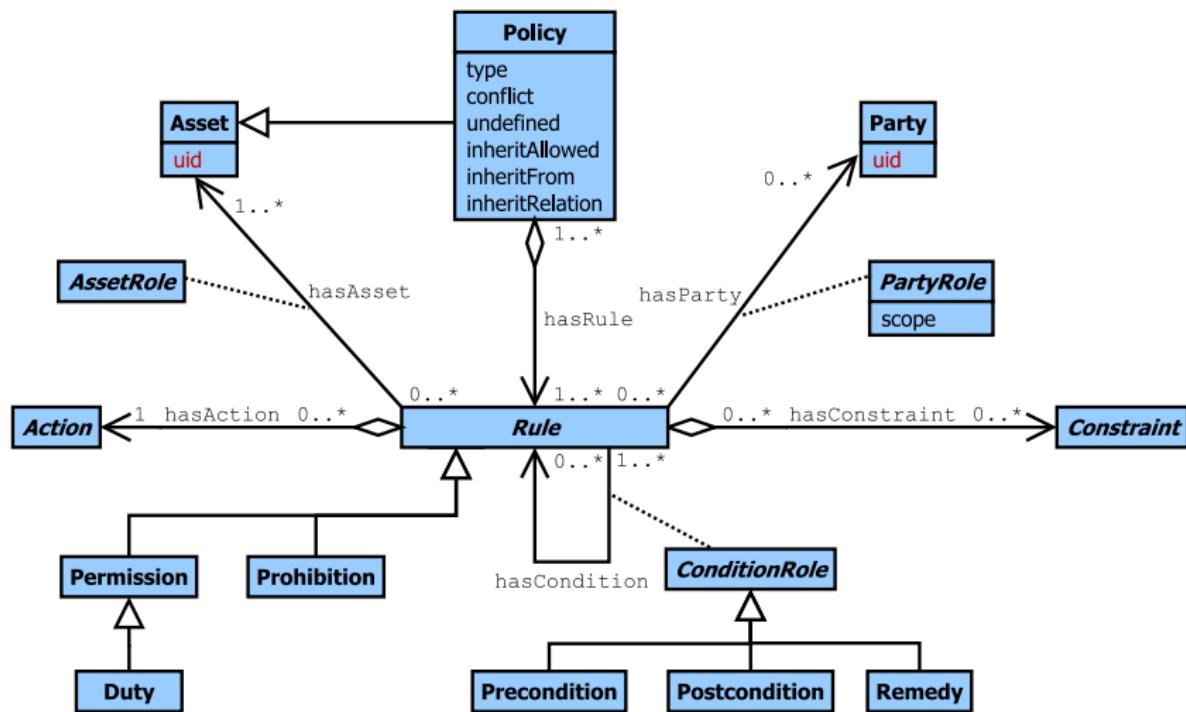
Improving the Core Model



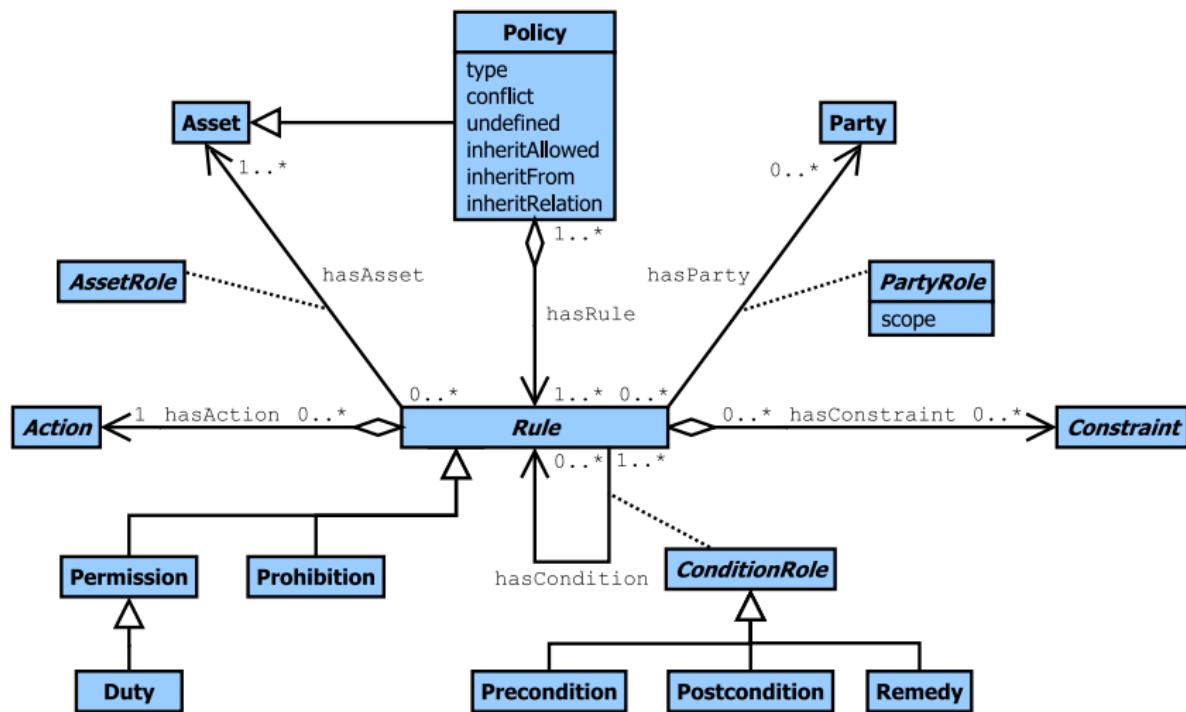
Improving the Core Model



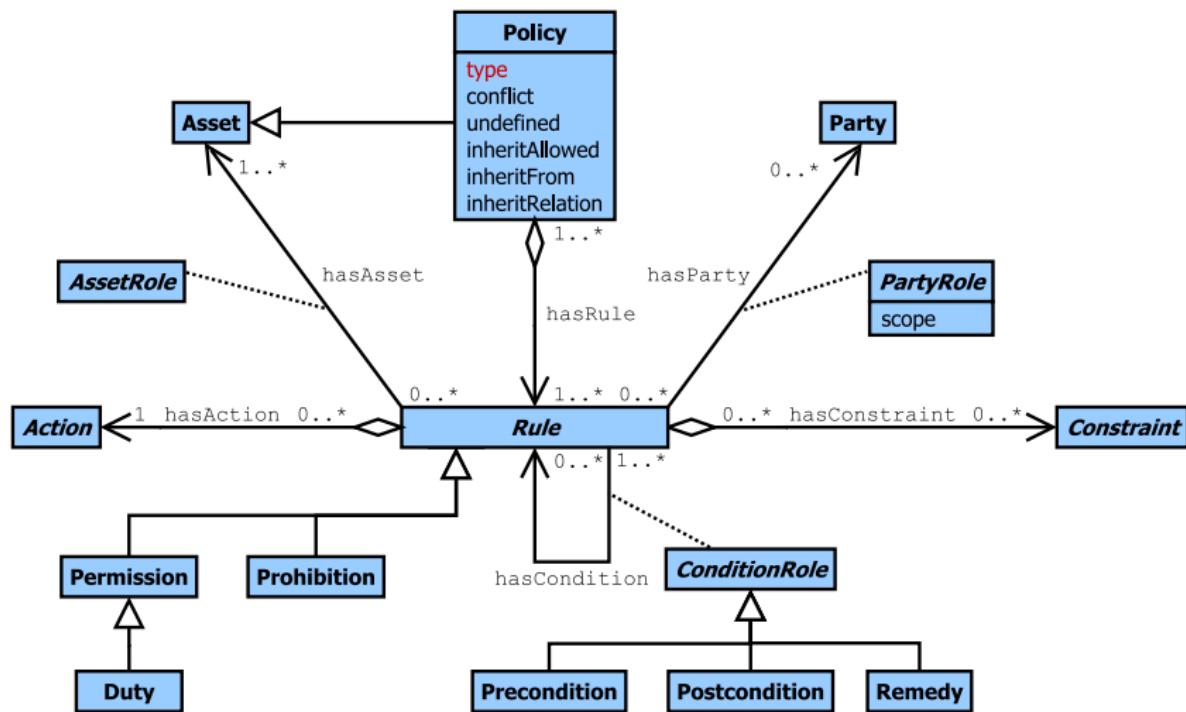
Improving the Core Model



Improving the Core Model

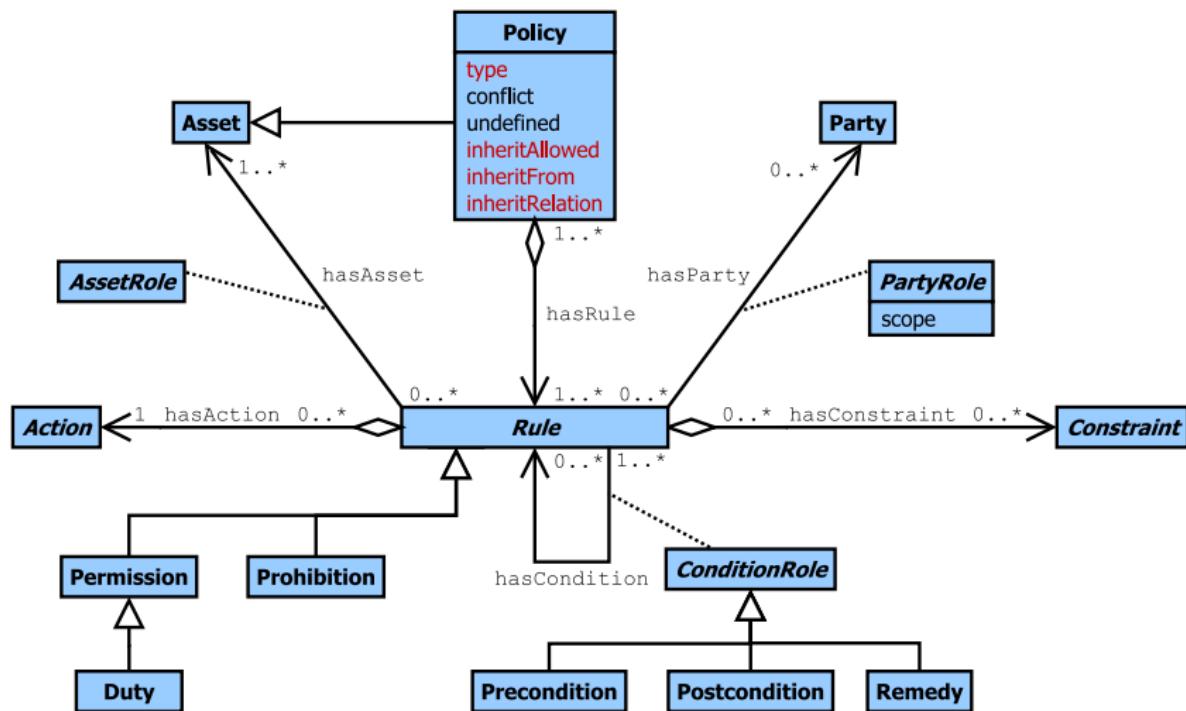


Improving the Core Model

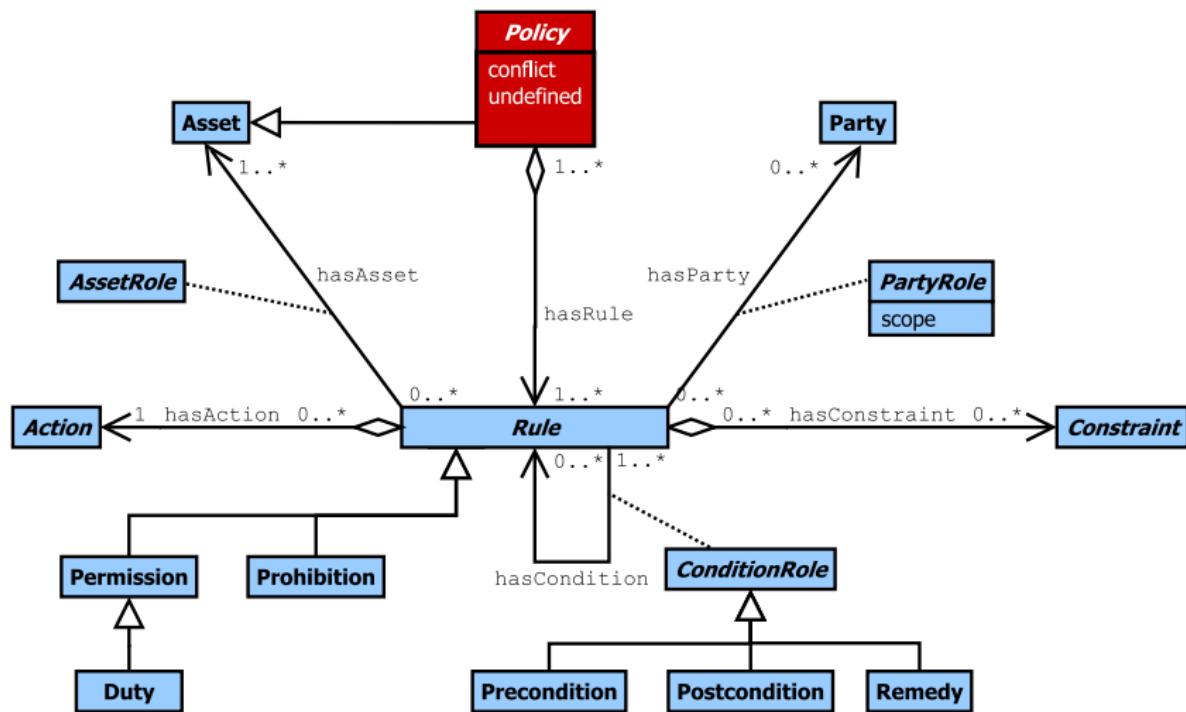




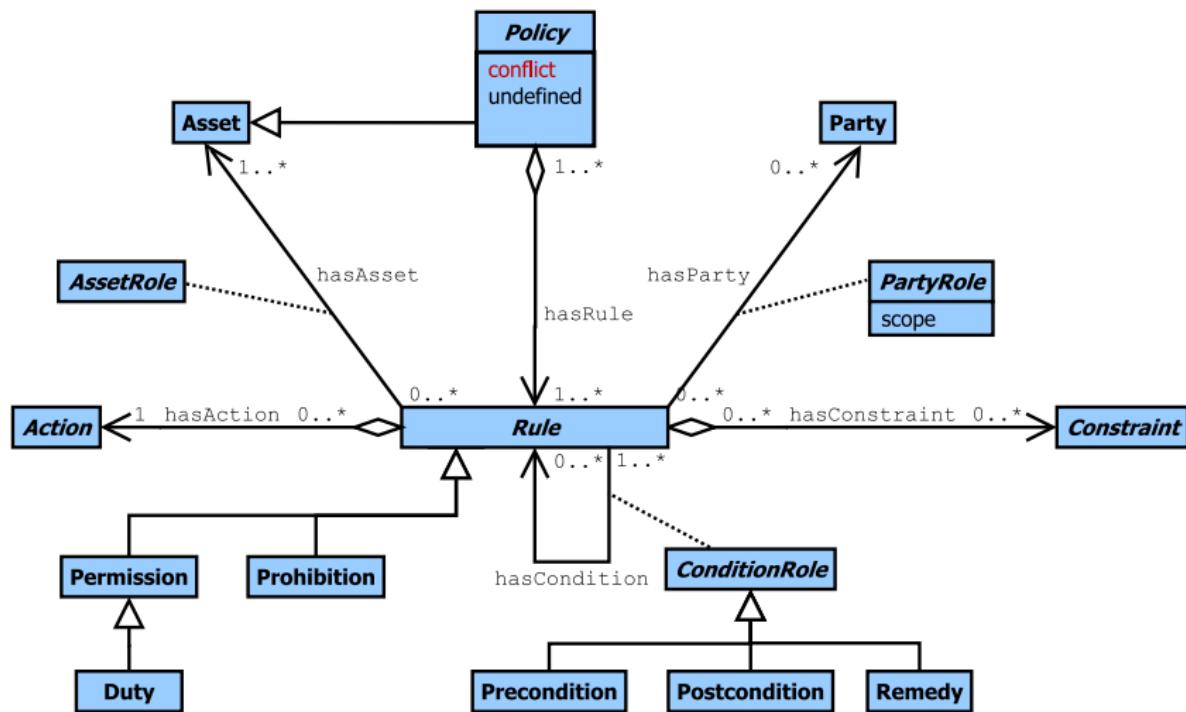
Improving the Core Model



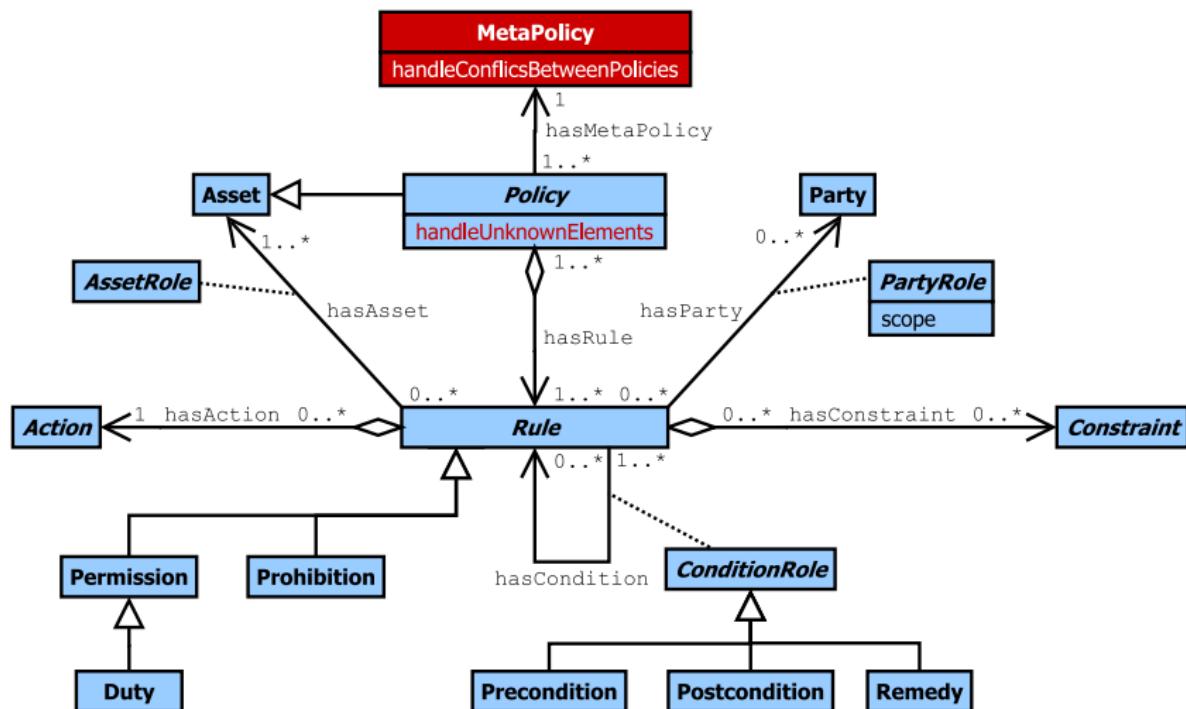
Improving the Core Model



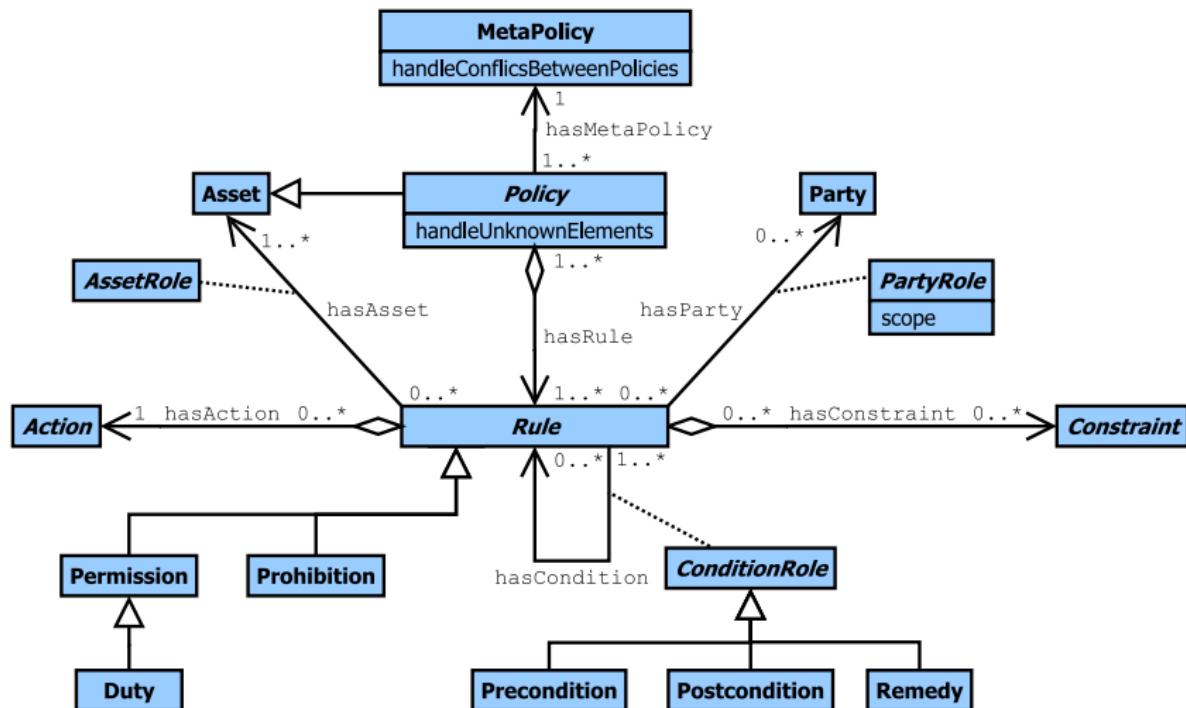
Improving the Core Model



Improving the Core Model



Improved Core Model



Outline

Motivation

Summarizing ODRL

Analyzing ODRL

Improving ODRL

Conclusion

Current Work

Further Work

Work in Progress

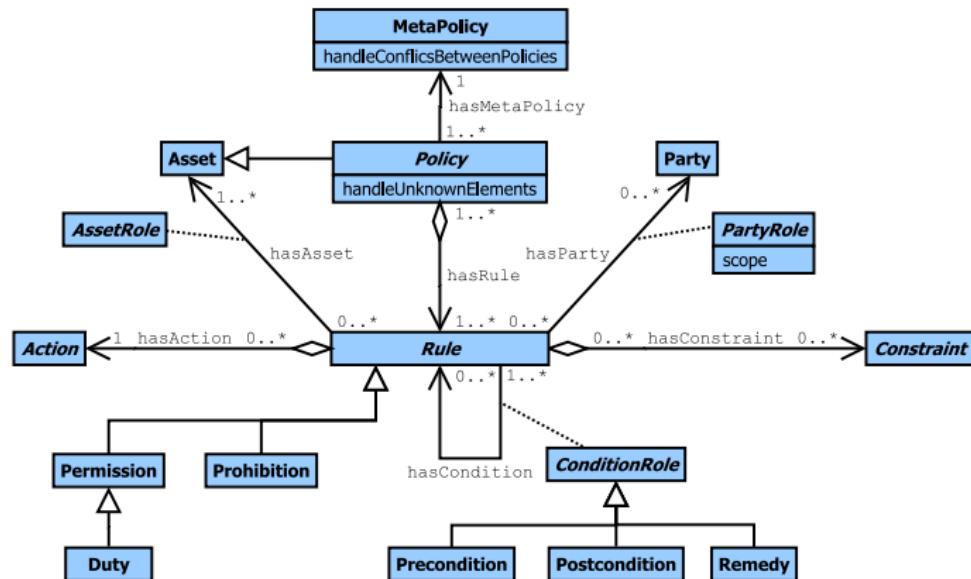
- new Core Model
 - ▶ new entities and attributes
- detailed models for complex entities
 - ▶ Constraint, Action etc.
- encoding as OWL ontology
 - ▶ based on other existing core ontologies

Further Work

- clarify open questions
 - ▶ templates, priorities ...
- test in praxis
 - ▶ editors, complex use cases
- other encodings
 - ▶ XML, JSON ...

Contact

- Stefan Becker stefanbecker@uni-koblenz.de
- Benjamin Hück bhueck@uni-koblenz.de
- Katharina Naujokat knaujokat@uni-koblenz.de
- Arne Fritjof Schmeiser afschmeiser@uni-koblenz.de
- Andreas Kasten andreas.kasten@uni-koblenz.de



Appendix Outline

References

Further Models

References I

-  Nicolas Beck, Stefan Becker, Marcel Heinz, Niklas Hessel, Alexander Klein, Katharina Naujokat, Alexander Philipp, Matthias Querbach, Torsten Schäfer, Arne Fritjof Schmeiser, Irina Schmidt, Alexander Steinmetz, and Martin Westermayer.
ROX - rdfa-based odrl licenses in xhtml web pages, 2012.
<http://userpages.uni-koblenz.de/~aggrimm/rox/>
(accessed 08/09/13).
-  Renato Iannella.
ODRL V2.0 XML Encoding, 2012.
<http://www.w3.org/community/odrl/two/xml/> (accessed: 08/09/13).

References II

-  Renato Iannella and Susanne Guth.
ODRL V2.0 Common Vocabulary, 2012.
<http://www.w3.org/community/odrl/two/vocab/> (accessed: 08/09/12).
-  Renato Iannella, Susanne Guth, Daniel Pähler, and Andreas Kasten.
ODRL V2.0 Core Model, 2012.
<http://www.w3.org/community/odrl/two/model/> (accessed: 08/09/13).

References III

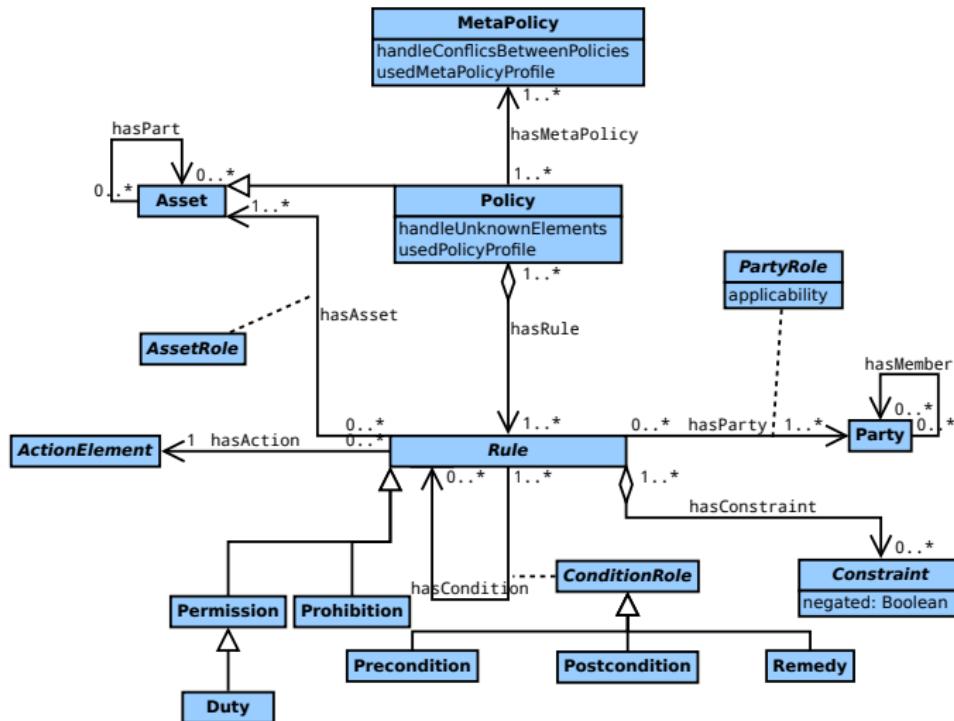
-  Mo McRoberts.
ODRL V2.0 Ontology, 2013.
<http://www.w3.org/community/odrl/work/ontology/>
(accessed: 08/09/13).
-  Jonas Öberg.
ODRL V2.0 JSON Encoding, 2013.
<http://www.w3.org/community/odrl/work/json/> (accessed:
08/09/13).

Appendix Outline

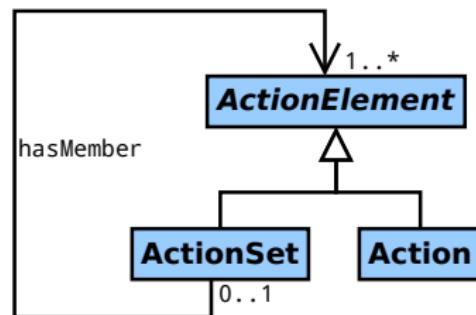
References

Further Models

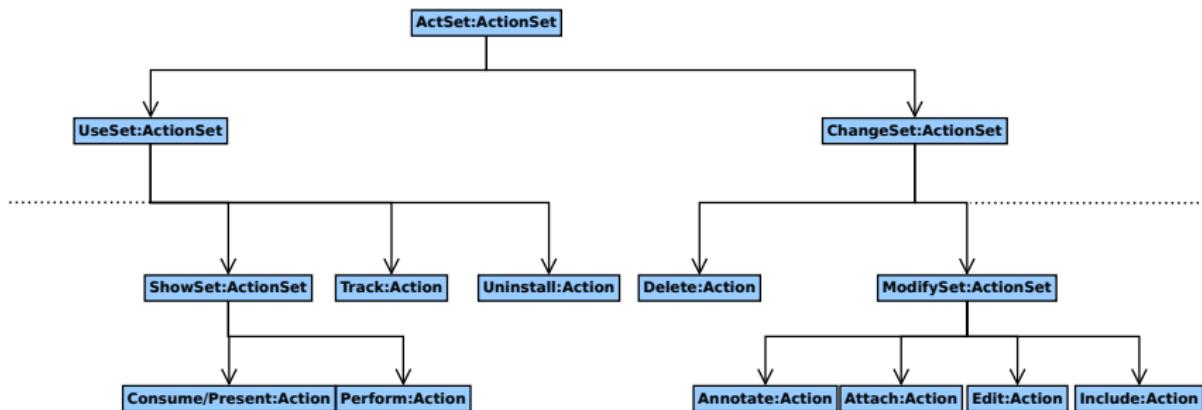
Base Model



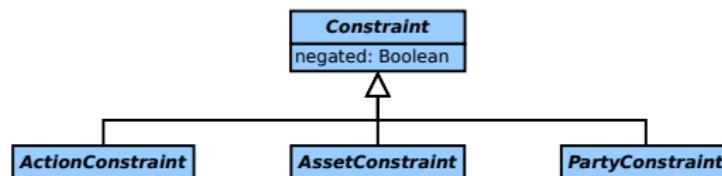
Action Model



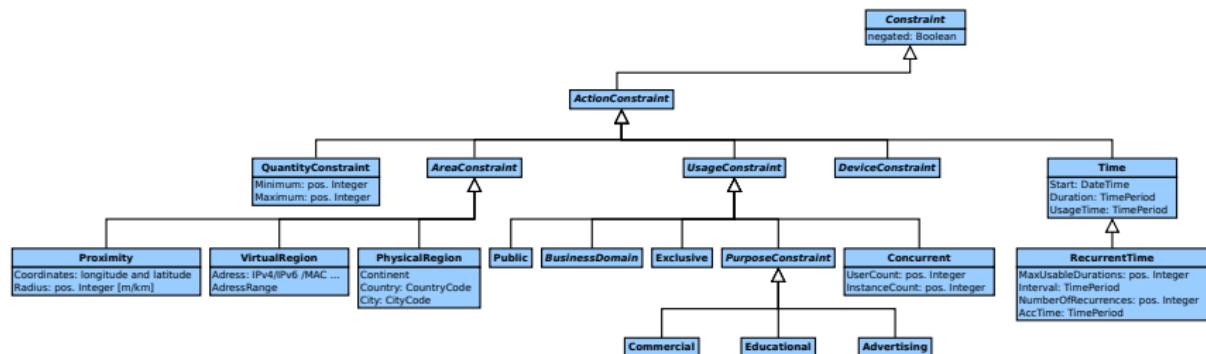
Action Model



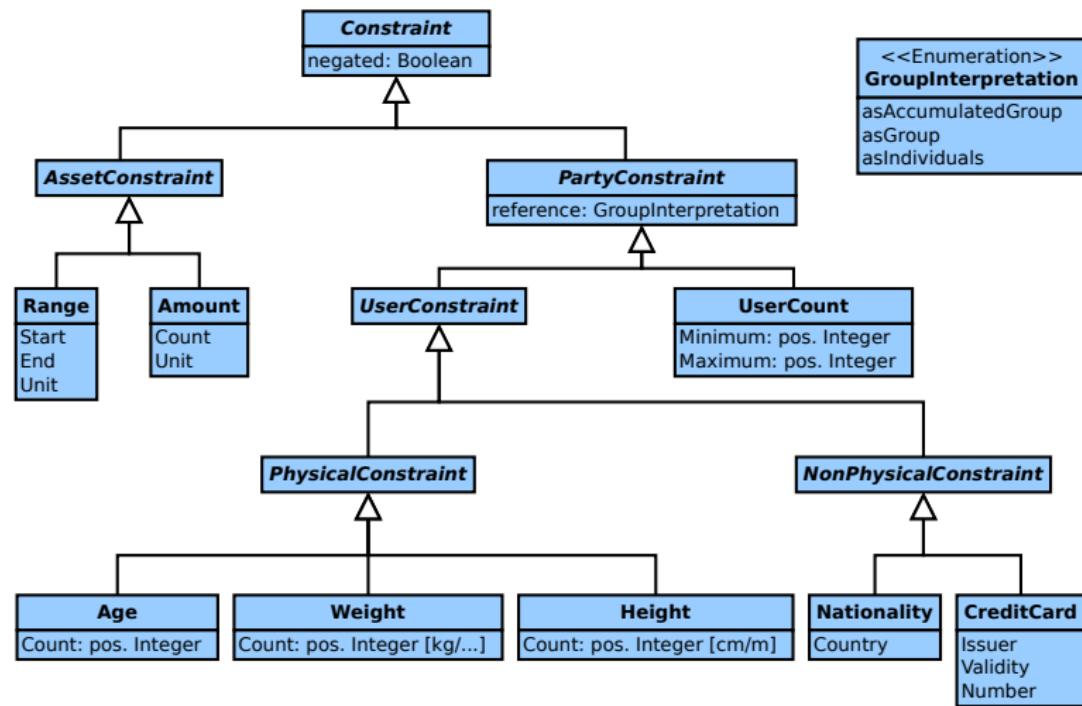
Constraint Model



Constraint Model



Constraint Model



Asset Model

