
OASIS LegalRuleML

RuleML2015

Berlin, *August 2nd, 2015*

OASIS  **LegalXML**

LegalRuleML TC



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Outline

- Introduction to LegalRuleML
 - Motivations, Goals, Principles
 - Design principles
 - LegalRuleML main blocks: meta, context, rules
 - Legal Statements and References
 - Temporal Events and Temporal Situations
 - Deontic
 - Penalty and Reparation
 - Defeasible
 - Alternatives
 - Metadata (Authority, Jurisdiction, Actor, Figure, Roles)
 - Future work

Motivating Example

National Consumer Credit Protection Act 2009:
Section 29

(Prohibition on engaging in credit activities without a licence)

(1) A person must not engage in a credit activity unless the person holds a licence authorising the person to engage in the credit activity.

Civil penalty: 2,000 penalty units.

...

Criminal penalty: 200 penalty units, or 2 years imprisonment, or both.

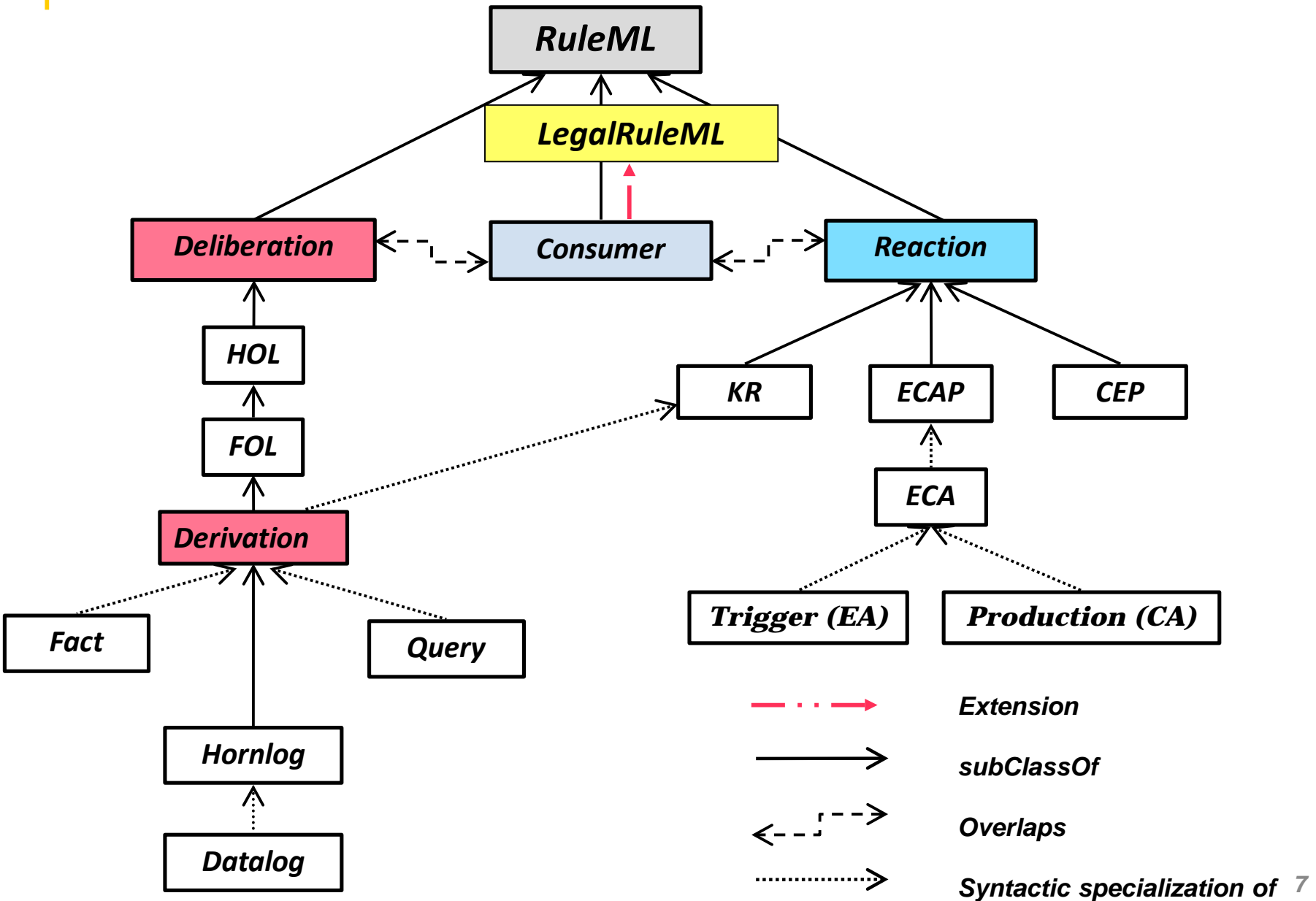
Motivations

- **Legal texts** are the privileged sources for norms, guidelines and rules that often feed different concrete Web applications.
 - **Legislative documents, Contracts, Judgements**
 - **Guidelines** (Soft Law) in eGovernment, eJustice, eLegislation, eHealth, banks, assurances, credit card organizations, Cloud Computing, eCommerce, aviation and security domain etc.
- Proper and expressive conceptual, machine readable models of norms

Goal

- The LegalRuleML TC, set up inside of OASIS at Jan 12, 2012 (www.oasis-open.org) with 25 members, aims to produce a rule language for the legal domain:
 - Based on the legal textual norms
 - Oriented to legal professionals
 - Compact integrated annotation
 - Logic-neutral
 - Flexible and extensible

RuleML Family of Sublanguages



Main Requirements

- Support for modelling different types of statements:
 - Constitutive rules (e.g. definitions)
 - Prescriptive rules (e.g. obligation, permission, etc.)
 - Facts ...
- Implement isomorphism [Bench-Capon and Coenen, 1992]
- Implement defeasibility [Gordon, 1995, Prakken and Sartor, 1996, Sartor, 2005]
- Model legal procedural rules

LegalRuleML Design Principles (1/2)

Multiple Semantic Annotations:

- ❑ A legal rule may have multiple semantic annotations where each annotation can represent a different legal interpretation.
- ❑ Each such annotation can appear in a separate annotation block as internal or external metadata.

Tracking the LegalRuleML Creators:

- ❑ As part of the provenance information, a LegalRuleML document or any of its fragments can be associated with its creators.

Linking Rules and Provisions:

- LegalRuleML includes a mechanism, based on IRI, that allows N:M relationships among the rules and the textual provisions
 - avoiding redundancy in the IRI definition and errors in the associations
 - LegalRuleML is independent respect any Legal Document XML standard, IRI naming convention

LegalRuleML Design Principles (2/2)

Temporal Management:

- LegalRuleML must represent these temporal issues in unambiguous fashion

Formal Ontology Reference:

- LegalRuleML is independent from any legal ontology and logic framework.

LegalRuleML is based on RuleML:

- LegalRuleML reuses and extends concepts and syntax of RuleML.

Mapping to Rdf:

- LegalRuleML metadata can be expressed in RDF for implementing Linked Data model.

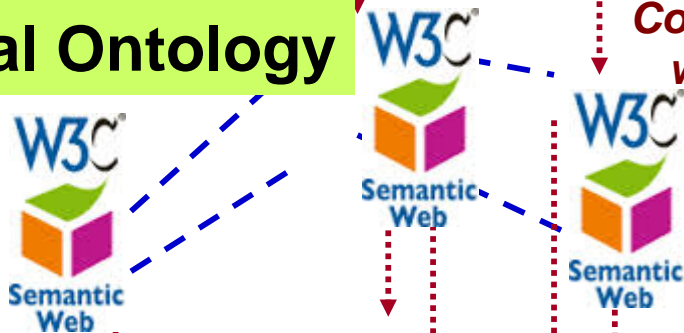
Open Rule Architecture

Legal document in XML



**Combine rules with other dataset
Interoperability and interchange
Retrieve rules and documents**

Legal Ontology



**Connection
with URI**

Extraction in RDF

Linked Open Data

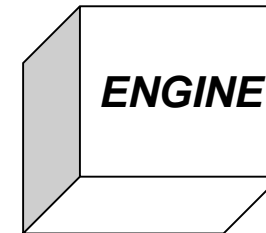


Logic Rules



**Connection
with URI**

Application Level



Language Design Principles

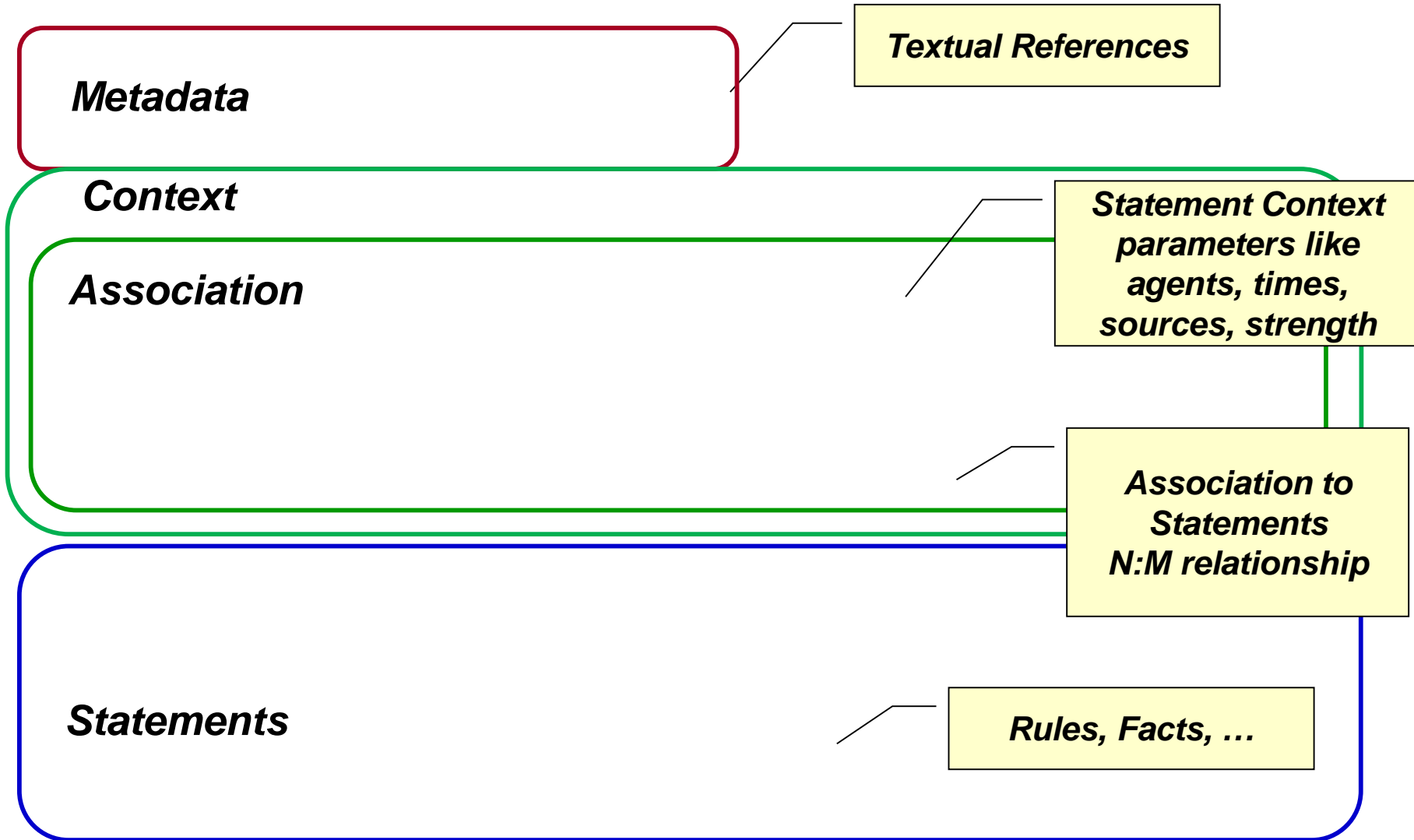
- **Minimality**, which requires that the language provides only a small set of needed language constructs.
- **Referential transparency**, which means that the same language construct always expresses the same semantics regardless of the context in which it is used. E.g., obligation
- **Orthogonality**, where language constructs are independent of each other, thus permitting their systematic combination. E.g., jurisdiction and authority
- **Pattern-based design**, where design patterns are a distillation of common wisdom in organizing the structural parts, the grammar and the constraints of a language. E.g., Associations is a collection of Association.
- **Metamodel based**, where the metamodel for a language, also defines the vocabulary for describing the language, including syntactic categories.

RuleML/LegalRuleML XML Design principle

Node and Edge Elements

- There is a distinction between *type* (also called *node*) elements and *role* (also called *edge*) elements, the element name of the
- **Node** starts with an upper case letter `<Jurisdiction>`.
- **edge** with a lower case letter `<hasJurisdiction>`.
- Node elements correspond to classes of the metamodel while edge elements correspond to relationships between members of these classes.

Document Structure: Metadata, Contexts, Statements



LegalRuleML Approach

Context of rule1

Context of rule2

112 STAT. 2860

PUBLIC LAW 105-304—OCT. 28, 1998

Digital Millennium Copyright Act

Public Law 105-304
105th Congress

An Act

Oct. 28, 1998
[H.R. 2281]

To amend title 17, United States Code, to implement the World Intellectual Property Organization Copyright Treaty and Performances and Phonograms Treaty, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Digital Millennium Copyright Act".

SEC. 2. TABLE OF CONTENTS.

Sec. 1. Short title.
Sec. 2. Table of contents.

TITLE I—WIPO TREATIES IMPLEMENTATION

Sec. 101. Short title.
Sec. 102. Technical amendments.
Sec. 103. Copyright protection systems and copyright management information.
Sec. 104. Evaluation of impact of copyright law and amendments on electronic commerce and technological development.
Sec. 105. Effective date.

TITLE II—ONLINE COPYRIGHT INFRINGEMENT LIABILITY LIMITATION

Sec. 201. Short title.
Sec. 202. Limitations on liability for copyright infringement.
Sec. 203. Effective date.

TITLE III—COMPUTER MAINTENANCE OR REPAIR COPYRIGHT EXEMPTION

Sec. 301. Short title.
Sec. 302. Limitations on exclusive rights; computer programs.

TITLE IV—MISCELLANEOUS PROVISIONS

Sec. 401. Provisions Relating to the Register of Copyrights.
Sec. 402. Ephemeral recordings.
Sec. 403. Limitations on exclusive rights.
Sec. 404. Exemption for libraries and archives.
Sec. 405. Scope of exclusive rights.
Sec. 406. Assumption of contracts.
Sec. 407. Effective date.

TITLE V—PROTECTION OF CERTAIN ORIGINAL DESIGNS

Sec. 501. Short title.
Sec. 502. Protection of certain original designs.
Sec. 503. Conforming amendments.
Sec. 504. Joint study of the effect of this title.
Sec. 505. Effective date.

```
<ruleml:Rule key=":rule1">  
  <ruleml:if> ...</ruleml:if>  
  ...  
  <ruleml:then>...</ruleml:then>  
</ruleml:Rule>...
```

```
<ruleml:Rule key=":rule2">  
  <ruleml:if> ...</ruleml:if>  
  ...  
  <ruleml:then>...</ruleml:then>  
</ruleml:Rule>...
```

Multiple rules as (alternative) interpretations of the same text

LegalRuleML Approach

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Sec. 202. Limitations on liability for copyright infringement.
Sec. 203. Effective date.

TITLE III—COMPUTER MAINTENANCE OR REPAIR COPYRIGHT EXEMPTION

Sec. 301. Short title.
Sec. 302. Limitations on exclusive rights; computer programs.

TITLE IV—MISCELLANEOUS PROVISIONS

Sec. 401. Provisions Relating to the Copyright Register.
Sec. 402. Ephemeral recordings.
Sec. 403. Limitations on exclusive rights; digital rights management.
Sec. 404. Exemption for libraries and archives.
Sec. 405. Scope of exclusive rights in sound recordings; ephemeral recordings.
Sec. 406. Assumption of contractual obligations related to transfers of rights in motion pictures.
Sec. 407. Effective date.

TITLE V—PROTECTION OF CERTAIN ORIGINAL DESIGNS

Sec. 501. Short title.
Sec. 502. Protection of certain original designs.
Sec. 503. Conforming amendments.
Sec. 504. Joint study of the effect of this title.
Sec. 505. Effective date.

Digital
Millennium
Copyright Act.
17 USC 101 note.

Context of rule3

```
<ruleml:Rule key=":rule3">  
  <ruleml:if> ...</ruleml:if>  
  ...  
  <ruleml:then>...</ruleml:then>  
</ruleml:Rule>...
```

Multiple sources for the same rule

LegalRuleML Approach

112 STAT. 2860

PUBLIC LAW 105-304—OCT. 28, 1998

Digital Millennium Copyright Act

Public Law 105-304
105th Congress

An Act

Oct. 28, 1998
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Sec. 103. Copyright protection systems and copyright management information.
Sec. 104. Evaluation of impact of copyright law and amendments on electronic commerce and technological development.
Sec. 105. Effective date.

TITLE II—ONLINE COPYRIGHT INFRINGEMENT LIABILITY LIMITATION

Sec. 201. Short title.
Sec. 202. Limitations on liability for copyright infringement.
Sec. 203. Effective date.

TITLE III—COMPUTER MAINTENANCE OR REPAIR COPYRIGHT EXEMPTION

Sec. 301. Short title.
Sec. 302. Limitations on exclusive rights; computer programs.

TITLE IV—MISCELLANEOUS PROVISIONS

Sec. 401. Pro...
Sec. 402. Epl...
Sec. 403. Lin...
Sec. 404. Exemption for libraries and archives.
Sec. 405. Scope of exclusive rights in sound recordings; ephemeral recordings.
Sec. 406. Assumption of contractual obligations related to transfers of rights in motion pictures.
Sec. 407. Effective date.

TITLE V—PROTECTION OF CERTAIN ORIGINAL DESIGNS

Sec. 501. Short title.
Sec. 502. Protection of certain original designs.
Sec. 503. Conforming amendments.
Sec. 504. Joint study of the effect of this title.
Sec. 505. Effective date.

Digital
Millennium
Copyright Act.
17 USC 101 note.

Context 1 of rule4

Context 2 of rule4

Context 3 of rule4

```
<ruleml:Rule key=":rule4">  
  <ruleml:if> ...</ruleml:if>  
  ...  
  <ruleml:then>...</ruleml:then>  
</ruleml:Rule>...
```

Multiple contexts (interpretations) for the same rule

LegalRuleML Approach

112 STAT. 2860 PUBLIC LAW 105-304—OCT. 28, 1998

112 STAT. 2860 PUBLIC LAW 105-304—OC **2013**

Digital Millennium Copyright Act NEW VERSION

Public Law 105-304
105th Congress

An Act

Oct. 28, 1998
[H.R. 2281]

To amend title 17, United States Code, to implement the World Intellectual Property Organization Copyright Treaty and Performances and Phonograms Treaty, and for other purposes.

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Sec. 103. Copyright protection systems and copyright management information.
Sec. 104. Evaluation of impact of copyright law and amendments on commerce and technological development.
Sec. 105. Effective date.

TITLE II—ONLINE COPYRIGHT INFRINGEMENT LIABILITY LIMITATION

Sec. 201. Short title.
Sec. 202. Limitations on liability for copyright infringement.
Sec. 203. Effective date.

TITLE III—COMPUTER MAINTENANCE OR REPAIR COPYRIGHT EXEMPTION

Sec. 301. Short title.
Sec. 302. Limitations on exclusive rights; computer programs.

TITLE IV—MISCELLANEOUS PROVISIONS

Sec. 401. Provisions Relating to the Commissioner of Patents and Trademarks and the Register of Copyrights.
Sec. 402. Ephemeral recordings.
Sec. 403. Limitations on exclusive rights; distance education.
Sec. 404. Exemption for libraries and archives.
Sec. 405. Scope of exclusive rights in sound recordings; ephemeral recordings.
Sec. 406. Assumption of contractual obligations related to transfers of rights in motion pictures.
Sec. 407. Effective date.

TITLE V—PROTECTION OF CERTAIN ORIGINAL DESIGNS

Sec. 501. Short title.
Sec. 502. Protection of certain original designs.
Sec. 503. Conforming amendments.
Sec. 504. Joint study of the effect of this title.
Sec. 505. Effective date.

Context T1 of rule2

```
<ruleml:Rule key=":rule2">  
  <ruleml:if> ...</ruleml:if>  
  ...  
  <ruleml:then>...</ruleml:then>  
</ruleml:Rule>...
```

Versioning of the rules according
to updates of the law

Context T2 of rule2-v2

```
<ruleml:Rule key=":rule2-v2">  
  <ruleml:if> ...</ruleml:if>  
  ...  
  <ruleml:then>...</ruleml:then>  
</ruleml:Rule>...
```

LegalRuleML main blocks: Metadata

Metadata

Legal Sources

References

Agents, Figures

Authority

Time Instants

Temporal Characteristics

Jurisdiction

Role

LegalRuleML main blocks: Statements

Metadata

Legal Sources

References

Agents, Figures

Authority

Time Instants

Temporal Characteristics

Jurisdiction

Role

```
<ruleml:Rule key=":rule1">  
  <ruleml:if> ...</ruleml:if>  
  <ruleml:then>...</ruleml:then>  
</ruleml:Rule>...
```

```
<ruleml:Rule key=":rule2">  
  <ruleml:if> ...</ruleml:if>  
  <ruleml:then>...</ruleml:then>  
</ruleml:Rule>...
```

LegalRuleML main blocks: Context

Metadata

Legal Sources

References

Agents, Figures

Authority

Time Instants

Temporal Characteristics

Jurisdiction

Role

Context
association of
metadata with
statements

Context
different author
association of
metadata with
statements

Context different
time and
jurisdiction
association of
metadata with
rules

Context
association of
alternative
interpretations of
the same text

```
<ruleml:Rule key=":rule1">  
  <ruleml:if> ...</ruleml:if>  
  <ruleml:then>...</ruleml:then>  
</ruleml:Rule>...
```

```
<ruleml:Rule key=":rule2">  
  <ruleml:if> ...</ruleml:if>  
  <ruleml:then>...</ruleml:then>  
</ruleml:Rule>...
```

Document Structure: Metadata, Contexts, Statements

```
<lrml:LegalRuleML>
```

```
<lrml:References>  
  <Reference> ...  
</lrml:References>
```

Textual References

```
...  
<lrml:Context key=":ruleInfo1-v2">
```

*Statement Context
parameters like
agents, times,
sources*

```
  <lrml:Association>  
    <lrml:appliesSource keyref=":sec2.1-list1-itm31-  
par1-v2"/>  
    <lrml:toTarget keyref=":rulebase1-v2"/>  
  </lrml:Association>  
</lrml:Context>
```

*Association to
Statements
N:M relationship*

```
<lrml:hasStatements key=":rulebase-v2">  
  <lrml:ConstitutiveStatement key=":rule1a">  
    <ruleml:if> ...</ruleml:if>  
    <ruleml:then>... </ruleml:then>  
  </lrml:ConstitutiveStatement>  
</lrml:hasStatements>...  
</lrml:LegalRuleML>
```

Statements

LegalRuleML main blocks

Metadata

Legal Sources

References

Agents

Authority

Time Instants

Temporal Characteristics

Jurisdiction

Role

Context

bridge between metadata and rules

interpretation of rules

```
<ruleml:Rule key=":rule1">  
  <ruleml:if> ...</ruleml:if>  
  <ruleml:then>... </ruleml:then>  
</ruleml:Rule>...
```

Legal Statements and References (2/2)

```
<lrml:LegalSources>
```

URI

```
<lrml:LegalSource key=":ref1"
```

```
  sameAs="http://www.law.cornell.edu/uscode  
  /text/17/504#psection-1"/>
```

```
</lrml:LegalSources>
```

```
<lrml:References>
```

Non-URI

```
<lrml:Reference refersTo=":ref2"
```

```
  refID="/us/USCode/eng@/main#title17-sec504-  
  clsc-pnt1" refIDSystemName="AkomaNtoso2.0-  
  2012-10"/>
```

```
</lrml:References>
```


Temporal Events and Temporal Situations

```
<lrml:TimeInstants>
  <ruleml:Time key=":t1">
    <ruleml:Data xsi:type="xs:date"
      >1978-01-01</ruleml:Data>
  </ruleml:Time>
</lrml:TimeInstants>
```

Event that define the validity of the rules

```
<lrml:TemporalCharacteristics key=":tblock1">
  <lrml:TemporalCharacteristic>
    <lrml:forRuleStatus iri="status:Efficacious"/>
    <lrml:hasStatusDevelopment iri="dev:Starts"/>
    <lrml:atTimeInstant keyref=":t1"/>
  </lrml:TemporalCharacteristic>
  <lrml:TemporalCharacteristic>
    <lrml:forRuleStatus iri="status:Efficacious"/>
    <lrml:hasStatusDevelopment iri="dev:End"/>
    <lrml:atTimeInstant keyref=":t2"/>
  </lrml:TemporalCharacteristic>
</lrml:TemporalCharacteristics>
```

*Type of event:
In force
Efficacy*

LegalRuleML main blocks: rules

Metadata

Legal Sources

References

Agents

Authority

Time Instants

Temporal Characteristics

Jurisdiction

Role

Context

bridge between metadata and rules

interpretation of rules

```
<ruleml:Rule key=":rule1">  
  <ruleml:if> ...</ruleml:if>  
  <ruleml:then>...</ruleml:then>  
</ruleml:Rule>...
```

Example

National Consumer Credit Protection Act 2009:
Section 29

(Prohibition on engaging in credit activities without a licence)

(1) A person must not engage in a credit activity unless the person holds a licence authorising the person to engage in the credit activity.

Civil penalty: 2,000 penalty units.

...

Criminal penalty: 200 penalty units, or 2 years imprisonment, or both.

Deontic operators

Obligation +: a Deontic Specification for a state, an act, or a course of action to which a Bearer is legally bound, and if it is not achieved or performed results in a Violation.

Prohibition +: a Deontic Specification for a state, an act, or a course of action to which a Bearer is legally bound, and if it is achieved or performed results in a Violation.

Permission +: a Deontic Specification for a state, an act, or a course of action where the Bearer has no Obligation or Prohibition to the contrary.

Right +: a Deontic Specification that gives a Permission to a party (the Bearer) and implies there are Obligations or Prohibitions on other parties (the AuxiliaryParty) such that the Bearer can (eventually) exercise the Right.

Deontic operators

Obligation

Prohibition

Permission

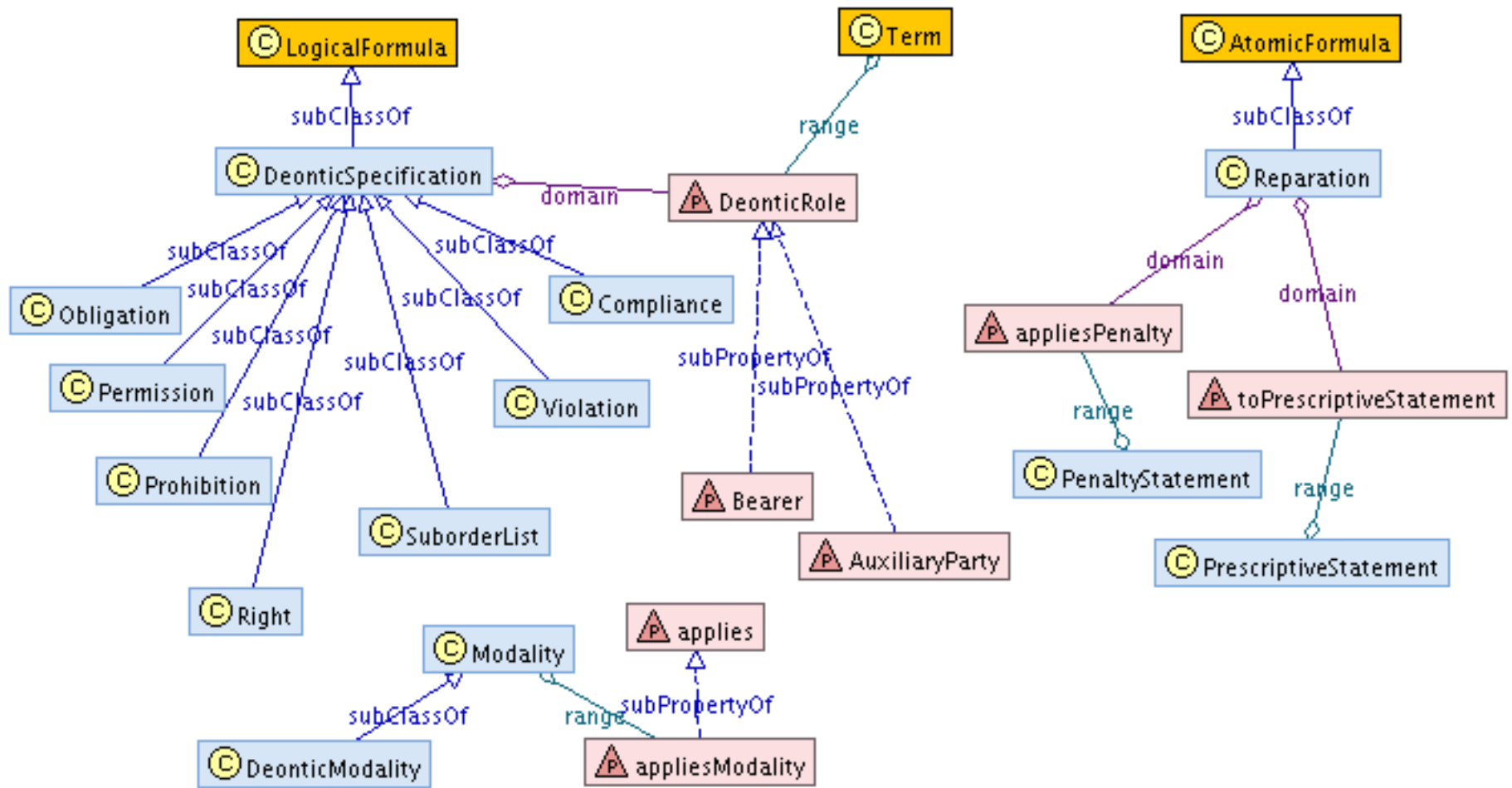
Right

A person must not engage in a credit activity. **Prohibition**

A person who has a financial licence may engage in a credit activity. **Permission**

Metamodel in RDFS

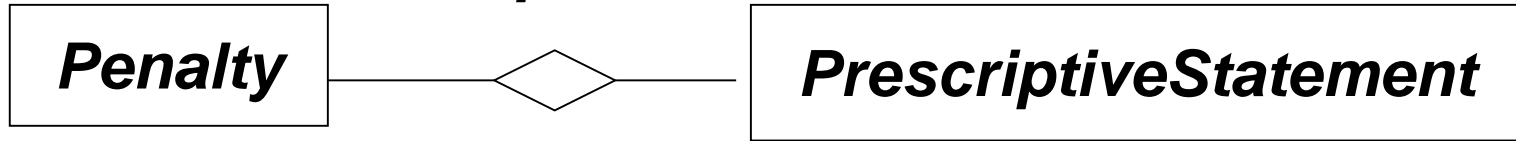
Partial Metamodel for Deontic



- LegalRuleML classes are shown with blue fill, LegalRuleML properties with pink fill, RuleML classes with orange fill

Penalty and Reparation

Reparation

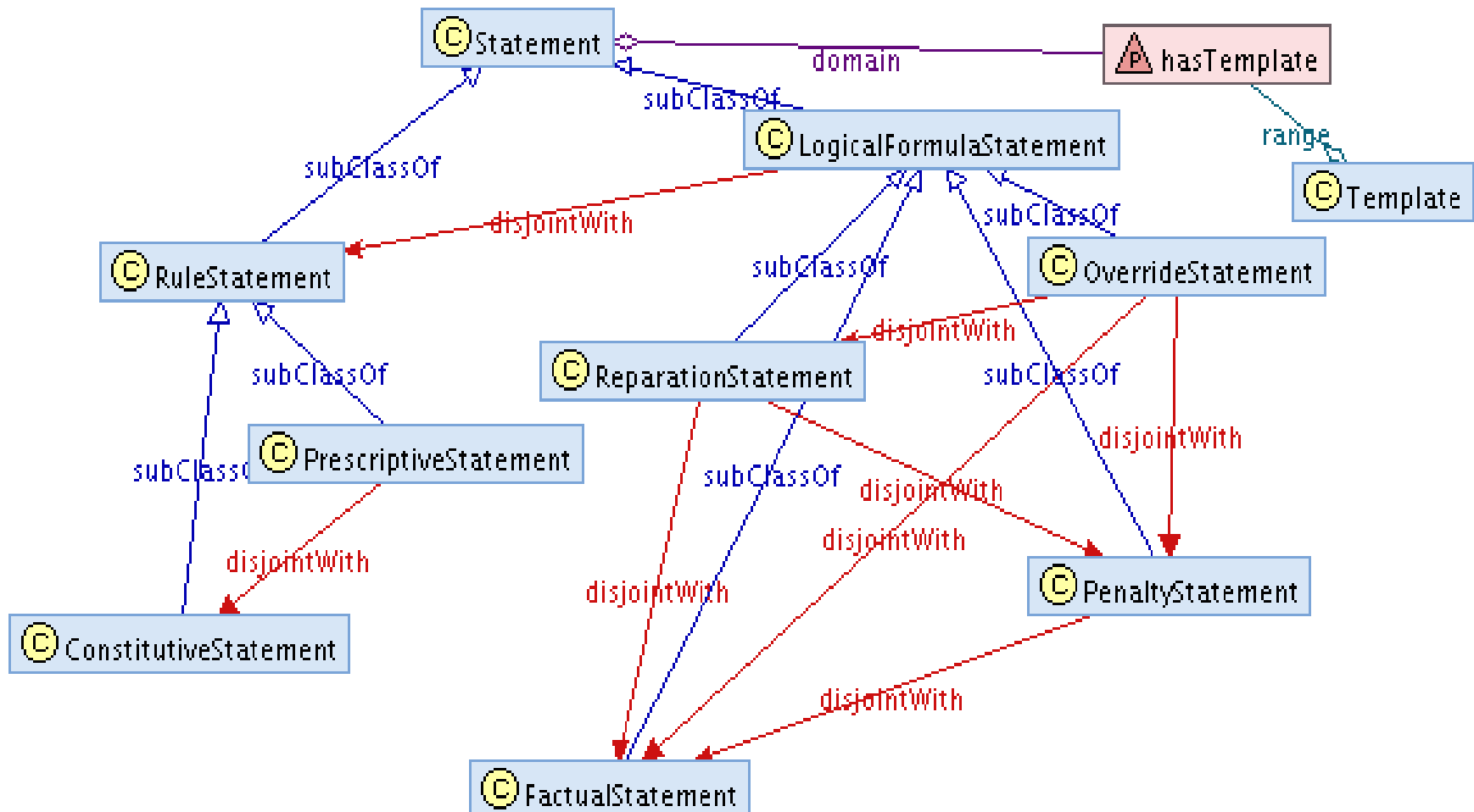


PenaltyStatement +: a Legal Statement of a sanction (e.g. a punishment or a correction).

Reparation +: an indication that a PenaltyStatement is linked with a PrescriptiveStatement, meaning that a sanction may apply when the PrescriptiveStatement entails a Deontic Specification, and there is a Violation of the Deontic Specification.

A **penalty** of 200 criminal unit is a **reparation** for **violating** the **prohibition** on engaging in a credit activity without a financial licence.

Partial Metamodel for Statements Concepts



- LegalRuleML classes are shown with blue fill, LegalRuleML properties with pink fill, RuleML classes with orange fill

Defeasibility

body always head	body -> head	<i>strict</i>
body sometimes head	body => head	<i>defeasible</i>
body not complement head	body ~> head	<i>defeater</i>

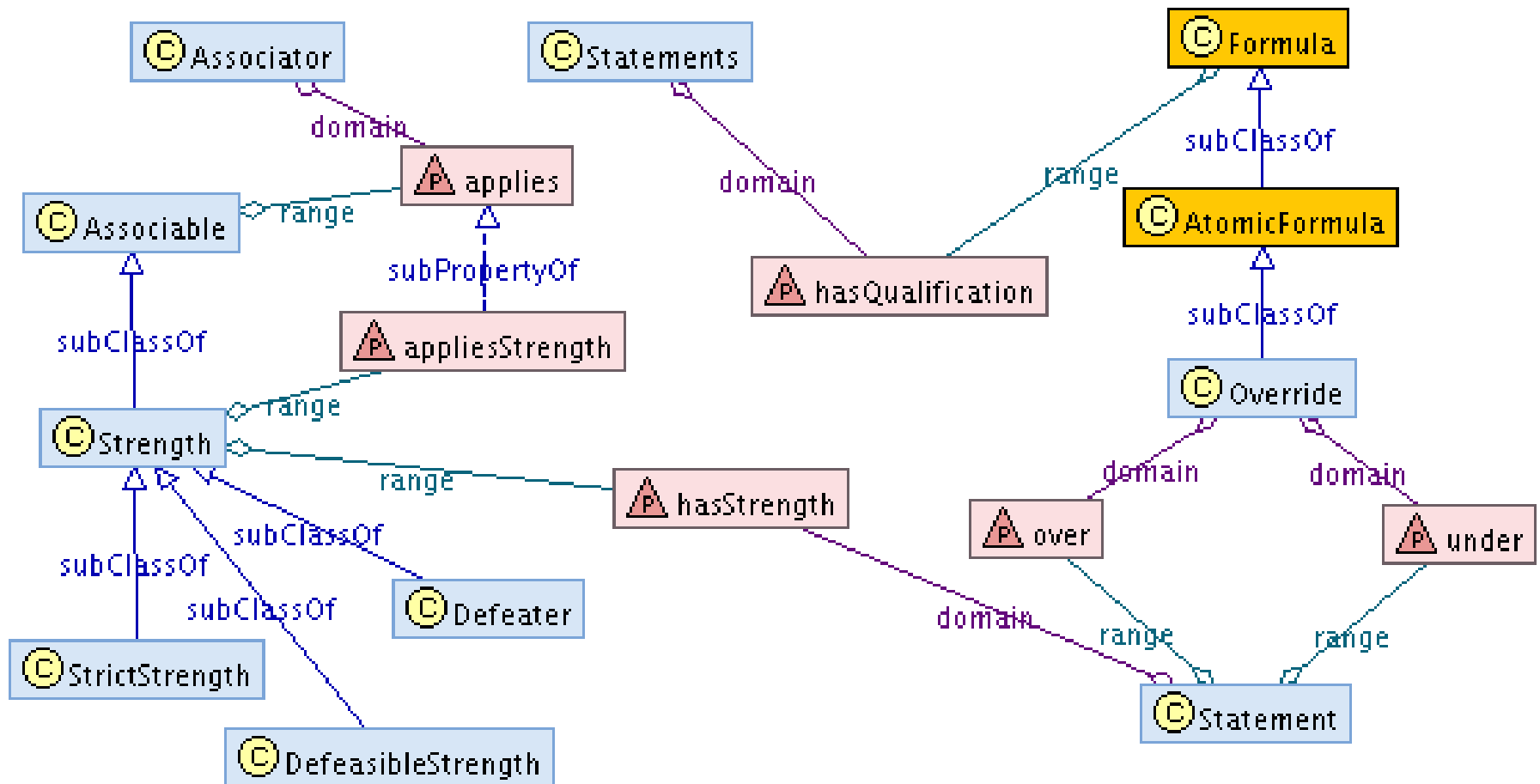
R2 > R1

R1: A person must not engage in a credit activity. **defeasible**

R2: However, if the person has a financial licence they may engage in a credit activity. **defeasible exception**

```
<lrml:hasQualification>  
  <lrml:Overrides over=":R2" under=":R1"/>  
</lrml:hasQualification>
```

Partial Metamodel for Defeasible Concepts



- LegalRuleML classes are shown with blue fill, LegalRuleML properties with pink fill, RuleML classes with orange fill

Example

National Consumer Credit Protection Act 2009:
Section 29

(Prohibition on engaging in credit activities without a licence)

(1) A person must not engage in a credit activity unless the person holds a licence authorising the person to engage in the credit activity.

Civil penalty: 2,000 penalty units.

...

Criminal penalty: 200 penalty units, or 2 years imprisonment, or both.

Example

National Consumer Credit Protection Act 2009:
Section 29

(Prohibition on engaging in credit activities without a licence) **R1**

(1) A person must not engage in a credit activity unless the person holds a licence authorising the person to engage in the credit activity. **R2**

P1

Civil penalty: 2,000 penalty units.

...

P2

P3

Criminal penalty: 200 penalty units, or 2 years imprisonment, or both. **P4**

LegalRuleML modelling

- At a given time $t=2009$, the author Guido, the authority “Consumer Credit Agency”, in the jurisdiction “Australia”, source text sec29
- ps1: $\text{Person}(x) \Rightarrow [\text{FORB}]\text{EngageCreditActivity}(x)$
- ps2: $\text{HasLicence}(x) \Rightarrow [\text{PERM}]\text{EngageCreditActivity}(x)$
- $\text{ps2} > \text{ps1}$
- pen1: $[\text{OBL}]\text{PayCivilUnits}(x,2000)$
- pen2:
 - $[\text{OBL}]\text{PayPenalUnits}(x,200)$,
 - $[\text{OBL}]\text{Imprisonment}(x,2y)$,
 - $[\text{OBL}]\text{PayPenaltyUnitsPlusImprisonment}(x,200,2y)$
- rep1: $[\text{Violation}]\text{ps1}, \text{pen1}$
- rep2: $[\text{Violation}]\text{ps1}, \text{pen2}$

LegalRuleML main blocks

Metadata

Legal Sources

References

Agents

Authority

Time Instants

Temporal Characteristics

Jurisdiction

Role

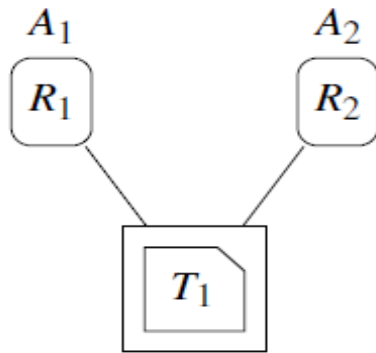
Context

bridge between metadata and rules

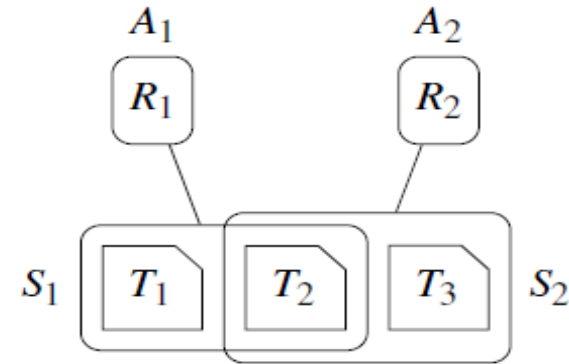
interpretation of rules

```
<ruleml:Rule key=":rule1">  
  <ruleml:if> ...</ruleml:if>  
  <ruleml:then>...</ruleml:then>  
</ruleml:Rule>...
```

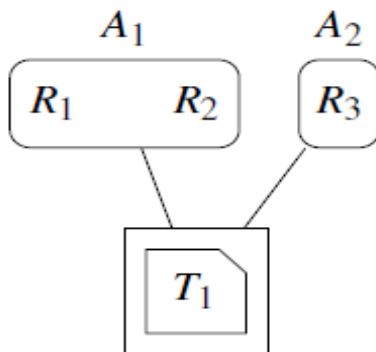
Alternatives



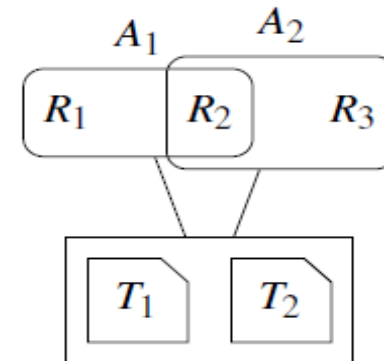
Case 1: Same legal provision(s), T_1 , and different alternatives (A_1 and A_2).



Case 2: Different alternatives (A_1 and A_2) that share one or more pieces of text, T_2 , but others are not shared (T_1 and T_3).



Case 3: Different alternatives (A_1 and A_2) sharing the same legal provision(s) (T_1), but embedding different rules (R_1 and R_2 for A_1 and R_3 for A_2).



Case 4: Different alternatives that share the same legal provision(s), but one or more rules are in common (e.g., R_2).

Alternative interpretations of the same text

Criminal penalty: 200 penalty units, or 2 years imprisonment, or both.

pen2a:

Guido

```
SUBORDERLIST {  
  [OBL] PayPenalUnits(x,200),  
  [OBL] Imprisonment(x,2y),  
  [OBL]  
  PayPenaltyUnitsPlusImprisonm  
  ent(x,200,2y)  
}
```

pen2b:

Monica

```
OR {  
  [OBL] PayPenalUnits(x,200)  
  [OBL] Imprisonment(x,2y),  
  [OBL]  
  PayPenaltyUnitsPlusImprisonm  
  ent(x,200,2y)  
}
```

```
<lrml:Alternatives key=":alt1">  
  <lrml:fromLegalSources>  
    <lrml:LegalSources>  
      <lrml:hasLegalSource keyref=":sec29-par3"/>  
    </lrml:LegalSources>  
  </lrml:fromLegalSources>  
  <lrml:hasAlternative keyref=":pen2a"/>  
  <lrml:hasAlternative keyref=":pen2b"/>  
</lrml:Alternatives>
```


LegalRuleML modelling

- At a given time $t=2009$, the author Guido, the authority “Consumer Credit Agency”, in the jurisdiction “Australia”, source text sec29
- ps1: $\text{Person}(x) \Rightarrow [\text{FORB}]\text{EngageCreditActivity}(x)$
- ps2: $\text{HasLicence}(x) \Rightarrow [\text{PERM}]\text{EngageCreditActivity}(x)$
- ps2 > ps1
- pen1: $[\text{OBL}]\text{PayCivilUnits}(x,2000)$
- **pen2a:**
 - SUBORDERLIST {
 - $[\text{OBL}]\text{PayPenalUnits}(x,200),$
 - $[\text{OBL}]\text{Imprisonment}(x,2y),$
 - $[\text{OBL}]\text{PayPenaltyUnitsPlusImprisonment}(x,200,2y)\}$
- **pen2b:**
 - OR { $[\text{OBL}]\text{PayPenalUnits}(x,200)$
 - $[\text{OBL}]\text{Imprisonment}(x,2y),$
 - $[\text{OBL}]\text{PayPenaltyUnitsPlusImprisonment}(x,200,2y) \}$
- rep1: $[\text{Violation}]\text{ps1}, \text{pen1}$
- **rep2a: $[\text{Violation}]\text{ps1}, \text{pen2a}$**
- **rep2b: $[\text{Violation}]\text{ps1}, \text{pen2b}$**

Context_Author: Guido

Context_Author: Monica

Context_Author: Guido

Context_Author: Monica

TCP Code C628:2012

COMMUNICATIONS
ALLIANCE LTD



INDUSTRY CODE
TELECOMMUNICATIONS CONSUMER

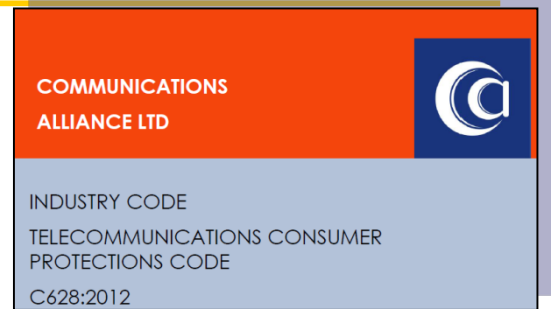
Complaint

means an expression of dissatisfaction made to a Supplier in relation to its Telecommunications Products or the complaints handling process itself, where a response or Resolution is explicitly or implicitly expected by the Consumer.

An initial call to a provider to request a service or information or to request support is not necessarily a Complaint. An initial call to report a fault or service difficulty is not a Complaint. However, if a Customer advises that they want this initial call treated as a Complaint, the Supplier will also treat this initial call as a Complaint.

If a Supplier is uncertain, a Supplier must ask a Customer if they wish to make a Complaint and must rely on the Customer's response.

TCP Code C628:2012



- **Complaint** **R1**
- means an expression of dissatisfaction made to a Supplier in relation to its Telecommunications Products or the complaints handling process itself, where a response or Resolution is explicitly or implicitly expected by the Consumer.
- An initial call to a provider to request a service or information or to request support is not necessarily a Complaint. **R2**
- An initial call to report a fault or service difficulty is not a Complaint. **R3**
- However, if a Customer advises that they want this initial call treated as a Complaint, the Supplier will also treat this initial call as a Complaint. **R4**
- If a Supplier is uncertain, a Supplier must ask a Customer if they wish to make a Complaint and must rely on the Customer's response. **R5**

Complaint example from Telecommunications Consumer Protections Code C628:2012, Australia

Date of Assent: 30 May 2012

Date of Registration: 11 July 2012

Date of Efficacy: 1 September 2012

2.1 sec2.1-v2

Complaint sec2.1-list1-itm31-v2

means an expression of dissatisfaction made to a Supplier in relation to its Telecommunications Products or the complaints handling process itself, where a response or Resolution is explicitly or implicitly expected by the Consumer.

rule1a

rule1b

rule2

rule3

rule4

rule1b<rule2

rule1b<rule3

rule3<rule4

rule5

par2-v2 An initial call to a provider to request a service or information or to request support is not necessarily a Complaint. An initial call to report a fault or service difficulty is not a Complaint. However, if a Customer advises that they want this initial call treated as a Complaint, the Supplier will also treat this initial call as a Complaint.

par3-v2 If a Supplier is uncertain, a Supplier must ask a Customer if they wish to make a Complaint and must rely on the Customer's response.

Complaint example from TCP Code C628:2012, Australia

```
<lrml:hasStatements key=":rulebase1-v2">
  <lrml:ConstitutiveStatement key=":rule1b-v2">
    <ruleml:if>
      <ruleml:Atom key=":rule1-atom2-v2">
        <ruleml:Rel iri=":rule1-rel2-v2">is an expression of
dissatisfaction made to a Supplier in relation to its
Telecommunications Products or the complaints handling
process itself, where a response or Resolution is explicitly
or implicitly expected by the Consumer</ruleml:Rel>
          <ruleml:Var>X</ruleml:Var>
        </ruleml:Atom>
      </ruleml:if>
      <ruleml:then>
        <ruleml:Atom key=":rule1-atom1-v2">
          <ruleml:Rel iri=":complaint-v2"/>
          <ruleml:Var>X</ruleml:Var>
        </ruleml:Atom>
      </ruleml:then>
    </lrml:ConstitutiveStatement>
  </lrml:hasStatements>
```

Complaint example from TCP Code C628:2012, Australia

```
<lrml:PrescriptiveStatement key=":rule5-v2">
  <ruleml:if>
    <ruleml:Atom key=":rule5-atom1-v2">
      <ruleml:Rel iri=":rule5-rel1-v2">is uncertain if/wishes to make
        a Complaint</ruleml:Rel>
      <ruleml:Var type=":supplier-v2">S</ruleml:Var>
      <ruleml:Var type=":customer-v2">C</ruleml:Var>
    </ruleml:Atom>
  </ruleml:if>
  <ruleml:then>
    <lrml:Obligation key=":rule5-ob1-v2">
      <ruleml:And key=":rule5-and1-v2">
        <ruleml:Atom key=":rule5-atom2-v2">
          <ruleml:Rel iri=":rule5-rel2-v2">asks/if they wish to make a
            Complaint</ruleml:Rel>
          <ruleml:Var>S</ruleml:Var>
          <ruleml:Var>C</ruleml:Var>
        </ruleml:Atom>
        <ruleml:Atom key=":rule5-atom3-v2">
          <ruleml:Rel iri=":rule5-rel3-v2">relies on the response of
          </ruleml:Rel>
          <ruleml:Var>S</ruleml:Var>
          <ruleml:Var>C</ruleml:Var>
        </ruleml:Atom>
      </lrml:And>
    </lrml:Obligation>
  </ruleml:then>
</lrml:PrescriptiveStatement>
```

Complaint example from TCP Code C628:2012, Australia

```
<lrml:PrescriptiveStatement key=":rule5-v2">
  <ruleml:if>
    <ruleml:Atom key=":rule5-atom1-v2">
      <ruleml:Rel iri=":rule5-re11-v2">is uncertain if/wishes to make
        a Complaint</ruleml:Rel>
      <ruleml:Var type=":supplier-v2">S</ruleml:Var>
      <ruleml:Var type=":customer-v2">C</ruleml:Var>
    </ruleml:Atom>
  </ruleml:if>
  <ruleml:then> ... </ruleml:then>
</lrml:PrescriptiveStatement>
```

Complaint example from TCP Code C628:2012, Australia

```
<lrml:PrescriptiveStatement key=":rule5-v2">
  <ruleml:if> ...</ruleml:if>
  <ruleml:then>
    <lrml:Obligation key=":rule5-ob1-v2">
      <ruleml:And key=":rule5-and1-v2">
        <ruleml:Atom key=":rule5-atom2-v2">
          <ruleml:Rel iri=":rule5-rel2-v2">asks/if they wish to make
            a Complaint</ruleml:Rel>
          <ruleml:Var>S</ruleml:Var>
          <ruleml:Var>C</ruleml:Var>
        </ruleml:Atom>
        <ruleml:Atom key=":rule5-atom3-v2">
          <ruleml:Rel iri=":rule5-rel3-v2">relies on the response of
          </ruleml:Rel>
          <ruleml:Var>S</ruleml:Var>
          <ruleml:Var>C</ruleml:Var>
        </ruleml:Atom>
      </lrml:And>
    </lrml:Obligation>
  </ruleml:then>
</lrml:PrescriptiveStatement>
```


Defeasibility

```
<lrml:hasQualification>
  <lrml:Overrides over="#rule2-v2" under="#rule1b-v2"/>
</lrml:hasQualification>
<lrml:hasQualification>
  <lrml:Overrides over="#rule3-v2" under="#rule1b-v2"/>
</lrml:hasQualification>
<lrml:hasQualification>
  <lrml:Overrides over="#rule4-v2" under="#rule3-v2"/>
</lrml:hasQualification>
<lrml:hasQualification>
  <lrml:Overrides over="#rule5-v2" under="#rule3-v2"/>
</lrml:hasQualification>
```

#2-Copyright law: copyright infringement

- US “Digital Millenium Act” and modifications
- goal: in t_x calculate the proper *statutory damage* in case of violation of the copyright taking in consideration all the exceptions and the modifications respect an fact.

17 USC Sec. 504

Remedies for infringement: Damages and profits

Three main versions

Enter in force of the norm	Interval of efficacy of the norm	Statutory Damages
Oct. 19, 1976	[1976-10-19, March 1, 1989 [$\$250 \leq \text{statutoryDamages} \leq \$10,000$
Oct. 31, 1988	[March 1, 1989, Dec. 9, 1999 [$\$500 \leq \text{statutoryDamages} \leq \$20,000$
Dec. 9, 1999	[Dec. 9, 1999, ∞	$\$750 \leq \text{statutoryDamages} \leq \$30,000$

- (c) **Statutory Damages.** -
- (1) Except as provided by clause (2) of this subsection, the **copyright owner** may elect, at any time before final judgment is rendered, to
R1 recover, instead of actual damages and profits, an award of **statutory damages** for all infringements involved in the action, with respect to any one work, for which any **one infringer** is liable individually, or for which any two or more infringers are liable jointly and severally, in a **sum of not less than \$250 or more than \$10,000** as the court considers just. For the purposes of this subsection, all the parts of a compilation or derivative work constitute one work.
- (2) In a case where the **copyright owner sustains the burden of proving**, and the court finds, that **infringement was committed willfully**, the court in its discretion may **increase** the award of statutory
R2 damages to a sum of not more than **\$50,000**. In a case where the **infringer sustains the burden of proving**, and the court finds, that such **infringer was not aware and had no reason to believe that his or her acts constituted an infringement of copyright**, the court in its
R3 discretion may **reduce** the **award of statutory damages to a sum of not less than \$100**.
- <http://www.law.cornell.edu/uscode/text/17/504>

Version 1
[Jan. 1, 1978, March 1, 1989]

(c) **Statutory Damages.** -

The copyright owner may elect an award of statutory damages for infringements in a sum of not less than **\$250** or more than **\$10,000** as the court considers just.

Version 2
[March 1, 1989, Dec. 9, 1999]

(c) **Statutory Damages.** -

The copyright owner may elect an award of statutory damages for infringements in a sum of not less than **\$500** or more than **\$20,000** as the court considers just.

Version 3
[Dec. 9, 1999, ∞

(c) **Statutory Damages.** -

The copyright owner may elect an award of statutory damages for infringements in a sum of not less than **\$750** or more than **\$30,000** as the court considers just.

Rules

- **R1**: If a piece of work is covered by copyright, then it is forbidden to use it.
- C1: An infringer is defined as somebody who used a piece of work when it was forbidden to use it.

Section 504

- **R2**: If the copyright owner claims statutory damages then the penalty for the infringer is to pay statutory damages of between \$250 and \$10,000.
- **R3**: If the copyright owner sustains the burden of proof and the infringer infringes copyright willfully then the penalty for the infringer is to pay statutory damages of between \$250 and \$50,000.
- **R4**: If the infringer sustains the burden of proof and the infringer infringes NOT willfully then the penalty for the infringer is to pay statutory damages of between \$100 and \$10,000.
- Defeasibility: **R4** > **R3** > **R2**

Conclusion and Future plans

- LegalRuleML is an emerging XML standard for modelling legal rules oriented to the legal expert, that provides a compact and expressive syntax
- RDF approach helps to foster the Open Rule Architecture in Linked Data and in Semantic Web
- Last outcomes
 - integration with Reaction RuleML
 - metamodel for permitting export in RDF
- Future outcomes
 - extensibility mechanisms of the schema
 - parameters in the syntax
 - case-law management

Where to find material of the tutorial

- Schemas and Examples SVN: <https://tools.oasis-open.org/version-control/browse/wsvn/legalruleml/trunk/examples/approved/?opt=dir&sc=1>
- XML schemas: https://tools.oasis-open.org/version-control/browse/wsvn/legalruleml/trunk/schemas/xsd/?sc=1#_trunk_schemas_xsd
- Documentation of the LegalRuleML TC: https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=legalruleml
- Glossary: <https://lists.oasis-open.org/archives/legalruleml/201408/msg00011/Glossary-v20.odt>



Thank you for your attention!