

```
diff --git a/DOL-terms.rdf b/DOL-terms.rdf
```

```
index de42e38..514c8c7 100644
```

```
--- a/DOL-terms.rdf
```

```
+++ b/DOL-terms.rdf
```

```
@@ -289,12 +289,13 @@ SubPropertyChain: semanticallyDenotes o hasLogic</rdfs:comment>
```

```
    <owl:ObjectProperty rdf:about="&dol;hasSequenceMember">
      <rdfs:label xml:lang="en">has sequence member</rdfs:label>
      <skos:definition xml:lang="en">The inverse of the sequence membership relation.
</skos:definition>
```

```
      <skos:note xml:lang="en">this is a linguistic property, because it is about
sequences of linguistic entities that occur in a text.</skos:note>
```

```
+      <rdfs:domain rdf:resource="&dol;Sequence"/>
      <rdfs:subPropertyOf rdf:resource="&dol;isLinguisticallyRelatedTo"/>
```

```
-      <owl:inverseOf rdf:resource="&dol;isMemberOf"/>
+      <owl:inverseOf rdf:resource="&dol;isSequenceMemberOf"/>
```

```
    </owl:ObjectProperty>
```

```
    <owl:ObjectProperty rdf:about="&dol;hasSignature">
```

```
      <rdfs:label xml:lang="en">has signature</rdfs:label>
```

```
      <skos:definition xml:lang="en">an OMS (resp. its semantic object) has an
associated signature, which is the signature of the OMS</skos:definition>
```

```
@@ -764,11 +765,12 @@ SubPropertyChain: serialization o serializes</rdfs:comment>
```

```
    </owl:ObjectProperty>
```

```
    <owl:ObjectProperty rdf:about="&dol;isSequenceMemberOf">
```

```
      <rdfs:label xml:lang="en">is sequence memberOf</rdfs:label>
```

```
      <skos:definition xml:lang="en">The sequence membership relation.
```

```
</skos:definition>
```

```
-      <owl:inverseOf rdf:resource="&dol;hasSequenceMember"/>
```

```
+      <rdfs:range rdf:resource="&dol;Sequence"/>
```

```
+      <owl:inverseOf rdf:resource="&dol;hasSequenceMember"/>
```

```
      <rdfs:subPropertyOf rdf:resource="&dol;isLinguisticallyRelatedTo"/>
```

```
    </owl:ObjectProperty>
```

```
    <owl:ObjectProperty rdf:about="&dol;isSerializedIn">
```

```
      <rdfs:type rdf:resource="&owl;FunctionalProperty"/>
```

```
@@ -934,11 +936,10 @@ SubPropertyChain: serialization o serializes</rdfs:comment>
```

```
      <owl:inverseOf rdf:resource="&dol;supportsLogic"/>
```

```
    </owl:ObjectProperty>
```

```
    <owl:ObjectProperty rdf:about="&dol;supportsLogic">
```

```
      <rdfs:label xml:lang="en">supports logic</rdfs:label>
```

```
-      <rdfs:label xml:lang="en">supportsL lgic</rdfs:label>
```

```
      <rdfs:comment xml:lang="en">The semantics of [a subset of] the subject language
can be specified in terms of the object logic.</rdfs:comment>
```

```
      <skos:definition xml:lang="en">logic represented by a satisfaction relation of
the language.</skos:definition>
```

```
      <rdfs:range rdf:resource="&dol;Logic"/>
```

```
      <rdfs:domain rdf:resource="&dol;OMSLanguage"/>
```

```
      <rdfs:subPropertyOf rdf:resource="&dol;isSemanticallyRelatedTo"/>
```

```
@@ -1020,22 +1021,22 @@ SubPropertyChain: isProfileOf o
```

```
supportsSerialization</rdfs:comment>
```

```
////////////////////////////////////
-->
```

```
    <owl:Class rdf:about="&dol;AbstractSyntax">
```

```
      <rdfs:label xml:lang="en">abstract syntax</rdfs:label>
```

```
-      <rdfs:subClassOf rdf:resource="&dol;LinguisticEntity"/>
```

```
+      <rdfs:subClassOf rdf:resource="&dol;Language"/>
```

```
      <skos:note xml:lang="en">An abstract syntax can be specified as a MOF metamodel.
Then abstract abstract syntax documents can be represented as XMI documents.</skos:note>
```

```
      <skos:definition xml:lang="en">term language for representing documents in a
machine-processable way</skos:definition>
```

```
    </owl:Class>
```

```

<owl:Class rdf:about="&dol;Alignment">
  <rdfs:label xml:lang="en">alignment</rdfs:label>
  <rdfs:subClassOf rdf:resource="&dol;OMSMapping"/>
  <rdfs:subClassOf>
    <owl:Restriction>
      <owl:onProperty rdf:resource="&dol;hasPart"/>
-      <owl:someValuesFrom rdf:resource="&dol;Correspondence"/>
+      <owl:someValuesFrom rdf:resource="&dol;SequenceOfCorrespondences"/>
    </owl:Restriction>
  </rdfs:subClassOf>
  <owl:disjointWith rdf:resource="&dol;Interpretation"/>
  <skos:definition xml:lang="en">an OMS mapping expressing a collection of
relations between entities of the two OMS</skos:definition>
  <rdfs:comment xml:lang="en">an alignment between two heterogeneous OMS in a DOL
library</rdfs:comment>
@@ -1077,16 +1078,28 @@ SubPropertyChain: isProfileOf o
supportsSerialization</rdfs:comment>
  </owl:Restriction>
</rdfs:subClassOf>
  <skos:definition xml:lang="en">structured OMS that expresses a maximum
approximant.</skos:definition>
</owl:Class>

- <owl:Class rdf:about="&dol;AxiomSentence">
-   <rdfs:label xml:lang="en">axiom sentence</rdfs:label>
+ <owl:Class rdf:about="&dol;Axiom">
+   <rdfs:label xml:lang="en">axiom</rdfs:label>
+   <rdfs:subClassOf rdf:resource="&dol;Sentence"/>
+   <skos:definition xml:lang="en">sentence postulated to be valid (i.e.\ true in
every model)</skos:definition>
</owl:Class>

+ <owl:Class rdf:about="&dol;InfrastructureAxiom">
+   <rdfs:label xml:lang="en">infrastructure axiom</rdfs:label>
+   <rdfs:subClassOf rdf:resource="&dol;Axiom"/>
+   <rdfs:subClassOf>
+     <owl:Restriction>
+       <owl:onProperty rdf:resource="&dol;partOf"/>
+       <owl:someValuesFrom rdf:resource="&dol;SimpleTheoroidalMapping"/>
+     </owl:Restriction>
+   </rdfs:subClassOf>
+   <skos:definition xml:lang="en">axiom that used in a simple theoroidal
mapping</skos:definition>
+ </owl:Class>
+
  <owl:Class rdf:about="&dol;BasicOMS">
    <rdfs:label xml:lang="en">basic OMS</rdfs:label>
    <rdfs:subClassOf rdf:resource="&dol;FlattenableOMS"/>
    <rdfs:subClassOf rdf:resource="&dol;NativeOMS"/>
    <rdfs:subClassOf>
@@ -1233,10 +1246,28 @@ relation has been explicitly specified; when $c$ is omitted, it
defaults to 1.</
  <owl:Class rdf:about="&dol;DOLLibrary">
    <rdfs:label xml:lang="en">DOL library</rdfs:label>
    <rdfs:subClassOf rdf:resource="&dol;DOLEntity"/>
    <rdfs:subClassOf>
      <owl:Restriction>
+       <owl:onProperty rdf:resource="&dol;hasPart"/>
+       <owl:someValuesFrom rdf:resource="&dol;OMS"/>
+     </owl:Restriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
      <owl:Restriction>
+       <owl:onProperty rdf:resource="&dol;hasPart"/>
+       <owl:someValuesFrom rdf:resource="&dol;OMSMapping"/>
+     </owl:Restriction>

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+     </rdfs:subClassOf>
+     <rdfs:subClassOf>
+         <owl:Restriction>
+             <owl:onProperty rdf:resource="&dol;hasPart"/>
+             <owl:someValuesFrom rdf:resource="&dol;OMSNetwork"/>
+         </owl:Restriction>
+     </rdfs:subClassOf>
+ </rdfs:subClassOf>
+     <owl:Restriction>
+         <owl:onProperty rdf:resource="&dol;semanticallyDenotes"/>
+         <owl:someValuesFrom rdf:resource="&dol;GlobalEnvironment"/>
+     </owl:Restriction>
+ </rdfs:subClassOf>
+ <skos:note xml:lang="en">collection is used here in the sense of syntactic
collection</skos:note>
@@ -1248,17 +1279,33 @@ relation has been explicitly specified; when $c$ is omitted, it
defaults to 1.</
+     <rdfs:subClassOf rdf:resource="&dol;StructuredOMS"/>
+     <skos:note xml:lang="en">DOL structured OMS, typically, use basic OMS as building
blocks for defining other structured OMS, OMS mappings or OMS networks.</skos:note>
+     <skos:definition xml:lang="en">syntactically valid DOL expression denoting an OMS
that is built from smaller OMS as building blocks.</skos:definition>
+ </owl:Class>

-     <owl:Class rdf:about="&dol;DefaultMapping">
-         <rdfs:label xml:lang="en">default mapping</rdfs:label>
+     <owl:Class rdf:about="&dol;DefaultLogicMapping">
+         <rdfs:label xml:lang="en">default logic mapping</rdfs:label>
+         <rdfs:subClassOf rdf:resource="&dol;LogicMapping"/>
+         <rdfs:subClassOf rdf:resource="&dol;DefaultMapping"/>
+         <dol:propagatesToAdjoint rdf:datatype="&xsd;
boolean">true</dol:propagatesToAdjoint>
+         <skos:definition xml:lang="en">logic mapping that will be chosen by default if
only the source and target logic are given</skos:definition>
+     </owl:Class>

+     <owl:Class rdf:about="&dol;DefaultLanguageMapping">
+         <rdfs:label xml:lang="en">default language mapping</rdfs:label>
+         <rdfs:subClassOf rdf:resource="&dol;LanguageMapping"/>
+         <rdfs:subClassOf rdf:resource="&dol;DefaultMapping"/>
+         <dol:propagatesToAdjoint rdf:datatype="&xsd;
boolean">true</dol:propagatesToAdjoint>
+         <skos:definition xml:lang="en">language mapping that will be chosen by default if
only the source and target language are given</skos:definition>
+     </owl:Class>
+
+     <owl:Class rdf:about="&dol;DefaultMapping">
+         <rdfs:label xml:lang="en">default mapping</rdfs:label>
+         <rdfs:subClassOf rdf:resource="&dol;Mapping"/>
+         <dol:propagatesToAdjoint rdf:datatype="&xsd;
boolean">true</dol:propagatesToAdjoint>
+         <skos:definition xml:lang="en">mapping that will be chosen by default if only the
source and target are given</skos:definition>
+     </owl:Class>
+
+     <owl:Class rdf:about="&dol;DefinitionalExtension">
+         <rdfs:label xml:lang="en">definitional extension</rdfs:label>
+         <owl:equivalentClass>
+             <owl:Class>
+                 <owl:intersectionOf rdf:parseType="Collection">
@@ -1304,11 +1351,10 @@ relation has been explicitly specified; when $c$ is omitted, it
defaults to 1.</
+     </owl:Class>

+     <owl:Class rdf:about="&dol;Embedding">
+         <rdfs:label xml:lang="en">embedding</rdfs:label>
+         <rdfs:subClassOf rdf:resource="&dol;ExactMapping"/>

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-      <rdfs:subClassOf rdf:resource="&dol;LogicMapping"/>
      <rdfs:subClassOf rdf:resource="&dol;LogicTranslation"/>
      <rdfs:subClassOf rdf:resource="&dol;ModelBijectiveMapping"/>
      <skos:definition xml:lang="en">logic mapping that embeds the source into the
target logic, using components that are embeddings and (in the case of model translations)
isomorphism</skos:definition>
      <dol:reifies rdf:resource="&dol;isEmbeddableInto"/>
    </owl:Class>
@@ -1444,11 +1490,11 @@ local envorinment, which is the signature of the &apos;given
OMS&apos;;.</skos:no
      <owl:Restriction>
        <owl:onProperty rdf:resource="&dol;hasPart"/>
        <owl:someValuesFrom rdf:resource="&dol;LocalEnvironment"/>
      </owl:Restriction>
    </rdfs:subClassOf>
-    <skos:definition xml:lang="en">mapping from identifiers (IRIs) to values in
semantics domains representing the global knowledge about OMS.</skos:definition>
+    <skos:definition xml:lang="en">mapping from identifiers (IRIs) to values in
semantics domains representing semantic information about a set of documents (the latter
typically being distributed over the internet)</skos:definition>
    </owl:Class>

    <owl:Class rdf:about="&dol;Graph">
      <rdfs:label xml:lang="en">graph</rdfs:label>
      <rdfs:subClassOf rdf:resource="&dol;MathematicalEntity"/>
@@ -1460,11 +1506,11 @@ local envorinment, which is the signature of the &apos;given
OMS&apos;;.</skos:no
      <rdfs:label xml:lang="en">heterogeneous environment</rdfs:label>
      <rdfs:subClassOf rdf:resource="&dol;MathematicalEntity"/>
      <rdfs:subClassOf>
        <owl:Restriction>
          <owl:onProperty rdf:resource="&dol;hasPart"/>
-          <owl:someValuesFrom rdf:resource="&dol;LanguageGraph"/>
+          <owl:someValuesFrom rdf:resource="&dol;OMSLanguageGraph"/>
        </owl:Restriction>
      </rdfs:subClassOf>
      <rdfs:subClassOf>
        <owl:Restriction>
          <owl:onProperty rdf:resource="&dol;hasPart"/>
@@ -1476,10 +1522,12 @@ local envorinment, which is the signature of the &apos;given
OMS&apos;;.</skos:no
          <owl:onProperty rdf:resource="&dol;hasPart"/>
          <owl:someValuesFrom rdf:resource="&dol;SupportsRelation"/>
        </owl:Restriction>
      </rdfs:subClassOf>
      <skos:definition xml:lang="en">environment for the expression of homogeneous and
heterogeneous OMS, comprising a logic graph, an OMS language graph and a supports
relation</skos:definition>
+    <skos:note xml:lang="en">The support relations specify which language supports
which logics and which serializations, and which language translation supports which logic
translation or reduction. Moreover, each language has a default logic and a default
serialization.</skos:note>
+    <skos:note xml:lang="en">Although in principle, there can be many heterogeneous
environments, for ensuring interoperability, there will be a global heterogeneous
environment (maintained in some registry), with subenvironments for specific purposes.
</skos:note>
    </owl:Class>

    <owl:Class rdf:about="&dol;HeterogeneousOMS">
      <rdfs:label xml:lang="en">heterogeneous OMS</rdfs:label>
      <rdfs:subClassOf rdf:resource="&dol;OMS"/>
@@ -1562,11 +1610,11 @@ local envorinment, which is the signature of the &apos;given
OMS&apos;;.</skos:no
      </owl:Restriction>
    </rdfs:subClassOf>
    <rdfs:subClassOf>
      <owl:Restriction>

```

```

        <owl:onProperty rdf:resource="&dol;formalizes"/>
-        <owl:someValuesFrom rdf:resource="&dol;Logic"/>
+        <owl:someValuesFrom rdf:resource="&dol;MonotonicLogic"/>
    </owl:Restriction>
</rdfs:subClassOf>
<rdfs:subClassOf>
    <owl:Restriction>
        <owl:onProperty rdf:resource="&dol;hasPart"/>
@@ -1583,11 +1631,11 @@ local envorinment, which is the signature of the &apos;given
OMS&apos;.</skos:no
    <owl:Restriction>
        <owl:onProperty rdf:resource="&dol;hasPart"/>
        <owl:someValuesFrom rdf:resource="&dol;Category"/>
    </owl:Restriction>
</rdfs:subClassOf>
-    <skos:definition xml:lang="en">metaframework mathematically formalising the
notion of a logic</skos:definition>
+    <skos:definition xml:lang="en">metaframework mathematically formalising the
notion of a logic in terms of notions of signature, signature morphism, model, sentence
and satisfaction</skos:definition>
</owl:Class>

<owl:Class rdf:about="&dol;InterfaceSignature">
    <rdfs:label xml:lang="en">interface signature</rdfs:label>
    <rdfs:subClassOf rdf:resource="&dol;Signature"/>
@@ -1600,33 +1648,45 @@ local envorinment, which is the signature of the &apos;given
OMS&apos;.</skos:no
    <skos:definition xml:lang="en">OMS mapping that postulates a specialization
relation between two OMS along a morphism between their signatures</skos:definition>
    <skos:altLabel xml:lang="en">refinement</skos:altLabel>
    <skos:altLabel xml:lang="en">view</skos:altLabel>
</owl:Class>

- <owl:Class rdf:about="&dol;Language">
-     <rdfs:label xml:lang="en">language</rdfs:label>
-     <rdfs:subClassOf rdf:resource="&dol;LinguisticEntity"/>
+ <owl:Class rdf:about="&dol;FormalLanguage">
+     <rdfs:label xml:lang="en">formal language</rdfs:label>
+     <rdfs:subClassOf rdf:resource="&dol;Language"/>
+     <rdfs:subClassOf>
        <owl:Restriction>
            <owl:onProperty rdf:resource="&dol;hasPart"/>
            <owl:someValuesFrom rdf:resource="&dol;CollectionOfExpressions"/>
        </owl:Restriction>
    </rdfs:subClassOf>
    <skos:note xml:lang="en">collection is used here in the sense of syntactic
collection</skos:note>
-     <skos:definition xml:lang="en">collection of expressions</skos:definition>
+     <skos:definition xml:lang="en">collection of expressions, following formal rules
of well-formedness</skos:definition>
+ </owl:Class>
+
+ <owl:Class rdf:about="&dol;Language">
+     <rdfs:label xml:lang="en">language</rdfs:label>
+     <rdfs:subClassOf rdf:resource="&dol;LinguisticEntity"/>
+     <skos:definition xml:lang="en">a body of words, following a set of methods of
combining them (called a grammar), understood by a community and used as a form of
communication</skos:definition>
+ </owl:Class>

+ <owl:Class rdf:about="&dol;Construct">
+     <rdfs:label xml:lang="en">construct</rdfs:label>
+     <rdfs:subClassOf rdf:resource="&dol;LinguisticEntity"/>
+     <skos:definition xml:lang="en">syntactic pattern that is part of a
language</skos:definition>
+ </owl:Class>
+

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<owl:Class rdf:about="&dol;LanguageAspect">
  <rdfs:label xml:lang="en">language aspect</rdfs:label>
  <rdfs:subClassOf rdf:resource="&dol;LinguisticEntity"/>
  <skos:definition xml:lang="en">set of language constructs of a given language,
not necessarily forming a sublanguage</skos:definition>
</owl:Class>

- <owl:Class rdf:about="&dol;LanguageGraph">
+ <owl:Class rdf:about="&dol;OMSLanguageGraph">
  <rdfs:label xml:lang="en">OMS language graph</rdfs:label>
  <rdfs:subClassOf rdf:resource="&dol;Graph"/>
- <skos:definition xml:lang="en">graph of OMS languages and OMS language
translations, typically used in a heterogeneous environment.</skos:definition>
+ <skos:definition xml:lang="en">graph with OMS languages as nodes and OMS language
translations and OMS language reductions as edges, typically used in a heterogeneous
environment.</skos:definition>
</owl:Class>

<owl:Class rdf:about="&dol;LanguageMapping">
  <rdfs:label xml:lang="en">language mapping</rdfs:label>
  <owl:equivalentClass>
@@ -1667,31 +1727,42 @@ local envorinment, which is the signature of the &apos;given
OMS&apos;.</skos:no
  <rdfs:label xml:lang="en">local environment</rdfs:label>
  <rdfs:subClassOf rdf:resource="&dol;Signature"/>
  <skos:definition xml:lang="en">signature built from all previously-declared
symbols and axioms.</skos:definition>
</owl:Class>

- <owl:Class rdf:about="&dol;Logic">
-   <rdfs:label xml:lang="en">logic</rdfs:label>
-   <rdfs:subClassOf rdf:resource="&dol;MathematicalEntity"/>
+ <owl:Class rdf:about="&dol;MonotonicLogic">
+   <rdfs:label xml:lang="en">monotonic logic</rdfs:label>
+   <rdfs:subClassOf rdf:resource="&dol;Logic"/>
  <rdfs:subClassOf>
    <owl:Restriction>
      <owl:onProperty rdf:resource="&dol;isFormalizedBy"/>
      <owl:someValuesFrom rdf:resource="&dol;Institution"/>
    </owl:Restriction>
  </rdfs:subClassOf>
  <skos:example xml:lang="en">  $\mathcal{SROIQ}(D)$  is the logic underlying OWL 2
DL. </skos:example>
  <skos:note xml:lang="en"> Most OMS languages have an underlying logic.
</skos:note>
  <skos:note xml:lang="en"> See annex~\ref{a:rdf-logic-vocab} for the organization
of the relation between OMS languages and their logics and serializations. </skos:note>
-   <rdfs:comment xml:lang="en">a logic that defines the semantics of an
language</rdfs:comment>
+   <rdfs:comment xml:lang="en">a (monotonic) logic that defines the semantics of an
language</rdfs:comment>
  <skos:definition xml:lang="en">specification of valid reasoning that comprises
signatures, sentences, models, and a satisfaction relation between models and
sentences</skos:definition>
</owl:Class>

+
+ <owl:Class rdf:about="&dol;Logic">
+   <rdfs:label xml:lang="en">logic</rdfs:label>
+   <rdfs:subClassOf rdf:resource="&dol;MathematicalEntity"/>
+   <skos:example xml:lang="en">  $\mathcal{SROIQ}(D)$  is the monotonic logic
underlying OWL 2 DL. </skos:example>
+   <skos:example xml:lang="en"> Reiter's default logic is a logic that is not
monotonic. </skos:example>
+   <skos:note xml:lang="en"> Most OMS languages have an underlying logic.
</skos:note>
+   <skos:note xml:lang="en"> See annex~\ref{a:rdf-logic-vocab} for the organization
of the relation between OMS languages and their logics and serializations. </skos:note>

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+       <rdfs:comment xml:lang="en">a (possibly non-monotonic) logic that defines the
semantics of an language</rdfs:comment>
+       <skos:definition xml:lang="en">specification of valid reasoning that comprises
signatures, sentences, models, and a satisfaction relation between models and sentences.
Possibly non-monotonic</skos:definition>
+   </owl:Class>

    <owl:Class rdf:about="&dol;LogicGraph">
      <rdfs:label xml:lang="en">logic graph</rdfs:label>
      <rdfs:subClassOf rdf:resource="&dol;Graph"/>
      <skos:note xml:lang="en">In a logic graph, some of the logic translations and
reductions can be marked to be default translations.</skos:note>
-       <skos:definition xml:lang="en">graph of logics, logic translations and logic
reductions, typically used in a heterogeneous environment.</skos:definition>
+       <skos:definition xml:lang="en">graph with logics as nodes and logic translations
and logic reductions as edges, typically used in a heterogeneous environment.
</skos:definition>
    </owl:Class>

    <owl:Class rdf:about="&dol;LogicMapping">
      <rdfs:label xml:lang="en">logic mapping</rdfs:label>
      <owl:equivalentClass>
@@ -1726,28 +1797,53 @@ local envorinment, which is the signature of the &apos;given
OMS&apos;.</skos:note>
      </owl:Restriction>
    </owl:intersectionOf>
  </owl:Class>
  </rdfs:subClassOf>
  <dol:propagatesToAdjoint rdf:datatype="&xsd;
boolean">true</dol:propagatesToAdjoint>
-       <rdfs:comment xml:lang="en">a mapping (translation or reduction) between two
logics</rdfs:comment>
+       <rdfs:comment xml:lang="en">a mapping (translation or reduction) between two
logics consisting of mappings for signatures, sentences and models</rdfs:comment>
      <skos:definition xml:lang="en">mapping between logics</skos:definition>
    </owl:Class>

    <owl:Class rdf:about="&dol;LogicReduction">
      <rdfs:label xml:lang="en">logic reduction</rdfs:label>
      <rdfs:subClassOf rdf:resource="&dol;LogicMapping"/>
-       <skos:note xml:lang="en">mapping between logics forgetting parts of the
structure, projection to a smaller logic, in contrast to reduction</skos:note>
+       <rdfs:subClassOf rdf:resource="&dol;Reduction"/>
+       <skos:note xml:lang="en">mapping between logics forgetting parts of the logical
structure, projection to a smaller logic, in contrast to translation</skos:note>
      <skos:definition xml:lang="en">reduction of a source logic onto a (usually less
expressive) target logic (mapping signatures, sentences and models) that simply forgets
those parts of the logical structure not fitting the target logic</skos:definition>
    </owl:Class>

+   <owl:Class rdf:about="&dol;Reduction">
+     <rdfs:label xml:lang="en">reduction</rdfs:label>
+     <rdfs:subClassOf rdf:resource="&dol;Mapping"/>
+     <skos:note xml:lang="en">mapping forgetting parts of the source, projection to a
smaller target, in contrast to translation</skos:note>
+     <skos:definition xml:lang="en">reduction of a source onto a (usually less
expressive) target that simply forgets those parts of the source not fitting the
target</skos:definition>
+   </owl:Class>
+
+   <owl:Class rdf:about="&dol;OMSLanguageReduction">
+     <rdfs:label xml:lang="en">OMS language reduction</rdfs:label>
+     <rdfs:subClassOf rdf:resource="&dol;LanguageMapping"/>
+     <rdfs:subClassOf rdf:resource="&dol;Reduction"/>
+     <skos:note xml:lang="en">mapping between OMS languages forgetting parts of the
source, projection to a smaller language, in contrast to translation</skos:note>
+     <skos:definition xml:lang="en">reduction of a source language onto a (usually

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less expressive) target language that simply forgets those parts of the source language
not fitting the target language</skos:definition>
+       <skos:note xml:lang="en"> An OMS language reduction shall satisfy the property
that the result of a reduction is a well-formed text in the target language. </skos:note>
+       </owl:Class>
+
      <owl:Class rdf:about="&dol;LogicTranslation">
        <rdfs:label xml:lang="en">logic translation</rdfs:label>
        <rdfs:subClassOf rdf:resource="&dol;LogicMapping"/>
+       <rdfs:subClassOf rdf:resource="&dol;Translation"/>
        <skos:note xml:lang="en">mapping between logics representing all structure, in
contrast to reduction</skos:note>
        <skos:definition xml:lang="en">translation of a source logic into a target logic
(mapping signatures, sentences and models) that keeps or encodes the logical content of
OMS</skos:definition>
      </owl:Class>

+     <owl:Class rdf:about="&dol;Translation">
+       <rdfs:label xml:lang="en">translation</rdfs:label>
+       <rdfs:subClassOf rdf:resource="&dol;Mapping"/>
+       <skos:note xml:lang="en">mapping representing the source completely, in contrast
to reduction</skos:note>
+       <skos:definition xml:lang="en">translation of a source into a target that keeps
or encodes the content of the source</skos:definition>
+     </owl:Class>
+
      <owl:Class rdf:about="&dol;LogicalLanguageAspect">
        <rdfs:label xml:lang="en">logical language aspect</rdfs:label>
        <rdfs:subClassOf rdf:resource="&dol;LanguageAspect"/>
        <skos:definition xml:lang="en">the (unique) language aspect of an OMS language
that enables the expression of non-logical symbols and sentences in a logical
language</skos:definition>
      </owl:Class>
@@ -1768,19 +1864,19 @@ local envorinment, which is the signature of the &apos;given
OMS&apos;.</skos:no
        <owl:onClass rdf:resource="&dol;Signature"/>
        <owl:qualifiedCardinality rdf:datatype="&xsd;
nonNegativeInteger">1</owl:qualifiedCardinality>
        </owl:Restriction>
      </rdfs:subClassOf>
      <skos:note xml:lang="en">The sentences must use only those non-logical symbols
that are present in the signature.</skos:note>
-      <skos:definition xml:lang="en">signature equipped with a set of sentences over
the signature</skos:definition>
+      <skos:definition xml:lang="en">a signature together with a set of sentences (over
that signature)</skos:definition>
    </owl:Class>

    <owl:Class rdf:about="&dol;MDEModel">
      <rdfs:label xml:lang="en">MDE model</rdfs:label>
      <rdfs:subClassOf rdf:resource="&dol;OMS"/>
      <skos:note xml:lang="en">Not to be confused with the term \termref{model} in the
sense
of logic (model theory).</skos:note>
-      <skos:definition xml:lang="en">logical theory that is used as a model in the
sense of model-driven engineering (MDE)</skos:definition>
+      <skos:definition xml:lang="en">representation of (the development of) a system
(e.g. hardware, software or information system or organisation), or a domain related to a
system, used in model-driven engineering (MDE)</skos:definition>
    </owl:Class>

    <owl:Class rdf:about="&dol;Mapping">
      <rdfs:label xml:lang="en">mapping</rdfs:label>
      <owl:equivalentClass>
@@ -1796,11 +1892,11 @@ of logic (model theory).</skos:note>
      </owl:Restriction>
    </owl:intersectionOf>

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        </owl:Class>
    </owl:equivalentClass>
    <rdfs:subClassOf rdf:resource="&dol;MathematicalEntity"/>
-    <rdfs:comment xml:lang="en">a generic mapping (translation or reduction)
</rdfs:comment>
+    <rdfs:comment xml:lang="en">a generic set-theoretic mapping or family of set-
theoretic mappings (translation or reduction)</rdfs:comment>
    <skos:note xml:lang="en">alternative term: function</skos:note>
    <skos:note xml:lang="en">in some cases is a morphism, as in Category Theory.
</skos:note>
    <skos:definition xml:lang="en">relation between a set of inputs and a set of
permissible outputs with the property that each input is related to exactly one output.
</skos:definition>
    <dol:reifies rdf:resource="&dol;isMappableTo"/>
</owl:Class>
@@ -1979,19 +2075,33 @@ of logic (model theory).</skos:note>
    <skos:definition xml:lang="en">sequence of expressions (like non-logical symbols,
sentences and structuring elements) from a given OMS language.</skos:definition>
</owl:Class>

    <owl:Class rdf:about="&dol;NonLogicalSymbol">
        <rdfs:label xml:lang="en">non-logical symbol</rdfs:label>
-        <rdfs:subClassOf rdf:resource="&dol;Term"/>
+        <rdfs:subClassOf rdf:resource="&dol;Symbol"/>
        <skos:example xml:lang="en">Non-logical symbols in Common Logic \nisref{ISO/IEC
24707:2007} comprise \begin{itemize} \item names (denoting objects from the domain of
discourse), \item sequence markers (denoting sequences of objects). \end{itemize} This is
opposed to logical symbols in Common Logic, e.g.\ logical connectives and quantifiers.
</skos:example>
        <skos:example xml:lang="en">Non-logical symbols in OWL \nisref{W3C/TR REC-owl2-
syntax:2009} (there called ``entities&apos;&apos;) comprise \begin{itemize} \item
individuals (denoting objects from the domain of discourse), \item classes (denoting sets
of objects; also called concepts), and \item properties (denoting binary relations over
objects; also called roles). \end{itemize} This is opposed to logical symbols in OWL,
e.g.\ those for intersection and union of classes. </skos:example>
        <skos:altLabel xml:lang="en">OMS symbol</skos:altLabel>
        <skos:note xml:lang="en">The notion of ``atomic sentence&apos;&apos; used in
logic is different, it usually may involve several non-logical symbols. </skos:note>
        <rdfs:comment xml:lang="en">a non-logical symbol in an OMS</rdfs:comment>
-        <skos:definition xml:lang="en">atomic expression or syntactic constituent of an
OMS that requires an interpretation through a model</skos:definition>
+        <skos:definition xml:lang="en">symbol that requires an interpretation through a
model</skos:definition>
    </owl:Class>

-
+
+    <owl:Class rdf:about="&dol;LogicalSymbol">
+        <rdfs:label xml:lang="en">logical symbol</rdfs:label>
+        <rdfs:subClassOf rdf:resource="&dol;Symbol"/>
+        <skos:example xml:lang="en">Logical symbols in Common Logic include propositional
connectives and quantifiers.</skos:example>
+        <skos:example xml:lang="en">Logical symbols in OWL include propositional
connectives (e.g. the intersection operator on classes) and quantifiers (e.g. the
existential restriction operator).</skos:example>
+        <skos:definition xml:lang="en">symbol whose interpretation is fixed by the
logic</skos:definition>
+    </owl:Class>
+
+    <owl:Class rdf:about="&dol;Symbol">
+        <rdfs:label xml:lang="en">symbol</rdfs:label>
+        <rdfs:subClassOf rdf:resource="&dol;Term"/>
+        <skos:definition xml:lang="en">atomic expression or syntactic constituent of an
OMS</skos:definition>
+    </owl:Class>
+
    <owl:Class rdf:about="&dol;OMS">
        <rdfs:label xml:lang="en">OMS (ontology, specification or MDE model)</rdfs:label>

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    <owl:equivalentClass>
      <owl:Class>
        <owl:unionOf rdf:parseType="Collection">
@@ -2045,11 +2155,11 @@ of logic (model theory).</skos:note>
          <owl:someValuesFrom rdf:resource="&dol;ClassOfModels"/>
        </owl:Restriction>
      </rdfs:subClassOf>
      <skos:note xml:lang="en">An OMS can be written in different OMS language
serializations.</skos:note>
      <skos:note xml:lang="en">An OMS has a single signature and model class over that
signature as its model-theoretic semantics.</skos:note>
-      <skos:note xml:lang="en">An OMS is a collection of expressions (like non-logical
symbols, sentences and structuring elements) in a given OMS language (or several such
languages)</skos:note>
+      <skos:note xml:lang="en">An OMS is a collection of expressions (like non-logical
symbols, sentences and structuring elements) in a given OMS language (or several such
languages) and denoting a class of models and, possibly, a logical theory</skos:note>
      <skos:definition xml:lang="en">a basic or structured ontology, specification or
MDE model</skos:definition>
      <skos:note xml:lang="en">collection is used here in the sense of syntactic
collection</skos:note>
    </owl:Class>

    <owl:Class rdf:about="&dol;OMSDocumentation">
@@ -2059,11 +2169,11 @@ of logic (model theory).</skos:note>
      <skos:definition xml:lang="en">set of all annotations to an OMS, plus any other
documents and explanatory comments generated during the entire OMS building
process</skos:definition>
    </owl:Class>

    <owl:Class rdf:about="&dol;OMSLanguage">
      <rdfs:label xml:lang="en">OMS language</rdfs:label>
-      <rdfs:subClassOf rdf:resource="&dol;Language"/>
+      <rdfs:subClassOf rdf:resource="&dol;FormalLanguage"/>
      <rdfs:subClassOf>
        <owl:Class>
          <owl:intersectionOf rdf:parseType="Collection">
            <owl:Restriction>
              <owl:onProperty rdf:resource="&dol;supportsLogic"/>
@@ -2097,11 +2207,11 @@ of logic (model theory).</skos:note>
            </owl:Class>
          </owl:Class>

    <owl:Class rdf:about="&dol;OMSLanguageTranslation">
      <rdfs:label xml:lang="en">OMS language translation</rdfs:label>
      <rdfs:subClassOf rdf:resource="&dol;LanguageMapping"/>
-      <rdfs:subClassOf rdf:resource="&dol;Mapping"/>
+      <rdfs:subClassOf rdf:resource="&dol;Translation"/>
      <rdfs:subClassOf>
        <owl:Restriction>
          <owl:onProperty rdf:resource="&dol;mapsFrom"/>
          <owl:onClass rdf:resource="&dol;OMSLanguage"/>
          <owl:qualifiedCardinality rdf:datatype="&xsd;
nonNegativeInteger">1</owl:qualifiedCardinality>
@@ -2129,13 +2239,12 @@ of logic (model theory).</skos:note>
          </owl:Restriction>
        </owl:intersectionOf>
      </owl:Class>
    </rdfs:subClassOf>
    <dol:propagatesToAdjoint rdf:datatype="&xsd;
boolean">true</dol:propagatesToAdjoint>
-      <skos:note xml:lang="en"> An OMS language translation shall satisfy the property
that the result of a translation is a well-formed text in the target language.
</skos:note>
-      <skos:definition xml:lang="en">a mapping (translation or reduction) between two
OMS languages</skos:definition>
-      <skos:definition xml:lang="en">mapping from constructs in the source OMS language
to their equivalents in the target OMS language</skos:definition>

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+       <skos:note xml:lang="en"> An OMS language translation shall satisfy the property
that the result of a translation is well-formed in the target language. </skos:note>
+       <skos:definition xml:lang="en">a mapping (translation) between two OMS languages
that keeps or encodes the content of the source</skos:definition>
    </owl:Class>

    <owl:Class rdf:about="&dol;OMSMapping">
        <rdfs:label xml:lang="en">OMS mapping</rdfs:label>
        <owl:equivalentClass>
@@ -2233,11 +2342,14 @@ of logic (model theory).</skos:note>
    </owl:Class>

    <owl:Class rdf:about="&dol;Ontology">
        <rdfs:label xml:lang="en">ontology</rdfs:label>
        <rdfs:subClassOf rdf:resource="&dol;OMS"/>
-       <skos:definition xml:lang="en">logical theory that is used as a shard
conceptualization</skos:definition>
+       <skos:definition xml:lang="en">explicit and shared formal representation of the
entities and their interrelationships of a given domain of discourse or of fundamental
notions.</skos:definition>
+       <skos:note xml:lang="en">The explicit and shared formal representation is
materialised in some OMS language (or several such languages).</skos:note>
+       <skos:note xml:lang="en">Ontologies also include definitions and explanations in
natural language that capture the intended meaning of the formal expressions.</skos:note>
+       <skos:note xml:lang="en">Ontologies typically include a taxonomy and, frequently,
a partonomy.</skos:note>
    </owl:Class>

    <owl:Class rdf:about="&dol;PlainMapping">
        <rdfs:label xml:lang="en">plain mapping</rdfs:label>
        <rdfs:subClassOf rdf:resource="&dol;LogicMapping"/>
@@ -2362,20 +2474,29 @@ of logic (model theory).</skos:note>
        <skos:note xml:lang="en">It is quite common that sentences are required to be
closed (i.e., have no free variables). However, this depends on the OMS language at
hand.</skos:note>
        <rdfs:comment xml:lang="en">a sentence in an OMS</rdfs:comment>
        <skos:definition xml:lang="en">term that is either true or false in a given
model, i.e., which is assigned a truth value in this model.</skos:definition>
    </owl:Class>

+   <owl:Class rdf:about="&dol;Sequence">
+       <rdfs:label xml:lang="en">sequence</rdfs:label>
+       <rdfs:subClassOf rdf:resource="&skos;OrderedCollection"/>
+       <skos:note xml:lang="en">sequence is used here in the sense of syntactic
sequence</skos:note>
+       <skos:definition xml:lang="en">ordered collection where also multiplicity of
elements matters.</skos:definition>
+   </owl:Class>
+
    <owl:Class rdf:about="&dol;SequenceOfCorrespondences">
        <rdfs:label xml:lang="en">sequence of correspondences</rdfs:label>
        <rdfs:subClassOf rdf:resource="&dol;DOLEntity"/>
+       <rdfs:subClassOf rdf:resource="&dol;Sequence"/>
        <skos:note xml:lang="en">sequence is used here in the sense of syntactic
sequence</skos:note>
        <skos:definition xml:lang="en">sequence whose members are correspondences.
</skos:definition>
    </owl:Class>

    <owl:Class rdf:about="&dol;SequenceOfOMS">
        <rdfs:label xml:lang="en">sequence of OMS</rdfs:label>
        <rdfs:subClassOf rdf:resource="&dol;DOLEntity"/>
+       <rdfs:subClassOf rdf:resource="&dol;Sequence"/>
        <skos:note xml:lang="en">sequence is used here in the sense of syntactic
sequence</skos:note>
        <skos:definition xml:lang="en">sequence whose members are OMS.</skos:definition>
    </owl:Class>

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    <owl:Class rdf:about="&dol;Serialization">
@@ -2463,11 +2584,11 @@ of logic (model theory).</skos:note>
        </owl:intersectionOf>
    </owl:Class>
    </owl:equivalentClass>
    <rdfs:subClassOf rdf:resource="&dol;LogicMapping"/>
    <dol:propagatesToAdjoint rdf:datatype="&xsd;
boolean">true</dol:propagatesToAdjoint>
-    <skos:definition xml:lang="en">logic mapping that maps signatures to
theories</skos:definition>
+    <skos:definition xml:lang="en">logic mapping that maps signatures of the source
logic to theories of the target logic</skos:definition>
    <rdfs:comment xml:lang="en">orthogonal to WeaklyExactMapping and
FaithfulMapping</rdfs:comment>
    <rdfs:comment xml:lang="en">the resulting theory typically contains
infrastructure axioms that are needed for expressing the logic mapping</rdfs:comment>
    <dol:reifies rdf:resource="&dol;isSimplyTheoroidallyMappableTo"/>
    </owl:Class>
    <owl:Axiom>
@@ -2478,16 +2599,16 @@ of logic (model theory).</skos:note>
    </owl:Axiom>

    <owl:Class rdf:about="&dol;Specification">
        <rdfs:label xml:lang="en">specification</rdfs:label>
        <rdfs:subClassOf rdf:resource="&dol;OMS"/>
-    <skos:definition xml:lang="en">logical theory that is used as a formal
specification</skos:definition>
+    <skos:definition xml:lang="en">formal representation of (requirements of) a data
structure, an algorithm or a hardware or software system used in systems analysis,
requirements analysis and systems design</skos:definition>
    </owl:Class>

    <owl:Class rdf:about="&dol;StandoffMarkup">
        <rdfs:label xml:lang="en">standoff markup</rdfs:label>
-    <rdfs:subClassOf rdf:resource="&dol;Language"/>
+    <rdfs:subClassOf rdf:resource="&dol;FormalLanguage"/>
    <skos:definition xml:lang="en">way of providing annotations to subjects in
external resources, without embedding them into the original resource (here:
OMS)</skos:definition>
    </owl:Class>

    <owl:Class rdf:about="&dol;StructuredOMS">
        <rdfs:label xml:lang="en">structured OMS</rdfs:label>
@@ -2538,11 +2659,11 @@ of logic (model theory).</skos:note>
    </owl:Class>

    <owl:Class rdf:about="&dol;Term">
        <rdfs:label xml:lang="en">term</rdfs:label>
        <rdfs:subClassOf rdf:resource="&dol;Expression"/>
-    <skos:definition xml:lang="en">syntactic expression either consisting of a single
non-logical symbol or recursively composed of other terms (a.k.a. its subterms)
</skos:definition>
+    <skos:definition xml:lang="en">syntactic expression either consisting of a single
non-logical symbol or recursively composed of other terms (a.k.a. its subterms) and
possibly logical symbols</skos:definition>
    </owl:Class>

    <owl:Class rdf:about="&dol;TheoremProver">
        <rdfs:label xml:lang="en">theorem prover</rdfs:label>
        <rdfs:subClassOf rdf:resource="&dol;Tool"/>
@@ -2559,12 +2680,12 @@ of logic (model theory).</skos:note>
        <rdfs:label xml:lang="en">theorem proving</rdfs:label>
        <rdfs:subClassOf rdf:resource="&dol;Process"/>
        <skos:definition xml:lang="en">process of demonstraing that a sentence (or OMS)
is the logical consequence of some OMS.</skos:definition>
    </owl:Class>

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- <owl:Class rdf:about="&dol;TheoremSentence">
-   <rdfs:label xml:lang="en">theorem sentence</rdfs:label>
+ <owl:Class rdf:about="&dol;Theorem">
+   <rdfs:label xml:lang="en">theorem</rdfs:label>
+   <rdfs:subClassOf rdf:resource="&dol;Sentence"/>
+   <skos:definition xml:lang="en">sentence that has been proven from other axioms
and theorems</skos:definition>
  </owl:Class>

  <owl:Class rdf:about="&dol;Tool">
```