

```
:C rdfs:subClassOf [ rdf:type owl:Restriction ;
                    owl:onProperty :P ;
                    owl:allValuesFrom :D ] .
```

can be expressed in Horn logic as follows:

$$C(X), P(X, Y) \rightarrow D(Y)$$

However, the opposite direction cannot be expressed in general. And the OWL statement

```
[ rdf:type          owl:Restriction ;
  owl:onProperty   :P ;
  owl:someValuesFrom :D ] rdfs:subClassOf :C .
```

can be expressed in Horn logic as follows:

$$P(X, Y), D(Y) \rightarrow C(X)$$

The opposite direction cannot be expressed in general.

Also, cardinality constraints and complement of classes cannot be expressed in Horn logic in the general case.

5.6 Rule Interchange Format: RIF

5.6.1 Overview

Rule technology has existed for decades now, and exhibits a broad variety (e.g., action rules, first order rules, logic programming). As a consequence, the aim of the W3C Rule Interchange Format Working Group was not to develop a new rule language that would fit all purposes, but rather to focus on the interchange among the various (existing or future) rule systems on the web. The approach taken was to develop a family of languages, called *dialects*; RIF defined two kinds of dialects: