# OWL KRInterface translators

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## Introduction

This document describes the mapping between various datatypes for the OWL interface.

## EIS to RDF

The percepts that come from EIS need to be inserted into the RDF triplestore (typically, the percept base). The mechanism used here is as follows. The ratioale here is that we want to create a lightweight translation, without requiring a full ontology.

Every EIS object is translated into a eis:predicate object, which has two properties: **name** and **parameters**. Name is of type xsd:string. Parameters is of type rdf:list. Table 1shows the values for name and parameters; Table 2 shows some examples.

Table . Conversins from EIS to RDF

|  |  |  |
| --- | --- | --- |
| eis iilang object | translated type | names of properties |
| **Percept**(String name, Parameter...parameters) | eis:percept | eis:name  eis:parameters |
| **Function**(String name, Parameter... parameters) | eis:function | eis:name  eis:parameters |
| **Parameter**... or **List<Parameter>** | rdf:list  rdf:nil | the usual rdf:first, rdf:rest |
| **identifier** | xsd:string |  |
| **Numeral** | xs:decimal |  |
| **TruthValue** | xsd:boolean |  |

Table . Some examples of EIS iilang objects and their translations.

|  |  |
| --- | --- |
| eis iilang | turtle |
| on(b1, b2) | \_:perc rdf:type eis:percept;  eis:name "on";  eis:parameters ("b1" "b2"). |
| block(b1) | \_:perc rdf:type eis:percept;  eis:name "block";  eis:parameters ("b1"). |
| tower(1,[b1,b2,b2]) | \_:perc rdf:type eis:percept;  eis:name "tower";  eis:parameters  (1 ("b1" "b2" "b3")). |
| colorblind(true) | \_:perc rdf:type eis:percept;  eis:name "colorblind";  eis:parameters  ("true"^^xsd:boolean). |
| wumpusIsAlive | \_:perc rdf:type eis:percept;  eis:name "wumpusIsAlive";  eis:parameters (). |
| on(block(b1)) | \_:perc rdf:type eis:percept;  eis:name "on";  eis:parameters (  \_:fun rdf:type eis:function;  eis:name "block"  eis:parameters ("b1")  ). |

## RDF to EIS

the reverse mapping of the above is also needed, for instance when creating actions. Table 1 shows the available conversions.

Table . Conversions from RDF to EIS

|  |  |
| --- | --- |
| rdf type | eis iilang |
| xsd:string | Identifier |
| xs:decimal | numeral. Depending on whether the number is an integer and the size of the number, this may become Long or Double. |
| xsd:boolean | TruthValue |
| **pointer to** rdf:list | PatameterList |
| **pointer to** eis:function | Function |

It is not clear now how to handle a "pointer to ". We can have the IRI but we can not access the actual contents unless we have access to the database. At the moment of translation, the database is already out of scope and the IRI does not even give a clue from which database the data comes, unless the IRI would contain the database name and the database would be immutable. Neither of these are part of the current plans.