grams, or transfer data among various hardware or software entities in a manner that requires the user to have little or no knowledge of the unique characteristics of those entities.

**OMS interoperability** relation among OMS (via OMS alignments) which are logically interoperable.

### 4.8 Abstract and Concrete Syntax

**Concrete syntax**

**Serialization** specific syntactic encoding of a given OMS language or of DOL.

**Note** Serializations serve as standard formats for exchanging DOL documents and OMS between human beings and tools.

**Example** OWL uses the term “serialization”; the following are standard OWL serializations: OWL functional-style syntax, OWL/XML, OWL Manchester syntax, plus any standard serialization of RDF (e.g. RDF/XML, Turtle, ...). However, W3C specifications only require an RDF/XML implementation for OWL2 tools.

**Example** Common Logic uses the term “dialect”; the following are standard Common Logic dialects: Common Logic Interchange Format (CLIF), Conceptual Graph Interchange Format (CGIF), eXtended Common Logic Markup Language (XCL).

**Document** result of serializing an OMS or DOL library using a given serialization.

**Standoff markup** way of providing annotations to subjects in external resources, without embedding them into the original resource (here: OMS).

**Abstract syntax**

**Parse tree** term language for representing documents in a machine-processable way.

**Note** An abstract syntax can be specified as a MOF metamodel. Then abstract syntax documents can be represented as XMI documents.

### 4.9 Semantics

**Formalization** precise mathematical entity capturing an informal or semi-formal entity.

**Formal semantics** assignment of a mathematical meaning to a language by mapping the abstract syntax to suitable semantic domains.

**Note** A formal semantics is a formalization of the meaning of a language.

**Semantic domain** mathematically-defined set of values that can represent the intended meanings of language constructs.

**Semantic rule** specification of a mapping from expressions for some meta class in the abstract syntax to a semantic domain.

**Global environment** mapping from identifiers (IRIs) to values in semantics domains representing the global knowledge about OMS semantic information about a set of documents (the latter typically being distributed over the internet).

### 4.10 Semantic Web

**Resource** something that can be globally identified.

**Note** Section 1.1 deliberately defines a resource as “in a general sense [...] whatever might be identified by [an IRI]”. The original source refers to URIs, but DOL uses the compatible IRI standard for identification.

**Example** Familiar examples include an electronic document, an image, a source of information with a consistent purpose (e.g., “today’s weather report for Los Angeles”), a service (e.g., an HTTP-to-SMS gateway), and a collection of other resources. A resource is not necessarily accessible via the Internet; e.g., human beings, corporations, and bound books in a library can also be resources. Likewise, abstract concepts can be resources, such as the operators and operands of a