4.7 Description Logic Features

SNOMED CT concepts are modelled in such a way that their meaning can be represented using a formal family of logics called Description Logic (DL). Description logic enables computers to make inferences about the concepts in SNOMED CT and their meanings, and to classify SNOMED CT using a DL reasoner. Description logic also allows the formal computation of:

- Subsumption – Testing pairs of expressions to see whether one is a subtype of the other
- Equivalence – Testing pairs of expressions to see whether they have the same logic-based meaning

Subsumption and equivalence are both extremely useful functions when retrieving or querying clinical information. For example, when retrieving all clinical records related to 73211009 (diabetes mellitus), it would usually be necessary to retrieve records referring to any subtype of this concept, such as 23045005 (insulin dependent diabetes mellitus type 1A).