3.2.2 - UML Components and the Services They Provide

This section outlines initial ideas about how the use cases realizations in the previous section could be linked to the technical (i.e. Semantic Infrastructure) services tentatively developed at the later stages of the Requirements Elicitation effort, and summarized in the Semantic Infrastructure Periodic Table. This table is posted on the Semantic Infrastructure Services page and shown in Figure 3.2.2-1 below. These technical services are included in the Functional Profile in the Periodic Table, and they will need to be invoked as part of the use case realizations.
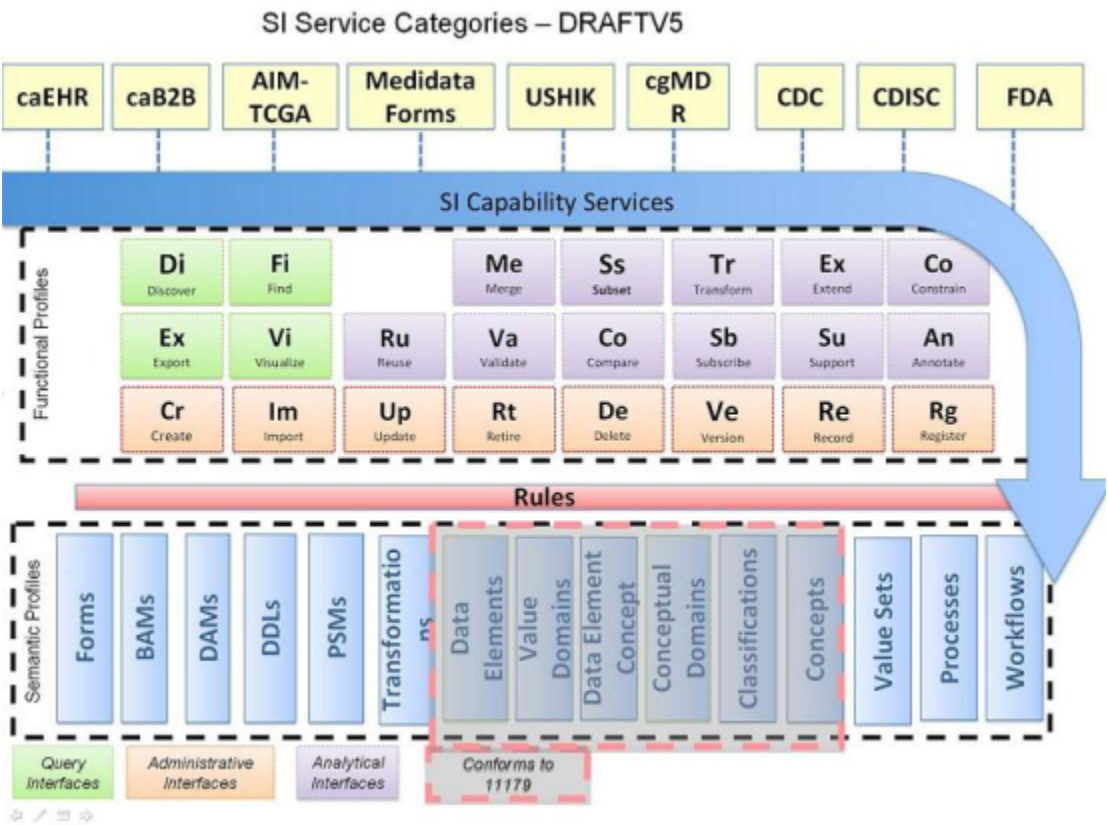

Figure 3.2.2-1 Semantic Infrastructure Periodic Table

The technical services are to be implemented by system components. Implementation responsibility is shown through the use of a UML interface in figures 3.2.2-2 and 3.2.2-3 below. Note that the Access Repository and Open Tool (the services shown in red) are not yet identified in the periodic table.

Note that the Semantic Infrastructure Periodic Table was developed to provide a similar way of categorizing services as was done in the context of the Enterprise Services Periodic Table.

The services can be positioned in terms of the following Infrastructure/Utility service categories, identified in the overall BIG Health Enterprise Services Periodic Table, namely:

- Knowledge Management services
- Validation Services
- Translation Services

The remainder of this section is structured according to these three service categories.

Knowledge Management Services

Figure 3.2.2-2 depicts the technical services included in the Knowledge Management category. The components shown in this figure are mentioned in the use case realizations in section 3.2.1 - UML Sequence Diagrams.

Note that the use of UML ports is not necessary but was included in this paper as a basis for subsequent discussion for choice of notation. An alternative approach is to connect the provided interface directly to the components.
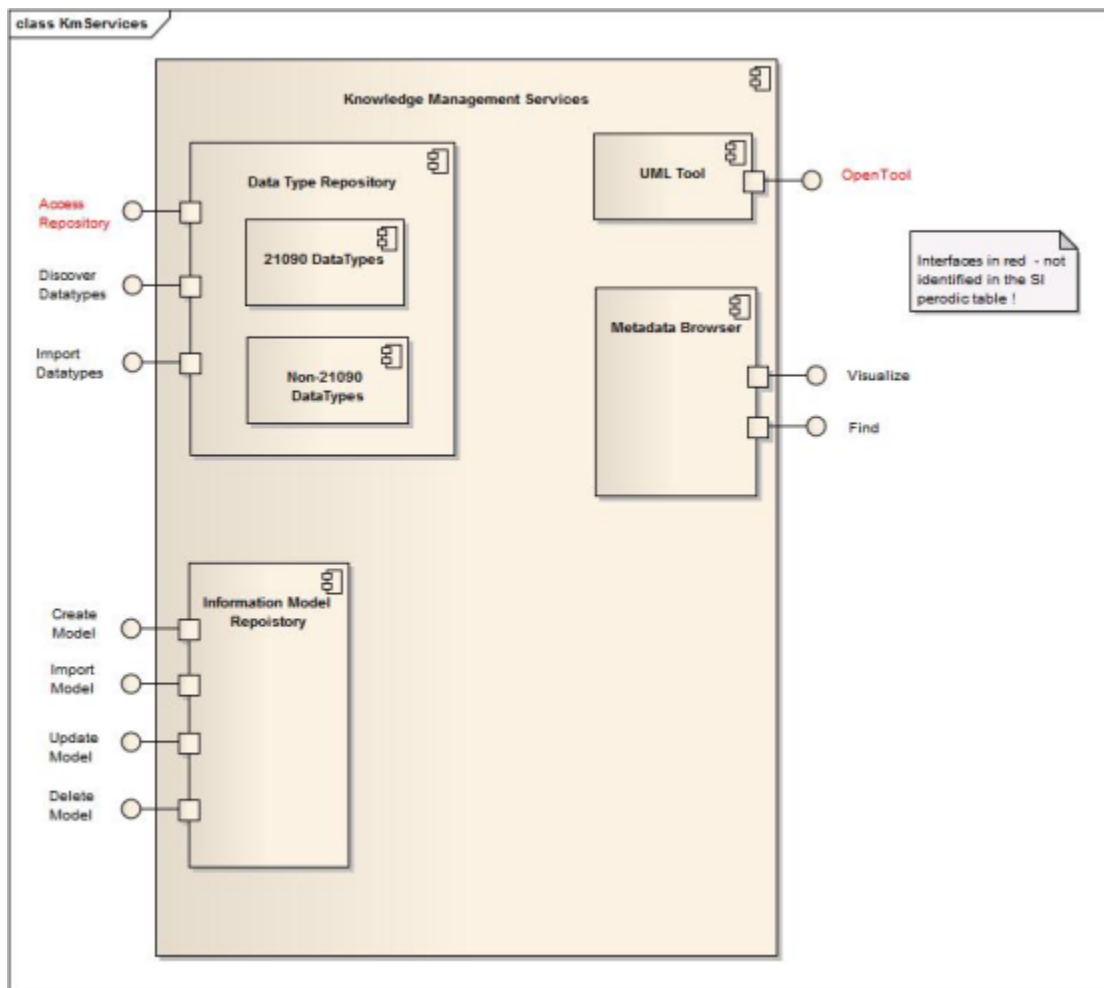
Figure 3.2.2-2 SI Knowledge Management Services Used in the 21090 Use Case

Validation Services

Figure 3.2.2-3 depicts the technical services included in the Validation category. The services are provided by an ECCF component, introduced to support future conformance and compliance activities associated with the certification of different services in the system.
Two simple SI services provided by the ECCF component are identified for reading and creating ECCF artifacts. These services can also make use of the existing (create, update etc.) SI services but they are shown here explicitly to highlight the need for an ECCF component.
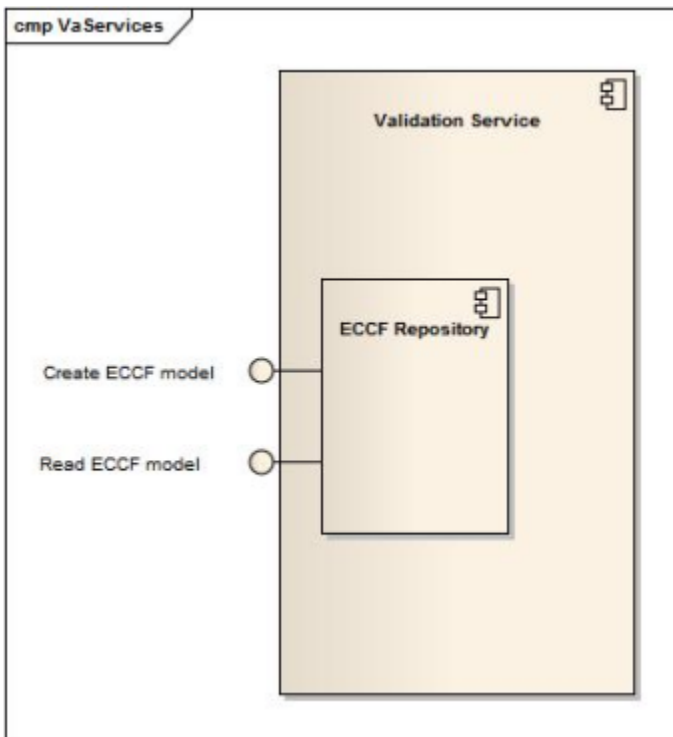Note that this figure depicts an alternative notation for service (i.e. no use of UML ports).

Figure 3.2.2-3 Validation Service and the ECCF Component Used in the 21090 Use Case

Translation Services

Figure 3.2.2-4 below depicts the Translator toolkit mentioned in the narrative use description. The component provides a number of technical services that are likely to be defined as part of the Translation Service category (see the Functional profile dashed box in the Semantic Infrastructure Periodic Table in Figure 3.2.2-1 above).
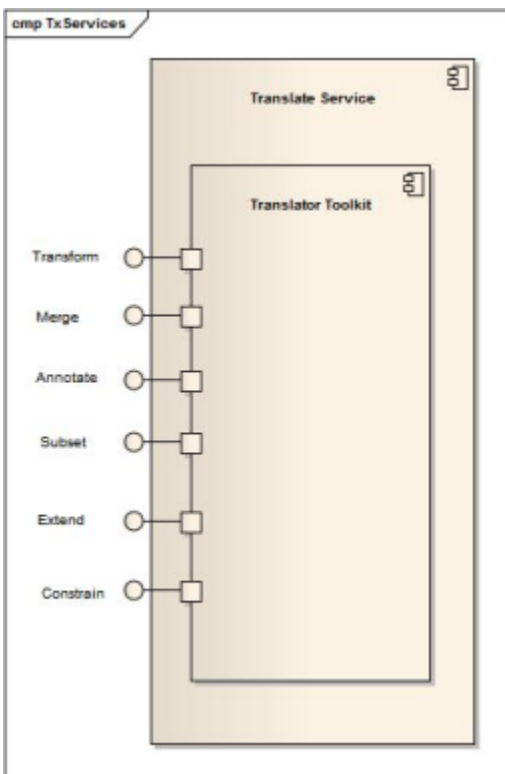

Figure 3.2.2-4 Translation Services