

Unsolved Issues in the domain ontology

1) Parameter passing

I followed Qing's recommendations (Parameter Passing, Word document, May 19, 2000) and modeled parameter passing in Protege. We'll discuss it on Monday, October 23, at 1 pm EST.

2) Distinguishing between global and local variables

On January 26th, Qing wrote:

- Data Item first used in a sub-guideline should be considered global.
- Variables first used in a sub-guideline should be considered local.

I am not sure that I follow.

3) Get Data Action Specification

On May19th, Qing wrote:

- **Possible Way of Implementation:**
- Upon defining a new variable, a "get" statement should be generated.
- Each time the variable is referred to, a user can choose to get new value or not.
- A get Statement contains a Data Item, Data Source, and **Temporal Constraint**.

There are two options:

- a) Using Get explicitly if a new value should be retrieved from the EPR in a session, otherwise using the value that was retrieved before.
- b) By default, always getting the new value from the EPR. If an old value is to be used it would be assigned to a variable data item.

3) Supporting list and time retrieval operations on complex types:

- a) how should an interpreter recognize variables of a complex type defined within the domain ontology?
- b) Will the expression language have a mechanism for declaring complex types, or will there be a part of the execution engine that interfaces with the interpreter and with the domain ontology and will know how to handle complex types.

4) Do Data Items follow the definition of (Qing's 1/26 Word document)

"Data value of a data item will be modeled by a list of instances of data model objects in the RIM model."

5) Should we have defaults for data item expression: current? latest? ".value"?

6) how do we specify that a variable data item is of a basic data type?

7) How should we define things such as the correct unit for a variable data item?

There are a number of alternatives:

- a) Create an instance of the Data_Item after all, in definition mood, and create an instance of a value for it. In the value, specify the unit, but not the number (e.g., write Kg and not 50 Kg)
- b) Subclass USAM's observation class into BOOLEAN_Observation, Physical_Quantity_Observation, etc. The problem with this approach, is that we cannot say what the unit should be, is it a measure of velocity, distance, etc. ?
- c) There might be other approaches.

8) Adding slots to the CORE GLIF class "Concept": definition (string) and related concepts (string), where we would define the new concept and also give UMLS codes of "close" concepts.

9) In the "cough gone?" choice, the decision hides in it an observation action that needs to take place. But it seemed unnecessary to add an action of "examine cough / get cough" before making the decision

10) How will we model relationships among classes and objects of patient data?

11) How will we model medical knowledge that is not patient data?

12) Mapping data items to EPRs:

- How will it be done?
- How will missing data be interpreted? (infinity, UC)

13) Defining and referring to events

If we want to specify that we should order-not-to do an X-Ray starting now and ending some time in the future, when some event happens, then:

- 1) How do we define the event (e.g., birth, or start of a future step)
- 2) Do we move on to the next step right away, or do we wait for the order to take place? For example, if we ordered an X-ray, and the next step is to determine if the X-ray results are normal, then when do we move on to the next step? What happens in case of a negative recommendation (order-not-to)?
- 3) After the event happens, we don't want to allow orders to be made. We also now know that we can replace the event with an actual time stamp. How do we do that? Do we create another entry of the order-not-to action, which has a definite time stamp?

14) Semantics need to be clearly defined