

WP 2: Selection and Asbru Modelling of Reference Protocols

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Workpackage number :	WP2				Start date or starting event:	month 0		
Participant number:	2	1	3	4	5			
Person-months per participant:	1	0.5	1	0.5	0.5			

Objectives

Definition of formal semantics of Asbru elements in KIV and identification of properties to verify on Asbru elements.

Description of work

A formal semantics will be defined for a sufficiently large part of Asbru, a part that should be enough for covering the selected reference protocols. In parallel, a number of interesting protocol properties will be determined and translated into the Asbru formal semantics.

In this stage, existing work on the definition of formal semantics of Asbru elements in KIV and on the identification of verifiable properties will be used.

Deliverables

D2, D3.

Milestones and expected result

The milestone will be the subset of Asbru elements to be used in the formalisation, crucial for the later steps.

The results will be a formal language to model medical protocols, on one hand, and a list of desirable/required protocol properties, on the other.

Content

- Task Overview => Goals
- A'dam/Augsburg: Asbru in KIV
 - Asbru Light (from Mo)
 - Operational Semantics (from Mo)
- A'dam Properties -> file: adam.pdf
- Vienna Properties
 - Condition Properties -> file: condition.pdf
 - Temporal Dimensions -> file: time.pdf
- Next Steps

A'dam Properties (sloppy/informal/vague)

- Control Structure : Conditions
 - Example:
 - if in a do-all-sequentially, the filter-condition fails
 - then there is an error in the plan
 - If in a do-some-any-order, the actions of one subplan should not influence conditions of other subplans
- Parameters Never Used or Asked
 - in both Directions
 - This are "gaps" in the protocol

A'dam Properties (sloppy/informal/vague)

- **Effects : Intentions**
 - Example:
An effect can make the intention (partial) true or (partial) false.
- **Combinations of Conditions**
 - Filter & Setup & Complete (& Some-terminology) -> Intentions
 - Variants of these
if (filter & setup) & ~suspended & ~aborted & complete & some terminology (domain ontologies) -- then overall - intentions holds
 - Complete-conditions should be consistent (or derivable) with the Filter/Setup-conditions and the execution of the plan
 - Derivable: Filter & Setup -> [plan]Complete -> Intention

A'dam Properties (sloppy/informal/vague)

- **Subplan has to Contribute to the Intention of the Plan**
- **Plan Library Completeness Properties**
 - For each setup condition should be a plan or set of plans that satisfied the setup condition.
(by intentions/complete-conditions/effects)
(i.e. *there must be a plan to make the setup conditions true*)

A'dam Properties EXTENSIONS

- **Effects Represent *Actual Behavior*, where as Intentions represent *Expected Behavior*** (adapted)
 - Intention - may be true --> expected behavior
 - Effects - must be true --> actual behavior
- **Overall Intentions are a Subset of Effects**
 - Effects with Likelihood = 1.0 = overall Intention

To Do ---> D3 (1/2)

- **Validation- Medical Knowledge**
 - Mar and Kitty joined Session in A'dam
 - Jaundice and Diabetes
 - send them to Peter, sends comments back
 - start second week of January
 - Topics
 - Properties - Indicators
 - plus Informal Medical Reasoning
 - Intentions
 - plus Informal Medical Reasoning
 - (possible in KIV: Safety Models)
 - Output: Summary

TO DO ---> D3

(2/2)

- **Verification Part**

- Input:
 - A'dam Properties
 - Vienna Properties:
Condition Properties, Temporal Dimensions
- Michael: What is suitable in KIV
- Output:
 - Selection of these Properties
 - Comments on non-selected properties
 - Distinguish on which level: original, Asbru, KIV
 - Annotate which level
- Deadline April 2002

Deliverables (D2, D3 : WP 2)

- **WP**

- responsible: Silvia

- **D2**

- Operational Semantics
- responsible: Michael (Andi)

- **D3**

- Properties
- responsible:
 - medical (original): Mar (Kitty)
 - semantics (Asbru): Silvia (Michael)