LLM CMS Specification Work Offer

This Document is an offer by:

Wolfgang Scherer

To

CEIT,

concerning the production of a specification for the central management system (CMS) of the system implementing the service functionality in the Long Lasting Memory (LLM) research project.

About this offer

This offer describes work performed in producing the functional and top level implementation specification for the central management system in the Long Lasting Memories research project. Most important, it describes:

- what will be contained in the specification
- in what level of quality and dependability and detail
- how the above information will be obtained and refined

To this effect, this is a meta-specification, specifying a specification and the associated work.

Document ID	PUCONLLMCMSSOFR001010
Version	V 1.0-0
Author	Wolfgang Scherer
Customer	CEIT
Customer Approval	Walter Hlauschek
Documen State	Draft Proposal
Change Date	2009-12-04
File Name:	LLM CMS Specification Work Offer - 20091204.doc

Overall Target

The target of the specification work is a functional and structural specification that may be given to implementing software development teams to be able to nearly immediate commence implementation. “Nearly immediate” means that implementation must not start before 2 activities deemed necessary at the start of the implementation:

Review of the specification by the implementation team

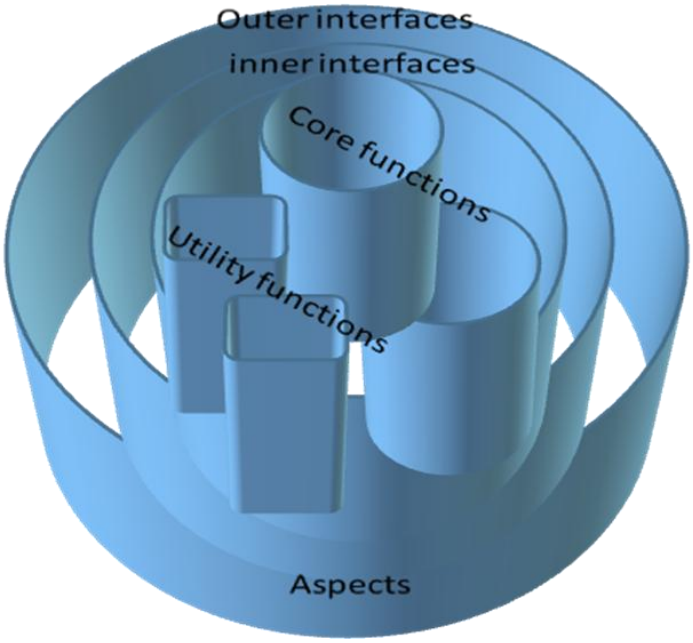
Acceptance and agreement of specification interpretation

Modularity

The specification is intended to be modular in the sense of breaking down the specified systems' architecture into modules being able to be implemented independently from each other. Furthermore, dependencies of modules amongst each other – however, on a very high level – will be identified in order to allow either an implementation sequence or postponing the implementation of certain modules to a later point of time without compromising the functionality

Template Architecture

In order to estimate the amount of specification work reasonably accurate, the work needs to be broken down into functional entities whose functionality and behavior needs to be specified. However, the architecture of the system is not known at the time of functional specification, much less before specification. In order to break this deadlock situation, this offer assumes an abstract template architecture to identify the class and cardinality of functional entities.



Architectural Entities

Outer Interfaces

Outer Interfaces are interfaces visible from the outside of the system in discussion

Inner Interfaces

Inner Interfaces are interfaces between inner components of the system in discussion. Not all interfaces between components will be considered in the first version of the architecture. However, these of relevance for the respective stage of architecture refinement are listed.

Core Functions

Core functions are the central functionalities of the system in discussion, the reasons of existence for which the system is intended in the first place. Use cases local to a specific core function are also described here.

Utility functions

These are the functions identifiable to core functions and other utility functions, common algorithms and data structures being reusable.

Aspects and Use Cases

These are aspects of the system, functional or non-functional, that are orthogonal to the architectural structure of the system. Aspects may describe performance or quality requis as well as volumetrics. Use Cases are also handled in this category, if they are system-wide.

Cardinalities andffos

The following table summarizes the assumptions made about the number of architectural elements to be specified in LLM CMS broken down by type of element resulting in a first estimation of effort to generate the specification .

Outer Interfaces - ILC – Independent Living - CTC – Cognitive Training - PTC – Physical Training - Local Interface - Remote Interface	5
Inner Interfaces	6
Core functions: - Domain Administration - User/Patient Administration - ILC control - PTC control - CTC control - Remote/Local Interface control	6
Utility functions	5
Aspects and Use Cases: - Performance - Availability	13

- Safety - Security - Modularity - Multi-Tenancy / -Agency / -Customer - UC: e-Home - UC: Day-Care Center - UC: Clinical Environment - Scalability - UC: Home-Care Professionals - Accounting - Evidence Collection & Archiving	

Work items

Having sketched the template architecture, each architectural entity requires a certain set of work items to reach the required level of specification.

Outer Interface	Outer side Inner side performance/volumetrics technology aspects	2 2 1 1	6	30
Inner Interface	Outer side Inner side performance/volumetrics dependencies technology aspects modularity aspects	1 1 1 1 1 1	6	36
Core function	Function HMI aspects Use cases configuration performance/volumetrics storage/persistence technology aspects	1 1 2 1 1 1 1	8	48
Utility function	Function HMI aspects configuration performance/volumetrics storage/persistence technology aspects	1 1 1 1 1 1	6	30

aspect	General requirements	1	1	13
Document control and release				8
Total				165

References

- “Auszug_LLM_DoW_v3 1_approved_10042009.pdf” of 2009-12-02