PROMISE

Paticipative Research labOratory for Multimedia and Multilingual Information Systems Evaluation

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Researchers Exchange Report
Use Case Framework
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1 Introduction

The purpose of the visit from Gunnar Eriksson and Preben Hansen (SICS) conducted from October 25 - 27, 2011 in Berlin, was the investigation of possible research exchanges between the partners SICS and UBER. The knowledge exchange was carried out in the context of PROMISE, particularly with regard to WP2 (Stakeholders Involvement and Technology Transfer) and WP6 (Evaluation Activities).

2 Planned Work

In order to involve stakeholders the main use case domains need to be properly formalized. UBER is working on formulating use cases related to the Cultural Heritage domain. Since no standard evaluation procedure for CH use cases exists therefore no standard requirements are defined yet. Therefore it was planned to discuss a possible use case framework and description from the PROMISE point of view.

The following issues should be covered:
1. Description of CH domain with regard to use case design
2. User groups/ models and interaction patterns
3. Evaluation approaches
4. Use case framework (template)
5. Use cases for evaluation purposes (e.g. CLEF campaign)

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3 Conducted Work

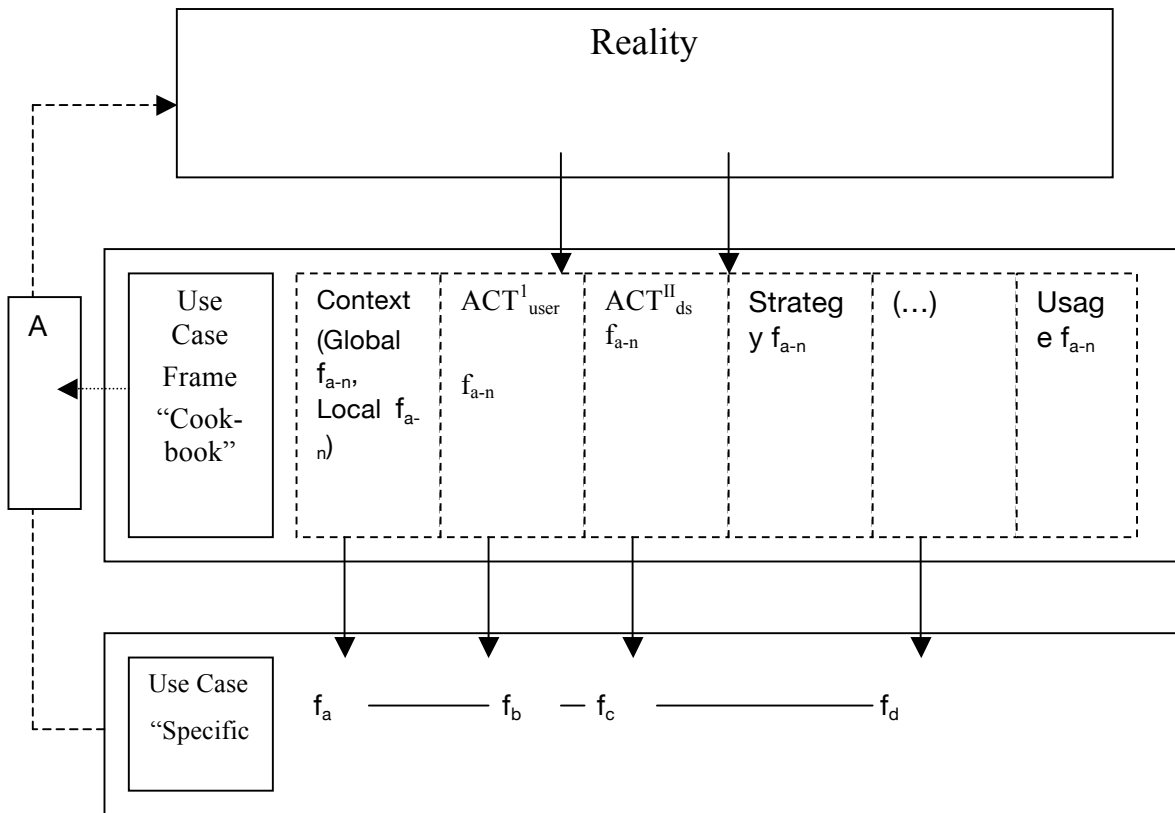Basically two main issues were addressed during the research exchange:

1. Development of the main Use case framework and specific components for a CH use case
2. Development of the evaluation task for CLEF 2012/13

In order to be able to build a use case model the three main interaction patterns for the CH domain were investigated and discussed with regard to possible evaluation tasks [Petras et al. 2011][Frieseke et al. 2011]. Especially for the "Engage" pattern alternative methods and metrics need to be taken into account [Berendsen et al. 2011].

The different abstraction levels from the real system to use cases and evaluation tasks should meet all requirements of the corresponding domain.

With regard to common use case components a possible framework served as starting point for the discussion including the following parts (see figure below):

- Need: e.g. what subjects is Shakespeare dealing with? / Find a variety of renaissance pictures of flowers
- Environment:
    o Global context: e.g. domain (e.g. art education)
    o Local context (situation)
- Actor (User): type of user (e.g. student), expertise: domain knowledge, search skills, information literacy, system knowledge)
- Actor (Data set/collection): Europeana (domain-specific, meta data representing different formats)
- Actor (System Components): text based search
- Situation: device, time constraints, location
- Strategy: e.g. search, browse
- System outcome: result list with variety of appropriate results
- User goal: e.g. get 10 pictures for a book project
- Usage: saving, writing, transformation, adopting, annotating, merging

Reality

	Use Case Frame "Cook-book"	Context (Global f_{a-n}, Local f_{a-n})	ACT^{1}_{user} f_{a-n}	ACT^{II}_{ds} f_{a-n}	Strategy f_{a-n}	(…)	Usage f_{a-n}

A

Use Case "Specific	f_a	f_b	f_c	f_d

A = evaluation task

It was agreed that the use case also should cover actions that are usually summarized as "usage". The term "usage" denotes the interaction with retrieved results, which include engage actions.

The second part of the research exchange focused on the development and design of a possible CH evaluation task within CLEF[1]. In line with the CLEF2011 conference UBER organized the CHiC workshop[2] (Cultural Heritage in CLEF) to review existing use cases in the CH domain and translate them into potential retrieval and evaluation scenarios that can be used as benchmarks for evaluating CH information access systems.

UBER will submit a lab proposal proposing a two-year evaluation process with the goal to also include methods and measures for interactive information evaluation.

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[1] http://clef-campaign.org/

[2] http://www.promise-noe.eu/chic-2011/home

4 References

[1] Berendsen, R., Di Nunzio, G. M. et al. D4.1 - First Report on Alternative Evaluation Methodology, 2011.

[2] Frieseke, M., Gäde, M. et al. Interaction Patterns in Cultural Heritage Information Systems, 2011

[3] Petras, V., Stiller, J. and Gäde, M. Evaluation Approaches in Cultural Heritage Information Systems, 2011