

**VIKING SHIP PROJECT:
W.I.S.E.**

MIDTERM REPORTÁGE



6 APRIL, 2005

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OVERVIEW

| Version | Description | Date finished |
|--------------------|---|---------------|
| Tentative Sketch | Conceptualization of project after consultation with Dagny Stuedahl | 26/01/2005 |
| Project Proposal | Drafted project proposal based on the tentative sketch and limited literature survey | 02/02/2005 |
| Project Definition | Explored technological avenues and discussed their relevance and implementation possibilities after further consultation with Ole Smørdal | 09/02/2005 |
| Midterm Reportage | Further analysis and discussion of the finer technical details, in light of factors beyond our control | 06/04/2005 |

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1. INTRODUCTION

1.1 Project Overview

The project is a collective effort and collective vision to develop a mobile information system which will provide location-based “media-on-demand” to mobile devices. A succinct overview of the technological aspects of the project will obviously include an assessment of available RFID technologies. This summary would also include an assessment of the appropriateness of different RFID uses in terms of purposeful prototypes. The import of which will stand testament to the development of an RFID monitoring and management system for tag positioning (and identification), motion statistics, displays and reports. In addition, the system will also serve information (media-on-demand) from any supported mobile device.

The project will be presented on April 13, 2005.

1.2 Project submissions

| Documents | Publication Date | Submissions Method |
|----------------------|------------------|----------------------|
| Tentative Sketch | 26/01/2005 | Internal use |
| Project Proposal | 02/02/2005 | E-mail, project page |
| Project Definition | 09/02/2005 | E-mail, project page |
| Midterm Reportáge | 06/04/2005 | E-mail, project page |
| Final Project Report | 11/05/2005 | Currently n/a |

2. PROJECT ORGANIZATION

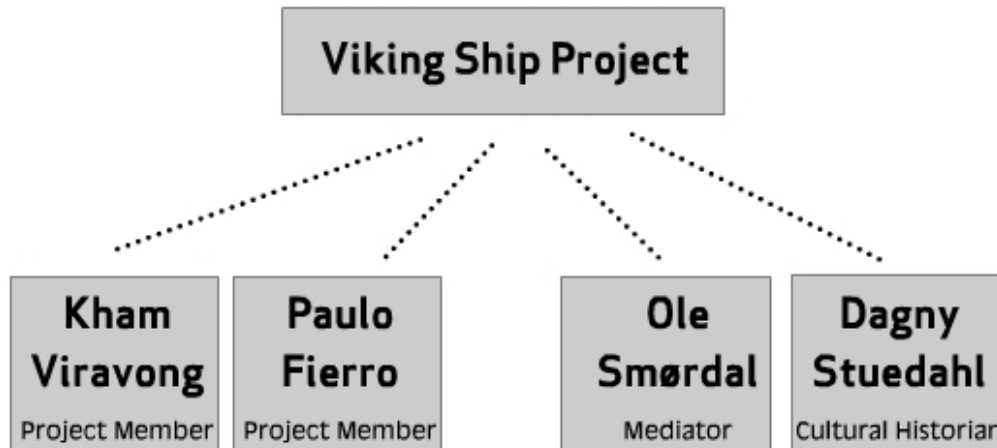
2.1 Process Model

We thought rapid prototyping would be the ideal means to explore essential features of the proposed system, because this process promotes early experimentation with alternative design choices and allows us to pursue different solutions without efficiency concerns.

Our process can be summarized as

1. Design of the two-tiered system and how these communicate with one another
2. Conceptualized a model of the client application (first-tier) and a delimitation of the back-end system
3. Definition of the prototype
4. Development of the prototype including testing on the proposed client hardware

2.2 Organizational Structure



2.3 Responsibilities

| Role | Main Responsibility |
|-------------------------|---------------------|
| Project Leader | Khamphira Viravong |
| Diagram and development | Paulo Fierro |
| Quality Assurance | Khamphira Viravong |

| Role | Main Responsibility |
|-------------------------------|-----------------------------------|
| Documentation | Khamphira Viravong & Paulo Fierro |
| Resource- and Time Allocation | Khamphira Viravong |
| Software Architecture | Khamphira Viravong & Paulo Fierro |

| Role | Main Responsibility |
|------------------------------|--|
| Project Leader | Internal co-ordination of development tasks, responsible for validation of final documents and updating the project page |
| Diagram and development | Design of use-case models, domain model, process models and prototyping |
| Quality Assurance | Guarantees documentation standards and the functional validation of prototype |
| Documentation | Creation of all project documents |
| Resource and Time Allocation | Distribution of resources |
| Software Architecture | Design of component architecture and processes |

3. PROJECT MANAGEMENT

3.1 Management Goals & Priorities

Adhere to documentation standards and meet deadlines.

No purchasing or usage of uncertain technology.

Ensure that the first-tier will be fully compliant for future amalgamation with the proposed second-tier.

Bi-weekly meetings, e-mail and SMS for status reports.

3.2 Assumptions, Dependencies & Restrictions

Milestones are being and will be met due to the nature of the rapid prototyping development process. Project members will acquire the necessary skills and knowledge to tackle any problems that appear in the development process.

3.4 Control and Surveillance Mechanisms

Documents and other relevant information may be found at
<http://www.uio.no/studier/emner/matnat/ifi/INF5261/v05/Studentgrupper/Viking%20Ship/>

Documentation standards comply with the same forms of layout and are distributed in the open PDF format.

Quality assurance of the documentation is undertaken by both project members in accordance with the course requirements.

By virtue of the size of the project group meetings are performed as scheduled as well as on an ad-hoc basis.

4. TECHNICAL ISSUES

4.1 Methods, Tools og Techniques

Microsoft Word 2003: Used for writing documentation.

Microsoft Visio 2003: Used for drawing process, domain and use-case models.

Adobe Acrobat: Used for creation of PDF documents.

Macromedia Flash MX 2004 Professional: Used for creation of client application.

mySQL: Used as the content database

AMF-PHP/AMF::Perl: Used as the server-side gateway.

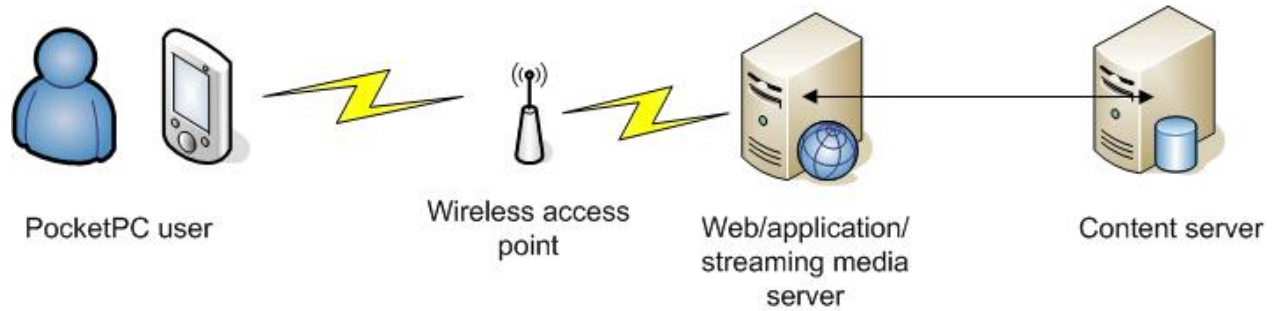
Avid Xpress Pro: Used to export the video for streaming.

4.2 Software Resources

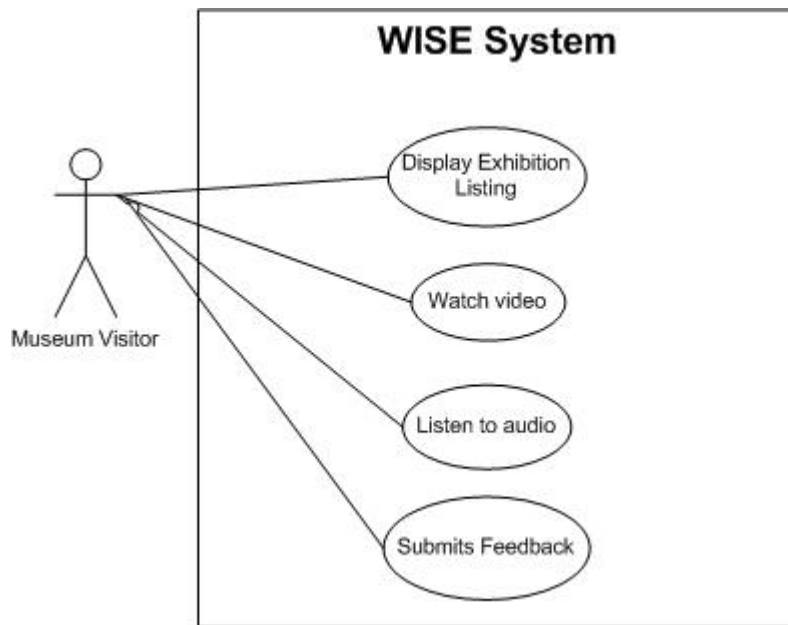
| Software | URL |
|---------------------------------------|---|
| Microsoft Word 2003 | http://office.microsoft.com |
| Microsoft Visio 2003 | http://office.microsoft.com |
| Adobe Acrobat | http://www.adobe.com/products/acrobat/ |
| Macromedia Flash MX 2004 Professional | http://www.flash.com |
| mySQL | http://dev.mysql.com/ |
| AMF-PHP/AMF::Perl | http://amfphp.org/ |
| Avid Xpress Pro | http://www.avid.com/products/xpresspro/ |

5. MODELS

5.1 Process model



5.2 Use Case Diagram



5.3 Use Case Description

| | |
|----------------------|---|
| Use Case | <i>Watch video</i> |
| Actor | Museum visitor |
| Trigger | Visitor clicks "Watch video" link |
| Preconditions | Visitor is within range to access the wireless system |

| | |
|------------------------------|---|
| | Visitor accesses a page on the WISE system |
| Post conditions | Video is cached on device for possible future viewing with zero latency |
| Normal flow of events | <ol style="list-style-type: none"> 1. Visitor walks into an exhibition hall 2. Visitor selects the corresponding page to the exhibition hall they are in on their PDA. Visitor reads the available page(s) 3. Visitor selects one of the available videos to watch 4. Video starts streaming near-instantaneously on the device |
| Variations | <ol style="list-style-type: none"> 4. No video is available for the current page. Goes back to 2, where the visitor can pick a related topic |
| Relevant information | <ol style="list-style-type: none"> 2. Future implementations will do this via a positioning system |

REFERENCES

[1] Craig Larman, Applying UML and Patterns, Second Edition, Prentice Hall PTR, 2002

[2] Ian Sommerville, Software Engineering, 6th Edition, Addison Wesley, 2001

[3] Lars Mathiassen, Andreas Munk-Madsen and Peter Axel Nielsen, Object Oriented Analysis and Design, Marko, 2000

[4] Macromedia Flash Supported Devices, http://www.macromedia.com/mobile/supported_devices/