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Osmos Field Trials

Definition and Application

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Summary

This document describes field trials carried out during Iteration 1 and to be carried out during Iteration 2 by the contractors (the "end users"), DERBI and GRANDLUNG.

These field trials show the specific work procedures employed by each contractor. These procedures have been detailed in Document D1.3

In addition to a description of the field trial scenarios, this document describes the means implemented to perform the trials (technical equipment, testers).

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Abbreviations

Please note that a further document will be made available that will act as a Glossary for all the deliverables in Workpackage 4.

EDMS Exchange Document Management System

OSMOS Open System for Inter-enterprise Information Management in
Dynamic Virtual Environments

VEM Virtual Enterprise Manager

1. Introduction

The purpose of Task T4100 presented in this report is to define the field trials that were carried out by the end users (DERBI and GRANDLUND) in the first iteration and presents the field trials that will be carried out in the second iteration.

2. Granlund field trials – Iteration 1

The field trials carried out by Granlund in the 1. iteration of the OSMOS project are built around the Facility Management services (a description of these services is available in the deliverable D2.3). These services are implemented by Granlund as end user extensions. These are:

- 'Adding Requests' -service
- 'Managing Requests' -service
- 'Checking and Confirming Workorders' -service

Other tools from the OSMOS environment used in the field trials are the OSMOS Web Browser and the OSMOS VE Manager tool.

The end user extensions are installed in Granlunds own web server connected to the Internet. The Web Browser is installed in VTT's web server also connected to the Internet. The VEM is installed on a workstation as a standalone Java application. Other hardware used is a mobile phone with Internet extensions (NOKIA Communicator). This means that the field trial conducted is run in a true Internet environment except for the VE Manager. It should also be mentioned that at the time of the field trial there is no integration between the VE Manager and the Web Browser. Thus the work with the VE Manager will concentrate more on the features of the tool itself than on integration issues.

The actors and their responsibilities in the field trial are:

<u>Actor (number of actors)</u>	<u>Responsibility</u>
Virtual Enterprise Manager (1)	Sets up the Virtual Enterprise and registers new actors in the Enterprise
Requesters (2)	Sends in requests to be processed by the Maintenance Manager
Maintenance Manager (1)	Checks incoming requests and defines work orders if necessary
Maintenance People (2)	Checks for work orders and carries out the tasks defined in the work orders ending up with confirming the work orders as finished

The Virtual Enterprise Manager uses the VE Manager tool. Requesters use the 'Adding Requests' -service through the OSMOS Web Browser and alternatively using the 3D VRML browsing extension or the treeview extension. The Maintenance Manager uses the

'Managing Requests' -service by logging directly to the end user extension through a normal web browser. One of the Maintenance People representatives uses the 'Checking and Confirming Workorders' -service directly through a normal web browser on his workstation. The other one uses the same service through the mobile phone. The work of the Maintenance People is divided so that one of them is responsible for issues related to cleaning and the other one for more technical things (HVAC and electrical issues).

The field trial will be conducted in the following way:

Requesters add new requests every now and then by browsing through the OSMOS Web Browser and defining textual descriptions about the problem they want to have fixed. The Maintenance Manager deals with the requests and processes some or all of them to work orders. The work orders are checked by the Maintenance People and these also confirm work orders done as part of their tasks. Each participant fills in the Field Trial Evaluation Forms after the field trials are finished. The field trials are estimated to carried out during 3 hours.

The scenario described in the 1. iteration of the field trials will be further refined in the 2. iteration and carried out as a real Internet solution together with a group of clients. The scenario described above has been chosen on the basis of a real case. This means that the client group will have participants according to the list of actors defined in the description. The number of actors will be bigger in the 2. iteration.

3. Derbi field trials

3.1 Scenario Test

The following example of an OSMOS application is for a fictitious operation in the construction works phase.

However, to gauge the feasibility and check the consistency of the model, simplified procedures which are relevant to (representative of) those customarily employed in France have been implemented in this scenario.

Reference will also be made to the various steps of Document D1.3 in Workpackage WP1.

During an initial meeting organized with all participants in the siteworks, the virtual (prime) contractor will propose specific means for exchanging information and issuing the various site documents the participants are required to produce (work schedules, meeting minutes, drawings, catalogue of samples, etc.), and will be responsible for managing access to them (issue, view only, etc.) in compliance with the rights and duties of each.

3.1.1 Worktools

To produce documents, users will employ softs specifically designed for the construction field, or currently marketed softs (Word, Excel, Autocad, etc.). All the documents produced must be issued in a standard format compatible with the main viewers.

OSMOS VE MAN

This soft is used to format and follow-through the task structure.

OSMOS Web Browser

The Web Browser allows each user to browse through the list of documents according to a tree structure to be pre-defined and, for a given document selected, to propose various actions inherent to the type of document and authorized by the system (view only, update, etc.). The Web Browser is used for storing new documents and should also propose general services to each participant, such as the capacity to modify his address or other attributes in the project directory, send an e-mail, etc.

SGTi

SGTi is the EDMS used during the siteworks. SGTi is accessible by the majority of participants, but those who do not have access to this tool will use the Web Browser as a gateway.

The API between the specific tools of OSMOS (VE MAN et Web Browser) and the SGTi will guarantee effective operation of the system.

3.1.2 Data management

3.1.2.1 Project participants

All project participants must be listed, for various reasons relating to the protection and traceability of information. One or several roles are assigned to each participant, or user. Rights are authorized to a given participant in relation to the role(s) assigned to him.

3.1.2.2 Roles

On this particular worksite, the roles are defined as follows:

- The Owner
- The Design Team (which is also an engineering design team)
- The Architect
- Two Engineering Design Offices, one for construction works, the other for external works
- The Construction Manager (scheduling, management of works, coordination)
- An SPS Coordinator (worker health and safety)
- Contractors for the various building trades (structural works, electricity, metalwork, etc.)

The VE Manager functions are carried out by the Design Team.

NB: Any role assigned to an individual indicates his function for the project only, not his function within his employer company.

Roles may either be limited to social entities, as in the preceding list, or the sub-functions of each entity may be identified, for example: manager, technical director, draftsman, secretary, etc. However, for the sake of clarity, titles such as “secretary”, “draftsman”, “project manager”, etc. must be identified in relation to their corresponding entity: “Architect’s Secretary”, “Design Team’s Project Manager”, etc.

Access to data by contractors is limited. Their rights of access are restricted to their respective contracts and financial statements (interim certificates, etc.). However, contractors are responsible for producing the working drawings for their specific trade(s) (electricity, external works, etc.).

3.1.2.3 Types of data recorded

OSMOS is designed to store the following types of data:

- contracts
- the job specifications
- the final design drawings (included in the tender documents)
- minutes of site meetings
- the worker health and safety logbook
- the general construction works schedule
- catalogues of samples (photos, written descriptions, including the possibility of links to suppliers' catalogues)
- the working drawings
- contractors' interim certificates (financial statements)

There may be several (subsequent) indexes of each document.

3.1.2.4 Range of possible actions (methods)

“General” actions available to every participant:

- view the list of participants,
- modify his attributes in the project directory,
- send e-mail,
- receive e-mail,
- search for documents.

Specific actions depending on each type of document are then defined. These actions include:

Issuing The act of recording/storing an item of information in OSMOS.

Viewing The act of viewing a document and if necessary of printing it, but without the possibility of modifying it.

Downloading The act of downloading a file recorded as an OSMOS document onto the user's computer.

Updating The act of modifying a document edited in OSMOS and of storing it with a new index.

Validation The act of modifying a statute in the general description (metadata) of a document.

3.1.2.5 The rights (and obligations) of each participant

Concerning contracts:

- Issuing Owner
- Updating Owner
- Contractor validation Contractor concerned
- Viewing All participants excepting contractors not concerned

Concerning the Job Specifications:

- Issuing Design Team
- Updating Design Team
- Viewing All participants

Concerning the final design drawings included in the tender documents:

- Issuing Design Team
- Updating Design Team
- Validation Owner
- Viewing All participants
- Downloading(copying) Contractors concerned

Concerning the minutes of site meetings:

- Issuing Construction Manager
- Viewing All participants

Concerning the worker health and safety logbook:

- Issuing SPS Coordinator
- Viewing All participants

Concerning the construction works schedule

- Issuing Construction Manager
- Updating Construction Manager
- Viewing All participants

Concerning catalogues of samples

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- Issuing Contractors
 - Architect's validation (if required) Architect
 - Owner's validation (if required) Owner
 - SPS coordinator's validation (if required) SPS Coordinator
 - Design team validation Design Team
 - Viewing All participants

Concerning the working drawings

- Issuing Contractors concerned
- Updating Issuing contractor
- Design office validation Design Office concerned
- Architect's validation Architect
- SPS coordinator's validation (for specific plans) SPS Coordinator
- Viewing All participants
- Downloading (copying) Contractors concerned

Concerning interim certificates

- Issuing Contractor
- Checking and updating Construction Manager
- Design Team validation Design Team
- Owner's validation Owner
- Viewing All the above

In fact these rights are either general (e.g.: validation by Owner), or specific (updates of working drawings.).

3.1.3 The two major phases of the test scenario:**3.1.3.1 Project formatting for VE MAN**

<i>Task</i>	<i>Ref. WPI</i>	<i>Entity responsible</i>	<i>Tool employed</i>	<i>It 1</i>	<i>It 2</i>
Define roles	4.1.1	Ve Manager	VE MAN	O	O
Define document types	4.1.1	Ve Manager	VE MAN	O	O
Describe principal project participants	4.1.1	Design Team Secretary	VE MAN	O	O
Assign automatic rights		Ve Manager	VE MAN	O	O
Assign specific rights		Design Team Secretary	VE MAN	O	O
Issue contractual documents: contracts, job specifications, final design drawings included in tender documents	3.2.7	Design Team Secretary	SGTi		O
Issue construction works schedule	4.1.6	Construction Manager	SGTi		O

3.1.3.2 A “typical” day on the operation

<i>Task</i>	<i>Ref. WP1</i>	<i>Entity responsible</i>	<i>Tool employed</i>	<i>It 1</i>	<i>It 2</i>
Update a final design drawing		Design Office	SGTi		
Send an e-mail to all project participants		Design Team Secretary			
Issue site meeting minutes	5.1.8	Construction Manager	SGTi		
View meeting minutes		Contractors, etc.	SGTi		O
Add a new project participant		Design Team Secretary	SGTi		O
Modify the attributes of a participant		Participant himself	SGTi		O
Delete previous participant from active list of participants	5.2.13	Design Team Secretary	VE MAN	O	O
Technical validation of a working drawing	5.1.3	Engineering Design Office	SGTi		O
Research drawings according her contract		Contractors (without access to SGTi)	SGTi		O

3.2 Test Processing in Iteration 1

Field trials made by DERBI in Iteration 1 have been exclusively focused on the OSMOS VE Manager (and the API to SGTi).

Context

The VEM is installed on a workstation as a standalone Java application.

The OSMOS interface between VE MAN and SGTi has been installed on SGTi server.

A specific SGTi server has been used for the field trials (data base and pages server) with a new project (operation).

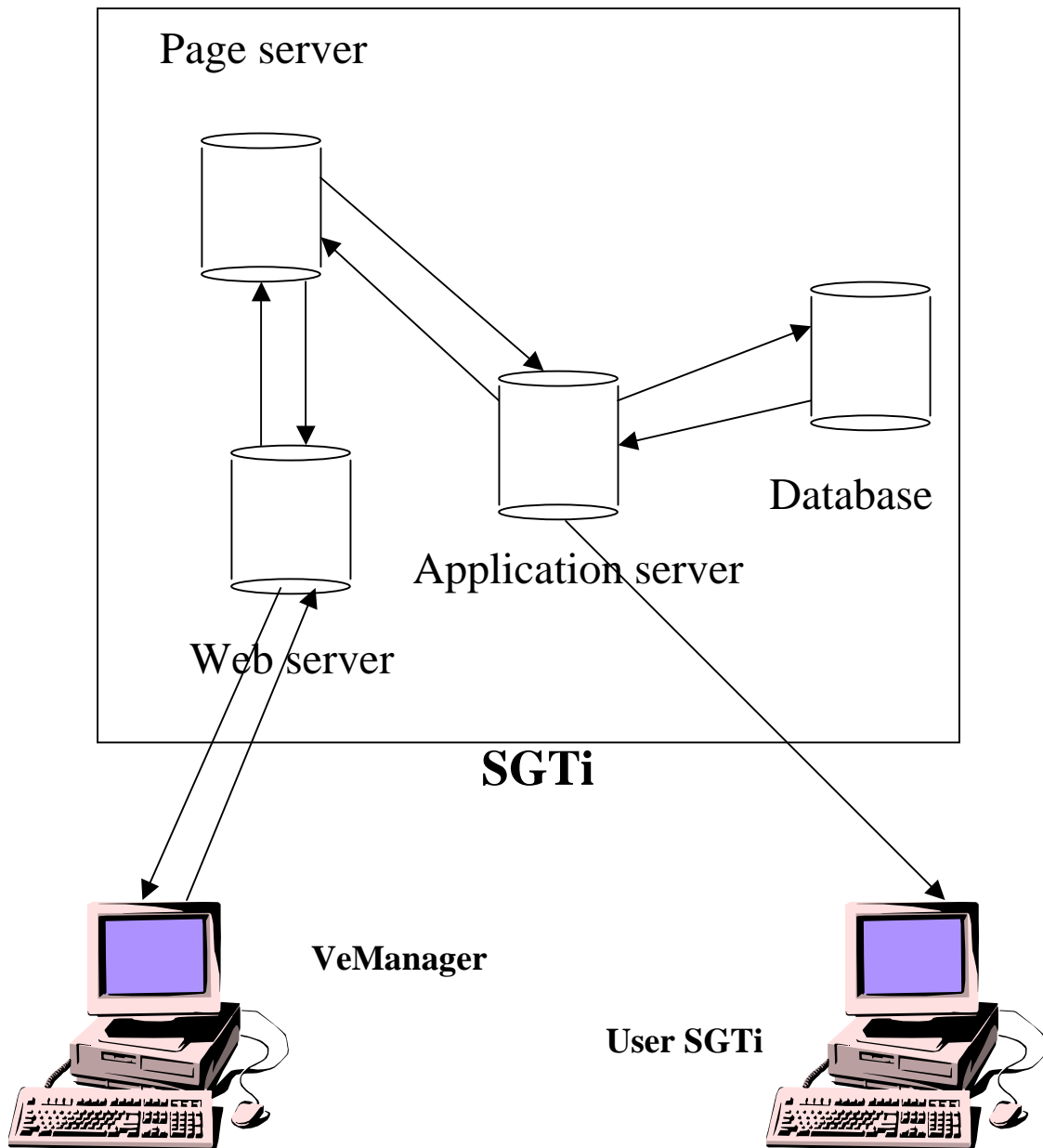
The actors and their responsibilities in the field trial are:

<u>Actor (number of actors)</u>	<u>Responsibility</u>
Virtual Enterprise Manager (1)	Sets up the Virtual Enterprise : define roles, document types, assign automatic rights
Design Team Secretary (1)	Registers new actors in the Enterprise, remove actors, assign specific rights.

In reality, these field trials were effected by Derbi's employees, who simulated the fictitious roles described above.

A check was made to ensure that each action carried out on OSMOS VE MAN was recorded in the SGTi system.

The time taken to perform the trials was 4 hours (1/2 day).



Acknowledgements

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References

OSMOS – *Business Process and Information – Process Model* , IST-1999-10491

OSMOS – *Specification of the OSMOS compliant extensions to common construction applications* , IST-1999-10491