Horus
IMSETY
System Test Plan
Version 0.5 21st June 2007

Project team: Jeroen Keiren 0569081
Frank Koenders 0575629
Thijs Nugteren 0574426
Joeri de Ruiter 0578312
Stijn Stiefelhagen 0579816
Carst Tankink 0569954
Pim Vullers 0575766
Freek van Walderveen 0566348

Project manager: Egbert Teeselink

Senior management: L. Somers TU/e (HG 7.83)
M. v.d. Brand TU/e (HG 7.44)
Adviser: R.J. Bril TU/e (HG 5.09)
Customer: E. v. Breukelen ISIS

Computer Science, Eindhoven University of Technology, Eindhoven
Abstract

This document provides the main guidance for the System Tests (ST) during the Detailed Design (DD) phase of the IMSEETY project. It describes the environment needed to perform the ST. When this environment is set up, all test cases must be executed according their corresponding test procedures. After a test has been performed a report needs to be written. When all tests resulted in a pass the DD phase can be finished successfully.
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</tr>
<tr>
<td>Author(s)</td>
<td>Pim Vullers</td>
</tr>
<tr>
<td>Version</td>
<td>0.5</td>
</tr>
<tr>
<td>Document status</td>
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<td>29-03-2007</td>
<td>Pim Vullers</td>
<td>SR phase version (chapters 1 and 2)</td>
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<td>0.3 (Revision 1503)</td>
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<td>Added last chapters (3, 4, and 5)</td>
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<td>0.5 (Revision 1987)</td>
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Document change report

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Chapter 1

Introduction

1.1 Purpose

This document describes the plan for testing the developed software package against the software requirements as defined in the SRD [3]. The purpose of these system tests is to make sure that IMSETY complies with the requirements as described in the SRD [3]. These tests should be executed at the end of the Detailed Design (DD) phase of the IMSETY project as described in the ESA software engineering standard [1].

1.2 Overview

Chapter 2 mentions the items to be tested together with the general criteria for the ST. A specification for each test case is given in chapter 3. The procedures for these test cases are explained in chapter 4. In chapter 5 the reports for all test cases are presented.

1.3 List of definitions

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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>DD</td>
<td>Detailed Design</td>
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<tr>
<td>ESA</td>
<td>European Space Agency</td>
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<td>SR</td>
<td>Software Requirements</td>
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<td>SRD</td>
<td>Software Requirements document</td>
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<td>ST</td>
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<td>SVVP</td>
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1.4 List of references

Chapter 2

Test plan

2.1 Test items

The software to be tested is IMSETY. Information about the requirements imposed on this system can be found in the SRD [3].

2.2 Features to be tested

IMSETY must meet the requirements as stated in the SRD [3]. These requirements are identified as described in the SVVP [4]. Besides the requirements from the SRD, the SR phase resulted in a prototype. The system’s behaviour must be similar to the behaviour of the prototype.

2.3 Test deliverables

Before the testing starts the following items must be delivered:

- SVVP [4]
- SRD [6]
- Prototype
- STP [5], chapters 1, 2, 3 and 4
- ST input data
- IMSETY software package

After completing the testing the following items must be delivered:

- ST report (STP chapter 5)
- ST output data
- Problem reports (if necessary)
2.4 Testing tasks

Before any testing in the DD phase can take place, the following tasks need to be done:

- Designing the system tests.
- Tracing all test cases to software requirements and/or prototype behaviour.
- All software requirements need to be covered by test cases.
- The prototype behaviour described in the SRD needs to be covered by test cases.
- Creation of ST input data.
- Ensuring that all environmental needs are satisfied for the ST.

When these tasks have been done a ST can be performed according to the procedures described in chapter 4.

2.5 Environmental needs

To be able to perform the ST the following resources are needed:

- A computer running Linux with MySQL++, XMLRPC-C and the IMSETY server installed.
- An MCC (-stub) available local or remote to the above described machine.
- An MCS (-stub) available local or remote to the above described machine.
- A computer running Windows 2000/XP/Vista, Linux or OpenSolaris with Qt4 and the IMSETY client installed.

See also the constraints described in the SRD in section 2.6.

2.6 Test case pass/fail criteria

Every test should describe the criteria that should be met to pass a specific test. An overall ST pass can only be achieved when all tests described in chapter 3 have been performed and passed.
Chapter 3

Test case specifications

For the test case specifications see the respective test case specifications in the automated test framework, which can be found in src/client/test. These tests consist of all test cases as described in the ATP [2] chapter 3. The actual automated tests are described in the *.stest.{h, cpp} files.
Chapter 4

Test procedures

For each test that needs to be run there needs to be a .pro file in the src/client/test/ directory, along with a .cpp file which implements the specific test. These tests cannot be easily aggregated in a single test suite because of shortcomings of the Qt test framework (if we would aggregate the tests in one test suite, a crash of one test would lead to the rest of the suite not being executed).

In order to overcome this we have added a shell script which runs all individual tests, as the tests won’t run from within the build system.

Note that all test names (denoted with testname) should be name_stest, as this is needed for running the batch of tests.

Individual system tests can be run by going to the src/client/test/ directory and there executing:

```
# scons testname
# ./testname
```

A batch with all tests can be run by executing src/client/test/systemtest.sh.
Chapter 5

Test reports

For system tests a report is always written to the screen. This can be overcome by redirecting test output to `src/client/test/report/testname_report.txt` by using the `--report` option, like `src/client/test/systemtest.sh --report`.

Due to lack of time during the coding phase of the project no system tests have been automated. The acceptance test has been executed manually in order to prepare for the real acceptance test. However this has been done in an ad-hoc manner, such that no test reports have been written.