

# Software Engineering Project (2IP40)

Project Group 1

## Software Transfer Document

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# Abstract

This document is the Software Transfer Document (STD) of the SPINGRID project. This project is one of seven assignments for the course 2IP40 at Eindhoven University of Technology. This document contains procedures that describe the transfer of the software and the results of this transfer. This document follows the Software Engineering standards set forth by the European Space Agency (ESA), as described in [ESA].

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# Chapter 1

## Introduction

### 1.1 Purpose

15 The purpose of the Software Transfer Document (STD) is to describe the procedures to install the components of the SPINGRID system and the results of this installation, as well as a list of all components. Also this document describes the reports of the acceptance tests that are being held.

### 1.2 Scope

20 The software implements a computational grid. This grid is able to execute jobs when it receives an application accompanied by a set of data files. By hiding the complexity of grid technology the system will be easy to use. Usability is also increased by offering a web-based front-end for users to access the system.

## 1.3 List of definitions and abbreviations

### 1.3.1 Definitions

Agent	Application that is used by a resource provider to retrieve and execute jobs.
Application	A non-interactive data processing application consisting of executables, scripts and/or auxiliary data files that reads one or more input data files and writes one or more output files.
Application Provider	An application provider can offer a set of applications to the SPINGRID system. They can restrict access for projects and for resource providers to their applications.
Client	Application that is used by all the users except the resource provider who uses the agent application.
Computational Grid	A hardware and software infrastructure that enables coordinated resource sharing within dynamic organizations consisting of individuals, institutions and resources.
Customer	Dutch Space B.V.
Data Provider	A data provider can offer a set of datafiles to the SPINGRID system. They can restrict access for projects and for resource providers to their datafiles.
Dispatcher	A dispatcher acts like a server and manages the distribution of jobs over the computational grid.
Job	Specification of application, configuration data, input and/or output data files and scheduler specific data (priority, preferred resource, etc).
Job Provider	Job providers are users that offer a job to a project. They have to be a member of that particular project.
Project	A collection of jobs with specified access rights to which users (project members) can be assigned.
Project Administrator	The project administrators administrate projects and can assign and remove job providers, configure a project and restrict access for resource providers.
Resource Provider	Resource providers are users that offer time on their computers to the SPINGRID system. They can restrict access to their computer for application providers and projects.
Role	The actions and activities assigned to a person.
SPINGRID	A computational grid using SPINGRID software.
SPINGRID Software	Software developed by Dutch Space and TU/e to build computational grids for distributed data processing.
SPINGRID System	The full name of the entire system.
System Administrator	The system administrator oversees the entire SPINGRID system and has the right to configure the system, to create and remove projects and assign and remove project administrators.



### 1.3.2 Abbreviations

STD	Software Transfer Document
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## 1.4 Reference Documents

[ADD]	<i>Architectural Design Document</i> , SPINGRID team, TU/e, version 1.0.0, April 2006
[ATP]	<i>Acceptance Test Plan</i> , SPINGRID team, TU/e, version 0.0.3, May 2006
[BSSC]	<i>BSSC 2005 Java Coding Standard</i> , Issue 1.0, March 2005
[DDD]	<i>Detailed Design Document</i> , SPINGRID team, TU/e, version 0.0.1, April 2006
[ESA]	<i>ESA Software Engineering Standards (ESA PSS-05-0 Issue 2)</i> , ESA Board for Software Standardization and Control (BSSC), 1991
[JSDL]	<i>Job Submission Description Language (JSDL) Specification</i> , Version 1.0, November 2005
[SCMP]	<i>Software Configuration Management Plan</i> , SPINGRID team, TU/e, version 0.1.1, February 2006
[SPMP]	<i>Software Project Management Plan</i> , SPINGRID team, TU/e, version 1.0.0, March 2006
[SQAP]	<i>Software Quality Assurance Plan</i> , SPINGRID team, TU/e, version 0.1.2, March 2006
[SRD]	<i>Software Requirements Document</i> , SPINGRID team, TU/e, version 1.0.1, March 2006
[STP]	<i>System Test Plan</i> , SPINGRID team, TU/e, version 0.0.1, January 2006
[SUM]	<i>Software User Manual</i> , SPINGRID team, TU/e, not yet available
[SVVP]	<i>Software Validation and Verification Plan</i> , SPINGRID team, TU/e, version 0.1.2, March 2006
[URD]	<i>User Requirements Document</i> , SPINGRID team, TU/e, version 1.0.0, February 2006

## 1.5 Overview

30 In chapter 2 is described when, where and in which environment the SPINGRID software was built. This chapter also describes what problems occurred during building and the time needed to built the software. In chapter 3 is described when, where and in which environments the SPINGRID software was installed. This chapter also describes what problems occurred during installing and the time need to install the software. Chapter 4 gives a summary which  
 35 configuration items are transferred. The acceptance test report is described in chapter 5. A software problems report is described in chapter 6 and chapter 7 describes the software change report. Chapter 8 contains the software modification reports.

## Chapter 2

# Build procedure

### 40 2.1 Environment

The environment needed for building the software is described in [ATP, section 2.5].

### 2.2 Build procedure

The build procedure is described in [SUM, chapter 3].

### 2.3 Results

45 The SPINGRID software is not yet built by the customer.

## Chapter 3

# Installation procedure

### 3.1 Installation environment

The environment needed for installation of the software is described in [ATP, section 2.5].

### 50 3.2 Installation procedure

The installation procedure is described in [SUM, chapter 3].

### 3.3 Installation results

The SPINGRID software is not yet installed by the customer.

## Chapter 4

# 55 Configuration item list

The following documents have to be delivered:

- [ADD]
- [ATP]
- [DDD]
- 60 • [SCMP]
- [SPMP]
- [SQAP]
- [SRD]
- [STP]
- 65 • [SUM]
- [SVVP]
- [URD]

## Chapter 5

# Acceptance test report summary

<sup>70</sup> This section contains a summary of all the acceptance tests that are held. For a description of the test procedures please refer to [ATP, section 4].

### 5.1 First acceptance test

The following test cases failed. All test cases not in this table succeeded.

TC_0040	This functionality is not required and was not implemented
TC_3030a	This functionality was not yet finished
TC_3030b	This functionality was not yet finished
TC_3060a	This functionality was not yet finished
TC_3060b	This functionality was not yet finished
TC_3074a	This functionality was not yet finished
TC_3074b	This functionality was not yet finished
TC_5040	This functionality is not required and was not implemented
TC_5042	This functionality is not required and was not implemented
TC_5012	This functionality was not yet finished
TC_6030	This functionality is not required and was not implemented
TC_6012	This functionality was not yet finished
TC_7060	This functionality was not yet finished
TC_7070	This functionality was not yet finished
TC_8040	This functionality is not required and was not implemented
<sup>75</sup> TC_8060	The code was not yet in a format conforming the BSSC standards.

## 5.2 Second acceptance test

The following test cases failed. All test cases not in this table succeeded.

TC_0040	This functionality is not required and was not implemented
TC_4070	Bug in the spingrid system
TC_3060	Bug in the spingrid system
TC_8040	This functionality is not required and was not implemented

The acceptance test has been declared conditionally successful, and all problems have been  
80 fixed after the acceptance test.

## Chapter 6

# Software problem reports

Not applicable.

## Chapter 7

# 85 Software change reports

Not applicable.



## Chapter 8

# Software modification reports

Not applicable.