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| HDSMT |
| Requirements Specification (RS) |
| CADCloud |

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| Leszek Dubicki  7/11/2015 |

Requirements Specification (RS)

Document Control

Revision History

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Distribution List

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| CADCloud Use Case Diagram |  |

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# Introduction

## Purpose

The purpose of this document is to set out the requirements for the development of a cloud based information sharing service for cad and engineering applications.

The intended customers are engineering companies, preferably companies working with many smaller but complex projects involving cooperation between multiple departments.

## Project Scope

The scope of the project is to develop a cloud based information sharing service for cad and engineering applications. The system shall have a CADCloud server that would provide or retrieve data from either CAD application through embedded feature or from custom engineering application (e.g. Shaft Calculation application which will be done as a part for this project).

This section also details any constraints that were placed upon the requirements elicitation process, such as schedules, costs, or the software engineering environment used to develop requirements.

Optional, the Project Scope Section could include the following sub-sections

* + - Project Scope – Introduction
      * A brief introduction to the project scope and the motivation for this project
    - Project objectives
      * Include a short description for each objective
    - Successful criteria of the project
      * The criteria must be described in terms of expected achievements
    - Project expectations:
      * Necessary to identify what is expected to be achieved by the project and to confirm that they fulfill the customer’s expectations
    - Project suppositions:
      * Necessary to identify the suppositions that must be assumed as true ones in order to start the project
    - Project restrictions
      * it is necessary to identify the limits previously established for the project
      * related to organization: political, legal and data quantity,
      * related to data: to access sources of information, and data quality
      * related to human and technical resources: the size of the data sources related to hardware and software handlers, hardware and software limitations, human resources;
      * related to the project: those activities which affect the project and its security
    - Project risks:
      * Identify risks for the project by looking continuously at what might be wrong and determining which risks are important to be solved
    - Contingency plans
      * necessary to define contingency plans to be applied to off-set risk
    - Human resource involved

## Definitions, Acronyms, and Abbreviations

AD Another Definition

……..

# User Requirements Definition

This section describes the set of objectives and requirements for the system from the customer’s perspective. What are the clients saying they want?

# Requirements Specification

All requirements should be verifiable. For example, experienced controllers shall be able to use all the system functions after a total of two hours training. After this training, the average number of errors made by experienced users shall not exceed two per day.

## Functional requirements

This section lists the functional requirements in **ranked order**. Functional requirements describe the possible effects of a software system, in other words, what the system must accomplish. Other kinds of requirements (such as interface requirements, performance requirements, or reliability requirements) describe how the system accomplishes its functional requirements. Each functional requirement should be specified in a format similar to the following:

Short, imperative sentence stating highest ranked functional requirement.

### Use Case Diagram

Each requirement should be uniquely identified with a sequence number or a meaningful tag of some kind.

The Use Case Diagram provides an overview of all functional requirements.

### Requirement 1 <name of requirement in a few words>

The heading of this section should read, e.g., “Requirement 1: User registration” or “Requirements 1: Participant takes test”

#### Description & Priority

A description of the requirement and its priority. Describes how essential this requirement is to the overall system.

#### Use Case

Each requirement should be uniquely identified with a sequence number or a meaningful tag of some kind.

**Scope**

The scope of this use case is to …….

**Description**

This use case describes the ………..

**Flow Description**

**Precondition**

The system is in initialisation mode……..

**Activation**

This use case starts when an <Actor>…………

**Main flow**

1. The system identifies the ………….
2. The <Actor> …………...(See A1)
3. The system …………..(See E1)
4. The <Actor> ………….

**Alternate flow**

A1 : <title of A1>

1. The system …………..
2. The <Actor> ………….
3. The use case continues at position 3 of the main flow

**Exceptional flow**

E1 : <title of E1>

1. The system …………..
2. The <Actor> ………….
3. The use case continues at position 4 of the main flow

**Termination**

The system presents the next ……….

**Post condition**

The system goes into a wait state

### Requirement 2 <name of requirement in a few words>

#### Description & Priority

A description of the requirement and its priority. Describes how essential this requirement is to the overall system.

#### Use Case

Each requirement should be uniquely identified with a sequence number or a meaningful tag of some kind.

**Scope**

The scope of this use case is to …….

**Description**

This use case describes the ………..

**Flow Description**

**Precondition**

The system is in initialisation mode……..

**Activation**

This use case starts when an <Actor>…………

**Main flow**

1. The system identifies the ………….
2. The <Actor> …………...(See A1)
3. The system …………..(See E1)
4. The <Actor> ………….

**Alternate flow**

A1 : <title of A1>

1. The system …………..
2. The <Actor> ………….
3. The use case continues at position 3 of the main flow

**Exceptional flow**

E1 : <title of E1>

1. The system …………..
2. The <Actor> ………….
3. The use case continues at position 4 of the main flow

**Termination**

The system presents the next ……….

**Post condition**

The system goes into a wait state

**List further functional requirements here, using the same structure as for Requirements 1 & 2. Most systems would have at least five main requirements.**

## Non-Functional Requirements

Specifies any other particular non-functional attributes required by the system. Examples are provided below. **Remove the requirement headings that are not appropriate to your project.**

### Performance/Response time requirement

### Availability requirement

### Recover requirement

### Robustness requirement

### Security requirement

### Reliability requirement

### Maintainability requirement

### Portability requirement

### Extendibility requirement

### Reusability requirement

### Resource utilization requirement

# GUI

Include mock-ups of the key pages or stages of the system. Explain how they are linked. Explain how you addressed above requirements in the design. It is important that the mock-ups are in line with the functional requirements above, e.g., if one of your requirements is “user registration” then one of the screens listed in this section should show a registration page.

# System Architecture

Use a class diagram to outline the structure of the system. Explain briefly why you have chosen this architecture. You might want to use Visio or Rational Rose to create these.

# System Evolution

This section describes how the system could evolve over time.