POLITECNICO
MILANO 1863

SCUOLA DI INGEGNERIA INDUSTRIALE
E DELL'INFORMAZIONE

DREAM - Data-dRiven PrEdictive FArMing in Telengana

RASD
Software Engineering 2

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1 | info

The Requirements analysis and specification document (RASD) contains the description of the scenarios, the use cases that describe them, and the models describing the requirements and specification for the problem under consideration. You are to use a suitable mix of natural language, UML, and Alloy. Any Alloy model should be validated through the tool, by reporting the models obtained by using it and/or by showing the results of assertion checks. Of course, the initial written problem statement we provide suffers from the typical drawbacks of natural language descriptions: it is informal, incomplete, uses different terms for the same concepts, and the like. You may choose to solve the incompleteness and ambiguity as you wish, but be careful to clearly document the choices you make and the corresponding rationale. You will also include in the document information on the number of hours each group member has worked towards the fulfillment of this deadline. As a reference structure for your document, you should refer to the one reported below that is derived from the one suggested by IEEE. Please include in the document information about the effort spent by each group member for completing this document.

2 | INTRODUCTION

2.1. Purpose

here we include the goals of the project

The Indian's population counts 1,8 bilions people and their main source of incomes come from the agriculture sector. And more precisely 80% of farmers own less than 2 hectares of cultivable land. As a consequence nowadays an important part of the population is already below the poverty threshold, and if nothing will be changed during the next decades this condition will become even worst.

2.2. Scope

here we include an analysis of the world and of the shared phenomena

2.3. Definitions, Acronyms, Abbreviations

2.4. Revision history

2.5. Reference Documents

2.6. Document Structure

3 | OVERALL DESCRIPTION

3.1. Product perspective

here we include scenarios and further details on the shared phenomena and a domain model (class diagrams and statecharts)

3.2. Product functions

here we include the most important requirements

3.3. User characteristics

here we include anything that is relevant to clarify their needs

3.4. Assumptions, dependencies and constraints

here we include domain assumptions

4 | SPECIFIC REQUIREMENTS

Here we include more details on all aspects in Section 2 if they can be useful for the development team.

4.1. External Interface Requirements

4.1.1. User Interfaces

4.1.2. Hardware Interfaces

4.1.3. Software Interfaces

4.1.4. Communication Interfaces

4.2. Functional Requirements

Definition of use case diagrams, use cases and associated sequence/activity diagrams, and mapping on requirements

4.3. Performance Requirements

4.4. Design Constraints

4.4.1. Standards compliance

4.4.2. Hardware limitations

4.4.3. Any other constraint

4.5. Software System Attributes

4.5.1. Reliability

4.5.2. Availability

4.5.3. Security

4.5.4. Maintainability

4.5.5. Portability

5 | FORMAL ANALYSIS USING ALLOY

This section should include a brief presentation of the main objectives driving the formal modeling activity, as well as a description of the model itself, what can be proved with it, and why what is proved is important given the problem at hand. To show the soundness and correctness of the model, this section can show some worlds obtained by running it, and/or the results of the checks performed on meaningful assertions.

6 | EFFORT SPENT

In this section you will include information about the number of hours each group member has worked for this document.

7 | REFERENCES