



POLITECNICO
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DREAM

RASD

Requirement Analysis and Specification Document

AA 2021-2022

Version: 1.0

Date: 19 December 2021

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1 Introduction

1.1 Purpose

The COVID-19 causes many challenges to our society. For the agriculture, it has greatly highlighted the massive disruption caused in food supply chains exposing the vulnerabilities of marginalized communities, small holder farmers and the importance of building resilient food systems. In addition, climate changes also impact everything from productivity to livelihoods across food and farm systems and is predicted to result in a 4%-26% loss in net farm income towards the end of the century. Therefore, it is important for us to develop innovative methodologies and technologies that can help bolster countries against food supply shocks and challenges.

This is why we develop DREAM, an application helped not only farmer, but also agronomists and policy makers to work together so that they can stabilize their food supply.

1.2 Scope

1.2.1 World phenomena

1.2.2 Shared phenomena

1.2.3 Goals

1.3 Definitions and abbreviations

1.3.1 Definitions

1.3.2 Abbreviations

1.4 Revision history

1.5 Reference Documents

1.6 Document Structure

2 Overall description

2.1 Product perspective

2.1.1 Scenarios

2.1.2 Class Diagram

2.1.3 Statecharts

2.2 Product functions

2.3 User characteristics

2.4 Assumptions, dependencies and constraints

3 Specific Requirements

3.1 External Interface Requirements

3.1.1 Hardware Interfaces

3.1.2 Software Interfaces

3.2 Functional Requirements

3.2.1 List of Requirements

3.2.2 Mapping on Goals

3.2.3 Use case diagrams

3.2.4 Use cases

3.2.5 Sequence diagrams

3.2.6 Activity diagrams

3.2.7 Mapping on Requirements

3.3 Performance requirements

3.4 Design Constraints

3.4.1 Standard compliance

3.4.2 Hardware limitations

3.5 Software System Attributes

3.5.1 Reliability

3.5.2 Availability

3.5.3 Security

3.5.4 Maintainability

3.5.5 Portability

4 Formal analysis using Alloy

4.1 Code

4.2 Result

4.3 Generated instances

5 Effort spent

6 References