Estima
Development Case

Version <1.0>

Revision History

Date	Version	Description	Author
2 / 1 / 2012	1.0	Initial Development Case	D.A.U.Nananyakkara – 090342F

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Development Case

1. Introduction

1.1 Purpose

This document presents how Rational Unified Process (RUP) will be used in the development of project "Estima"

1.2 Scope

This development case applies to the inception, elaboration, construction and transition phase of the project "Estima"

1.3 Definitions, Acronyms, and Abbreviations

BOQ : Bill of Quantities

1.4 Overview

The remainder of this document describes ways in which the RUP will be adapted for this project. Where the RUP will be used as is, this is so noted.

2. Overview of the Development Case

2.1 Lifecycle Model

Estima will be developed using the RUP framework. This will include a full inception phase, full elaboration phase and a two iteration construction phase and a full transition phase.

2.2 Iteration Plans

2.2.1 Inception Phase

Define the Scope and Vision

I have worked with the (at the time the document is written) project stakeholders such as civil engineers and students who do building construction related work, to formulate the vision document. In addition an initial feasibility study for the project was done and a document relating to that was created.

Outline and clarify the functionality that is to be provided by system.

Several sessions with the stakeholders will be conducted to clarify the requirements of the system. Initial use case modeling will be done to get a better understanding of the system. And as there domain specific (building construction) nomenclature used throughout the project a glossary shall be developed.

Development of Project schedule

Using the knowledge gained about the project and prior knowledge on RUP framework rough project schedule shall be developed to be used.

2.2.2 Elaboration Phase

- In this phase of the project development initially thorough elicitation of requirements shall be done. And they should be prioratised according to the stakeholder need.
- System Requirement Specification shall be developed.
- Use cases shall be almost complete at this stage. And most important user requirements shall be covered in these use cases.

- System Architecture shall be developed using the most important use cases identified
- Start developing the high risk elements (technically difficult to implement) that are identified.

2.2.3 Construction Phase

In this phase of the project the requirements shall be better understood. Main focus of the phase is to develop the system features within 2 iterations.

In first iteration most requested requirements of the system shall be implemented and user review shall be taken. Main GUI design and the Basic BOQ creation functions shall are the current candidates.

In the second iteration more features will be included to the system. And features that will give way to manipulate databases and BOQ creation formulae will be implemented.

2.2.4 Transition Phase

In this phase the system shall be almost production capable. To test for unnoticed bugs and implementation issues the system will be distributed among a selected set of users, civil engineers and students. Feedback from the users will be used to fine tune the system.

3. Disciplines

3.1 Business Modeling

3.1.1 Artifacts

Artifacts	How to Use				Review Details	Tools Used	Templates/ Examples
	Incep	Elab	Const	Trans			
Business Glossary	should	Should			Formal-External	MS Word	RUP
Business Use Case	Must	Must			Formal-External	UML	UML
Business Vision	Must				Formal-External	MS Word	RUP

3.1.2 Notes on the Artifacts

Artifacts	How to Use	Reason
Business Glossary	As a guide for GUI related work	System is domain specific. Therefore user interfaces should be designed to be intuitive for the domain experts. And shall be used in creating user manuals

3.1.3 Notes on the Artifacts

Business vision shall be reviewed by the stake holders to make sure it accurately illustrates the stakeholder vision.

3.2 Requirements

3.2.1 Artifacts

Artifacts	How to Use				Review Details	Tools Used	Templates/ Examples
	Incep	Elab	Const	Trans			
Glossary	Should	Should			Formal-External	MS Word	RUP
Software Requirements Specification		Must			Formal-External	MS Word	RUP
Use Case	Should	Must			Formal-External	UMLet, MS Word	UML

3.2.2 Notes on the Artifacts

Artifacts	How to Use	Reason
Software Requirements Specification	Use as a method of identifying and categorising requirements	The document creation process will make it easy to understand the requirements better and categorise them as non-functional and functional requirements.

3.2.3 Notes on the Artifacts

Artifacts The software requirements Specification and Use Cases shall be completed in the first half of the Elaboration phase. And the artifacts shall be reviewed by the stakeholders.

3.3 Analysis & Design

3.3.1 Artifacts

Artifacts	How to Use				Review Details	Tools Used	Templates/ Examples
	Incep	Elab	Const	Trans			
Data Model		Should			Informal	UMLet	UML
Design Class		Should			Informal	UMLet	UML
Interface		Should			Formal-External	UMLet	RUP
Software Architecture Document		Must			Formal-Internal	MS Word	RUP

3.3.2 Notes on the Artifacts

Data Modeling and Class design shall be done after most of the requirement elicitation is done. As the system has several Interfaces such as remote database connectors and GUI aspects interface design artifacts will aid in the design process. Software Architecture Document shall be created so that the actual work relating to the system can be better planned and coordinated.

3.4 Implementation

Implementation of the designed software components are undertaken in this phase. And the components made shall be unit tested and regression test shall be done afterwards.

3.4.1 Artifacts

Artifacts	How to Use				Review Details	Tools Used	Templates/ Examples
	Incep	Elab	Const	Trans			
Build			Must		Internal	Qt creator	
Component			Must		Internal	Qt Creator	

3.5 Testing

3.6 Artifacts

Artifacts	How to Use				Review Details	Tools Used	Templates/ Examples
	Incep	Elab	Const	Trans			
Test Case		Should	Must		Informal		
Test Plan		Should	Must		Informal	MS Word	RUP
Test Results		Should	Must		Informal		

3.6.1 Notes on the Artifacts

Test cases shall be created under the guidance of stake holders such as civil engineers. And the results for the test cases shall also be designed. Test plan shall be created according to the RUP template available

3.7 Deployment

3.8 Artifacts

Artifacts	How to Use				Review Details	Tools Used	Templates/ Examples
	Incep	Elab	Const	Trans			
Deployment Plan				Should	Informal		
End-User Support Material				Should	Formal-External		
Installation Artifacts				Must	Formal-External	Qt Creator	
Product				Must	Formal-External	qMake	
Product Artwork				Should	None	GIMP, Inkscape	
Release Notes				Should	Formal-Internal		
Training Materials				Could	Formal-External		

3.8.1 Notes on the Artifacts

Product shall be available at the transition phase and it shall be in binary format (executable file) for mainstream Linux versions and Windows. Source files can be used to compile for other platforms and the product will be coded in cross platform compatible manner where “write once and compile anywhere” (WOCA) is adhered.

3.9 Configuration & Change Management

3.9.1 Artifacts

Artifacts	How to Use				Review Details	Tools Used	Templates/ Examples
	Incep	Elab	Const	Trans			
Project Repository		Should	Must	Must	None	Git	

3.10 Project Management

3.10.1 Artifacts

Artifacts	How to Use				Review Details	Tools Used	Templates/ Examples
	Incep	Elab	Const	Trans			
Quality Assurance Plan		Should	Should	Should	Informal	MS Word	RUP
Risk Management Plan	Should	Must	Should	Should	Informal	MS Word	RUP
Project Schedule	Must	Must	Must	Must	Informal	OpenProj	

3.11 Environment

3.11.1 Artifacts

Artifacts	How to Use				Review Details	Tools Used	Templates/ Examples
	Incep	Elab	Const	Trans			
Development Case	Must				Formal-Internal	MS Word	RUP
Project-Specific Templates	Should	Should			Informal		BOQ templates, Formulae, Measurment methods.
Tools	Should	Should	Should	Should	Informal	OpenProj, Qt Creator, UMLet, Gimp	
User-Interface Guidelines		Must	Should		Informal		

3.11.2 Notes on the Artifacts

Project specific templates shall be looked at throughout the design process of the system as the domain specific software is highly sensitive to the way of presentation of data and the measurement units used.
Tooling for the project varies from task to task and the primary development environment or the IDE shall be Qt creator the official IDE for making Qt related software in C++.