
Durmaz Teknoloji

iBEX
Software Development Plan
Version 2.0

Revision History

Date	Version	Description	Author
23/02/2015	2.0	Software development plan for version 2 of iBEX	Altay Brusan

Table of Contents

Contents

1. Introduction	4
1.1 Purpose	4
1.2 Scope	4
1.3 Definitions, Acronyms, and Abbreviations	4
1.4 References	4
1.5 Overview.....	4
2. Project Overview	5
2.1 Project Purpose, Scope, and Objectives.....	5
2.2 Assumptions and Constraints.....	5
2.3 Project Deliverables.....	5
2.4 Evolution of the Software Development Plan	5
3. Project Organization.....	6
3.1 Organizational Structure.....	6
3.2 External Interfaces.....	6
3.3 Roles and Responsibilities	6
4. Management Process	7
4.1 Project Estimates	7
4.2 Project Plan.....	8
4.2.1 Phase Plan	8
4.2.2 Iteration Objectives.....	10
4.2.3 Releases	12
4.2.4 Project Schedule	12
4.2.5 Project Resourcing.....	12
4.3 Project Monitoring and Control	12

Software Development Plan

1. Introduction

As part of software development, this document is intended to be a road map during iBEX project. The main aim is to introduce the plan for non-technical and technical stuffs at Durmaz Teknoloji. The scope is to introduce RUP process and how the software is going to be developed.

1.1 Purpose

The purpose of the *Software Development Plan* is to gather all information necessary to control the project. It describes the approach to the development of the software and is the top-level plan generated and used by managers to direct the development effort.

The following people use the *Software Development Plan*:

- The **project manager** uses it to plan the project schedule and resource needs, and to track progress against the schedule.
- **Project team members** use it to understand what they need to do, when they need to do it, and what other activities they are dependent upon.

1.2 Scope

This *Software Development Plan* describes the overall plan to be used by the iBEX project, including deployment of the product. The details of the individual iterations will be described in the Iteration Plans. The plans as outlined in this document are based upon the product requirements as defined in the *Vision Document*.

1.3 Definitions, Acronyms, and Abbreviations

RUP: rational Unified Process. A well-known process for software development.

1.4 References

For the Software Development Plan, the list of referenced artifacts includes:

- *Iteration Plans*
- *Vision*
- *Glossary*

1.5 Overview

This document, *Software Development Plan*, contains the following information:

Project Overview — provides a description of the project's purpose, scope, and objectives. It also defines the deliverables that the project is expected to deliver.

Project Organization — describes the organizational structure of the project team.

Management Process — explains the estimated cost and schedule, defines the major phases and milestones for the project, and describes how the project will be monitored.

Applicable Plans and Guidelines — provides an overview of the software development process, including methods, tools and techniques to be followed.

2. Project Overview

2.1 Project Purpose, Scope, and Objectives

Durmaz Teknoloji has started a project in order to design and implement a *platform* for Non Destructive Tests (NDT) applications. This platform consists of a software unit and an electronic device. The software unit is coined iBEX (which is the objective of this document) and the device is named syncBox. The final target of this platform is to bring all types, platforms and applications of NDTs under a same umbrella. For this aim iBEX is responsible for extensibility and uniformity of the platform. In other words, by changing devices, modalities or any other operating environment condition with just a sufficient changes within iBEX the system would be adapted for new application.

2.2 Assumptions and Constraints

- The project may be supported by TUBİTAK.
- The total time for system completion is *one* year.
- The team of programmers are extendable up to three bodies.
- We are startup and for each part of the platform we have one person in charge.
- This version of the iBEX is going to be designed for just x-ray applications.
- The developed platform is going to be deployed at x-lab.
- The platform is going to be tested on available devices. If there were any support new devices would be purchased and tested on.
- This version of iBEX would be windows based and developed under C# and .NET.

2.3 Project Deliverables

The final deliverables are include:

- A running SyncBox.
- The running version of iBEX software.
- Development artifacts which are written during the process progression.

Deliverables for each project phase are identified in the **Development Case**. Deliverables are delivered towards the end of the iteration, as specified in section 4.2.4 *Project Schedule*.

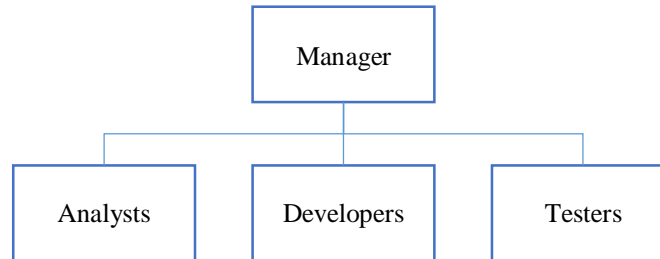
2.4 Evolution of the Software Development Plan

The *Software Development Plan* will be revised prior to the start of each Iteration phase.

3. Project Organization

3.1 Organizational Structure

The project team rolls includes:



3.2 External Interfaces

There is a chance to have a collaboration with other companies: GE, Hamamatsu, etc. After finalization we may be able to include their produces in the development. But, as it is in just first steps, we ignored them.

3.3 Roles and Responsibilities

Person	Rational Unified Process Role
Aytaç Durmaz, Senior Manager	Project Manager Change Control Manager
Altay Bruslan, Chief Technology Officer	Deployment Manager Requirements Reviewer Software Architect Test Analyst Designer and Implementer Code Reviewer and Integrator Test Designer
Burak Ergüder, Senior Software Engineer	System Analyst Requirements Specifier Designer Implementer Code Reviewer Tester Technical Writer

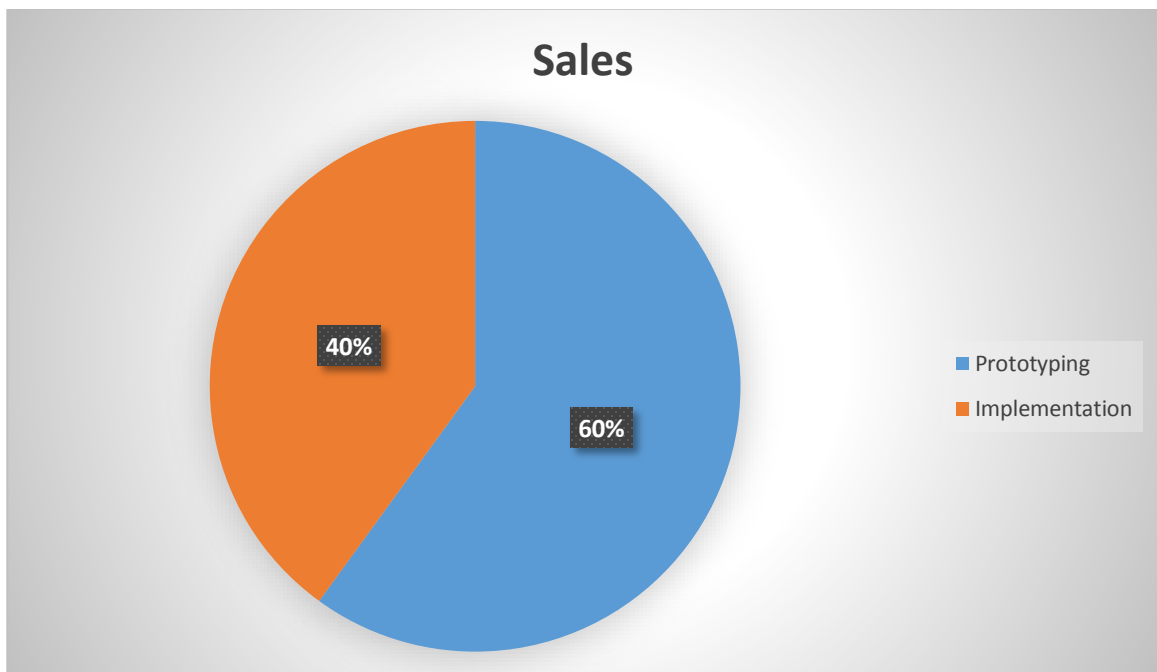
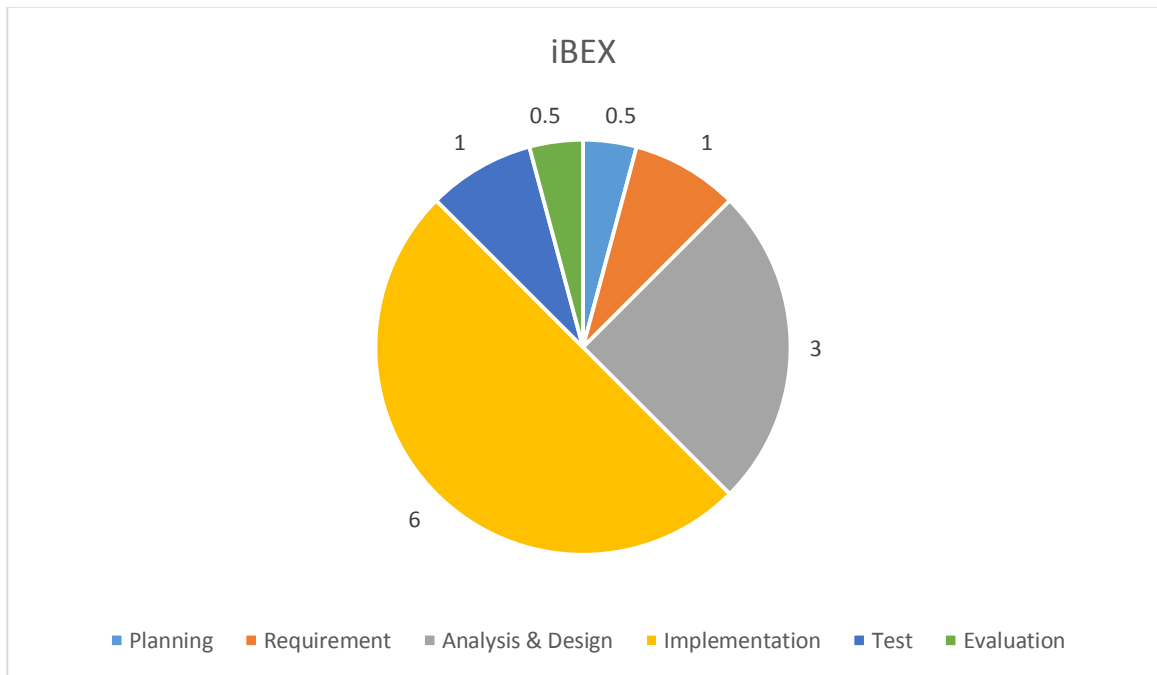
4. Management Process

4.1 Project Estimates

Project is going to progress in parallel in two branches:

- iBEX
- syncBox

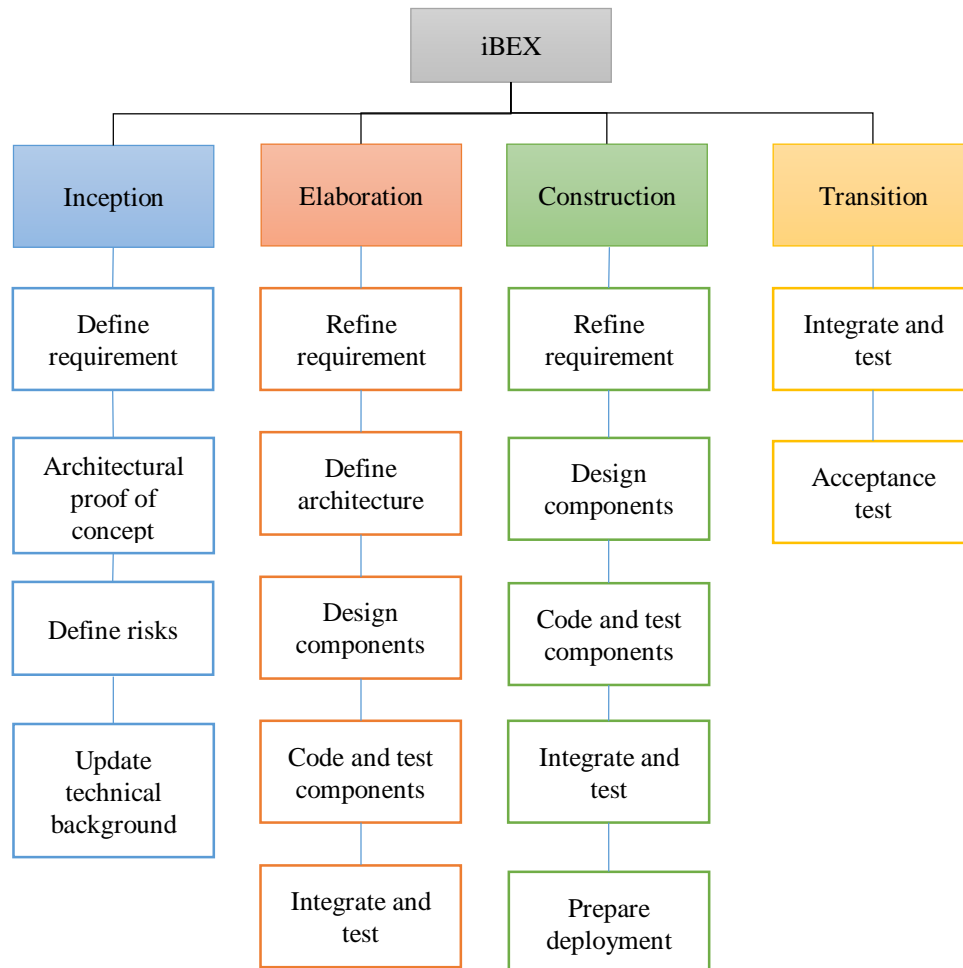
By considering the fact that the first version of the syncBox and iBEX both have already implemented, so within a year it seems to be feasible to have the complete version of the platform.

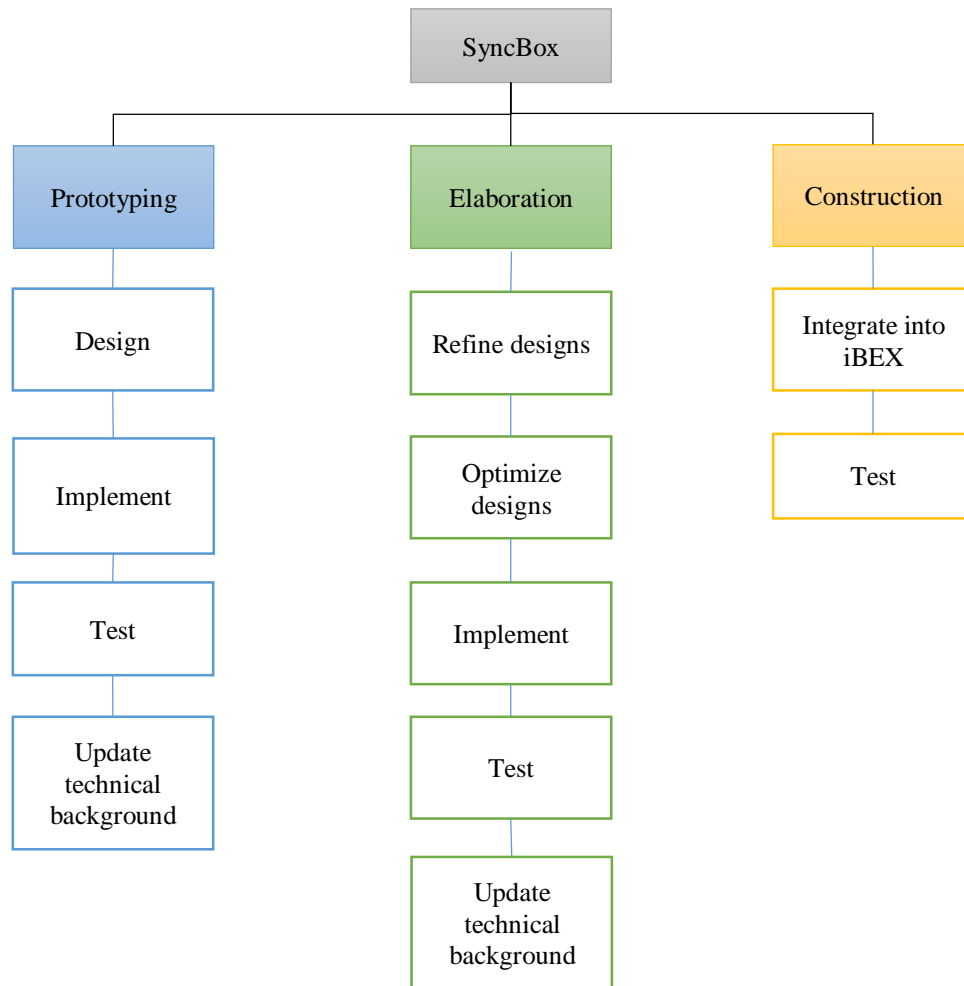
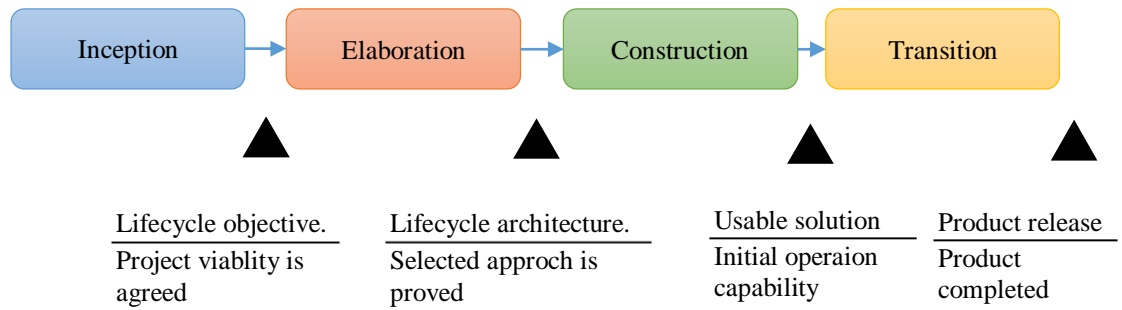


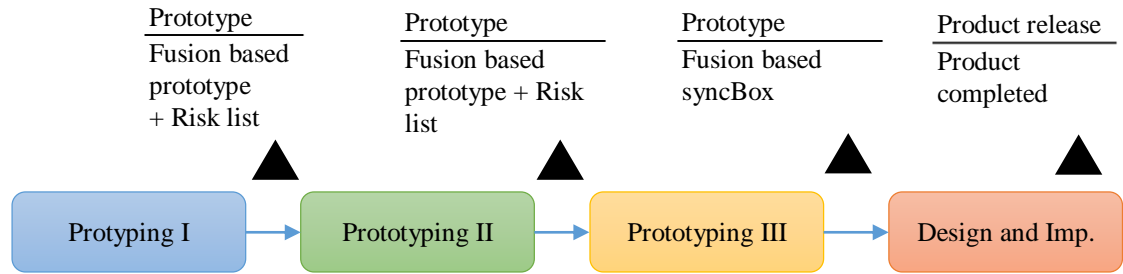
4.2 Project Plan

In this section project plan is introduced in more details.

4.2.1 Phase Plan







4.2.2 Iteration Objectives

The iBEX iteration:

Iteration	Objective
One	<input type="checkbox"/> Complete all the steps in inception phase and prepare the following documents: <ul style="list-style-type: none"> • Architecture documents, • Requirement analysis documents, • Risk analysis document • Project management document <input type="checkbox"/> Analyze and Design major components <input type="checkbox"/> Critical requirements <input type="checkbox"/> Satisfy critical risks <input type="checkbox"/> Implement minimum running program. <input type="checkbox"/> Evaluate the performance and risk satisfaction.
Two	<input type="checkbox"/> Update documents developed in the first iteration: <ul style="list-style-type: none"> • Refine architecture, • Refine Requirement documents, • Refine risks <input type="checkbox"/> More concentration on elaboration tasks: <ul style="list-style-type: none"> • Design architecture • Refine design • Refine components <input type="checkbox"/> Major component implementation <input type="checkbox"/> Unit test components <input type="checkbox"/> Integration test <input type="checkbox"/> Check risks and progress

Three	<input type="checkbox"/> Update documents developed in the second iteration: <ul style="list-style-type: none"> • Refine design documents, • Refine analysis documents, • Update project progress reports, • Refine risks, • Refine test documents <input type="checkbox"/> Complete all components. <input type="checkbox"/> Unit test components <input type="checkbox"/> Integration test <input type="checkbox"/> Analyze risks
Four	<input type="checkbox"/> Integrate into syncBox <input type="checkbox"/> Integration test <input type="checkbox"/> Analyze risks

SyncBox

Iteration	Objective
one	<input type="checkbox"/> RS-232 (single) <input type="checkbox"/> USB (Include interrupt) <input type="checkbox"/> LCD/Sound <input type="checkbox"/> Push button <input type="checkbox"/> Unit Tests
Two	<input type="checkbox"/> CAN bus <input type="checkbox"/> RS 485/428 <input type="checkbox"/> Multiplex RS 232 <input type="checkbox"/> Unit Test <input type="checkbox"/> Reports
Three	<input type="checkbox"/> Isolation circuit <input type="checkbox"/> Consistency test <input type="checkbox"/>
Four	<input type="checkbox"/> PCB engineering <input type="checkbox"/> Altium based designing <input type="checkbox"/> Refine code <input type="checkbox"/> Housing and design <input type="checkbox"/> Printed version

4.2.3 Releases

The releases of each iteration is as follow:

Iteration	SyncBox	iBEX
1	Prototype version 1. This prototype is going to be work on fusion board.	Mini executable core. This core is going to be used as a base and in the next iterations some components are going to be added on.
2	Prototype version 2. This prototype is also going to work on fusion board. This time it is augmented to support other protocols.	Major component is added. The components and sub sections are implemented and ready to integrate. These components passed unit test.
3	Prototype version 3. Complete syncBox based on fusion board.	Beta version. Completed version which is going to be tested on the x-lab devices.
4	Design and implementation.	Final release

4.2.4 Project Schedule

The three prototyping phases are going to be designed in 5 months and the design and implementation is going to be implemented in 3 months

The ibex time table is available in section 4.1.

4.2.5 Project Resourcing

The project is going to progresses by two full time member. Altay is mainly responsible for iBEX and Burak is going to be responsible for syncBox. However, during the progress of the project some auxiliary/ temporary team members are going to be added to the team.

4.3 Project Monitoring and Control

Requirements Management

The requirements for this system are captured in the Vision document. Requested changes to requirements are captured in Change Requests, and are approved as part of the Configuration Management process.

Schedule and Budget Control

Expenses are monitored by the project manager, and reported and assessed monthly. (See Reporting and Measurement below).

The project manager maintains a schedule showing the expected date of each milestone. The line items in the schedule include work packages assigned to individuals. Each individual who is assigned a work package provides %completion information to the project manager on a weekly basis. Changes in the schedule will be escalated to the project sponsors, who will then decide whether to alter scope in order to preserve target completion dates.

Quality Control

Defects will be recorded and tracked as Change Requests, and defect metrics will be gathered (see Reporting and Measurement below).

All deliverables are required to go through the appropriate review process, as described in the Development Case. The review is required to ensure that each deliverable is of acceptable quality, using guidelines described in the RUP for Small Projects review guidelines and checklists.

Any defects found during review which are not corrected prior to releasing for integration must be captured as Change Requests so that they are not forgotten.

Reporting and Measurement

Updated cost and schedule estimates, and metrics summary reports, will be generated at the end of each iteration.

The Minimal Set of Metrics, will be gathered on a weekly basis. These include:

Earned value for completed tasks. This is used to re-estimate the schedule and budget for the remainder of the project, and/or to identify need for scope changes.

Total defects open and closed – shown as a trend graph. This is used to help estimate the effort remaining to correct defects.

Acceptance test cases passing – shown as a trend graph. This is used to demonstrate progress to stakeholders.

In addition, overall costs will be monitored against the project budget.

Risk Management

Risks will be identified in Inception Phase using the steps identified in the RUP for Small Projects activity “Identify and Assess Risks”. Project risk is evaluated at least once per iteration and documented in this table. The risks of the greatest magnitude are listed first in the table.

Risk Ranking (High, Medium, Low)	Risk Description and Impact	Mitigation Strategy and/or Contingency Plan
High	unknown types of devices	By purchasing new devices, widen the range of available devices as much as possible Learn about the devices By searching on the net Collaboration with major component producers.
High	Jointing to the other companies	Another company can help us with both syncBox and iBEX progress. This could speed up the development progress and simultaneously could change the project plan and steps.
Medium	Operation environment change	If the user wants a web based interface or switch from windows to iOS platform then this could cause serious back of plans.

Configuration Management

Appropriate tools will be selected which provide a database of Change Requests and a controlled versioned repository of project artifacts.

All source code, test scripts, and data files are included in baselines. Documentation related to the source code is also included in the baseline, such as design documentation. All customer deliverable artifacts are included in the final baseline of the iteration, including executables.

The Change Requests are reviewed and approved by one member of the project, the Change Control Manager role.