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Recovery and stress meter

Project plan

First year hardware project
School of ICT
Metropolia University of Applied Sciences
January 25, 2023 (v0.2)

Abstract

Write your abstract here.

Keywords:

Ver	Description	Date	Author(s)
0.1	First version created from the Construx's software development plan template.	9.12.2022	Sakari Lukkarinen
0.2	Continued editing. Added examples and other documents.	11.12.2022	Sakari Lukkarinen

Table 1: Version history

Keyword 1
Keyword 2
Keyword 3
...

Contents

1 Introduction

This section describes the recovery and stress meter project being to be conduct during the first year Hardware courses of School of ICT at Metropolia University of Applied Sciences.

1.1 Project Overview and Vision

The objective of the project is to create a proof-of-concept product of a stress and recovery meter. The project begins with the discovery phase, where the requirement specification is reviewed, the project plan is developed with detailed schedule and risk management plans. The planning checkpoint review is arranged at the beginning of the 4th learning period starting in the middle of March.

In the 4th learning period, the project continues to the invention phase where the architecture of the system and detailed design are planned. The actual implementation work is divided into three (3) iterative development stages each of them having a separate release and milestones. The final release is at the end of the spring semester.

During the development the project plan with time schedules and risk management are updated under change and version control.

1.2 Project Deliverables

The main deliverables of the project are:

- The updated and detailed requirement specification
- The project plan (this document)
- Architecture and detailed design document (to be developed in the 4th period)
- The proof-of-concept product (the product)
- User's manual for the product
- documented source codes.

The main deliverables, their release dates, physical locations and delivery methods are listed in Table 2.

Table 2: The main deliverables of the project.

Main deliverable	**Release date**	**Physical location**	**Delivery method**
Detailed requirement specification	TBD	TBD	TBD
Project plan	TBD	TBD	TBD
Architecture design	TBD	TBD	TBD
Detailed design	TBD	TBD	TBD
User's manual	TBD	TBD	TBD
Source code and its documentation	TBD	TBD	TBD
Proof-of-concept product	TBD	TBD	TBD

1.3 Evolution of the Project Management Plan

The following Table 2 summarises the project management plan showing the version, primary authors, description and data completed estimates.

Table 3: Project management plan.

Version	Primary author(s)	Description	Date completed
Draft		Initial draft created for distribution and review comments	TBD
Preliminary		Second draft incorporating initial review comments distributed for final review	TBD
Final		First complete draft, which is placed under change control	TBD
Revision 1		Revised draft, revised according to the change control process and maintained under change control	TBD
Revision 2		Second revision, revised according to the change control process and maintained under change control	TBD
Revision 3		Third revision, revised according to the change control process and maintained under change control	TBD

1.4 Reference Materials

Below is listed all the documents and other materials referenced in this document.

Documents

- Requirements Specifications (v0.7), 11.12.2022, Author(s): Sakari Lukkarinen, Word document.
- Requirements Specifications, Functional and non-functional requirements, user roles and use cases (v0.7), 11.12.2022, Author(s): Sakari Lukkarinen, Excel document.
- Gantt timetable (v0.2), 11.12.2022, Author(s): Sakari Lukkarinen, Excel document.
- Risk evaluation and management, Last update 11.12.2022, Author(s): Sakari Lukkarinen, Excel document.

Other materials

- McConnell, S. (1998). Software Project Survival Guide. MicroSoft Press.
- Harrin, E. (2017). How to Create a Project Organization Chart. Project-Management.com
- Wikipedia, Product-based planning in Project management. Accessed 11.12.2022.

- Wikipedia, PRINCE2. Projects in controlled environments a structured project management method. Accessed 11.12.2022.
- Wrike, What Is a Work Package in Project Management? wrike.com. Accessed 11.12.2022.

1.5 Definitions and Acronyms

TBD.

Instructions: Provide definitions or references to all the definitions of the special terms and acronyms used within this document.

This could probably be also done on the beginning of the article.

2 Project Organization

A staged delivery plan is followed having at least 3 stages and the final release. The project's process model, organizational structure (chain of command and management reporting structure), and responsibilities of individuals on the project are described in this chapter.

2.1 Process Model

A staged delivery plan is followed in the project. A detailed GANTT chart of major phases and milestones are given in a separate document (XXX. Project Phases and Milestones). The following Table 4 summarises the major work products, their planned completion dates and their content.

[table]

Table 4: Major work products and their content and timing.

Work product name	**Planned completion date**	**Placed under change control**	**Deliverable to customer**	**Approved by**
TBD	TBD	Yes	No	Project manager
TBD	TBD	No	Yes	Engineering lead
TBD	TBD	Yes	Yes	Documentation

Instructions: consider including all the top-level work products.

2.2 Organizational Structure and Project Responsibilities

Each major project responsibility and the responsible persons are described in Table 5.

The project's internal structure, the lines of authority, responsibility and communication within the project are illustrated in Figure 1 .

Table 5: Project responsibilities and persons responsible.

Responsibility	**Persons responsible**
Overall Project Manager	TBD
Engineering Manager	TBD
Quality Assurance Manager	TBD
End-User Documentation Manager	TBD
Requirements Development	TBD
Software Architecture	TBD
Technical Self-Review	TBD
Etc.	TBD

3 Managerial Process

The management objectives, priorities, project assumptions, dependencies, constraints, risk management techniques, monitoring and controlling mechanisms, and the staffing plan are described here.

3.1 Management Objectives and Priorities

The project is managed following the product-based planning and PRINCE2 structured project management method (See other documents for details). Instructions: Describe the philosophy, goals, and priorities for management during the project. Consider including the following items:

- status reporting
- relative priorities among functionality, schedule, and budget
- risk management procedures
- approach to modifying existing software

3.2 Assumptions, Dependencies, and Constraints

The project plan is based on the given preliminary requirement specification and documents (See 1.4 Reference Materials). The project's schedule is constrained to the Spring 20XX semester, which ends at XX.XX.20XX. Totally XX engineering students are involved on the project development process. The project's time budget is based on the ECTS system. Each ECTS point is budgeted for 27 hours of study work. Totally XXX hours of engineering students' workhours are used for the project. The quality measures of the project are being updated during the project. The quality of the final proof-of-concept is constrained by the given schedule, time budget, and human resources. Based on these constraints, the proof-of-concept product is planned to have the functionalities given in the detailed requirement specification (See Document XXX). However, any guarantees of the quality of the implemented features cannot be given, but the results are as-they-are.

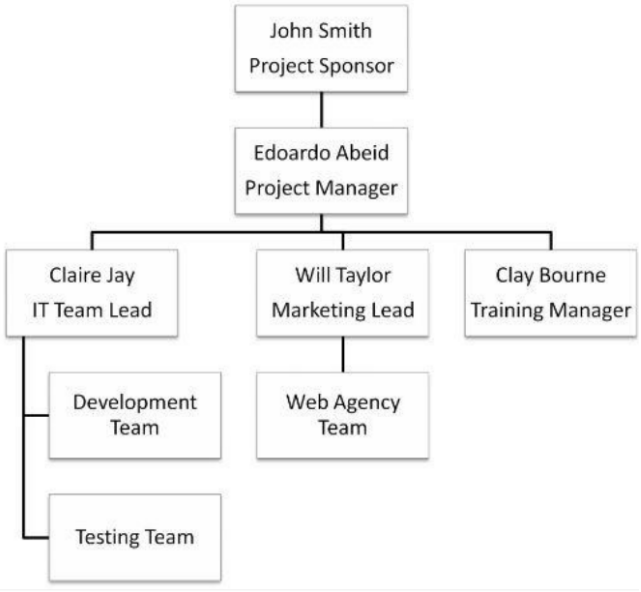

Figure 1: Example of project's organisational chart (Source: Harrin, 2017).

3.3 Risk Management

A separate risk evaluation and management document is given in document XXX. The Table 6 lists the top major risks for the project.

Table 6: Major identified and evaluated risks of the project. Instructions: copy here the initial top 10 risk list and update the table at major milestones of the project.

ID	Description	Severity	Likelihood	Risk level
R_01	Unachieavable schedule	3	3	9
R_02	Released product has low quality	2	4	8
R_03	Requirements or developer gold plating	2	2	4
R_04	Creeping requirements	1	3	3
R_05	Unstable tools delay schedule	1	1	1
R_06	TEST very high risk	4	4	16
R_07	TEST very low risk	1	1	1
R_08	TEST another very high risk	4	4	16

3.4 Monitoring and Controlling Mechanisms

The project shedule, quality and functionality are tracked through the project. The report content and format follows .... Instructions: describe here the report

content and format.

The monitoring report is structured the following way ... Instructions: write here the report structure and they are delivered every XXX week.

The project progress is controlled ... Instructions: write here how the project progress is controlled.

3.5 Staffing Plan

Instructions: Describe the numbers and types of personnel needed to conduct the project, for example: NN engineering students with ... skill levels are required. The project starts at ..... and continues XXX weeks. The personnel are selected by (method of obtaining the personnel), and (what?) training is required. All staff is phased out at the end of the project.

4 Technical Process

The top-level technical processes used on the project including the technical methods, tools, and techniques; major software documents; and supporting activities such as configuration management and quality assurance are described in this chapter.

4.1 Methods, Tools and Techniques

The following methods, tools and techniques are used in the project (see the requirement specification for more details):

- The computing system environment including hardware and operating system environment: ....
- Software tools including design tools, source code control, time accounting, compiler or IDE, debugging aids, defect tracking, and so on: ...
- Development methodologies including requirements development practices, design methodologies and notations, programming language, coding standards, documentation standards, system integration procedure, and so on (these will not all be defined when the first draft of the project plan is created; the section should be updated as the plans become more detailed)
- Quality assurance practices including methods of technical peer review, unit testing, stepping through code in a debugger, system testing, automated regression tests, and so on: ....

4.2 Documentation

The following documents will be developed for the project:
Instructions: List here all the major documents ...

4.3 Project Support Functions (optional)

Instructions: Describe here or give references to other documents that describe the plans for functions that support the software development effort, including configuration management, quality assurance, and end user documentation. Describe the responsibilities, resource requirements, schedule, budget, and so on. Note: this section can be added later during the project.

5 Work Packages, Schedule, and Budget

5.1 Work Packages and their dependencies

Instructions: Create a first draft of work packages and place them here (i.e., task or collection of tasks that must be completed to complete the product). Identify each work package with a unique number and provide a diagram showing the breakdown of work packages into sub-packages (See Figure 2 for example). Describe the dependencies both among work packages, and external events. Update this part in every stage when the project progresses.

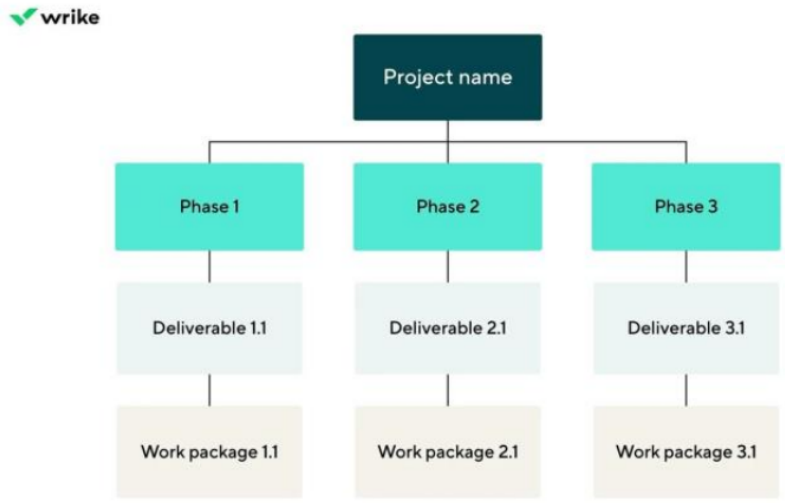

Figure 2: Example of project breakdown into work packages. (Source: Wrike, 2022).

5.2 Resource Requirements

The following resources are required for the project on over the whole course of the project:

- The numbers and type of personnel: ...
- Number of computers and software used: ...
- Office facilities used: ...
- Training needed: ...

5.3 Time Budget and Schedule

The detailed time budget and schedule is given in document XXX. The major activities and tasks, required calendar dates, and their required milestone and deliverable dates are summarised in Table 7.

Table 7: Time budget and schedule for major project activities and tasks.

Activity/Task	**Begin**	**End**	**Required calendar days**	**Delivery or milestone date**

6 Additional Components (optional)

Instructions: Include additional components needed to manage your specific project. Possibilities include subcontractor management plans, security plans, training plans, hardware procurement plans, facilities plans, installation plans, cutover plans, and software maintenance plans.

If you don't have any additional components, remove this section, or write: TBD (To be designed).