

SDP - Software Developement Plan

September 17, 2018

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Document history

Version	Date	Resp	Description
0.x	2018-09-14	PG	Draft version

1 Project Organization

The project requires a total of 16 people. The current grouping is

- PG(2)
 - Assar Pettersson
 - Erik Gralén
- SG(3+1)
 - Jascha Thiel(Leader)
 - Simon Hyttfors
 - Viktor Claesson
 - Daniel Karlsson
- TG (3+1)
 - Jesper Berg(Leader)
 - Jesper Grahm
 - Axel Peterson
 - Tuan Nam Vuong
- UG(3*2)
 - Front-end
 - * Jan Zubac
 - * Filip Karabeleski
 - Back-end
 - * Alexander Pålsson
 - * Sani Mesic
 - Algorithms
 - * Isabella Gagner
 - * Felicia Carlsson

1.1 Project Leaders (PG)

The project leaders are responsible for bringing the desired product to the client. They need to ensure that the other members of the group are doing the required work by distributing the technical tasks and giving each group member a roll(SG, TG or UG). The PG is responsible for creating a proper time schedule

in consultation with the other groups and ensure that this schedule is followed throughout the project.

The project leaders responsible for identifying and creating a list of the necessary configuration units needed for the project, as well as writing/contributing to some of these such as the SDP, SSD and PR. The configuration units needs to be accessible at a (online) document library that the PG is responsible for managing. The PG is required to have good contact with the client and the other team members by attending and setting up meetings at least once a week. The project leaders need to make sure that each document has an informal and formal examination and distribute the examination work among the group members. The project leaders are also active in the CCM.

The PG has to time report everything they do. The PG is also responsible for completing the final report with metrics and comments from the whole project group.

1.2 System Architects (SG)

The system architect group has the responsibility for the technical aspect in the project. They have a leader who's responsible for reporting in to the PG, and for distributing the work among the members of the SG group. The group leader also has to make sure that the Software Requirement Specification(SRS) is consistent with the Software Verification and Validation Specification(SVVS). The SG is required to have good communications with all the other groups to make sure that the developers and testers are working on the same page as well as delegating work tasks to the UG. They are also responsible for configuration management of the work library. The SG are responsible for the compilation of the SRS, STLDD and the SDDD. They are also part of the CCM.

The SG has to time report everything they do, individually. Participate as author and/or examiner in document examinations(both informal and formal). They also has to compile their conclusions and comments to the end report coherent with what they've done.

1.3 Test Group (TG)

The test groups responsibility is to ensure that everything in the development is properly tested. They have a group leader whose responsibility is to ensure good division of labor, maintain contact with SG and PG, and report all discovered errors to SG.

The group is responsible for creating the SVVS,SVVI and SVVR and to make sure that the SVVS and SRS are consistent. They're also required to participate and help when the UG has to produce automatic unit tests. The TG has the responsibility of the system construction and to ensure that the system is regression tested.

The TG has to time report everything they do, individually. Participate as author and/or examiner in document examinations(both informal and formal).

They also has to compile their conclusions and comments to the end report coherent with what they've done.

1.4 Developers (UG)

The developers are responsible for the development of the functionality to the project. They are divided in three sub-groups. Back-end, front-end and algorithms. Each sub-group is responsible for the functionality coherent to that sub-group. The functionality is required to follow and be consistent to requirements given from the SRS. The are required to produce sub-chapters to the SRS,STLDD and SDDD.

The UG has to time report everything they do, individually. Participate as author and/or examiner in document examinations(both informal and formal). They also has to compile their conclusions and comments to the end report coherent with what they've done.

1.5 Change Control Management(CCM)

The Change Control Management consists of the PG and SG. The purpose of this group is configuration management of all the produced documents. The SG has main responsibility for this and the PG participates with making decisions of change operations that requires resource and time-planning.

1.6 External Members

The organization has several external members. The external members are the section manager, the client, a formal examiner and some technical experts. The section manager, responsible to help the project groups if they are in dire need with anything non-technical. The client is the mission-giver to group and also the recipient of the final product. The formal examiner is conducting the formal examines and controls that the development plan is followed.

There are three technical experts that the group can consult if their respective expertise is needed. A requirements expert, a test expert and one design expert.

2 Time Plan

2.1 Estimated time: Phases

2.1.1 Phase 1

Estimated time: 10 days Start: 6/9 End: 16/9

Document: SDP Estimated time: 10 days Start: 6/9 End: 16/9

Document: SRS Estimated time: 10 days Start: 6/9 End: 16/9

Document: SVVS Estimated time: 10 days Start: 6/9 End: 16/9

2.1.2 Phase 2

Estimated time: 7 days Start: 17/9 End: 23/9

Document: STLDD Estimated time: 7 days Start: 17/9 End: 23/9

Document: SVVI Estimated time: 7 days Start: 17/9 End: 23/9

2.1.3 Phase 3

Estimated time: 21 days. Start: 24/9 End: 14/10

Document: SDDD Estimated time: 21 days. Start: 24/9 End: 14/10

2.1.4 Phase 4

Estimated time: 21 days. Start: 8/10 End: 28/10

Document: SVVR Estimated time: 14 days. Start: 8/10 End: 28/10

Document: SSD Estimated time: 14 days. Start: 8/10 End: 28/10

Document: PFR Estimated time: 7 days Start: 21/10 End: 28/10

2.2 Calendar

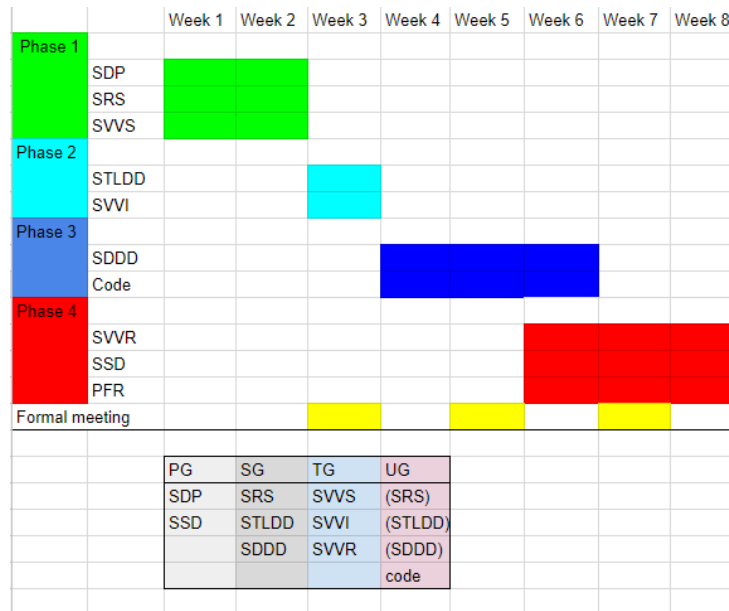


Figure 1: Time plan overview

3 Follow-up and Quality Evaluation

3.1 Follow-up

As the project progresses, the group may start to deviate from the original plan. This can be either voluntary or involuntary changes. It is important to take note of these changes so that they can be handled and evaluated accordingly. As such, all deviations will be discussed in our weekly meetings and/or reported through other means. While everyone in the group must communicate if they notice or predict deviations, the main responsibility of handling and evaluating them lies with the PG.

Since changes are likely to occur, it is important that the group has a clear guideline to handle them.

1. *Identify* - If any group member notices or predicts problems or changes, this person must inform the rest of the group. This can be done during one of our meetings or through Slack.
2. *Analyze* - PG and key team members analyze potential effects. Additionally, the PG may perform a root cause analysis if it seems appropriate.
3. *Response* - PG and key team members decides the appropriate response and informs the rest of the group.
4. *Evaluate* - PG and key team members evaluate if the response was effective, if this deviation was predictable, and what measures could have been taken to avoid it.

All of these steps should be recorded and discussed internally.

3.2 Quality Evaluation

During the project, quality evaluations will be done through formal reviews, informal reviews, and testing. Formal reviews will be held during each phase with appropriate team members and external members. Informal reviews will be held before each formal review and when otherwise deemed appropriate by PG. PG will either select a few members to review or select the whole group. This group must then individually read and review the documents and send feedback via Slack. Testing will be in the form of both unit tests (UG) and black-box testing (TG).

4 Risk Analysis

Disengagement, *low risk, medium impact* - A member becomes disengaged with the project. This can mean not doing the required work, not showing up to meetings or not communicating well. This can be solved by trying to reengage the member, changing roles or redistributing work.

Internal conflicts, *high risk, low impact* - All conflicts between members will hopefully be handled professionally. If the members can not solve the conflict themselves, other team members can help. If major conflict occur, members should discuss and decided whether to try to solve it internally or externally.

Poor communication, *medium risk, medium impact* - This may be between groups, in the whole group, internally within a group, or with external members. If this problem arises, more meetings can be arranged to hold discussions. During each meeting, the team should discuss the level of communication.

Poor planning, *medium risk, medium impact* - Due to inexperience with the project process, there is a risk of certain aspects being overlooked or estimated poorly. Provided resources should therefore be utilized effectively. PG and others should continuously evaluate the progress and plan.

Lack of technical competence, *low risk, high impact* - Although there will be many new concepts to learn, our team will be able to support each other and take time to learn. In meetings, the team should discuss if there are some things that members should learn beforehand. If required, PG can reassign roles, provide support from other groups, or redesign the plan to be more realistic. The development phase is also expected to include a learning curve.

Poor design, *low risk, high impact* - The high-level design might need to be redesigned and large amounts of work needs to be redone. Since our project is rather small and built upon a preexisting system, the risk is rather small. To further minimize the risk, all designs should be properly evaluated.

Improper reporting, *medium risk, medium impact* - Members might fail to properly report, for example, changes and time. This might lead to miscommunication or inaccuracies. All members should utilize the course material and PG communicate the importance of it.

Unexpected amount of paperwork, *high risk, medium impact* - Members might have an unrealistic expectation regarding the amount of paperwork. This can result in slower progress or not following the project process correctly. The group should discuss this early and prepare.