

# **TFE4850 - EiT - Student satelite**

## **Process report**

### **Group 2**

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## **Abstract**

The subject Experts in Teamwork builds on learning about interdisciplinary team collaboration. Our group consists of six people with different backgrounds. We will categorize us as a heterogeneous group despite that we all study at NTNU Gløshaugen. To use the different knowledge within the group we had a strong focus on shaping the task so that everyone could participate with their knowledge. Since no one had great background knowledge of the project's theme, it was natural for us to have a flat structure without any designated leader.

To identify the group development and progress, various events and process exercises has been discussed and evaluated. As a team we have solved conflicts, reached consensus when changing the project definition and achieved better self-awareness and openness through process exercises. When we met challenges where the group had difficulties to cooperate or were unproductive, we used different theory to solve this in a good way. After working together for a while we got a good friendship that led to more trust and better communication. We also had a lot of fun during the working period.

From this experience we all learned something about us selves and how we affect the group dynamic. We also experienced how to cope with challenges and discuss undiscussable issues.

## **Preface**

This report is a part of the result of the Experts in Teamwork village TFE4850 Student Satellite, spring 2013. EiT is a interdisciplinary course, where students from different study programs work together to achieve a common goal. It is important to use the different knowledge in constructive manner and work well together under pressure to achieve effectiveness and reach our goal.

An important part of this course is to focus on how the group work together and communicates internally. This is a report that describes this process, and we emphasize individual situations which we believe has been of great importance to the group collaboration. We have focused on using relevant theory and joint reflection to create an understanding of what happened, what we could have done differently and how to improve the process on this basis. We will also try to locate patterns of behavior that affects the group work.

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# **Chapter 1**

## **Introduction**

This report is rooted in the teamwork process the group experienced during our project in EiT. The basis of the report is group reflections done at the end of every day we spent working on the project. These logs contains descriptions of situations, the results of these, as well as reflections and eventually actions taken in response to the situation in question. Some events and exercises have also been highlighted as they helped the group improve or reflect upon their teamwork skills.

The report starts with a description of the group, and each individual group members expectations to EiT and the NUTS-project, as well as their academic background. After that we discuss the different situations and reflect around them, before we end it with a reflection on the project and teamwork process as a whole, what we learned and how both the project and the teamwork exercises lived up to our expectations.

### **1.1 The Project group**

The project group consisted of 6 people from 5 different studies, so we had a wide variety of competence to use in the project. Since most of our group members study technology, we decided to make something physical, and not just theorize. The wide variety also means we are one of the most heterogeneous groups in the EiT-village. If you consider that a sociologist wouldn't be of much use in our project, we can say that inside this project, the group was quite heterogeneous, even though we only had engineer students and a science student in our group.

All the group members have knowledge that will be useful in our project, and in the scope of this EiT-village we managed to use everyone's competence. This was helpful for the collaboration and no one was left with the "Report responsible" task which is often a loophole for team members who are unable to use their knowledge. All the group members viewed space as something new and exciting which was a source of inspiration and motivation early in the project.

### **1.1.1 Hallstein Skjølsvik**

My name is Hallstein Skjølsvik. I started to study electrical engineering in 2009 at HiST (Høgskolen i Sør-Trøndelag). I completed my bachelor degree in the spring 2012. The same autumn I started a two year master program in electronics at NTNU. At NTNU I specialize within design of digital circuits. In addition to studying I have been working part time as a shift leader at a grocery store until 2012. After I completed my bachelor degree I got a part time job at Kongsberg Seatex, where I work with maritime electronics. Therefore do I have some experience with working in a team.

I chose the NUTS village at EiT because I always have been fascinated by space exploration. A student satellite seems like an interesting project where I can learn something which is not normally covered by the digital design masters program. My expectations to this project is to learn more about the process of launching a satellite in to space. In addition I hope to get in touch with people from a different field of study, but with similar interests as me.

### **1.1.2 Hanne**

My name is Hanne, I am studying Energy and Environmental engineering with specialization in Energy and Heat Processes. This means that I have general knowledge about different renewable energy sources, thermodynamics, fluid mechanics, gas processing and energy processes. When I chose village for EiT I wanted to challenge myself by choosing something new and unfamiliar, and the NUTS Student Satellite seemed incredibly exciting. But by challenging myself with a topic outside my field I became unsure how to apply my knowledge. I received mixed feedback about EiT from previous students, as many expressed that it was time consuming and that working in interdisciplinary groups were demanding. Taking this to consideration I expected that EiT would be challenging but with my choice of the village it would give me knowledge about something new. Regarding the interdisciplinary collaboration my expectations were both positive and negative. I looked forward to meeting new people with different backgrounds, but were unsure whether the group would manage to work together.

### **1.1.3 Marius Ekerholt**

My name is Marius Ekerholt, in 2009 i started studying computer science at NTNU in Trondheim. I chose to specialize in artificial Intelligence. Since 2012 i have been working for a development company. I have a lot of experience in developing systems on web and mobile. I am good at finding solutions and i like working in groups. In this project i can see myself contributing with technical insight and resolving different problems the group encounter. I chose this village because i have a general interest in space and the technical aspect of it. I also looked forward to working with something outside my everyday activities. Besides the variation i also thought that the most important focus for EIT was to learn to work in groups with unfamiliar faces. I looked forward to meet new people with different background and work as a team despite our differences. I hope to gain new knowledge about different group processes and some knowledge about satellites. I will do i best to make EIT an exciting project.

#### **1.1.4 Eirik**

My name is Eirik Skjeggestad Dale. I study computer technology, with specialization in intelligent systems. This means I have a good sense of general programming, and know a lot about solving difficult programming problems. This specialization is not the most relevant to this village, or any village, but if any programming bugs appear I can use it to try to solve them. What I can contribute to the group is general programming, and helping setting up the programs for the raspberry, and tuning it to the antenna system. I have also, through computer technology courses, worked on medium sized projects and hope my experience from these can help the group, specifically with writing our reports.

I chose the NUTS village because I've always been interested in space and everything that has to do with it. It's a real inspiration to know that I'm working on something that hopefully one day will be flying out in space and sending useful data back to us.

My expectations of EiT was that it seemed like formalizing things one already knew a lot, and that by extension it was quite boring and dull, with a lot of dead time where the group did nothing. That being said, I felt that the village was interesting, and I was looking forward to the project, while I also hoped that this would give me a chance to work with people from different fields and while I thought it might feel a little forced and formalized, give me a chance to improve my team-working abilities, and my conflict solving skills.

#### **1.1.5 Børge**

My name is Børge Irgens. I study theoretical physics at NTNU with primary focus on quantum entanglement. The reason I chose this EiT village is my interest in space physics and technology. My specialization is not strictly relevant to the work I do in this course, but my skills in analyzing physical systems (e.g. satellite orbits) and mathematics in general has been useful.

I've heard mixed reviews from other students about EiT, e.g. some people had problems with conflicts with other group members. This meant that I came into this project with kind of low expectations, but luckily it seems that everyone wants to do well on this course. Now I'm looking forward to hopefully learning a lot about both teamwork and satellites.

#### **1.1.6 Leif-Einar**

I have an education in electronics service and are now studying electronics at NTNU. In my studies I have specialized in radio and digital communication including satellite communication.

My expectations for EIT is that we will get continuous feedback on how we work together as a team. Because of this I believe that the team eventually will work good together.

# Chapter 2

## The Process

This chapter contains what we did during the project in terms of the team process. We will discuss the different process elements used and how it affected the group, and helped us improve our teamwork.

### 2.1 Teamwork agreement

The teamwork agreement is an agreement that goes outside the actual project description, and it is defined by the members of the group, based on what each group finds important. Early in the project we therefore wrote down a few key points that were important in terms of teamwork for the group members. The signed teamwork agreement can be seen in [Appendix A](#). We broke the agreement into three parts, delivery, wellbeing and learning. The delivery part contains all the points concerning the effort everyone is to put in, and what we're expecting in terms of quality and quantity of work. In the wellbeing section we wrote down what kind of atmosphere and leadership we wanted, as well as any social additions, like eating lunch together each Wednesday. In the last section, learning, we wrote down how we wanted to deal with feedback and how to achieve good progress throughout the project, while keeping everyone up to speed.

### 2.2 The Sosiogram

During the project the facilitators went around to the groups, analyzing the communication flow within the team during a discussion. They made a sosiogram of it by drawing lines to represent whenever someone talked to individuals or the group as a whole, as we can see in the sosiogram from our group, seen in [Figure 2.1](#). This sosiogram was made while we had one of our mid-day meetings. None of the group members knew that they were being facilitated. Note that when someone talked to the group in general, it's represented as a line towards the center dot of the "table".

The sosiogram showed that the communication flow had broken down, i.e. some people were hardly involved in the discussion at all, and this was a surprise to us. Hanne, one of the

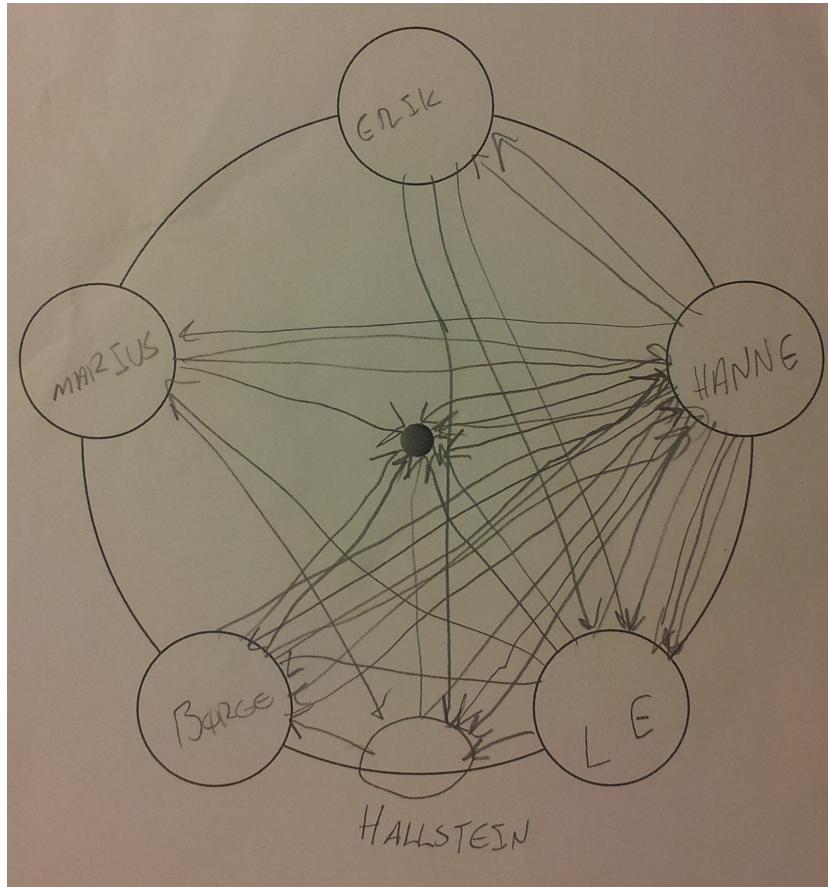


Figure 2.1: The Sosiogram we got from the facilitators after they observed a discussion in the group

most active participants, was surprised she did not notice that Eirik and Marius were not participating in the discussion, as she had felt that all the members were contributing. Marius was one of the members focused on doing research on the computer while the group was meeting. He was also surprised over the sociogram because he felt that he could do research and contribute in the group meeting at the same time. On the contrary the sosiogram shows that the members that had their computers up were almost absent from the discussion.

One of the big advantages of a group project is that you get different points of view and constructive criticism of your ideas, so this is something we did not want. Since the sociogram showed that everyone was about as active as the others, with exception of those using their laptop, we decided to add a norm saying that from now on every meeting shall be pc-free, with the exception of the secretary.

We managed to keep this norm for the rest of the project and we felt that it improved our creativity and productivity. It is hard to measure, but one thing we noticed was that we did not have to repeat the same topics that had been discussed earlier because all group members paid attention and focused on the meeting.

## 2.3 February 13, Changing project definition

During our project we met some obstacles, which made us, change our project definition. We want to emphasize this day since we feel it represents how our group handles setbacks.

When we started our project we had decided on one type of ground station network that we wanted to test and use. We had spent some time exploring the BlueBox network and every group member had done research. We learned that we were dependent on external partners to complete and work with our project, but were optimistic that we would get the information we needed. We were surprised when we got the news that Aalborg University did not have the opportunity to provide us with the needed information about BlueBox. Hallstein and Leif-Arne who had put in a lot of time understanding some of the technical aspects of BlueBox, felt that they had worked in vain and lost their motivation. As Weeland describes the fundamental attribution error [4] we started blaming others for our defeat. Thoughts along the lines: "It's the Aalborg University's fault that we have to start from the beginning, why would they not give us any help?" and "It's not our fault!" surfaced among different team members.

As the motivation went down we all became ineffective and unproductive. But putting the blame on others would not help us get any further with our project. We took Weeland's advice and started finding the factors that were blocking the group progress. By not blaming "the other guy", and remembering that all group members have responsibility for the group's successes and failures we became more motivated to put in a good effort every day.

As a group we wanted to focus on creating an effective group, high-performance group, by following Schwartz ground rule nine [2], which details decision making. We had earlier decided to have a flat structure within the group, without any appointed leader, and a democratic decision-making process [2]. This time we would ensure that the project was feasible, and used ground rule two. This rule stated that each member share all the relevant information she or he has that affects how the group solves a problem or makes a decision. We then put up a checklist over other ground station network that could be a solution for us. Every group member gathered information about one of the networks that could be appropriate for the project. We then conducted a round where each member presented what they had found, and shared their views. We then discussed which alternative would suit the group best, and then according to our "Teamwork agreement" voted. The voting were unanimous as there were huge benefits by choosing one option, and we felt that we reached consensus since we all were well informed before the voting. Changing the project definition led to a discussion of delegation of tasks.

With a group consisting of six people with different qualities and interests we had to discuss how we wanted to cooperate to solve our new project. First each member presented his ability and knowledge that could be of use to reach our goal. Though we are a group consisting of different backgrounds we were determined to use this as an advantage. As Johnson and Johnson wrote [3], "Tomorrow's effective groups (including large groups such as organizations and nations) will be those that have learned to be productive with a diverse membership". This led to ground rule eight in [2] where we had to discuss an undiscussable issue. Some of the group members felt at ease taking on different work tasks. Hanne whose study program differences the most from the core of the project, was a bit skeptical to how her competence

could be used. She had to confess to the group her theoretical weaknesses that made her unsuitable for some tasks. To solve this we took action and shaped the project so that every member got an assignment where they could use their expertise. In this way everyone felt that they played a significant role in reaching our common goal.

## 2.4 March 13, Solving a conflict

During the work period the group has had difficulties being productive at the start of the day. In our Teamwork agreement it is written that if someone is going to be late to the agreed upon time, that person must inform the rest of the group. This point has so far been adhered by all members, but it does not prevent people being late. As one member of the group has been consistently late to group meetings the rest of the group decided to bring it up for discussion. Even though he follows the group agreement with giving notice, he breaks the agreement of being on time. As this has been happening over some time the rest of the group felt that it affected the project's progress. Either the group waited until all the members came and lost valuable time, or they had to use time on getting the person concerned up to speed. Either way the situation would hopefully be improved by discussing it with the person concerned.

As the group planned to bring it up, we noticed that our flat group structure made it difficult. Nobody wanted to be the "bad guy", but without any formal leader we had come up with a solution. We did not want to be a group that avoided conflicts to help a member save face, we wanted to be an effective group. As our group had grown to trust each other and we felt that every member was mature enough to not feel insulted by constructive feedback we decided to discuss the issue in a meeting. To find a way to solve this problem in a constructive manner we followed one of the three effectiveness criteria written by Schwarz[1]. Schwarz categorizes problem solving as one of the primary group processes an effective group should manage. We wanted to use a systematic approach to the problem and find a solution after hearing and understanding the cause. Hanne took on the role as leader for the conflict handling. All six members of the group sat down together and discussed the issue. On behalf of the group Hanne then told him how the group felt about the situation and how it affected the work process and collaboration. Hallstein felt that he had a lot of other schoolwork to deal with, but understood that he had to prioritize the group. He also stated that the group used to be unproductive at the beginning of the day, and that this was not motivating when he had other things to do. By taking this conflict up for discussion the group now knew what Hallstein felt and what the problem really was. To deter members from being late the group appended a new point to the Teamwork agreement. We wanted a rule that would punish the member that broke it, but would work as an advantage for the others. It resulted in a cake rule; if one member was late he or she had to bring a cake to the next meeting.

By identifying the cause of the problem, evaluating and selecting a solution the group felt that this conflict had contributed to personal growth. Hallstein had pointed out a problem with the groups effectively that the rest had not thought of as the cause of the problem. Revealing this made the group reconsider their working methods. What could be done to secure more productivity at the start of the day? The teamwork agreement stated that we should start each day with a meeting where we updated each other on our progress and plan the rest of the day. The group has not been good at fulfilling this rule, which is one of the factors contributing to the unproductivity. Børge suggested that we looked over the status of the project and located the remaining work. This made it easy to see what we had left to do and divide the work to increase production. Hallstein felt that by having well defined tasks he would be more motivated and committed to the group and the project.

Already the next meeting we could see that the group worked more effectively. Everyone met

at the given time and communication was improved. The group felt at ease since the conflict was resolved and everyone had said what they felt. We agreed that if someone felt that they were unsatisfied with the group or working methods, they should feel that they could take it up for discussion. It is also important that every member should be more critical of our own productivity and focus on continuously improving the teamwork process.

Our group has completed several process exercises. One of these were the exercise "Group Dimensions", which was done the 3. of April. During this exercise an event happened that helped us to determine the maturity of our group. In the exercise we were to score the properties of the group. This was done by grading several statements according to how much we agreed that they fit our group. During the second statement, an interesting discussion occurred.

The second statement was: "...the group is productive compared to its purpose." Here the group answered differently. Some meant that the group was effective, while others, particularly Hallstein, meant that the group was somewhat ineffective. Hallstein used Schwarzes 4th ground rule for effective groups; Explain your reasoning and intent [2]. The reason Hallstein scored this group low on effectiveness compared to its purpose was because he had a suspicion that the groups leadership policy did not fit the group's task. He had a suspicion that there was some sort of mismatch between the groups maturity level and the maturity level needed for the task. In order to decide this, we tried to determine our own group maturity, and the maturity needed for the task.

Since the group is quite newly formed, it is reasonable to assume that the group has a low maturity. Probably level 1 or 2 (Reservation or Team Spirit). In "Group Dimensions" the group scored quite high on statement 3 (... this is a nice and comfortable group to be a part of), which indicates that the group has the property "Nurture". At the first statement (... the group is controlled by one or a few persons), the group scored low. This indicates that the group members is able to agree with each other, and follow others lead. Therefore does the group probably have the property "Dependence".[5]

On statement 4 (...the work load is evenly distributed among the group members). This suggests that the group have the ability to control its work flow and distribution. The group also scored low on statement 6 (...the group shows little respect for regulations, to show up in time, keep appointments, prepare for or complete tasks effective and thoroughly). This can indicate that the group is structured and respect the authority of the other group members, which supports the view that group has the property "Control". Therefore we may assume that the maturity of the group is at level 3 (Production).[5]

At statement 5 (...the group is facing internal opposition, disagreement/ ill will) the group scored low. This shows that the group does not have the property "Opposition". This means that it is a nice group to participate in, which is reflected in statement 3, however the group has not yet evolved to level 4 (Innovation).[5]

The maturity level needed for the task is a bit more difficult to decide. The task is quite wide. It covers several fields of studies; hardware, software, Energy and power calculations, radio communication, and simulations. That means that we each focus on a specific part of the task, and are very dependent of each other, since no one can cover others part. Therefore it is reasonable to assume that the group need a leader that is able to make everything fit together. Like the operation allegory in the note [note]. We may make the conclusion that the task needs a maturity level of 1 or 2. Since the group is not making anything new and innovative, it does not require a level 4 group. The task is not directly a production oriented task either. The group is to produce one example, not a large quanta that requires a high level of control.[5]

As an additional point, the groups task demanded a lot of assistance from external resources. When these resources were unable to aid us, the entire project halted, and caused us to be

very ineffective. It would have been a huge advantage if an external coordinator made sure we could interact with the external resources when we needed it. This supports that this task demand a level 2 leadership structure.

After the group completed this exercise, we questioned our leader structure. This was a so called "Undiscussable issue" to us, Since we have a nice social situation in the group. With the leadership structure we already had nobody needed to be more responsibly than the others, and nobody bossed the others about. However the Ground rules for effective teamwork clearly states that such undiscussable issues should be discussed[2]. This was difficult to discuss for us, however we reached some results. We found out that Eirik and Leif Einar may have been a bit more eager to push our project forward previously, while Børge had been a more leader figure on the process side. With this in mind we tried the arrangement of a One day leader. We did see the effect of this action already the next week. The 10. of April, when we were going to write the report, Børge took charge. He divided the report up into several parts and wrote them on the blackboard. He gave everybody responsibility for different parts. Whenever a part was done, he crossed it out on the blackboard ad distributed a different part. By doing this, the group worked effectively in parallel the whole day.

This shows how the awareness of our maturity level can make the group do necessary changes to complete a given task. If there exists a mismatch between the groups maturity level and the level needed by the task. If a group has a too low maturity level, it can be increased with Team Building exercises which forces the group to move out of its comfort zone. In our case we believe the opposite situation was present, and this we solved by changing our leadership structure. It was too bad that this happened at the end of the project. Because we only benefited on it during the report writing phase of the project. When the group participants takes part in a group at a later point, they will probably reflect upon this on an earlier stage. The new group will probably benefit from this.

The theory material of maturity level is from Endre Sjøvold's article: "Maturity and effectiveness in small groups", Nordic Psychology 24. January 2013.

# Chapter 3

## Summary

WORK IN PROGRESS!! At the end of the project the group sat down together to reflect on the experiences and teamwork done during the project, and also had a short meeting with the village leader about the same subject. We had all heard different things about the course and we all had the impression that there would be potential conflicts and a lot of team exercises. The group had a wide variety in terms of academic background, and the project we chose to do required using the skills of everyone on the team.

During this term there have been a lot of team exercises. They have first and foremost been helpful for facilitating discussions about how we work as a group and how our behavior and level of involvement in the project affected the group. It also formalized quite a lot around conflicts and groups rules, which became useful later in the project.

The sosiogram we got from one of the facilitators was a good for reflection on how we communicated at the start of the project. In a interdisciplinary group the different people have different viewpoints and ideally the interaction between different fields will yield ideas etc. that would not be possible for a group with a narrower focus. This made us more aware of how easy it is to forget the importance of everyone's participation, and how it affects the group. To exploit the interdisciplinary nature of our group, it was important that everyone participates in discussions.

We had a good communication flow and discussions where people showed their point of view, with no one being too quiet. We also feel that we allowed for everyone to use their skills and knowledge, and that we worked well together interdisciplinary.

The group had a open and friendly tone from the beginning, and everybody agreed on most decisions, or we discussed it and reached a unanimous decision. Even though we didn't get any larger conflicts we had some challenging situations. Our first group challenge came when we had to change our project definition and then we had a conflict with people not meeting at time. These events made the group more aware of how different theory can be used to solve group challenges. By openly discussing topics that are hard and reaching a common solution, we experienced a growth within the group. The group became more effective and the communication flow improved.

As we look back at the working process we all felt that we have gained valuable experience.

When communicating with people that differ from yourself it is important to present all valuable information in an understandable way. This helped our group a lot throughout the process since we did not share the same theoretical background. Further we learned that feedback is essential for the different team members to grow. By discussing how we see each other in the team, we all had something to work on.

We have also learned a lot about different models and characteristics for high performance groups which we feels

As we look back at our process we feel that we've gained valuable experience. a lot about different models for groups and the theoretical needs of high performance groups. There have also been situations that have highlighted that the extremely flat structure may not have been optimal. This was exacerbated by the nature of our project where we don't really need to answer to anyone else when it comes to progress etc. Which is in sharp contrast to most situations we will meet in "real life".

We also think we have done some things right, e.g. had a very open and friendly atmosphere and meetings without any distracting elements like computers.

# Samarbeidsavtale for gruppe 2

## Appendix A

30. januar 2013

v. 1.0

## Teamwork Agreement

### Leveranse

- Alle stiller til avtalt tidspunkt, dersom en ikke kan komme skal man gi beskjed til gruppen (SMS). Dersom samme person ofte kommer for sent skal det tas opp i drøftingsmøte.
- Alle skal delta likt på både prosjekt- og prosessrapporten, og har medansvar for at kvaliteten på arbeidet skal holde kravene til minimum B.
- Vi starter dagen med et daglig oppdateringsmøte og planlegging av dagen som kommer.

### Trivsel

- Vi ønsker å ha det artig og trivelig. Vi har trivsel i fokus, fordi det er lettere å jobbe i et godt samarbeidssklima. For å bidra til dette vil vi lage teambuildingøvelser som for eksempel felles lunsj.
- Vi setter opp milepæler/delmål underveis for å unngå økt arbeidsmengde mot slutten av perioden.
- Vi vil ha flat ledelsesstruktur og rullere på rollene som ordstyrer og sekretær. Beslutninger skal tas demokratisk etter et møte hvor alle har kommet med sine synspunkter.
- Ved alvorlige avvik/brudd på samarbeidsavtalen skal det tas opp på et eget møte.

### Læring

- Alle skal komme med konstruktive tilbakemeldinger, slik at vi kan forbedre arbeidet med prosjektet.
- Dokumenter som møtereferater o.l skal legges ut på itslearning og alle skal holde seg oppdatert på informasjonen som ligger der.
- For å få optimal framdrift er det viktig at alle gruppemedlemmer gir og søker hjelp av resten av gruppen.

Avtalen skal evalueres og evt. revideres om 5 uker

Underskrevet av:

30. januar 2013. Trondheim

Børge Irgens  
Børge Irgens

Marius Ekerholt  
Marius Ekerholt

Eirik Skjeggestad Dale  
Eirik Skjeggestad Dale

Hanne Thorhaug Andreassen  
Hanne Thorhaug Andreassen

Leif-Einar Hustoft Pettersen  
Leif-Einar Hustoft Pettersen

Hallstein Skjølvik  
Hallstein Skjølvik

# Samarbeidsavtale for gruppe 2

13. mars 2013

v. 1.1

## Leveranse

- Alle stiller til avtalt tidspunkt, dersom en ikke kan komme skal man gi beskjed til gruppen (SMS). Dersom samme person ofte kommer for sent skal det tas opp i drøftingsmøte.
- (Lagt til i v. 1.1) Dersom man kommer for sent, uten gyldig grunn, skal man ta med kake til neste gang.
- Alle skal delta likt på både prosjekt- og prosessrapporten, og har medansvar for at kvaliteten på arbeidet skal holde kravene til minimum B.
- Vi starter dagen med et daglig oppdateringsmøte og planlegging av dagen som kommer.

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## Læring

- Alle skal komme med konstruktive tilbakemeldinger, slik at vi kan forbedre arbeidet med prosjektet.
- Dokumenter som møtereferater o.l skal legges ut på itslearning og alle skal holde seg oppdatert på informasjonen som ligger der.
- For å få optimal framdrift er det viktig at alle gruppemedlemmer gir og søker hjelp av resten av gruppen.

Avtalen skal evalueres og evt. revideres om 5 uker

Underskrevet av:

30. januar 2013. Trondheim

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## Appendix B

### SITRA-exercise

One of the first group exercises proposed by the facilitators was the SITRA-exercise. In this exercise we were handed a SITRA-sheet where different aspects were colour coded, and we were to evaluate the previous group reflection based on these colours. The colours helped evaluate the group reflections and give us an idea of where on the grading scale the reflections was, by giving different aspects, as shown in Figure B.1.

During this exercise the group discovered that we had written our first group reflection chiefly by explaining a situation followed by a reflection, both of them quite short and uninformative. This led to a larger focus on a deeper group reflection, with more theory and action considerations where that was applicable. The group felt that the exercise helped give a more objective view on how to write the group reflections, based on how they would be graded.

# SITRA-øvelsen

## Fargelagte vurderingskriterier

Karakter	Nødvendige forutsetninger		Gruppeprosessen	
	Situasjoner	Teori	Refleksjoner over situasjoner som gruppa har trukket fram	Aksjoner for å bedre samarbeidet om prosjektet
<b>A</b> Fremragende prestasjon som klart utmerker seg	Situasjonsfortellinger som synliggjør hvordan den enkelte handlinger har innvirket på framgangen i prosjektarbeidet.	Anvender teori og metoder på en særdeles god måte.	Gruppa synliggjør meget godt sin utvikling i samarbeidet (gruppeprosessen) gjennom situasjoner som er trukket fram. De reflekterer meget godt om: <ul style="list-style-type: none"> <li>det enkelte gruppemedlems opplevelse av egne og andres handlingsmønstre og væremåte i situasjonene</li> <li>hensiktsmessigheten av forskjellige handlingene forbedringer i prosjektsamarbeidet</li> </ul>	Gruppa gjør og evaluerer meget godt: <ul style="list-style-type: none"> <li>gruppenes handlingsmønster for å forbedre en situasjon</li> <li>viderefaring og forsterking av et tiltak som fungerer</li> </ul>
<b>B</b> Megt god prestasjon		Bruker noen relevante begrep.	Refleksjonene synliggjør meget godt: <ul style="list-style-type: none"> <li>hvordan gruppa kommuniserer og samarbeider</li> <li>hvordan tverrfagligheten i gruppa påvirker kommunikasjonen</li> </ul>	Gruppa gjør og bare delvis begrunner: <ul style="list-style-type: none"> <li>endring av handlingsmønster for å forbedre en situasjon</li> <li>viderefaring og forsterking av et tiltak som fungerer</li> </ul>
<b>C</b> Jevnt god prestasjon		Enkelte teoretiske aspekter flettet inn.	Gruppa reflekterer over den enkeltes handlingsmønstre og væremåte i situasjonen, hvordan de ga tilbakemeldinger til hverandre, og hvordan dette påvirket prosjektsamarbeidet.	Gruppa nevner enkelte ting de prøvde å få til for: <ul style="list-style-type: none"> <li>å bedre samarbeidet om prosjektet.</li> </ul>
<b>D</b> En akseptabel prestasjon		Nevner teori uten å bruke den.	Refleksjonene synliggjør til en viss grad: <ul style="list-style-type: none"> <li>hvordan gruppa kommuniserer og samarbeider</li> <li>hvordan tverrfagligheten i gruppa påvirker kommunikasjonen</li> </ul>	
<b>E</b> Tilfredsstiller minimumskravene	Situasjonene som nevnes er generelle. Enkeltindivid ikke synliggjort.		Studentene beskriver teamets arbeid og redegjør kronologisk for prosessen. Noen teknikker som har vært benyttet, og noe generell erfaring de har fått trekkes fram. Ingen refleksjoner om hensiktsmessigheten ved egne handlinger.	
<b>F</b> Ikke bestått	Mangelfull oversikt over hendelsene i gruppa.	Mangelfull bruk av teori og begreper.	Besvarelsen er en ren kronologisk beskrivelse av møtene som ble holdt. Fravær av refleksjon og erkjennelse (begrunnes ofte med utsagn som: "Vi hadde ingen konflikter og derfor ingenting å skrive om ...").	Se for øvrig retningslinjer for prosessrapporten og "Velledelingen til studenter i EiT".

Figure B.1: The SITRA-sheet given for the SITRA exercise

## Appendix C

### Milestones

In order to keep the progress of the project steady, we decided we should define some milestones, to help give some perspective on how far we had gotten and how much remained to be done. This was also in the teamwork agreement, and it was one of the first things we did after we finished with the agreement.

The first milestone was to have our project definition ready to be handed in, and the components we would need to be ordered and on their way. This was scheduled for 13th of February.

The next milestone was to connect the box to the ground station, so we could start the testing. Since the blue-box project later tanked we moved this milestone, to the 20th of Mars.

the last two milestones we set up for this project was to finish testing, and to finish the report, on the 17th and 24th of april, respectively.

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