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Experts in Teamwork
Gullfaks Village 2010

Process report

Group 2
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Preface

This report is a result of the teamwork process in the mandatory course TGP4851 Experts in team at NTNU. The origin of this report is the Gullfaks village at Department of Petroleum Technology and Applied Geophysics and is run in collaboration with Statoil. The students are given a project assignment and the scope of this course is to introduce a multidisciplinary setting where the students should combine their different areas of expertise to achieve the final result. Both the given challenge and the teamwork process are to be graded and represented in a report, each weighted 50% of final grade.

The teamwork process has been a continuous process but to some extent more concentrated at the end of the semester, due to large workload and focus on the project assignment in the beginning. To keep track of the teamwork process both personal and group logs are kept. Simple exercises and relevant theory is used to highlight and reflect on the teamwork process.

The focus on teamwork in this course has been a new experience for us and given new knowledge of what goes into working in a team. The village has been multidisciplinary, multinational and multicultural and for sure given us experience which would be valuable later on in the working life.

The group would like to express its gratitude to Statoil, Professor Jon Kleppe, Professor Jan Ivar Jensen and the student assistants Ida and Daniel for their contributions and setting the surroundings for this village.

1. Md. Saiful Islam

2. Eyamba Ita

3. Rustem Nafikov

4. Kristian Maalø

5. Iina Kristensen

6. Ubaidur Rehman

Summary

Experts in Team is a interdisciplinary setting and the origin of this process report has been the Gullfaks Village, which also is an international village. The village is lead in cooperation with Statoil and the project tasks given are challenging and interesting topics for Statoil at the moment. Employment of new technology is key word and our group has been working with new drilling methods.

The interdisciplinary setting has been a new experience for most of the group. The project assignment has been predefined by Statoil and to some extent specialized towards one area of expertise. We have been much dependent on Rustem's and Saiful's knowledge to solve the challenge, but in some time the rest of the group has also been able to contribute.

The international setting has also contributed to some challenges to the teamwork process, mostly related to communications. With five different nationalities the cultural differences has been an interesting and useful experience.

We feel that our group in general have worked very well. We have had no major events related to personal conflicts holding back our work. If problems have risen we have tried to confront and solve them in a good way. We feel that this project and the focus on the teamwork process has given us new and useful knowledge on both a personal and group level.

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Introduction

"The objective of Experts in Teamwork (EiT) is that students are to apply their academic learning and develop teamwork skills by addressing real-life issues that are faced by the public sector or industry. This means that students can add another dimension to their theoretical knowledge and learn practical skills in interdisciplinary teamwork. The method used in the course provides training in realistic situations found in working life." (www.ntnu.no/eit/student)

The Experts in Teamwork (EiT) is an interdisciplinary teamwork. The objective for the course is to give the students practical skills in teamwork, by using their technical experience from the university combined with new techniques learned during EiT.

All of the students in the 4. year at NTNU, has to participate in EiT. The students apply for different prioritized villages before the semester starts. From these applications, the students are put into different groups based up on their academic background. This is to make sure that the groups are as interdisciplinary as possible.

The course is mandatory, and takes place every Wednesday at different locations at NTNU. Some of the villages are held in Norwegian, and some are held in English. Each village has a village leader, and two village assistants, who work as facilitators. The villages have about 20-30 students, and in each group there is between 4-6 members.

In the real working life, the focus on efficient teams is very high. In a world that becomes smaller and smaller, and the competiton becomes larger as new markets are opened, it is of great importance to have interdisciplinary teams that can perform well.

1 Presentation of the group and the task

1.1 Presentation of the task

Since the start of the Gullfaks village in 2000, the main subject for the Gullfaks village has been "How to extract 10% more oil from the Gullfaks field?" This is a challenge that Statoil has to deal with every day, and it is of great importance to the Norwegian oil industry. In accordance to this subject, our group were given the task "Drilling of wells through depleted Brent Group with MPD, UBD or convention drilling". The task was mainly to look at different drilling technologies that could be implemented at Gullfaks Sør, and how they affected the result. We had to learn the theory behind the drilling technologies and do some mathematical calculations to be able to give a good answer to the task. But before we started on the main task, all the groups had to do an introduction part. This was to get to know the Gullfaks field and some the most important characteristics of the field.

1.2 Presentation of the group members

In the presentation of the group each of the group members had to answer some question. This is to give you an impression of the background and the motivation for applying the Gullfaks Village.

1) What is your academic background?
2) Why did you decide to apply to the Gullfaks village?
3) What were your expectations to EiT, and to the village?
4) How did you think you could contribute to the teamwork?

Kristian Maalø

I am 24 years old and am originally from Trondheim, Norway. My background is marine technology and specialises within hydrodynamics and structural engineering. In this team I think I can contribute with knowledge about the ocean space above the seabed, materials and structural related aspects to offshore installations, but in general this project would be outside my area of expertise. I have also some knowledge in programming and use of analytical tools which may be helpful running the provided Statoil software.

I consider myself quite easy to work with and am open for different opinions. When working in a team, feedback and a close relationship in the group is important for me and will normally try to adapt this to the group. Working in a project I realise that I may be very picky on things and as a person never consider myself done before everything is perfect.

When choosing a village I wanted to use the opportunity to gain experience outside my main area of expertise. My area of knowledge is limited to what is above the seabed and Gullfaks gave me the opportunity to learn more about what is underneath. The involvement of Statoil was also of great influence for my choice. The ability to work on a real challenge for a major contractor in the industry made the Gullfaks

village my first choice.

Initially my impression towards EiT was quite positive. In advance I had heard that EiT would be quite challenging and have a considerable workload, making me somewhat unsure of how this would affect my other courses, which I still consider the most important for my education and career. I feel quite used to working in a team and was not expecting that EiT could contribute with something new in this way. However the multidisciplinary aspect and the opportunity to get personal feedback has been a good experience.

Iina Kristensen

My name is Iina Kristensen and I am 23 years old from Brumunddal in Norway. I am studying geophysics at NTNU. When I applied for the Gullfaks village, it was mainly because I thought I could contribute with my knowledge in geology and geophysics. I have also been working with multidisplinary projects at my insitiute before, and I have learned a lot from this.

I applied to the Gullfaks village because I have heard a lot of positive things about it before, even though it is a lot of work. I also wanted to be engaged in a project where I could learn something new related to petroleum, since that is what I am studying myself. I have taken place in projects with external companies before, and they have been exclusively professional and interesting. I think this has a lot to do with the fact that one can get a opportunity to work with real data and challenges.

In a group I think I can contribute with consideration to all my team members. But at the same time I enjoy being a leader and having control. I like making plans and time schedules and having everything organized. I think I am able to see things from different aspects, and reflect over these as well.

I had a very negative attitude towards Experts in Team before starting the work. It was due to lot of things, but two things that are most important is the fact that I have been working with the International Student Festival in Trondheim (2009) for over two years as chief for a 100 people. In that setting I had a lot group process related work and management training, and I was pretty tired of it when applying for Gullfaks. On the other hand I heard a lot of negative things about EiT from older students, and that the final grade often do not reflect the amount work done.

Eyamba Ita

My name is Eyamba Ita, I am 24 years old and I hail from the southern state of Cross River, in Nigeria. My background is in Oil and gas engineering from the Kuban State University Of Technology in Krasnodar, Russia. My current major is in Natural gas Technology at the Norwegian University of Science and Technology. My background in petroleum technology gives me an ability to be able to contribute to the challenge set by STATOIL for my team group, which mainly concerns issues of drilling technology.

In evaluating myself, I consider myself a person who can learn quickly and believes in getting results at the proper time. I am easy to work with, outgoing and dedicated to my tasks. I have learnt a lot about myself during the course of this

projects from my team mates as well, I have learnt I can improve on my patience with my teammates and shortening my speeches.

I have chosen the Gullfaks village because it sounded like a village which would have a lot of challenging tasks and considering my background, it would be advantageous to learn a lot of new things which are being applied in the Enhanced Oil Recovery sector of the petroleum industry. Also the contribution and involvement of STATOIL made the village even more interesting to me.

My expectations for the Expert in Team program were generally mixed, on the positive side I looked forward to working in a team in a controlled and monitored environment. On the negative, I have generally worked in teams before for smaller course projects and not all my experiences where positive. I at first considered the Expert in Team to be a psychological test, but coming into the Gullfaks village. I have encountered a good balance between both technical and psychological challenges.

Rustem Nafikov

I am 24 years old and am originally from Ufa, Russia. My background is in pipeline engineering from the Ufa State Petroleum Technological University. My next diploma will be in drilling engineering from the Norwegian University of Science and Technology. With all my knowledge about oil & gas processing and transporting and drilling of oil & gas wells I can contribute to the project very much due to the main task which is about drilling. Since I have been working in the oil service company before, I can use some examples from the real working life.

When speaking about myself and the team, I consider myself as the person to rely on and who is very helpful. I try to accomplish the work in the best way possible. I also consider myself as the person to easy communicate with. During the working process, my team members gave some advices in work improvement connected with sharing of tasks and moving too fast thus skipping some fresh ideas . I realized that I had too many responsibilities on myself which was also not good in teamwork.

I have chosen Gullfaks village because this village was offered by my department. As the one who will be connected with petroleum industry in the future, I was very interested in teamwork at petroleum sector in order to implement some experience in the real work. I would also say that contribution with Statoil made that village even more interesting for me.

My expectations were positive. I was really looking forward to see what the work in a team means especially when group members are from different specialities and what place I would have in a team. I was also considering "Experts in teamwork" a little bit more towards psychological way of doing things in a team, but we had everything starting from the technological side and also some process work. If speaking about the village, I knew that there will be something special, for example, a visit to Statoil in Bergen. I expected from the village to have a lot of interesting people, have interesting challenges and a good work atmosphere.

Ubaidur Rehman

My name is Ubaidur rehman and country of origin is Pakistan. I have graduated in mechanical engineering from NWFP University of Engineering & technology Pakistan in session 2002. I have worked in challenging environment of Pakistan in very professional GOVT defense oriented public sector organization. I have dual background as an engineering professional involved in maintenance as well

as management & Administration. I am doing masters in project management from Norwegian University of science and technology. As my back ground in maintenance with project management its gives a unique opportunity to contribute to the challenge set by the STATOIL for my group, in terms of project strategy, planning and implementation.

I consider my self as a person who is trustworthy and extremely supportive, but not very good in understanding people's behavior. Awareness is essential for inventing future I eager to learn new things. I have learned a lot from my teammates not only about the petroleum knowledge but also learn how I can improve my communication and working in the international environment.

I have chosen the Gullfaks village because it sounds like a village which would have a lot of new challenging tasks associated with petroleum engineering specially related to heavy equipment and machinery. As my project has no relation with my technical skill but it have enhanced my knowledge about drilling engineering.

My expectation from Expert in team was not very positive .I was very interesting in working in multicultural group. I have generally worked in very big and more professional projects in my carrier but this was first time I was in international environment. But I found the timing and especially supervision or guidance from faculty is not up the mark as i was expected more to be learn from highly professional faculty. The opening of the village on first day and the trip to Bergen was very interesting. Lot of emphasis was on process report that's seems be ok but not too much that effect the learning.

Md.Saiful Islam

My name is Md. Saiful Islam and I am from Bangladesh. I am 33 years old and I specialize in reservoir engineering. My interests are Petroleum Engineering, Mechanical Engineering, Science Fictions, Psychology, Photography, helping to the helpless people, giving support to others, like to pass my time with humorous people, intention is to make new friends and to know the unknown people with close collaboration. I got many friends and feedback from this amazing world!

My endeavour is to build up my career as a successful petroleum engineer. I love to work with poor and helpless people. I strongly believe that God is almighty. I am a good listener, kind-hearted and honest. I also believe that perseverance is the key to success.

The first reason to apply to this village as my 1st priority is that this village has some real challenges, which are completely petroleum engineering related challenges. The second reason is that the village leader is the best faculty of IPT and he is also my favorite teacher

Actually before starting EiT, I was thinking that EiT would be hard work for me to do concerning the theoretical part. Later, I found the need to be more creative coming up with new ideas. Then, I got a new taste of team work which was like a fresh theme to me. On the other hand, I was excited and kind of happy because I knew I would meet new people and make new friends. I was confident that I will be able to learn many new things from this village which will be very helpful for my future career. But I didn't get so much as my expectations because the challenge we got is completely drilling engineering specialization, which is different from my specialization (reservoir engineering). Though I am a reservoir engineering student, I

learned a lot of new things about drilling engineering and I am optimistic that it will make a positive affect in my career.

2 Framework conditions

2.1 The village

The Gullfaks village is a multidisciplinary and multicultural village, but only with students with a civil engineering background. The village has almost 30 students from all over the world, distributed on six different groups. The superior subject for the village is how to extract more oil from the Gullfaks Sør field in the North Sea. Each of the groups has different tasks related to this subject and use different tools in order to solve these tasks. The Gullfaks database at Department of Petroleum Engineering and Applied Geophysics has been available for all the students at all time.

The Gullfaks village has a close cooperation with Statoil, both technical and economical. This opens possibilities for doing activities that otherwise would be impossible. All the tasks were developed by Statoil, according to what kind of new technology Statoil wants to implement on Gullfaks Sør. Due to the fact that the given tasks are very technical, it is a necessity that the students have technical background.

The village have had workdays every Wednesday, and have started at 09.00. Most of the days there has been some compulsory work until 10.00, and after this the groups have used the rest of the day to work with the task. Since the workload on the technical assignment has been very large, most of the groups have focused on this most of the time.

2.2 The village leaders

The village leaders for Gullfaks are Professor Jon Kleppe and researcher Jan Ivar Jensen. These two have reservoir engineering as their speciality. Hence they have been very helpful in answering questions about reservoir related questions. They have also been an important link between the Gullfaks Village and Statoil. The village leaders have also been responsible for the practical arrangements that had to be done in the village.

2.3 Village assistants

The village assistants for the Gullfaks village have been Ida Aasen and Daniel Solheim. They have facilitated the work with the group process. This includes writing the cooperation agreement, working with the group log and highlighted the weak and strong sides of our group. They have also been a good help in finding what kind of qualities we had to improve in our group. The assistants have also been helpful in situations that called for a neutral third party.

2.4 External stakeholder, Statoil

A stakeholder is an external contributer who has ownership to the task, and who is dependent on the result from the project. As mentioned earlier Statoil developed all of the different tasks, and they had a strong ownership relation to the

tasks and they wanted the best result possible from us. They assigned a supervisor to each group, who was going to work as the technical expert. Our supervisor was drilling engineer Johan Eck-Olsen.

Our cooperation with Eck-Olsen did not work as good as could have, mostly due to the fact that he was a very busy man. Because of this we lacked some information in our work, and we did not get the feedback on our assignments as we wished.

2.5 Communication

From the beginning our group have had a focus on communication and the importance of being available for a team member who depends on you. From previous projects several of our team members have bad experiences when it comes to communication in the group, making the project more challenging and frustrating. The group therefore decided to make communications a part of the actual framework for this project and already the 2nd Wednesday the framework was implemented in the collaboration agreement. This chapter contains the tools and methods used to insure good communications.

A quote from the collaboration agreement is, *"All group members should communicate and be available when necessary (Skype etc.)"*. A communication tool which was used was Skype. Skype is a voice over/video conference software which is free. It was decided that everybody should get Skype and be available at all time. It however took a while before all of our team members were available on Skype and in practice this program has not been much used. It has turned out much easier to just call each other. However the video conferences and the possibility to switch desktops have turned out very efficient when used.

At the beginning of the semester a common storage area on its learning was established and has turned out to be our most used communication tool. In this project folder it is possible to upload documents and post messages. The group has used this tool very frequently and uploaded everything related to the project from background material, external and internal documents, information received on mail and time schedules etc. The team logs are also uploaded and student assistant Ida given access to the logs so she could follow the groups process.

This project folder has turned out to be a very good way to organize material and assure that every group members has access to all relevant information at any time. This has made it easier for an individual team member to be up to date and be able contribute on every aspect of this project.

3 Events

In this chapter we want to highlight different events that have been important for the development in our group.

3.1 Trip to Bergen

A tradition in this village is to visit Statoil office at Sandsli just outside Bergen. This year the trip was scheduled to the 3rd of March. The whole village fly down for one day where the main goal is that each group get to meet their advisor, but

there is also made time for social events and a good opportunity to get to know Statoil from the inside. So it should be an important day for the progress of the group both related to the project assignment and the teamwork process.

This was a long anticipated trip for our entire group and everybody met eagerly at Trondheim Airport Værnes this morning. The atmosphere was exited and cheerful and the flight down to Bergen went fine. After a short taxi trip we where very well received by Statoil. During the day we got a guided trip around Statoil facilities, lunch and at the end of the day the village gathered for pizza at Dolly Dimples. It was a interesting and fun day for the whole group, but in the end the main event was talking to our advisor.

In advance of this trip the groups should have completed the introduction part and preparations regarding the project assignment should also be done in order to get the most out of the meeting with our advisor.

Our group's advisor, Johan Eck-Olsen, was offshore this day and could not be present. We knew this in advance and Statoil had arranged a video conference for us. The surroundings of the videoconference work out fine. Statoil had very good setup for this purpose. However our advisor was very busy due to a problem with the drilling operation this day. He still however took his time to go through or questions briefly and at the end we organized a new meeting later on at NTNU, for a more detailed discussion.

Looking back on this day it turned out to be one of the best opportunities for the group to represent it self as a team outside the village. How a group is perceived by external individuals and groups may be very important for the willingness of providing resources and collaborating with the group. With reference to Ancona, a group researcher [1], we as a group have reflected on how we performed as a group this day.

First of all the meeting with our advisor was of great importance for the progress of the group at this stage. We had a very limited time to achieve our needed information. The learning curve for the group has been very steep and not all group members were comfortable assessing the problems. The way the group acted in this situation was to put Rustem in charge of the meeting. Rustem was initially the one with the most background knowledge and most suited for representing the group. Rustem worked as a buffer in this situation attaining as much information as possible while in the same time giving the impression of a very competent group. Which we think was important for later willingness and collaboration with Statoil.

Another situation aroused when Rustem and Eyamba, by accident, got away from the group during a guided tour. They were suddenly finding themselves in a restricted area where a HR person had taken notice of them. This is a major concern in Statoil and it required that a report of this breech is made internally. By coincidence Kristian was in the same area guided by his cousin, which work there and has the necessary clearances. Eyamba and Rustem ran over to Kristian seeking help. Kristian said afterwards that he felt that this was a situation were he had to take a guarding role for the group, buffering unpleasant information and directing the responsibility for this event to the right persons in Statoil, letting the group of the hook externally and maintaining a pleasant atmosphere internally in our group.

3.2 International and multicultural team

In our group we are six people with different academic background, different cultural background and five different nationalities. The nations of Norway, Russia, Nigeria, Bangladesh and Pakistan are represented in our group.

According to a research article written by Marko Mäkilouko [2], concerning how Finnish project managers are coping in multicultural projects, there are two main issues that can be difficult to overcome in a multicultural team. First, the team members can look at themselves as representatives from their country or culture, and not as members of a multicultural team. This may cause problems since different cultures have different ways in looking at other cultures. Hence the view on the human dignity and worthiness could be bound to the culture. Ethnocentrism is a concept where all humans are judged from a common standard, as BNP, democracy, etc. This way of comparing humans will lead to comparison of different societies based upon the societies where one lives. Thus "all the others societies" will be less worth.

The second thing Mäkilouko mentions is the differences in language skills of the individual team members. This difference can complicate the communication, and thereby prevent progress and growth of the team. In his research, Mäkilouko made it clear that some of the tension in the team where due to the fact that the Finnish project managers could not handle polite forms of the English language. This made them look unpleasant, hard and insulting to the others members of the team. It is very important to be aware of the communication differences, both verbal and non-verbal, in different cultures. When the number of cultural variables and differences increase, the number of communication misunderstandings also increase. [3] One can split between what is called intercultural communication and intracultural communication. The first one is communication that takes place between individuals who have different cultural background and thereby have different expectations to the setting. Compared with intercultural communication, intracultural communication takes place between people who have the same cultural background.

In our group we have had challenges with both of the two things that Mäkilouko mentions as critical points. The first village day everyone in the team presented themselves and got to know each other. Nobody knew some of others before this meeting. This meant that every team member went in to the situation with a view on humanity and worthiness as they had learned from the culture they came from. After the first village day Iina wrote in her log *"It can be very interesting to see how it will work with me as only girl and two Muslim guys. I am very anxious."* Iina's thoughts are good example on how culture can affect one's ideas about other people before you have get to know them. In Norway it is a general opinion that Islam has a lot of suppression of women. This is based upon articles in the media and books written about the topic, but then again these articles and books are evaluated from a Norwegian point of view. This can be looked upon somewhat ethnocentric of Iina. The first day Ubaidur told the rest of the group that in his culture they had norms for how girls talk to boys and how boys talk girls. This made him very anxious coming to Norway, where communication between girls and boys are different than back in Pakistan.

But as the days went along, and the team got to know each other better and better, all the ethnocentric thoughts Iina had the first day were gone. After village day 3 Iina wrote in her log, *"Today I have learned a lot about how one becomes husband and wife in Pakistan… I am really greatful for having two Muslim guys in my group, so that I can learn a bit about cultural differences, not only technical stuff."* It is quite

clear that Iina has change her way of thinking after she got to know her group. Ubaidur said some of the last days in the group, *"During this process I have become more open for girls and find it easier to talk with them."* When we had a discussion about this in the end, the entire group agreed upon that all had enjoyed being in a multicultural group, and that everybody had gained social knowledge about the cultures of the others.

We did also experience some challenges when communicating, both internally in the group, but also due to the material given from the administration of the EiT and Statoil. The material given was often translated in a Norwegian – English manner, and this made it difficult to understand the texts for the team members who are familiar with good written English language. Iina and Kristian had to spend a lot of time in the beginning of the semester, and try to explain and translate the material in to understandable English. This took a lot of energy and the group became frustrated at times. We did also experience that the knowledge of the English language caused some misunderstandings in our group. Since the tone of voice, certain words, etc can be understood in different ways, we some times talked past each other. But we sat down and tried to use different words to explain what we meant, and then thing usually solved in a very good way. Under these circumstances it would be easier for Iina and Kristian too talk together and explain and help each other to making their points for the rest of the group. This kind of communication between Iina and Kristian can be looked upon as intracultural communication. The communication with the rest of the group is intercultural communication.

3.3 Work task given in advance

According to Susan A. Wheelan [4] who wrote the book "Creating effective teams", it is necessary to make sure that the team has meaningful goals and tasks. In order for the team members to gain task ownership, one should make sure that the task promotes continuous learning for the team members. It is also important that the team members feel interdependence and can be able to learn from each other. But perhaps the most important thing in order for team members to get task ownership is the ability for the individual to clarify, expand and develop the task that is given. By letting team members do this process themselves and challenge the given task, they will get more ownership. One last thing Wheelan mentions is the importance of having a good time schedule, and making sure that everybody knows about it and the importance of it. Wheelan points out that if the task is given by some other thirdparty, it is really important for the team to have access to these people, in order for them to clarify the task and getting an idea what the problem holders are interested in finding out. By doing this, the team, will gain more ownership to the task and will deliver a better result.

All the groups in the Gullfaks village were presented with six different tasks to select between. Our group sat down and tried to work out what team members could contribute with and what task that fitted these qualities. We were unanimous and decided to go for task number two. However, it was also some of the other groups that also were interested in this task, and we got another task than the one that we wanted. From the group log this day one can read, *"First we got task 4 assigned, and we were unhappy with it and complained. The reason why we were unhappy was because we had decided on the second task last time, and the whole group can definitively contribute most on task 2."* Rustem and Iina stood up and spoke on behalf of the group, and gave good reasoning on why we should get the task. The arguments were

considered, and we were assigned task 2. By having this little "fight" with the other groups, we got a really strong ownership to our task, and the group feeling was established. We stood united and spoke with one voice on behalf of the group.

When we started working with the task it became pretty clear that it was a bit difficult to relate to what Statoil wished when they designed the work task, since none of them had the time to sit down with us and explain what they really wished to gain from the task. On the ninth villageday we wrote in our log, *"Observed that we have different level of knowledge about the task a head. This could be a challenge in the future, and it can be very time consuming to keep everybody in the group updated on the different tasks."* We used a lot of time to the clarification of words, technology and planning how to attack the given task. Rustem and Saiful had a lot of knowledge about the technology related to task, and they shared itwith the rest of the group. In this way we all had an understanding of what we were working with, and the task became clearer. We quickly realized that in order for us to be finished with the task we had split the work between us, and have one of the experts on each of the groups. This splitting lead to that we all learned a lot of new things, and we could evolve the task somewhat in the direction that we wanted.

If we compare the actual happenings in our group with the points that Wheelan mentions, we can see that we all learned new things throughout the work. And as we learned new things, we were able to develop and bring in new aspects into the task. We knew that in order for us to finish the project, we had to rely on the others in the group to do their work. Due to this we made a time schedule together, and this was the guideline for the work in the team. This can be seen in the appendices.

3.4 Events related to Schwarz ground rules [5]

3.4.1 Dividing the work tasks

When we divided the work between us everybody explained his or her knowledge about the assigned task. After this Rustem had a brief introduction on the white board on what kind of different technologies that were involved. He handed out a lot of reading materials, which the rest of the group read. The next time we meet, based upon new information, we put up an outline of the task on the whiteboard. Then everybody could say which part they wanted to work on. The parts that were left were split among the group. Rustem wrote in his log from this day, *"The tasks are not imposed on anybody. We have good communication between the experts on the technology and the rest of the group."* We experienced that when working with the part A it was a bit more difficult to split the work, since these task were quite general, and no one had the expertise on the topics. We started by working with every thing togheter, but when realizing that it was too complicated, we split the work between us. Then it went much smoother, and we implemented this splitting into the task B as well.

The first of the ground rules Schwarz made was that all group members should be willing to test their assumptions and inferences. By doing this, decisions that are made will be well thought through, and one can highlight more than one point of view. This rule makes also sure that no group member is run over by the others. By dividing the workload between us in the way we did, we made sure that all were heard and nobody had to do something that they didn't want to do.

Rule number two for an effective group, yields that all group members should share all relevant information. This could be information concerning the work, but also information concerning private issues, that will affect the group and it's work. When sharing information, all group members will have a common base of information. This will help the group in making good decisions, which will benefit all members in the group and the progress in the work. In this process it also very important that all group members are open for constructive criticism. If you are not willing to take constructive criticism from the other group members, it will be difficult for you to evolve as a group member, but perhaps also as a person.

In the finishing stage of the project Iina had to go home in a funeral. Due to volcanic ash spreading, she had to leave in a hurry without any change talking to the group before she left. She posted a note on It's learning, *"I will be leaving from home very early on Wedensday morning, but I don't think that I will back in Trondheim before 12.00. Hope this is okey, I will try to do some work when I am at home"*. She didn't make it back to 12.00, but since she had given reasoning for leaving, it was fine with the rest of the group. The work was divided in such manner that everybody could work even tough Iina was not present, and progress in the work did not stop.

3.4.2 Working with a completely new technological field

"Focus on interests and not positions," is ground rule five of Schwarz. This rule points out the importance of making decisions that all group members are happy with. A good decision is characterized by the fact that the group members feel that their interests, needs, desire and concerns are met. To obtain this level of satisfaction, it is important not to focus on the solutions right away, but rather start looking on the criteria each group member has in order for her or him to accept a solution. If one starts looking at the position, how one's interest is met in the best way, this could lead to conflicts and in worst case scenario a complete locked situation.

Since we were a group with different technological background, we had different knowledge about the task. When deciding to take the task, we all thought that we could contribute a lot. But when we started working, we realized that not all of us could contribute as much as we had thought. But since everybody had to help out, those who were not experts got the easiest points. Together with the experts they went trough the points and decided how to solve the task. It was difficult to find relevant information about our topic, since it is still completely new. Ubaidur wrote in his log, *"It is frustating to not find information. It is difficult when nobody can help us out"*. When the group became aware of the situation, Ubaidur got help in finding information, and everybody was happy with the result.

In our cooperation agreement we wrote, *"If we have a disagreement/conflict, we should vote, and if there is a tie, then the group leader should decide. If it is technical, then the expert should decide."* We decided that it would be best to split between conflict in the technical term and between conflicts in the work process. Iina as group leader were not expert on the task, and she did not feel comfortable to make decisions regarding the technical aspect of the task. However, Saiful and Rustem were experts, and they could take decisions on behalf of the group that would benefit us in the long run.

Rule number seven says something about how to design ways to test disagreements and solutions in the group. In order for the group to solve disagreements in the group, one needs to define what the most important and relevant information is. By sitting together and finding out who to talk with, how to get the

right data and agreeing upon important key elements, a lot of conflicts can be avoided and one can obtain a high level of commitment to the task. It is not unusual that group members can talk at cross purposes, because they are talking about different times, people or issues. By having the split between technical and other decisions to be taken, we were very satisfied on how decisions were taken. At all times there were at least one who could explain and clarify to the others what we were talking about if there were misunderstandings.

3.4.3 Making our discussions and work more efficient

By being specific and using specific example to explain what you mean, the other group members can easily take constructive criticism and become aware of challenges in the group. It can also help the other group members in understanding how you are thinking and how your mind is working. This is ground rule number three according to Schwarz.

Rule number four is *"Explain your reasoning and intent"*. It is a very important rule, since this can help you to get understanding for your own views, and for the other group member's views. When explaining your reasoning, it is important to be as specific and consise as possible, since it will help the others to understand your point of view.

The sixth village day we had a group exercise called "Team meetings". In this exercise we should take a stand on different statements, whether or not we agreed with the statements. Before doing this exercise we had long discussions, were things often were repeated and took a lot of time. On the points regarding efficiency and team meetings, everybody had some points of view. During a round around the table, everybody was able to say what they meant without anybody interrupting them. Eyamba made this comment on the statement "We manage to keep the schedule for our meetings", *"I don't agree upon this statement. Last Wednesday when we were making the Cooperation agreement, we were given a certain time limit to be finished within. Since we all are very enthusiastic and want to contribute, we discussed certain points for a very long time. Thus that we didn't finish on time. I feel that have to improve this, otherwise will we not be able to finish this project on time."* When Eyamba used a specific example, it helped everybody to understand what he meant. We all agreed that we had to improve the way we discussed, since time was starting to go fast. So when we had reflection discussion in the end of the period, we all agreed that the exercise had helped us a lot in improving our team meetings. Eyamba made this note in his log, *"We know each other much better know, and since we have a time limit every body has understood that we can not keep going as we did in the start."*

"Make statements, then invite to questions and comments," is rule number 6. By inviting someone to question and comment on one's statement, helps the group maintaining a dialogue rather than a monologue. It can help to give the group some insight in what you are working with, as well as it shows that you rely on the others in the group and value their opinion. If you are able to put into action the comments that are given, you will evolve both as group member, but also as a person.

Throughout the period, we have been very good in communicating with each other, and getting different points of view on the things we are working with. This can be because we have been working with a pretty complex task, and many of us have been working with this kind of technology for their first time. One of the last days Eyamba, Saiful and Rustem were discussing how to make the Power Point presentation for Statoil in the best way. Then Saiful first explained how he had been

planning his slides, and then he asked Rustem and Eyamba about what they thought of his ideas. They did not completely see eye to eye with Saiful, and some suggestions to how he could improve his slides. They explained they reasoning for this, and Saiful understood them and changed his slides. This is a very good example on how our group has been good in communicating with each other and getting feedback from the rest of the group.

3.4.4 Feedback exercise

In order for a group or a person to evolve, one needs to get feedback from its surroundings. This is the case in a group as well, if you do not get any get feedback, you will not be able to recognize your weak and strong sides. It can be difficult to talk about these kinds of things, since we react to criticism in different ways. But it is better to talk about things that are annoying, rather than just keeping them inside of you. This can be a thing that affect the work in the group, and that stagnate the work to go on. Group member must therefore be open to discuss undiscussable issues, rule number eight in Schwarz ground rules.

We decided to have a feedback exercise in our group, in order to see how the team members felt about each other. We decided to say one positive thing and one thing that each and every one could improve. Iina had done this before and was bit sceptical to the exercise, and were anxious that team members could be upset if the exercise wasn't done in a right way. Before we started the "rules" for the feedback round were thoroughly explained. Every team member got the feedback from all of the others, before moving on to the next person. It was also very important to say something related to the work process, and not about the personality to the person. In several of the individual logs, one can read, *"I am not looking forward to this exercise. I don't know what to say on the negative side. Wondering what they are going to say about me"*. Even tough it was difficult to say negative things about each other everything that was said was very constructive. The tone was still cheerful after the exercise, and no one felt that they were insulted. Some of the things mentioned in the round were things that have been murmuring under the surface, but not spoken about out loud. The fact that somebody had difficulties with understanding each other due to the language had been suppressed earlier in order to avoid conflicts. It was good that we spoke about it so that every body came aware of it.

3.5 Lifo survey

To make each of us more aware of how we behave and respond in a team setting a behavioural study called the LIFO® Method was carried out the 10.March. The LIFO® Method is a framework for identifying your preferred communication and management styles both in a favourable and unfavourable condition. Professor Egil Tjåland is licensed to perform the LIFO® method and lead this study.

Background and theory

For this study each student fills out a questionnaire electronically and based on the answers the score is calculated. A total of 90 points are divided between four categories and one or more of the categories are determined as your preferred style. The four categories are characterized below, taken from LIFO® theory [6].

Support Giving

Philosophy: If I prove my worth by working hard and pursuing excellence, good things in life will come to me. I value excellence.
Goals: Prove worth, be helpful.
Strengths: Principled, cooperative dedicated and pursues excellence.

Controlling Taking

Philosophy: If I can get results by being competent and seizing opportunity, the good things in life will be there for taking. I value actions.
Goals: Be competent, get results.
Strengths: Persistent, instantiating, urgent and directing.

Conserving Holding

Philosophy: If I think before I act and make the most of what I've got, I can build up my supply of the good things in life.
Goals: Be careful, get it right.
Strengths: Systematic, analytical, maintaining and tenacious.

Adaptive Dealing

Philosophy: If I please other people and fill their needs first, then I can get the good things in life I've wanted all along. I value harmony.
Goals: Know people, get along.
Strengths: Empathetic, tactful, flexible, and enthusiastic.

The highest score defines your most preferred style, the lowest your least preferred style. If the difference to the next category is less than ±3, more than one category is defined as the preferred style. Exceeding 30 points means that you may use this style to much and the second term in the category starts to apply. Example: Control Taking, you start *taking* to much control. Scoring below 17 means that you use this style to little, in this case does not take enough control.

LIFO® test results

Favourable situations

	S/G	C/T	C/H	A/D
Iina	23	21	21	25
Rustem	30	22	23	15
Eyamba	19	29	21	21
Kristian	25	27	23	15
Saiful	29	20	19	22
Ubaid Ur	26	20	25	19
Average	*25,3*	*23,2*	*22,0*	*19,5*
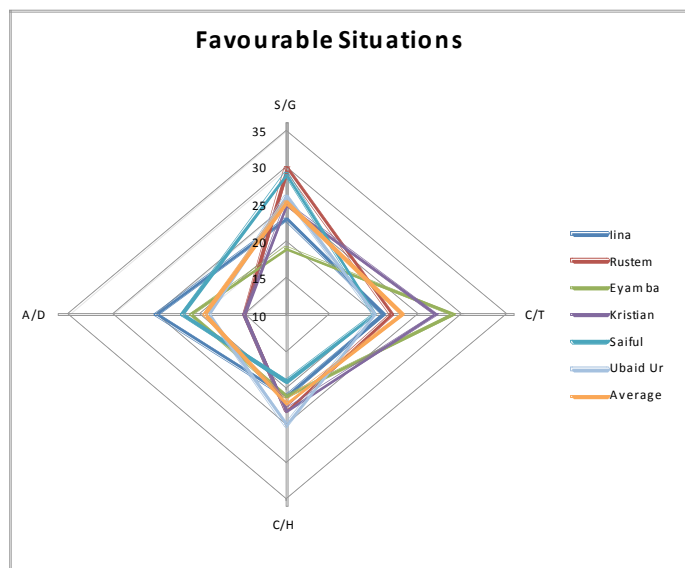
Figure 1: Distribution of the group in favourable situations

Discussion, Favourable situations

Looking at the result it is evident that our group tend to be Support Giving in a favourable situation. For most team members this is their preferred style, which also the average score of the group reflects. Meaning that the group in general will be very supportive of each other, cooperative and helpful.

That the group is so uniform can both be a positive and a negative thing. On the positive side the group will work at the same level for the same goals, utilizing the same method to get there and may result in a good harmony in the group. This may also be the reason why this group have not had any major bad events. On the downside an S/G may get a feel of guilt when getting to much support and would rather be the one who gives the support. A feeling of not being trusted may also arise when to much support is given.

In general it may benefit the group that all styles are present and even if the majority is S/G we also see that we cover all the different behaviour styles. Eyamba and Kristian are both control taking and will be the ones pushing for actions and

results. Ubaid Ur are C/H and will be the one holding back and making sure that everything is controlled and done right. Iina has in addition A/D as her preferred style and will be the one who makes sure that everybody in the group gets along, for example keeping a good mood when Ubaid Ur thinks Eyamba is moving to fast and we need to slow down. In a good teamwork process every aspect is important.

Unfavourable situations

	S/G	C/T	C/H	A/D
Iina	29	16	16	29
Rustem	15	23	23	29
Eyamba	12	25	25	28
Kristian	21	26	21	22
Saiful	27	16	23	24
Ubaid Ur	21	18	22	30
Average	*20,8*	*20,7*	*21,7*	*27,0*

Discussion, unfavourable situations
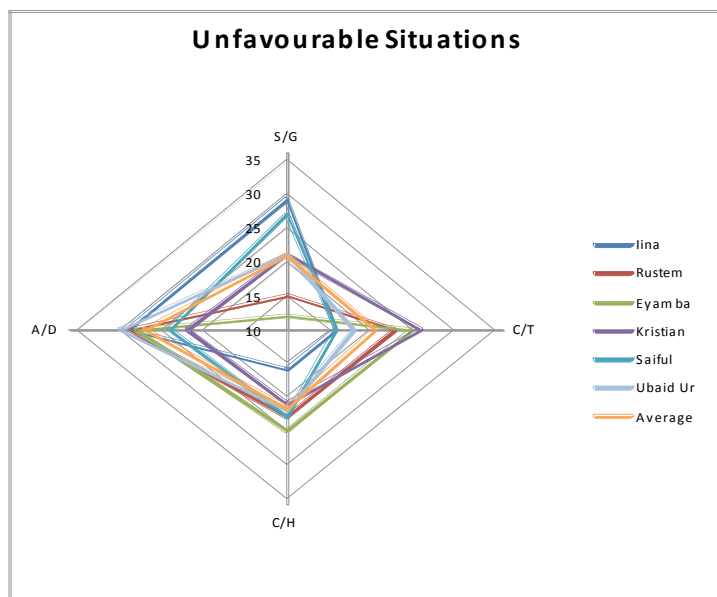
Figure 2: Distribution of the group in unfavorable situations

When the situation is unfavourable we can se that in general the preferred style changes from S/G to A/D. This shows that when the pressure increases most of our group tend to preferred getting along and having a good atmosphere, avoiding confrontations. This is a dangerous setting when the focus may be to take action and at the same time taking care of things getting done right, again we se the importance of having all styles present. Kristian has C/T as his only preferred style to deal with a stressed situation and will be the one pushing for actions. Ubaid Ur no longer feels comfortable holding back and making sure the actions are done right. However

Eyamba may take this role and Iina and Md. Saiful stays supportive. Giving a good working condition also in a stressful and unfavourable conditions.

Individual comments

Iina

Since I have been working with ISFiT 09 and UKA-07, I have taken three personality tests before. On these three I have gotten almost similar results, just said with different words. So when I took this test I expected to get some similar results again. However, this was not the case, and I find it a bit strange. I knew that I am a supportive person, and at the same time can be a bit kind to a fault because I do not want to hurt other people or create tension around me. I also knew that I value hard work and can sometimes be a bit control freak when it comes to details. The things that surprised me was that I had a low score on systematic and getting results. On the other test that I have taken, these two qualities have been commentated as strong and something that I really contribute with in a group. When we have had feedback rounds in the team, I have gotten the response that I am systematic, a planner and a caring person, but could have taken a bit more control as group leader. So I feel that the Lifo-survey differ substantially with how the group see me, and how I the feedback I have gotten in other teams that I have worked in.

Kristian

I had never taken a behaviour test before and was quite exited to get the result. I feel that getting a firm feedback on how I prefer to behave in a group could be very useful. I think the test gave a very correct interpretation of me as a person and what I need to be aware of. In advance I had a view of myself being supportive and to some extent control taking. As a person I tend not to emphasize getting along as the most important factor obtaining the result in a teamwork, which also the low score on A/D shows. After this test, this is something I have tried to work on, being more considered and spending more energy on getting along. In a stressed situation my only preferred style is C/T and that is also the usual way I react when things need to get done. Actually for this project I have tried to not be the one taking control. Based on my little background knowledge about the project topic I have thought it would be best if a group member with more knowledge would be the one taking control. The funny thing I experienced after this test is that the group actually needs me as a control taking person in an unfavourable situation.

Rustem

It was my first personality test. I was really interested to see what it is, especially after Jon Kleppe has written in e-mail following words:
"This is one of the best (and most expensive) behavioral surveys on the market, and is used in the Gullfaks Village because it is easy to fill out, gives interesting results, is useful for writing your process report, and not least, is completely harmless!"
Those words have changed everything. When doing it, I was trying to be as truthful as possible in order to get the right feedback. I realized that I am a "support giving" guy

in a favourable situation. I couldn't believe that it would be 30 points. It was not a good sign to have such a high number and to be one of the experts in our challenge. It could lead to overloading myself. It has really changed my behaviour in a team. I was trying to change this issue in me by having more wise dedication of the work to my group mates, by limiting support if it was not necessary. I tried also to increase my ability to be a controller.

In unfavourable situation I had 29 points for A/D and also very low number as a supporter. That meant I preferred to keep the situation without confrontations and trying to please other people and fill their needs. Harmony is a key word for that. I would say that it is not always like that. In a real life it depends on a situation. When I was working in Siberia in a team of engineers, I had sometimes to take control and be responsible for everybody's actions. I could do it, but I preferred not to do so, since it was very stressful. I am trying to adapt myself to any situation and being the one who can act wisely at any kind of question.

During working on Gullfaks challenge, I didn't have any stressful time so I was working in a favourable atmosphere.

Eyamba

The LIFO test for me was really an ''eye opener'' for me. It has been really difficult for me to put a finger on what type of person i consider myself to be. My behaviour in a team had been very difficult for me to characterize, and thus how i affected others. Initially when Professor Kleppe told us in our groups about the LIFO survey, i was sceptical because i had taken some online behaviourial tests before and had found their results to be quite ''confusing''. On the LIFO test i was as truthful as possible because i wanted to see what it had to offer, and i was surprised at the accuracy of its results. My LIFO result was analysed on the board by the coordinator of the test and i admit this kind of made me feel uneasy because i thought any negative characteristic would be known by everyone, but it was fine at the end. My results for the LIFO test suggested that in favourable working conditions i tended to take control of my team (control taking 29). I was surprised at this accuracy during the explanation because it described me as a person who was competitive, forceful, persistent, urgent and directing. Thinking back i remember a lot of times when i was all this things, for example competitive, i have always told my group mates i wanted us to have a perfect score in the EIT program, forceful, in trying to explain to Rustem and Kristian about how to proceed on the economics part of task A. Urgent; in advising our team to upload tasks on Sundays deadlines, Directing; in suggesting alternative meeting days. On more unfavourable conditions, my control taking characteristics fell and my LIFO result suggested i was more of an Adaptive dealer, i would try to be much more harmonious, tactful, and negotiating. This are also true and i am glad again that the LIFO survey clearified this for me, because while working on other projects i had seen that during stressful situations i became less controlling and tended to do ''anything'' to ease the atmosphere which meant sometimes accepting some compromises i would normally not, just for the sake of harmony and progress in work. The LIFO survey did a good job of characterizing me and this has helped me because i now know my strengths and weakness in team work and now know the sort of people which will complement me to have a good team in all conditions.

Saiful

I haven't taken any personality test such as Lifo before and after getting the test result I was excited as well as happy since the test result is similar to my behavior. I think everybody should take such type of behavioral test who don't know about themselves after getting the test result one will be able to correct himself. In my case, from test result I am support giving personnel in favorable condition. I am used to try to do anything with mutual understanding i.e. I always try to give the value to other's people opinion by Adaptive Dealing in favorable condition. From group discussion, I also knew about myself I am not exposure, of course this is my negative feature and I am calm and quiet. I think the group member's discussion is correct. In unfavorable condition, I am still a support giving man which is little bit less and an adaptive dealing which is higher compare to favorable condition. That's I am able to work in any unfavorable situation by using my two types of behavior. I do not like to take control in favorable as well as unfavorable situation, also this is my other negative characteristics. Overall I may conclude that the Lifo survey test gave an exact interpretation of my behavior style. I can rely on this test.

Ubaid Ur

I found LIFO survey test very interesting and a little bit strange about my personality in normal and in stress condition. To some extent it will give me benefit in long run. Some of the question in lifo test was not very clear due to language barrier and I have to interpret those question according to my own understanding and cultural aspect. However I agree with some results that I am *Supportive and Conserving holding* in normal condition. I believe in collectivism and leadership. I want to give hands to group members and take forward together in any circumstances. Commitment and dedication is my worth. But in stress condition LIFO survey show my result as *Adaptive Dealing,* which I not totally agree. I would like to mention here that I was the more experienced person in my group as I worked almost seven years in handling projects. I have been through very difficult situation in real life. In stress situation I really try hard that work should be in peace and harmony and don't want to push people to the wall. This is my first international experience and things are very different for me.
As I told earlier I believe in leadership therefore in stress condition I want to lead from the front when I see things are going out of control. Patience, support, motivation are my values. But my lack of technical knowledge about the project I did not want to take command. If I take control and command then I believe in discipline and obedient irrespective of results and to keep them intact then I do not hesitate to take actions whether someone like it or not. Therefore I keep myself away to be involved at leading style and mostly I tried to learn from international cultures and values. Group somehow also did not understand me very much because of my complex nature and gives very varying opinion about my behavior.

4 The development in the group

4.1 Multidisciplinary work

EIT is multidisciplinary project in which students belong to different academic background and cultures works together in a team. Multidisciplinary is very useful in developing creativity, innovation and possible solution to different engineering related challenges that are given in EIT village.

We have learned a lot in EIT by working in a multidisciplinary team. EiT has provided an international platform for us where we could be creative and manage activities on the basis of the common task that were assigned to us. We have developed an understanding of engineering design projects from recognition of a need and definition of objectives through completion. It has broadened our engineering concepts for different engineering background. We learned how to develop creativity and solution oriented techniques.
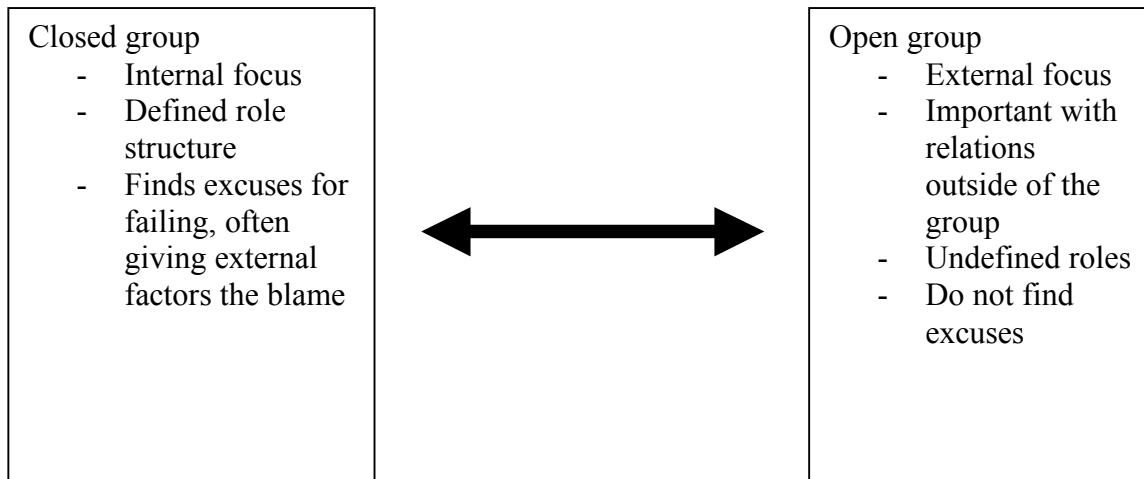
Defining the goal and how to achieve this goal is one core value of EIT. During the entire period we have learned from each other's experiences and knowledge. By exchanging ideas and cooperating with each other, not only in technical side, we have improved listing and communication. By working together, we create understating of each other and this makes it possible to achieve goals in any difficult and complex environment. As the environment of our multidisciplinary was informal, it has created trust value that has been the epicenter of our tasks performance.

4.2 Group development

4.2.1 How has the group developed?

In the beginning of the project our group had a large focus on finding out what kind of qualities each and everyone in the group had. We worked a lot in trying to find out what was the best for the group in the time to come. We did not take into consider the environment around us, and in that way we can be regarded as a closed group (Sjøvold, 2009) [7]. A closed group has internal focus, is closed and have a clear role structure. Every one is aware of what kind of role one has in the team. Our team had an internal focus in the beginning. If we lacked information, Statoil got blamed for this and we did not take in account that perhaps it was us who had done to little searching for material. We had an own room in the end of the hallway, and worked with the door closed. If someone ought to come into us, we think they would feel a bit left out since all of us were focused around a small table. One can say that we had defined role structures, but in a way that everybody knew what they were supposed to do, and not in typical roles. A role is those expectations the others in the group have to you as a person, according to a role.

As the work went a long we maintained a bit closed atmosphere, but not that closed as before. If information were lacking, we tried to search other places and use other resources. But we still had an internal focus on our task, and how we could solve it in the best possible way.

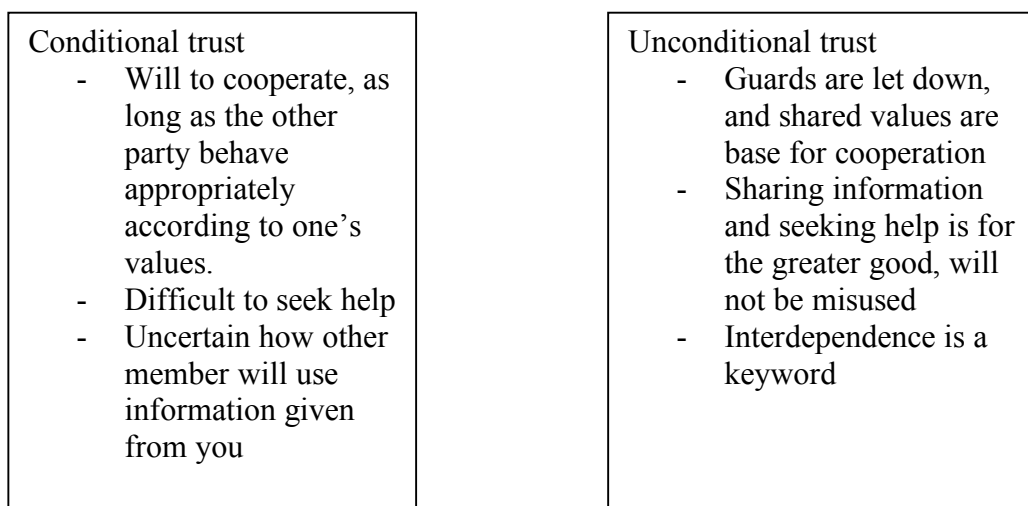| Closed group	Open group
- Internal focus - Defined role structure - Finds excuses for failing, often giving external factors the blame	- External focus - Important with relations outside of the group - Undefined roles - Do not find excuses

Figure 3: Shows the differences between a closed and an open group. These two kinds of groups are extreme points. Most groups are somewhere in the midle. (Sjøvold, 2009)

If one says that a closed group and an open group are the extreme points, we would place our group, today, somewhere in the middle. But still a bit closer to the closed group than the open group.

Another important thing that has happened in our group is the development of trust. Trust can be commonly be looked upon a confidence between involved parties, that they will not be harmed or put at risk by the actions of the other party. In order for us to understand how we trust in people, it is important for us to understand how each and every one of us have different values and how they prioritize them. Baseed upon these values we tend to evolve some kind of attitude towards unknown people. In a team these attitudes can be difficult to overcome, unless there is some kind of trust present. It is also important to notice that the everyday mood and emotions can influence on the question of trust. They can affect the ongoing process both in positive and negative directions.

Trust [8] can be divided into two main categories, conditional trust and unconditional trust. Most groups will discover that they have both types in their team, but it is dependent on what kind of situation one is looking at.

| Conditional trust	Unconditional trust
- Will to cooperate, as long as the other party behave appropriately according to one's values. - Difficult to seek help - Uncertain how other member will use information given from you	- Guards are let down, and shared values are base for cooperation - Sharing information and seeking help is for the greater good, will not be misused - Interdependence is a keyword

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In our group we have experienced both kind of trust, but we have developed from conditional trust and ended up at unconditional trust. In the beginning before we knew each other, but were put together and forced to cooperate, we experienced some kind of conditional trust. No one wanted to look inadequate, so it was a bit difficult to ask for help. Instead kept people things inside of them, and pretended to understand everything we were working with. It is difficult to say precisely when the change happened, but we think it could be at the fourth day of the village something happened. *"During the reservoir simulation on Eclipse, the information was poor and since we were a group of six people working on a simple problem at once, the challenge grew and we lost the control, resulting in a time consuming process to sort the challenge out "*, was written in our group log this day. We all sat working with a simulation tool, and it was only a few people who really understood what they were doing. All of a sudden someone said that they did not understand anything of what we were doing, and asked why we could sit down and go trough it step by step. Just by the fact that one person said this, other persons said that they felt the same way. After this incident we learned that we cannot keep information to us self and not share it with the others. Later on the work process all information were shared, if it was important for the group. As mentioned earlier in this report, we learnt to split the work between us, and this helped us in the progress of the work. Everybody agreed that we had to trust each other and work separately in order to finish. By having large discussion about what was important for each member in the work process, for example the exercise about our team meetings, we made a common base for values during work situation. It was this base we used further on our work, and it worked very well. These two things shows how our group went from having conditional trust, to unconditional trust.

4.2.2 Why has our group been successful?

An efficient and high performance team has some characteristics that easily can be recognized [9]. The first important step to a good team, is the fact that the team has clear goals which all of the team members agree upon. When looking at our group, the development of clear goals has been a process that we went through from the beginning and all the way until the end. Since the task was given in advance, but with some unclear points, we had long discussions about how to solve the task, what should be implemented, what was the relevant information and how should we split the task between us. Since we had these discussions, eventually the goals became clearer for us and everyone in the group knew what the work in front of us was about. We didn't write these goals down, and looking back at it this was perhaps a bit stupid. If there had been some discussions or conflicts related to the goals, we would have been able to look at them and solved the conflicts. But since we did not encounter large conflicts that stopped the progress in the work, it has not been necessary for us to have them written. Perhaps that is a reason why we didn't encounter conflicts, since all of the team members had the goal implemented in their heads from all of the discussion that we have had. This way of creating our goals took time, but we felt very happy with the decisions that we took and the plans we made. This is another thing Wheelan mentions in her book, a high performance team has to spend time discussing on how to solve problems and make decisions. After these decisions have been done, the team has to implement them into actions. Our group did that by starting the work with the task immediately after decisions were made. It was easy to

implement our descions into the group, since everybody had participated in the process.

Wheelan mentions that it is important, as soon as the goals are set, that the roles in the group are clarified. In that way one can decide upon who does what and how. It is very clear that each team member is clear on what kind of role it has, and that it has the necessary ability and skills to fill the role. According to R. Meredith Belbin a team role is *"the tendency to behave, contribute and interrelate with others at work in distinctive ways."* [10] Belbin points at six factors that underlie the team role.
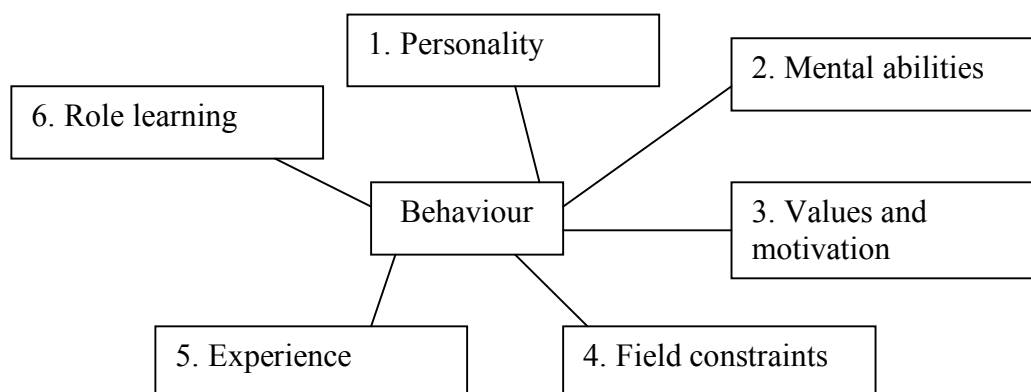
Figure 4: The figure shows the six factors that Belbin recons underlie the role that we take in a team

These six factors will contribute in different way and perhaps also in different extent. Since we do not have had any form of exercise clarifying the roles in our village, we will not try including this in the process report either. This would only be based upon assumptions and the opinion of individuals. What we can say is that during the Lifo survey and the feedback exercise, all group members have become more aware of their strong and weak sides in a team. We as a group have gained understanding on why some of us react in the way that they do. A very good example is Ubaidur who has a lot of experience from the field in Pakistan, and as a student in project management, he felt that the group lacked a clear and strong leader as well as a detailed time schedule.

Further on our group have been very well in splitting the work in to smaller fractions and working in subgroups. This has been crucial for us in order to be finished with the task. The splitting has been done based upon every team member's knowledge and interests. At same time as every group has worked independently, we all have been dependent on that the other groups do their part. This is known as interdependence, a term that Wheelan also use in her description of a well functioning team.

In order for a group to be efficient, it needs a leader. In our group we early on appointed Iina as group leader and Rustem as her assiantant. In this way we would be able to cover both the technical bit and the strategic planning of the work. Iina took responsibility for planning timelines and making outlines for the work and making sure that everyone got a task they were comfortable with. This was done by writing

all topics up on the whiteboard and go through them point-by-point, and look at who felt that they could contribute to the different points. Rustem had the technical knowledge, and took responsibility in situations where it was necessary to take decisions about technical stuff. This is according to our cooperation agreement, and it worked very well.

Wheelan points out the importance of giving constructive feedback to each other continuously. In order for a team to give feedback it is important that the whole team contribute to the work done in the team. This is perhaps a point that our group could have been better in. In the end of the period we had the feedback exercise discussed earlier in the report. We think that we as group members and as a group would have more benefit from it if we had done a round like this earlier in the work as well. But since we did not know each other that well in the beginning, it could have been difficult to give feedback and not knowing how the person would react. However, our team were good at giving each other feedback on the technical part of the assignment. None of the team members felt that it was difficult to seek help and support from the rest of the group.

As mentioned earlier our group was a multicultural group, with very different backgrounds. Even tough, in the beginning, we were anxious on how the work would go along it worked very well. We think this is due to the fact that in our team everybody felt like they could be themselves and all the other team members respected this. There was room for saying "stupid" things and this was regarded as a positive contribution to the team, rather than a negative one. We were one girl and five guys, but all members were treated with respect and equality. In our team at almost all time we were focused on making a good product in the end. This was not written anywhere, but was like a norm in our team. These unwritten rules are also important according to Wheelan. Everybody has to be respected for the person they are, otherwise will they not give their best in the group. By having norms about high quality, everybody in the team will try to their best in order for the team to achive a good result in the end.

The last thing Wheelan mentions in her description of a well functioning team, is the structure of the team. It should not be too many members and the members should have sufficient time together. As well as the team has to realize that working in subgroups are something good, and not look upon this as threat to the work progress. As we have mentioned earlier we did split the task and the group into subgroup, so we will not discuss this any further. We want to discuss a bit the statement about spending sufficient time together. Our team meeting every Wednesday, and sometimes we had to meet up in the weekends to finish our work. However we only met each other in work settings. We have discussed this after the work was done, and we feel that we could have been better in meeting in our spare time and done other things than work. In that way we could have gotten to know each other in a different way and perhaps the work would have gone even smoother.

4.3 Individual reflections

Iina
When looking back on this semester, I cannot say that I have developed that much as a team member, rather gotten confirmed the things I knew about myself in advance. However, I want to mention that my group has been an outstanding good group to work in. Even tough I was the only girl, I feel that I was an equal member of the group and that the guys did not run me over. Our group was very multicultural and

people come from all over the world, even tough everybody was treated with respect and dignity, and we have learned a lot about our cultural differences.

The thing I can say that I have learned a lot about is how a multicultural group work, and what kind of challenges one can encounter in these settings. I see this as a valuable experience that I can bring with me into the working life. I have also learned a lot about cultural understanding, and I feel that this is a interesting area I want to explore more.

As team member the things mentioned both in the Lifo-survey and during the feedback exercise we had in the team, are things that I was aware of. The results from the Lifo survey are a bit strange, since they differ substantially from the tests that I have taken before. But it could be that Lifo defines certain qualities in another way compared with those I've taken before. I will continoue working with my weak sides, which I once again have gotten confirmed is my weak sides.

I feel that the amount of time spent on this project is relative high, compared with what I feel I have gained from it. In order for me to develop more as a team member I would have needed more exercises related to the group, and our group had to be given enough time to work with process related work instead of only working with technical part. It is quite possible that since I was sick and tired of group related work before I started with EiT, I have not showed enough interest in evolving as a team member either. However, I have gotten some really good friends from my team and I will for sure miss them after this is over.

Kristian

I consider myself quite used to working in a team. However the interdisciplinary setting of EIT is new to me, in addition our village is also an international village. These two together have definitely given me a new challenge and a possibility to improve my teamwork skills.

I have gained a lot of new experience during this project especially on how to communicate between different specialties, but maybe even more when it comes to language and the culture differences. To utilize the different knowledge in the group I have found it important to spend the necessary time to get to know each other in order to cooperate in a good way. I have also noticed that I have become more open to other opinions and suggestions than I initially was before.

The most important thing I have learned is what I have learned about myself. Getting personal feedback is rare and has both been confirming and given new knowledge in how I perceive myself. As an example I have had a feeling that I may often become a leader figure in a group, but was not sure. During this project I have been determined to not be the control taking one from the start and still the group has define med as a leader person (from feedback). This is something I have to consider, when confirming this it also may be something I could try to get better in, in the future.

I am very result oriented and I need to feel that everything have to be perfecy before completing the task. I think my actions in that way has affected the group in being more conscious and precise in the work that's have been done. I also have a tendency to be quite bold and not so afraid of new things, related to the feedback and process of the group I think my actions taken here have lead to new discoveries in the group.

While focusing on the teamwork process I have also tried to be more aware of how actions taken in the group has affected the group. In general I think the atmosphere have been very good. Our group is very respectful of each other and the culture differences. We have talk openly about it and used the opportunity to gain experience, not make conflicts. When addressing the problems we have had I could see that team members have tried to improve and do something with it. The effect of these actions have had a positive effect on how the group has performed.

I think us as a group has developed much during this semester. We had initially some problems regarding communications and efficiently. Together with our student assistants we have addressed these and similar problems and tried to find a solution, giving a much better working condition and awareness in the group in the end.

Our most important discovery as a group I feel have to be the way we have tried to address unpleasant topics and still managed to do this in a constructive way and kept a good atmosphere.

Considering this I think the group has functioned very well. We have gotten to know each others weaknesses and strengths, supported each other and worked as a team to achieve the final result.

Eyamba

My group is a really diverse, multicultural and interdisciplinary team. Working in it, I have learnt how to work with tasks. Arrangement has been the key; we developed early a structure which helped us in making decisions, and discussing questions. As time has progressed, a more clear understanding of my teammates has developed. Good structure and communication has helped me to really develop my skills.

I have learnt a lot about myself, I have learnt that in the course of working in a team, I am prone to taking control but as the situation becomes more stressful (i.e. things not going according to plan) , I lose my patience and become sometimes frustrated which may reflect negatively on my group, and tend to relinquish my control (LIFO survey).

I value results, and sometimes am not aware how my actions affect my group, I believe in getting the job done at all costs. I have tried to contribute in any way academically to our challenge to the best of my abilities.

My teammates are really unique; they are all respectful, cordial, funny and intelligent. This blend has helped us to achieve the goals set before us, and our confidence has grown with every step. We complement each other wonderfully and communicate well.

In performing Task A, since the work was generalized, we could not split it up and had to work together everyone (6 people) on a simple task, it created some difficulties because there were too many suggestions and the person in charge couldn't implement all, thus discarding at different intervals the correct suggestion. The problem was identified and fixed by delegating a few people to do the work and we succeeded instantly. This same logic (splitting of tasks) was implemented in the Task B and we worked much more efficiently.

Our group in my opinion has grown strongly and we have learnt how to work as a team, understanding the proper structure for working in a team, as concerns issues of leadership, tasks, decisions and deadlines.

Ubaidur

A working in multicultural and more technically diverse group i have learnt a lot about communication and understanding. The team was very enthusiastic from the first day of project work. They were very eager to know about each other. The team structured was made at the very start of the project work and reach on cooperation agreement was very tough but after a very comprehensive discussion the group reach on contract agreement with deciding there group leader. That agreement did very well at the end of project work.

I have learnt a lot of about my self specially presentation. The LIFO survey gave me very complete picture about my self that I am very supportive in normal working condition but in stress situation I changed to adaptive. I believe in leadership and collectivism and to take every body on board irrespective of there abilities have tried very up to my best to give my managerial output to my project work.

My teammates are very respectful, cordial and very intelligent. They were serious about project worked very hard irrespective of there other engagement and sacrifice there weekends to achieve best possible result and complete the project work on time. About group members some time communication problems arise which was very difficult to synchronize all ideas that feel some time affect the decision.

The group did very well but I think it could do better by working much more closely. In the part (A) some ambiguity arises about task related activities but managed very effectively and efficiently by project leader. About part (B) as team have developed very effective communication there fore problem by dividing tasks, but to selecting the challenge it was very difficult select the challenge as group was divided .I put suggestion that we should consult more and take time to reach on one decision. It did very well after taking time for thinking and helps very well reach on agreement on one challenge. I share my opinion about giving task and there planning and implementing the decisions.

The group most learned about values, creating a strategic vision and leadership and become a real team that will help every group member how to perform in an international environment.

Rustem

While working in the interdisciplinary team I have learned how to deal with tasks. As having people from different cultures and specialities, the team in whole was doing good in arranging tasks and discussing some questions. When spending more time with the team members, I could better understand their knowledge and abilities, strong and weak sides. Communication was the main tool in developing of my skills.

The main thing I have learned is about me. I realized that I am too helpful thus it affects me not in a good way (LIFO Survey). Another thing is that I take too many responsibilities on me (group observation). I feel that I know how my actions affect the rest of the team. When I am keeping myself optimistic and helpful, that could be mentioned by team and it affects it in a good way. Also, since I am an expert at the challenge we had, when trying to explain something, I feel that team becomes more confident in tasks they are doing.

If speaking about other group members actions, they definitely affect the group in the same way. In whole our team is very respectful to each other and all the ideas and suggestions affect the group in a positive way.

The group work functioned well, but I think it could function better. By having some assignments to do in part A and B, we were proving to ourselves that the

team work was taking place. The difficulty I would say that the time is limited and everybody has different things to do besides the EiT. Due to having very specific challenges in Part B, it was more difficult to split tasks between each other. Since I was an expert at that challenge, I have decided to take more responsibilities on me to make a good technical report. If the time was not limited as it was, I could explain better the task to the group, thus equalizing the work load. On another hand, since we had a process report to do that takes also a lot of time, the work load was shared in whole wisely.

The group has developed in a way that everybody became closer to each other. We all knew our strong and weak sides. During work process, by using some techniques and tests, we mentioned our weaknesses and we have been trying to improve them. At the current moment we still have some things to make stronger, but we are working on it.

The most important thing that happened with the group is that we became a real team and could work more effectively in achieving our aims.

Saiful

The group of EiT project, I am working is quite multicultural as well as interdisciplinary. I have some experiences to work in a group. And I know the methodology how to work in a team. That's why I thought I reflected my previous knowledge and skills with this interdisciplinary team work. I knew myself that I am support giving personnel (LIFO survey) also helpful to others. I also knew about myself, I am calm and quiet and I should expose myself more (from group discussion).

The most important as well as new things I have learned from this team work is to how to work on multicultural people. I think it's a quite positive for me. I feel that the whole group fellow's actions affect the team and the teamwork and the team functioned well because from the very beginning we made a co-operation agreement, we made a group leader and co-leader also we made a communication tool (e.g. Skype ID) to communicate frequently to each other.
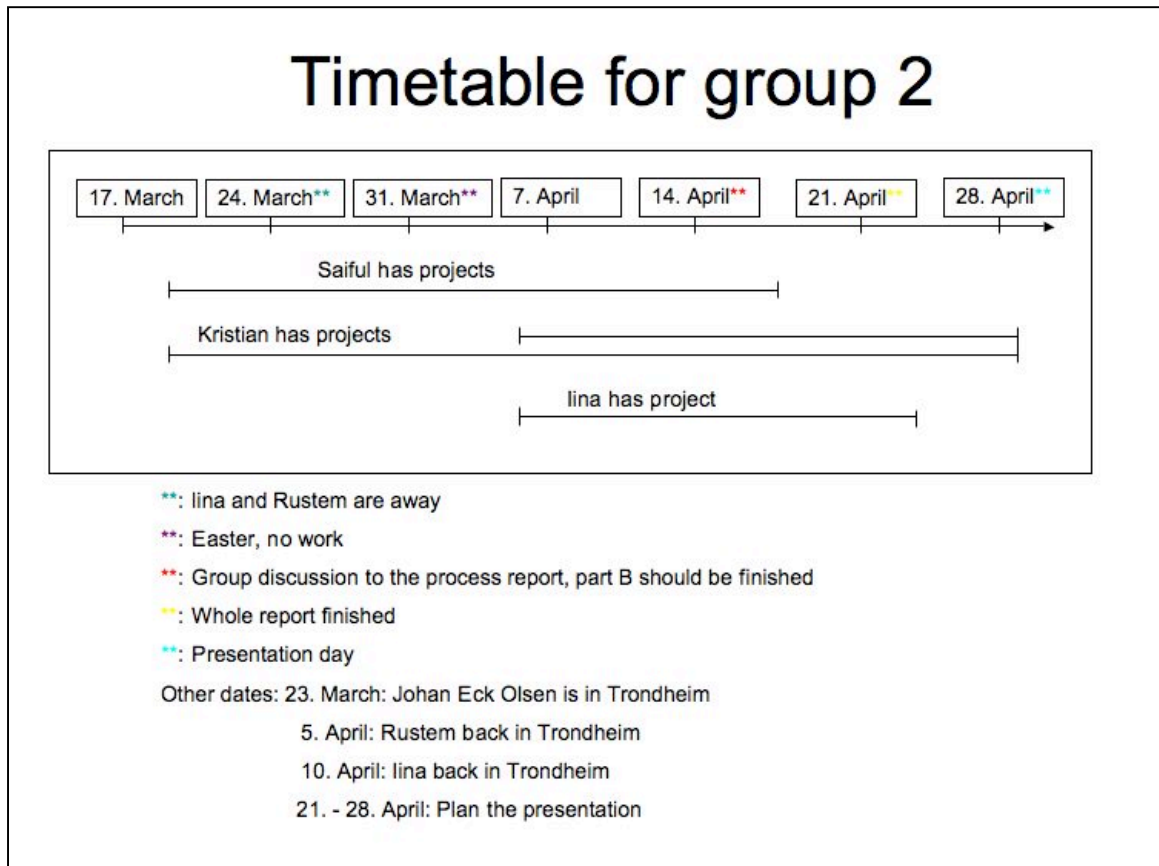
I think that the group has developed because we did our task in a planned way before doing task we discuss the whole things in our group and made a conclusion after discussion. All of the group fellows are quite intelligent and responsible about their assigned tasks. The most important thing that happened in our group, there was no conflict or collision. I will say that this thing is quite positive for the whole group. The other important thing that happened in our group was that the group fellows worked efficiently in every moment.

5 References

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6 Appendice

A – Timetable for group 2

Timetable for group 2

17. March	24. March**	31. March**	7. April	14. April**	21. April**	28. April**

Saiful has projects

Kristian has projects

lina has project

**: lina and Rustem are away

**: Easter, no work

**: Group discussion to the process report, part B should be finished

**: Whole report finished

**: Presentation day

Other dates: 23. March: Johan Eck Olsen is in Trondheim

5. April: Rustem back in Trondheim

10. April: lina back in Trondheim

21. - 28. April: Plan the presentation
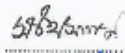
****** COOPERATION AGREEMENT ******

GROUP - 02

This agreement is meant as guidelines for our group, and not necessary a plan that has to be followed strictly.

- We as a group should choose a group leader and an assistant
- We as a group should agree and a make a plan through out the semester
    - ➤ We as a group should agree on a time plan for subprojects
    - ➤ All group members should communicate and be available when necessary (Skype etc.)
    - ➤ If we have a disagreement/conflicts;
    - ➤ We should vote, and if there is a tie, then the group leader should decide
    - ➤ If it is technical, then the expert should decide.
- We as a group should always try to make sure that we all pull in the same direction
- Every group member should show interest and reflect on each other's work tasks and help each other.
- Everybody in the group should be heard, in a time limit.
- Everybody in the group should be on time, according to what has been decided.
    - ➤ If you know that you are going to be late, then let the project members know.

If someone in the group violates this agreement, that person should make a cake/pizza and bring it to the next meeting.

1. Md. Saiful Islam

2. Eyamba Ita

3. Rustem Nafikov

4. Kristian Maalø

5. Iina Kristensen   Jina Kristensen

6. Ubaidur Rehman