Summer Student Report

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Introduction

In my summer studentship I worked at CMS in the Safety Office. The team consists of a handful of people that also work there. My supervisor was LEXGLIMOS Roberto Perruzza and apart from him there were a fellow and two technical students. In addition, another summer student joined about halfway through my studentship, but she worked on a project independent of mine.

The main part of my summer studentship was dedicated to a project called CMS^2. In general, the purpose of this project was to raise awareness of safety hazards on site. This was mainly accomplished by finding a variety of ways to communicate such as posters and presentations as well as brochures and videos. Some of them I designed by myself and other ones I researched and collected from a range of sources. What is not reviewed in the following chapters is, that especially in the first week it took me some time to understand how CERN and as well how the remote summer studentship works. As I was one of the students who started in the earliest possible week, I assisted the HR team (especially the responsible persons for summer students) in figuring out some ways to deal with different kind of administrative problems that occurred due to the studentship being remote.

Besides of CMS^2 I also worked on some side projects as well. The main ones include the editing of a document and review called 'Safety Tips - During Technical Stops at CMS', the assistance concerning the new EDMS Folder Structure and the improvement of the CMS Safety Website. More details can be found in the respective following chapters as well as a summary of my entire time spent remotely at CERN.

CMS^2

As already mentioned in the introduction, most of my activity at CERN consisted of working on the CMS^2 project, which stands for Communication Month of Safety and for the experiment's name Compact Muon Solenoid. It was a new project aiming at raising awareness on hazards and risks within CMS by multiple communication tools, preparing presentations, videos, and specific reference documentation. Therefore, my first objectives were to set some milestones and structure the project in different stages: The first two to three weeks were focused on getting familiar with the topic and the structure used at CERN, working on administrative questions, and developing a category system for hazards. This was followed by the main part, which consisted of the actual work. During this time, posters were designed, the folder structure for EDMS was created and links, websites, videos, and external posters were collected and assigned to the respective

folders. The focus of the last part was to gather feedback and comments on my results and to incorporate them into the project. This last step was also done during the middle phase by sharing the outcome of milestones with part or all the team and incorporating their comments.

1st Stage – Starting point

I made myself familiar with the different kinds of hazards that are relevant at CERN. Therefore, I did some research on a variety of CERN-based websites like CMS Safety, HSE and other safety-based websites and looked for documents as well as I took a range of courses on the CERN Learning Hub. The purpose of taking these courses was to get familiar with the structure of CMS and to understand what people working at CMS must learn before entering the site. I wanted to take these courses as a base and tried to renew what was already learnt and maybe just add points. My first milestone was finding a category system for hazards and assign them. To do this, I researched different existing systems and added some points as well as rephrasing and defining categories. In the result, the hazard's categories divide in six different types: general, biological, chemical, ergonomic, physical, and psychosocial. The visual output was an online mind map, which can be accessed at this link: https://gitmind.com/app/doc/f542567088

2nd Stage – Main phase

During the nine weeks of working at the project I also had some meetings on process, review, or further topics. The next step was to design the posters. Therefore, I drafted three types of posters with a focus on formal to informal. After deciding which kind of posters I want, I started designing the posters by collecting all the information which could be relevant and applying it in a visual way. This phase was lasting much longer than expected, because there was a lot of reviewing and trying to find a similar design as I wanted them to fit together in one campaign. Also, in the end important information like contact or emergency number was added and the posters were translated into French to make sure the two official languages used at CERN were covered.

Finally, it was time to find a way to structure all documents created and elaborated. A folder structure based on the hazard categories was established (temporarily on CERNBox). For each category these subfolders were created:

- x_1_presentations
- x_2_printables
- x_3_links_websites
- x_4_videos
- x_5_related_documents
- x_6_MISC

After finishing this structure, it was possible to research for related videos and documents on external sources for CMS[2]. I started with external sources as the folders were not yet included in EDMS and to link inside this instrument it is more efficient than collecting them before hand and adding later. Additionally, a power point presentation for each hazard category was created. The first part consists of general information like the differentiation between hazards and risks or general safety rules at CERN. Besides that, the presentations also include the relevant CERN Learning Hub courses and links to different sources or relevant PPE (personal protective equipment) for each hazard.

3rd Stage – Revision

As already mentioned, the focus of the last part, which approximately took up the last two working weeks, was to review, edit and complete. Moreover, through working on this report during that time I was able to reflect on some decisions and outcomings and gained a certain consciousness of my work.

CMS Safety Website

The work on the CMS Safety Website was divided in two parts. The first task was to look at the whole website and to especially focus on the FAQ (frequently asked questions) to proofread and correct the content and replace broken links. This had to be done twice, as also the French part of the website had to be checked. Moreover, some smaller tasks concerning the layout of the website were done. By this I mean aligning colours, tables, or information to the state of affairs. As I was working quite some time on the website, I figured out that there are some inconsistencies that could be solved or improved. This leads to the second part of my work on the CMS Safety Website.

Together with the second summer student and my supervisor Roberto Perruzza we decided that we could try to improve some of the critics I had. After agreeing on the improvable parts, we looked for ways to do so. The main solution was to find a new template, which fitted our needs. For the main page the plan was to remove some elements, to unify the colour palette, to add more space in between the different parts and to apply the new template. A fresh template was also planned for the team page, as well as a better division of the teams and the insertion of a visualised hierarchy for better understanding. The main problem on the FAQ was, that there were more than 80 questions and you had to scroll down to read them, also you couldn't search for key words without unfolding the right question. The other summer student Alina came up with the idea of inserting a chatbot. We decided that we want to keep maybe ten important questions on the page and outsource the remaining questions to the chatbot. Additionally, there were more points on the list, but I am not going in detail for those.

I worked on a new structure for the top menu for the CMS Safety Website. I used a mind map tool to make it visually appealing and easy to change, which you can find under this link: https://gitmind.com/app/doc/4a42863721 Also, I established a shared to-do list for the teamwork with Alina.

Additional

We had a meeting about the new EDMS Safety Folder structure in week three of my summer studentship. It was mainly about feedback for the planned changes. Together with another team member we checked different perspectives and wrote an e-mail with our feedback to our supervisor. I offered to visualize the structure and he agreed with my proposal.

I also assisted with the editing of the above-mentioned document 'Safety Tips – During Technical Stops at CMS'. I included feedback from people who proofread it, as is typical at CERN in English and French. During the process some changes were also made regarding the assignment of the individual hazards as we decided to include the earlier established hazard categories into the document. In the end we printed the document as an A5 brochure to check it one last time.

As a summer student I had the opportunity to join a variety of lectures, talks, seminars and virtual tours. Some of my favourites were the visit of CMS and ATLAS and for lectures the ones about big data, computer security and future high-energy collider projects.

Résumé

To sum up, my summer studentship was a really good time and I enjoyed working with the team. As the program was entirely remote it sometimes was a bit lonely for me, especially in comparison with previous jobs I had. It improved a lot as the second summer student joined the team and we were able to work on the CMS Safety Website together. The two-week team meetings also provided a good basis for exchange and feedback.

The things I learned and improved a lot by working at CERN were not only hard skills but also soft skills like showing initiative, writing skills, project management and resourcefulness.

In conclusion I had a very good balance between giving and receiving and I wish the whole team all the best for their future work.