

Logbooking Software for Science

Software for Science
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1 Preface

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2 Abstraction

The abstraction of the report.

3 Introduction

Since 2017, the University of Applied Sciences of Amsterdam collaborates with CERN, Conseil Européen pour la Recherche Nucléaire, by doing research for ALICE (A Large Ion Collider Experiment). ALICE detects the collisions with Ions such as lead resulting in quark-gluon plasma which is believed to have existed just a few milliseconds after the Big Bang. After the quark-gluon plasma is resolved an enormous number of particles is emitted and detected by ALICE. The detection is transformed into data which has to be processed and made available for physicists doing research on the smallest particles imaginable.

3.1 Defining the problem

ALICE will receive a major upgrade in 2019/2020. During this period, the new O computer system will be implemented. This gives an opportunity to upgrade the bookkeeping system currently in use. The bookkeeping system consists of two systems: the electronic logbook and Alimonitor. These systems have been in development since 2009 and evolved during the years. Due to this development process, the applications are a bit confusing, not efficient and overall candidates for improvement.

Software for Science has received the task to handle the improved bookkeeping system from CERN. At first, a demo will be made to give an expression to CERN about the new system. The demo is focused on the Electronic Logbook part of the new system. This demo takes place in June 2018. In order to deliver the demo, a requirements document is made with all the ideas and wishes from the CERN development team. Not every requirement from CERN can be implemented due to the time constraints and the sizable requirements. Therefore, an analysis of the requirements must be made in order to ease the development of the new system and add the important features into the prototype to demo for CERN.

3.2 Research questions

3.2.1 Main research question

Which Requirements can be implemented into the logbook system prototype for ALICE and what are the consequences for developing?

3.2.2 Sub research questions

To solve the problem that has been defined, it is important to divide the report in different sections. Based upon the problem, it is possible to divide the research question in four different sub research sections. These sub sections can be written as questions.

1. How to analyse requirements?
2. Analyzing the requirements

3. CERN reaction.
4. What are the consequences for developing?

4 Methods and techniques

The first step is to define criteria so that the analysis will go smoothly. The second step is the analysis itself. With the criteria set from the previous step, the analysis of the requirements can start. The third step will be about different possible demo's based upon the results of the requirements analysis. The fourth and final step will discuss the consequences for the development process with the possible demo requirements

4.1 criteria for analysing the requirements

To limit the scope and create a structure for the requirements analysis, different kinds of criteria are needed to make sure that the requirements analysis will go throughly and clear at the same time.

4.2 Analyzing the requirements

After the criteria's are defined, it will be time to analyse them. The criteria will be (Resultaat van vraag 1 hier).

4.3 The possible demo's

With the completion of the analysis, it will be possible to create different demo's based upon the results of the requirement analysis.

4.4 Consequences for the development process

5 Results

Discussing the results from the methods.

6 Conclusion

Concluding the report with a conclusion.

7 Recommendations

Recommendations for future use of the server.

8 Subface

9 Resource List

10 Attachments

10.1 Word list

10.2 Requirements document