title

Review Document: Real Time Mesh Utilities

Subtitle

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Review Document

Das Reviewdokument ist in zwei Teile aufgeteilt. Zum einen enthält es die Ergebnisse der Planung, zum anderen werden hier auch die des Entwurfes festgehalten. Die Ergebnisse der Planung beinhalten das Vorgehensmodell, Aufwands- und Risikoabschätzung, Meilensteine und diverse organisatorische Vereinbarungen. Im Entwurf werden die Resultate der aktuellen Iteration, Festlegungen für die nächste Iteration und die verwendeten Werkzeuge aufgezeigt.

1 Result of the Planning

A big part of the first phase of the Project (i.e. Scheduling and Draft) Ein großer Teil der Planung eines Projektes spiegelt sich im Pflichtenheft wieder. Dort wird die Anforderungsanalyse festgehalten, Ziele deklariert, sowie Entscheidungen und Produktinformationen niedergeschrieben.

1.1 Software Development Model

This section contains information about the Software model chosen based on the Requirements of the Project. The Principals of the Group, the Customer Requirement and Knowledge about the Project play an important role in choosing the Development Model. Based on the Development Model, the Development team decides its work flow.

Agile Development Model: SCRUM The Group chose Scrum because it is an iterative and incremental agile software development framework for managing product development. The duration of each Sprint would be two weeks. Each Phase of the Software Development would have two Sprints.

Each Sprint would end with a Presentation by each Working Group about the Developments and Progress during the Sprint. The End of each Phase of the Project would be marked by a working Prototype and a Presentation which would include a summary of the work done by the entire team.

Projects specific Adaptation to the Model: Every person in the team has multiple roles. Each group member would be working on both, the Document and the Code.

1.1.1 Software Development specific Content

Since the group decided for the Agile Development Project, the Milestones need to be stated and agreed upon by the Team. Milestones are the Aim or the expected output of each Development Phase. The also give the Outlook and Perspective of the Performance of the System. They help the team to specify what all should be completed by which deadline.

1.2 Aufwandsabschätzung

Mit der Aufwandsabschätzung wird versucht, die verschiedenen Teile des Projektes anhand von Aufwands- und Komplexitätskriterien einzuteilen. (siehe Abbildung 1)

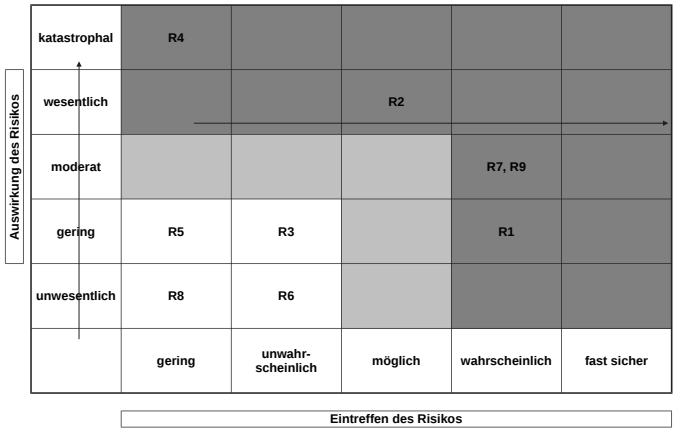

Figure 1: Aufwandsabschätzung

1.3 Risk Estimation RE

In this section, the probability of the different occurring risks involved in the Project is mentioned. If any risks take place, their effect helps determining how important it is for the team to take care of that risk and prevent it from happening again.

RE1: Communication problems in the team

RE2: Coverage is too extensive

RE3: Framework does not provide the needed functionality

RE4: Absence of the team members

RE5: Change of the requirements due to the miscommunication with the Product Owner PO

RE6: Hidden complexity

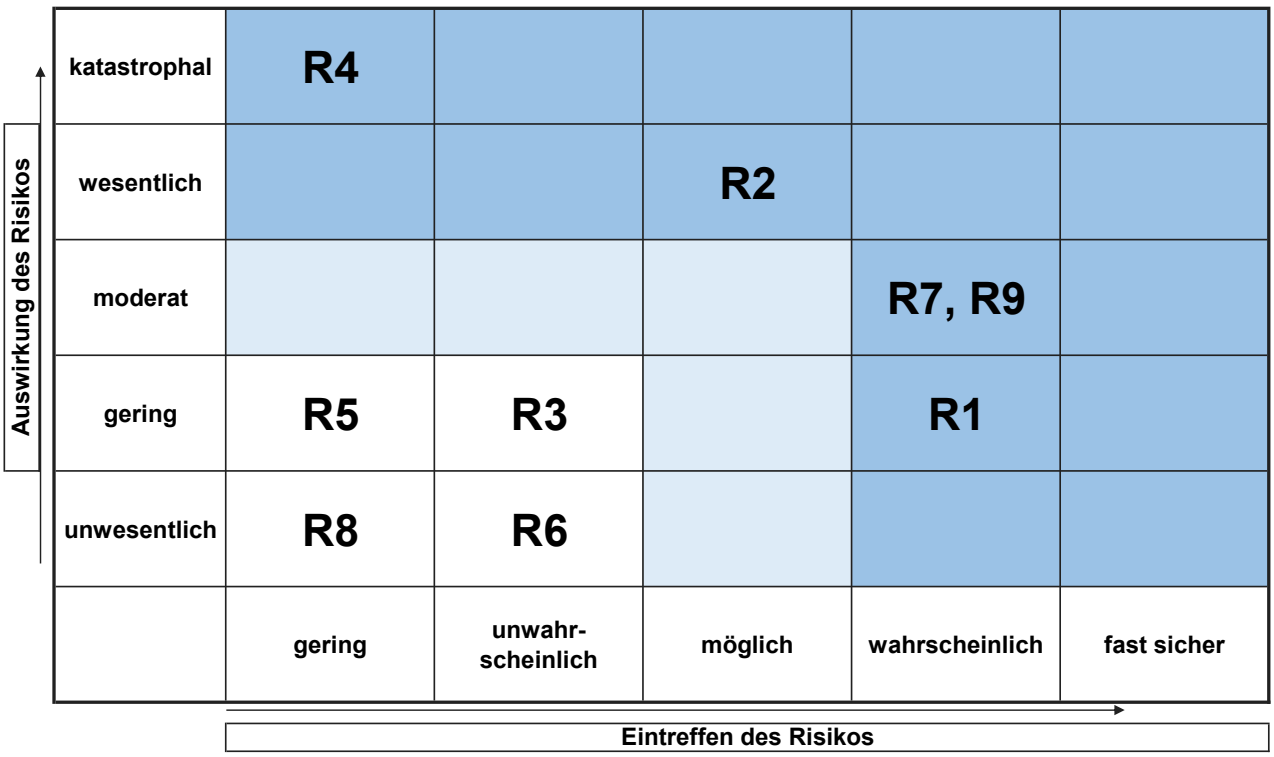

Figure 2: Risk Estimation RE

1.4 Milestones

First Milestone: functional specification, preliminary design, reviewdocument, executable inputprocessing, presentation

Second Milestone: SCDC (running), Projecting (running), Interpolation (running), Intergration display 3D, Reviewdocument, Presentation, detailed design

Third Milenstone: Portation to MNE Scan, SCDC (tested and operating), Projecting (tested and operating), Interpolation (tested and operating), Reviewdocment, Presentation

1.5 Organisation

This section concerns to the rules, agreements and the partitioning regarding the teamwork in the Project, so the work itself will at it best be efficient and organized.

1.5.1 Ways of communication

Telegram: Used for quicker and direct team communication so that the possible misunderstandings will be solved in no time.

e-mail distribution list: Used for scheduling the team meetings and the communications with the extended team, including the POs.

Team meetings: Used for the review and direct discussion of the encountered problems.

Skype: Used in the cases of the absence of a team member.

Jira: Used for scheduling tasks and keeping track of the progress done by each member of the team.

Dropbox: Used for exchanging documents and file sharing.

1.5.2 Additional agreements

- Internal team meetings (without the POs) : (every week) Tuesdays and Thursdays at 19:00
- External team meeting (with the POs) : (every week) Wednesdays at 17:00
- Meeting of the subgroups : upon consultation and demand

1.5.3 Role assignment in Scrum

Produkt Owner: Thomas Jochmann, Lorenz Esch

Scrum Master: Simon Heinke

Development team: Blerta Hamzallari, Felix Griesau, Julius Lerm, Lars Debor, Marco Klamke, Simon Heinke, Sugandha Sachdeva, Petros Simidyan

Client, User: Participants of the MNE CPP Project of Boston Child Hospital

1.5.4 Role assignment organization

Adviser: Thomas Jochmann, Lorenz Esch

Team leader: Simon Heinke

Code: Lars Debor

Presentation:

Graphics:

Build-Master:

Dokumentation:

Test:

Web-Master:

Version Management : Felix Griesau

2 Results of the design

It is possible to find the Results of the design in design documentation. There will the coherences of various packets, components and classes demonstrated and descriptive with help of UML-Diagrams represented.

2.1 Tools

The used tools are the software solutions, for the enabling and facilitating of the areas of organization and developing.

2.1.1 Organization tools

Sourcecodemanagement: Here will *GitHUB* used to ensure the uniformly Basis of work and the files

LaTeX: Here is it about a text edition language, which allows to create various documents. This document can be used in various formats. It will particularly be used in this project for creating the functional specifications, review document and the design document.

Doxygen: With this program the comments will be dragged from the already created code to produce a documentation of the implementation.

Visual Paradigm: Creating of UML-Diagrams, for the graphically representation of the actions, constructions and functions of system.

2.1.2 Developing tools

Development environment: Here will be *QtCreator*, for clean code used.

Program language Here will be program language*C++* used, because C++ meets all requirements of this project.

Operating systems: The software can be used on Linux, Microsoft Windows and Mac OS.

Libraries: In this project will C++11 STL and the from employer provided libraries used. We also use QT Libraries with OpenGL, Eingen. With there enormous collection of classes give this libraries the basis for this System.

2.2 Ergebnisse des Entwurfs für die erste Iteration:

Die Ergebnisse der ersten Iteration ergeben sich aus dem aktuell zu erreichenden Meilenstein.

Pflichtenheft: Das Lastenheft wurde vollständig in das Pflichtenheft überführt und um weitere Punkte, im Dialog mit dem Auftraggeber, ergänzt.

Grobentwurf: Der Grobentwurf umfasst eine erste Übersicht über die Funktions- und Arbeitsweise des Systems.

Implementierung: Eine erste Lauffähige Implementierung wurde umgesetzt und umfasst die Funktionen eines einfachen Forwardings ohne Verschlüsselung.

Planung: Es wurden Festlegungen für die weiteren Iterationen getroffen, hierbei wurden insbesondere die Meilensteine für die nächste Iteration festgelegt und das weitere Vorgehen innerhalb des Teams besprochen.

2.3 Determinations for the next iteration

Refining of preliminary design : The preliminary design is extended with special diagrams and descriptions to detailed design. This occurs each time parallel to Milestones, because each change will automatically held.

Further implementation: Here will the 4 Features implemented and tested.