2.5 Feasibility Analysis — Dennis Oberst

With regard to technical feasibility, we strive to determine whether the software can be actually built with the available tools and by the available experts. As part of the project, we will also examine the risks that might arise during the development of the project.

2.5.1 Practicability

Our project requires high-performance computers with graphics cards that have at least 8GB of video RAM and a multi-threaded system with high processing power to enable the Blender simulation to run smoothly.
In order to facilitate easy use of the code, everyone uses their own machine on a localhost network during the development process. It is essential that in order to successfully complete the final deployment of the product, we also require a strong server that meets the specifications of the product. In addition, the server should have a fast connection to the Internet.

2.5.2 Project Risk

Technical risks :

Our Team will be facing already known challenges in the area of remote rendering, remote post-processing, and cloud computing. There are many different approaches using techniques ranging from Client Side Rendering to a hybrid rendering approach to that of a fully Server Based Rendering Environment (e.g. Streaming). The purpose of this project is to work with already researched papers such as *“Rixels” [1]*, *“Integrating server-based simulations into web-based geo-applications” [2]* or *“Investigation of rendering techniques in a remote rendering setup”[3]* and try to find a favorable tradeoff between these different approaches as we do not want to deliver static fire simulations only sending the images from the server. We would prefer to deliver more of an interactive simulation.

Organizational risks :

As a group of expectant professionals, we are confronted with a completely different set of challenges when it comes to communication and time management. Our project has precise deadlines for when we must deliver the final product. As a result, communication is going to be a challenge when working with such a large team.

[1] Christian Altenhofen, André Stork, Dieter W. Fellner
“Rixels - Towards Secure Interactive 3D Graphics in Engineering Clouds”
https://www.researchgate.net/figure/Stream-lines-computed-on-a-dataset-containing-results-of-a-CFD-simulation-The-stream_fig3_291774945

[2] Bormann, Pascal; Gutbell, Ralf; Mueller-Roemer, Johannes
“Integrating Server-based Simulations into Web-based Geo-applications”
http://publica.fraunhofer.de/dokumente/N-548962.html

[3] Hans-Christian Wollert
“Untersuchung von Rendertechniken in einem Remote Rendering Setup”
https://kola.opus.hbz-nrw.de/frontdoor/index/index/docId/805