TINF21C, SWE I Praxisprojekt 2022

Project Handbook (PM)

Project: **AAS-Management**
Customer: Rentschler & Holder
Rotebühlplatz 41
70178 Stuttgart
Supplier: Team 2 (Selvana Dwi Ayunda, Paul Brenner, Jonas Alexander Graubner, Mohaddeseh Tibashi, Luka Dominik Pavic)
Rotebühlplatz 41
70178 Stuttgart
Version 0.1

Version	Date	Author	Comment
0.1	30.10.2022	Selvana Ayunda	Document created and edited
0.2	09.10.2022	Selvana Ayunda	Gantt Charts update

CONTENTS

1. Project Order

Goal:

The goal of this project is to develop a web application that acts as a management system for the "Asset Administration Shell" (AAS). This specific web application shall have an identity and access management as well as a user administration with persistent data storage in MongoDB. The user administration enables a role distribution of the users in the user groups "Admin", "Advanced" and "Basic", whereby the role distribution is carried out manually via the Admin. Each role is equipped with different access rights and read permissions ("Advanced" gets full read access to all AAS and their submodels and "Basic" gets read access only to the basic submodels to all AAS), with the admin also having functions for managing AAS content and user management. This uses the specification of the concept as a REST API in openapi.

Product Environtment:

The AAS is a concept of the Industrie 4.0 platform for the standardized implementation of "Industrie 4.0 components", consisting of the digital twin in the form of the AAS and the associated physical object (the asset). This makes it possible in industry to provide digital twins that can be shared and combined across manufacturers and accessed via standardized interfaces.

<table>
<tr><td>Costomer: M. Rentschler; C. Holder</td><td>Project Manager: Mohaddeseh Tibashi</td></tr>
<tr><td colspan="2">Supplier:
Selvana Dwi Ayunda
Paul Brenner
Jonas Alexander Graubner
Mohaddeseh Tibashi
Luka Dominik Pavic</td></tr>
<tr><td>Main Task:
Documentation
Requirementsanalysis
Design
Development
Test</td><td>Milestone:
Requirementsanalysis
Design
Coding
Test
Presentation</td></tr>
<tr><td>Project start: Requirementsanalysis</td><td>Project start: 26 September 2022</td></tr>
<tr><td>Project Product: presentation product</td><td>Deadline: 6.03.2023</td></tr>
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2. Project Kontext

Initial situation and problem description

A web application for managing the digital twins of the respective Industry 4.0 devices. The administration should be made available via user management with the user groups "Admin", "Advanced" and "Basic" mentioned there.

The web application should communicate with the backend of the AASX server using the REST API to be created. The interface can be designed in such a way that the information of the digital twins can be saved, changed and read out. Depending on the role of the logged in user. This means the application communicates with the backend and presents this information via the web application (a classic MVC application).

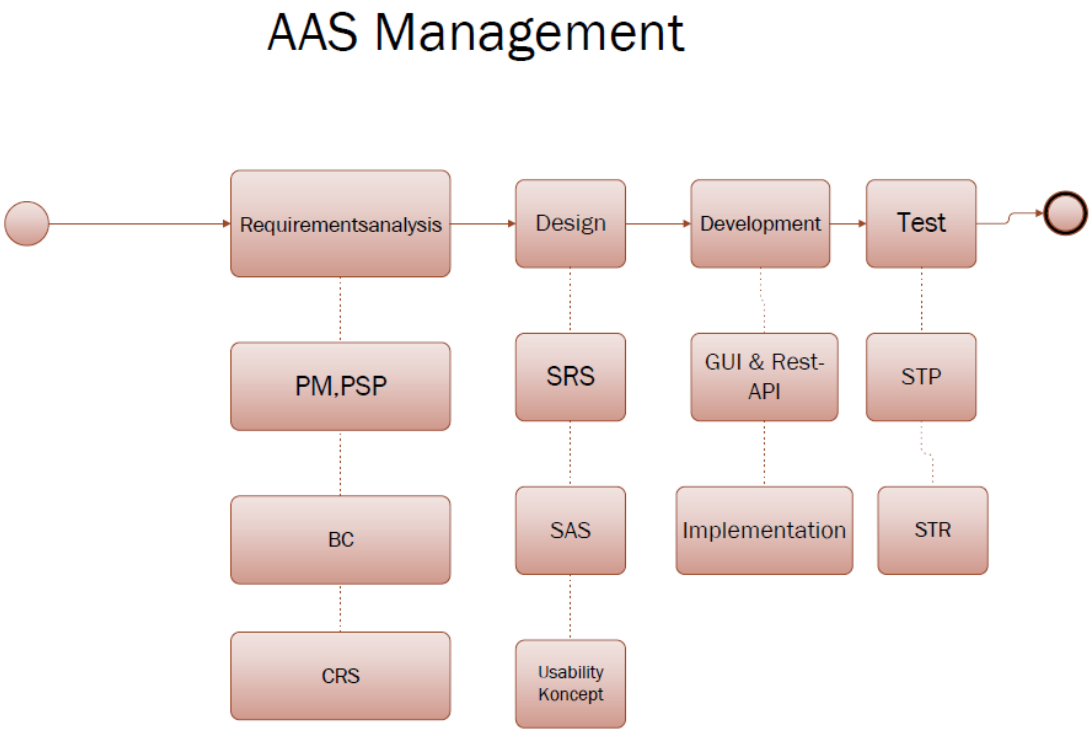
The web application is to be created with the REST API. In addition, you should implement a connection to a MongoDB in the backend of the server, in which the digital twins are stored, with all properties (can be implemented relatively "easily" using a REST API to use the web application to manage the digital twins). In addition, the user administration is also placed in the MongoDB. Everything is in one central place.

Social context (project environmental analysis)			
Stakeholder	**Potentials / Opportunities**	**Conflicts / Risks**	**Measures**
Customer	Satisfaction with the implemented solution	Change requests during the project	Constant communication between supplier and customer
Supplier	development of an appropriate solution	Misjudgment of effort, time pressure, miscommunication	Documentation, meeting , schedules
User	Benefits of the application, increase in efficiency, ease of use	Lack of understanding of the application, incorrect operation	Creation of a usability concept and constant testing of the program

3. Project Organization

Project Organization		
project role	**Rollenbeschreibung**	**Name**
Costumer	• Defines requirements	Holder, Christian / Rentschler, Markus
Project Lead	• Coordination of members, tasks and other resources	Mohaddeseh Tibashi
Project team members	• Technical Editor • System Architecture • Productmanager • Testmanager	Luka Dominik Pavic Paul Brenner Jonas Alexander Graubner Selvana Dwi Ayunda

4. Project Structure Plan (PSP)



5. Risks

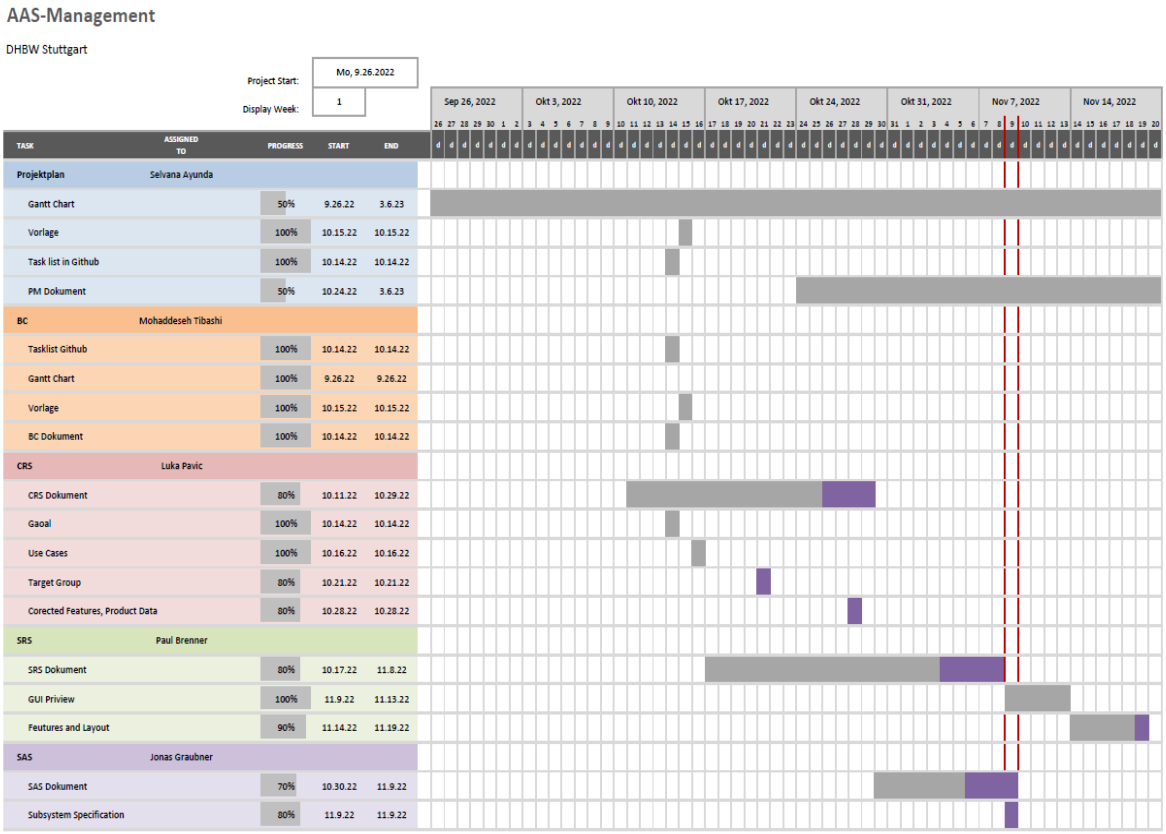
• ***Financial risk***: It is possible that the project planning is misestimated and the actual number of hours per person is higher than actually planned.
Measure: The risk is minimized through precise planning of the project. Work packages and time expenditure must be defined.

• ***Planning risk:*** Fixed deadlines cannot be met, which delays the entire process, especially if there are dependencies between the work packages.
Measure: The project plan must contain sufficient time buffers to absorb delays.

• ***Communication risk***: Lack of or incorrect communication between individual team members.
Measure: Regular exchange in the team, in the form of calls and proactive communication in the event of uncertainties or problems of individual members

• ***Personal risk:*** Members could leave the company during the project period, or be lost due to limitations such as illness, accidents, etc
Measure: Sufficient buffer and distribution of tasks among several members. It is not possible to replace the member in the project!

6. Gantt-Charts



7. Milestone

Milestone	Deadline	Person in charge
Requirments analysis		
PM, PSP	10.11.2022	Selvana Dwi Ayunda
BC	10.11.2022	Mohaddeseh Tibashi
CRS	10.11.2022	Luka Dominik Pavic
Design		
SRS	10.11.2022	Paul Brenner
SAS	10.11.2022	Jonas Alexander Graubner
Coding		
GUI-Prototyp Frontend		Selvana Dwi Ayunda, Mohaddeseh Tibashi
Rest-API Backend		Paul Brenner, Jonas Alexander Graubner Luka Dominik Pavic,
Test		
Systemtestplan (STP)		Selvana Dwi Ayunda
Systemtestreport (STR)		
AAS-Management		Team member

8. Activities and Responsibilities

Activities and Responsibilities		
Person	**Category**	**Task**
Mohaddeseh Tibashi **Role**: Project Manager **GitHub-Name**: Mohitibashi	**Dokumentation, Organisation, Tests**	• Business Case (BC) • Gantt-Charts • GitHub Organisation • Presentation
	Development	• Frontend Developer
Luka Dominik Pavic **Role:** Productmanager **GitHub-Name**: LukaDPavic	**Dokumentation, Design**	• Customer Requirement Specification (CRS) • Usability Konzept • Presentation • Costomer exchange
	Development	• Backend Developer
Jonas Graubner **Role:** Systemarchitekt **GitHub-Name**: JoTec2002	**Dokumentation**	• System Architecture Specification (SAS) • Usability Konzept • Presentation
	Development	• Backend Developer • Rest-API Implementation • MongoDB
Paul Brenner **Rolle:** Tech. Documentation **GitHub-Name**: Paulbrenner2	**Dokumentation**	• Dokumentation des Codes • Software Requirements Specification (SRS)
	Development	• Backend Developer • GUI
Selvana Dwi Ayunda **Rolle:** Test Manager **GitHub-Name:** selvanadwiayunda	**Dokumentation**	• Project Handbook (PM) • GitHub Organisation • Test • Gantt-Charts
	Development	• Frontend Developer