Projekthandbuch

TINF21C, Software Engineering I
Praxisproject 2022/23

Project

AAS-Webclient

Customer

Markus Rentschler, Christian Holder

Rotebühlplatz 41, 70178 Stuttgart

Supplier

Project Leader: Samara Dominik (inf21001@lehre.dhbw-stuttgart.de)

Product Manager: Martin Rittmann (inf21157@lehre.dhbw-stuttgart.de)

System Architect: Marcel Hintze (inf21056@lehre.dhbw-stuttgart.de)

Test-Manager: Anja Niedermeier (inf21097@lehre.dhbw-stuttgart.de)

Developer: Severin Helms (inf21047@lehre.dhbw-stuttgart.de)

Technical Documentation: Tom Engelmann (inf21010@lehre.dhbw-stuttgart.de)

Version	Date	Author	Comment
0.1	26.10.2022	Samara Dominik	Created, added structure
0.2	28.10.2022	Samara Dominik	Project assignment
0.3	01.11.2022	Samara Dominik	Project context, Project organization, WBS, Risks, Gantt chart, Project Milestone Plan, List of Operations and responsible persons
1.0	05.11.2022	Samara Dominik	Final Version

CONTENTS

Project assignment

Project assignment
Project goal (Output) The goal is to design a user-friendly frontend page for a reactive asset administration shell. The frontend application is supposed to be based on React and has to be able to communicate with any ASS-Server over REST-API. The opportunity to search for and filter contents should be possible across several ASS-server. To reach this goal, a usability concept for significant use cases will be designed in advance.
Project use (Outcome) A human orientated frontend helps the user to find and understand information and date faster than a technical orientated tool. This will save time and simplifies the training of new employees, which leads all together to a reduction in costs.
Project Clients Markus Rentschler; Christian Holder
Team members ■ Dominik, Samara ■ Engelmann, Tom ■ Helms, Severin ■ Hintze, Marcel ■ Niedermeier, Anja ■ Rittmann, Marcel
Main tasks ■ Analysis ■ Design ■ Coding ■ Testing ■ Documentation
Start of project Introductory lecture, 09.11.2022
End of project Final presentation and project delivery, May 2023

Project context

| Initial situation |
| --- |
| In the context of the project, we have to create a human- orientated asset administration shell. There is no previous project, which means that the code for the frontend must be written completely new. However, we have three asset administrations shells, that can be used as reference, even though we need to be cautious since these are more technically orientated. We also have to add the connection of frontend and the various ASS-server, as well as the possibility to search for and filter content. For this purpose, there is no given logic, which means, that all needed methods still need to be developed. |

Temporal context		
Pre-project phase	**Project phase**	**Post-project phase**
▪ No previous project. Introduction into asset administration shells during lectures	▪ Other projects, lectures, tasks, and exams during theory phase ▪ Full-time working on company projects during praxis phase	▪ Increased usability of an asset administration shell ▪ possibility to search for and filter content ▪ still more functions to be implemented to increase the usability even more

Social context			
Stakeholder	**Chances**	**Risks**	**Actions**
Client	▪ Satisfied with the end product	▪ Not satisfied with the product after the deadline ▪ Additional change requests during the project	▪ Clear communication with the client ▪ Asking for clarifications when needed
Supplier	▪ Client is satisfied, could stay a customer ▪ Reusable solution for a problem	▪ Misjudgements (time, financially,…) ▪ Internal problems (miscommunications, diseases, bad team dynamic)	▪ Meetings, regular talks among team members ▪ Structured project leading ▪ Team members already worked together
User	▪ Better usability of an asset administration shell	▪ Usability worsened	▪ Usability concept ▪ Testing

Project organization

Project Role	Description	Name
Client	Provides project	Markus Rentschler, Christian Holder
Project leader	Leads project, keeps the overview over the project	Samara Dominik
Team members	Specialized on different tasks: ■ System architect ■ Product Manager ■ Test Manager ■ Developer ■ Technical Documentation	 Marcel Hintze Martin Rittman Anja Niedermeier Severin Helms Tom Engelmann
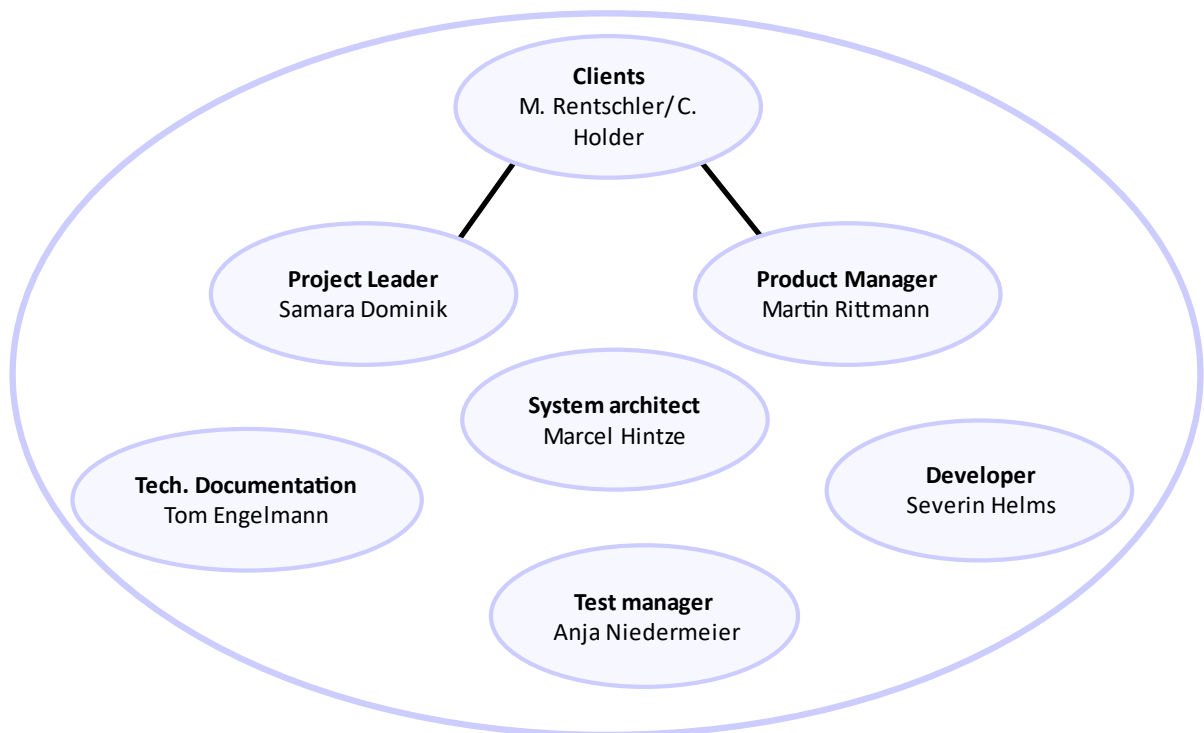
Work breakdown structure

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                          │  AAS-Webclient   │
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│  1.0 Analysis │  │  2.0 Design   │  │  3.0 Coding   │  │   4.0 Tests   │
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1.0 Analysis	2.0 Design	3.0 Coding	4.0 Tests
1.1 CRS	2.1 Usability concept	3.1 Apply usability concept to frontend	4.1 Write Tests
1.2 BC	2.2 SRS	3.2 Connection to backend	4.2 Testing
1.3 PM	2.3 SAS	3.3 Content search	4.3 STP
		3.4 Filter content	4.4 STR
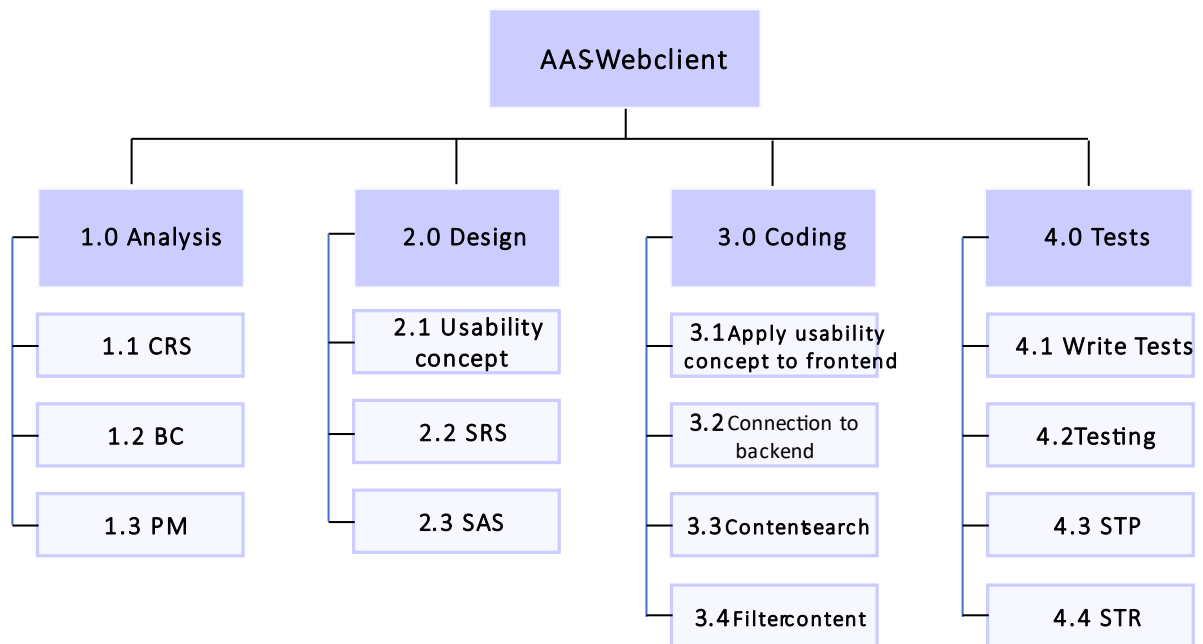
Risks

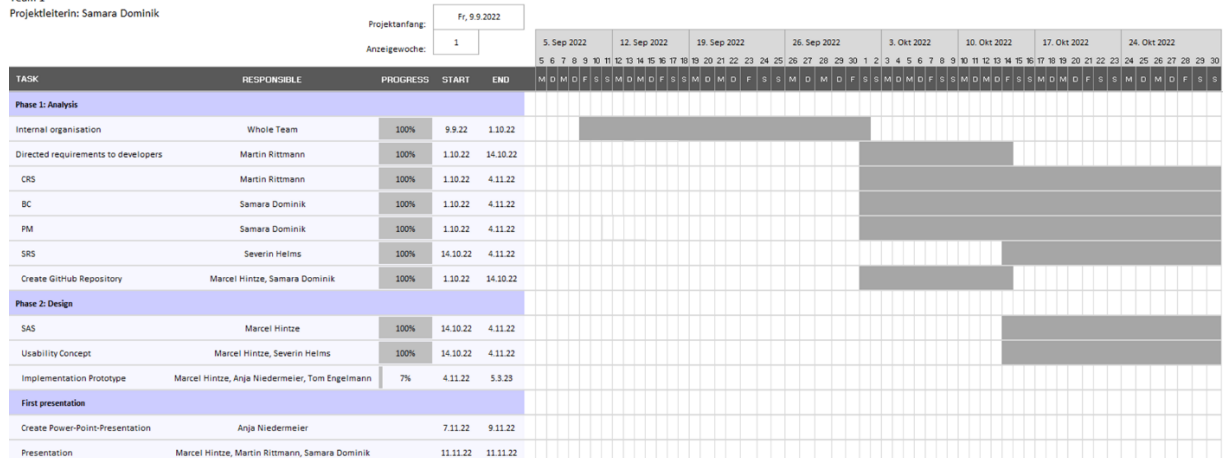| Risk	Description	Probability of occurrence	Severity	Action
Personal risk	Member leaves the course	Extremely low	Medium	▪ All time scopes possess buffers, so that the loss of a team member can be compensated by others with a little more time
Personal risk	Member is ill	Medium	Low	▪ All tasks have several weeks time to be competed. ▪ At least two people work on a task that is directly related to the end product (design, coding, testing)
Planning risk	Milestones are not achieved in time	Medium	Medium	▪ Including enough buffers in the time schedule and efficient task planning
Planning risk	Forgotten important documents	Low	High	▪ Double checking
Financial risk	Team members work more or in different areas than originally planned ->Expenses are too high for original offer	Low	High	▪ Letting the team members pick their parts -> everyone is doing what they can do and like best, no need to change roles
Financial risk	Miscalculation of the additional costs	Medium	Medium	▪ Research and use experience of previous projects
Communication risk	Miscommunication within the team members	Medium	Medium-High	▪ Regular meetings, direct clarification in case of problems/ questions
Communication risk	Miscommunication with clients	Low	High	▪ Direct clarification in case of problems/ questions ▪ Rather ask than guess the requirement
Knowledge risk	Many team members first need to get familiar with the technologies they work with	High	Medium	▪ Every member is assigned to the task they are most likely to perform well at ▪ Unexperienced members work together with more experienced ones

Gantt chart

Part 1
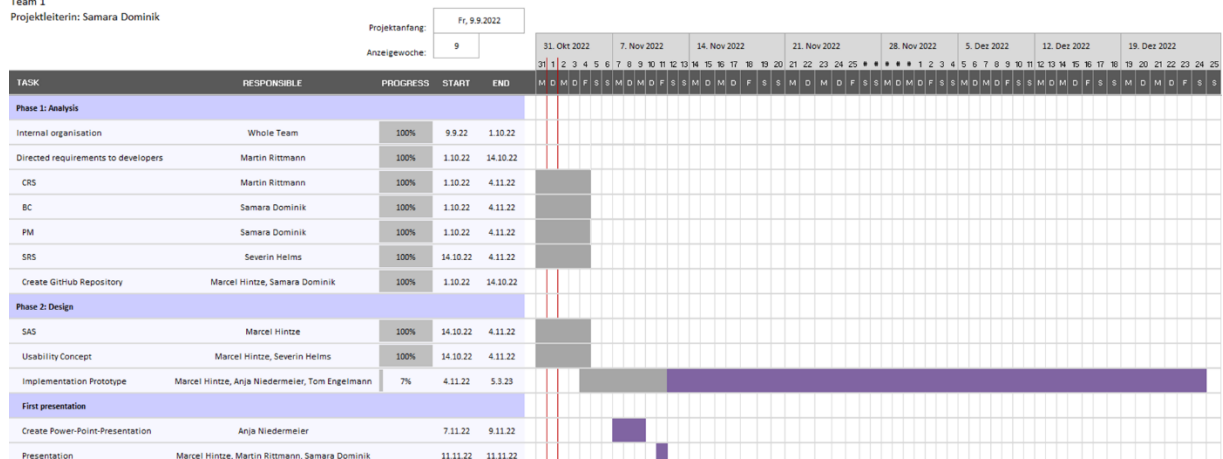
AAS-Webclient

Team 1
Projektleiterin: Samara Dominik

| Projektanfang: | Fr, 9.9.2022 |
| Anzeigewoche: | 1 |

TASK	RESPONSIBLE	PROGRESS	START	END
Phase 1: Analysis				
Internal organisation	Whole Team	100%	9.9.22	1.10.22
Directed requirements to developers	Martin Rittmann	100%	1.10.22	14.10.22
CRS	Martin Rittmann	100%	1.10.22	4.11.22
BC	Samara Dominik	100%	1.10.22	4.11.22
PM	Samara Dominik	100%	1.10.22	4.11.22
SRS	Severin Helms	100%	14.10.22	4.11.22
Create GitHub Repository	Marcel Hintze, Samara Dominik	100%	1.10.22	14.10.22
Phase 2: Design				
SAS	Marcel Hintze	100%	14.10.22	4.11.22
Usability Concept	Marcel Hintze, Severin Helms	100%	14.10.22	4.11.22
Implementation Prototype	Marcel Hintze, Anja Niedermeier, Tom Engelmann	7%	4.11.22	5.3.23
First presentation				
Create Power-Point-Presentation	Anja Niedermeier		7.11.22	9.11.22
Presentation	Marcel Hintze, Martin Rittmann, Samara Dominik		11.11.22	11.11.22

Part 2

AAS-Webclient

Team 1
Projektleiterin: Samara Dominik

| Projektanfang: | Fr, 9.9.2022 |
| Anzeigewoche: | 9 |

TASK	RESPONSIBLE	PROGRESS	START	END
Phase 1: Analysis				
Internal organisation	Whole Team	100%	9.9.22	1.10.22
Directed requirements to developers	Martin Rittmann	100%	1.10.22	14.10.22
CRS	Martin Rittmann	100%	1.10.22	4.11.22
BC	Samara Dominik	100%	1.10.22	4.11.22
PM	Samara Dominik	100%	1.10.22	4.11.22
SRS	Severin Helms	100%	14.10.22	4.11.22
Create GitHub Repository	Marcel Hintze, Samara Dominik	100%	1.10.22	14.10.22
Phase 2: Design				
SAS	Marcel Hintze	100%	14.10.22	4.11.22
Usability Concept	Marcel Hintze, Severin Helms	100%	14.10.22	4.11.22
Implementation Prototype	Marcel Hintze, Anja Niedermeier, Tom Engelmann	7%	4.11.22	5.3.23
First presentation				
Create Power-Point-Presentation	Anja Niedermeier		7.11.22	9.11.22
Presentation	Marcel Hintze, Martin Rittmann, Samara Dominik		11.11.22	11.11.22

Outlook

AAS-Webclient

Team 1
Projektleiterin: Samara Dominik

| Projektanfang: | Fr, 9.9.2022 |
| Anzeigewoche: | 27 |

TASK	RESPONSIBLE	PROGRESS	START	END
Presentation	Marcel Hintze, Martin Rittmann, Samara Dominik		11.11.22	11.11.22
Phase 3: Coding				
Apply Usability Concept to frontend	Martin Rittmann, Tom Engelmann, Samara Dominik		6.3.23	2.4.23
Connection to backend	Marcel Hintze		6.3.23	2.4.23
Content search	Severin Helms		6.3.23	2.4.23
Filter content	Severin Helms		6.3.23	2.4.23
Phase 4: Tests				
Writing Tests	Anja Niedermeier		20.3.23	9.4.23
Testing	Martin Rittmann, Tom Engelmann, Samara Dominik		10.4.23	16.4.23
STP	Anja Niedermeier		17.4.23	30.4.23
STR	Tom Engelmann		17.4.23	30.4.23
Final presentation				
Create Power-Point-Presentation	Samara Dominik		1.5.23	7.5.23
Self reflection	Samara Dominik		1.5.23	7.5.23
Presentation	Anja Niedermeier, Marcel Hintze, Samara Dominik		?	?
Documentation				
Meeting Minutes	Tom Engelmann		1.10.22	28.5.23
User Manual	Tom Engelmann		2.4.23	16.4.23
Readme	Tom Engelmann		2.4.23	16.4.23

Project milestone plan
First half of the project

Date	Milestone	Responsible
Week 1: 26.09- 02.10	Analysis ▪ Official project start for the team ▪ First Meeting, distribution of tasks done	All
Week 2: 03.10- 09.10	Analysis ▪ Build up internal project structure, create rough time scope	Samara Dominik
Week 3: 10.10- 16.10	Analysis ▪ Collect all requirements, clarify open questions, and hand them over to the system architect and the project leader ▪ Start analysing the requirements, thinking of first ideas for the website ▪ Set up GitHub repository	Martin Rittmann Marcel Hintze, Severin Helms Marcel Hintze, Samara Dominik
Week 4: 17.10- 23.10	Analysis/ Design ▪ Create CRS in the first version ▪ Create BC and PM in the first versions	Martin Rittmann Samara Dominik
Week 5: 24.10- 30.11	Design ▪ Complete Design phase ▪ Create usability concept ▪ Create SRS and SAS in the first versions	Martin Hintze, Severin Helms
Week 6: 31.10- 06.11	Buffer	
Week 7: 07.11- 13.11	First Presentation ▪ Create Power-Point ▪ Prepare for presentation ▪ CRS, BC, PM, SRS, SAS, and documentation in final version and pushed in the GitHub repository	All
Week 8: 14.11- 20.11	Design ▪ Started implementing first prototypes	Marcel Hintze, Anja Niedermeier, Tom Engelmann

List of operations and responsible persons

Person	Work package	Task
Samara Dominik Role: Project leader E-Mail: MatrikelNr.: 1047506	▪ Analysis ▪ Coding ▪ Testing	▪ Project organisation ▪ Maintaining GitHub Repository ▪ BC ▪ PM ▪ Presentation ▪ PowerPoint (final presentation) ▪ Help in coding+ testing, if needed
Martin Rittmann Role: Product manager E-Mail: MatrikelNr.: 8461817	▪ Analysis ▪ Coding ▪ Testing	▪ CRS ▪ Presentation ▪ Apply usability concept to frontend webpage ▪ Testing
Marcel Hintze Role: System architect E-Mail: MatrikelNr.: 3932152	▪ Analysis ▪ Design ▪ Coding	▪ SAS ▪ Presentation ▪ Created GitHub Repository ▪ Usability concept ▪ Implementation of prototype ▪ Code connection to backend
Anja Niedermeier Role: Test manager E-Mail: MatrikelNr.: 5697407	▪ Analysis ▪ Design ▪ Testing	▪ STP ▪ PowerPoint (first presentation) ▪ Presentation ▪ Implementation of prototype ▪ Write tests
Severin Helms Role: Developer E-Mail: MatrikelNr.: 3391129	▪ Analysis ▪ Design ▪ Coding	▪ SRS ▪ Usability concept ▪ Code to be able to search for content ▪ Code to be able to filter content
Tom Engelmann Role: Technical Documentation E-Mail: MatrikelNr.: 1594643	▪ Coding ▪ Testing ▪ Documentation	▪ STR ▪ Apply usability concept to frontend webpage ▪ Testing ▪ Meeting Minutes ▪ User Manual ▪ Readme