

UsabilityConcept

TINF21C, Software Engineering I
Praxisproject 2022/23

Project

AAS-Webclient

Customer

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Supplier

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Version	Date	Author	Comment
0.1	01.11.2022	Marcel Hintze, Anja Nidermeier	First usability concept created
0.2	25.02.2023	Samara Dominik, Martin Rittmann	Created document, specified concept
0.3	08.03.2023	Samara Dominik	Redesigned Webpage based on client feedback
1.0	10.03.2022	Samara Dominik	Summarized usability concept in this document, final Version

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About

The goal of our project is to enhance the usability design of the current popular AAS-Webclients. To achieve this goal, we compared different currently running AAS-Webpages and researched about important UI-/UX-features, in order to work out the best possible design for our AAS-Webclient. In the second step we will implement our design in our code. This will be an agile process, since we are open for the customers feedback and will add it to our design. The last part on the way to a human orientated Webclient are the usability tests, which are described in the Document TINF21C-UsabilityTests_Team_1.

Usability Concept Features

Other AAS-Webclients

- <https://aasrepo.digitaltwin-vdma.org/>
- <https://v3.admin-shell-io.com/>
- <https://demo-digital-twin.r-stahl.com/?lang=de>

When comparing those, already existing, Webclients, one can see, that even those with a more human orientated Frontend, like the Demonstrator from Stahl are still hard to use for an unexperienced user. One loses overview of all Assets very fast and the websites still feel complicated in handling, because there are simply too many possibilities to choose from and too many information all at once to process.

General Features of our Webclient

- **Simplicity:** We aim to keep the Webclient interface simple and intuitive, reducing unnecessary functionalities that may overwhelm users. This approach ensures users can easily navigate and maintain an overview of the Webclient.
- **Structured Navigation:** A structured navigation system will be implemented to help users quickly find the information they need. This will enhance the efficiency of the Webclient by minimizing the time required for users to locate specific features or assets.
- **Display of Information:** To prevent information overload, we will prioritize displaying the most important Asset-information prominently, while structuring additional details in a logical and organized manner. This approach helps users focus on essential information while maintaining accessibility to comprehensive asset details.
- **Minimal Clicks:** We recognize the importance of providing users with direct feedback for every click. Therefore, we will change the interaction process to minimize the number of clicks required to perform actions or retrieve information.
- **Intuitive Buttons:** Clear and easily distinguishable buttons will be implemented to ensure users can easily identify and utilize specific functionalities. This will enhance the overall usability and reduce user confusion.
- **Language:** The Webclient will be developed in a single language, specifically English, to ensure consistency and ease of understanding for a wide range of users.
- **Focus on Functionality:** The design will prioritize functionality over visual aesthetics. By keeping the Webclient visually simple and uncluttered, users can remain focused on their tasks without unnecessary distractions.

- Input assistance: To enhance the search functionality, input assistance will be incorporated. This feature will provide suggestions and auto-complete options, assisting users in saving time and ensuring accurate search results.

Display of AAS-Server and their Assets

To facilitate an organized user experience, the selection of AAS-Servers will be segregated from the display of assets. The "Add Server" function will be prominently placed in the top right corner, allowing users to easily add new AAS-Servers when necessary.

Since the assets and their contents are most important for the user, they will be displayed in the center of the page, accompanied by a static sidebar to maintain an overview of all available assets.

Search/ Filter function

The search, filter, and sort functions will be separated from the asset display to avoid confusion and ensure their visibility. The search bar and filter options will be highlighted to enable quick and easy access to these functionalities, enhancing the user's ability to find and refine search results efficiently.

Design Version 0.1

GUI – No Server Connection


The mockup shows a web interface titled "AAS-Webclient". At the top, there is a dark blue header bar containing the text "AAS-WEBCLIENT" on the left, a text input field labeled "Server-URL" in the center, and a blue button labeled "Add Server" on the right. Below the header, the main content area is divided into two columns. The left column is labeled "Filters:" and is currently empty. The right column is labeled "Assets:" and contains the message "No contents available, connect Server to display Assets" in a red, underlined font. The entire interface is set against a light gray background with a dark blue footer bar.

GUI –Server connected

AAS-WEBCLIENT

Server: Server-URL [Delete Server](#)

Filters:







Search 

Manufacturer ▼

Year ▼

Serialnumber ▼

AAS:


 AAS <u>name</u> – AAS <u>number</u>	Open
 AAS <u>name</u> – AAS <u>number</u>	Open
 AAS <u>name</u> – AAS <u>number</u>	Open
 AAS <u>name</u> – AAS <u>number</u>	Open
 AAS <u>name</u> – AAS <u>number</u>	Open
 AAS <u>name</u> – AAS <u>number</u>	Open

GUI –Server connected

AAS-WEBCLIENT

Server: Server-URL [Delete Server](#)

Filters:







Search 

Manufacturer ▼

Year ▼

Serialnumber ▼

Assets:

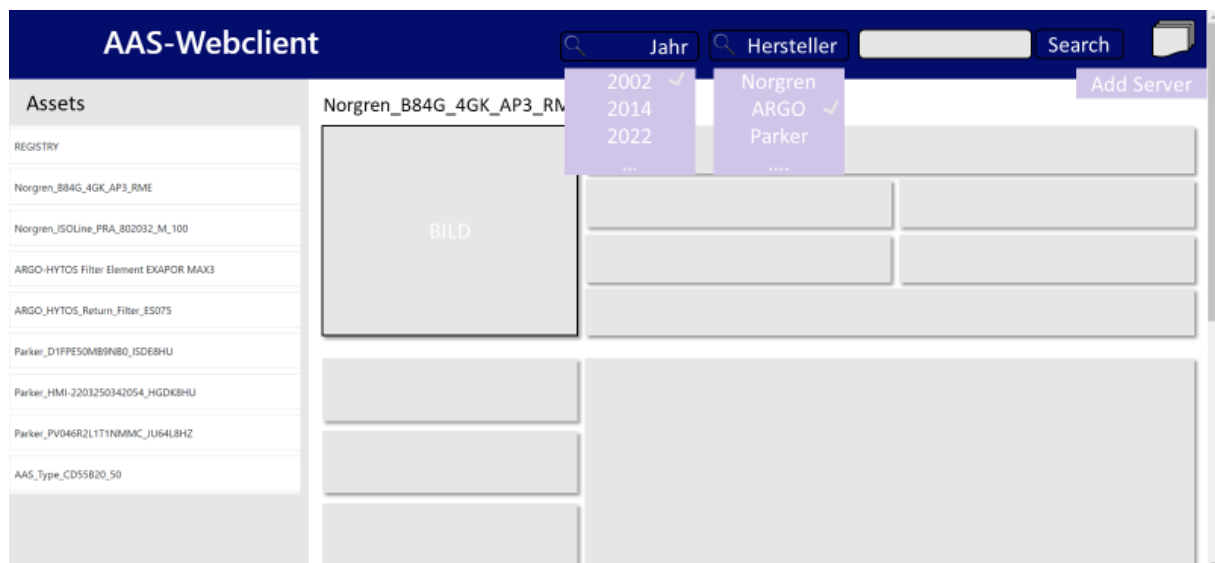
 <u>Article name</u> – Serial <u>number</u>	Details
 <u>Article name</u> – Serial <u>number</u>	Details
 <u>Article name</u> – Serial <u>number</u>	Details
 <u>Article name</u> – Serial <u>number</u>	Details
 <u>Article name</u> – Serial <u>number</u>	Details
 <u>Article name</u> – Serial <u>number</u>	Details

Design Version 0.2 based on customer Feedback

Asset-Display when Server is already connected



View on the filter functions



Comments on changes

- We wanted to remain a greater overview about all the assets, even if one asset is already opened, which is why we have added a static sidebar that shows all Assets.
- Since there was no space on the side anymore, we moved the filter and sort functions to the top- this also made more sense, since such functions are often in the top in common shop-websites.
- We created the design of the detailed display of an Asset. The information should be structured, according to which technical area they belong to and sorted from most important and frequently needed information at the top, to less frequently needed information on the bottom.

Design Final Version

Selecting a Server and display of his contents


AAS-Webclient


Current Server: <https://ccae4836-001e-48c2-a4f9-235554f9400b.ma.bw-cloud-instance.org/> [Server Menu](#)


Year ▼ Manufacturer ▼ Search Q X


Select Asset


REGISTRY


 Norgren_B84G_4GK_AP3_RME


 Norgren_ISOLine_PRA_802032_M_100

 ARGO-HYTOS Filter Element EXAPOR MAX3

 ARGO-HYTOS_Return_Filter_ES075

 Parker_D1FPE50MB9NB0_ISDE8HU

 Parker_HMI-2203250342054_HGDK8HU

 Parker_PV046R2L1T1NMMC_JU64LBHZ

<https://ccae4836-001e-48c2-a4f9-235554f9400b.ma.bw-cloud-instance.org/> [Add Server](#)

<https://v3.admin-shell-io.com/>

<https://admin-shell-io.com/5001/>

<http://aas.murrelektronik.com:4001/aas>

<https://ccae4836-001e-48c2-a4f9-235554f9400b.ma.bw-cloud-instance.org>

Asset View


AAS-Webclient


Current Server: <https://ccae4836-001e-48c2-a4f9-235554f9400b.ma.bw-cloud-instance.org/> [Server Menu](#)


Year ▼ Manufacturer ▼ Search Q X


Select Asset


REGISTRY


 Norgren_B84G_4GK_AP3_RME


 Norgren_ISOLine_PRA_802032_M_100


 ARGO-HYTOS Filter Element EXAPOR MAX3


 ARGO-HYTOS_Return_Filter_ES075


 Parker_D1FPE50MB9NB0_ISDE8HU


 Parker_HMI-2203250342054_HGDK8HU

 Parker_PV046R2L1T1NMMC_JU64LBHZ


 AAS_Type_CD53820_50

 AAS_Type_JSY205220

 AAS_Demo_4WRPEH6

 AAS Demo CytroPac

Norgren_B84G_4GK_AP3_RME



id

<https://www.norgren.com/ids/aas/4DEF2ED7>

idEncoded

aHR0cHM6Ly93d3cubm9yZ3lib5b20vaWRzL2Fhcy80REVGMkVENW==

apiVersion

3

Nameplate

<https://admin-shell.io/zvei/nameplate/1/0/Nameplate>

ArticleInformation

id

www.example.com/ids/sm/7002_0231_5032_3368

HandoverDocumentation

idEncoded

d3d3LnV4YW1wbGUuY29hL2lkcy9ybS83MDAyKzAyMzFNTAyMi8zMzY4

TechnicalData

ManufacturerName

-

MCAD

ManufacturerProductFamily

-

Filter and Search


AAS-Webclient


Year ▼ Manufacturer ▼ Search Q X

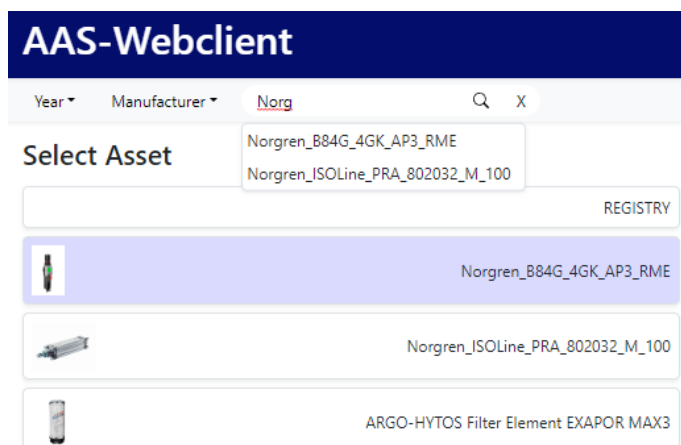
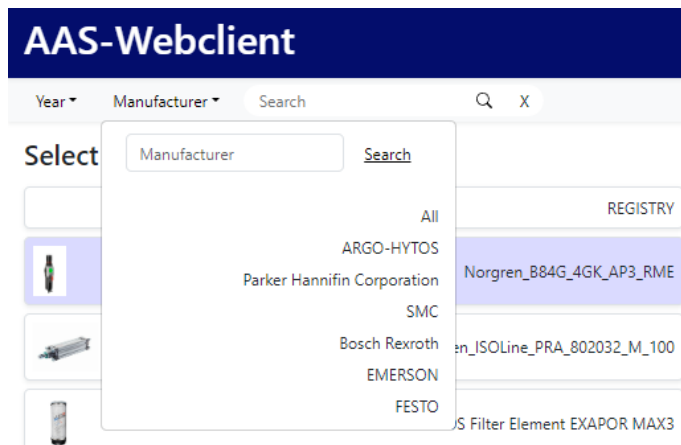
oldest first

newest first

REGISTRY

 Norgren_B84G_4GK_AP3_RME

 Norgren_ISOLine_PRA_802032_M_100



Build Version

Build created on: 2023-05-09-15:07:31
Commit Hash: d5094d5

Comments on changes

- We moved the filter and search functions again, to make the page look even more structured
- According to customers feedback we changed the filter-for-year function in a sort by year function, which is also why its design changed
- One can search for manufacturer, but also can look through all manufacturers in a list, which ensures, that the user can always find, what he wants, even if he cannot remember the manufacturer name while searching
- In the search field the user gets now suggestions according to what he types in, to help the user find what he wants even faster
- Both, when clicked on a server and when clicked on an Asset, the background of the Server/Asset field is coloured to help the user distinguish between chosen Servers/Assets and the others.