

MOD04: Errorhandling

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Project

AAS-Webclient

Customer

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Version	Date	Author	Comment
0.1	09.05.2023	Samara Dominik	Created, set up basic structure
0.2	09.05.2023	Marcel Hintze	Added Implementation
0.3	10.05.2023	Samara Dominik	Added Scope, Glossary
0.4	10.05.2023	Samara Dominik	Added Design
0.5	10.05.2023	Martin Rittmann	Add Module Requirements, Analysis
0.6	10.05.2023	Tom Engelmann	Add Module Tests

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1 Scope

Error handling plays a vital role in ensuring the usability and reliability of our webclient. As an integral part of our project, we have implemented robust error handling mechanisms to provide users with immediate feedback and guidance in case of any issues or failures.

2 Glossary

- AAS: Asset Administration Shell
- AASX: file format to store an asset

3 Module Requirements

3.1 User View

The user receives error messages when entering wrong text values in the search bar, when the server link is not a link and when the sorting of the entries is noch possible, because not all assets have a proper manufacturing date.

3.2 Requirements

/REQ20/ Server validation

The system shall be able to detect false server-URLs when adding a new server and throw an error to the user.

/REQ30/ Error handling

The system shall be able to handle errors (no entries found, unexpected errors, false server-URL, ...) and throw an error to the user.

/NF20/ Browser

The webpage shall work in every Browser supporting the HTML 5 standard.

/NF40/ Usability

A user searching a specific product shall find that product as fast as possible, intuitively know how the webpage works and there shall be enough online documentation for new users. No further training or experience is required.

3.3 Module Context

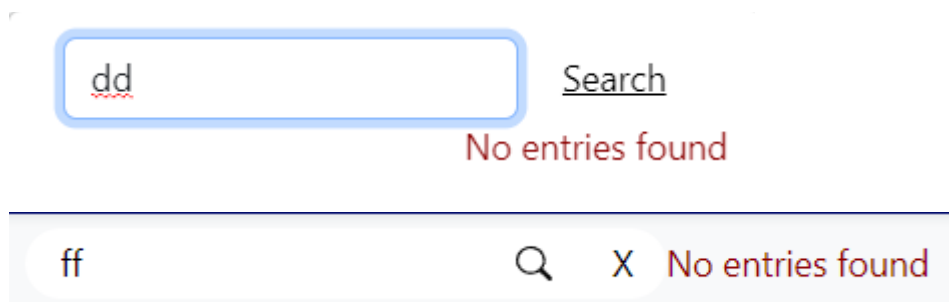
This module surrounds all the other modules. When there is an error in one of the other modules, an error message shall be shown on the webpage. Therefore errorhandling plays a big role in every module. Starting from the data connection to the server, as well as showing the data and in the process of filtering, searching or sorting entries. Uncatched errors impair the usability of the application, because the user doesn't know if or where something went wrong. Crashes of the application should not occur at all in day to day work.

4 Analysis

The module delivers the functionality to handle errors in a useful way, where the user is notified when an error occurs. Errorhandling should be observed in the implementation of the whole application. It serves the main goal of creating a user friendly and intuitive web application for finding digital twins. Receiving error messages gives the user feedback if something went wrong and he can then proceed with adjusting the usage based on the error message.

5 Design

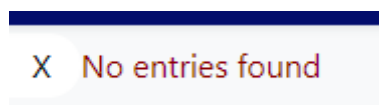
On our webpage we want to provide an intuitive error handling mechanism. When a user performs a search that does not yield any results, an error message stating "No entries found" is triggered. This error message is designed to be familiar to users, resembling error messages commonly found on larger websites. This familiarity ensures that users are not confused by the error message and understand how to proceed. The error message is displayed in a clear and visible manner when the error occurs, ensuring that users can easily identify and acknowledge it. Whenever the user clicks on an Asset, the error messages will vanish again.



Additional details on our Usability Concept can be found on the Usability-Concept-page.

6 Implementation

When the searchbar can't find a asset the following errormessage will be shown:



When the user enters a text as the server address that isn't an url the webclient will throw an alert to the user. To do that the input is checked wether it has 'http' at the beginning or not.

When the user wants to sort the assets by year but there isn't an asset with year data the webclient will thow an alert to the user.

7 Module Tests

The functionalities have been tested in the test suite TS-Asset with the test case TC-Asset-Search-002 and in the test suite TS-Server with the test cases TC-Server-Import-001 and TC-Server-Switch-002.

In TC-Server-Import-001 the functionality of the import of an AAS-server by its URL has been tested. It verifies the display of an error message in case the given URL is incorrect. It passed the test and produced the expected results.

In TC-Server-Switch-002 the functionality of switching out a currently used server with another one has been tested. It verifies the display of an error message in case the given URL is incorrect. It passed the test and produced the expected results.

In TC-Asset-Search-002 the functionality of searching for specific assets by their name or by a substring of their name has been tested. It has been tested with test data TD-003. Dataset 6 expected an error warning. It passed the test and produced the expected results.