

# System Requirements Specification

(TINF21C, SWE)

**Project:** Modelling Wizard Improvements

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## Change History

Version	Date	Author	Comment
0.1	07.10.2022	Dana Frey	created
0.2	14.10.2022	Dana Frey	Added 'Introduction' and 'Use Cases'
0.3	17.10.2022	Dana Frey	Added 'Features'
0.4	19.10.2022	Dana Frey	reworks
0.5	20.10.2022	Dana Frey	Added 'Enhancements' and did reworks
1.0	10.05.2023	Dana Frey	Updates for the final version

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## 1. Introduction

Our project deals with the already existing program called „Modelling Wizard“. The program can create a device model in a graphical user interface (GUI). It is possible to add device interfaces (such as physical ports) or file attachments to the created device model. If the user already owns descriptive files, those files can be used to create a device model as well. The current version of the Modelling Wizard is capable of handling AMLX, AML, EDZ, IODD and GSD import.

The goal of our project is to create a more user-friendly version of the Modelling Wizard which includes an improved version of the GUI as well as fixing bugs and refactoring the code by the team beforehand.

## 1.1 Product Environment

AutomationML (AML) is the short form of Automation MarkUp Language and is used to describe parts of automation plants as objects. These objects can consist of multiple other objects and can be part of a larger assembly of objects. That way AML can be used to describe a single screw or an entire robot with the necessary level of detail. AML makes use of various standards to describe the following plant components:

1. CAEX (Computer Aided Engineering Exchange) to describe attributes of objects and their relations in a hierarchical structure. This is called a system topology. In this respect, CAEX forms the overarching integration framework of AutomationML.
2. COLLADA to describe the geometry and 3D Models of an object
3. COLLADA also integrates motion planning. It describes the connections and relations of moveable objects, which is called Kinematics.
4. PLCopen XML describes the logic. Internal behavior and states of objects, action-sequences and I/O connections are implemented via this format. An IODD (IO Device Description) file describes the sensor and actuator of a plant or component. It also contains information on identify, parameters, process data, communication and more. It is written in XML-format, same as AML, which ensures a conversion.

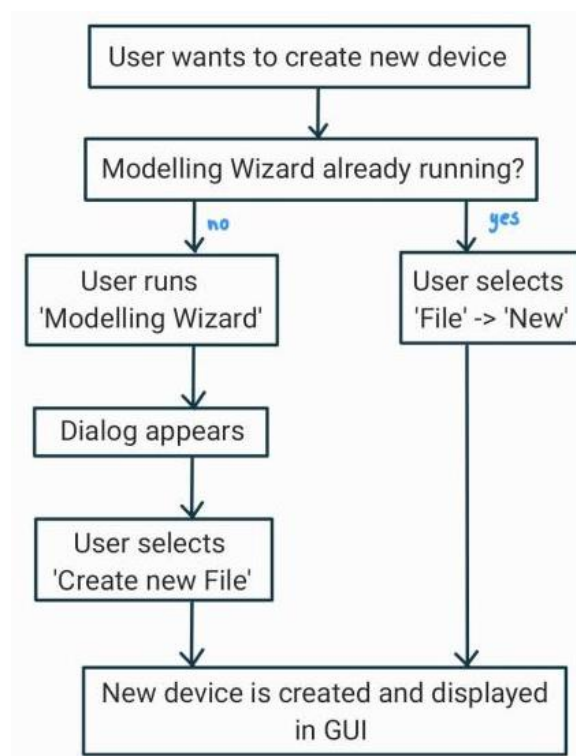
## 2. Use Cases

Our project doesn't include new added Use Cases and focuses more on the improvement of the given project. Therefore, the following Use Cases have been taken over by the previous team to still be able to visualize the current program's Use Cases.

### 2.1 <UC.001> Create new device

Use Case's Objective:	User wants to create a device
System Boundary:	The application itself

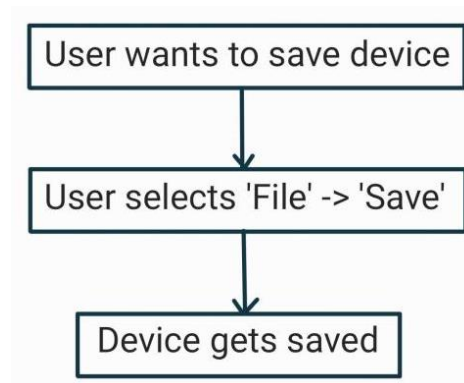
<b>Precondition:</b>	The user needs to have the minimal required data for the device on hand. The program needs to be installed on the user's system and opened.
<b>Postcondition on success:</b>	The entered data is displayed completely and correctly
<b>Involved Users:</b>	Every end-user of the application
<b>Triggering Event:</b>	When the user opens the application and uses the 'New' function to create a new device



## 2.2 <UC.002> Save device

<b>Use Case's Objective:</b>	User wants to save a device by using the 'Save' function
<b>System Boundary:</b>	The application itself
<b>Precondition:</b>	The user created a device
<b>Postcondition on success:</b>	The user created or loaded at least one device successfully
<b>Involved Users:</b>	Every end-user of the application

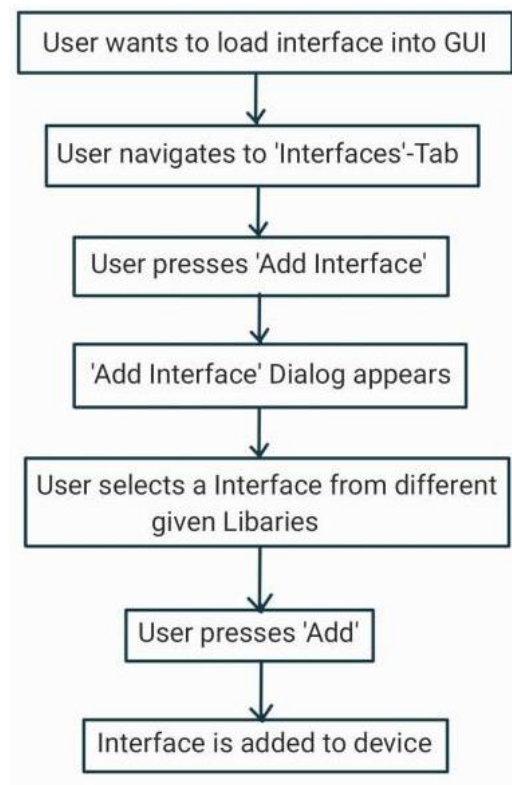
<b>Triggering Event:</b>	When the user has an opened device, which the user wants to save
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### 2.3 <UC.003> Create interface from existing library

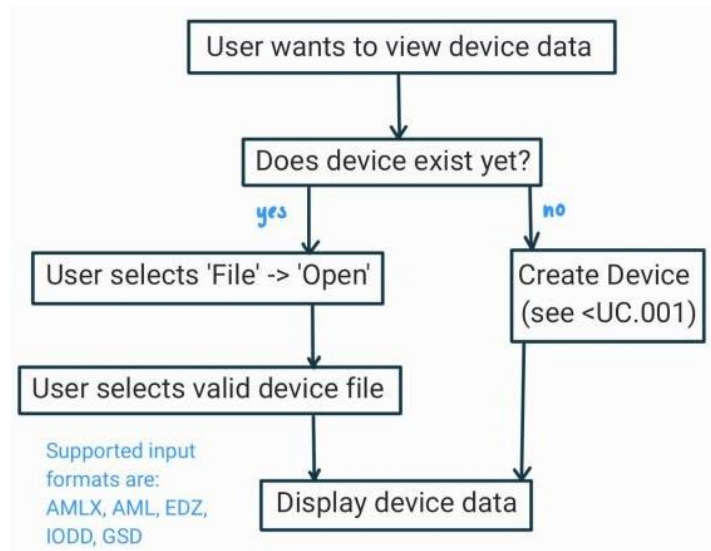
<b>Use Case's Objective:</b>	User wants to create a device interface by adding an interface from one of the existing libraries
<b>System Boundary:</b>	The application itself
<b>Precondition:</b>	The user needs to have the minimal required data for the device or interface to be added.
<b>Postcondition on success:</b>	The user has successfully added an interface to his device
<b>Involved Users:</b>	Every end-user of the application
<b>Triggering Event:</b>	When the user wants to add a device interface





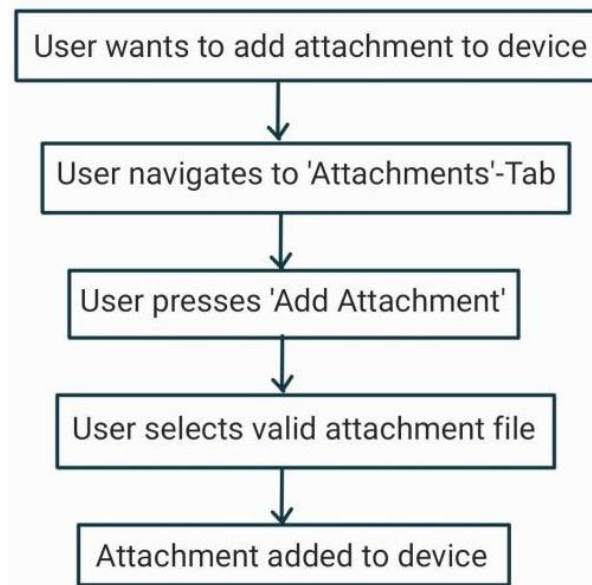
#### 2.4 <UC.004> View device data

<b>Use Case's Objective:</b>	After at least one device was successfully created, the device data should be visible and editable on the user interface
<b>System Boundary:</b>	The application itself
<b>Precondition:</b>	The user created or loaded a device
<b>Postcondition on success:</b>	The user created or loaded at least one device successfully and its data is visible on the screen
<b>Involved Users:</b>	Every end-user of the application
<b>Triggering Event:</b>	When the user wants to view device data



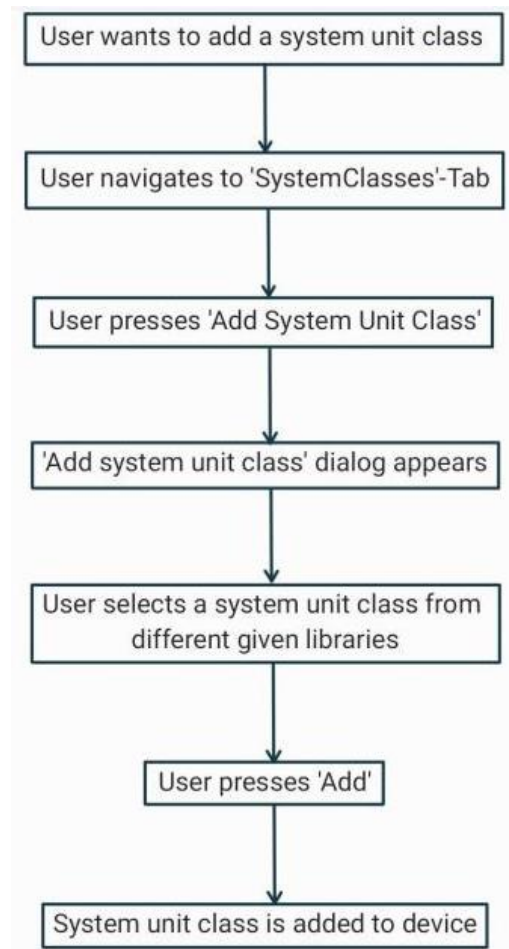
## 2.5 <UC.005> Add attachments to device

<b>Use Case's Objective:</b>	It is possible to add an attachment to the object, such as a manufacturer's icon
<b>System Boundary:</b>	The application itself
<b>Precondition:</b>	The user created or loaded a device
<b>Postcondition on success:</b>	The user has successfully added an attachment to his device
<b>Involved Users:</b>	Every end-user of the application
<b>Triggering Event:</b>	When the user has the need to edit device data and add attachments such as icons.



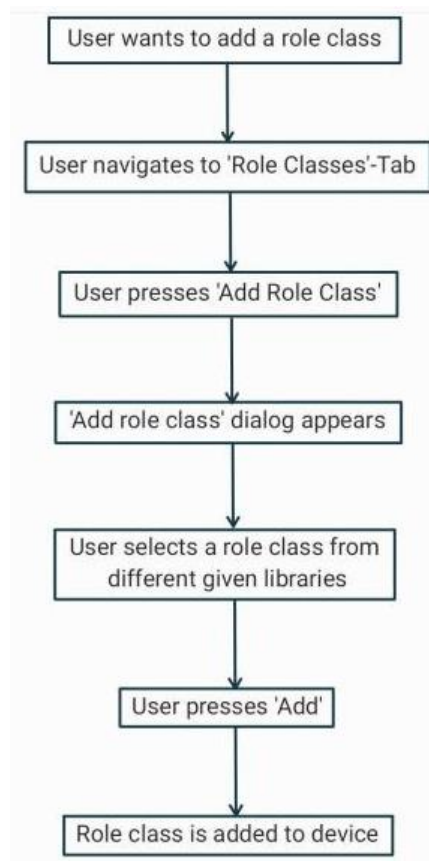
## 2.6 <UC.006> Add system unit classes to device

<b>Use Case's Objective:</b>	User wants to add a system unit class to existing device
<b>System Boundary:</b>	The application itself
<b>Precondition:</b>	The user created or loaded a device
<b>Postcondition on success:</b>	The user has successfully added a system unit class to his device
<b>Involved Users:</b>	Every end-user of the application
<b>Triggering Event:</b>	When the user has the need to add a system unit class to his device



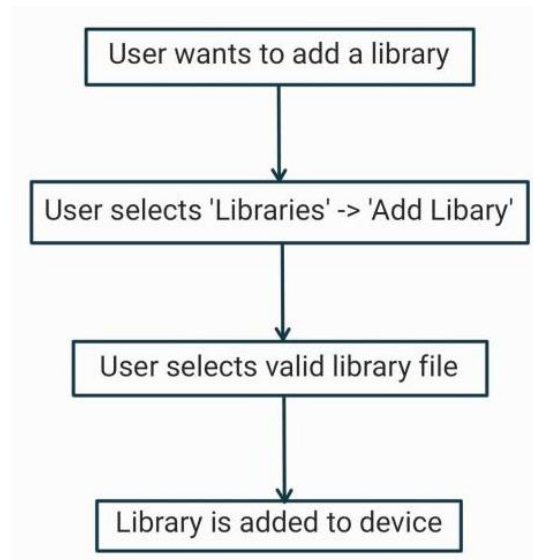
## 2.7 <UC.007> Add role class to device

<b>Use Case's Objective:</b>	User wants to add a role class to existing device
<b>System Boundary:</b>	The application itself
<b>Precondition:</b>	The user created or loaded a device
<b>Postcondition on success:</b>	The user has successfully added a role class to his device
<b>Involved Users:</b>	Every end-user of the application
<b>Triggering Event:</b>	When the user has the need to add a role class to his device



## 2.8 <UC.008> Add library to device

Use Case's Objective:	User wants to add a library to existing device
System Boundary:	The application itself
Precondition:	The user created or loaded a device
Postcondition on success:	The user has successfully added a library to his device
Involved Users:	Every end-user of the application
Triggering Event:	When the user has the need to add a library to his device



### 3. Functional Features

#### 3.1.1 <LF11> Import

The application should be able to import a file by the absolute path to the file. This import supports files of the file types AMLX, AML, EDZ, IODD and GSD.

#### 3.1.2 <LF12> File validation

The system shall be able to detect wrongly formatted imported files and throw an error to the user.

#### 3.1.3 <LF13> Error handling

The system shall be able to handle errors (unexpected shut down, wrongly formatted files, ...) and throw an error to the user. If an error appears to be in a specific part of the program, the cursor should be pointed to that exact location.

### 3.1.4 <LF14> Unsaved changes

When the user has edited a device without saving yet, he should be informed, that there are non-saved changes.

### 3.1.5 <LF15> Edit device

When the attributes of a loaded device are displayed to the user, the user should be able to edit every attribute he wants to change.

### 3.1.6 <LF16> Create device

When the application is started, the user should be able to create a new and empty device model.

### 3.1.7 <LF17> Export device

When the user has edited a device, he should be able to save the device to a file.

## 4. Non-functional Features

### 4.1.1 <NF11> GUI

The system should display a graphical user interface after startup of the standalone application. The user will interact with this GUI for every other functionality of the application. For this, the application must be converted from a plugin to a full application on its own.

Old GUI from the previous Modelling Wizard team (in easy mode):

Modelling Wizard für Gerätemodelle

File Libraries Options Help

Generic Data Interfaces Attachments

Device Name: Vendor:

Generic Information

Index	Role
1	AutomationComponent(Class: AutomationMLBaseRole)

(1)AutomationComponent(Class: AutomationMLBaseRole)

Attributes

AttributeName	Values
IdentificationData	
Manufacturer	
ManufacturerURI	
DeviceClass	
Model	
ProductCode	
OrderCode	
HardwareRevision	
SoftwareRevision	
SerialNumber	
FabricationNumber	

Role Class Library

- AutomationMLComponentBaseRCL
- AutomationMLComponentStandardRCL
- AutomationMLFMLLogicRoleClassLib
- AutomationMLBaseRoleClassLib
- AutomationMLBPRRRoleClassLib
- AutomationMLLogicRoleClassLib

Interface Class Library

Old GUI from the previous Modelling Wizard team (in "advanced" mode = expert mode):

Modelling Wizard für Gerätemodelle

File Libraries Options Help

Generic Data Interfaces Attachments

Device Name: Vendor:

Generic Information

Index	Role
1	AutomationComponent(Class: AutomationMLBaseRole)

(1)AutomationComponent(Class: AutomationMLBaseRole)

Attributes

AttributeName	Values	Default	Units	Data Type	Semantic
IdentificationData					
Manufacturer				xs:string	
ManufacturerURI				xs:string	
DeviceClass				xs:string	
Model				xs:string	
ProductCode				xs:string	
OrderCode				xs:string	
HardwareRevision				xs:string	
SoftwareRevision				xs:string	
SerialNumber				xs:string	
FabricationNumber				xs:string	

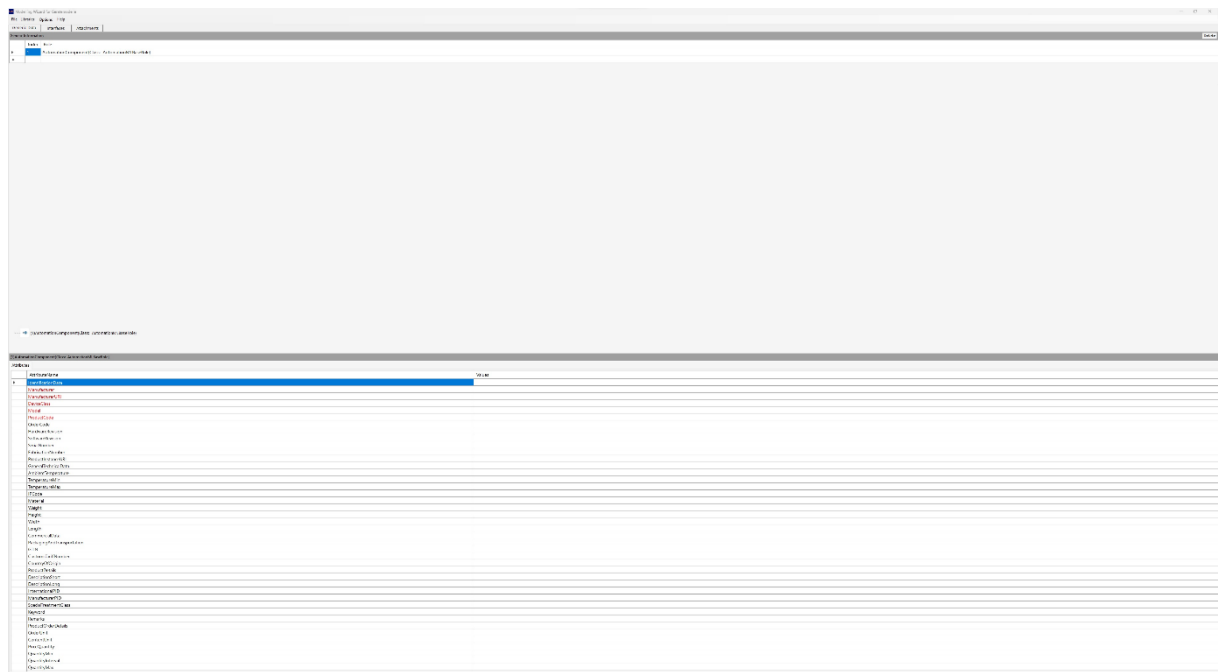
Role Class Library

- AutomationMLComponentBaseRCL
- AutomationMLComponentStandardRCL
- AutomationMLFMLLogicRoleClassLib
- AutomationMLBaseRoleClassLib
- AutomationMLBPRRRoleClassLib
- AutomationMLLogicRoleClassLib

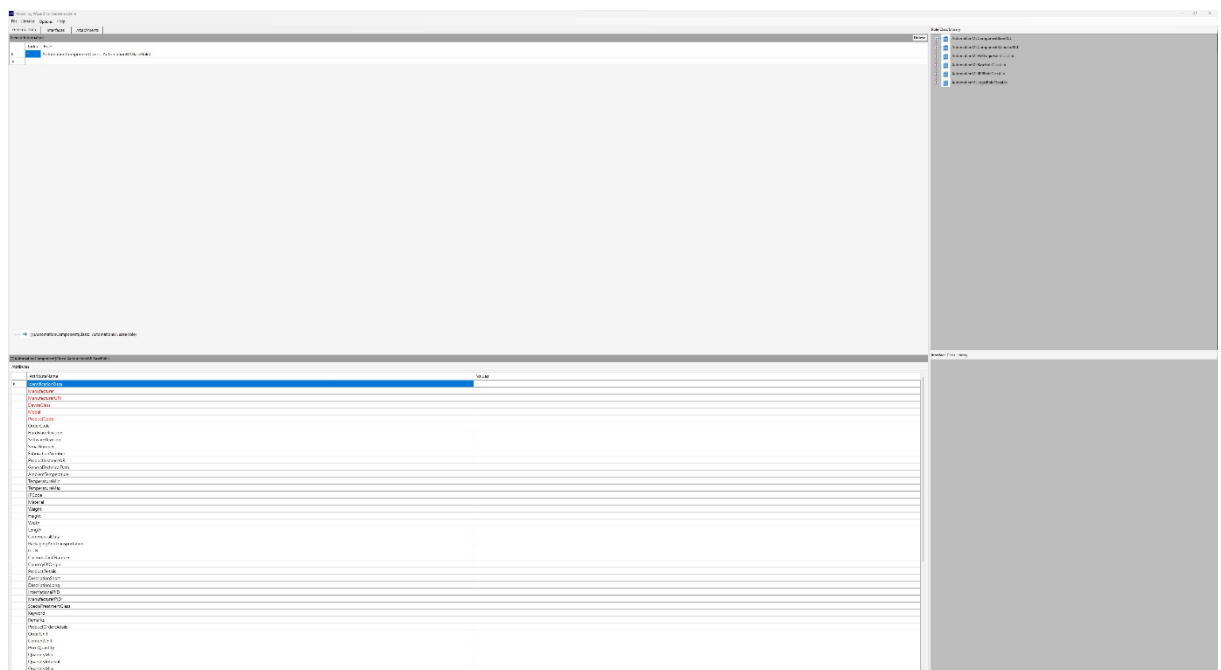
Interface Class Library



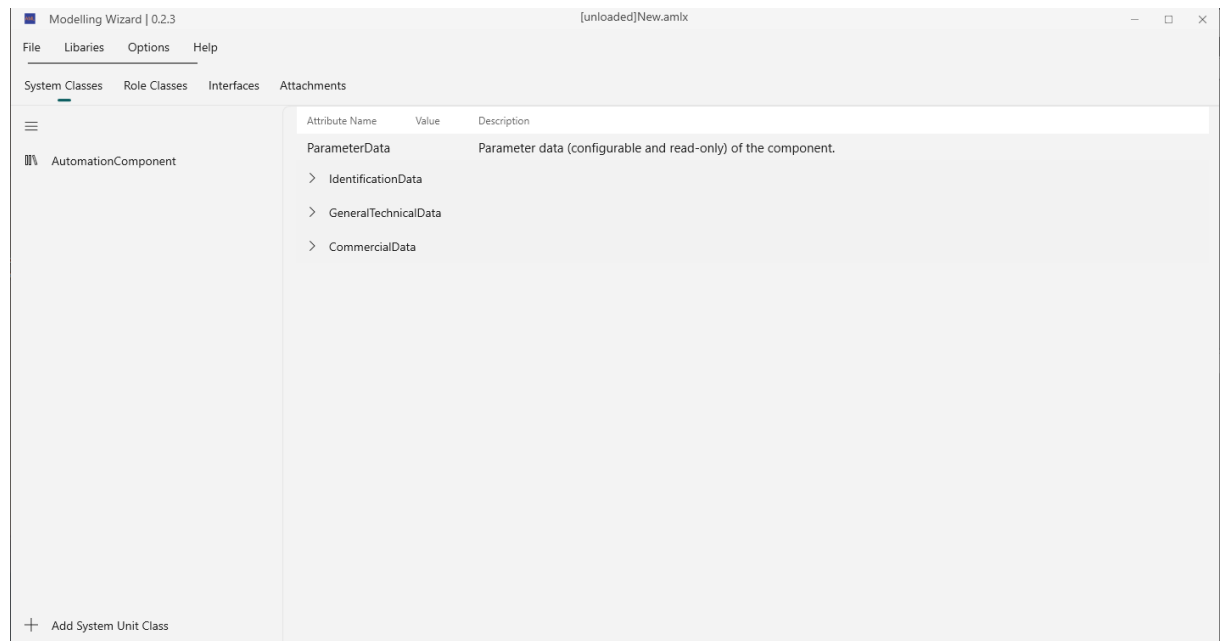
First prototype of GUI (in easy mode):



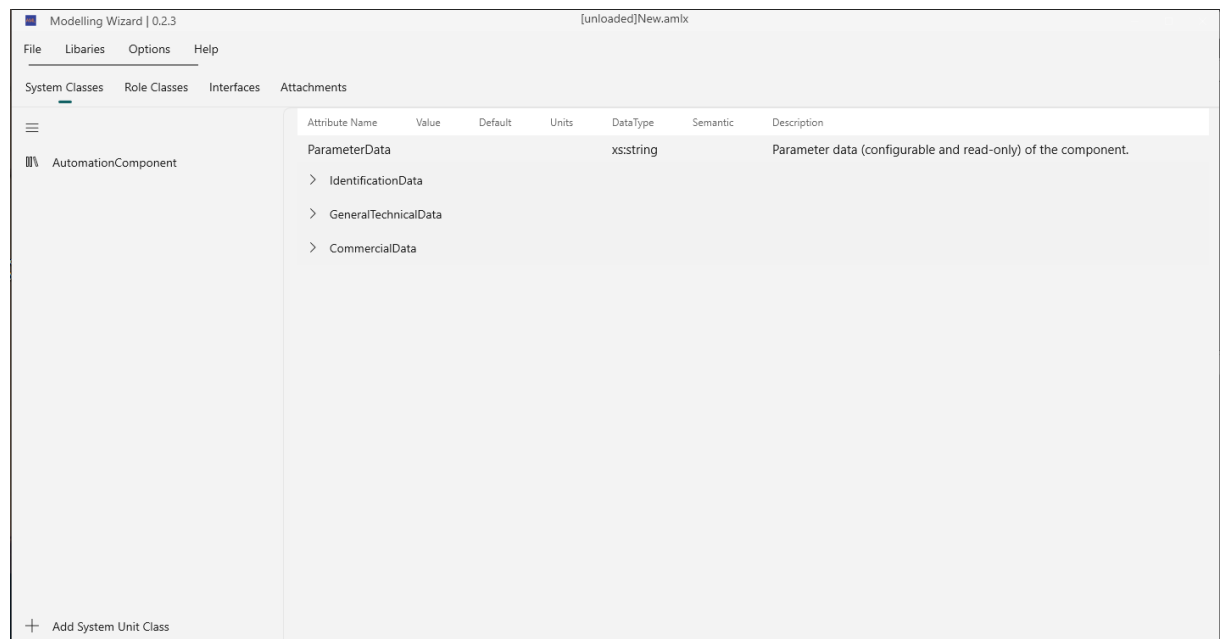
First prototype of GUI (in expert mode):



Final GUI version (in easy mode):



Final GUI version (in expert mode):



The graphical user interface should be user friendly. There should not be an overwhelming amount of information, button areas should easily be clickable, there should be no unnecessary buttons, etc..

#### 4.1.2 <NF12> Display device in a readable way

When a device is loaded or created the attributes of the element should be displayed directly and easily readable for the user.

#### 4.1.3 <NF13> Easy Mode

When the user wants to hide additional attribute information visible in the "System Classes"-Tab.

#### 4.1.4 <NF14> Expert Mode

When the user wants to display additional attribute information, which was not visible in the "System Classes"-Tab before.

#### 4.1.5 <NF15> Portable

The program should be runnable without any installation.

#### 4.1.6 <NF16> Performance

The application should respond instantly after a user's action.

#### 4.1.7 <NF17> Compatibility

The application should be executable on every current system such as Windows 10 or higher. Furthermore, the application is only executable on the Windows platform.

## 5. Bug fixes

### 5.1 <BUG10> Data Models

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/12](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/12)

### 5.2 <BUG20> Open Saved Files

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/5](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/5)

### 5.3 <BUG30> Delete without Confirmation

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/27](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/27)

### 5.4 <BUG40> Deleted Interface

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/28](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/28)

### 5.5 <BUG50> List View for Attributes

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/75](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/75)

### 5.6 <BUG60> Separate Menu Bar

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/72](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/72)

### 5.7 <BUG70> Visual Displacement

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/71](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/71)

5.8 <BUG80> Text Colours removed

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/68](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/68)

5.9 <BUG90> Theme changes Dialog

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/66](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/66)

5.10 <BUG100> Wrong Colouring

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/62](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/62)

5.11 <BUG110> Semantic

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/60](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/60)

5.12 <BUG120> Content Dialog size

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/52](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/52)

5.13 <BUG130> Visual Feedback

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/134](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/134)

5.14 <BUG140> Crash while Edit

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/130](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/130)

5.15 <BUG150> Attribute Highlight

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/115](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/115)

#### 5.16 <BUG160> Library Visualization

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/114](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/114)

#### 5.17 <BUG170> Local Storage

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/97](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/97)

#### 5.18 <BUG180> Wrong Text

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/82](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/82)

#### 5.19 <BUG190> Window Refactoring

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/132](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/132)

#### 5.20 <BUG200> Dialog Cancel

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/133](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/133)

#### 5.21 <BUG210> Change Filename

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/135](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/135)

#### 5.22 <BUG220> Data Grid size

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/136](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/136)

#### 5.23 <BUG230> Update Status

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/137](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/137)

## 6. Enhancements

### 6.1 <ENH10 > Data Models

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/13](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/13)

### 6.2 <ENH20 > Device Name

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/11](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/11)

### 6.3 <ENH30 > Easy Mode

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/10](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/10)

### 6.4 <ENH40 > Error Handling

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/9](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/9)

### 6.5 <ENH50 > Remove Input Fields

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/8](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/8)

## 6.6 <ENH60 > Save Buttons

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/7](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/7)

## 6.7 <ENH70 > Open and Import

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/6](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/6)

## 6.8 <ENH80> Load Library Repositioning

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/40](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/40)

## 6.9 <ENH90> Mode Indicator

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/41](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/41)

## 6.10 <ENH100> Remove About

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/42](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/42)

## 6.11 <ENH110> Attributes Button

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/43](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/43)

## 6.12 <ENH120> Remove Interface Class Library

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/44](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/44)

## 6.13 <ENH130> Remove Column

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/45](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/45)



#### 6.14 <ENH140> Remove Table Display

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/46](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/46)

#### 6.15 <ENH150> Edit Data Types

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/47](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/47)

#### 6.16 <ENH160> Delete Option

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/48](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/48)

#### 6.17 <ENH170> Remove Textfields

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/49](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/49)

#### 6.18 <ENH180> Information Texts

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/50](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/50)

#### 6.19 <ENH190> Dialog

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/51](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/51)

#### 6.20 <ENH200> Adding Interfaces

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/53](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/53)

#### 6.21 <ENH210> Add Table

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/54](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/54)

## 6.22 <ENH220> AML Files

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/57](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/57)

## 6.23 <ENH230> Attachments

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/58](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/58)

## 6.24 <ENH240> Dark Light Mode

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/61](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/61)

## 6.25 <ENH250> Title Bar

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/63](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/63)

## 6.26 <ENH260> Update Tables

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/64](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/64)

## 6.27 <ENH270> Replace List View

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/70](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/70)

## 6.28 <ENH280> About Dialog

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/73](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/73)

## 6.29 <ENH290> Filename

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/76](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/76)

### 6.30 <ENH300> Unsaved Changes

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/77](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/77)

### 6.31 <ENH310> Value Validation

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/78](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/78)

### 6.32 <ENH320> Start Dialog

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/79](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/79)

### 6.33 <ENH330> Add Role Class

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/85](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/85)

### 6.34 <ENH340> Visual Loading

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/88](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/88)

### 6.35 <ENH350> Save Options

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/89](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/89)

### 6.36 <ENH360> Automatic Expansion

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/112](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/112)

### 6.37 <ENH370> NavBar Icons

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/113](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/113)

## 6.38 <ENH380> Back Arrow

[https://github.com/robinziegler/TINF21C\\_Team4\\_Modelling\\_Wizard\\_Improvements/issues/116](https://github.com/robinziegler/TINF21C_Team4_Modelling_Wizard_Improvements/issues/116)

## 7. References

[1] [https://github.com/H4CK3R-01/TINF20C\\_ModellingWizard\\_Devices/wiki/1.-Software-Requirements--Specification#UC3](https://github.com/H4CK3R-01/TINF20C_ModellingWizard_Devices/wiki/1.-Software-Requirements--Specification#UC3)

[2] Software Engineering lessons by Markus Rentschler and Christian Holder

## 8. Glossary

AML	Automation Markup Language is an open standard data format for storing and exchanging plant planning data
AMLX	AML Package
CAEX	Computer-Aided Engineering Exchange
EDZ	EPLAN Electric P8 Data Archive Zipped File
GSD	General Station Description
GUI	Graphical User Interface
IODD	Input/Output Device Description