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System Test Report

(TINF21C, SWE)

Project: Modelling Wizard Improvements

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Change History

Version	Date	Author	Comment
0.1	01.05.2023	Robin Ziegler	Initial Setup
0.2	03.05.2023	Robin Ziegler	Testcase changes
1.0	10.05.2023	Robin Ziegler	Complete Draft

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1. Introduction

The STR (System Test Report) documents the results of testing the Modelling Wizard. The tests are derived of the STP.

The STR contains the Testcases and their results.

Testing the Modelling Wizard was done by Robin Ziegler.

1.1 Scope

The tests check the fulfillment of the requirements from the SRS in the software. The tests check whether the functional and non-functional requirements are covered by the implemented functions.

1.2 Glossary

TC Testcase

TS Test suite

TD Test data

GUI Graphical User Interface

Req Requirement

1.3 Product names and attributes

The following test objects must be verified:

Ref.-Id.	Product Number	Product Name	Product Description
1	Build v1.0.0	Standalone Modelling Wizard	Windows Standalone Application with a GUI

2. Testcases

2.1 Naming conventions

Test suite = <TS-**TS_number**>

Testcase = <TC-**TS_number-TC_number**>

Test data = <TD-**TS_number-TC_number**>

2.2 Tests

<TS-001> User interaction with Data

<TC-001-001> Create new device

Testcase-ID:	**TC-001-001**
Testcase-Name:	Create new device
Req.-ID:	NF11, NF12, LF14, LF15
Description	The test case verifies that the application can create a new device.

Step	Action	Expected result	Acutal result
1	Open the Application Modelling Wizard.	Application starts without problems.	Application starts without any errors.
2	Create a new device by clicking "Create new File".	In "System Classes" should be one device with the name "AutomationComponent".	App creates new device, named "AutomationComponent". It also loads the standard parameter data.
3	Click on the "Add System Unit Class"-Button in "System Classes". Expand the tree view and check one device and then click "Add".	A dialog should be opened. After clicking on "Add" the selected devices should be added into "System Unit Class" and the dialog should be closed.	Dialog for choosing a System Unit Class is opened, selecting one and pressing "Add" appends the selected class to the System Classes. The Dialog closes after selection

<TC-001-002> Edit attribute of device

Testcase-ID:	**TC-001-002**
Testcase-Name:	Edit attribute of devices
Req.-ID:	NF11, NF12, LF14
Description	The test case verifies that the application can create a new device.

Step	Action	Expected result	Acutal result
1	Open the Application Modelling Wizard.	Application starts without problems.	Application starts without any errors.
2	Create a new device by clicking "Create new File".	In "System Classes" should be one device.	App creates new device, named "AutomationComponent". It also loads the standard parameter data.
3	Open the "AutomationComponent". Open the expander with the name "IdentificationData" Now change the value of Manufacturer in the right grid. Then select another attribute in the grid and change the value of this attribute.	The user input should be accepted and displayed correctly in the grid.	The user input is accepted. Under "Value" the user can see the provided input.

<TC-001-003> Add attachment

Testcase-ID:	**TC-001-003**
Testcase-Name:	Add attachment to device
Req.-ID:	NF11, NF12, LF14
Description	The test case verifies that the application can add a new attachment to a device.

Step	Action	Expected result	Acutal result
1	Open the Application Modelling Wizard.	Application starts without problems.	Application starts without any errors.
2	Create a new device by clicking "Create new File".	In "System Classes" should be one device with the name "AutomationComponent".	App creates new device, named "AutomationComponent". It also loads the standard parameter data.
3	Open the "Attachments" in the menu bar.	The Attachments menu item should now be highlighted with a blue line.	A blue line is visible beneath the "Attachements" menu item.
4	Now press "Add Attachment" and select the file.	The file explorer will be opened. After selecting the file, the file name should be listed in the application.	The App opens the Explorer, so that the user can select the wanted Attachement. After selecting, the Attachment is shown on the left side.

Test data: TD-001-003

Dataset	File	Validation
1	139059_Festo_Automatisierung_Prozessventile_WhitePaper_DE142460_202005_V01.pdf	valid

Dataset	Test Result
1	Pass

<TC-001-004> Change the theme

Testcase-ID:	**TC-001-004**
Testcase-Name:	Change the theme
Req.-ID:	NF11, NF12
Description	The test case verifies that the application can change the colour theme.

Step	Action	Expected result	Acutal result
1	Open the Application Modelling Wizard.	Application starts without problems.	Application starts without any errors.
2	Create a new device by clicking "Create new File".	In "System Classes" should be one device with the name "AutomationComponent".	App creates new device, named "AutomationComponent". It also loads the standard parameter data.
3	Click on the "Options" in the menu bar and click on "Darkmode" or "Lightmode" depending on your actual theme.	The theme of the application should be changed.	When clicking "Darkmode", "Lightmode" respectively the theme of the Modelling Wizard changes
4	Open the "System Classes", "Interfaces", "Role Classes" and "Attachments" and compare the design with the expected design pattern.	The colour theme should be used in every menu. In Darkmode the text colour should be white and the background light grey. In lightmode the background should be white and the text colour should be black.	Theme is in the expected coloration. Theme is consistent in the different menu options.

<TC-001-005> Load a new valid library

Testcase-ID:	**TC-001-005**
Testcase-Name:	Load a new valid library
Req.-ID:	NF11, LF15
Description	The test case verifies that the application can load a new aml-library.

Step	Action	Expected result	Acutal result
1	Open the Application Modelling Wizard.	Application starts without problems.	Application starts without any errors.
2	Create a new device by clicking "Create new File".	In "System Classes" should be one device with the name "AutomationComponent".	App creates new device, named "AutomationComponent". It also loads the standard parameter data.
3	Click "Libraries" in the menu bar, then "Add library".	The explorer should be opened.	App opens the explorer.
4	Select the library file to import it.	The library should be loaded into the Application and displayed in the list under "Libraries" in the menu bar.	The library is loaded and can be found under the "Libraries" menu item.

Test data: TD-001-005

Dataset	File	Validation
1	valid/IndustrialSensorLibrary_v1_0_0.aml	valid

Dataset	Test Result
1	Pass

<TS-002> File operations

<TC-002-001> Loading of a valid file with validation

Testcase-ID:	**TC-002-001**
Testcase-Name:	Loading of a valid file with validation
Req.-ID:	LF11, LF12, NF12
Description	The test case verifies that the application can load a valid file.

Step	Action	Expected result	Acutal result
1	Open the Application Modelling Wizard.	Application starts without problems.	Application starts without any errors.
2	Select a valid input file for the validation, by selecting "Open File", and then choose the file in explorer.	The validation is executed successfully, and the file is loaded completely and correctly without error message.	Selecting "Open File" opens the Explorer where the user can select the wanted file.
3	Check that the data has been interpreted correctly. Compare the expected data with the data in "System Unit Class" and their "Attributes", also compare the data in "Interfaces" and "Role Classes".	All data should be displayed readable and correctly.	Data is loaded correctly

Test data: TD-002-001

Dataset	File	Validation
1	valid/MURR.4000-73000-0200000.amlx	valid
2	valid/MVK MPNIO DI6 DO6 IOL2 IRT PP-55516.amlx	valid

Dataset	Test Result
1	Pass
2	Pass

<TC-002-002> Export of a valid device in a file with validation

Testcase-ID:	**TC-002-002**
Testcase-Name:	Export of a valid device in a file with validation
Req.-ID:	LF11, LF12, NF12, LF14, LF16
Description	The test case verifies that the application can export a valid file.

Step	Action	Expected result	Acutal result
1	Open the Application Modelling Wizard.	Application starts without problems.	Application starts without any errors.
2	Select a valid input file for the validation, by selecting "Open File".	The validation is executed successfully, and the conversion is completed correctly without error message.	Selecting a valid file opens it succesfully, no errors messages are shown.
3	Edit some attributes in "System Unit Class", be sure to add some new attributes and change some old ones.	Changes are displayed correctly. In the title bar the text changed from "saved" to "unsaved".	After editing the attributes, changes are shown correctly. The title bar shows "unsaved".
4	Click on "File" and select "Save", select location in the file explorer and save file.	Valid file can be saved without errors and filename is generated automatically by manufacturer and product code.	File name was generated automatically. The right manufacturer and product code was used.
5	Open the new file in the Application and check if the changes were applied correctly and the file is still valid.	File opened without error and changes of the attributes are displayed correctly.	Saved File could not be opened displaying error message.

Test data: TD-002-002

Dataset	File	Validation
1	valid/MURR.4000-73000-0200000.amlx	valid
2	valid/Murrelektronik_7000-40021-6340500.amlx	valid
3	valid/MVK MPNIO DI6 DO6 IOL2 IRT PP-55516.amlx	valid

Dataset	Test Result
1	Fail: Changed file could not be opened again!
2	Fail: Changed file could not be opened again!
3	Fail: Changed file could not be opened again!

<TS-003> Error Handling

<TC-003-001> Loading of an invalid file with validation

Testcase-ID:	**TC-003-001**
Testcase-Name:	Loading of an invalid file with validation
Req.-ID:	LF11, LF12, LF13
Description	The test case verifies that the application can validate a file and find invalid files by opening.

Step	Action	Expected result	Acutal result
1	Open the Application Modelling Wizard.	Application starts without problems.	Application starts without any errors.
2	Select an invalid input file for the validation, by selecting "Open File", and then choose the file in explorer.	The validation is executed successfully, and the file is not loaded. The User get a message about the error.	Validation is succesful, the file was not loaded by the App and an error message was displayed.

Test data: TD-002-001

Dataset	File	Validation
1	invalid/7000-40041-5770150.amlx	invalid
2	invalid/7030-12361-1261000.amlx	invalid
3	invalid/MURR.8000-88010-3570500.amlx	Invalid

Dataset	Test Result
1	Pass
2	Pass
3	Pass

<TC-003-002> Export of an invalid device in a file with validation

Testcase-ID:	**TC-003-002**
Testcase-Name:	Export of an invalid device in a file with validation
Req.-ID:	LF11, LF12, LF13, LF14, LF16
Description	The test case verifies that the application can handle a wrong input from the user and that it informs the user right.

Step	Action	Expected result	Acutal result
1	Open the Application Modelling Wizard.	Application starts without problems.	Application starts without any errors.
2	Select a valid input file for the validation, by selecting "Open File" or create a new file by "New file"	The validation is executed successfully, and the conversion is completed correctly without error message.	Selecting "Open File" opens the Explorer where the user can select the wanted file.
3	Delete the manufacturer of the first element in "System Unit Class" under "IndentificationData".	An orange warning sign appears at the upper right edge of the application. Hovering over the ICON displays the error message.	The background of the Manufaturer changes to orange and a warning icon appears in the upper right corner. Hovering over it displays the error message.
4	Click on "File" and select "Save".	The file cannot be saved, and the application should show a message with the reason.	When clicking save an error message appears not letting the user save the invalid file.

Test data: TD-003-002

Dataset	File	Validation
1	valid/Murrelektronik_7000-40021-6340500.amlx	valid

Dataset	Test Result
1	Pass

3. Summary

Testcases <TC-001-001> to <TC-002-001> and <TC-003-001> were succesfully tested and no problems were found within the App, "Modelling Wizard v1.0.0".
Testcase <TC-002-002> has shown that there are issues with saving a file. For future versions this must be made a priority.