Content

1. Introduction

1.1 Purpose

This document is a test plan for the Modelling Wizard for Cables, produced by the System Test Manager. It describes the testing strategy and approach to testing the QA Team will use to verify that the application meets the established requirements of the System Requirement Specification to release.

1.2 Objectives

Application - meets the System Requirement Specification and System Architecture Specification, - satisfies the business purpose - satisfies the testing thresholds laid out in this document

1.3 Definitions

TC: Test Case

TS: Test Suite

TD: Test Data

AML: Automation Markup Language

CAEX: Computer Aided Engineering Exchange (Dateityp)

STR: System Test Report

STP: System Test Plan

1.4 Product Names and Attributes

Ref.-ID	Product Number	Product Name	Product Description
1	V 0.9 (Commit e04822c)	Modelling Wizard for Cables	Program which can be used to view AML cable files, showing cable attributes. Also allows editing of these attributes.

2. Functional Scope

The functions in the scope of testing for the Modelling Wizard for Cables are specified in the System Requirement Specification. The results of testing produce the System Test Report.

3. Features

Req.-ID	Functionality	Priority	TS ID
LF10:	Allows for displaying the available cables as cable overview list	A	TS-001, TS-002
LF20:	Allows for navigating through the application by clicks on different areas	A	TS-002
LF30:	Allows for filtering the display list by certain cable attributes	A	TS-002
LF40:	Allows for deleting cables from the display list	B	TS-003
LF50:	Allows for filtering the display list by cable name	A	TS-002
LF60:	Allows for viewing cable details	A	TS-002, TS-003
LF70:	Allows for saving edited cables	A	TS-003
LF80:	Allows for exporting cables as CAEX 2.15 or CAEX 3.0 AML files	A	TS-003

4. Overall Strategy and Approach

4.1 Testing Strategy

The Modelling Wizard for Cables will be tested for all user-facing functionalities that are in scope (refer to Functional Scope section). Testing will include new functionalities, work flows, functionality access and testing of external interfaces. Data verification is taken care of by logic both in the front and back end, evaluating API-functionality alone is not in scope for this project.

4.2 System Testing Entrance Criteria

In order to start system testing, the application has to be deemed ready for evaluation by the development team.

4.3 Test Preparation

The creation of tests will be application case-based. Three main application cases can be identified, the Local installation, Overview & Navigation and Cable Editing.

The Local Installation is the smallest application case. It is necessary to make sure, that the program works properly when installed and hosted on a local machine. The other test cases use the version hosted on a webserver, as it is assumed that the local version is safer and less error prone.

The Overview and Navigation is another application case, that ensures a safe and user-friendly navigation through the app. It also ensures, that the filter options work as intended, because without a good overview the navigation would not work as intended.

The last main application case is the Cable Editing itself. Whenever the user wants to create a cable, work on an existing one or delete any cable, the system should respond correct and save the changes to its database as that is the core feature of the Modelling Wizard.

4.4 Testing Types

4.4.1 Usability Testing

User interface attributes, cosmetic presentation and content will be tested for accuracy and general usability. The goal of Usability Testing is to ensure that the User Interface is comfortable to use and provides the user with consistent and appropriate access and navigation through the functions of the application (e.g., access keys, consistent filter view, readable fonts etc.)

4.4.2 Functional Testing

The objective of this test is to ensure that each element of the component meets the functional requirements as outlined in the System Requirement Specification:

- functional requirements
- business goals or conditions
- other functional documents produced during the course of the project i.e. resolution to issues/change requests/feedback

4.5 Suspension Criteria and Resumption Requirements

This section will specify the criteria that will be used to suspend all or a portion of the testing activities on the items associated with this test plan.

4.5.1 Suspension Criteria

Testing will be suspended if the incidents found will not allow further testing of the Wizard. If testing is halted, and changes are made to the front end or back end, it is up to the Testing Manager to determine when the test plan will be re-executed.

4.5.2 Resumption Requirements

Resumption of testing will be possible when the functionality that caused the suspension of testing has been retested successfully.

4.6 Test Data

Test data requirements are drawn up based on the functional requirements that are due for testing. The System Test Manager will identify test cases that can be grouped into test scenarios and detail the data required to complete the testing activities.

5. Execution Plan

5.1 Testsuite <TS-001: Local installation>

5.1.1

Testcase ID:	TC-001-001
Testcase Name:	Access front end on local machine
Req.-ID:	LF10
Description:	This test cases verifies that the application can run on a local machine

Test Steps:

Step	Action	Expected result
1	Execute the front end and back end and open the front end webpage at localhost.	The front end cable display list is displayed.

5.2 Testsuite <TS-002: Overview and Navigation>

5.2.1

Testcase ID:	TC-002-001
Testcase Name:	Filtering of displayed cables
Req.-ID:	LF10 LF30 LF50
Description:	This test cases verifies that not all cables are displayed all the time and that the user can be sure that a cable with the specified parameters really does not exist if the display list is empty

Test Steps:

Step	Action	Expected result
1	Open front end	Display list presents itself
2	Enter a string into the search bar	Display list narrows down to only show cables which names contain the search string.
3	Enter an attribute value in the appropriate field below the search bar and choose whether cables where the attribute is unknown should be shown	Display list further narrows down to only show cables which also fit the attributes provided.

Testdata: TD-002-001

Index	Cablename	Length
1	BCC M415-M415-3A-312-PX0534-020	200
2	BCC M415-M415-3A-312-PX0534-035	350
3	BCC M313-M313-30-300-EX43T2-050	500

Dataset	Searchstring	Attributes
1	M41	<empty>
2	<empty>	Length: Minimum: 300
3	🍆	<empty>
4	M41	Length: Minimum: 300

5.2.2

Testcase ID:	TC-002-001
Testcase Name:	Accessing cable details view by clicking on overview cable
Req.-ID:	LF20
Description:	This test cases verifies that the intended functionality of the cable editor can be accessed by the user.

Test Steps:

Step	Action	Expected result
1	Open front end	Display list presents itself
2	Click on cable name or image	Cable details are presented to the user

5.2.3

Testcase ID:	TC-002-003
Testcase Name:	Accessing overview list by browser back button and GUI
Req.-ID:	LF20 LF60
Description:	This test cases verifies that the user can return to the cable overview list in order to view or edit another cable.

Test Steps:

Step	Action	Expected result
1	Open front end	Display list presents itself
2	Open cable details view by clicking on a cable	Cable details are displayed
3	Click on specified button	Cable overview list is again presented to the user

5.3 Testsuite <TS-003: Cable Editing>

5.3.1

Testcase ID:	TC-003-001
Testcase Name:	Create new cable based on user specified input
Req.-ID:	LF70
Description:	This test cases verifies that the user can create their own cable based on the attributes and specifications they want.

Test Steps:

Step	Action	Expected result
1	Open front end	Display list presents itself
2	Click on add button	Cable editor is presented to the user
3	Input cable data	Cable data is shown in editable form to the user, cable is not yet saved.
4	Hit save button	Cable is saved and now available in the cable overview list.

Testdata: TD-003-001

Based on the cables by the manufacturer Balluff GmbH. The cable names given below reference the underlying cable models, which are recreated using the Cable Wizard.

Dataset	Cablename	altered Attributes
1	none	all values default

Dataset	Cablename	altered Attributes
2	none	all values 0
3	BCC M314-M414-3E-304-PX0434-035	none
4	BCC M425-M314-3F-304-VX44T2-010	Height: <empty>

5.3.2

Testcase ID:	TC-003-002
Testcase Name:	Edit details of existing cable with valid data
Req.-ID:	LF60, LF70
Description:	This test cases verifies that the user can edit existing cables to their satisfaction. They can remove single connectors, etc. as long as the data stays valid.

Test Steps:

Step	Action	Expected result
1	Open front end	Display list presents itself
2	Click on cable to be edited	Cable details present themselves
3	Click on attribute or specification list	List containing attributes or specifications opens
4	Enter test data into the field	Field now contains edited data
5	Hit save button	Cable is saved and now available in the cable overview list.

Testdata: TD-003-002

Based on the cables by the manufacturer Balluff GmbH. The cable names given below reference the underlying cable models, which were recreated using the Cable Wizard. The finished cables have then been altered by the listed attribute(s).

Dataset	Cablename	Changed Attributes
1	BCC M314-M414-3E-304-PX0434-035	Width: 10, Height: 10
2	BCC M313-M413-3E-300-PW3334-015	Weight: 20
3	BCC M324-M414-3E-304-VX8434-100	Manufacturer: LAPP Kabel

5.3.3

Testcase ID:	TC-003-003
Testcase Name:	Edit details of existing cable with invalid data
Req.-ID:	LF60, LF70
Description:	This test cases verifies that changes made by the user, that do not conform to the demanded data model can not be saved.

Test Steps:

Step	Action	Expected result
1	Open front end	Display list presents itself
2	Click on cable to be edited	Cable details present themselves
3	Click on attribute or specification list	List containing attributes or specifications opens
4	Enter test data into the field	Field now contains edited data
5	Hit save button	Error message is presented to the user informing them that the provided information is invalid.

Testdata: TD-003-003

The cables from TD-003-002 are used again, but this time the attributes are changed to an invalid value.

Dataset	Used Cable File	Changed Attributes
1	BCC M314-M414-3E-304-PX0434-035	Width: -15, Height: -20
2	BCC M313-M413-3E-300-PW3334-015	Weight: Madagaskar
3	BCC M324-M414-3E-304-VX8434-100	Connect Pins and Wires to non existant respectives

5.3.4

Testcase ID:	TC-003-004
Testcase Name:	Export cable as AML
Req.-ID:	LF80
Description:	This test cases verifies that the user can export created, unmodified and edited cables as an AML file according to CAEX 2.15 and CAEX 3.0.

Test Steps:

Step	Action	Expected result
1	Open front end	Display list presents itself
2	Click on cable to be downloaded	Cable details present themselves
3	Click on the download button for specified CAEX version	Cable is downloaded to user machine

Testdata: TD-003-004

Dataset	Cablename	CAEX Version
1	"BCC M415-M415-3A-312-PX0534-035"	2.15
2	"BCC M415-M415-3A-312-PX0534-035"	3.0

5.3.5

Testcase ID:	TC-003-005
Testcase Name:	Remove entire cable
Req.-ID:	LF40
Description:	This test cases verifies that the user can safely delete unwanted cables.

Test Steps:

Step	Action	Expected result
1	Open front end	Display list presents itself
2	Click on cable to be deleted	Cable details present themselves
3	Click on the delete button	Cable is deleted from disk and user is returned to display list.

Testdata: TD-003-005

Dataset	Cablename
1	"BCC M313-M313-30-300-EX43T2-050"

6. Defect Reporting

6.1 Defect Tracking

GitHub Issues will be used to keep track of any failed tests.

6.2 Defect Reporting and Reports

Defects will be reported by the System Test Manager to the Front End Development Team and Back End Development Team directly via arbitrary communication channel.

6.3 Defect Management Process

Defects discovered by testing will be fixed by the respective development team, status reports are delivered in the regularly scheduled meetings.

6.4 Defect Severity Definitions

Critical | The defect causes a catastrophic or severe error that results in major problems and the functionality rendered is unavailable to the user. A manual procedure cannot be either implemented or a high effort is required to remedy the defect. Examples of a critical defect are as follows:

- System abends
- Data cannot flow through a business function/lifecycle
- Data is corrupted or cannot post to the database

Medium | The defect does not seriously impair system function can be categorized as a medium Defect. A manual procedure requiring medium effort can be implemented to remedy the defect. Examples of a medium defect are as follows:

- Form navigation is incorrect
- Field labels are not consistent with global terminology

Low | The defect is cosmetic or has little to no impact on system functionality. A manual procedure requiring low effort can be implemented to remedy the defect. Examples of a low defect are as follows:

- Repositioning of fields on screens
- Text font on reports is incorrect

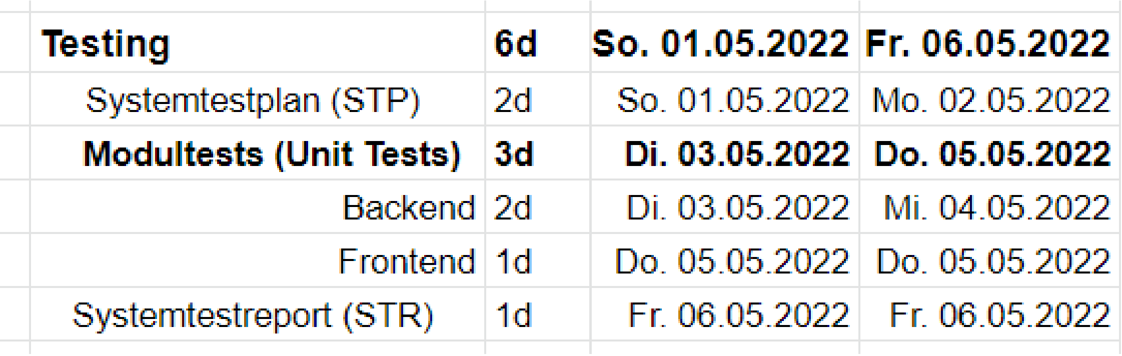
7. Environment

7.1 Environment

System tests will be conducted by cloning the most recent status of the git repository, running the code in a suitable program environment and loading the front end in various browsers of choice. Then, inputs are taken and any unexpected behavior noted.

8. Test Schedule and Budget

System testing is scheduled for a period of one week starting 2022-05-01 to 2022-05-06. The System Test Manager will complete the execution of all the tests during the first week. The defects retesting will occur in the last day of System Testing. The run dates for defect retesting period may be changed according to the need to retest and close the defects. The defects retesting will reduce the number of open defects to a minimum, a complete closure of all defects should be strived towards but is not strictly necessary, as long as the defects are not critical.



Testing	**6d**	**So. 01.05.2022**	**Fr. 06.05.2022**
Systemtestplan (STP)	2d	So. 01.05.2022	Mo. 02.05.2022
Modultests (Unit Tests)	**3d**	**Di. 03.05.2022**	**Do. 05.05.2022**
Backend	2d	Di. 03.05.2022	Mi. 04.05.2022
Frontend	1d	Do. 05.05.2022	Do. 05.05.2022
Systemtestreport (STR)	1d	Fr. 06.05.2022	Fr. 06.05.2022

schedule

No budget is required as all tests are all performed by hand.

9. Who to Call List

Please mail the Test Manager for contact with the Test Manager who will forward your questions.

10.Appendices

Based on DoIT-TestPlan