# Test Plan
# “SWT21 lab kit”

# Revision History

| Date | Version | Description | Author | Customer |
|---|---|---|---|---|
| 06/June/2021 | 1.0 | Created Test Plan for CAN subsystem in “SWT21 lab kit” device | Maria Markova | Joachim Lublin |
| 28/June/2021 | 1.1 | Added changes (Team size, test types) | Maria Markova | Joachim Lublin |
| 29/June/2021 | 1.2 | Added changes (Test schedule, team members responsibilities) | Maria Markova | Joachim Lublin |
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# Summary

# 1. Introduction

## 1.1. General information

This document describes methods, strategy and plan that will be used by the Markova testing team in the functional and non-functional testing processes of the industrial test equipment “SWT21 lab kit”.

Testing will be based on these core features:

1. “SWT21 lab kit” sends information to CAN bus.
2. “SWT21 lab kit” receives information from CAN bus.

This document contains all the information about approaches and methodologies, resources and testing team needs to reach bullets above.

# 2. Test strategy

## 2.1. Scope of work

1. Study documentation (user manual)
2. Write test plan
3. Plan approval by testing team
4. Design and execute static testing
5. Design and execute functional manual test cases
6. Design and execute unit tests
7. Report Bugs
8. Create Test Result Report
9. Present Test Results (send to customer)

#### 2.1.1. Components and commands to be tested

| # | Component name | Functions | Description |
|---|---|---|---|
| 6 | CAN commands | can help | The user sees the description and capabilities of the component. |
| | | can send | The user sends information to the CAN bus using the component. |
| | | can rx | The user receives information from the CAN bus using the component. |

## 2.2. Feature not to be tested

These feature will not be tested because they are not included in the software requirement specification:

1. GUI
2. Security

## 2.3. Test types

In the project “SWT21 lab kit”, there are 4 types of testing that should be conducted.

1. CAN subsystem Testing
   2.1. CAN subsystem Functional Testing (Functional Manual)
   2.2. CAN Unit Testing
   2.3. Compatibility testing (Windows, Mac OS)

2. Static testing
   2.1. User manual
   2.2. SRC code
   2.3. Access to labkit

# 3. Test Resources

## 3.1. Test team

| # | Project Role | Name | Location | Responsibilities |
|---|---|---|---|---|
| 1 | Tester | Maria Markova | Lund, Sweden | Development of unit tests, execution and generation of bug reports |
| 2 | Tester | Jan Abrahamsson | Ed, Sweden | Development of manual test cases, execution and generation of bug reports |
| 3 | Reviewer | Muhammad Obaid Ullah Khan | Växjö, Sweden | Development of static testing, review process |
| 4 | Manager | Devrim Kadiroglu | Göteborg, Sweden | Jira management, organizing |
| 5 | Support | Yasir Hussain | Sweden | Team support |

### 3.2. Test hardware

| # | Resource | Hardware configuration | Software configuration |
|---|---|---|---|
| 1 | SWT21 lab kit | Standart | 1.1 Joachim´s firmware |
| 2 | PC | RAM: 4 Gb | Win 10 64 bit |
| 3 | Macbook pro | M1 chip | iOS 11.4 |
| 4 | USB-C adapter | Deltaco USBC-1266 | - |

### 3.3. Test tools

| # | Tool | Comment |
|---|---|---|
| 1 | Jira | Kanban board. |
| 2 | Google docs | ❖ Creating test-cases<br>❖ Documentation<br>❖ Reports |
| 3 | Visual Studio Code | To write unit tests |
| 5 | GIT | To store unit tests and documentation |

### 3.4. Test documentation

| # | Title | Responsible person | Frequency (delivery time) | Method of delivery |
|---|---|---|---|---|
| 1 | Test Plan | Maria Markova | Once before the testing start | Google docs itslearning.com |
| 2 | Functional Manual Test Cases | Jan Abrahamsson | Before the testing start | Google docs |
| 3 | Unit tests cases | Maria Markova | Before the testing start | Google docs |
| 4 | Static test cases | Muhammad Obaid Ullah Khan | Before dynamic testing start | Google docs |
| 5 | Bug Reports | Maria Markova, Obaid Ullah Khan, Jan Abrahamsson | Upon finding a bug | Google docs |
| 6 | Test Result Report | Maria Markova, Obaid Ullah Khan, Jan Abrahamsson | Once after the testing finish | Google docs |

Method of delivery may be changed after customer comments.

# 4. Test Criteria

| | |
|---|---|
| **Equipment** | Testing according to the Test Plan is possible if the following equipment is available:<br>❖ The “SWT21 lab kit”.<br>❖ PC with USB port<br>❖ Macbook pro with USB-C adapter. |
| **Entry Criteria** | The tester will start the test execution when all of the following inputs are ready<br>❖ Necessary devices, instruments, and other equipment are acquired.<br>❖ Software is available for testing.<br>❖ Test Specification is created.<br>❖ Test Environment is working.<br>❖ Two testers are available. |
| **Completion Criteria** | ❖ All the planned tests are performed.<br>❖ There are no show-stoppers.<br>❖ All found errors are reported.<br>❖ The test results are evaluated, discussed and approved. |

## 4.1. The criteria of quality

- ❖ The product should operate in accordance with the requirements and the functional specification (if present).
- ❖ The product should not contain critical and blocking defects in the final version of the project.
- ❖ All necessary artifacts collected: test cases and bug reports.

## 5. Testing Process Risks

The following risks may jeopardize testing:

- Test plan not approved by customer;
- The test device was not acquired or did not arrive on time;
- The project schedule is too tight;
- The Team member lacks the required skills for testing the device;
- Problems in the test equipment. Breakdown of computer hardware;
- Delays in bug-fixing.

## 6. Test schedule

| # | Activity | Work content | Deadline dates | Workers |
|---|---|---|---|---|
| 1 | Study device manual | 1 day | 06/06/2021 | Maria, Jan, Obaid, Devrim, Yasir |
| 2 | Write Test Plan | 1 day | 06/06/2021 | Maria |
| 3 | Test Plan review (static testing) | 2 days | 29/06/2021 | Obaid |
| 4 | Download test environment | 1 day | 28/06/2021 | Maria |
| 5 | Check Entry criteria | 1 day | 28/06/2021 | Maria, Jan, Obaid |
| 6 | Write manual test cases | 2 days | 29/06/2021 | Jan |
| 7 | Design unit tests | 2 days | 29/06/2021 | Maria |
| 8 | Execute manual testing | 1 day | 30/06/2021 | Jan |
| 9 | Execute unit tests | 1 day | 30/06/2021 | Maria |
| 6 | Write bug report | 1 day | 30/06/2021 | Maria, Jan |
| 7 | Create Test Result Report | 1 day | 30/06/2021 | Maria, Jan |
| 8 | Present Test Results | 1 day | 01/07/2021 | Maria, Jan, Obaid, Devrim |