Test plan

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Status

Examined		
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TSRT71 Automatic control project   ©Lips
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Document history

Version	Date	Changes	Sign	Reviewed
0.1	060404	First draw	AL	AJ
0.2	060504	Small changes	AL	AJ, CL
1.0	060519	Approved as version 1.0	J.HOL	

1   Introduction

The *General Aviation* (GA) aircraft fleet has become very old (40+ year old aircrafts are now very common) thanks to reliable air frames and rapidly increasing prices of new light aircraft. A vast majority of these aircrafts are equipped with old-fashioned mechanical flight instruments, now reaching the end of their lifetime as the air frames become older. Instead of performing a complete upgrade of the entire instrument panel, which can result in costs often exceeding the value of the entire aircraft, one can complete the system with a much more affordable Micro EFIS. A Micro EFIS is, as the name implies, a small EFIS (*Electronic Flight Information System*), targeted for the GA market. It is intended as a backup system for the mechanical flight instruments.

1.1   Function of the test plan

The purpose of this document is to state which basic tests that will be performed on the different subsystems and on the entire system. These tests are performed to insure that all requirements in the requirement- and design-specification are met.

1.2   Structure of the test plan

The project is divided into the following subsystems; OLED unit, HSI/ADI/ESI display modes, setup mode, and a rotary switch unit. This test plan is divided into tests which are divided after the different subsystems. There will also be tests performed on the entire system. Each subsystem and the entire system will have a chapter on their own.

1.3   Presentation of the tests in this document

The tests that will be performed shall be presented in the following way.

Test no x	Responsible	Description of test	Week
Test no 1			

1.4   Failured tests

If a test failures the responsible for this test shall, on their own or together with concerned members in the group, decide if the test is incorrect or if the requirements in the requirement- and designspecification not are attainable.

If a test has failed because one or several requirements in the requirement-
and designspecification not are attainable, a negotiation with customer and
supervisor shall take place.

1.5   Delimitation

This document does not present what makes a test successful, that is up to
the responsible for the test to decide on the basis of the requirements in the
requirement- and designspecification.

2   HSI display mode

Test no x	Responsible	Description of test	Week
Test no 1	AL, CL	Initializer can send data to OLED unit.	w.14
Test no 2	AL, CL	HSI display mode can send data to OLED unit.	w.16
Test no 3	AL, CL	HSI display mode can interact with the sensor unit, without DBUS.	w.16
Test no 4	AL, CL	HSI display mode can interact with the sensor unit, with DBUS.	w.18

3   ADI display mode

Test no x	Responsible	Description of test	Week
Test no 5	AL, CL	Initializer can send data to OLED unit.	w.14
Test no 6	AL, CL	ADI display mode can send data to OLED unit.	w.16
Test no 7	AL, CL	ADI display mode can interact with the sensor unit, without DBUS.	w.16
Test no 8	AL, CL	ADI display mode can interact with the sensor unit, with DBUS.	w.18

4   ESI display mode

Test no x	Responsible	Description of test	Week
Test no 9	VG, ML	ESI mode activates RTC and reads correctly from it.	w.17

5   Setup mode

Test no x	Responsible	Description of test	Week
Test no 10	VG, ML	Setup mode activates RTC and read correctly from it.	w.14
Test no 11	VG, ML	Setup mode writes correctly to RTC.	w.17

6   Rotary switch unit

Test no x	Responsible	Description of test	Week
Test no 12	VG, ML	Turns and pushes correctly decoded.	w.14
Test no 13	VG, ML	The button sends stable, bounce free signals	w.18

7   OLED unit

Test no x	Responsible	Description of test	Week
Test no 14	AJ, MJ	Data transmitter can receive data and output it according to specification.	w.10
Test no 15	AJ, MJ	Data receiver works according to specification.	w.13
Test no 16	AJ, MJ	Data character outputs the rigtht signals.	w.14
Test no 17	AJ, MJ	Initiator sends correct data on reset.	w.15
Test no 18	AJ, MJ	Contrast works according to specification.	w.16
Test no 19	AJ, MJ	Clear works according to specification	w.16
Test no 20	AJ, MJ	The OLED module works according to specification.	w.17

8   Entire system

Test no x	Responsible	Description of test	Week
Test no 21	AL, CL, ML, VG	Only one mode can be active at any point in time.	w.17
Test no 22	AL, AJ, CL, MJ	HSI display mode can interact with OLED unit	w.18
Test no 23	AL, AJ, CL, MJ	ADI display mode can interact with OLED unit	w.18
Test no 24	AJ, MJ, ML, VG	ESI display mode can interact with OLED unit	w.18
Test no 25	AJ, MJ, ML, VG	Setup mode can interact with OLED unit	w.18
Test no 26	ALL	HSI display mode, ADI display mode, ESI display mode, Setup mode and Rotary switch can interact with OLED unit.	w.18

A   Test protocol

This protocol is used during a simulation test. The responsible for the test
fills in the protocol and gives it to the test responsible.

Refer to test number:_____

Description of test:_____

_____

_____

Short description of how the test was performed:_____

_____

_____

Responsible for the test:_____

Test result:

First occation   [ ] Approved   [ ] Failed
                                  Comment:_____
                                  Date:_____

Second occation   [ ] Approved   [ ] Failed
                                  Comment:_____
                                  Date:_____

Third occation   [ ] Approved   [ ] Failed
                                  Comment:_____
                                  Date:_____

Remaining comments:_____

_____

_____

_____

References

[1] Tomas Svensson & Christian Krysander, *Projektmodellen Lips*, kompendium, Linköpings Tekniska Högskola, Version 1.2.

[2] George Grätzer, *Math into LATEX*, Birkhäuser, 1996.

[3] Jan-Erik Strömberg, *Requirement specification – Micro EFIS*, DST Control, MEFIS/Doc/Spec/R0543S01.fm, version 1.0.0.