Software Validation Test Specification
Practica4
Cooling Car System
Temperature Task

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Test Log

Functionality	Baseline Reference	Target Software Release Version
LID $64 and $65	Baseline #1.9.1	Release Version2.0
Software Tester	Department	Date of Test Completion
Tester Name	Dept. Software	12/04/2018

List of Changes

Ver. (X.Y)	Date (YYYY-MM-DD)	Maturity (**D**raft/ **V**alid/ **W**ithdrawn)	Author (Name/Departm.)	Description
#1.2	2018-0418	Draft	Chiara Gutierrez, Omar Misael Curiel Niehus, Ricardo Emilio	Creation

CONTENTS

1 Introduction

Change the scheduler putting a diferent kind of task that allow to monitor the temperature of a system. Depends of this parameters enable a fan that's cool the system.
That function emulate a cooling car system and prevent heat problems .

1.1 Change Description

The cooling and heat control added in the scheduler, with a define priority in each case. Depending the important of the task, its set in a time laps that runs every define time without delays.

1.2 Solution Approach

First we lookout the scheduler code to know how it works, then make a task and a function that's allows to simulate the heat with a potentiometer in way to measure the resistance and simulated a heat sensor.

2 Abbreviations and Definitions

SWDP	Software Development Plan
SWAD	Software Architecture and Design Document
SDD	Software Design Document
SRS	Software Requirement Specification
STS	Software Test Strategy
MTS	Module Test Specification
ITS	Integration Test Specification
VTS	Validation Test Specification

Add any other needed

Project specific abbreviations and definitions:

CAN	Controlled Area Network
ECU	Electronic Control Unit
SW	Software

Add any other needed

3 References

No.	Document Name	Date/ Revision	Link (if applicable)
1	Kinetics KL25Z manual and data sheet		
2	Potenciometer data shee		
/R1/	Reference 3		
/R2/	Reference 4		
/R3/	Reference 5		

4 Test case formalism

A simple numeration system is used to identify the Test Cases.

4.1 Test case number

Numbering system	Positive Integer numbers starting with 1 are used to identify the Test Cases
Inserted test cases	The steps of each Test Cases use also positive integer numbers. ie, 1.2 indicates Test Case #1, step 2.

4.2 Variant Management

Many tests do not apply to all variants of the product. Column V of the test form indicates applicable variants for each test.

Column V	Associated variant
A	All variants
U	US variant
E	European variant

4.3 Regression Tests Identifier

Each test case is assigned a level that is in column R of the test form:

Column R	Definition	When to be executed
	Nominal Test Case	Test cases for tests of modified or new SW modules/files
R	Regression Tests Cases	Subset of test cases for regression tests of unmodified / unaffected SW modules

4.4 Test Type Identifier

A column T permits to identify the type of the test:

Column N	Meaning
	Positive Tests
N	Negative tests for checking robustness

5 Functionality References & Traceability

5.1 Functionality Overview

Description of functionality	Cooling system
Reference to SRS / Version	2.0
Rating [when risk analysis required]	Medium
Test completeness criteria	

6 Test Environment

This chapter defines the test environment. In case of several specific configurations the description effort can be reduced this way.

6.1 Hardware

No.	Description
PC	PC Laptop

6.2 Software

No.	Description
Win10	Windows 10
MCU	MCUXpreso 10.1.1.

6.3 Test Environment

No.	HW Configuration	SW Configuration	EEPROM-Parameter	Description
1	KL25Z	MCUXpreso 10.1.1.		

6.4 Default Preconditions

6.5 Relevant Input & Output Definitions

Inputs and outputs are specified within the procedure of each test case.

Test Case Specification (Systematic and Intuitive)

6.6 Test Procedures

Backward-Traceability								
Test Environment					Standard			
Test Configuration					MCUXpresso IDE			
TC-Identifier	**V**	**R**	**N**	**Description**	**Precondition**	**Test procedures**	**Expected results**	**Ok/ Nok Comments /description**
All the hardware correctly connected								
1					Led Connected	**1.1-** Led 1 conection	1.1 Led On	OK
						1.2- Led 2 conection	1.2 Led On	OK
						1.3- Led 3 conection	1.3 Led On	OK
						1.4- Led 4 conection	1.4 Led On	OK

						1.8- Test procedure	Expected result for procedure 1.8	OK (Pass)/F (Fail)
Any general precondition for testcase 2								
2					Potentiometer connected	**2.1-** ADC working	Expected result for procedure 2.1 Values changes as the potentiometer increase or decrees	OK
Main task test								
3					Stadart mode works	**Tested with values between low minimum danger and hi minimum danger**	Expected result for procedure 3.1 Standart mode still working, no changes	OK
					Safe mode works	**Tested with values between low max danger and hi max danger**	Expected result for procedure 3.2 Safe mode ON	OK
					Fan work at 50%	**Enable low danger limit over standard mode**	Expected result for procedure 3.3 Fan On at 50%	OK
					Fan work at 100%	**Enable hi danger limit over standard mode**	Expected result for procedure 3.4 Fan On at 100%	OK (
					Heating at 50%	**Enable low danger limit under standard mode**	Expected result for procedure 3.5	OK
					Heating at 100%	**Enable hi danger limit under standard mode**	Expected result for procedure 3.6	OK

7 Test Report

SW VALIDATION TEST REPORT	Date (dd/mm/yyyy)
	12/04/2018

PRODUCT

Project name	**Practica 4**
Functionality	**Cooling car system**
SW Tested Baseline (ccaavtMMmm)	
Test specification name	**Cooling system**
Work Package Reference	

TEST ENVIRONMENT

Test bench release report (link to file)	
Test environment deviations	

GENERAL TEST RESULTS

***Estimated test time** (hours):*	**1**	***Final test time** (hours):*	**40 min**
Existing number of tests:	**11**	***Number of planned tests*** *Subset of existing test according to STS*	**11**
Number of performed tests:	**11**	***Number of tests not done:***	**0**
Number of deviations:	**0**	***Number of failed tests:***	**0**

Test performed by (first name, last name - department)	Test approved by (first name, last name - department)
Chiara Gutierrez , Omar Misael B&S Curiel Niehus, Ricardo Emilio B&S	**Stephen Hawking Test department**

Test Status Abbreviations:	***OK***	***- test result correct (passed)***
	F	***- test failed***
	C	***- test procedure/description complaint***
	N/A	***- not applicable***

Tests not done – Reasons

Test No.	Reason

Failed Tests (default for all anomalies)

Test No.	Result Observed	CR number/ After submission to CS

Test deviations (proven incorrect/unclear test specification only)

Test No.	Wrong description	Corrected description	CR number Optional

Other comments: