

Description Of Overall Test Plan

Our tests include tests of individual components and their accuracy as well as tests for integration of multiple components. Our LAN tests focus on the presence of a Local Area Network in the car and the network connection between components. PA tests focus on the Parent App that will alarm parents if they leave their child in the car. WSEN tests focus on the ability to detect the presence of a child in the backseat. SBELT tests focus on the ability to sense the presence of an adult in the car. FS tests are Full System tests that require all components to be working properly.

Test Case Descriptions

LAN 1.1	LAN Connection Existence Test
LAN 1.2	This test will make sure the LAN is up and running
LAN 1.3	Using a laptop in the car, we will look for our LAN in the list of wireless connections.
LAN 1.4	There are no inputs for this test
LAN 1.5	Expected results: we can see our LAN listed in the list of networks
LAN 1.6	Normal
LAN 1.7	Blackbox
LAN 1.8	Functional
LAN 1.9	Unit Test

Result: Test passed as expected.

LAN 2.1	Weight Sensor LAN Connection Test
LAN 2.2	This test will make sure the weight sensor is on the network
LAN 2.3	We will ssh to the weight sensor board and ping the router (192.168.0.1)
LAN 2.4	Inputs: ip address of another host on the network
LAN 2.5	Expected outputs: console output showing successful ping
LAN 2.6	Normal
LAN 2.7	Blackbox
LAN 2.8	Functional
LAN 2.9	Integration Test

Result: Test passed as expected.

PA 1.1	Parent App Alarm test
--------	-----------------------

PA 1.2	This test will make sure the parent app can successfully trigger an alarm on their phone
PA 1.3	This will be a unit test in the repo of the parents app. It will trigger an alarm
PA 1.4	Program will run unit test
PA 1.5	Alarm will trigger on virtual phone
PA 1.6	Abnormal
PA 1.7	Whitebox
PA 1.8	Functional
PA 1.9	Unit test

Result: Notification is shown instead of a full alarm.

PA 2.1	App connection test
PA 2.2	This test will make sure the alarm can communicate with the weight sensor
PA 2.3	A phone with the parent app will be placed in the car. The parent app will be opened and the app will notify the user when a connection to the weight sensor has been made.
PA 2.4	weight sensor
PA 2.5	App notifies user that connection has been made
PA 2.6	Normal
PA 2.7	Whitebox
PA 2.8	Functional
PA 2.9	Integration

Result: Test passes as expected.

WSEN 1.1	Weight Sensor Empty Test
WSEN 1.2	Evaluates the weight sensor's accuracy when a baby is not in the car
WSEN 1.3	No child prop will be placed in the car. We will ssh into the weight sensor and check whether it senses enough weight to think that a baby is in the car
WSEN 1.4	the lack of weight on the scales is the input
WSEN 1.5	Should return a negative result when asked if a child is in the car
WSEN 1.6	Normal
WSEN 1.7	Blackbox
WSEN 1.8	Functional
WSEN 1.9	Unit

Result: Test usually passes. Sometimes there is a false positive. Implementation was updated to compensate.

WSEN 2.1	Weight Sensor Loaded Test
WSEN 2.2	Evaluates the weight sensor's ability to sense the weight of a child
WSEN 2.3	A child prop will be placed in the car. We will ssh into the weight sensor and check whether it sense enough weight to think that a baby is in the car

WSEN 2.4	The weight from the prop on the scales
WSEN 2.5	Expecting a positive result when asked if a child is in the car
WSEN 2.6	Normal
WSEN 2.7	Blackbox
WSEN 2.8	Functional
WSEN 2.9	Unit

Result: Test passes as expected

SBELT 1.1	Parent Seatbelt Not clicked
SBELT 1.2	this test will test the systems accuracy of detecting an absent adult
SBELT 1.3	With no one in the car we will ssh to the board detecting adult presence and query whether an adult is in the car
SBELT 1.4	Abscense of adult in car
SBELT 1.5	System reports that no adult is in the car
SBELT 1.6	Normal
SBELT 1.7	Blackbox
SBELT 1.8	Functional
SBELT 1.9	Unit

Result: Fail. Design Changes phased out the seatbelt sensor.

SBELT 2.1	Parent Seatbelt clicked
SBELT 2.2	This will test the system's accuracy of detecting an adult in the car
SBELT 2.3	Someone will sit down in the car with the seatbelt buckled. We will query the system for whether an adult is in the car
SBELT 2.4	The presence of an adult
SBELT 2.5	The system reports that an adult is present
SBELT 2.6	Normal
SBELT 2.7	Blackbox
SBELT 2.8	Functional
SBELT 2.9	Unit

Result: Fail. Design Changes phased out the seatbelt sensor.

FS 1.1	No Alarm Test
FS 1.2	Test will make sure false alarms don't happen
FS 1.3	Baby prop will be placed in car, then removed from car.
FS 1.4	Weight of baby prop on weight sensor
FS 1.5	Outputs: none. Alarm should not trigger.
FS 1.6	Normal
FS 1.7	Whitebox
FS 1.8	Functional
FS 1.9	Integration

Result. Test passes as expected

FS 2.1	Alarm Test
FS 2.2	this test will send out a alarm if the child is in the back seat and the parent is not in the car
FS 2.3	alarm will go off if parent is missing from the car and the baby is still in the car
FS 2.4	parent connection and baby connection
FS 2.5	alarm triggered if connection for baby registers for it being present in the back seat and the parent connection is missing from front seat
FS 2.6	Abnormal
FS 2.7	Whitebox
FS 2.8	Functional
FS 2.9	Integration

Result Test passes as expected**Test Case Matrix**

	Normal/ Abnormal	Blackbox/ Whitebox	Functional/ Performance	Unit/ Integration
LAN 1	Normal	Blackbox	Functional	Unit
LAN 2	Normal	Blackbox	Functional	Integration
PA 1	Normal	Whitebox	Functional	Unit
PA 2	Normal	Whitebox	Functional	Integration
WSEN 1	Normal	Blackbox	Functional	Unit
WSEN 2	Normal	Blackbox	Performance	Unit
SBELT 1	Normal	Blackbox	Functional	Unit
SBELT 2	Normal	Blackbox	Functional	Unit
FS 1	Normal	Whitebox	Functional	Integration

FS 2	Abnormal	Whitebox	Functional	Integration
------	----------	----------	------------	-------------