HMI Framework Test Case

This document shows what kinds of test was done for the following modules.

- Home screen
- Window manager
- Sound manager

System testing

For these tests, sample applications which are contained in home screen's source tree are used as test program. These samples based on CES2017, and changed for new home screen, window manager and sound manager.

Screen transition

Start Window manager and Sound manager, Show the Home screen

Pre condition:

1. Power off.
2. All HMI framwork related software must be installed properly.

Test cases:

#	Current screen	Operation	Expected result	Result
1	Power off	Turn on the board	Window manager will start	V
2	Power off	Turn on the board	Sound manager will start	V
3	Power off	Turn on the board	Home screen will appear	V

*) These tests will be tested at same time.

**) The Home screen consist status bar, four shortcut icons, control bar and nine application icons.

Launch the application by app icon on the Home screen

Pre condition:

1. After boot-up, and the Home screen is shown.

Test cases:

#	Current screen	Operation	Expected next screen	Result
1	Home screen	Touch Media player icon	Media player	V
2	Home screen	Touch Radio icon	Radio	V
3	Home screen	Touch Navi icon	Simple EGL	V

*) Regarding #3, Navi icon is reused for another application. Simple EGL is used for test of native weston application.

Switch the application by shortcut buttom

Pre condition:

1. After boot-up, and the Home screen is shown.

2. Since this test is for "Swiching", so each application must be launched in advance.

Test cases:

#	Current screen	Operation	Expected next screen	Result
1	Home screen	Touch Media player shortcut	Media player	V
2	Home screen	Touch Radio shortcut	Radio	V
3	Home screen	Touch Navi shortcut	Simple EGL	V
4	Media player	Touch Media player shortcut	Media player	V
5	Media player	Touch Radio shortcut	Radio	V
6	Media player	Touch Navi shortcut	Simple EGL	V
7	Media player	Touch Home screen shortcut	Home screen	V
8	Radio	Touch Media player shortcut	Media player	V
9	Radio	Touch Radio shortcut	Radio	V
10	Radio	Touch Navi shortcut	Simple EGL	V
11	Radio	Touch Home screen shortcut	Home screen	V
12	Simple EGL	Touch Media player shortcut	Media player	V
13	Simple EGL	Touch Radio shortcut	Radio	V
14	Simple EGL	Touch Navi shortcut	Simple EGL	V
15	Simple EGL	Touch Home screen shortcut	Home screen	V

Note: Screen transion point of view, the test result is good, but we find un-stable phenomena in general.

Sound transition

Transition between audio-off and basic sound

Pre condition:

1. After boot-up, and the Home screen is shown.

Test cases:

#	Current screen	Current FL, FR, RL, RR	Operation	Expected next screen	Expected FL, FR, RL, RR	Result
1.1	Home screen	Off, Off, NA, NA	Touch Media player icon	Media player	Off, Off, NA, NA	V
1.2	After #1.1	After #1.1	Touch Play button	Media player	MP, MP, NA, NA	V
1.3	After #1.2	After #1.2	Touch Stop button	Media player	Off, Off, NA, NA	V
2.1	Home screen	Off, Off, NA, NA	Touch Radio icon	Radio	Off, Off, NA, NA	V
2.2	After #2.1	After #2.1	Touch Play button	Radio	Radio, Radio, NA, NA	V
2.3	After #2.2	After #2.2	Touch Stop button	Radio	Off, Off, NA, NA	V

Note: We will test for Radio in few days.

Transition between basic sound and another basic sound

Pre condition:

1. After boot-up, and the Home screen is shown.

Test cases:

#	Current screen	Current FL, FR, RL, RR	Operation	Expected next screen	Expected FL, FR, RL, RR	Result
1.1	Home screen	Off, Off, NA, NA	Touch Media player icon	Media player	Off, Off, NA, NA	V
1.2	After #1.1	After #1.1	Touch Play button	Media player	MP, MP, NA, NA	V
1.3	After #1.2	After #1.2	Touch Radio shortcut	Radio	MP, MP, NA, NA	V
1.4	After #1.3	After #1.3	Touch Play button	Radio	Radio, Radio, NA, NA	V
2.1	Home screen	Off, Off, NA, NA	Touch Radio icon	Radio	Off, Off, NA, NA	V
2.2	After #2.1	After #2.1	Touch Play button	Radio	Radio, Radio, NA, NA	V
2.3	After #2.2	After #2.2	Touch Media player shortcut	Media player	Radio, Radio, NA, NA	V
2.4	After #2.3	After #2.3	Touch Play button	Media player	MP, MP, NA, NA	V

Note: We will test for Radio in few days.

Transition between basic sound and interrupt sound

Pre condition:

1. After boot-up, and the Home screen is shown.
2. Paring with mobile phone has been completed.
3. Laucn phone application in advance

Test cases:

#	Current screen	Current FL, FR, RL, RR	Operation	Expected next screen	Expected FL, FR, RL, RR	Result
1.1	Home screen	Off, Off, NA, NA	Touch Media player icon	Media player	Off, Off, NA, NA	V
1.2	After #1.1	After #1.1	Touch Play button	Media player	MP, MP, NA, NA	V
1.3	After #1.2	After #1.2	Call from external phone	Media player	Ring, Ring, NA, NA	-
1.4	After #1.3	After #1.3	Touch Home screen shortcut	Home screen	Ring, Ring, NA, NA	-
1.5	After #1.4	After #1.4	Touch Phone icon	Phone	Ring, Ring, NA, NA	-
1.6	After #1.5	After #1.5	Touch Off-hook button	Phone	Tel, Tel, NA, NA	-
1.7	After #1.6	After #1.6	Touch On-hook button	Phone	MP, MP, NA, NA	-

Note: Since Setting application wasn't ported to new window manager, so it's impossible to make the pre-condition. This test was skipped.

Status bar

Bluetooth icon

Pre condition:

1. After boot-up, and the Home screen is shown.
2. Any Bluetooth device have not pared yet. At that time, The connected status icon of bluetooth is toned down.

Test cases:

#	Current screen	Operation	Expected next screen	Result
1.1	Home screen	Touch Settings icon	Settings	-
1.2	After #1.1	Touch Bluetooth sub menu	Bluetooth sub menu	-
1.3	After #1.2	Touch target test device	Some blue connected icon appear on Bluetooth status icon	-

*) Since Settings application wasn't ported to new Window manager for testing so to/from Settings transition wasn't tested. In other word, bacause it is impossible to do the paring operation of bluetooth, the connected status icon of bluetooth wasn't tested.

Integration testing

The below listed API and events were tested by sample application.

Window manager

API calling

#	API name	Result	Note
1	init	V	
2	requestSurface	V	
3	activateSurface	V	
4	deactivateSurface	V	
5	endDraw	V	
6	set_event_handler	V	

Event receiving

#	Event name	Result	Note
1	Event_Active	V	
2	Event_Inactive	V	
3	Event_Visible	V	
4	Event_Invisible	V	

#	Event name	Result	Note
5	Event_SyncDraw	V	
6	Event_FlushDraw	V	

Sound manager

API calling

#	API name	Result	Note
1	connect	V	
2	disconnect	V	
3	setVolume	-	
4	volumeStep	-	
5	setSinkMuteState	-	
6	getListMainConnections	-	
7	registerSource	V	
8	ackSetSourceState	V	
9	set_event_handler	V	
10	subscribe	V	
11	unsubscribe	V	
12	register_callback	V	

Event receiving

#	Event name	Result	Note
1	newMainConnection	-	
2	removedMainConnection	-	
3	mainConnectionStateChanged	-	
4	volumeChanged	-	
5	sinkMuteStateChanged	-	
6	setRoutingReady	-	
7	asyncConnect	-	
8	asyncSetSourceState	V	
9	asyncDisconnect	-	

Home screen

API calling

#	API name	Result	Note
1	on_screen_message	V	
2	tapShortcut	V	
3	subscribe	V	
4	unsubscribe	-	
5	registerCallback	V	

Event receiving

#	Event name	Result	Note
1	tap_shortcut	V	
2	on_screen_message	V	

#	Event name	Result	Note
1	tap_shortcut	V	
2	on_screen_message	V	