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AllJoyn™ Lighting Service Framework Lamp Service 14.12 Validation Test Case Specifications

April 09, 2015

Contents

1 Introduction

1.1 Purpose

When an OEM implements the Lighting Service Framework Lamp Service on a device, it is desirable to ensure that that implementation is consistent with the Lamp Service Interface Specification before certification. These test cases verify the functionality of an implementation of the AllJoyn™ Lighting Service Framework Lamp Service exposed by a device through the Lamp Service 14.12 interface.

1.2 Scope

These test cases are designed to determine if a device conforms to the Lamp Service interface specifications. Successful completion of all test cases in this document does not guarantee that the tested device will interoperate with other devices.

1.3 References

The following are reference documents

- *AllJoyn™ Lighting Service Framework Lamp Service 14.12 Interface Specification*
- *AllJoyn™ About Feature 14.12 Interface Specification*

2 Environment setup

2.1 Requirements

The following are required in order to execute these test cases:

- An AllJoyn-enabled device (the device under test, or DUT) that supports the AllJoyn Lamp Service
- A supported test device (Android phone or tablet) on which the test cases will run
- A Wi-Fi access point (referred to as the personal AP)

2.2 Preconditions

Before running these test cases, it is assumed that:

- The DUT is connected to the personal AP
- The test device is connected to the personal AP
- At least one process on the DUT is announcing its capabilities through its About announcement, including its support for the Lamp Service interface

2.3 Parameters

Table 1. Parameters for the Lamp Service

Parameter	Description
DeviceId	Device ID of the DUT
AppId	Application ID of the System application on the DUT (application implementing the Lamp Service interface)

3 Lamp Service test cases

3.1 LSF_Lamp-v1-01: Service Interface Version equals 1

Objective

Verify whether the Service Interface Version of the DUT's System App (the application supporting the Lamp Service interface) is equal to 1.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getVersion() property on the LampService bus object.
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The interface version returned from the getVersion property equals 1.
  - If not equal to 1, the test fails
  - If a bus exception occurs, the test fails.
  - Otherwise, the test case passes.

3.2 LSF_Lamp-v1-02: Lamp Service Version equals 1

Objective

Verify whether the Service Version of the DUT's System App (the application supporting the Lamp Service interface) is equal to 1.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getLampServiceVersion() property on the LampService bus object.

4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The version returned from the getLampServiceVersion property equals 1.
  - If not equal to 1, the test fails
  - If a bus exception occurs, the test fails.
  - Otherwise, the test case passes.

3.3 LSF_Lamp-v1-03: ClearLampFault() method

Objective

Verify that calling the getLampFaults() method before and after calling the ClearLampFault() method does not cause a bus exception.

Note: ClearLampFault is an OEM-specific function. Therefore this test does not attempt to verify that the fault was actually cleared.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getLampFaults() method on the bus object
4. The test device calls the ClearLampFault() method on the bus object
5. The test device calls the getLampFaults() method on the bus object
6. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The getLampFaults() method returns an array containing fault codes for the application on the DUT.

3.4 LSF_Lamp-v1-04: SetOnOff() property

Objective

Verify that calling the getOnOff() property, after calling the setOnOff() property, returns the appropriate value .

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the setOnOff() property on the bus object providing the value ‘true’.
4. The test device calls the getOnOff() property on the bus object.
5. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The setOnOff() property is executed.
- The getOnOff() property returns the value ‘true’

3.5 LSF_Lamp-v1-05: SetHue() property

Objective

Verify that calling the getHue() property, after calling the setHue() property, returns the appropriate value .

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the setHue() property on the bus object providing the value 100.
4. The test device calls the getHue() property on the bus object.
5. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The setHue() property is executed.
- The getHue() property returns the value 100.

3.6 LSF_Lamp-v1-06: SetSaturation() property

Objective

Verify that calling the getSaturation() property, after calling the setSaturation() property, returns the appropriate value .

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the setSaturation() property on the bus object providing the value 100.
4. The test device calls the getSaturation() property on the bus object.
5. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The setSaturation() property is executed.
- The getSaturation() property returns the value 100

3.7 LSF_Lamp-v1-07: SetColorTemp() property

Objective

See if the DUT supports variable color property. If it does, verify that calling the getColorTemp() property, after calling the setColorTemp() property, returns the appropriate value .

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getVariableColorTemp() method.
4. If true, the test device calls the setColorTemp() property on the bus object providing the value 100.
5. The test device calls the getColorTemp() property on the bus object.
6. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- If the getVariableColorTemp() method returns ‘true’, the setColorTemp() property is executed.
- If the getVariableColorTemp() method returned ‘true’, the getColorTemp() property returns the value 100.

3.8 LSF_Lamp-v1-08: SetBrightness() property

Objective

See if the DUT supports dimmable property. If it does, verify that calling the getBrightness() property, after calling the setBrightness() property, returns the appropriate value .

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getDimmable() property.
4. If true, the test device calls the setBrightness() property on the bus object providing the value 100.
5. The test device calls the getBrightness() property on the bus object.
6. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- If the getDimmable() property returns ‘true’, the setBrightness() property is executed.
- If the getDimmable() property returned ‘true’, the geBrightness() property returns the value 100.

3.9 LSF_Lamp-v1-09: TransitionLampState and verify state

Objective

Verify that calling the TransitionLampState() method on the bus object complies with the interface, and thus does not result in a BusException.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device registers a signal handler with the AllJoyn framework .
4. The test device calls the TransitionLampState() method on the bus object with the timestamp set to the current time, a transition period of 10, onOff true, brightness 10, hue 20, saturation 30, colorTemp 40
5. The test device calls getHue() property on the bus object
6. The test device calls getSaturation() property on the bus object
7. The test device calls getColorTemp() property on the bus object
8. The test device calls getBrightness() property on the bus object
9. The test device calls getOnOff() property on the bus object
10. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The brightness field returned from the getBrightness() property equals 10.
- The hue field returned from the getHue() property equals 20.

- The saturation field returned from the getSaturation() property equals 30.
- The colorTemp field returned from the geColorTemp() property equals 40.

3.10 LSF_Lamp-v1-10: ApplyPulseEffect

Objective

Verify that calling the ApplyPulseEffect() method on the bus object will return success.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls ApplyPulseEffect() method with

   fromOnOffValue = **true**;

   fromBrightnessValue = 10;

   fromHueValue = 20;

   fromSaturationValue = 30;

   fromColorTempValue = 40;

   toOnOffValue = **true**;

   toBrightnessValue = 11;

   toHueValue = 22;

   toSaturationValue = 33;

   toColorTempValue = 44;

   startTimestamp = System.currentTimeMillis() / 1000L;

   period = 100;

   duration = 200;

   numPulses = 3;
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the ApplyPulseEffect() method on the bus object returns success.

3.11 LSF_Lamp-v1-11: Service Interface XML Matches

Objective

Verify that using introspection to retrieve each interface definition on the bus object matches exactly the XML file maintained by the test suite. A successful match means that no interfaces have been added nor removed.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test compares the introspected interface definition with its stored XML file.
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The introspected interface definition matches the Lamp Service XML maintained with the validation test.

3.12 LSF_Lamp-v1-12: Parameters Interface Version equals 1

Objective

Verify whether the Parameters Interface Version of the DUT's System App (the application supporting the Lamp Service interface) is equal to 1.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getVersion() property on the LampParameters bus object.
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.

- The test device joins a session with the application at the port specified in the received About announcement.
- The interface version returned from the getVersion property equals 1.
  - If not equal to 1, the test fails
  - If a bus exception occurs, the test fails.
- Otherwise, the test case passes.

3.13 LSF_Lamp-v1-13: GetEnergyUsageMilliwatts

Objective

Verify that calling the GetEnergyUsageMilliwatts() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getEnergy_Usage_Milliwatts() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getEnergy_Usage_Milliwatts() property on the bus object does not cause a bus exception.

3.14 LSF_Lamp-v1-14: GetBrightnessLumens

Objective

Verify that calling the GetBrightness_Lumens() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.

3. The test device calls the getBrightness_Lumens() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getBrightness_Lumens() property on the bus object does not cause a bus exception.

3.15 LSF_Lamp-v1-15: Details Interface Version equals 1

Objective

Verify whether the Details Interface Version of the DUT's System App (the application supporting the Lamp Service interface) is equal to 1.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getVersion() property on the LampDetails bus object.
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The interface version returned from the getVersion property equals 1.
  - If not equal to 1, the test fails
  - If a bus exception occurs, the test fails.
- Otherwise, the test case passes.

3.16 LSF_Lamp-v1-16: GetMake

Objective

Verify that calling the GetMake() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getMake() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getMake() property on the bus object does not cause a bus exception.

3.17 LSF_Lamp-v1-17: GetModel

Objective

Verify that calling the GetModel() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getModel() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getModel() property on the bus object does not cause a bus exception.

3.18 LSF_Lamp-v1-18: GetType

Objective

Verify that calling the GetType() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getType() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getType() property on the bus object does not cause a bus exception.

3.19 LSF_Lamp-v1-19: GetLampType

Objective

Verify that calling the GetLampType() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getLampType() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.

- The call to the getLampType() property on the bus object does not cause a bus exception.

3.20 LSF_Lamp-v1-20: GetLampBaseType

Objective

Verify that calling the GetLampBaseType() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getLampBaseType() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getLampBaseType() property on the bus object does not cause a bus exception.

3.21 LSF_Lamp-v1-21: GetLampBeamAngle

Objective

Verify that calling the GetLampBeamAngle() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement
3. The test device calls the getLampBeamAngle() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getLampBeamAngle() property on the bus object does not cause a bus exception.

3.22 LSF_Lamp-v1-22: GetDimmable

Objective

Verify that calling the GetDimmable() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement
3. The test device calls the getDimmable() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getDimmable() property on the bus object does not cause a bus exception.

3.23 LSF_Lamp-v1-23: GetColor

Objective

Verify that calling the GetColor() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.

3. The test device calls the getColor() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getColor() property on the bus object does not cause a bus exception.

3.24 LSF_Lamp-v1-24: GetVariableColorTemp

Objective

Verify that calling the GetVariableColorTemp() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getVariableColorTemp() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getVariableColorTemp() property on the bus object does not cause a bus exception.

3.25 LSF_Lamp-v1-25: GetLampID

Objective

Verify that calling the GetLampID() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.

2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement
3. The test device calls the getLampID() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getLampID() property on the bus object does not cause a bus exception.

3.26 LSF_Lamp-v1-26: GetHasEffects

Objective

Verify that calling the GetHasEffects() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getHasEffects() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getHasEffects() property on the bus object does not cause a bus exception.

3.27 LSF_Lamp-v1-27: GetMinVoltage

Objective

Verify that calling the GetMinVoltage() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getMinVoltage() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getMinVoltage() property on the bus object does not cause a bus exception.

3.28 LSF_Lamp-v1-28: GetMaxVoltage

Objective

Verify that calling the GetMaxVoltage() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getMaxVoltage() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getMaxVoltage() property on the bus object does not cause a bus exception.

3.29 LSF_Lamp-v1-29: GetWattage

Objective

Verify that calling the GetWattage() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getWattage() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getWattage() property on the bus object does not cause a bus exception.

3.30 LSF_Lamp-v1-30: GetIncandescentEquivalent

Objective

Verify that calling the GetIncandescentEquivalent() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getIncandescentEquivalent() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.

- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getIncandescentEquivalent() property on the bus object does not cause a bus exception.

3.31 LSF_Lamp-v1-31: GetMaxLumens

Objective

Verify that calling the GetMaxLumens() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getMaxLumens() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getMaxLumens() property on the bus object does not cause a bus exception.

3.32 LSF_Lamp-v1-32: GetMinTemperature

Objective

Verify that calling the GetMinTemperature() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getMinTemperature() property on the bus object

4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getMinTemperature() property on the bus object does not cause a bus exception.

3.33 LSF_Lamp-v1-33: GetMaxTemperature

Objective

Verify that calling the GetMaxTemperature() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getMaxTemperature() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getMaxTemperature() property on the bus object does not cause a bus exception.

3.34 LSF_Lamp-v1-34: GetColorRenderingIndex

Objective

Verify that calling the GetColorRenderingIndex() property on the bus object does not cause a bus exception.

Procedure

1. The test device waits to receive an About announcement from the application on the DUT.
2. After receiving an About Announcement, the test device joins a session with the application at the port specified in the received About announcement.
3. The test device calls the getColorRenderingIndex() property on the bus object
4. The test device leaves the session.

Expected results

- The test device receives an About announcement from the application on the DUT.
- The test device joins a session with the application at the port specified in the received About announcement.
- The call to the getColorRenderingIndex() property on the bus object does not cause a bus exception.