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LINK LOSS SERVICE

Abstract:

This service defines behavior when a link is lost between two devices.

Revision History

Revision	Date(yy-mm-dd)	Comments
D09r01	2010-05-05	First draft of Link Loss service
D09r02	2010-05-17	Comments from Tim Howes
D09r03	2010-05-18	Additional comments from Tim Howes
D09r04	2010-11-08	Updated following approval of Proximity UCRDD
D09r05	2010-11-17	Corrections from Victor Zhodzishsky, resolved in PUID F2F
D09r06	2010-11-18	Added GATT requirements to 1.4
D09r07	2010-11-22	Updated to match revised template from GPA WG
D09r08	2010-11-24	Minor corrections
D09r09	2010-11-25	Further correction
D09r10	2010-12-01	Comments from RH & MW, plus responses
D09r11	2010-12-02	Comments from DT, plus responses, and update from PUID call
D09r12	2010-12-02	Change from Frank
D09r13	2010-12-03	Additional change to Section 4
D09r14	2010-12-06	Additional changes from Robin
D10r01	2011-01-24	Editorial correction
D10r02	2011-03-08	Updated security statement in section3.
D10r03	2011-05-25	Updated references
D10r04	2011-06-07	Removed BR/EDR support
V10r00	2011-06-21	Adopted by the Bluetooth SIG Board of Directors

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1 Introduction

The Link Loss Service uses the Alert Level characteristic (as defined in [2]) to cause an alert in the device when the link is lost.

1.1 Conformance

If a device claims conformance to this service, all capabilities indicated as mandatory for this service shall be supported in the specified manner (process-mandatory). This also applies for all optional and conditional capabilities for which support is indicated. All mandatory capabilities, and optional and conditional capabilities for which support is indicated, are subject to verification as part of the *Bluetooth* qualification program.

1.2 Service Dependency

This service has no dependencies on other GATT-based services.

1.3 *Bluetooth* Specification Release Compatibility

This service is compatible with any *Bluetooth* Core Specification host [1] that includes the Generic Attribute Profile (GATT).

1.4 GATT Sub-Procedure Requirements

Additional GATT sub-procedure requirements beyond those required by the GATT are listed in Table 1.1:

GATT Sub-Procedure	Requirement
Write Characteristic Value	M

Table 1.1: GATT sub-procedure requirements

1.5 Transport Dependencies

This service shall operate over LE transport only.

1.6 Error Codes

This service does not define any application error codes that are used in Attribute Protocol.

2 Service Declaration

The Link Loss Service shall be instantiated as a «Primary Service». The service UUID shall be set to «Link Loss».

The UUID value assigned to «Link Loss» is defined in [2].

There shall only be one instance of the Link Loss Service on a device.

3 Service Characteristics

Characteristic	Ref.	Mandatory / Optional
Alert Level	3.1	M

Table 3.1: Service characteristics

The characteristic in **Error! Reference source not found.** shall comply with the properties in **Error! Reference source not found.**.

	Broadcast	Read	Write without Response	Write	Notify	Indicate	Signed Write	Reliable Write	Writable Auxiliaries
Alert Level	X	M	X	M	X	X	X	X	X

Table 3.2: Characteristic properties

Requirements marked with ‘M’ are mandatory, ‘O’ are optional and ‘X’ are excluded (not permitted).

This service does not impose any security requirements.

There shall be only one instance of the Alert Level characteristic in a Link Loss Service.

3.1 Alert Level

The Alert Level characteristic is used to expose the current link loss alert level that is used to determine how the device alerts when the link is lost.

3.1.1 Characteristic Behavior

The Alert Level characteristic returns the current link loss alert level when read using the GATT Characteristic Read Value procedure.

The Alert Level characteristic can be written using the GATT Write Characteristic Value sub-procedure with an alert level of either “No Alert,” “Mild Alert,” “High Alert,” to set the current link loss alert level.

4 Service Behaviors

4.1 Disconnection Behavior

When this service is instantiated in a device and the connection is lost for any reason, the device shall start alerting to the current link loss alert level.

If the current link loss alert level is “No Alert,” no alerting shall be done on this device.

If the current link loss alert level is “Mild Alert,” the device shall alert.

If the current link loss alert level is “High Alert,” the device shall alert in the strongest possible way.

The specific action that occurs in the device for the mild and high alerts is implementation specific. For example, this could include flashing lights, making noises, moving, or other methods to alert the user.

This alert continues until one of following conditions occurs:

- an implementation-specific timeout
- user interaction on this device
- the physical link is reconnected

5 Acronyms and Abbreviations

Abbreviation or Acronym	Meaning
GATT	Generic Attribute Profile
LE	Low Energy
UUID	Universally Unique Identifier

Table 5.1: Abbreviations and Acronyms

6 References

[1] *Bluetooth* v4.0 Core Specification
[2] Characteristic and Descriptor descriptions are accessible via the Bluetooth SIG Assigned Numbers web page.