Running Out of Bits

Bluetooth® Validation Specification

- **Version:** VSr00_PR
- **Version Date:** 2025-11-19
- **Prepared By:** Core Specification Working Group
- **Feedback Email:** core-main@bluetooth.org

This CR proposes changes to the following specification ("Source Specification"):

- Bluetooth Core Specification, Version 6.1

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Abstract:

This document specifies the changes to the Core Specification required to increase the number of supported Host Controller Interface (HCI) commands and events beyond the current respective limits of 512 and 60.

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1 Language

1.1 Language conventions

Refer to and follow any terminology, language conventions, and interpretation sections of the Source Specification.

2 Conventions used in this specification

The formatting and color conventions described in Table 2.1 below are used in the CR to describe the specific changes and additions that are proposed to the Source Specification(s) identified on the cover page.

Text Color	Description
black	Text that is unmodified from the Source Specification. Note: The text of the Source Specification may not be black and may contain tracked changes or other colored text that are reflected as black text in this document.
red	Text that is added to the Source Specification.
~~red strikethrough~~	Text that is deleted from the Source Specification.
[green bracketed text]	Comments that explain the changes made to the Source Specification.
[...]	Indicates the section of the Source Specification that includes additional text that is not included in black text.
blue	Default color used for section numbers and headings of this document.

Table 2.1: Color key for headings, captions, and body text

3 Changes to Source Specification

This Section sets forth the specific changes and additions, using the formatting and color conventions described in Section 2, that are proposed to the Source Specification.

3.1 Changes to Volume 4, Part E, Host Controller Interface Functional Specification

3.1.1 [Modified Section] 3 Overview of commands and events

[Modify rows of this table as shown.]

Name	Vers.	Summary Description	BR/EDR	LE
LE Set Event Mask command	4.0 TBD	The HCI_LE_Set_Event_Mask command is used to control which events are generated by the HCI for the Host.	E	[v1] M [v2] C.X+0
Read Local Supported Commands command	1.2 TBD	The HCI_Read_Local_Supported_Commands command requests a list of the supported HCI commands for the local device.	[v1] M [v2] C.X+1	[v1] M [v2] C.X+1

[Add the following conditions to the list underneath the table, in position of assigned number.]

C.X+0: Mandatory if any event assigned a bit number of 64 or above is supported, otherwise optional.

C.X+1: Mandatory if any command listed in octet 64 or above is supported, otherwise optional.

3.1.2 [Modified Section] 6.27 Supported commands

[Modify this section as shown.]

The Supported_Commands configuration parameter lists which HCI commands the local Controller supports.

The Supported_Commands is a ~~64~~251 octet bit field. If a bit is set to 1, then this command is supported.

Supported_Commands: *Size: ~~64~~251 octets*

[Amend or add rows of the table, in assigned order of octet and bit, as shown. Leave the rest of the table unchanged.]

Octet	Bit	Command Supported
25	0	HCI_LE_Set_Event_Mask [v1]

TBD	TBD	HCI_LE_Set_Event_Mask [v2]
TBD	TBD	HCI_Read_Local_Supported_Commands [v2]

[Note to reviewers: HCI_Read_Local_Supported_Commands [v1] does not appear in the table because the table is only accessible if the command is supported. In any case, the command is mandatory to support.]

3.1.3 [Modified Section] 7.4.2 Read Local Supported Commands command

[Modify the introductory table as shown.]

Command	OCF	Command Parameters	Return Parameters
HCI_Read_Local_Supported_Commands [v2]	TBD	*none*	Status, Supported_Commands
HCI_Read_Local_Supported_Commands [v1]	0x0002	*none*	Status, Supported_Commands

[Modify the Supported_Commands parameter of the Return parameters subsection as shown.]

Supported_Commands [v1]: *Size: 64 octets*

Supported_Commands [v2]: *Size: 251 octets*

[Table is unchanged.]

The [v1] command returns octets 0 to 63 of the supported commands; the [v2] command returns all octets.

3.1.4 [Modified Section] 7.8.1 LE Set Event Mask command

[Modify the introductory table as shown.]

Command	OCF	Command Parameters	Return Parameters
HCI_LE_Set_Event_Mask [v2]	TBD	LE_Event_Mask	Status
HCI_LE_Set_Event_Mask [v1]	0x0001	LE_Event_Mask	Status

[Modify the Command parameters subsection as shown.]

Command parameters:

LE_Event_Mask [v1]: *Size: 8 octets*

LE_Event_Mask [v2]: *Size: 255 octets*

[Table is unchanged.]

The value with all bits set to 0 indicates that no events are specified. The default is for just bits 0 to 4 ~~(the value 0x0000 0000 0000 001F)~~ to be set.

All bits not listed in this table are reserved for future use.

The [v1] command sets bits 0 to 63 of the event mask and leaves bits 64 and above unchanged. The [v2] command sets all the bits of the event mask.

Appendix A References

No references.