ESR05 - ERRATA SERVICE RELEASE TO
BLUETOOTH® SPECIFICATIONS

Version 4.0
Version 3.0 +HS
Core Specification Addendum 1
Version 2.1 + EDR
Version 2.0 + EDR
Profiles
Test Specification Impact

Issued
23 August 2011
Document No
V10r00
## Revision History

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<td>D05r01</td>
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| D05r02   | 2010-08-03 | 1. Second draft with input from BARB. Includes spec version numbers for those erratas that are fixed and incorporated to a specific released spec version.  
2. Includes 12 new erratas that were moved from “Test Spec rev” to ESR candidates.  
3. Deleted one duplicate Erratum.                                                                 |
| D05r03   | 2010-08-10 | 1. Received clarification for Erratas 2459, 2146, 2459, 2037, 360. These are complete now.  
2. Added AVRCP 1.3 and 1.4 erratas per request from AVV WG: 2961, 2932, 2814, 2786, 2763, 2762, 2740, 2720, 2708, 2707, 2698, 2687, 2588, 2572, 2560, 2761, 2688  
3. Note: Still need clarifications on erratas: 2861, 2551, 2424, 2859, 3112, from CSWG.  
4. Note: Still need clarifications on Errata 3085 from OBEX WG.                                                                 |
| D05r04   | 2010-08-12 | 1. Added 2 HFP errata: 2211, and 2716  
2. Postponed and removed Core Spec errata until they are clarified by the CSWG: 2861, 2551, 2424, 2859, 3112.  
3. Received clarifications for errata 3085 from OBEX WG and now is complete.                                                                 |
| D05r05   | 2010-08-30 | 1. Included all comments and recommended changes received from CS, AVV, OBEX WGs and BARB.  
2. Included 2859 after receiving clarifications from CS WG.  
3. Included both A2DP 1.2 errata 2903 and 3043 after receiving clarifications.                                                                 |
| D05r06   | 2010-10-05 | Included Various LE Generic Attribute profile, Link Layer, Attribute protocol, HDP, MCAP, FTP1.2, Architecture, and HCI errata.  
The following errata were added: 3696, 3925, 3924, 3933, 3938, 3881, 3929, 3915, 3833, 3932, 3821, 3951, 2888, 2937, 2947, 2993, 3944, 3852, 3907, 3908, 3811, 3847, 3813, 3891, 3892, 3890, 3815, 3893, 3745, 3895, 3896, 3898. |
| D05r07   | 2010-10-21 | Included Errata: 3507 (HSP1.2 SDP records), 3879 & 3931 (LE).  
Corrected erratum 3123 (MAP), and changed MAP erratum number 3664 to 3464 since 3664 does not exist.                                                                 |
| D05r08   | 2010-11-19 | 1. Fixed HCI errata: 3895  
2. Added LE errata: 3451, 3751, 3636, 3655, 3828, 3830, 3948, 3869, 4149, 4137, 3897, 3938, 4092, 4095, 4150, 3904, and 4120.                                                                 |
| D05r09   | 2010-12-01 | Added 2 minor LE errata: ATT: 4062, and GATT: 4067                                                                                          |
| D05r10   | 2011-03-15 | Added Yao Wang comments, addressed the ones I (Jimmy Salame) could, and some need WG review.  
Added AV errata: 3631, 3632, 4071                                                                                         |
Incorporated changes after Yao Wang’s comments were reviewed by CS WG and LE WG:

A. Erratum 2733 and 2849 were pulled out from this ESR version since these errata were applied in v3.0+HS spec in a different way and this would make CSA1 inconsistent with v3.0 and later.

B. Made changes accordingly to errata:
- 1867: Removed page number from table.
- 2402: Changed default value to 0x003F
- 2422: No change
- 3362: section 4.6.1.2 Changed the “replace with text” text for clarity
- 3879: No change.
- 3915: No major change, only corrected section names.
- 2664: MSCs were update for clarity
- 2967: Added Fixed in 4.0
- 3150: No change.
- 3202: No change.
- 3815: updated BR/EDR Controller to BR/EDR/LE Controller.
- 3049: Updated error in title from AVDCTP to AVDTP.

Editorial reviewed version

Adopted by the Bluetooth SIG Board of Directors

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<th>Description</th>
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</tr>
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<td>6.13.2</td>
<td>Erratum 2932 - Player initiation delay after switching addressed player on TG</td>
</tr>
<tr>
<td>6.13.3</td>
<td>Erratum 2814 - Add press and hold feature</td>
</tr>
<tr>
<td>6.13.4</td>
<td>Erratum 2786 - Tyro of notification event 'Available Players Changed'</td>
</tr>
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<td>6.13.5</td>
<td>Erratum 2763 - Clarify naming for field in Group Navigation command/response</td>
</tr>
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<td>6.13.6</td>
<td>Erratum 2762 - Clarify meaning of InformDisplayableCharacterSet</td>
</tr>
<tr>
<td>6.13.7</td>
<td>Erratum 2740 - Not clear what values to set for 'Playing times in millisecond' of GetElementAttributes</td>
</tr>
<tr>
<td>6.13.8</td>
<td>Erratum 2720 - Clarification of Error Code when Folder Item not playable</td>
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<td>6.13.9</td>
<td>Erratum 2708 - Figures 2.4 and 2.7 in Section 2.3 requires modification</td>
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<td>6.13.10</td>
<td>Erratum 2707- uidCounter parameter is missing from the example of ChangePath command</td>
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<td>6.13.11</td>
<td>Erratum 2698- Service class for CT is not just</td>
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<td>6.13.12</td>
<td>Erratum 2687- Parameter Description of Start Item parameter for GetFolderItems command is confusing</td>
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<td>6.13.13</td>
<td>Erratum 2761- Cosmetic section name fix: 4.5.1 shallshallshallmayshallSupport Level in TG</td>
</tr>
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<td>6.13.14</td>
<td>Erratum 2688- Cosmetic corrections needed for AVRCP v1.4 specification</td>
</tr>
<tr>
<td>6.14.2</td>
<td>Erratum 2037 - Allowing AT+CHLD=3 when there is an active and a waiting call contradicts 4.33.2, GSM</td>
</tr>
<tr>
<td>6.14.3</td>
<td>Erratum 2211- Mismatch between SDP/BRSF and Application Requirements for call waiting+3way calling</td>
</tr>
<tr>
<td>6.14.4</td>
<td>Erratum 2716- Response and Hold Status Reporting</td>
</tr>
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<td>6.15</td>
<td>6.15.1 Erratum 3507- Backward compatibility issue in HSP 1.2</td>
</tr>
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</tr>
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<td>Erratum 2888 - Confirmed IEEE 11073 20601 events on the first reliable channel</td>
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<td>6.18.2</td>
<td>Erratum 2947- Service Record for HDP Device</td>
</tr>
<tr>
<td>6.18.3</td>
<td>Erratum 2993- Conflict in statements for response packet format in Create command</td>
</tr>
</tbody>
</table>

7 **Test Specification Impact**
1 Core Specification Version 2.0 + EDR

1.1 Volume 2 Part C: Link Manager Protocol

1.1.1 Erratum 2986 - Should be anchor points not instants

Applies to version(s): 2.0 + EDR, 2.1 + EDR

Fixed starting with 3.0 + HS

Section: 4.6.2.6 Negotiation state definitions, page 288

[Original text states]

“(e.g. other synchronous reserved slots, sniff instants, or park beacons).”

[Replace with]

“(e.g. other synchronous reserved slots, sniff anchor points, or park beacons).”

[End of changes for Erratum 2986]

1.2 Volume 3 Part C: Generic Access Profile

1.2.1 Erratum 246 - E2604 Annex A, recommended or normative?

Applies to version(s): 2.0 + EDR, 2.1 + EDR, 3.0 + HS

Fixed starting with 4.0

Section: 9 Appendix A (Normative): Timers and constants, page 221

[Replace Table 9.1: Defined GAP timers with]

<table>
<thead>
<tr>
<th>Timer name</th>
<th>Value</th>
<th>Description</th>
<th>Requirement or recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>T_GAP(100)</td>
<td>10.24 s</td>
<td>Time span that a Bluetooth device performs device discovery.</td>
<td>Recommended value</td>
</tr>
<tr>
<td>T_GAP(101)</td>
<td>10.625 ms</td>
<td>A discoverable Bluetooth device enters INQUIRY_SCAN for at least T_GAP(101) every T_GAP(102).</td>
<td>Required value</td>
</tr>
<tr>
<td>T_GAP(102)</td>
<td>2.56 s</td>
<td>Maximum time between repeated INQUIRY_SCAN enterings.</td>
<td>Recommended value</td>
</tr>
<tr>
<td>T_GAP(103)</td>
<td>30.72 s</td>
<td>Minimum time span that a device is in discoverable mode</td>
<td>Required value</td>
</tr>
<tr>
<td>T_GAP(104)</td>
<td>1 min.</td>
<td>Maximum time span that a device is in limited discoverable mode.</td>
<td>Recommended value</td>
</tr>
<tr>
<td>T_GAP(105)</td>
<td>100 ms</td>
<td>Maximum time between INQUIRY_SCAN enterings</td>
<td>Recommended value</td>
</tr>
<tr>
<td>T_GAP(106)</td>
<td>100 ms</td>
<td>Maximum time between PAGE_SCAN enterings</td>
<td>Recommended value</td>
</tr>
</tbody>
</table>
ERRATA SERVICE RELEASE

ESR05 - Errata Service Release to Bluetooth® Specifications

<table>
<thead>
<tr>
<th>TGap(107)</th>
<th>1.28 s</th>
<th>Maximum time between PAGE_SCAN entering (R1 page scan)</th>
<th>Recommended value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TGap(108)</td>
<td>2.56 s</td>
<td>Maximum time between PAGE_SCAN enterings (R2 page scan)</td>
<td>Recommended value</td>
</tr>
</tbody>
</table>

[End of changes for Erratum 246]

1.3 Volume 1 Part A: Architecture

1.3.1 Erratum 722 - Capitalization of Coverage Area

Applies to version(s): 2.0 + EDR, 2.1 + EDR

Fixed starting with 3.0 + HS

Section: 1.2 NOMENCLATURE, Row 9, page 16

[Original text states]

"coverage area"

[Replace with]

"Coverage area"

[End of changes for Erratum 722]

1.4 Volume 2 Part C: Link Manager Protocol

1.4.1 Erratum 527 - "latency violation" is better than "not supported"

Applies to version(s): 2.0 + EDR, 2.1 + EDR, 3.0 + HS

Fixed starting with 4.0

Section: 4.6.2.5 Rules for the LMP negotiation and renegotiation, page 287

[Original text states]

"Rule 6: if the parameters cause both a reserved slot violation and a latency violation the device shall set the negotiation_state to 3 (latency violation)."

[Replace with]

"Rule 6: if the parameters cause both a reserved slot violation and a latency violation OR the parameters are not supported and cause a latency violation then the device shall set the negotiation state to 3 (latency violation)."

[End of changes for Erratum 527]
1.5 Volume 2 Part E: Host Controller Interface Functional Specification

1.5.1 Erratum 3478 - Footnote may not be useful
Section: 7.7.29 Connection Packet Type Changed Event, footnote at the bottom of table: Packet Type: for ACL_Link_Type, page 594

[Original footnote states]
"This bit will be interpreted as set to 1 by Bluetooth V1.2 or later controllers."

[Replace with]
"This bit will be set to 1 by Bluetooth V1.2 or later controllers."

[End of changes for Erratum 3478]

1.5.2 Erratum 1858 - Controller response not specified for Vendor Specific Debug commands
Applies to version(s): 2.0 + EDR, 2.1 + EDR, and 3.0 + HS
Note: Fixed starting with 4.0
Section: 5.4.1 HCI Command Packet, page 377

[Append text after the 1st “Note”]
1. A Command Status Event. If the status indicates success (section 7.7.15) then this event shall be followed by an HCI Event with Event Code field of 0xFF (section 5.4.4).
2. A Command Complete Event specifying the corresponding Vendor Specific Debug command op-code. The Host shall assume that sending of a Vendor Specific Debug command will consume an HCI Command credit."

[End of changes for Erratum 1858]

1.5.3 Erratum 1867 - Duplicate information in specification could lead to problems later
Applies to version(s): 2.0 + EDR, 2.1 + EDR, 3.0 + HS, and 4.0

1.5.3.1 Section: 7.1.27 Accept Synchronous Connection Request Command, in the initial table, Column “Command Parameters” page 442

[Original text states]
"Content_Format"

[Replace with]
"Voice_Settings"

Section: 7.1.27 Accept Synchronous Connection Request Command, in the 2nd and 3rd paragraphs of the “Description” section, page 442
[Original text states]
"Content_Format"

[Replace with]
"Voice_Settings"

1.5.3.2 Section: 7.1.27 Accept Synchronous Connection Request Command, in the “Command Parameters” section, page 444

[Original text states]
"Content_Format"

[Replace with]
"Voice_Settings"

1.5.3.3 Section: 7.1.27 Accept Synchronous Connection Request Command, table Content_format, page 444

[Replace table with]

<table>
<thead>
<tr>
<th>Value</th>
<th>Parameter Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>See Section 6.12</td>
</tr>
</tbody>
</table>

[End of changes for Erratum 1867]

1.6 Volume 3 Part A: Logical Link Control and Adaptation Protocol Specification

1.6.1 Erratum 908 - MTU in positive Configure Response must be \( \geq 48 \) bytes

Applies to version(s): 2.0 + EDR, 2.1 + EDR, CSA1, and 3.0 + HS

Note: Fixed starting with 4.0

1.6.1.1 Section: 5.1 Maximum Transmission Unit (MTU), Paragraph 5, page 58

[Original text states]
“If the remote device sends a positive configuration response it shall include the actual MTU to be used on this channel for traffic flowing into the local device. This is the minimum of the MTU in the configuration request and the outgoing MTU capability of the device sending the configuration response. The new agreed value (the default value in a future re-configuration) is the value specified in the request.”

[Replace with]
“If the remote device sends a positive configuration response it should include the actual MTU to be used on this channel for traffic flowing into the local device. Following the above rules, the actual MTU cannot be less than 48 bytes. This is the minimum of the MTU in the configuration request and the outgoing MTU
capability of the device sending the configuration response. The new agreed value (the default value in a future re-configuration) is the value specified in the response.”

[End of changes for Erratum 908]

1.6.2 Erratum 2244 - Events to reach OPEN during reconfigure are inconsistent between local and remote device

Applies to version(s): 2.0 + EDR, 2.1 + EDR, CSA1, and 3.0 + HS

Note: Fixed starting with 4.0

1.6.2.1 Section: 6.1.5 Open state, Row 2 ‘ReconfigureChannel_req”, Column “Next State”, page 73

[Original text states]
“CONFIG (substate
WAIT_CONFIG_
RSP)”

[Replace with]
“CONFIG (substate
WAIT_CONFIG_REQ_
RSP)”

1.6.2.2 Section: 6.1.5 Open state, Row 5 ‘L2CAP_ConfigReq”, Column “Next State”, page 73

[Original text states]
“CONFIG
(substate
WAIT_CONFIG_REQ)

[Replace with]
“CONFIG
(substate
WAIT_SEND_CONFIG"

[End of changes for Erratum 2244]
2 Core Specification Version 2.1 + EDR

2.1 Volume 2 Part C: Link Manager Protocol

2.1.1 Erratum 2701- Editorial Error in Sequence 57: Only one device is OOB-capable

Applies to version(s): 2.1 + EDR

Note: Fixed starting with 3.0 + HS

Section: 4.2.7.3.5 Authentication Stage 1: OOB, page 265

[Original text states]
“LMP_simple”.

[Replace with]
“LMP_simple_pairing_number”.

[End of changes for Erratum 2701]

2.1.2 Erratum 2984- Comma disappeared between v2.0 and v2.1 (and v3.0)

Applies to version(s): 2.1 + EDR

Note: Fixed starting with 3.0 + HS

Section: 4.6.2.6 Negotiation state definitions, page 297

[Original text states]
“(e.g. other synchronous reserved slots sniff instants, or park beacons).”

[Replace with]
“(e.g. other synchronous reserved slots, sniff anchor points, or park beacons).”

[End of changes for Erratum 2984]

2.1.3 Erratum 2541- Incorrect channel restriction in test mode PDU for transmitter test

Applies to version(s): 2.0 + EDR, and 2.1 + EDR, and 3.0 + HS

Note: Fixed starting with 4.0

Section: 4.7.3 Summary of test mode PDUs, page 302, First Row, Column 2

[Original text states]
“0 ≤ k ≤ 93.”

[Replace with]
“0 ≤ k ≤ 78.”
2.1.4 **Erratum 2739 - Editorial error: Missing reference**

 Applies to version(s): 3.0 + HS  
 Note: Fixed starting with 4.0  
 Section: 4.4.2 Role Switch, page 276

*[Original text states]*

“…”encryption” and both devices support pausing encryption, the master device shall initiate the pause encryption sequence (See [Part C] Section 4.2.5 on page 248 What section should be referenced?)”

*[Replace with]*

“…”encryption” and both devices support pausing encryption, the master device shall initiate the pause encryption sequence (See [Part C] Section 4.2.5.5 on page 276).”

*[End of changes for Erratum 2739]*

2.1.5 **Erratum 2421 - Keypress notification mandatory or optional?**

 Applies to version(s): 2.1 + EDR  
 Note: Fixed starting with 3.0 + HS  
 Section: 4.2.7.3.4 Keypress Notifications, page 246

*[Original text states]*

“A side with the KeyboardOnly IO capability may send notifications on key presses to the remote side using the LMP_keypress_notification PDU. This PDU may be sent by either the initiating LM, the responding LM or both LMs.

Note: a device with KeyboardOnly IO capabilities is not required to send any LMP_keypress_notification PDUs.”

*[Replace with]*

“A Controller that allows the Host to change its IO capabilities shall send notifications on key presses to the remote side using the LMP_keypress_notification PDU when the Host sets the IO capabilities to KeyboardOnly IO and when Secure Simple Pairing is supported on the Host and Controller.”

*[End of changes for Erratum 2739]*

2.2 **Volume 2 Part E: Host Controller Interface Functional Specification**

2.2.1 **Erratum 2965 - PBF for data from Controller to Host**

 Applies to version(s): 2.1 + EDR and 3.0 + HS  
 Note: Fixed starting with 4.0  
 Section: 5.4.2 HCI ACL Data Packets

*[Original text states]* under Packet_Boundary_Flag table
00 First non-autonomously-flushable packet of Higher Layer Message (start of a non-autonomously-flushable L2CAP packet).

[Append Text]

“Shall not be used on a BR/EDR Controller from Controller to Host”

[End of changes for Erratum 2965]

2.2.2 Erratum 2995 - Refresh Encryption Key

Applies to version(s): 2.1 + EDR and 3.0 + HS

Note: Fixed starting with 4.0

Section: 7.3.57 Refresh Encryption Key-- All the text related to return parameter “Status” should be removed

2.2.2.1 [Original table text states]

<table>
<thead>
<tr>
<th>Command</th>
<th>OCF</th>
<th>Command Parameters</th>
<th>Return Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCI_Refresh_Encryption_Key</td>
<td>0x0053</td>
<td>Connection_Handle</td>
<td>Status</td>
</tr>
</tbody>
</table>

[Replace with]

<table>
<thead>
<tr>
<th>Command</th>
<th>OCF</th>
<th>Command Parameters</th>
<th>Return Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCI_Refresh_Encryption_Key</td>
<td>0x0053</td>
<td>Connection_Handle</td>
<td></td>
</tr>
</tbody>
</table>

[Original text states]

Return Parameters:

**Status.**  
Size: 1 Octet

<table>
<thead>
<tr>
<th>Value</th>
<th>Parameter Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x00</td>
<td>Refresh_Encryption_Key command succeeded</td>
</tr>
<tr>
<td>0x01-0xFF</td>
<td>Refresh_Encryption_Key command failed. See “Error Codes” on page 331 [Part D] for a list of error codes and descriptions.</td>
</tr>
</tbody>
</table>

Event(s) generated (unless masked away):

A Command_Status event is sent from the Controller to the Host when the Controller has started the Refresh Encryption Key procedure. An Encryption Key Refresh Complete event is generated when the Refresh Encryption Key procedure has completed.

[Replace with]

Event(s) generated (unless masked away):
A Command_Status event is sent from the Controller to the Host when the Controller has started the Refresh Encryption Key procedure. An Encryption Key Refresh Complete event is generated when the Refresh Encryption Key procedure has completed.

[End of changes for Erratum 2995]

2.2.3  **Erratum 2994 - IO Capabilities Response Negative Reply is not a command**

Applies to version(s): 2.1 + EDR and 3.0 + HS

Note: Fixed starting with 4.0

Section: 6.26 SUPPORTED COMMANDS, Page 415, Octet 20, bit 3

**[Original text states]**

“IO Capabilities Response Negative Reply”

[ReplaceText]

“IO Capability Request Negative Reply”

[End of changes for Erratum 2994]

2.2.4  **Erratum 2621 - Can we un-reserve event code 0xFE?**

Applies to version(s): 2.0 + EDR, and 2.1 + EDR

Note: Fixed starting with 3.0 + HS

Section: 5.4.4 HCI Event Packet, Page 398, Table “Event_Code”, Column “Parameter Description”

**[Delete last sentence]**

“In addition, the event code 0xFE is also reserved for Bluetooth Logo Testing)”

[End of changes for Erratum 2621]

2.2.5  **Erratum 2538 - There is white space in the bit field value for Link Supervision Timeout Changed Event in the event_mask table**

Applies to version(s): 2.0 + EDR, and 2.1 + EDR

Note: Fixed starting with 3.0 + HS

Section: 7.3.1 Set Event Mask Command, Page 501, Table “Event_Mask”, Row 7, Column 1 “Value”

**[Original value states]**

“0x00800000000000 00”

[Replace with]

“0x0080000000000000”

[End of changes for Erratum 2538]
2.2.6  **Erratum 2554 - Inconsistence regarding if Accept_Connection_Request is allowed for eSCO**  
Applies to version(s): 2.0 + EDR, 2.1 + EDR and 3.0 + HS  
Note: Fixed starting with 4.0  
Section: 7.7.4 Connection request Event, Paragraph “Description” page 610  

**[Original text states]**  
“…negotiating the SCO or eSCO link parameters…”  

**[Replace with]**  
“…negotiating the SCO link parameters…”  

**[End of changes for Erratum 2554]**

2.2.7  **Erratum 2666 - Clarification of criteria’s for Changed Combination Key in Link Key Notification Event**  
Applies to version(s): 2.1 + EDR and 3.0 + HS  
Note: Fixed starting with 4.0  
Section: 7.7.24 Link Key Notification Event, Paragraph “Description” page 632  

**[Original text states]**  
“…Note: it is the responsibility of the Host to remember whether the combination key was a debug, unauthenticated or authenticated Key_Type prior to changing the link key.”  

**[Replace with]**  
“…Note: it is the responsibility of the Host to remember the Key_Type (combination, debug combination, unauthenticated combination or authenticated combination) prior to changing the link key.”  

**[End of changes for Erratum 2666]**

2.2.8  **Erratum 2673 - Incorrect range value listed for Link_Policy_Settings in Read Link Policy Settings Command**  
Applies to version(s): 2.0 + EDR, 2.1 + EDR, and 3.0 + HS  
Note: Fixed starting with 4.0  
Section: 7.2.9 Read Link Policy Settings Command, Table “Link_Policy_Settings”, row 6, column “Value”, page 491  

**[Original text states]**  
“0x0008  
0x8000”
2.2.9 **Erratum 2580** - For deprecated HCI commands the supported bit field shall be set as

**Applies to version(s): 2.0 + EDR, and 2.1 + EDR**

**Note:** Fixed starting with 3.0 + HS

**Section:** 6.26 Supported Commands, Row “Octet: 11”, Column “Command Supported”, Bit “5”, “6”, and “7”, page 413

**[Original text states]**

“5 Reserved
6 Reserved
7 Read Page Scan Mode”

**[Replace with]**

“5 Read Page Scan Mode Period (deprecated)
6 Write Page Scan Mode Period (deprecated)
7 Read Page Scan Mode (deprecated)”

**Section:** 6.26 Supported Commands, Row “Octet: 12”, Column “Command Supported”, Bit “0”, page 413

**[Original text states]**

“0 Write Page Scan Mode”

**[Replace with]**

“0 Write Page Scan Mode (deprecated)”

**[End of changes for Erratum 2580]**

2.2.10 **Erratum 2620** - Can we un-reserve OGF 0x3E?

**Applies to version(s): 2.0 + EDR, and 2.1 + EDR**

**Note:** Fixed starting with 3.0 + HS

**Section:** 5.4.1 HCI Command Packet, page 392

**[Delete text]**
“....The OGF of 0x3E is reserved for Bluetooth Logo Testing.”

Section: 5.4.1 HCI Command Packet, table “OP_Code:”, Column “Parameter Description”, page 393

[Original text states]
“OGFRange (6 bits): 0x00-0x3F (0x3E reserved for Bluetooth logo testing and 0x3F reserved for vendor-specific debug commands) OCF Range (10 bits): 0x0000-0x03FF”

[Replace with]
“OGFRange (6 bits): 0x00-0x3F (0x3F reserved for vendor-specific debug commands)
OCF Range (10 bits): 0x0000-0x03FF”

[End of changes for Erratum 2620]

2.2.11 Erratum 2667 - Clarification of Change Connection Link Key Command (related to errata 2666)

Applies to version(s): 2.1 + EDR and 3.0 + HS

Note: Fixed starting in 4.0

Section: 7.1.17 Change Connection Link Key Command, “Description” paragraph, page 444, append another note to end of paragraph.

[Append text]
“Note: The resulting link key, generated as a result of Change_Connection_Link_Key command, will be of equal link key strength to the previously used link key.”

[End of changes for Erratum 2667]

2.2.12 Erratum 2772 - Deprecated commands still need to have bits in the supported commands command

Applies to version(s): 2.1 + EDR and 3.0 + HS

Note: Fixed starting in 4.0

Section: 6.26 Supported Commands, Row “Octet: 0”, Column “Command Supported”, Bit “6”, page 410

[Original text states]
“Add SCO Connection”

[Replace with]
“Add SCO Connection (deprecated)”

Section: 6.26 Supported Commands, Row “Octet: 8”, Column “Command Supported”, Bit “6” and “7”, page 412
[Original text states]
“6 Reserved
7 Reserved”

[Replace with]
“6 Read Encryption Mode (deprecated)
7 Write Encryption Mode (deprecated)"

[End of changes for Erratum 2772]

2.2.13 **Erratum 2542 – Minimum Timeouts**

Section: 7.1.37 Sniff Subrating Event, table “Minimum_Remote_Timeout:” Column “Parameter Description”, page 651

Note: Fixed starting with v3.0+HS

[Original text states]
“Time Range: 0 sec – 20.5 sec”

[Replace with]
“Time Range: 0 sec – 40.9 sec”

[End of changes for Erratum 2542]

2.2.14 **Erratum 2413 – Editorial: reference to non existing description of Golden Range**

Note: Fixed starting with v3.0+HS

Section: 7.5.4 Read RSSI command, 1st paragraph under “Description” page 594

[Original text states]
“This command will read the value for the difference between the measured Received Signal Strength Indication (RSSI) and the limits of the Golden Receive Power Range (see Radio Specification Section 4.1.6 on page 43) for a Connection Handle to another Bluetooth device. The Connection_Handle must be a Connection_Handle for an ACL connection. Any positive RSSI value returned by the Controller indicates how many dB the RSSI is above the upper limit, any negative value indicates how many dB the RSSI is below the lower limit. The value zero indicates that the RSSI is inside the Golden Receive Power Range.”

[Replace with]
“This command will read the Received Signal Strength Indication (RSSI) value from a Controller.

For a BR/EDR Controller, a Connection_Handle is used as the Handle command parameter and return parameter. The RSSI parameter returns the difference between the measured Received Signal Strength Indication (RSSI) and the limits of the Golden Receive Power Range for a Connection Handle to another BR/EDR Controller. The Connection_Handle must be a Connection_Handle for an ACL connection. Any positive RSSI value returned by the Controller indicates how many dB the RSSI is above the upper limit,
any negative value indicates how many dB the RSSI is below the lower limit. The value zero indicates that the RSSI is inside the Golden Receive Power Range.”

[End of changes for Erratum 2413]

2.2.15 Erratum 2402 – Editorial Default value of Packet_Type in Accept Synchronous Connection Request Command

Section: 7.1.27 Accept Synchronous Connection Request Command, line below “Packet_Type table, page 462

[Original text states]
“Default: 0xFFFF - means all packet types may be used.”

[Replace with]
“Default: 0x003F - means all defined packet types may be used.”

[End of changes for Erratum 2402]

2.2.16 Erratum 2388 – Incorrect value listed for time range of Sniff_Attempt

Note: Fixed starting with v3.0+HS

Section: 7.2.2 Sniff Mode Command, table “Sniff_Attempt:”, Column “Parameter Description”

[Original text states]
“Time Range: 0.625msec - 40.9 Seconds.”

[Replace with]
“Time Range: 1.25msec - 40.9 Seconds.”

Section: 7.2.2 Sniff Mode Command, table “Sniff_Min_Interval:”, Column “Parameter Description”

[Original text states]
“Time Range: 1.25 msec to 40.9 sec)”

[Replace with]
“Time Range: 1.25 msec to 40.9 sec”

[End of changes for Erratum 2388]

2.2.17 Erratum 2422 – What happens if host never responds to User Confirmation Request or User Passkey Request?

Note: Fixed starting with v4.0

Sections: 7.7.42 User Confirmation Request Event, Add text under first paragraph “Description”, page 657

[Append text]
“When the Controller generates User Confirmation Request event in order for the local Link Manager to respond to the request from the remote Link Manager, the local Host must respond with either a User_Confirmation_Request_Reply or User_Confirmation_Request_Negative_Reply command before the remote Link Manager detects LMP response timeout. (See “Link Manager Protocol” on page 203 [Part C].)”

Sections: 7.7.43 User Passkey Request Event, Add text under first paragraph “Description”, page 658

[Append text]

“When the Controller generates User Passkey Request event in order for the local Link Manager to respond to the request from the remote Link Manager, the local Host must respond with either a User_Passkey_Request_Reply or User_Passkey_Request_Negative_Reply command before the remote Link Manager detects LMP response timeout. (See “Link Manager Protocol” on page 203 [Part C].)”

[End of changes for Erratum 2422]

2.2.18 Erratum 2320 – Event Mask Bit definition miss one bit

Note: Fixed starting in v3.0+HS

Section: 7.3.1 Set Event Mask Command, page 501

[Append a row after 0x0100000000000000]

"0x0200000000000000   Reserved"

[End of changes for Erratum 2320]

2.3 Volume 2 Part F: Message Sequence Charts

2.3.1 Erratum 2664 - IO capability exchange event name is wrong

Note: Fixed starting in v4.0

Section: 4.2.7 IO Capability Exchange, page 703, Figure 4.8

[Original Command states] – note replace figure 4.8
[Replace with]

[End of changes for Erratum 2664]

2.3.2 **Erratum 2344 - Missing Just Works MSC**

*Note: Fixed starting in v4.0*

*Section: 4.2.10 Numeric Comparison, page 704*

*[Append note after first paragraph]*
“Note: The sequence for Just Works is identical to that of Numeric Comparison with the exception that the Host will not show the numbers to the user.”

[End of changes for Erratum 2344]

2.4 Volume 3 Part A: Logical Link Control and Adaptation Protocol Specification

2.4.1 Erratum 2581 - Shouldn't be required to send MTU in positive ConfigRsp

Applies to versions: 2.0 + EDR, 2.1 + EDR, CSA1

Note: Fixed starting in v3.0+HS

Section: 5.1 Maximum Transmission Unit, Page 51

[Original text states]
“If the remote device sends a positive configuration response it shall include the actual MTU to be used on this channel for traffic flowing into the local device. This is the minimum of the MTU in the configuration request and the outgoing MTU capability of the device sending the configuration response. The new agreed value (the default value in a future re-configuration) is the value specified in the request.”

[Replace with]
”If the remote device sends a positive configuration response it should include the actual MTU to be used on this channel for traffic flowing into the local device. This is the minimum of the MTU in the configuration request and the outgoing MTU capability of the device sending the configuration response. The new agreed value (the default value in a future re-configuration) is the value specified in the response.”

[End of changes for Erratum 2581]

2.5 Volume 3 Part B: Service Discovery Protocol (SDP)

2.5.1 Erratum 2444 - Figures and tables without titles.

Note: Fixed starting in v3.0+HS

Sections: 2, 3 and 4 – Add titles for all missing tables and figures in SDP where missing

[Append]
“Figure 2.1: SDP Client-Server Interaction
Figure 2.2: Simplified SDP Client-Server Interaction
Figure 2.5: Attribute ID
Figure 2.6: Service Browsing Hierarchy
Figure 3.1: Data Element
Figure 4.1: Protocol Data Unit Format
Figure 4.3: Error Handling
Figure 4.4: ServiceSearch Transaction
Figure 4.5: ServiceAttribute Transaction
Figure 4.6: ServiceSearchAttribute Transaction
Table 2.1: Service Browsing Hierarchy
Table 3.2: Data Element Size”
2.6 Volume 3 Part C: Generic Access Profile

2.6.1 Erratum 2660 - Inconsistent text

Applies to versions: 2.0 + EDR, 2.1 + EDR, 3.0 + HS

Note: Fixed starting with v4.0

Section: 3.2.3.3 Representation, Page 183

[Original text states]

“For compatibility with devices with numeric keypads fixed PINs shall be composed of only decimal digits, and variable PINS may be composed of only decimal digits.”

[Replace with]

“For compatibility with devices with numeric keypads fixed PINs shall be composed of only decimal digits, and variable PINS should be composed of only decimal digits.”

[End of changes for Erratum 2660]

2.7 Volume 4 Part B: Host Controller Interface [Transport Layer] - USB Transport Layer

2.7.1 Erratum 2629 - Section is PC-specific and references outdated technology

Section: 5.1 Power Specific Limitations, Page 32

[Original text states]

“Today, the host controller of USB-capable machines resides inside a chip known as PIIX4. Unfortunately, because of errata, the USB host controller will not receive power while the system is in S3 or S4. This means that a USB wake-up can only occur when the system is in S1 or S2. Another issue with the USB host controller is that, while a device is attached, it continually snoops memory to see if there is any work that needs to be done. The frequency that it checks memory is 1ms. This prevents the processor from dropping into a low power state known as C3. Because the notebook processor is not able to enter the C3 state, significant power loss will occur. This is a real issue for business users – as a typical business user will spend almost 90% of their time in the C3 state.”

[Replace with]

“Some USB host controllers in portable devices will not receive power while the system is in a sleep mode. For example, many PCs do not supply power to the USB port in system power states S3 or S4, as defined in ACPI. Hence, USB wake-up can only occur when the system is in S1 or S2. Furthermore, all connections and state information of the USB Bluetooth controller will be lost in the system sleep state if power is lost necessitating re-initialization when the device returns to the active state.

Some USB host controllers further continually snoop memory when a device is attached to see if there is any work that needs to be done. The snoop is typically performed every 1ms for USB full-speed devices. This prevents the processor from dropping into a low power state known as C3. Because the processor is not able to enter the C3 state, significant power consumption may occur. This is a major concern for
battery-powered hosts such as notebook computers. Some host controllers are capable of scheduling polling of USB devices at short intervals while snooping the host's memory much less frequently. Systems with such host controllers may be able to greatly increase the percentage of time spent in the C3 state even if Bluetooth connections are maintained.

A feature called Link Power Management is also recommended for implementation by Bluetooth devices. It is described in an ECN (Engineering Change Notice) from the USB Implementers’ Forum."

[End of changes for Erratum 2629]

2.7.2 Erratum 2624 - Section is PC-specific

2.7.2.1 Section: 1 Overview, Figure 1.1, Page 21

[Original text states]
“Notebook PC”

[Replace with]
“Bluetooth Host Device”

Section: 1 Overview, Page 21

[Original text states]
“The USB hardware can be embodied in one of two ways:
1. As a USB dongle, and
2. Integrated onto the motherboard of a notebook PC.”

[Replace with]
“The USB hardware can be embodied in one of several ways:
1. As a USB dongle (e.g. cabled USB)
2. As a USB module integrated into the product and connected internally via a cable or connector.
3. Integrated onto the motherboard of a notebook PC or other device and connected via circuit board traces with standard USB, Inter-Chip USB or High Speed Inter-Chip USB.”
4. Integrated as a subsystem on a single-chip System-on-Chip (SoC) design connected on-chip as part of a compound device"

[End of changes for Erratum 2624]

2.7.3 Erratum 2627 - Mention of class code field being in USB device request, but field does not exist

Section: 2.2 CONTROL ENDPOINT EXPECTATIONS, Page 28

[Original text states]
“Endpoint 0 is used to configure and control the USB device. Endpoint 0 will also be used to allow the host to send HCI-specific commands to the host controller. When the USB firmware receives a packet over this endpoint that has the Bluetooth class code, it should treat the packet as an HCI command packet.”

[Replace with]
“Endpoint 0 is used to configure and control the USB device. Endpoint 0 will also be used to allow the host to send HCI-specific commands to the host controller. HCI command packets should be sent with the following parameters:
  bmRequestType = 0x20 (Host-to-device class request, device as target)
  bRequest = 0x00
  wValue = 0x00
  wIndex = 0x00

Some host devices on the market set bRequest to 0xE0. Hence, for historical reasons, if the Bluetooth controller firmware receives a class request over this endpoint it should treat the packet as an HCI command packet regardless of the value of bRequest, wValue and wIndex.”

[End of changes for Erratum 2627]

2.7.4 Erratum 2628 - Incorrect statement about class code differentiating HCI commands from USB commands

Section: 3 Class Code, Page 30

[Original text states]

“A class code will be used that is specific to all USB Bluetooth devices. This will allow the proper driver stack to load, regardless of which vendor built the device. It also allows HCI commands to be differentiated from USB commands across the control endpoint.

The class code (bDeviceClass) is 0xE0 – Wireless Controller.

The SubClass code (bDeviceSubClass) is 0x01 – RF Controller.

The Protocol code (bDeviceProtocol) is 0x01 – Bluetooth programming.”

[Replace with]

“A class code will be used that is specific to all USB Bluetooth devices. This will allow the proper driver stack to load, regardless of which vendor built the device.

The following values shall be used in the Device Descriptor The class code (bDeviceClass) is 0xE0 – Wireless Controller.

  eSubClass) is 0x01 – RF Controller.
  The Protocol code (bDeviceProtocol) is 0x01 – Bluetooth programming.

These values should also be used in the interface descriptors for the interfaces described in section 2.1.”

[End of changes for Erratum 2628]

2.7.5 Erratum 2625 - Incorrect USB terminology

2.7.5.1 Section: 2.1 Class Code, Page 23

[Original text states]

“The USB device is intended for high speed. The firmware configuration consists of two interfaces. The first interface (interface zero) has no alternate settings and contains the bulk and interrupt endpoints. The second interface (interface one) provides scalable isochronous bandwidth consumption. The second interface has four alternate settings that provide different consumption based on the required isochronous bandwidth. The default interface is empty so that the device is capable of scaling down to no isochronous bandwidth. An HCI frame, consisting of an HCI header and HCI data, should be contained in one USB transaction. A USB transaction is defined as one or more USB frames that contain the data from one IO
request. For example, an ACL data packet containing 256 bytes (both HCI header and HCI data) would be sent over the bulk endpoint in one IO request. That IO request will require four 64-byte USB frames, and forms a transaction. The endpoints are spread across two interfaces so that when adjusting isochronous bandwidth consumption (via select interface calls), any pending bulk and/or interrupt transactions do not have to be terminated and resubmitted.“

[Replace with]

“The Universal Serial Bus is intended to support high data rates. The firmware configuration consists of two interfaces. The first interface (interface zero) has no alternate settings and contains the bulk and interrupt endpoints. The second interface (interface one) provides scalable isochronous bandwidth consumption. The second interface has four alternate settings that provide different consumption based on the required isochronous bandwidth. The default alternate setting is empty so that the device is capable of scaling down to zero isochronous bandwidth.

An HCI packet, consisting of an HCI header and HCI data, should be contained in one USB transfer. A USB transfer is defined by the USB specification as one or more USB transactions that contain the data from one IO request. For example, an ACL data packet containing 256 bytes (both HCI header and HCI data) would be sent over the bulk endpoint in one IO request. If the Maximum Packet Size for the endpoint on which the transfer is sent is 64 bytes, then that IO request will require four 64-byte USB transactions. The endpoints are spread across two interfaces so that when adjusting isochronous bandwidth consumption (via select interface calls), any pending bulk and/or interrupt transfers do not have to be terminated or resubmitted.”

2.7.5.2 Section: 2.1 Class Code, “table 2.1” Page 24

[Original text states]

“The following table outlines the required configuration”

[Replace with]

“The following table outlines the recommended configuration”

Section: 2.1 Class Code, “table 2.1”, Row “HCI Commands”, Columns “Interface Number” and “Alternate Setting”, Page 24

[Original HCI Commands values]

“0”

[Replace both HCI Commands values with]

“NA”

[End of changes for Erratum 2625]

2.8 Volume 4 Part C: Secure Digital (SD) Transport Layer

2.8.1 Erratum 2464 - Hyperlinks to SDCARD web pages incorrect

Note: Fixed starting in v4.0

Section: 6 Appendix B - Related Documents, Page 42

[Original text states]
These documents are available to members of the SDA in the “Members Only” section of the SDA website (http://www.sdcard.org/access.htm). See http://www.sdcard.org/join.htm for information on joining the SDA.

C) Applicable Simplified SDA Documents available to non-members and members of the SDA:

http://www.sdcard.org/sdphysical_simplified_Ver101.pdf
www.sdcard.org/SDIO-SimpleSpec-1.00_A.pdf
C.3) Simplified Version of: SDIO Card Type-A Specification for Bluetooth

[Replace with]

These documents are available to members of the SDA in the “MembersOnly” section of the SDA website (https://www.sdcard.org/members/).

See http://www.sdcard.org/developers/join/ for information on joining the SDA.

C) Applicable Simplified SDA Documents available to non-members and members of the SDA:

http://www.sdcard.org/developers/tech/sdcard/pls/
C.2) Simplified Version of: SDIO Card Specification
http://www.sdcard.org/developers/tech/sdio/sdio_spec/
C.3) Simplified Version of: SDIO Card Type-A Specification for Bluetooth
http://www.sdcard.org/developers/tech/sdio/sd_bluetooth_spec/

[End of changes for Erratum 2464]
3 Core Specification Addendum 1

3.1 Volume 3 Part A: Logical Link Control and Adaptation Protocol Specification

3.1.1 Erratum 2718 - Conflict between test spec and addendum regarding requirements on Basic mode

**Note:** Fixed starting in v3.0+HS

**Section:** 5.4 RETRANSMISSION AND FLOW CONTROL OPTION, page 57 under table 5.2

**[Original text States]**

“Basic mode, Flow Control mode and Retransmission mode shall only be used for backwards compatibility with L2CAP entities that do not support Enhanced Retransmission mode or Streaming mode.”

**[Replace with]**

“Flow Control mode and Retransmission mode shall only be used for backwards compatibility with L2CAP entities that do not support Enhanced Retransmission mode or Streaming mode.”

**[End of changes for Erratum 2718]**

3.1.2 Erratum 2657 - Action doesn’t seem consistent with event and condition

**Section:** 8.6.5.11 REJ_SENT State Table, page 124, Row 2 Recv I-Frame (F=1), column 2 “Condition”

**Note:** Fixed starting in v3.0+HS

**[Original text states]**

“With-unexpected-TxSeq
and With-Valid-ReqSeq
and With-Valid-F-bit”

**[Replace with]**

“With-Expected-TxSeq
and With-Valid-ReqSeq
and With-Valid-F-bit”

**[End of changes for Erratum 2657]**

3.1.3 Erratum 2658 - Both Row5 and Row6 are the subsets of Row7 in SREJ_SENT State Table

**Section:** 8.6.5.12 REJ_SENT State Table, page 129, row 7 Event: Recv I-frame, Column 2 “Condition”

**Note:** Fixed starting in v3.0+HS
[Original text states]
“With-Unexpected-TxSeq
and With-Valid-ReqSeq
and With-Valid-F-bit”

[Replace with]
“With-Expected-TxSeq
and With-Valid-ReqSeq
and With-Valid-F-bit”

[End of changes for Erratum 2658]

3.1.4 Erratum 2764 - StoreOrIgnore does not appear to be useful

Section: 8.6.5.6 Actions, page 115

Note: Fixed in v3.0+HS

[Original text states]
“StoreOrIgnore—If the local L2CAP entity has room to store the received Iframe then it may store it otherwise it shall discard it.”

[Replace with]
“StoreOrIgnore—If the local L2CAP entity has room to store the received Iframe then it may store it otherwise it shall discard it. If the received I-frame is stored, ExpectedTxSeq is advanced as follows:

\[
\text{ExpectedTxSeq} := (\text{ExpectedTxSeq} + 1) \mod \text{MaxTxWin}
\]

[End of changes for Erratum 2764]

3.1.5 Erratum 2858 - Ambiguity over reconfiguration of FCS

Section: 5.5 Frame Check Sequence (FCS) Option, page 62

Note: Fixed starting in v3.0+HS

[Original text states]
“The FCS option shall only be used when configuring Enhanced Retransmission mode and Streaming mode to specify the type of Frame Check Sequence (FCS) that will be included on S/I-Frames that are sent. The Frame Check Sequence option is type 0x05. "No FCS" shall only be used if both L2CAP entities send the FCS Option with value 0x00 (No FCS) in a configuration request. If one L2CAP entity sends the FCS Option with "No FCS" in a configuration request and the other L2CAP sends the FCS Option with a value other than "No FCS" then the default shall be used. If one or both L2CAP entities do not send the FCS option in a configuration request then the default shall be used.”

[Replace with]
“This option is used to specify the type of Frame Check Sequence (FCS) that will be included on S/I-Frames that are sent. The FCS option shall only be used when the mode is being, or is already configured to Enhanced Retransmission mode or Streaming mode. Note the FCS option can be reconfigured only when the mode is Enhanced Retransmission mode or Streaming mode. Implementations may reconfigure the FCS when L2CAP channels are moved between Controllers. The Frame Check Sequence option is type 0x05. "No FCS" shall only be used if both L2CAP entities send the FCS Option with value 0x00 (No FCS) in a configuration request. If one L2CAP entity sends the FCS Option with "No FCS" in a configuration request and the other L2CAP sends the FCS Option with a value other than "No FCS" then the default shall be used. If one or both L2CAP entities do not send the FCS option in a configuration request then the default shall be used.”

[End of changes for Erratum 2858]

3.1.6 Erratum 2686 - Unclear requirements

Note: Fixed starting in v3.0+HS

Section: 5.4 Retransmission and Flow Control Option, page 57

[Original text states]

“Enhanced Retransmission mode shall be enabled if a reliable channel has been requested.”

[Replace with]

“Enhanced Retransmission mode should be enabled if a reliable channel has been requested.”

[End of changes for Erratum 2686]

3.1.7 Erratum 2732 - A few minor problems with the state tables

Note: Fixed starting in v3.0+HS

3.1.7.1 Section: 8.6.5 State tables, “table 8.6”, last row “Recv REJ(F=1)”, “Action” column page 121

[Original text states]

“else
RejActioned := TRUE"

[Replace with]

“else
RejActioned := FALSE”

Section: 8.6.5 State tables, “table 8.7”, last row “event ="Recv frame””, “Next State” column page 127

[Original text states]

“RECV”

[Replace with]
“REJ_SENT”

Section: 8.6.5 State tables, “table 8.8”, row 4 “Action” column page 128

[Original text states]
“SaveIframe”

[Replace with]
“SaveIframeSrej”

Section: 8.6.5 State tables, “table 8.8”, row 5 “Action” column page 128

[Remove text]
“RemoveSrejList(TxSeq)”

[End of changes for Erratum 2732]

3.1.8 Erratum 2646 - MaxTransmit clarification needed in Retransmit-I-frames.

Note: Fixed starting in v3.0+HS

Section: 8.6.5.6 Actions, page 115

[Original text states]
“Retransmit-I-frames—All the unacknowledged I-frames starting with the Iframe with TxSeq equal to the ReqSeq field of the received S-frame (REJ or RR) is retransmitted. If the P-bit of the received S-frame is 1 then the F-bit of the first I-frame sent shall be 1. If the P-bit of the received S-frame is 0 then the F-bit of the first I-frame sent shall be 0. The F-bit of all other unacknowledged Iframes sent shall be 0. The retry counter in RetryIframes[] for each retransmitted I-frame is incremented by 1. FramesSent shall be incremented by 1 for each frame sent. If the RetransTimer is not already running then perform the Start-RetransTimer action.”

[Replace with]
“Retransmit-I-frames—All the unacknowledged I-frames starting with the Iframe with TxSeq equal to the ReqSeq field of the received S-frame (REJ or RR) is retransmitted. If the P-bit of the received S-frame is 1 then the F-bit of the first I-frame sent shall be 1. If the P-bit of the received S-frame is 0 then the F-bit of the first I-frame sent shall be 0. The F-bit of all other unacknowledged Iframes sent shall be 0. The retry counter in RetryIframes[] for each retransmitted I-frame is incremented by 1. FramesSent shall be incremented by 1 for each frame sent. If the RetransTimer is not already running then perform the Start-RetransTimer action.”

[End of changes for Erratum 2646]

3.1.9 Erratum 2859 - Receiving I-Frames in WAIT_F

Note: Fixed starting in v3.0+HS

Section: 8.6.5 State Tables, page 113

[Original text states]
“Send IorRRorRNR(F=x)—Send I-frames, an RR or an RNR with the specified
value for the F-bit. If a value for the F-bit is not specified the value shall be 0.

The following algorithm shall be used:

FramesSent := 0
if RemoteBusy = TRUE then
  Retransmit-I-Frames
  Send-Pending-I-frames(see note)
if LocalBusy = TRUE then
  Send RNR (see note)
else if FramesSent := 0 then
  Send R(f=x)

Note: The SendIorRRorRNR(f=x) sends frames by invoking other actions. During the execution of SendIorRRorRNR multiple actions may be invoked. The first action invoked shall send the first or only frame with the F-bit set as passed into the SendIorRRorRNR action. All other frames sent shall have the F-bit set to 0.

[Replace with]

"Send IorRRorRNR(F=1)—Send I-frames, an RR or an RNR with the F-bit set to 1. The following algorithm shall be used:

FramesSent := 0
if LocalBusy = TRUE then
  Send RNR(F=1)
else if RemoteBusy = TRUE and UnackedFrames > 0 then
  Start-RetransTimer
  Send-Pending-I-frames(see note)
if LocalBusy = FALSE and FramesSent = 0 then
  Send RR(F=1)

Note: The SendIorRRorRNR(F=1) sends frames by invoking other actions. During the execution of SendIorRRorRNR multiple actions may be invoked. The first action invoked shall send the first or only frame with the F-bit set to 1. All other frames sent shall have the F-bit set to 0."

[End of changes for Erratum 2859]
4 Core Specification Version 3.0 + HS

4.1 Volume 5 Part A: 802.11 Protocol Adaptation Layer Functional Specification

4.1.1 Erratum 3350 - Use New MAC Connect Failed error code
Section: 3.1.8 – Starting State - Change last line of table 3.2 in Vol 5 part A
Note: Fixed starting in v4.0

[Original text states]
Set PhysLinkCompleteStatus to Connection Limit Exceeded (0x09)

[Replace with]
Set PhysLinkCompleteStatus to MAC Connection Failed (0x3F)

[End of changes for Erratum 3350]

4.1.2 Erratum 3246 - Wrong error code for connection accept timeout
Section: 3.1 section 3.1.8 through 3.1.10 - Physical Link State Machine
Note: Fixed starting in v4.0

[Original text states]
The error code for connection accept timeout is specified as: 0x08.

[Replace with]
Per Vol 2 Part D, replace the error code for connection accept timeout with: 0x10.

[End of changes for Erratum 3246]

4.1.3 Erratum 3245 - Unclear which AMP SSID to use in association request
Section: 3.3.4 Admission Control
Note: Fixed starting in v4.0

[Original text states]
If Address2 of an 802.11 association request does not match the MAC address from the AMP Assoc received during construction of the current physical link and if the SSID in the association request matches the AMP SSID of the receiving AMP device, then the receiver shall not transmit an 802.11 association response with a status code of 0 (success).

[Replace with]
If Address2 of an 802.11 association request does not match the MAC address from the AMP Assoc received during construction of the current physical link or if the SSID in the association request does not match the AMP SSID of the receiving AMP device, then the receiving AMP device shall not transmit an 802.11 association response with a status code of 0 (success).
4.1.4 Erratum 3053 - Inconsistent transaction ID for 802.11 open authentication

Note: Fixed starting in v4.0

Section: 3.3.2 Establishing the 802.11 Link

In Vol 5 Part A section 3.3.2, change the entirety of paragraphs 2 and 3 to read:

[Original text states]

AMPs shall use RSN security. RSN security requires the use of 802.11 open authentication as specified in [1] clause 8.2.2.2.

It follows with:

The AMP responder shall send the first frame of the 802.11 authentication transaction sequence, with transaction ID of 0. Address fields Address1 and Address3 shall contain the initiator's address. The AMP initiator shall respond with an 802.11 authentication frame with transaction ID of 1. Address fields Address2 and Address3 shall contain the initiator's address.

[Replace with]

AMPs shall use RSN security. RSN security requires the use of 802.11 open authentication as specified in [1] clause 8.2.2.2. The AMP responder shall send the first frame of the 802.11 authentication transaction sequence, with transaction ID of 1. Address fields Address1 and Address3 shall contain the initiator's address.

The AMP initiator shall respond with an 802.11 authentication frame with transaction ID of 2. Address fields Address2 and Address3 shall contain the initiator's address.

[End of changes for Erratum 3053]

4.1.5 Erratum 3247 - Wrong error code for MAC Connect Failed

Note: Fixed starting in v4.0

Section: 3.1.9 - CONNECTING State - Vol 2 part D, section 1.3

[Append]

A row to Table 1.1, numbering appropriately

[Append Text]

0x3F MAC Connection Failed

Section: 3.1.9 - In Vol 2 Part D, section 2

[Append]

Add a new error code description to the end of the list, numbering appropriately.

[Append Text]
2.60 MAC CONNECT FAILED (0x3F)
The MAC of the 802.11 AMP was requested to connect to a peer, but the connection failed.

[End of changes for Erratum 3247]

4.2 Volume 2 Part D: Error Codes

4.2.1 **Erratum 2967** - 0x3A is missing

*Section 1.3 List of Error Codes, page 340*

*Note: Fixed starting in v4.0*

[Append]
A new row to the end of table 1.1

[Append Text]
0x3A: Controller Busy

[End of changes for Erratum 2967]

4.3 Volume 2 Part B: Baseband Specification

4.3.1 **Erratum 2988** - Wrong text when explaining what L2CAP FLOW=0 means

*Note: Fixed starting in v4.0*

*Section 6.6.2 page 320: Asynchronous Data Field*

[Original text states]

“It shall stop the transmission of ACL packets before an additional amount of payload data is sent.”

[Replace with]

“It shall stop the transmission of ACL-U packets before an additional amount of payload data is sent. Under this condition ACL-C traffic is still allowed.”

[End of changes for Erratum 2988]

4.4 Volume 2 Part E: Host Controller Interface Functional Specification

4.4.1 **Erratum 3170** - Requirement to display Numeric Value is too broad and possibly in the wrong place.

*Note: Fixed starting in v4.0*

*Section: 7.7.42 User Confirmation Request Event, page 701*

[Original text states]
“Description:
The User Confirmation Request event is used to indicate that user confirmation of a numeric value is required. The host shall reply with either the User Confirmation Request Reply or the User Confirmation Request Negative Reply command. If the host has output capability it shall display the Numeric_Value until the Simple Pairing Complete event is received. It shall reply based on the yes/no response from the user. If the host has no input and no output it shall reply with the User Confirmation Request Reply command.”

[Replace with]

“Description:
“The User Confirmation Request event is used to indicate that user confirmation of a numeric value is required. The Host shall reply with either the User_Confirmation_Request_Reply or the User_Confirmation_Request_Negative_Reply command. If the Host has output capability (DisplayYesNo or KeyboardOnly), it shall display the Numeric_Value until the Simple Pairing Complete event is received. It shall reply based on the yes/no response from the user. If the Host has no input and no output it shall reply with the User Confirmation Request Reply command. When the Controller generates a User Confirmation Request event, in order for the local Link Manager to respond to the request from the remote Link Manager, the local Host must respond with either a User_Confirmation_Request_Reply or a User_Confirmation_Request_Negative_Reply command before the remote Link Manager detects LMP response timeout. (See Part C, Link Manager Protocol Specification on page 207.)”

[End of changes for Erratum 3170]

4.4.2 Erratum 3040 - "Number Of Completed Data Blocks" Event (All Controllers) & "Set Event Mask Page 2" Command (Only AMP)

Note: Fixed starting in v4.0

Section: 3.14 Host Flow Control, Row 2, Column “Supported Controllers” page 389

[Original text states]

“AMP”

[Replace with]

“BR/EDR, AMP”

[End of changes for Erratum 3040]

4.4.3 Erratum 3099 - Minor omission in description of 'Interval' field for Mode Change = Sniff event

Note: Fixed starting with v4.0

Section: 7.7.20 Mode Change Event, page 675, Under “Interval:”

[Original text states]

“Sniff:
Number of Baseband slots between sniff intervals.
Time between sniff intervals = 0.625 msec (1 Baseband slot)
Range for N: 0x0002-0xFFF
4.4.4  **Erratum 3060 - Typo in Inquiry_Mode: parameter table**

*Note: Fixed starting in v4.0*

**Section:** 7.3.50 Write Inquiry Mode Command, page 587, under Command Parameters:

Inquiry_Mode:

*Original text states*

“[0x02”

*Replace with*

“0x02”

*End of changes for Erratum 3060*

4.4.5  **Erratum 3150 - Clarify which values result in the equivalent of sniff mode and on which device(s)**

**Section:** 7.2.14 Sniff Subrating Command, page 523

*Original text states*

“The Maximum Latency parameter shall define the maximum allowed sniff subrate of the remote device.

Note: If the Host does not write the sniff subrating parameters prior to sniff subrating being initiated by the Link Manager the default values shall be used.

Note: Setting both subrate values to zero is equivalent to sniff mode without subrating enabled.”

*Replace with* – Delete the last note

“The Maximum Latency parameter shall define the maximum allowed sniff subrate of the remote device.

Note: If the Host does not write the sniff subrating parameters prior to sniff subrating being initiated by the Link Manager the default values shall be used.”

Section: 7.2.14 Sniff Subrating Command, page 523, under Command parameters, **Maximum_Latency:**

*Original table text states*

“The Maximum Latency parameter shall be used to calculate the maximum_sniff subrate that the remote device may use.
Errata Service Release 43 of 131

ESR05 - Errata Service Release to Bluetooth® Specifications

Default: 0x0000
Latency = N * 0.625 msec (1 Baseband slot)
Range for N: 0x0000 – 0xFFFE
Time Range: 0 sec – 40.9 sec

[Replace table text with]
“The Maximum Latency parameter shall be used to calculate the maximum_snoop subrate that the remote device may use.
Default: Tsniff
Latency = N*0.625 msec (1 Baseband slot)
Range: 0x0002- 0xFFFE
Time Range: 1.25msec – 40.9 sec

[End of changes for Erratum 3150]

4.4.6 Erratum 2963 - The Write Scan Enable command is incorrectly identified

Note: Fixed starting in v4.0

Section: 3.18 Alphabetical List of Commands and Events, Table 3.18 page 403, row 6 Column “Group”

[Original text states]
“Controller Information”

[Replace with]
“Controller Configuration”

[End of changes for Erratum 2963]

4.4.7 Erratum 2962 - The Set Event Mask Page 2 command is incorrectly identified

Note: Fixed starting in v4.0

4.4.7.1 Section: 3.18 Alphabetical List of Commands and Events, Table 3.18 page 402, row 1 “Set Event Mask Page 2 Command”, Column “Group”

[Original text states]
“Controller Flow Control”

[Replace with]
“Host Flow Control”

Section: 9 List of Tables, page 722

[Original text states]
“Controller Flow Control”

[End of changes for Erratum 2962]
4.4.7.2 Section: 3.14 HOST FLOW CONTROL, pages 388 & 389

[Original table labels state]
“Table 3.14: Controller flow control.”

[Replace both instances with]
“Table 3.14: Host flow control.”

[End of changes for Erratum 2962]

4.5 Volume 2 Part C: Link Manager Protocol Specification

Note: Fixed starting in v4.0
Note: This erratum applies for “2.1+EDR spec release” as well

4.5.1 Erratum - 3311 - The description of HV2 packets ends with the word "Removed"

Section: 3.2 Feature Definitions, HV2 Packets, page 219

[Original text states]
“This feature indicates whether the device is capable of supporting the HV2 packet type as defined in baseband Section 6.5.2.2 on page120 on the SCO logical transport. Removed”.

[Replace with]
“This feature indicates whether the device is capable of supporting the HV2 packet type as defined in baseband Section 6.5.2.2 on page120 on the SCO logical transport.”

[End of changes for Erratum 3311]

4.6 Volume 2 Part E: Host Controller Interface Functional Specification

4.6.1 Erratum - 3362 Size of Location Domain parameter should be 2 octet

Section: 6.29 LOCATION DOMAIN - Page 437 -- The size of "Location Domain"

[Original text states]
1 Octet

[Replace with]
2 Octet

Section: 6.29 LOCATION DOMAIN - Page 437 – Value Field in Local_Domain
4.6.2 **Erratum - 3266 Incorrect spelling of BR/EDR**

*Note: Fixed starting in v4.0*

*Section: 7.7.17 Flush Occurred Event – Page 671*

[Original text states]

"The Handle will be a Connection_Handle for a ER/BDR ACL connection ..."

[Replace with]

The Handle will be a Connection_Handle for a BR/EDR ACL connection ..."

[End of changes for Erratum 3266]

4.6.3 **Erratum - 3198 Clarification on flow spec contents**

*Note: Fixed starting in v4.0*

*Section: 7.1.40 Create Logical Link Command – page 497*

[Original text states] Second paragraph under “Description:”

The Flow_Spec structures define the traffic requirements of the link. The Flow Spec ID values in the Tx/Rx parameters identify the logical link.

[Append Text]

Note: The Tx_Flow_Spec and Rx_Flow_Spec parameter only use 16 out of the 18 octets of the L2CAP Extended Flow Spec. The Type and Length fields from the L2CAP format are not included in the Tx_Flow_Spec and Rx_Flow_Spec parameters.

[End of changes for Erratum 3198]

4.6.4 **Erratum - 3176 Short Range Mode Commands should not have return parameters**

*Note: Fixed starting in v4.0*
Section: 7.3.77 Short Range Mode Command – page 614

[Delete Text]
Under the Return Parameter field delete the word “Status”.

[End of changes for Erratum 3176]

4.6.5 Erratum - 3175 Inquiry results can be filtered

Note: Fixed starting in v4.0

4.6.5.1 Section: 7.1.1 Inquiry Command – page 440 - Event(s) generated (unless masked away):

[Original Text States]
A Command Status event is sent from the BR/EDR Controller to the Host when the BR/EDR Controller has started the Inquiry process. An Inquiry Result event will be created for each BR/EDR Controller which responds to the Inquiry message. In addition, multiple BR/EDR Controllers which respond to the Inquire message may be combined into the same event. An Inquiry Complete event is generated when the Inquiry process has completed.

[Replace with]
A Command Status event shall be sent from the BR/EDR Controller to the Host when the BR/EDR Controller has started the Inquiry process. Unless filtered, an Inquiry Result event shall be created for each BR/EDR Controller which responds to the Inquiry message. In addition, multiple BR/EDR Controllers which respond to the Inquire message may be combined into the same event. An Inquiry Complete event shall be generated when the Inquiry process has completed.

4.6.5.2 Section: 7.1.3 Periodic Inquiry Mode Command– page 444 – Under Event(s) generated (unless masked away):

[Original Text States]
The Periodic Inquiry Mode begins when the BR/EDR Controller sends the Command Complete event for this command to the Host. An Inquiry Result event will be created for each BR/EDR Controller which responds to the Inquiry message. In addition, multiple BR/EDR Controllers which response to the Inquiry message may be combined into the same event. An Inquiry Complete event is generated when each of the periodic Inquiry processes has completed. No Inquiry Complete event will be generated for the canceled Inquiry process.

[Replace with]
The Periodic Inquiry Mode begins when the BR/EDR Controller sends the Command Complete event for this command to the Host. Unless filtered, an Inquiry Result event shall be created for each remote device that have responded to the Inquiry message. In addition, multiple BR/EDR Controllers which response to the Inquiry message may be combined into the same event. An Inquiry Complete event shall be generated when each of the periodic Inquiry processes has completed. No Inquiry Complete event will be generated for the canceled Inquiry process.

[End of changes for Erratum 3175]
4.7 Volume 3 Part A: Logical Link Control and Adaptation Protocol Specification

4.7.1 Erratum 3182 - FCS not used in response path

Section: 7.1.2 Response Path, page 114

[Original table 7.2]

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTU</td>
<td>Outgoing MTU information</td>
</tr>
<tr>
<td>FlushTO</td>
<td>Incoming flush timeout 1</td>
</tr>
<tr>
<td>QoS</td>
<td>Incoming QoS information 1</td>
</tr>
<tr>
<td>RFCMode</td>
<td>Outgoing Retransmission and Flow Control Mode</td>
</tr>
<tr>
<td>FCS</td>
<td>Incoming Frame Check Sequence</td>
</tr>
<tr>
<td>ExtFlowSpec</td>
<td>Incoming QoS information 1</td>
</tr>
<tr>
<td>ExtWindow</td>
<td>Outgoing Extended Window size</td>
</tr>
</tbody>
</table>

Table 7.2: Parameters allowed in Response

[Remove from table 7.2]

“FCS: Incoming Frame Check Sequence”.

[End of changes for Erratum 3182]

4.7.2 Erratum 3181 - Confusing about Flush timeout in Extended Flow Spec

Section: 5.6 Extended flow specification option, page 85

[Original text states]

“The parameters in the Extended Flow Specification option specify the traffic stream in the outgoing direction (transmitted traffic), with the exception of the Flush Timeout parameter which specifies the desired Flush Timeout that will be used by the remote side when transmitting. Extended Flow Specification option is type 0x06.”

[Replace with]

“The parameters in the Extended Flow Specification option specify the traffic stream in the outgoing direction (transmitted traffic), in a configuration request, this option describes the traffic stream in the outgoing direction from the device sending the request. In a positive configuration response, this option describes the incoming traffic stream agreement to the device sending the response. In a negative
configuration response, this option describes the preferred incoming traffic stream to the device sending the response. Extended Flow Specification option is type 0x06.”

[End of changes for Erratum 3181]

4.7.3 Erratum 3252- Configuration parameters reference page number error

Section: 4.4 Configuration Request (code 0x04), page 56

[Original text states]

“In Section 4.13 on page 65, the various configuration parameters and their relation to the outgoing or incoming data traffic are shown.”

[Replace with]

“In Section 5 on page 72, the various configuration parameters and their relation to the outgoing or incoming data traffic are shown.”

Section: 4.5 Configuration Response (code 0x05), page 60, under “Configuration Options”

[Original text states]

“This field contains the list of parameters being configured. These are defined in Section 4.13 on page 65.”

[Replace with]

“This field contains the list of parameters being configured. These are defined in Section 5 on page 72.”

[End of changes for Erratum 3252]
4.7.5 **Erratum 2948** - Two typos in second row, last column (>0x1000 - Client Usage)

**Note:** Fixed starting in v4.0

**Section:** 4.2 Connection Request (code 0x02), Table 4.4, page 54

**[Original text states]**

“PSM shall be obtained via SDP upon every reconnection. PSM for one direction will typically be different from the other direction.”

**[Replace with]**

“PSM shall be obtained via SDP upon every reconnection. PSM for one direction will typically be different from the other direction.”

**[End of changes for Erratum 2948]**

4.7.6 **Erratum 2945** - Abnormal stop caused by REJ_ACTIONED and Poll

**Applies to versions:** CSA1, 3.0 + HS

**Note:** Fixed starting in v4.0

**Section:** 8.6.5.9 REJ_ACTIONED flag, Table 8.6: RECV_State table, Row 2 “Recv RR (F=1)” Column “Action” page 167

**[Original text states]**

“If RejActioned = FALSE then

Retransmit-I-frames

Send-Pending-I-frames

else

RejActioned := FALSE”

**[Replace with]**

“If RejActioned = FALSE then

Retransmit-I-frames

else

RejActioned := FALSE

Send-Pending-I-frames”

**Section:** 8.6.5.9 REJ_ACTIONED flag, Table 8.6: RECV_State table, Row 5 “Recv REJ (F=1)” Column “Action” page 167

**[Original text states]**

“If RejActioned = FALSE then

Retransmit-I-frames

Send-Pending-I-frames
else
RejActioned := FALSE

[Replace with]
“If RejActioned = FALSE then
Retransmit-I-frames
else
RejActioned := FALSE
Send-Pending-I-frames”

Section: 8.6.5.10 REJ_ACTIONED flag, Table 8.7: REJ_SENT State table, Row 4 “Recv RR (F=1)”
Column “Action” page 169  

[Original text states]
“If RejActioned = FALSE then
Retransmit-I-frames
Send-Pending-I-frames
else
RejActioned := FALSE”

[Replace with]
“If RejActioned = FALSE then
Retransmit-I-frames
else
RejActioned := FALSE
Send-Pending-I-frames”

Section: 8.6.5.10 REJ_ACTIONED flag, Table 8.7: REJ_SENT State table, Row 3 “Recv REJ (F=1)”
Column “Action” page 170

[Original text states]
“If RejActioned = FALSE then
Retransmit-I-frames
Send-Pending-I-frames
else
RejActioned := FALSE”

[Replace with]
“If RejActioned = FALSE then
Retransmit-I-frames
else
RejActioned := FALSE
Send-Pending-I-frames"

Section: 8.6.5.11 REJ_ACTIONED flag, Table 8.8: SREJ_SENT State table, Row 2 "Recv RR (F=1)"
Column “Action” page 173

[Original text states]
“If RejActioned = FALSE then
Retransmit-I-frames
Send-Pending-I-frames
else
RejActioned := FALSE”

[Replace with]
“If RejActioned = FALSE then
Retransmit-I-frames
else
RejActioned := FALSE
Send-Pending-I-frames”

Section: 8.6.5.11 REJ_ACTIONED flag, Table 8.8: SREJ_SENT State table, Row 2 “Recv REJ (F=1)"
Column “Action” page 174

[Original text states]
“If RejActioned = FALSE then
Retransmit-I-frames
Send-Pending-I-frames
else
RejActioned := FALSE”

[Replace with]
“If RejActioned = FALSE then
Retransmit-I-frames
else
RejActioned := FALSE
Send-Pending-I-frames”

[End of changes for Erratum 2945]

4.7.7  Erratum 3011  - Possibly misleading text on endian-ness.
Section: 3.0 DATA PACKET FORMAT, First paragraph, last sentence, page 40
Note: The erratum also applies to V2.0+EDR, V2.1+EDR.
**Original text states**

“...All packet fields shall use Little Endian byte order"

**Replace with**

"All L2CAP layer packet fields shall use Little Endian byte order with the exception of the information payload field. The endian-ness of higher layer protocols encapsulated within L2CAP information payload is protocol-specific."

[End of changes for Erratum 3011]

---

**4.7.8 Erratum 2936 - 7. S-frame where the length field is not equal to 4**

*Note: Fixed starting in v4.0*

*Section: 3.3.7 Invalid Frame Detection Algorithm, page 49*

**Original text states**

"b) I-frame that has fewer than the required number of octets. If the channel is configured to use "No FCS" then the required number of octets is 6 otherwise the required number of octets is 8. c) S-frame where the length field is invalid. If the channel is configured to use "No FCS" then the length field shall be 2 otherwise the length field shall be 4."

**Replace with**

"b) I-frame that has fewer than the required number of octets. If the channel is configured to use a Standard or Enhanced Control Field then the required number of octets is 6 if "No FCS" is configured otherwise it is 8. If the channel is configured to use the Extended Control Field then the required number of octets is 8 if "No FCS" is configured otherwise it is 10. c) S-frame where the length field is invalid. If the channel is configured to use a Standard or Enhanced Control Field then the length field shall be 2 if "No FCS" is configured otherwise the length field shall be 4. If the channel is configured to use the Extended Control Field then the length field shall be 4 if "No FCS" is configured otherwise the length field shall be 6."

[End of changes for Erratum 2936]

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**4.8 Volume 3 Part C: Generic Access Profile**

**4.8.1 Erratum 3023 – Typo**

*Note: Fixed starting with v4.0*

*Section: 4.3 Bondable Modes, Page 279*

**Original Text States**

"In bondable mode the Bluetooth device accepts bonding initiated by the remote device, and in non-bondable mode it does not."

**Replace with**

"In bondable mode the Bluetooth device accepts bonding initiated by the remote device, and in non-bondable mode it does not."

[End of changes for Erratum 3023]
4.8.2 Erratum 3236 - Text missing

Note: Fixed starting in V4.0

Section: 5.2.2.1.2 - Authentication Required for Access to Remote Service

[Original Text States]
When a Bluetooth device in security mode 4 initiates access to a remote service via a connection-oriented L2CAP channel and a sufficient link-key is not available, the local device shall perform pairing procedures and enable encryption before sending a channel establishment request ().

[Replace with]
When a Bluetooth device in security mode 4 initiates access to a remote service via a connection-oriented L2CAP channel and a sufficient link-key is not available, the local device shall perform pairing procedures and enable encryption before sending a channel establishment request (L2CAP_ConnectReq or higher layer channel establishment request such as that of RFCOMM).

[End of changes for Erratum 3236]

4.9 Volume 2 Part H: Random Number Generation

4.9.1 Erratum 3194 - Most of the links given in Vol 2, Part H, Section 2 are wrong

[Original Links]
Each device has a pseudo-random number generator. Pseudo-random numbers are used for many purposes within the security functions – for instance, for the challenge-response scheme, for generating authentication and encryption keys, nonces used in Simple Pairing, for Passkeys used in authentication. A device shall use a pseudo random number generator compliant with [FIPS PUB 140-2](http://csrc.nist.gov/publications/fips/fips140-2/ fips1402annexc.pdf)

An example of a possible random generator is provided in [FIPS PUB 186-2] Appendix 3.1 (http://csrc.nist.gov/publications/fips/fips186-2/fips186-2-change1.pdf), which can be used by replacing SHA-1 function with the SHA-256 function The device shall use a seed with at least the minimum entropy required by the pseudo random number generator. The random number generator shall be tested against the [FIPS SP800-22](http://csrc.nist.gov/rng/SP800-22b.pdf).

....

These tests are part of standard statistical mathematical packages. Some test suites, like the Diehard test suite can be used to verify the compliance. Alternatively, other tools, such as the DieHarder (http://www.phy.duke.edu/~rgb/General/ rand_rate.php) or the available NIST tools (http://csrc.nist.gov/CryptoToolKit/tkrng.html, http://csrc.nist.gov/rng) and the corresponding recommendations (http://csrc.nist.gov/rng/SP800-22b.pdf) may also be used.

[Replace with]
Each device has a pseudo-random number generator. Pseudo-random numbers are used for many purposes within the security functions – for instance, for the challenge-response scheme, for generating authentication and encryption keys, nonces used in Simple Pairing, for Passkeys used in authentication. A device shall use a pseudo random number generator compliant with [FIPS PUB 140-2](http://csrc.nist.gov/publications/fips/fips140-2/ fips1402annexc.pdf)
An example of a possible random generator is provided in [FIPS PUB 186-2] Appendix 3.1 (http://csrc.nist.gov/publications/fips/archives/fips186-2/fips186-2-change1.pdf), which can be used by replacing SHA-1 function with the SHA-256 function.

The device shall use a seed with at least the minimum entropy required by the pseudo random number generator.

The random number generator shall be tested against the [FIPS SP800-22](http://csrc.nist.gov/publications/nistpubs/800-22-rev1/SP800-22rev1.pdf). This encompasses the verification of the following statistical tests performed on the output of the PRNG as specified by the [FIPS SP800-22]:

.....

These tests are part of standard statistical mathematical packages. Some test suites, like the Diehard test suite can be used to verify the compliance. Alternatively, other tools, such as the DieHarder (http://www.phy.duke.edu/~rgb/General/rand_rate.php) or the available NIST tools (http://csrc.nist.gov/groups/ST/toolkit/random_number.html) and the corresponding recommendations (http://csrc.nist.gov/publications/nistpubs/800-22-rev1/SP800-22rev1.pdf) may also be used.

[End of changes for Erratum 3194]

4.10 Volume 3 Part E: AMP DISCOVER RESPONSE (CODE 0X03)

4.10.1 **Erratum 3079 - A2MP: Minor omission in Table 3.5, Controller Status field**

*Note: Fixed starting in v4.0*

*Section: 3.4 AMP DISCOVER RESPONSE (CODE 0X03), table 3.5, page 378*

*[Append to Code 0x04, row “Parameter Description” last line]*

This value shall only be used if the AMP Controller is powered up.

[End of changes for Erratum 3079]
5 Core Specification Version 4.0

5.1 Volume 0 part B: Part B - Bluetooth Compliance Requirements

5.1.1 Erratum 3852 - Table 4.1 GATT requirement does not match GAP requirements. GATT is mandatory if ATT is supported

Section: 4.1, Basic Rate Core Configuration, Table 4.1, row “4”, Column “Required Features”, page 50

[Original text states]
“GATT is optional when the ATT is supported. When supported, all mandatory features.”

[Replace with]
“GATT is mandatory when ATT is supported. When supported, all mandatory features.”

[End of changes for Erratum 3852]

5.2 Volume 1: Architecture & Terminology Overview

5.2.1 Erratum 3908 - Missing legend in core system architecture figure

Paragraph 2: Core System Architecture, Figure 2.1: Bluetooth core system architecture, page 31

[Replace with]
[End of changes for Erratum 3908]
5.3 Volume 1: Part A Architecture

5.3.1 Erratum 3847 - typos in figure 3.2 when mapping logical transports to logical links

Section: 3.1 CORE TRAFFIC BEARERS, Figure 3.2: Bluetooth traffic bearers, page 40

[Replace with]

<table>
<thead>
<tr>
<th>Application Traffic Types</th>
<th>Bluetooth core</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L2CAP Channels</td>
</tr>
<tr>
<td>AMP Manager Protocol</td>
<td>AMP Manager Fixed Channel</td>
</tr>
<tr>
<td>Channel Manager</td>
<td></td>
</tr>
<tr>
<td>AMP PAL</td>
<td></td>
</tr>
<tr>
<td>BR/EDR Link Manager</td>
<td></td>
</tr>
<tr>
<td>LE Link Layer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher Layer Protocol</td>
<td>Unicast</td>
</tr>
<tr>
<td>Signalling</td>
<td></td>
</tr>
<tr>
<td>Reliable Asynchronous</td>
<td></td>
</tr>
<tr>
<td>Framed User Data</td>
<td></td>
</tr>
<tr>
<td>Higher Layer Framed</td>
<td></td>
</tr>
<tr>
<td>Isochronous User Data</td>
<td></td>
</tr>
<tr>
<td>Constant Rate Isochronous</td>
<td></td>
</tr>
<tr>
<td>User Data</td>
<td></td>
</tr>
<tr>
<td>Unreliable Asynchronous</td>
<td>[End of changes for Erratum 3847]</td>
</tr>
<tr>
<td>Framed User Data</td>
<td></td>
</tr>
</tbody>
</table>

5.3.2 Erratum 3813- LE piconet channel supported layers

Section: 3.3.2.1.4 Supported layers, page 56

[Original text states]

“The LE piconet channel supports a number of physical links, logical transports, logical links and L2CAP channels used for general purpose communications.”
[Replace with]

“The LE piconet channel supports L2CAP channels used for general purpose communications.”

[End of changes for Erratum 3813]

5.3.3 Erratum 3891 - Typos in text referring to devices B and C incorrectly. Should be A and C.

Section: 4.1.2 LE Topology, page 75

[Original text states]

“...Devices B and C are using another LE piconet physical channel (represented by the blue enclosure and a lighter gray background)...”

[Replace with]

“...Devices A and C are using another LE piconet physical channel (represented by the blue enclosure and a lighter gray background)…”

[End of changes for Erratum 3891]

5.3.4 Erratum 3892 - Typos referring to devices H, I and J.

Section: 4.1.2 LE Topology, page 76

[Original text states]

“...Devices H and I are advertisers and device J is a scanner.”

[Replace with]

“...Device H is an advertiser and devices I and J are scanners.”

[End of changes for Erratum 3892]

5.3.5 Erratum 3890 - Typo in the text: used the term

Section: 4.2.2.1 Device Filtering Procedure, page 80

[Original text states]

“... A similar situation occurs with connection requests. Connection requests must be responded to by initiators unless a device filter is used to limit the devices the initiator is required to respond…”

[Replace with]

“... A similar situation occurs with connection requests. Connection requests must be responded to by advertisers unless a device filter is used to limit the devices the advertiser is required to respond…”

[End of changes for Erratum 3890]
5.4 Volume 1 part C: Architecture & Terminology Overview

Note: Fixed starting with v4.0

5.4.1 Erratum 3556 - Description of changes from v2.1 to v3.0 says v4.0 instead

Section: 5.1 CHANGES FROM V2.1 + EDR TO V3.0 + HS

5.4.1.1 In Section 5.1

[Original text states]

“Several new features are introduced in Bluetooth Core Specification v4.0.”

[Replace with]

“Several new features are introduced in Bluetooth Core Specification v3.0 + HS.”

5.4.1.2 In Section 5.2

[Original text states]

v4.0

[Replace with]

v3.0 + HS

5.4.1.3 In Section 6.1

[Original text states]

4.0

Replace With]

v4.0

[End of changes for Erratum 3356]

5.5 Volume 1 part D: Mixing of Specification Versions

5.5.1 Erratum 3568 - High Speed Only Controller Subsystems

Section: 1 below Table 4.1

[Append]

"High Speed Only Controller Subsystems qualified to the 4.0 version of the Bluetooth Core Specification shall use the specification name 3.0 + HS."

[End of changes for Erratum 3568]
5.6 Volume 2 part C: Link Manager Protocol Specification

5.6.1 Erratum 3531 - Sequence 41 has the arrows pointing to the wrong direction

Section 4.2.5.5 Pause Encryption, page 258

[Original Sequence diagram]

[Replace with this Sequence diagram]

[End of changes for Erratum 3531]

5.7 Volume 2 part E: Host Controller Interface Functional Specification

5.7.1 Erratum 3497 - Typo under Command Parameter

Section: 7.3.41 Read Link Supervision Timeout Command, page 620

[Original text states]

“Connection_Handle: Size: 2 Octets (12 Bits meaningful)"

[Replace with]

“Handle: Size: 2 Octets (12 Bits meaningful)”
5.7.2  **Erratum 3540 - Advertiser filter policy text does not match Link Layer**

*Section: 7.8.5 LE Set Advertising Parameters Command, Advertising_Filter_Policy table, page 814*

**[Original table content]**

<table>
<thead>
<tr>
<th>Value</th>
<th>Parameter Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x00</td>
<td>Allow Scan Request from Any, Allow Connect Request from Any (default).</td>
</tr>
<tr>
<td>0x01</td>
<td>Allow Scan Request from White List Only, Allow Connect Request from Any.</td>
</tr>
<tr>
<td>0x02</td>
<td>Allow Scan Request from Any, Allow Connect Request from White List Only.</td>
</tr>
<tr>
<td>0x03</td>
<td>Allow Scan Request from White List Only, Allow Connect Request from White List Only.</td>
</tr>
<tr>
<td>0x04 – 0xFF</td>
<td>Reserved for future use.</td>
</tr>
</tbody>
</table>

**[Replace Parameter Descriptions for rows 1 to 4]**

0x00: Process scan and connection requests from all devices (i.e. the White List is not in use). (default).

0x01: Process connection requests from all devices and only scan requests from devices that are in the White List.

0x02: Process scan requests from all devices and only connection requests from devices that are in the White List.

0x03: Process scan and connection requests only from devices in the White List.

**[End of changes for Erratum 3540]**

5.7.3  **Erratum 3514 - Missing reference in description**

*Note: Fixed starting in v4.0*

*Section: 7.8.24 LE Start Encryption Command, page 845*

**[Original text states]**

“The LE_Start_Encryption command is used to authenticate the given encryption key associated with the remote device specified by the connection handle, and once authenticated will encrypt the connection.”

**[Append]**

“The parameters are as defined in [Vol 3] Part H, Section 2.4.4.”

**[End of changes for Erratum 3514]**
5.7.4  **Erratum 3815 - BR/EDR/LE controller instead of BR/EDR**

*Section: 1.1 Lower Layers of the Bluetooth Software Stack, figure 1.2 right hand side of figure, page 371*

[Original text states]
“BR/EDR Controller.”

[Replace with]
“BR/EDR/LE Controller.”

[End of changes for Erratum 3815]

5.7.5  **Erratum 3893 - Incorrect reference; missing a Volume link**

*Section: 3.19 LE CONTROLLER REQUIREMENTS, page 415*

[Original text states]
“Table 3.20 lists the commands and events that a Controller supporting LE shall implement if HCI is claimed. The Link Layer Features are defined in Part B, Section 4.6, Active Slave Broadcast Transport.”

[Replace with]
“Table 3.20 lists the commands and events that a Controller supporting LE shall implement if HCI is claimed. The Link Layer Features are defined in Volume 6, Part B, Section 4.6, Feature Support.”

[End of changes for Erratum 3893]

5.7.6  **Erratum 3895 - Incorrect ref to Volume 2 (own volume) instead of Volume 6**

*Section: 7.4.6 Read BD_ADDR Command, page 678*

[Original text states]
“On an LE Controller, this command shall read the Public Device Address as defined in Part B, Section 4.1, General.”

[Replace with]
“On an LE Controller, this command shall read the Public Device Address as defined in [Vol 6] Part B, Section 1.3.”

[End of changes for Erratum 3895]

5.7.7  **Erratum 3896 parameter Data[i]: is referring to the scan response data; and pointing to BR/EDR instead of LE**

*Section: 7.7.65.2 LE Advertising Report Event, in table labeled “Data[i]:”, page 802*
5.7.8 Erratum 3879 - Slave latency range inconsistency

Section: 7.7.65 LE Meta Event, table “Conn_Latency” column “Parameter Description”, page 800.
Note: rows “Time” and Time Range” should be deleted.

[Original text states]
“Connection latency for this connection.
Range: 0x0006 to 0x0C80
Time = N * 1.25 msec
Time Range: 7.5 msec to 4000 msec”

[Replace with]
"Slave latency for the connection in number of connection events.
Range: 0x0000 to 0x01F3.”

Section: 7.7.65.3 LE Connection Update Complete Event, table “Conn_Latency” column “Parameter Description”, page 804.
Note: rows “Time” and Time Range” should be deleted.

[Original text states]
“Connection latency for this connection.
Range: 0x0006 to 0x0C80
Time = N * 1.25 msec
Time Range: 7.5 msec to 4000 msec”

[Replace with]
“Slave latency for the connection in number of connection events.
Range: 0x0000 to 0x01F4.”

Section: 7.8.12 LE Create Connection Command, table “Conn_Latency” column “Parameter Description”, page 828.

[Original text states]
“Range: 0x0000 to 0x01F4”

[Replace with]
“Range: 0x0000 to 0x01F3”

Section: 7.8.18 LE Connection Update Command, table “Conn_Latency” column “Parameter Description”, page 836.

[Original text states]
“Range: 0x0000 to 0x03E8”

[Replace with]
“Range: 0x0000 to 0x01F3”

Section: 7.8.18 LE Connection Update Command, table “Conn_Latency” column “Value”, page 836.

[Original text states]
“0x03E9 – 0xFFFF”

[Replace with]
“0x01F4 – 0xFFFF”

[End of changes for Erratum 3879]

5.7.9 Erratum 3897 - Inconsistency between the LE link layer and the HCI spec.
Section: 7.8.11 LE Set Scan Enable Command, page 823

[Original text states]
“…reports to the Host, or if it shall generate advertising reports…”

[Replace with]
“…reports to the Host, or if the Link Layer should generate advertising reports…”

[End of changes for Erratum 3897]

5.8 Volume 3 Part C: Generic Access Profile

5.8.1 Erratum 3879 - Slave latency range inconsistency
Section: 12.5 LE Connection Update Command, “Table 12.7”, column “Description” Row “Slave latency”, page 382.

[Original text states]
“Slave latency range: 0x0000 to 0x03E8”

[Replace with]
“Slave latency range: 0x0000 to 0x01F3”

[End of changes for Erratum 3879]
5.8.2 **Erratum 4120** - PublicBrowseGroup should be PublicBrowseRoot


[Original text states]

“PublicBrowseGroup”

[Replace with]

“PublicBrowseRoot”

[End of changes for Erratum 4120]

5.9 **Volume 3 part F Attribute Protocol (ATT)**

5.9.1 **Erratum 3925** - LE One of the parameters in Table 3.12 is missing starting range

Section: 3.4.3.4 Find By Type Value Response, Table 3.12, 2nd Row, Column “Size (octets)”, page 490

[Original text states]

“to (ATT_MTU-1).”

[Replace with]

“4 to (ATT_MTU-1).”

[End of changes for Erratum 3925]

5.9.2 **Erratum 3924** - A typo at Section 3.3.1 Attribute PDU Format

Section: 3.3.1 Attribute PDU Format, page 481

[Original text states]

“Only the Write Command may include an Authentication Signature:."

[Replace with]

"Only the Write Command may include an Authentication Signature."  

[End of changes for Erratum 3924]

5.9.3 **Erratum 4062** - Sentence is not possible to every be considered

Section: 3.4.3.4 Find By Type Value Response, 1st paragraph, page 491

[Delete text]

“...If no other attributes with the same attribute type exist after the Found Attribute Handle, the End Found Handle shall be set to 0xFFFF.”
5.10 Volume 3 Part G - Generic Attribute Profile (GATT)

5.10.1 Erratum 3933 - In Configured Broadcast, the case if BR/EDR link is not stated

Section: 2.7 Configured Broadcast, page 534

[Append text]

"For BR/EDR physical links, Configured Broadcast is not supported."

[End of changes for Erratum 3933]

5.10.2 Erratum 3881 - Clarify that BR-only GATT services will be reported in GATT Discover Primary Services executed on LE

Section: 4.4 Primary Service Discovery, page 551

[Append text to end of section 4.4]

"A GATT client that performs service discovery sub-procedures shall not assume that services returned in the sub-procedure responses are available over all transports over which GATT can operate.

For a service that is only available over one transport, the service shall fail requests using an Application Error."

[End of changes for Erratum 3881]

5.10.3 Erratum 3929 - Service Changed Client Configuration Characteristic Descriptor

Section: 7.1 Service Changed, page 584

[Original text states]

“This Characteristic Value shall be configured to be indicated.”

[Replace Command with]

“This Characteristic Value shall be configured to be indicated, using the Client Characteristic Configuration Descriptor by a client.”

[End of changes for Erratum 3929]

5.10.4 Erratum 3915 - Client characteristic configuration descriptor

Section: 3.3.1.1 Characteristic Properties, table 3.5 row 1 “Broadcast”, column “Description”, page 538

[Original text states]

“If set, permits broadcasts of the Characteristic Value using Characteristic Configuration Descriptor”
[Replace with]
“If set, permits broadcasts of the Characteristic Value using Server Characteristic Configuration Descriptor. If set, the Server Characteristic Configuration Descriptor shall exist.”

5.10.4.1 Section: 3.3.1.1 Characteristic Properties, row 5 “Notify”, column “Description”, page 538

[Original text states]
“As set, permits notifications of a Characteristic Value without acknowledgement using the procedure defined in Section 4.10.”

[Replace with]
“If set, permits notifications of a Characteristic Value without acknowledgement using the procedure defined in Section 4.10. If set, the Client Characteristic Configuration Descriptor shall exist.”

5.10.4.2 Section: 3.3.1.1 Characteristic Properties, row 6 “Indicate”, column “Description”, page 538

[Original text states]
“As set, permits indications of a Characteristic Value with acknowledgement using the procedure defined in Section 4.11.”

[Replace with]
“If set, permits indications of a Characteristic Value with acknowledgement using the procedure defined in Section 4.11. If set, the Client Characteristic Configuration Descriptor shall exist.”

5.10.4.3 Section: 3.3.1.1 Characteristic Properties, row 8 “Extended Properties”, column “Description”, page 538

[Original text states]
“As set, additional characteristic properties are defined in the Characteristic Extended Properties Descriptor defined in Section 3.3.3.1”

[Replace with]
“If set, additional characteristic properties are defined in the Characteristic Extended Properties Descriptor defined in Section 3.3.3.1. If set, the Characteristic Extended Properties Descriptor shall exist. Section: 4.10 Characteristic Value Notification, page 569

[Original text states]
“This procedure is used to notify a client of the value of a Characteristic Value from a server. There is one sub-procedure that can be used to notify a value: Notifications. Notifications can be configured using the Characteristic Configuration descriptor (See Section 3.3.3.3).

A profile defines when to use Notifications.”

[Replace with]
“This procedure is used to notify a client of the value of a Characteristic Value from a server. There is one sub-procedure that can be used to notify a value: Notifications. Notifications can be configured using the Client Characteristic Configuration descriptor (See Section 3.3.3.3).
A profile defines when to use Notifications.”

5.10.4.4 Section: 4.11 Characteristic Value Indication, page 570

[Original text states]
This procedure is used to indicate the Characteristic Value from a server to a client. There is one sub-procedure that can be used to indicate a value: Indications. Indications can be configured using the Characteristic Configuration (See Section 3.3.3.3).

A profile defines when to use Notifications.”

[Replace with]
This procedure is used to indicate the Characteristic Value from a server to a client. There is one sub-procedure that can be used to indicate a value: Indications. Indications can be configured using the Client Characteristic Configuration (See Section 3.3.3.3).

A profile defines when to use Notifications.”

5.10.4.5 Section: 7.1 Service Changed, page 584

[Original text states]
The «Service Changed» characteristic is a control-point attribute (as defined in 11) that shall be used to indicate to connected devices that services have changed (i.e., added, removed or modified). The characteristic shall be used to indicate to clients that have a trusted relationship (i.e. bond) with the server when GATT based services have changed when they re-connect to the server. See Section 2.5.2. This Characteristic Value shall be configured to be indicated.”

[Replace with]
The «Service Changed» characteristic is a control-point attribute (as defined in 11) that shall be used to indicate to connected devices that services have changed (i.e., added, removed or modified). The characteristic shall be used to indicate to clients that have a trusted relationship (i.e. bond) with the server when GATT based services have changed when they re-connect to the server. See Section 2.5.2. This Characteristic Value shall be configured to be indicated, using the Client Characteristic Configuration Descriptor by a client”.

[End of changes for Erratum 3915]

5.10.5 Erratum 3833 - Service Changed

Section: 7.1 Service Changed, Table 7.2, column “Attribute Value”, page 584

[Original text states]
“Characteristic Properties = 0x26.”

[Replace with]
“Characteristic Properties = 0x20,”

[End of changes for Erratum 3833]
5.10.6 Erratum 3932 - Attribute Caching

Section: 2.5.2 Attribute Caching, “last paragraph”, page 529

[Original text states]
“….If GATT based services on the server cannot be changed during the usable lifetime of the device, the Services Changed characteristic….”

[Replace with]
“….If GATT based services on the server cannot be changed during the usable lifetime of the device, the Service Changed characteristic…."

Section: 2.5.2 Attribute Caching, “1st paragraph”, page 530

[Original text states]
“….Any change to the GATT service definition characteristic values other than the Service Change characteristic value….”

[Replace with]
“….Any change to the GATT service definition characteristic values other than the Service Changed characteristic value….”

Section: 2.5.2 Attribute Caching, “3rd paragraph”, page 530

[Original text states]
“Note: Clients without a trusted relationship must perform service discovery on each connection if the server supports the Services Changed characteristic.”

[Replace with]
“Note: Clients without a trusted relationship must perform service discovery on each connection if the server supports the Service Changed characteristic.”

Section: 4.2 Feature Support and Procedure Mapping, page 550

[Original text states]
“C3: If Service Change Characteristic is present, this feature is mandatory, otherwise optional.”

[Replace with]
“C3: If Service Changed Characteristic is present, this feature is mandatory, otherwise optional.”

[End of changes for Erratum 3932]

5.10.7 Erratum 3821- Read Long Characteristic Values

Section: 4.8.3 Read Long Characteristic Values, page 562

[Original text states]
“Note: The Read Blob Request may be used to read the remainder of an Attribute where the first part was read using a simple Read Request.”
[Replace with]

"Note: The Read Blob Request may be used to read the remainder of an Attribute where the first part was read using a simple Read Request, or Read By Type Request."

[End of changes for Erratum 3821]

5.10.8 **Erratum 3951 - Clarify what occurs when a service changes and the Service Changed indication/notification is not enabled by the client**

Section: 7.1 Service Changed, page 584

[Original text states]

“The «Service Changed» characteristic is a control-point attribute (as defined in 11) that shall be used to indicate to connected devices that services have changed (i.e., added, removed or modified). The characteristic shall be used to indicate to clients that have a trusted relationship (i.e. bond) with the server when GATT based services have changed when they re-connect to the server. See Section 2.5.2.

This Characteristic Value shall be configured to be indicated, using the Client Characteristic Configuration Descriptor by a client”.

[Replace with]

“The «Service Changed» characteristic is a control-point attribute (as defined in 11) that shall be used to indicate to connected devices that services have changed (i.e., added, removed or modified). The characteristic shall be used to indicate to clients that have a trusted relationship (i.e. bond) with the server when GATT based services have changed when they re-connect to the server. See Section 2.5.2.

This Characteristic Value shall be configured to be indicated, using the Client Characteristic Configuration Descriptor by a client. Indications caused by changes to the Service Changed Characteristic Value shall be considered lost if the client has not enabled indications in the Client Configuration Characteristic Descriptor”.

[End of changes for Erratum 3951]

5.10.9 **Erratum 4120 - PublicBrowseGroup should be PublicBrowseRoot**


[Original text states]

“PublicBrowseGroup”

[Replace with]

“PublicBrowseRoot”


[Original text states]

“BrowseGroupList[”
[Replace with]
“BrowseGroupList”

[End of changes for Erratum 4120]

5.10.10 Erratum 4067 - Are prepared values written multiple times
Section: 4.9.5 Reliable Writes, page 568

[Original text states]
“If a Characteristic Value is prepared two or more times during this sub-procedure, then all prepared values are written multiple times to the same Characteristic Value in the order that they were prepared.”

[Replace with]
“If a Characteristic Value is prepared two or more times during this sub-procedure, then all prepared values are written to the same Characteristic Value in the order that they were prepared.”

[End of changes for Erratum 4067]

5.11 Volume 3 Part H: Security Manager Specification

5.11.1 Erratum 3948 - Reference to IETF RFC 4493 should be removed due to conflict in terminology with NIST 800-38B
Section: 2.4.5 Signing Algorithm, page 616.

[Delete text]
“…The description of the algorithm can also be found in IETF RFC 4493(http://www.ietf.org/rfc/rfc4493.txt)…”
Section: 2.4.5 Signing Algorithm, page 617.

[Delete text]
“…and IETF RFC 4493 Section 4.”

[End of changes for Erratum 3948]

5.11.2 Erratum 4150 - Typo in value field

5.11.2.1 Section: 3.5.5 Pairing Failed, table 3.6, page 628.

[Original text states]
“0x0-0xFF”

[Replace with]
“0x0A”
ERRATA SERVICE RELEASE

ESR05 - Errata Service Release to Bluetooth® Specifications

5.11.2.2 Section: 2.4.5 Signing Algorithm, page 617.

[Original text states]
“0x0B”

[Replace with]
“0x0B - 0xFF”

[End of changes for Erratum 4150]

5.12 Volume 5 Part A: Message Sequence Charts

5.12.1 Erratum 3697 - HCI command name corrections on MSC 7.1

Note: Fixed starting in v4.0

5.12.1.1 Section: 7 Message Sequence Charts, page 49

[Original command states]
“HCI_Get_Local_AMP_Info”

[Replace command with]
“HCI_Read_Local_AMP_Info”.

5.12.1.2 Section: 7 Message Sequence Charts, page 49

[Original command states]
“HCI_Write_Remote_AMP_Assoc”

[Replace command with]
“HCI_Write_Remote_AMP_Assoc”.

5.12.1.3 Section: 7 Message Sequence Charts, page 49

[Original command states]
“HCI_Channel_sel”

[Replace command with]
“HCI_Channel_Selected”.

[End of changes for Erratum 3697]

5.12.2 Erratum 3602 - Typo on Fig 3.1, Physical Link FSM diagram

Section: 3.1.2 State Diagram, page 24, Figure 3.1: Physical Link finite state machine diagram

Note: Fixed starting in v4.0

[Original text states]
“4-wau”.

[Replace with]
“4-way”.

[End of changes for Erratum 3697]

5.13 Volume 6 part A: Physical Layer Specification

5.13.1 Erratum 3451 - Wanted signal frequency not in line with frequencies supported by non-connectable devices
Section: 4.3 Out of band blocking, 1st paragraph, page 21

[Original text States]
“…with a center frequency of 2440 MHz…”

[Replace with]
“…with a center frequency of 2426 MHz…”

[End of changes for Erratum 3451]

5.14 Volume 6 part B: Link Layer Specification

5.14.1 Erratum 3938 - Device Address
Section: 1.3 Device Address, page 34

[Delete this paragraph and figure 1.3]
The random device address is divided into the following two fields:

hash field is contained in the 24 least significant bits, as defined in [Vol. 3] Part C, Section 10.8.2.3.
random field is contained in the 24 most significant bits, as defined in [Vol. 3] Part C, Section 10.8.2.2.

Figure 1.3: Format of random device address

[End of changes for Erratum 3938]

5.14.2 Erratum 3931 - Missing Pause Encryption LLC requirements when Encryption is supported
Section: 4.6.1 LE Encryption, Add 2 new bullet points after “LL_START_ENC_RSP bullet point and before Encryption Start Procedure bullet point”, page 77
ERRATA SERVICE RELEASE

ESR05 - Errata Service Release to Bluetooth® Specifications

[Append ]

LL_PAUSE_ENC_REQ (Section 2.4.2.11)
- LL_PAUSE_ENC_RSP (Section 2.4.2.12)

[End of changes for Erratum 3931]

5.14.3 Erratum 3751 - Is instant an absolute or relative time?

5.14.3.1 Section: 2.4.2.1 LL_CONNECTION_UPDATE_REQ, page 48

[Original text States]
“…The Instant Field shall have a value in the range of 1 to 32767.”

[Replace with]
“…The Instant field shall have a value in the range of 0 to 65535.”

5.14.3.2 Section: 2.4.2.2 LL_CHANNEL_MAP_REQ, page 49

[Original text States]
“…The Instant Field shall have a value in the range of 1 to 32767.”

[Replace with]
“…The Instant field shall have a value in the range of 0 to 65535.”

[End of changes for Erratum 3751]

5.14.4 Erratum 3636 - Incorrect use of the NESN bit
Section: 4.5.5 Connection Setup – Slave Role, below figure 4.13, page 72

[Original text States]
“…can use slave subrating as defined…”

[Replace with]
“…can use slave latency as defined …”

[End of changes for Erratum 3636]

5.14.5 Erratum 3565 - No spec for behavior when remote sends non-empty Data Channel Data PDU during encryption pause

5.14.5.1 Section: 5.1.3.1 Encryption Start Procedure, at the end of last sentence, page 84

[Append text]
“If at any time during the encryption start procedure, the Link Layer of the master or the slave receives an unexpected Data Channel PDU from the peer Link Layer, it shall immediately exit the Connection State,
and shall transition to the Standby State. The Host shall be notified that the link has been disconnected with error code “Connection Terminated Due to MIC Failure” (0x3D).”

5.14.5.2 Section: 5.1.3.2 Encryption Pause Procedure, at the end of last sentence, page 85

[Append text]
“If at any time during the encryption pause procedure, the Link Layer of the master or the slave receives an unexpected Data Channel PDU from the peer Link layer, it shall immediately exit the Connection State, and shall transition to the Standby State. The Host shall be notified that the link has been disconnected with error code “Connection Terminated Due to MIC Failure” (0x3D).”

[End of changes for Erratum 3565]

5.14.6 Erratum 3869 - Typo ADV_DISCOVER-IND in footnote 1 for ADV_SCAN_IND
Section: 2.3.2.1 SCAN_REQ, Footnote 1, page 41

[Original text States]
“1. ADV_DISCOVER-IND was renamed to ADV_SCAN_IND”

[Replace with]
“1. ADV_DISCOVER_IND was renamed to ADV_SCAN_IND”

[End of changes for Erratum 3869]

5.14.7 Erratum 4149 - Typo
Section: 4.4 Intermodulation Characteristics, page 22

[Original text States]
“…and | f2-f1 | = n*1, where n…”

[Replace with]
“…and | f2-f1 | = n * 1 MHz, where n…”

[End of changes for Erratum 4149]

5.14.8 Erratum 4137 - Inconsistent session key identifier
5.14.8.1 Section: 2.4.2.4 LL_ENC_REQ, 3rd bullet, page 49

[Original text States]
“…session key identifier.”

[Replace with]
“…session key diversifier.”
ERRATA SERVICE RELEASE

ESR05 - Errata Service Release to Bluetooth® Specifications

5.14.8.2 2.4.2.5 LL_ENC_RSP, 1st bullet, page 49

[Original text States]
“…session key identifier.”

[Replace with]
“…session key diversifier.”

[End of changes for Erratum 4137]

5.14.9 Erratum 4092 - In LL_CONNECTION_UPDATE_REQ, a typo minus sign is in front of connSupervisionTimeout.

Section: 2.4.2.1 LL_CONNECTION_UPDATE_REQ, page 48

[Original text States]
“…as defined by Section 4.5.1, in the following manner:
connSupervisionTimeout= Timeo ut * 10 ms.”

[Replace with]
“…as defined by Section 4.5.2, in the following manner:
connSupervisionTimeout= Timeout * 10 ms.”

[End of changes for Erratum 4092]

5.14.10 Erratum 4095 - Clarify if the Link layer of the Master could initiate autonomously a channel map update

Section: 5.1.2 Channel Map Update Procedure, 1st paragraph, page 80

[Append text after the word PDU]
“The master can update the channel map without being requested to by the Host.”

[End of changes for Erratum 4095]

5.14.11 Erratum 3904 - When does the instant occur? Unclear when connEventCount is incremented? Beginning of new event or end of last event

5.14.11.1 Section: 4.5.2 Supervision Timeout, 4th paragraph, page 69

[Append text after the word connInterval]
“* 2.”

5.14.11.2 Section: 5.1.1 Connection Update Procedure, 2nd paragraph, page 79

[Original text states]
“For example, the interval between the previous connection event and the connection event at the instant will be \textit{connIntervalOLD}. The interval between the connection event at the instant and the next connection event will be \textit{connIntervalNEW}.”

\textbf{[Replace with]}

“For example, the interval between the preceding connection event before the instant and the instant will be \textit{connIntervalOLD}. The interval between the connection event after the instant and the following connection event will be \textit{connIntervalNEW}.”

5.14.11.3 Section: 5.1.1 Connection Update Procedure, last paragraph, page 79

\textbf{[Original text states]}

“The first packet sent at the instant…”

\textbf{[Replace with]}

“The first packet sent after the instant…”

5.14.11.4 Section: 5.1.1 Connection Update Procedure, 1st paragraph, page 80

\textbf{[Original text states]}

“The next connection event anchor point shall be \textit{connIntervalNEW} after the connection event anchor point at the instant…”

\textbf{[Replace with]}

\textit{Note to editor: \_OLD should be “OLD” subscript, and transmitWindowOffset should be in italic like shown below.}

“The instant occurs after connInterval\_OLD and before \textit{transmitWindowOffset}. ….”

5.14.11.5 Section: 5.1.1 Connection Update Procedure, Figure 5.1, page 80

\textbf{[Insert a vertical line]}

“Insert a vertical line that is aligned with the end of the "connIntervalOLD" and "transmitWindowOffset" line, and label it "Instant"

\textbf{[End of changes for Erratum 3904]}

\section*{5.15 Volume 6 Part C: Sample data}

\subsection*{5.15.1 Erratum 3828 - Incorrect parsed length field in the LL\_START\_ENC\_REQ}

Section: 1 Encryption sample data, page 92

\textbf{[Original text States]}

“…Length 0x0D…”

\textbf{[Replace with]}

“…Length 0x01…”
5.16 Volume 6 part D: Message Sequence Charts

5.16.1 Erratum 3830 - Missing ACL data from LL B to Host B

Section: 6.1 Sending Data, page 110

[Replace Figure 6.1 with]

![Figure 6.1: Sending Data]

5.17 Volume 6 part F: Direct Test Mode

5.17.1 Erratum 3696 - LE Test Packet not completely defined

Section: 2.2 Message Sequence Charts, page 130

[Append an entire new section to Volume 6 part F, page 137]

4.0 LE Test Packet Definition

4.1 LE test packets format

The LE Test packet format shall be as shown in Figure 4.1. LE test packets are required for LE RF PHY conformance testing using Direct Test Mode.

The LE test packet consists of the following fields; preamble (8 bit), synchronization word (32 bit), PDU header (8 bit), PDU length (8 bit), payload (296 bit) and CRC (24 bit), totaling 376 bits. LE test packets do not incorporate a PDU address field.
Depending on the test, the packet payload content may vary.

![Packet Diagram]

*Figure 4.1 – LE Test packet format*

4.1.1 Whitening

LE test packets shall not use whitening.

4.1.2 Preamble and synchronisation word

LE test packets shall have ‘10010100100001001110101001110’ (in transmission order) as their synchronization word. The preamble for all LE test packets is thus ‘10101010’ (in transmission order).

4.1.3 CRC

The CRC shift register shall be preset with 0x555555 for every LE test packet.

4.1.4 LE test packet PDU

The LE test packet PDU consists of an 8-bit header, an 8-bit length field and a variable size payload. Its structure is as shown in Figure 4.2

![Payload Structure Diagram]

*Figure 4.2 – LE Test packet PDU structure*

The first four bits of the PDU header field indicate the payload content type as defined in Table 4.1. The length field expresses the payload field length in octets. The RFU bits shall be set to zero and ignored upon reception.
Table 4:1 – LE Test Packet PDU header’s Type field encoding

<table>
<thead>
<tr>
<th>Payload type</th>
<th>Payload description</th>
</tr>
</thead>
<tbody>
<tr>
<td>b₃b₂b₁b₀</td>
<td></td>
</tr>
<tr>
<td>'0000'</td>
<td>PRBS9 sequence ‘11111111100000111101…’ (in transmission order) as described in section 4.1.5</td>
</tr>
<tr>
<td>'0001'</td>
<td>Repeated ‘11110000’ (in transmission order) sequence as described in section 4.1.5</td>
</tr>
<tr>
<td>'0010'</td>
<td>Repeated ‘10101010’ (in transmission order) sequence as described in section 4.1.5</td>
</tr>
<tr>
<td>'0011'</td>
<td>PRBS15 sequence</td>
</tr>
<tr>
<td>'0100'</td>
<td>Repeated ‘11111111’ (in transmission order) sequence</td>
</tr>
<tr>
<td>'0101'</td>
<td>Repeated ‘00000000’ (in transmission order) sequence</td>
</tr>
<tr>
<td>'0110'</td>
<td>Repeated ‘00001111’ (in transmission order) sequence</td>
</tr>
<tr>
<td>'0111'</td>
<td>Repeated ‘01010101’ (in transmission order) sequence</td>
</tr>
</tbody>
</table>

Example: For LE test packets with 0x0F payload contents (‘11110000’ in transmission order) and with the defined LE test packet payload length of 37 octets (296 bits), the LE test packet header and length type field will be ‘1000000010100100’ in transmission order.

4.1.5 LE Test packet payload description

The LE test packet payload content alternatives required for the Bluetooth low energy RF PHY conformance tests are:

PRBS9:

9-bit pseudorandom binary sequence used for wanted signal payload content. The PRBS9 sequence repeats itself after the \((2^9 - 1 = 511)\) bit. The PRBS9 sequence may be generated in a nine stage shift register whose 5ᵗʰ and 9ᵗʰ stage outputs are added in a modulo-two addition stage (see Figure 4.4), and the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized with nine ONEs.

Figure 4.4 – Linear feedback shift register for generation of PRBS9 sequence

PRBS15:

15-bit pseudorandom binary sequence used for the interfering signal. The PRBS15 sequence repeats itself after the \((2^{15} - 1)\) bit. The PRBS15 polynomial may be arbitrarily chosen where this is not explicitly specified in the text. The interfering signal is to be continuously modulated with PRBS15 data (i.e. no packet structures or pauses in the signal).

10101010:

Repeated sequence of alternating 1’s and 0’s, starting at the first payload bit and ending at the start of the first bit in the CRC field. This pattern is used to verify the frequency deviation and the Gaussian filtering properties of the transmitter modulator.

11110000:

Repeated sequence of alternating 0’s and 1’s in groups of four (i.e. 1111000011110000…), starting at the first payload bit and ending at the start of the first bit in the CRC field. This pattern is used to verify the frequency deviation and the Gaussian filtering properties of the transmitter modulator.
4.1.6 LE Test Packet interval

While in LE direct TX mode, LE test packets shall be transmitted from the EUT with a packet interval of 625μs, see Figure 4.5 for reference.

While in LE direct RX mode, the nominal packet interval of the LE test packets transmitted from the tester is 625μs (i.e. the time from the start of a LE test packet to the start of the next LE test packet). The tester packet interval may be extended up to 12.5ms upon change of the dirty transmitter parameter settings and during verification of the EUT PER reporting functionality.

![Diagram](image)

Figure 4.5: LE Test packet interval in LE Direct Test Mode

[End of changes for Erratum 3696]
6 Profile Errata

6.1 Object Push Profile 1.1

6.1.1 Erratum 3085- Incorrect mandatory requirements
Section: 6.2 SDP Protocol Data Units, page 363
[Delete all of section 6.2]
[End of changes for Erratum 3085]

6.1.2 Erratum 2800- Ambiguity in Spec of Type Header Use
Section: 5.5 Pushing Data, page 361
[Original text states]
"It is highly recommended that the Push Client use the Type Header when pushing objects to the Push Server."

[Replace with]
"The Push Client should use the Type Header when pushing objects to the Push Server. Push Servers should accept supported objects if sent without a Type Header."

[End of changes for Erratum 2800]

6.1.3 Erratum 713- Object type searching included in Object Push Function
Section: 3.3.1 Object Push, row 4, column “Push Client”, page 352
[Original text states]
"The user selects a Push Server to push the object to. If the selected device does not support the Object Push service, the user is prompted to select another device."

[Replace with]
"The user selects a Push Server to push the object to. If the selected device does not support the Object Push service or the type of object being sent, the user should be prompted to select another device. Service discovery is used to determine both the services available on a device and the object types supported for an Object Push service on a device."

[End of changes for Erratum 713]

6.1.4 Erratum 940- Object Character Set Support
Section: 4.2.1 Content Formats, 1st bulleted Paragraph (Phone Book applications…), page 355
[Append text to end of 1st bulleted paragraph]
“Whatever the vCard format requested, the character set used to encode vCard attribute content should be UTF-8. The CHARSET property parameter may be used in a vCard to override the default character set; however this is not recommended as it may lead to reduced interoperability of this profile.”

[End of changes for Erratum 940]

6.1.5 Erratum 924- Add response codes for handling of large items/OPP Error Codes for Push operations

Section: 5.5 Pushing Data, page 361

[Original text states]
“It is highly recommended that the Push Client use the Type Header when pushing objects to the Push Server.

See Section 5.5 in GOEP.”

[Replace with]
The Push Client should use the Type Header when pushing objects to the Push Server. Push Servers should accept supported objects if sent without a Type header.

If the Push Server does not support the object format sent in the Push operation, the Push Server should respond with the error code “Unsupported Media Type”. Similarly, if the Push Server supports the object format but cannot handle the size of the object being sent in the Push operation, the Push Server should respond with the error code “Requested entity is too large.”

[End of changes for Erratum 924]

6.1.6 Erratum 2447- Unable to determine the number of objects(e.g vCard, vCal) that will be received during OPP server session

Section: 5.2.1 OBEX Headers, table 5.2 page 359

[Original text in Row 1 states]

| Count | X | X |

[Replace with]

| Count | O | O |

Section: 5.2.2 OBEX Headers for the Business Card Pull and Exchange Features, table 5.3 page 360

[Original text in Row 1 states]

| Count | X | X |

[Replace with]

| Count | O | O |

[End of changes for Erratum 2447]
6.2 Message Access Profile 1.0

6.2.1 Erratum 3385 - MNS only use case needs clarification

Section 2 section: 6.4.3 page 72

[Original text states]
“The Message Access session shall be active before and shall not be disconnected after the establishment of the Message Notification session, but only the MAS Notification-Registration feature is required for this use case.”

[Replace with]
"The Message Access session shall be active before the establishment of the Message Notification session, but only the MAS Notification-Registration feature is required for this use case. If the Message Access session is disconnected after Message Notification session establishment, this will automatically indicate a MAS Notification-Deregistration for this MAS instance."

[End of changes for Erratum 3385]

6.2.2 Erratum 3180 - How does the MSE handle retries for messages sent through the MSE

Section: 3.1.7 – MAP-Event-Report object page 33

[Original text states]

• "type" shall have one of the following values:

1. "NewMessage": indicates that a new message has been received by the MSE device. This event type shall also be used if a new message replaces an old one on the MSE (e.g. a Replace-SMS [12]). In this case the MSE shall send the NewMessage including the same handle as used for the replaced message where the readstatus-property of the related bMessage object shall be set to "UNREAD".
2. "DeliverySuccess": indicates that a message has been successfully delivered to its intended recipient.
3. "SendingSuccess": indicates that a message has been successfully sent to a remote network.
4. "DeliveryFailure": indicates that the delivery of a message to its intended recipient failed. This event type shall not be applied for emails.
5. "SendingFailure": indicates that sending to a remote network failed.
6. "MemoryFull": indicates that the memory of the MSE device is full and will not allow any new arriving messages to be received and stored.
7. "MemoryAvailable": indicates that the memory of the MSE device is ready again to receive new messages. This event shall be sent only if there was a " MemoryFull" event before.
8. "MessageDeleted": indicates that a message has been deleted from the reported folder on the MSE and has therefore been shifted to the 'Deleted' folder.
9. "MessageShift": indicates that a message has been shifted on the MSE from one folder (indicated by the "old_folder" parameter) to another folder (indicated by the "folder" parameter).

[Replace with]
...
• “type” shall have one of the following values:

1. "NewMessage": indicates that a new message has been received by the MSE device. This event type shall also be used if a new message replaces an old one on the MSE (e.g. a Replace-SMS [12]). In this case the MSE shall send the NewMessage including the same handle as used for the replaced message where the readstatus-property of the related bMessage object shall be set to "UNREAD".
2. "DeliverySuccess": indicates that a message has been successfully delivered to its intended recipient.
3. "SendingSuccess": indicates that a message has been successfully sent to a remote network.
4. "DeliveryFailure": indicates that the delivery of a message to its intended recipient failed. This event type shall not be applied for emails. It shall be reported not more than once for a message.
5. "SendingFailure": indicates that sending to the remote network failed. The MSE may send this several times for one message if the ‘Retry’ application parameter of the PushMessage function (section 5.8) has been set to ‘ON’ by the MCE, i.e. each time the MSE’s delivery to the network has failed.
6. "MemoryFull": indicates that the memory of the MSE device is full and will not allow any new arriving messages to be received and stored.
7. "MemoryAvailable": indicates that the memory of the MSE device is ready again to receive new messages. This event shall be sent only if there was a "MemoryFull" event before.
8. "MessageDeleted": indicates that a message has been deleted from the reported folder on the MSE and has therefore been shifted to the 'Deleted' folder.
9. "MessageShift": indicates that a message has been shifted on the MSE from one folder (indicated by the "old_folder" parameter) to another folder (indicated by the "folder" parameter).

[End of changes for Erratum 3180]

6.2.3 Erratum 3546 - The example is an ill-formed xml

Section 3.1.6(6): Example of Message-Listing Object, page 32

[Original text states]

```
<msg handle = "20000100002" subject = "Guten Tag" datetime = "20071214T092200" sender_name = "Dmitri" sender_addressing = "8765432109" recipient_addressing = "+49-9012-345678"type = "SMS_GSM" size = "512" attachment_size = "3000" priority "no" read "no" sent "yes" protected "no"/>
```

[Replace with]

```
<msg handle = "20000100002" subject = "Guten Tag" datetime = "20071214T092200" sender_name = "Dmitri" sender_addressing = "8765432109" recipient_addressing = "+49-9012-345678"type = "SMS_GSM" size = "512" attachment_size = "3000" priority = "no" read = "no" sent = "yes" protected = "no"/>
```

[End of changes for Erratum 3546]

6.2.4 Erratum 3440 - MSETime shall be included in response packet when MaxListCount(request packet) is 0.

Section 5.5.4: Application parameters, Paragraph: MaxListCount, page 51

[Original text states]
"If 'MaxListCount'=0 in the request the MSE shall response with the headers "NewMessage" and "MessagesListingSize" only (see description of these headers below) and shall not deliver a Messages-Listing object."

[Replace with]
"If 'MaxListCount' = 0 in the request the MSE shall response with the header "NewMessage", "MSETime" and "MessageListingSize" (see description of these header below) and shall not deliver a Messages-Listing object."

[End of changes for Erratum 3440]

6.2.5 Erratum 3219 - SetFolder operation should allow an omitted or empty Name header

Section 5.3: SetFolder function, page 48

[Original text states]
"If supported, the MCE shall use this function to navigate the folders of the MSE.

The request is formatted as follows:

<table>
<thead>
<tr>
<th>Fields</th>
<th>Opcode</th>
<th>SetPath</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headers</td>
<td>Connection ID</td>
<td>Connection Identifier</td>
</tr>
<tr>
<td></td>
<td>Flags</td>
<td>up/down/root</td>
</tr>
<tr>
<td></td>
<td>Name</td>
<td>Name of the folder</td>
</tr>
</tbody>
</table>

The response is formatted as follows:

<table>
<thead>
<tr>
<th>Fields</th>
<th>Response Code</th>
<th>Success or error code</th>
</tr>
</thead>
</table>

5.3.1 Connection ID

See chapter 5.1.1.

5.3.2 Flags and Name

These headers shall be used to indicate the folder to be navigated to. Note that the OBEX SetPath Command is the basis for the SetFolder function where Flags is the 3rd Byte of the OBEX request ([10], section 3.3.6). OBEX SetPath allows only for setting the current folder to the root, parent or a child folder.

For example in order to set the current folder to "msg", it is necessary to apply SetPath twice: the first is necessary to change into "telecom" and the second is necessary to change into "msg".

The usage of the OBEX Flags and Name header is summarized hereunder:
Accordingly, the name header shall be empty if the directory is shall be set to the parent directory (1 level up) or to the root directory.”

[Replace with]

"5.3 SetFolder function

If supported, the MCE shall use this function to navigate the folders of the MSE.

The request is formatted as follows:

<table>
<thead>
<tr>
<th>Fields</th>
<th>Opcode</th>
<th>SetPath</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headers</td>
<td>Connection ID</td>
<td>Connection Identifier</td>
<td>M</td>
</tr>
<tr>
<td>Flags</td>
<td>up/down/root</td>
<td>Name of the folder</td>
<td>O</td>
</tr>
</tbody>
</table>

The response is formatted as follows:

<table>
<thead>
<tr>
<th>Fields</th>
<th>Response Code</th>
<th>Success or error code</th>
<th>M</th>
</tr>
</thead>
</table>

5.3.1 Connection ID

See chapter 5.1.1.

5.3.2 Flags and Name

These headers are used to indicate the folder to be navigated to. Note that the OBEX SetPath Command is the basis for the SetFolder function where Flags is the 3rd Byte of the OBEX request ([10] section 3.3.6). OBEX SetPath allows only for setting the current folder to the root, parent or a child folder.

For example in order to set the current folder to "msg", it is necessary to apply SetPath twice: the first is necessary to change into "telecom" and the second is necessary to change into "msg".

The usage of the OBEX Flags and Name header is summarized hereunder:
| bit 1 (*): | 1 | 1 | 1 |
| bit 2~7:  | 0 | 0 | 0 |
| Name header | Mandatory: empty | Mandatory. Name of child folder | Optional: Name of child folder, omitted or empty |
| Description | Reset to the root directory | Go down one level into this directory name, relative to the current directory | When name is not present or empty: go to parent directory (equivalent to “cd ..” on some systems) When name is present: Go up one level before applying name (equivalent to “cd ../name” on some systems) |

(*) The creation of new directories on the MSE is not a feature of MAP so the MCE shall set bit1=1 always.

[End of changes for Erratum 3219]

6.2.6 **Erratum 3124** - MNS Service with more than one MAS connection with same device (copied from MAP-draft errata, issue 2868)

6.2.6.1 Section 4.5: Notification Registration Feature, page 45

[Original Figure]
ERRATA SERVICE RELEASE

ESR05 - Errata Service Release to Bluetooth® Specifications

[Replace with]

MCE device

MNS Server  MAS Client

MSE device

MAS Server  MNS Client

Ongoing Message Access service session

SetNotificationRegistration_Req(…,
NotificationStatus='off/on', …)

SetNotificationRegistration_Resp()

connect to Message Notification service
(in case of notification = 'on')

Ongoing Message Notification service session

Ongoing Message Access service session

SetNotificationRegistration_Req(…,
NotificationStatus='off/on', …)

SetNotificationRegistration_Resp()

connect to Message Notification service
(if notification = 'on' AND no ongoing MNS connection)

Ongoing Message Notification service session
6.2.6.2 **Section 6.4.2 Initialization sequence for a MAP session that uses both the Message Access service and the Message Notification service**

[Original figure and text states]

![Figure 6-3: Establishment of MAP session (usage of Message Access Service and Message Notification Service)](image)

The establishment of a Message Notification service session is done in accordance with [10] with the MCE as OBEX Server and the MSE as OBEX Client. For the UUID values to be used for the Target header see 6.3. The establishment of a Message Notification session requires the previous establishment of a Message Access service session as described in chapter 6.4.1.

[Replace with]
The establishment of a Message Notification service session is done in accordance with [10] with the MCE as OBEX Server and the MSE as OBEX Client. For the UUID values to be used for the Target header see 6.3. The establishment of a Message Notification session requires the previous establishment of a Message Access service session as described in chapter 6.4.1.

The MCE device may establish one MAS connection for each MAS Instance provided by the MSE device while the MSE shall establish only one MNS connection (see also 4.5). The MNS connection shall be established by the first SetNotificationRegistration set to ON during a MAP session. Respectively, when the MNS connection is established all following SetNotificationRegistration set to ON by any MAS-Instance will cause no further MNS connection.

6.2.6.3 Section: 6.4.4 Terminating a Message Access or Message Notification service session, After Figure 6.5

[Append]

“The termination of multiple MAS sessions (MCE connected to several MAS instances) and an ongoing Message Notification service is described in the figure below. The MSE shall terminate the MNS service if the MCE has de-registered the MNS for all MAS-instances OR has terminated the MAS connections for all MAS-instances.”
ERRATA SERVICE RELEASE

ERS05 - Errata Service Release to Bluetooth® Specifications

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6.2.7  Erratum 3441 - Minor: vCard Property in bMsg at push

Section 3.1.3: vCard

[Original text states]

“All other vCard properties shall not be used. The properties may be empty if not known by the MSE, e.g. N/FN in case of a SMS.”

[Replace with]

“All other vCard properties shall not be used. The properties may be empty if not known, e.g. N/FN in case of a SMS.”

Figure 6-6: Termination of a MAP session with connections to multiple MAS instances and established Message Notification Service

[End of changes for Erratum 3124]
6.2.8 **Erratum 3442 - Folder property in bMsg at push**

Section 3.1.3: bmessage-folder-property

[Original text states]

“The folder name including the path where the bMessage is located in. Any folder- within the MSE folder structure may be used for this property as described 3.1.4 (e.g. "TELECOM/MSG/INBOX"). This property shall be restricted to 512 Bytes. If the path and folder description exceeds this length the name of the addressed folder and as far as possible the folder layers above shall be delivered.”

[Replace with]

“The folder name including the path where the bMessage is located in. Any folder within the MSE folder structure may be used for this property as described in 3.1.4 (e.g. "telecom/msg/inbox"). This property shall be restricted to 512 Bytes. If the path and folder description exceeds this length the name of the addressed folder and as far as possible the folder layers above shall be delivered. If the bMessage is used for an upload (PushMessage function, see 5.8) the MCE shall send an empty bmessage-folder-property and the MSE shall discard this property to avoid redundancy with the 'name' header of the PushMessage function.”

[End of changes for Erratum 3442]

6.2.9 **Erratum 3443 - MS/MMS MAS instance ID shall be 0 or not?**

Section 3.1.8: MSE Instances Page 35 below figure 3-3, 1st paragraph

[Original text states]

"- MAP is capable to differentiate in one MAS Instance between Email, SMS and MMS, so an MSE device – taking into consideration the recommendations below – should present its messages by one MAS Instance to minimize the number of OBEX connections required. This MAS Instance shall at least include the SMS and MMS repository of the MSE device, if these message types are supported, and may include also emails.

For this MAS Instance the value of the related SDP record attribute 'MASInstanceID' shall be 0.”

[Append]

Accordingly, the MASInstanceID value 0 shall not be used if SMS/MMS are not supported by the MSE.”

[End of changes for Erratum 3443]

6.2.10 **Erratum 3197 - When does the MSE send MemoryFull**

Section 3.1.7: MAP-Event-Report object, page 33, “Memory Full”

[Original text states]

“"MemoryFull": indicates that the memory of the MSE device is full and will not allow any new arriving messages to be received and stored.”

[Append]
“This event shall be sent even if the memory of the MSE device is full prior to a Messaging Notification Service session being established with the MCE.”

[End of changes for Erratum 3197]

6.2.11 Erratum 3765 - The MCE may not know the email of the MSE while sending

Section 3.1.3: Message format, bmessage-body-content: page 22

[Original text states]

“If the message or – in case of a multipart-message – a part of the message includes textual content (MIME type/subtype = text/xxx), the contained message text shall be coded in UTF-8 charset:

• The related <bmessage-body-charset-property> shall be "UTF-8".

• If the bMessage is downloaded from the MSE to the MCE, the MSE shall trans-code the included text to UTF-8 charset before delivery.

• If the bMessage is uploaded from the MCE to the MSE, the MSE may trans-code the text of the message from UTF-8 to any charset required, e.g. before sending to the network.”

[Append]

“• If the bMessage is uploaded from the MCE to the MSE, the MSE shall add the “From” attribute of the included email before sending if it's not present in the email. This situation may occur if the MCE doesn't know this email address.”

[End of changes for Erratum 3765]

6.2.12 Erratum 3603 - Definition length of bMessage-content

Section 3.1.3: bmessage-body-content-length-property: page 21

[Original text states]

“The length of the related <bmessage-body-content> in bytes.”

[Replace text with]

“Overall length of the related <bmessage-body-content> objects(s) in bytes, where the length counting starts with the ”B” of the the first occurrence of ”BEGIN:MSG” and ends with the <CRLF> of the last occurrence of ”END:MSG”<CRLF>.”

[End of changes for Erratum 3603]

6.2.13 Erratum 3309 - Change in referring figure number

Section 2.2: Configuration and roles

[Original text states]

“ - PC Use Case:

Figure 2-4 shows a configuration with a PC acting as MAP client such that the user is able to use it's PC as IO-device for the messages stored in the cellular phone.”

[Replace text with]
“- PC Use Case:
Figure 2.3 shows a configuration with a PC acting as MAP client such that the user is able to use its PC as IO-device for the messages stored in the cellular phone.”

[End of changes for Erratum 3309]

6.2.14 **Erratum 3530 - Recommendation for 'MemoryFull' in case of connection setup**

*Section 3.1.7: MAP-Event-Report object, page 33*

**[Original text states]**

“6. "MemoryFull": indicates that the memory of the MSE device is full and will not allow any new arriving messages to be received and stored.”

**[Append]**

“This event should be sent if the memory becomes full during the MAP session and at the setup of the MNS connection if the memory is already full.”

[End of changes for Erratum 3530]

6.2.15 **Erratum 3464 - OBEX error codes MNS partly not feasible**

*Section 6.3.3: Obex error codes, page 67*

**[Replace entire section content with]**

Message Access Service

The table below summarizes the error codes for the Message Access Service to be provided by the MSE and to be recognized by the MCE:

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Client (MCE) (interprets the Error Codes)</th>
<th>Server (MSE) (informs of Errors)</th>
<th>Meaning in the Message Access Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad Request</td>
<td>M*</td>
<td>M</td>
<td>Function not recognized or ill-formatted</td>
</tr>
<tr>
<td>Not implemented</td>
<td>M*</td>
<td>M</td>
<td>Function recognized but not supported</td>
</tr>
<tr>
<td>Unauthorized</td>
<td>M*</td>
<td>O</td>
<td>In operations with actual exchange of an object in the body header (either in the request or the response), indicates that the function was recognized and well formatted, but that the object to be handled is protected and access is not authorized (either temporarily or permanently).</td>
</tr>
<tr>
<td>Precondition Failed</td>
<td>M*</td>
<td>M</td>
<td>The function was recognized and well-formatted but there is a problem with one of the request's parameter values</td>
</tr>
<tr>
<td>Not Found</td>
<td>M*</td>
<td>M</td>
<td>The function was recognized and well-formatted and all the parameters are proper, but the bMessage handle or the message folder could not be found</td>
</tr>
</tbody>
</table>
### Error Code Table

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Client (MCE) (interprets the Error Codes)</th>
<th>Server (MSE) (informs of Errors)</th>
<th>Meaning in the Message Access Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Acceptable</td>
<td>M*</td>
<td>O</td>
<td>The request is recognized and well formatted and all the parameter values are legal, but there is a problem with a parameter value that indicates a request that cannot be met by the Server.</td>
</tr>
<tr>
<td>Service Unavailable</td>
<td>M*</td>
<td>M</td>
<td>The function was recognized and well formatted and is normally executable, but a system condition prevents it from being performed. It could be for instance that the message folders cannot be accessed when the MSE is involved in a call. Another example would be when the MCE sent a message to the Outbox of the MSE, but the cellular service is currently not available.</td>
</tr>
<tr>
<td>Forbidden</td>
<td>M*</td>
<td>O</td>
<td>Function recognized and correctly formatted but temporarily barred</td>
</tr>
</tbody>
</table>

* Indicates that the Client shall recognize this response code as an error code.

On the MCE side, the entire response code list above shall be recognized as error codes; how to handle these error codes is left to the implementer's discretion.

### Message Notification Service

The table below summarizes the error codes for the Message Notification Service to be provided by the MSE and to be recognized by the MCE:

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Client (MSE) (interprets the Error Codes)</th>
<th>Server (MSE) (informs of Errors)</th>
<th>Meaning in the Message Notification Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad Request</td>
<td>M*</td>
<td>M</td>
<td>Function not recognized or ill-formatted</td>
</tr>
<tr>
<td>Not implemented</td>
<td>M*</td>
<td>M</td>
<td>Function recognized but not supported</td>
</tr>
<tr>
<td>Unauthorized</td>
<td>M*</td>
<td>O</td>
<td>In operations with actual exchange of an object in the body header (either in the request or the response), indicates that the function was recognized and well formatted, but that the object to be handled is protected and access is not authorized (either temporarily or permanently).</td>
</tr>
<tr>
<td>Precondition Failed</td>
<td>M*</td>
<td>M</td>
<td>The function was recognized and well-formatted but there is a problem with one of the request's parameter values</td>
</tr>
</tbody>
</table>
Table 6-6: ERROR Codes MAS
* Indicates that the Client shall recognize this response code as an error code.

On the MSE side, the entire response code list above shall be recognized as error codes; how to handle these error codes is left to the implementer's discretion.

Support for response codes indicated in tables 6-5 and 6-6 above as optional is recommended, because they are more informative and provide the MCE with a better indication of the nature of an error; this permits better error reporting. The "x complements y" relationship between response codes is illustrated below:

![OBEX Response Codes Diagram]

Figure 6-1 OBEX Response Codes
When multi-packet responses are used, response codes shall be returned as early as possible, preferably in the first response packet. In some cases – for example, Service Unavailable – it is possible that an error condition won't arise until the operation is
underway, in which case it is acceptable to return a response code in a packet other than the first one.

[End of changes for Erratum 3464]

6.2.16 **Erratum 3123** - The Email which is included in the bMessage example is not completely correct, a newline before the email body is missing. setup

Section 3.1.3: Message format (x-bt/message), page 25, bmessage example

[Original text states]

```
"BEGIN:BBODY
 ENCODING:8BIT
 LENGTH:57
 BEGIN:MSG
 Date: 20 Jun 96
 Subject: Fish
 From: tanaka@def.edu
 To: laurent@ghi.edu
 Let's go fishing!
 BR, Mat
 END:MSG
END:BBODY "
```

[Replace with]

```
"BEGIN:BBODY
 ENCODING:8BIT
 LENGTH:125
 BEGIN:MSG
 Date: 20 Jun 96
 Subject: Fish
 From: tanaka@def.edu
 To: laurent@ghi.edu
 Let's go fishing!
 BR, Mat
 END:MSG
END:BBODY "
```

[End of changes for Erratum 3123]

6.3 File Transfer Profile 1.1

6.3.1 **Erratum 2496** - Name header description should be more specific

Section 5.5.1: Pulling a Folder Listing Object, page 387

[Original text states]
“Pulling a Folder Listing object uses a GET operation and follows the procedure described in Section 5.6 of GOEP [2]. The Connection ID and Type headers are mandatory. A Name header containing the name of the folder is used to pull the listing of a folder. Sending the GET command without a name header is used to pull the contents of the current folder. Typically, a folder browsing application will pull the contents of the current folder, so a Name header is not used. The Type header must be set to ‘x-obex/folder-listing’.”

[Replace with]

“Pulling a Folder Listing object uses a GET operation and follows the procedure described in GOEP [2]. The Connection ID and Type headers are mandatory. A Name header containing the name of the folder is used to pull the listing of a folder. Sending the GET command without a name header is used to pull the contents of the current folder. An empty Name header shall also be accepted. Typically, a folder browsing application will pull the contents of the current folder, so a Name header is either not used or an empty Name header is sent. The Type header shall be set to ‘x-obex/folder-listing’.”

[End of changes for Erratum 2496]

6.3.2 Erratum 3085 - Incorrect mandatory requirements
Section: 6.2 SDP Protocol Data Units, page 395

[Delete all of section 6.2]

[End of changes for Erratum 3085]

6.4 File Transfer Profile 1.2

6.4.1 Erratum 3944 - Wrong entry in table, and wrong table title
Section 5.1: OBEX Operations Used, page 23

[Original text states]

“Table 5.1: OBEX OperationsOBEX Headers”

[Replace with]

“Table 5.1: OBEX Operation”

Section 5.1: OBEX Operations Used, Table 5.1, row “6” Column “Prohibited When using RFCOMM” page 23

[Delete text]

“Y”

[End of changes for Erratum 3944]

6.5 Synchronization Profile V1.1

6.5.1 Erratum 3085 - Incorrect mandatory requirements
Section: 7.2 SDP Protocol Data Units, page 421
Delete all of section 7.2

[End of changes for Erratum 3085]

6.6 Advanced Audio Distribution Profile (A2DP) V1.2

6.6.1 Erratum 3043 - SNK Bitpool capabilities do not reflect actual capabilities of individual SNKs

Section 4.3.2.6 Minimum / Maximum Bitpool Value, page 20, 3rd paragraph

[Original text states]
“The decoder of the SNK shall support all possible bitpool values that do not result in excess of the maximum bit rate. This profile limits the available maximum bit rate to 320kb/s for mono, and 512kb/s for two-channel modes.”

[Replace with]
“The decoder of a SNK device shall support 2 as the Minimum Bitpool Value and High Quality Bitpool value in Table 4.7 as the Maximum Bitpool Value at a minimum.

A SNK device may support bitpools larger than the High Quality value in Table 4.7, but shall be required to demonstrate the ability to acceptably render the resulting media.”

[End of changes for Erratum 3043]

6.6.2 Erratum 2903- Missing information on MP3 Bit Rate Index meaning when VBR is activated

Section 4.4.2.7 Bit Rate Index, page 25

[Append text to end of section 4.4.2.7]
“When VBR is set, the Bit Rate Index Field shall be neglected.”

[End of changes for Erratum 3043]

6.6.3 Erratum 3631- 32-bit Vendor ID referenced by the spec does not exist in the Bluetooth Assigned Numbers pages

Section 4.7.2.1 Vendor ID, page 33

[Original text states]
“The 32-bit Vendor ID defined in Bluetooth Assigned Numbers [8] shall be used.”

[Replace with]
“A 32-bit Vendor ID shall be used. The lower 16 bits of the 32-bit Vendor ID shall contain a valid, non-reserved 16-bit Company ID as defined in Bluetooth Assigned Numbers [8]. The upper 16 bits of the 32-bit Vendor ID shall be set to zero. The LSB of the Vendor ID shall be placed in octed 0.”

[End of changes for Erratum 3631]
6.7 Advanced Audio Distribution Profile (A2DP) V1.0

6.7.1 **Erratum 3632**- 32-bit Vendor ID referenced by the spec does not exist in the Bluetooth Assigned Numbers pages

*Section 4.7.2.1 Vendor ID, page 34*

[Original text states]

“The 32-bit Vendor ID defined in Bluetooth Assigned Numbers [8] shall be used.”

[Replace with]

“A 32-bit Vendor ID shall be used. The lower 16 bits of the 32-bit Vendor ID shall contain a valid, non-reserved 16-bit Company ID as defined in Bluetooth Assigned Numbers [8]. The upper 16 bits of the 32-bit Vendor ID shall be set to zero. The LSB of the Vendor ID shall be placed in octet 0.”

[End of changes for Erratum 3632]

6.8 Video Distribution Profile (VDP) V1.0

6.8.1 **Erratum 4071**- Make placement of MSB/LSB in Vendor ID field clear

*Section 4.7.2.1 Vendor ID, page 24*

[Original text states]

“The 32-bit Vendor ID defined in Bluetooth Assigned Numbers [6] shall be used.”

[Replace with]

“The lower 16 bits of the 32-bit Vendor ID shall contain a valid, non-reserved 16-bit Company ID as defined in Bluetooth Assigned Numbers [6]. The LSB of the Vendor ID shall be placed in octet 0. The upper 16 bits of the 32-bit Vendor ID shall be set to zero.”

[End of changes for Erratum 4071]

6.9 Audio/Video Distribution Transport Protocol (AVDTP) V1.2

6.9.1 **Erratum 3049** - The service category for AVDTP reconfigure reject message

*Section 8.10.3 Reconfigure Reject, page 65*

[Original text states]

“Note 3. Contains the value of the first Service Category to fail.”

[Append text]

“In case no Service Category applies due to the nature of the error, the Service Category field shall be set to 0x0. The INT should ignore the Service Category if it is not applicable to the error code.”

[End of changes for Erratum 3049]
6.9.2  **Erratum 2911 - Preconditions to a stream reconfiguration are not clear**

6.9.2.1  Section 6.14 Stream Reconfigure, page 38

*Original text states*
“The first step is to perform a **Suspend Streaming Procedure**.”

*Replace with*
“Stream Reconfigure Procedure can be executed while both devices are in stream ‘OPEN’ state. If streaming is already started, the first step is to perform a Suspend Streaming Procedure.”

6.9.2.2  Section 6.3 Stream Management Signaling Overview, page 31

*Delete text*
“However, a **Stream Suspend** procedure **shall** precede a **Stream Reconfigure** procedure.

6.9.2.3  Section 9.8 Stream Change Parameters, page 91

*Original diagram*

![Diagram showing state transition for stream change parameters](image_url)

Figure 6-1: INT – Stream Change Parameters State Transition Diagram
Changing the streaming parameters with the Stream Reconfigure procedure **shall** be performed in OPEN state.

---

**[End of changes for Erratum 2911]**
6.10 Audio/Video Control Transport Protocol Specification (AVCTP) V1.3

6.10.1  Erratum 2689 - Possible Typo to be corrected

Section 2.1 Operations Between Devices, page 7

[Original text states]
“The Audio/Video Distribution Control Protocol (hereafter referred to as AVCTP)”

[Replace with]
“The Audio/Video Control Transport Protocol (hereafter referred to as AVCTP)”

[End of changes for Erratum 2689]

6.11 Audio Video Remote Control Profile (AVRCP) V1.0

6.11.1  Erratum 2011 - Contradicting requirements

6.11.1.1  Section 4.7.1  Category 1: Player/Recorder, page 30

[Original text states]
“Basic operations of a player or a recorder are defined, regardless of the type of media (tape, disc, solid state, etc.) or the type of contents (audio or video, etc.). If a device supports this category 1, it shall be implemented with the two operation_ids of the PASS THROUGH command, “play” and “stop”.”

[Replace with]
“Basic operations of a player or a recorder are defined, regardless of the type of media (tape, disc, solid state, etc.) or the type of contents (audio or video, etc.). If a device supports this category 1, it shall be implemented with the two operation_ids of the PASS THROUGH command, “play” and “stop” for the TG. No mandatory command for the CT is defined by the operation_ids in the PASS THROUGH command. However, it is mandatory in CT to support at least one of the operation_ids marked as C1 in table 4.7.”

6.11.1.2  Section 4.7.2  Category 2: Monitor/Amplifier, page 30

[Original text states]
“The category 2 is to define basic operations of a video monitor or an audio amplifier. If a device supports this category 2, it shall be implemented with the two operation_ids of the PASS THROUGH command, “volume up” and “volume down”.”

[Replace with]
“The category 2 is to define basic operation of a video monitor or an audio amplifier. If a device supports this category 2, it shall be implemented with the two operation_ids of the PASS THROUGH command, “volume up” and “volume down” for the TG. No mandatory command for the CT is defined by the operation_ids in the PASS THROUGH command. However, it is mandatory in CT to support at least one of the operation_ids marked as C2 in table 4.7.”

Section 4.7.3  Category 3: Tuner, page 30

[Original text states]
“The category 3 defines the basic operation of a video tuner or an audio tuner. If a device supports this category 3, it shall be implemented with the two operation_ids of the PASS THROUGH command, "channel up" and "channel down".

[Replace with]

“The category 3 defines the basic operation of a video tuner or an audio tuner. If a device supports this category 3, it shall be implemented with the two operation_ids of the PASS THROUGH command, "channel up" and "channel down" for the TG. No mandatory command for the CT is defined by the operation_ids in the PASS THROUGH command. However, it is mandatory in CT to support at least one of the operation_ids marked as C3 in table 4.7.”

6.11.1.3 Section 4.7.4 Category 4: Menu, page 30

[Original text states]

“The basic operations for a menu function are defined in category 4. The method to display menu data is not specified. It may be a display panel of the device itself, or on-screen display (OSD) on an external monitor. A device that supports category 4 shall be implemented with the six operation_ids of the PASS THROUGH command, "root menu", "up", "down", "left", "right", and "select".

[Replace with]

“The basic operations for a menu function are defined in category 4. The method to display menu data is not specified. It may be a display panel of the device itself, or on-screen display (OSD) on an external monitor. A device that supports category 4 shall be implemented with the six operation_ids of the PASS THROUGH command, "root menu", "up", "down", "left", "right", and "select" for the TG. No mandatory command for the CT is defined by the operation_ids in the PASS THROUGH command. However, it is mandatory in CT to support at least one of the operation_ids marked as C4 in table 4.7.”

[End of changes for Erratum 2011]

6.12 Audio/Video Remote Control Profile (AVRCP) V1.3

6.12.1 Erratum 2255 - Page 88 Get Element Attributes command/Response

6.12.1.1 24 Appendix I: Examples of PDUs for different command and responses, Table: “Get Element Attributes command”, page 88

Note: All instances of “BT SIG” shall be replaced with “Bluetooth SIG”.

[Replace table with]

Get Element Attributes command

<table>
<thead>
<tr>
<th>Oct</th>
<th>MSB(7)</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>LSB(0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0x0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ctype: 0x1 (STATUS)</td>
</tr>
<tr>
<td>1</td>
<td>Subunit_type:0x9(PANEL)</td>
<td>Subunit_ID: 0x0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Opcode: 0x0 (VENDOR DEPENDENT)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Company ID: Bluetooth SIG registered CompanyID</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>PDU ID (0x20 – GetElementAttributes)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Reserved (0x00)</td>
<td>Packet Type (0x0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### [Replace table with]

Get Element Attributes response

<table>
<thead>
<tr>
<th>Oct</th>
<th>MSB(7)</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>LSB(0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0x0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Subunit_type: 0x9 (PANEL)</td>
<td>Subunit_ID: 0x0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Opcode: 0x0 (VENDOR DEPENDENT)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-5</td>
<td>Company ID: Bluetooth SIG registered CompanyID</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>PDU ID (0x20 – GetElementAttributes)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Reserved (0x00)</td>
<td>Packet Type (0x0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8-9</td>
<td>Parameter Length (0x2A)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Number of Attributes (0x2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-14</td>
<td>Attribute ID 1: 0x1 (TitleOfMedia)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-16</td>
<td>CharacterSetID1: 0x6A (UTF-8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-18</td>
<td>AttributeValueLength1: 0x13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-37</td>
<td>AttributeValue1: 'Give Peace a Chance'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38-41</td>
<td>Attribute ID 2: 0x7 (Playing Time)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42-43</td>
<td>CharacterSetID2: 0x6A (UTF-8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44-45</td>
<td>AttributeValueLength2: 0x6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>46-51</td>
<td>AttributeValue2: ‘103000’ (= 103000 ms – 103 sec. – 1min43s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[End of changes for Erratum 2255]

### 6.12.2 Erratum 2588- Clarify "parameterID"

#### 6.12.2.1 Section 5.7 Error handling for Metadata Transfer Commands, page 56

[Original text states]

"If CT sent a PDU with nonexistent PDU ID or a PDU containing only one parameter with nonexistent parameter ID, TG shall return REJECTED response with Error Status Code. TG may return REJECTED response also in other situations (See 5.7.1 Error Status Code)."
If CT sent a PDU with multiple parameters where at least one ID is existent and the others are nonexistent, TG shall proceed with the existent ID and ignore the nonexistent IDs.

Note, that CT can always have complete information which IDs were accepted by TG: in case of STATUS PDUs the response will contain information for the IDs which were understood, when setting values for Player application settings; TG will return notification response with the list of AttributeIDs for which values have been set.”

[Replace with]

“If the CT sent a PDU with a nonexistent PDU ID or a PDU containing only one parameter and the TG can not interpret that parameter, the TG shall return a REJECTED response with an Error Status Code. The TG may also return a REJECTED response in other situations, see 5.7.1 Error Status Code).

If the CT sent a PDU with multiple parameters where TG can interpret at least one of the parameters, the TG shall proceed with the ones it can interpret and ignore the others.

Note that the CT can always obtain complete information on which parameters were accepted by the TG. For STATUS PDUs the response will contain information for the parameters which were understood. When setting values for Player application settings, if the CT has an outstanding Register Notification for EVENT_PLAYER_APPLICATION_SETTING_CHANGED then the CHANGED response for this will contain the list of AttributeIDs for which values have been set.”

6.12.2.2 Section 5.7.1 Error Status Code, table 5.41 “List of Error Status Codes”, page 56

[Original text for error code value “0x01” states]

“Invalid parameter, sent if the TG received a PDU with a parameter ID that it did not understand. Sent if there is only one parameter ID in the PDU.”

[Replace with]

“Invalid identifier, sent if the TG received a PDU with an identifier that it did not understand. This error code applies to following identifiers:

- PDU ID
- Capability ID
- Event ID
- Player Application Setting Attribute ID
- Player Application Setting Value ID
- Element Attribute ID

Section 5.7.1 Error Status Code, table 5.41 “List of Error Status Codes”, page 57

[Original text for error code value “0x02” states]

“Specified parameter not found. Sent if the parameter ID is understood, but content is wrong or corrupted.”

[Replace with]

“Parameter content error. Sent if the identifier is understood, but content is wrong or corrupted.”

[End of changes for Erratum 2588]
6.12.3  **Erratum 2572 - Attribute/value text only for extended attributes**

Section 5.2.5 GetPlayerApplicationSettingAttributeText (PDU ID: 0x15), page 44

[Original text states]

“NOTE: This command is expected to be used only for extended attributes for menu navigation. It is assumed that all <attribute, value> pairs used for menu extensions are statically defined by TG.”

[Replace with]

“NOTE: This command is expected to be used mainly for extended attributes for menu navigation; for defined attributes the CT provides text for the application. However, to avoid inconsistency between CT and TG provided text, the TG can choose to provide text for defined attributes as well. It is assumed that all pairs used for menu extensions are statically defined by TG.”

Section 5.2.6 GetPlayerApplicationSettingValueText (PDU ID: 0x16), page 45

[Original text states]

“NOTE: This command is expected to be used only for extended attributes for menu navigation. It is assumed that all <attribute, value> pairs used for menu extensions are statically defined by TG.”

[Replace with]

“NOTE: This command is expected to be used mainly for extended attributes for menu navigation; for defined attributes the CT provides text for the application. However, to avoid inconsistency between CT and TG provided text, the TG can choose to provide text for defined attributes as well. It is assumed that all pairs used for menu extensions are statically defined by TG.”

[End of changes for Erratum 2572]

6.12.4  **Erratum 2560 - Number of AttributeIDs when NumAttributes is 0**

6.12.4.1  Section 5.3.1 GetElementAttributes (PDU ID: 0x20), table 5.23, row “AttributeID1”, column “Allowed Values”, page 49

[Original text states]

“See Appendix E: List of Media Attributes for the list of possible attribute IDs.”

[Replace with]

“See Appendix E: List of Media Attributes for the list of possible attribute IDs. This field is not present if NumAttributes is zero.”

6.12.4.2  Section 5.3.1 GetElementAttributes (PDU ID: 0x20), footnote at bottom of table 5.23, page 49

[Original text states]

“And so on for each attribute (1…N)”

[Replace with]

“The set of four parameters AttributeID, CharacterSetID, AttributeValueLength and AttributeValue together are present for each attribute.”
6.12.4.3 Section 5.3.1 GetElementAttributes (PDU ID: 0x20), table 5.24 row “AttributeValue1”, column “Size (byte)”, page 49

[Original text states]
“1-n1”

[Replace with]
“n1”

Section 5.3.1 GetElementAttributes (PDU ID: 0x20), table 5.24 row “AttributeValue1”, column “Allowed Values”, page 49

[Original text states]
“Any text encoded in specified character set”

[Replace with]
“Any text encoded in specified character set. This field is not present if AttributeValueLength for this Attribute is set to zero.”

[End of changes for Erratum 2560]

6.13 Audio/Video Remote Control Profile (AVRCP) V1.4

6.13.1 Erratum 2961 - Treatment of top bit in Absolute Volume

6.13.1.1 Section 6.13.1 Absolute Volume, page 90

[Original text states]
“….The top bit (bit 7) is reserved for future definition.”

[Replace with]
“….The top bit (bit 7) is reserved for future addition (RFA).”

[End of changes for Erratum 2961]

6.13.2 Erratum 2932 - Player initiation delay after switching addressed player on TG

6.13.2.1 Section 6.9.1 SetAddressedPlayer, page 66

[Original text states]
“The Set Addressed Player command is used to inform the TG of which media player the CT wishes to control. Since the TG may also be controlled locally it is recommended that the CT also makes use of 6.9.2 Addressed Player Changed Notification.

The player is selected by its Player Id.”

[Replace with]
“The Set Addressed Player command is used to inform the TG of which media player the CT wishes to control. Since the TG may also be controlled locally it is recommended that the CT also makes use of 6.9.2 Addressed Player Changed Notification.

The player is selected by its Player Id.

Positive confirmation of the Set Addressed Player command by the TG indicates the opening of the player has started. Successful completion of the opening is indicated by the TG via the Addressed Player Changed Notification, see 6.9.2. Before having received the successful Addressed Player Changed Notification, the CT should not send any player specific command to the TG. In case the TG receives any player specific command for a player not yet successfully opened, it should reply with Error Code 0x13 (Player Not Addressed).”

[End of changes for Erratum 2932]

6.13.3 Erratum 2814 - Add press and hold feature

Section 3.1 Feature Support, page 21

[Append a new row to table 3.1]

<table>
<thead>
<tr>
<th>Feature</th>
<th>Support in CT</th>
<th>Support in TG</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>22</td>
<td>PASSTHROUGH operation supporting press and hold</td>
<td>O</td>
</tr>
</tbody>
</table>

Section 3.2 Feature Mapping, page 23

[Append a new row to table 3.2]

<table>
<thead>
<tr>
<th>Feature</th>
<th>Support in CT</th>
<th>Support in TG</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>PASSTHROUGH operation supporting press and hold</td>
<td>Procedure of AV/C command</td>
</tr>
</tbody>
</table>

[End of changes for Erratum 2814]

6.13.4 Erratum 2786 - Typo of notification event ‘Available Players Changed’

Section 4.4.1 Pass through command, page 32

[Original text states]

<table>
<thead>
<tr>
<th>PDU ID</th>
<th>PDU Name</th>
<th>Command Type</th>
<th>CT</th>
<th>TG</th>
<th>TG Max Response Time</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MediaPlayerSelection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.9</td>
</tr>
<tr>
<td>0x31</td>
<td>EVENT_NOTIFY_AVAILABLE_PLAYERS_CHANGED</td>
<td>AV/C NOTIFY</td>
<td>O</td>
<td>C6</td>
<td>T_{MTP}</td>
<td>6.9.4</td>
</tr>
</tbody>
</table>

[Replace with PDU name 3rd row, 2nd column]
<table>
<thead>
<tr>
<th>PDU ID</th>
<th>PDU Name</th>
<th>Command Type</th>
<th>CT</th>
<th>TG</th>
<th>TG Max Response Time</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MediaPlayerSelection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.9</td>
</tr>
<tr>
<td>0x31</td>
<td>EVENT_AVAILABLE_PLAYERS_CHANGED</td>
<td>AV/C NOTIFY</td>
<td>O</td>
<td>C6</td>
<td>T_MTP</td>
<td>6.9.4</td>
</tr>
</tbody>
</table>

[End of changes for Erratum 2786]

6.13.5  **Erratum 2763 - Clarify naming for field in Group Navigation command/response**

6.13.5.1  **Section 22.10 PASS THROUGH for Group Navigation, page 127**

**[Original text states]**
PASS THROUGH command for Group Navigation

<table>
<thead>
<tr>
<th>Oct</th>
<th>MSB (7)</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>LSB (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0x0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0x0</td>
</tr>
<tr>
<td></td>
<td>Subunit_type:0x9 (PANEL)</td>
<td>Subunit_ID: 0x0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Opcode: 0x7C (PASS THROUGH)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>State_flag *2 Operation_ID: 0x7E (VENDOR UNIQUE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Operation_data_field_length: 0x5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Company ID: Bluetooth SIG registered CompanyID</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 - 7</td>
<td>Vendor_unique_operation_id</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**[Replace with]**
PASS THROUGH command for Group Navigation

<table>
<thead>
<tr>
<th>Oct</th>
<th>MSB (7)</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>LSB (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0x0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0x0</td>
</tr>
<tr>
<td></td>
<td>Subunit_type:0x9 (PANEL)</td>
<td>Subunit_ID: 0x0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Opcode: 0x7C (PASS THROUGH)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>State_flag *2 Operation_ID: 0x7E (VENDOR UNIQUE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Operation_data_field_length: 0x5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Company ID: Bluetooth SIG registered CompanyID</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 - 7</td>
<td>Vendor_unique_operation_id</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.13.5.2  **Section 22.10 PASS THROUGH for Group Navigation, page 128**

**[Original text states]**
PASS THROUGH response for Group Navigation
### 6.13.5.3 Section 4.4.1 PASS THROUGH Command, page 33

#### [Original text states]

<table>
<thead>
<tr>
<th>Item</th>
<th>Vendor Unique ID</th>
<th>Operation Name</th>
<th>AV/C Command Type</th>
<th>CT</th>
<th>TG</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Basic Group Navigation</td>
<td></td>
<td></td>
<td></td>
<td>6.9</td>
</tr>
<tr>
<td>2.</td>
<td>0x0000</td>
<td>Next Group</td>
<td>CONTROL</td>
<td>M</td>
<td>M</td>
<td>6.14.1</td>
</tr>
<tr>
<td>3.</td>
<td>0x0001</td>
<td>Previous Group</td>
<td>CONTROL</td>
<td>M</td>
<td>M</td>
<td>6.14.2</td>
</tr>
</tbody>
</table>

Table 4.6: AVRCP Specific Vendor Unique PASS THROUGH command

These PASS THROUGH commands shall use Bluetooth SIG registered Company ID as the opcode with the defined vendor unique ID with the PANEL subunit-type. Refer to 22.10 for packet structure of command and response.

Requirements for CT refer to the ability to send a command.

Requirements for TG refer to the ability to respond to a command.

#### [Replace with]

<table>
<thead>
<tr>
<th>Item</th>
<th>Vendor Unique Operation</th>
<th>Operation Name</th>
<th>AV/C Command Type</th>
<th>CT</th>
<th>TG</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ERRATA SERVICE RELEASE  113 of 131

ESR05 - Errata Service Release to Bluetooth® Specifications

<table>
<thead>
<tr>
<th>ID</th>
<th>Basic Group Navigation</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Basic Group Navigation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>0x0000</td>
<td>Next Group</td>
<td>CONTROL</td>
<td>M</td>
</tr>
<tr>
<td>3.</td>
<td>0x0001</td>
<td>Previous Group</td>
<td>CONTROL</td>
<td>M</td>
</tr>
</tbody>
</table>

Table 4.6: AVRCP Specific Vendor Unique PASS THROUGH command

These PASS THROUGH commands shall use Bluetooth SIG registered CompanyId as the opcode with the defined vendor unique operation Id with the PANEL subunit-type. Refer to 22.10 for packet structure of command and response.

Requirements for CT refer to the ability to send a command.
Requirements for TG refer to the ability to respond to a command.

[End of changes for Erratum 2763]

6.13.6 Erratum 2762 - Clarify meaning of InformDisplayableCharacterSet

6.13.6.1 Section 6.5.7 InformDisplayableCharacterSet, page 55

[Original text states]

“This primitive informs the list of character set supported by CT to TG. This shall allow TG to send responses with strings in the character set supported by CT.

When TG receives this command, the TG can send a string in the character set that is specified in this command. If there is no character set which CT has, TG will send a string in UTF-8. By default TG shall send strings in UTF-8 if this command has not been sent by CT to TG.”

[Replace with]

“This primitive provides the list of character sets supported by the CT to the TG. This shall allow the TG to send responses with strings in any of the character sets supported by the CT.

After the TG has received this command, the TG may send a string in any one of the character sets that are specified in this command. By default the TG shall send strings in UTF-8 if it has not received a valid version of this command.”

6.13.6.2 Section 6.5.7 InformDisplayableCharacterSet, Table 6.22, page 55

[Original table states]

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Size (octets)</th>
<th>Description</th>
<th>Allowed Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>NumCharacterSet(N)</td>
<td>1</td>
<td>Number of displayable character sets</td>
<td>1-255</td>
</tr>
<tr>
<td>CharacterSetID1</td>
<td>2</td>
<td>Specifies the character set ID to be displayed on CT.</td>
<td>Refer to NOTE for valid values</td>
</tr>
</tbody>
</table>

Table 6.22: InformDisplayableCharacterSet command

[Replace with]

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Size (octets)</th>
<th>Description</th>
<th>Allowed Values</th>
</tr>
</thead>
</table>


Table 6.22: InformDisplayableCharacterSet command

<table>
<thead>
<tr>
<th>NumCharacterSet(N)</th>
<th>1</th>
<th>Number of displayable character sets provided</th>
<th>1-255</th>
</tr>
</thead>
<tbody>
<tr>
<td>CharacterSetID1</td>
<td>2</td>
<td>Supported Character Set</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Refer to note for valid values</td>
<td></td>
</tr>
</tbody>
</table>

The CharacterSetID parameter is present for each supported character set; that is it should be present N times.

6.13.6.3 Section 6.5.7 InformDisplayableCharacterSet, under table 6.23, page 55

Note: The title of Appendix J has changed. All references to Appendix J shall be updated to “Appendix J: Example MSCs of AVRCP Specific Commands (informative)”

[Original text states]

“Refer to Figure 26.2 in Appendix J: List of Example MSC of different”.

[Replace with]

“Refer to Figure 26.2 in Appendix J: Example MSCs of AVRCP Specific Commands (informative)”

6.13.6.4 Section 26.2 I InformDisplayableCharacterSet, page 147

[Replace single existing diagram with two new diagrams]

![Diagram showing the interaction between CT and TG for InformDisplayableCharacterSet](Figure 26.2: Example of using InformDisplayableCharacterSet where the TG does not support any of the listed character sets other than UTF-8)
Figure 26.3: Example of using InformDisplayableCharacterSet where the TG supports at least one of the listed character sets in addition to UTF-8

[End of changes for Erratum 2762]

6.13.7 **Erratum 2740 - Not clear what values to set for 'Playing times in millisecond' of GetElementAttributes**

Section 23 Appendix E: List of Media Attributes, page 142

[Original text states]

“The table below provides the list of IDs for Attributes. These IDs are used to uniquely identify media information. Additional information on Media Attributes is available in Bluetooth Assigned Numbers [6].
### Table 23.1: Attribute IDs

NOTE: If the track title is not available the TG shall try to identify the track in other ways or send information about the media. If no information is available an empty string of zero length may be sent.”

[Replace with]

“The table below provides the list of IDs for Attributes. These IDs are used to uniquely identify media information. Additional information on Media Attributes is available in Bluetooth Assigned Numbers [6].

<table>
<thead>
<tr>
<th>Attribute ID</th>
<th>Description</th>
<th>Contents</th>
<th>Mandatory/Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0</td>
<td>Not Used</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0x1</td>
<td>Title</td>
<td>Text field representing the title, song name or content description coded per specified character set.</td>
<td>M</td>
</tr>
<tr>
<td>0x2</td>
<td>Artist Name</td>
<td>Text field representing artist(s), performer(s) or group coded per specified character set.</td>
<td>O</td>
</tr>
<tr>
<td>0x3</td>
<td>Album Name</td>
<td>Text field representing the title of the recording (source) from which the audio in the file is taken.</td>
<td>O</td>
</tr>
<tr>
<td>0x4</td>
<td>Track Number</td>
<td>Numeric ASCII string containing the order number of the audio-file on its original recording.</td>
<td>O</td>
</tr>
</tbody>
</table>
If the track title is not available the TG shall try to identify the track in other ways or send information about the media. If no information is available an empty string of zero length may be sent."

[End of changes for Erratum 2740]

6.13.8  **Erratum 2720 - Clarification of Error Code when Folder Item not playable**

*Section 6.15.3 Status and Error Codes, Table 6.49: List of Error Status Code, page 95*

*[Original text states]*

<table>
<thead>
<tr>
<th>Attribute ID</th>
<th>Description</th>
<th>Contents</th>
<th>Mandatory/Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0c</td>
<td>UID is a Directory – The UID provided refers to a directory, which cannot be handled by this media player</td>
<td>PlayItem, AddToNowPlaying</td>
<td></td>
</tr>
</tbody>
</table>

*[Replace with]*

<table>
<thead>
<tr>
<th>Attribute ID</th>
<th>Description</th>
<th>Contents</th>
<th>Mandatory/Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x0c</td>
<td>Folder Item is not playable – The UID provided refers to a folder item which cannot be handled by this media player</td>
<td>Play Item, AddToNowPlaying</td>
<td></td>
</tr>
</tbody>
</table>

[End of changes for Erratum 2720]

6.13.9  **Erratum 2708 - Figures 2.4 and 2.7 in Section 2.3 requires modification**

6.13.9.1  **Section 2.3.1.2 Remote Control from Car Audio System, figure 2.4, page 16**

*[Original figure shows]*
* The audio stream is not handled in this profile.

[Replace with]

* The audio stream is not handled in this profile.

6.13.9.2 Section 2.3.1.5 Remote controller with LCD, figure 2.7, page 18

[Original figure shows]

* The audio stream is not handled in this profile.

[Replace with]
[End of changes for Erratum 2708]

6.13.10 **Erratum 2707** - uidCounter parameter is missing from the example of ChangePath command

*Section 22.20 ChangePath, page 138*

**[Original text states]**

Browsing command for ChangePath.

<table>
<thead>
<tr>
<th>Oct</th>
<th>MSB (7)</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>LSB (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>PDU ID: 0x72 (ChangePath)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 – 2</td>
<td>Parameter Length: 0x0009</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Direction: 0x01 (Folder Down)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 – 11</td>
<td>Folder UID: 0x0000000000000005</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**[Replace with]**

Browsing command for ChangePath.

<table>
<thead>
<tr>
<th>Oct</th>
<th>MSB (7)</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>LSB (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>PDU ID: 0x72 (ChangePath)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 – 2</td>
<td>Parameter Length: 0x000B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 - 4</td>
<td>UID Counter: 0x1234</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Direction: 0x01 (Folder Down)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 – 13</td>
<td>Folder UID: 0x0000000000000005</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[End of changes for Erratum 2707]
6.13.11 Erratum 2698- Service class for CT is not just

Section 7.3 Profile Identifier of AVCTP Message Information, page 96

[Original text states]
“Note: The value of Service Class for CT is “A/V Remote Control”, while the value for TG is “A/V Remote Control Target”. The value of Profile Identifier is the same for CT and TG, which is “A/V Remote Control”.

[Replace with]
“Note: The value of Service Class for CT is “A/V Remote Control Controller” and “A/V Remote Control” for backwards compatibility, while the value for TG is “A/V Remote Control Target”. The value of Profile Identifier is the same for CT and TG, which is “A/V Remote Control”.

[End of changes for Erratum 2698]

6.13.12 Erratum 2687- Parameter Description of Start Item parameter for GetFolderItems command is confusing

Section 6.10.4.2.1 Command Parameters, “Start Item – 4 Octets”, column “Parameter Description”, page 84

[Original text states]
“The offset within the listing of the item which should be the first returned item. The first media element in the listing is at offset 0.”

[Replace with]
“The offset within the listing of the item which should be the first returned item. The first element in the listing is at offset 0.”

[End of changes for Erratum 2687]

6.13.13 Erratum 2761- Cosmetic section name fix: 4.5.1 shallshallshallmayshallSupport Level in TG

6.13.13.1 Section 4.5.1 shallshallshallmayshallSupport Level in TG, page 33

[Original text states]
“4.5.1 shallshallshallmayshallSupport Level in TG ”

[Replace with]
“4.5.1 Support Level in TG”

6.13.13.2 Section 2.2.2.1 through section 2.2.2.4, Remove the word “Shall’ from the end of every line, page 15

[Original text states]
“2.2.2.1 Category 1: Player/Recorder
Basic operations of a player or a recorder are defined, regardless of the type of media (tape, disc, solid state, etc.) or the type of contents (audio or video, etc.).

2.2.2.2 Category 2: Monitor/Amplifier
The category 2 is to define basic operations of a video monitor or an audio amplifier.

2.2.2.3 Category 3: Tuner
The category 3 defines the basic operation of a video tuner or an audio tuner.

2.2.2.4 Category 4: Menu
The basic operations for a menu function are defined in category 4. The method to display menu data is not specified. It may be a display panel of the device itself, or on-screen display (OSD) on an external monitor. Shall

[Replace with]

“2.2.2.1 Category 1: Player/Recorder
Basic operations of a player or a recorder are defined, regardless of the type of media (tape, disc, solid state, etc.) or the type of contents (audio or video, etc.).

2.2.2.2 Category 2: Monitor/Amplifier
The category 2 is to define basic operations of a video monitor or an audio amplifier.

2.2.2.3 Category 3: Tuner
The category 3 defines the basic operation of a video tuner or an audio tuner.

2.2.2.4 Category 4: Menu
The basic operations for a menu function are defined in category 4. The method to display menu data is not specified. It may be a display panel of the device itself, or on-screen display (OSD) on an external monitor.”

[End of changes for Erratum 2761]

6.13.14 Erratum 2688- Cosmetic corrections needed for AVRCP v1.4 specification

Section 11.2 Sniff Subrating, page 105

[Original text states]
“TRCP(100)”

[Replace with]
“T RCP (100)”

[End of changes for Erratum 2688]

6.14 Hands-Free Profile (HFP) V1.5

6.14.1 Erratum 2459 - Incorrect sequence of indicators update
Section 4.22.2 Three Way Calls - Third party Call Placed from HF, page 44

[Replace section 4.22.2 with]
If a third party call is placed from the HF using the ATD command, the AG shall send the OK indication and two +CIEV result codes, one with the value indicating (callsetup=2), and one with the value indicating (callheld=2) to the HF. It is permissible for the AG to send these two +CIEV result codes in either order as the timing of events in the AG may differ between implementations and network types. If the remote party is reached and alerted, the AG shall issue the +CIEV result codes with the values indicating (callsetup=3) and (callheld=1). As before, there is no enforced order to these two +CIEV result codes.

If afterwards, the remote party answers the call, the AG shall issue the +CIEV result code with the value indicating (callsetup=0).

Optionally, the HF may then use the AT+CHLD command, in order to change the status of the held and active calls. If the AT+CHLD command results in the change in a held call status the AG shall provide the status indication using the +CIEV result code with the value indicating the call held status (callheld=0,1,2>).

If the normal incoming call procedure is interrupted for any reason, the AG shall issue the +CIEV result code, with the value indicating (callsetup=0), to notify the HF of this condition (see Section 4.15.2).

[End of changes for Erratum 2459]

6.14.2 **Erratum 2037 - Allowing AT+CHLD=3 when there is an active and a waiting call contradicts 4.33.2, GSM**

*Section 4.22.1 Three Way Calling – Call Waiting Notification, page 43*

*[Original text states]*
“If the AG receives a third party call, it shall send the call waiting notification +CCWA and +CIEV result code, with the value indicating (callsetup=1), to the HF. If the user accepts the call at the HF, it shall send the AT+CHLD with parameter 1, 2 or 3 to the AG.”

[Replace with]

“If the AG receives a third party call, it shall send the call waiting notification +CCWA and +CIEV result code, with the value indicating (callsetup=1), to the HF. If the user accepts the call at the HF, it shall send the AT+CHLD with parameter 1 or 2 to the AG. (The HF Unit cannot cause the waiting call to be added as a conference call via a single AT+CHLD command; but if this is desired the HF Unit can achieve this by first issuing an AT+CHLD=2 command, and then issuing an AT+CHLD=3 command.)”

[End of changes for Erratum 2037]

6.14.3 Erratum 2211- Mismatch between SDP/BRSF and Application Requirements for call waiting+3way calling

6.14.3.1 Section 4.33.3 Bluetooth Defined AT Capabilities, “AT+BRSF”, page 77

[Original text states]

<table>
<thead>
<tr>
<th>Bit</th>
<th>Feature</th>
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<tbody>
<tr>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>1</td>
<td>Call waiting and 3-way calling</td>
</tr>
<tr>
<td>…</td>
<td>…</td>
</tr>
</tbody>
</table>

[Replace with]

<table>
<thead>
<tr>
<th>Bit</th>
<th>Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>1C</td>
<td>all waiting or 3-way calling</td>
</tr>
<tr>
<td>…</td>
<td>…</td>
</tr>
</tbody>
</table>

Section 5.3 SDP Interoperability Requirements, “table 5.1”, Row “Bit position (0=LSB) 1, column “Feature”, change the word “and” with “or”, page 82

[Original text states]

<table>
<thead>
<tr>
<th>Bit position (0=LSB)</th>
<th>Feature</th>
<th>Default in HF</th>
</tr>
</thead>
<tbody>
<tr>
<td>…</td>
<td>…</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Call waiting and three way calling(yes/no, 1 = yes, 0 = no)</td>
<td>0</td>
</tr>
</tbody>
</table>
[Replace with]

<table>
<thead>
<tr>
<th>Bit position (0=LSB)</th>
<th>Feature</th>
<th>Default in HF</th>
</tr>
</thead>
<tbody>
<tr>
<td>………</td>
<td>………</td>
<td>………</td>
</tr>
<tr>
<td>1</td>
<td>Call waiting or three way calling (yes/no, 1 = yes, 0 = no)</td>
<td>0</td>
</tr>
</tbody>
</table>

[End of changes for Erratum 2211]

6.14.4  Erratum 2716- Response and Hold Status Reporting

6.14.4.1  Section 4.29.2 Put an Incoming Call on Hold from HF, page 55

[Original text states]

“….  
• The AG shall send +BTRH Response with the parameter set to 0 as soon as the incoming call is put on hold.  
• The AG shall send the +CIEV Response with the call status set to 1.  
• The AG shall send the +CIEV Response with the callsetup status set to 0.  
….”

[Append a new bullet and text]

“….  
• The AG shall send +BTRH Response with the parameter set to 0 as soon as the incoming call is put on hold.  
• The +CIEV: (callheld = 2) message shall NOT be sent when a call is held via the AT+BTRH=0 message.  
• The AG shall send the +CIEV Response with the call status set to 1.  
• The AG shall send the +CIEV Response with the callsetup status set to 0.  
….”

6.14.4.2  Section 4.29.3 Put an Incoming Call on Hold from AG, page 56

[Original text states]

“….  
• The user may put the incoming voice call on hold by using the proper means provided by the AG unit. The AG shall then send +BTRH Response with the parameter <n> set to 0 to indicate that the incoming call is on hold.  
• Depending on whether in band ringing is enabled or disabled, there may or may not be a synchronous connection established between the HF and AG. The synchronous connection state (enabled or disabled) shall not be changed when an incoming call is placed on hold.
The AG shall send the +CIEV Response with the call status set to 1.

The AG shall send the +CIEV Response with the callsetup status set to 0.

..."

[Append a new bullet and text]

"....

• The user may put the incoming voice call on hold by using the proper means provided by the AG unit. The AG shall then send +BTRH Response with the parameter <n> set to 0 to indicate that the incoming call is on hold.

• The +CIEV: (callheld = 2) message shall NOT be sent by the audio gateway when it holds a call via the response and hold method.

• Depending on whether in band ringing is enabled or disabled, there may or may not be a synchronous connection established between the HF and AG. The synchronous connection state (enabled or disabled) shall not be changed when an incoming call is placed on hold.

• The AG shall send the +CIEV Response with the call status set to 1.

• The AG shall send the +CIEV Response with the callsetup status set to 0.

..."

Section 4.33.2 AT Capabilities Re-Used from GSM 07.07 and 3GPP 27.007, “+CLCC”, “Status”, page 71

[Original text states]

```
  status=  0 = Active
        1 = Held
        2 = Dialing (outgoing calls only)
        3 = Alerting (outgoing calls only)
        4 = Incoming (incoming calls only)
        5 = Waiting (incoming calls only)
```

[Append a new line of text at bottom]

```
  status=  0 = Active
        1 = Held
        2 = Dialing (outgoing calls only)
        3 = Alerting (outgoing calls only)
        4 = Incoming (incoming calls only)
        5 = Waiting (incoming calls only)
        6 = Call held by Response and Hold
```

[End of changes for Erratum 2716]
6.15 Headset Profile (HSP) V1.2

6.15.1 Erratum 3507 - Backward compatibility issue in HSP 1.2

Section 5.3 SDP Interoperability Requirements, Table 5.1: Service Record for Headset, page 21

[Original text states]

""

<table>
<thead>
<tr>
<th>Item</th>
<th>Definition</th>
<th>Type</th>
<th>Value</th>
<th>AttrID</th>
<th>Status</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>ServiceClassIDList</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>ServiceClass0</td>
<td></td>
<td>UUID</td>
<td>Headset</td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ServiceClass1</td>
<td></td>
<td>UUID</td>
<td>Generic Audio</td>
<td>M</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

""

[Replace with]

""

<table>
<thead>
<tr>
<th>Item</th>
<th>Definition</th>
<th>Type</th>
<th>Value</th>
<th>AttrID</th>
<th>Status</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>ServiceClassIDList</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ServiceClass0</td>
<td></td>
<td>UUID</td>
<td>HSP</td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ServiceClass1</td>
<td></td>
<td>UUID</td>
<td>Headset - HS</td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ServiceClass2</td>
<td></td>
<td>UUID</td>
<td>Generic Audio</td>
<td>M</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

""

Note:

ServiceClassIDList:

- ServiceClass0: HSP = 0x1108, this is the old UUID
- ServiceClass1: Headset – HS = 0x1131, this is the new UUID for the HS role
- ServiceClass2: Generic Audio = 0x1203, required per Headset profile

End of changes for Erratum 3507]

6.16 Serial Port Profile V1.1

6.16.1 Erratum 386 - E2170 Serial Port Profile specification clarification

Section 2.1 Profile Stack, page 178

[Original text states]

"The applications on both sides are typically legacy applications, able and wanting to communicate over a serial cable (which in this case is emulated). But legacy applications cannot know about Bluetooth procedures for setting up emulated serial cables, which is why they need help from some sort of..."
Bluetooth-aware helper application on both sides. (These issues are not explicitly addressed in this profile; the major concern here is for Bluetooth interoperability.)

[Replace with]

“The applications on both sides are typically legacy applications, able and wanting to communicate over a serial cable (which in this case is emulated). But legacy applications cannot know about Bluetooth procedures for setting up emulated serial cables, which is why they need help from some sort of Bluetooth-aware helper application on both sides. (These issues are not explicitly addressed in this profile; the major concern here is for Bluetooth interoperability.) Equally though, non-legacy applications wishing to perform serial communications over Bluetooth must also adhere to the behavior specified in this profile. This is the case regardless of whether they make use of a Bluetooth-aware helper as described above, or by use of some other interface to the Bluetooth stack. This ensures that all combinations of legacy and non-legacy applications remain interoperable at the Bluetooth level.”

End of changes for Erratum 386]

6.17 Dial-up Networking Profile V1.1

6.17.1 Erratum 284 - E2473 Remove mandatory use of the 'Phone' Major Device class in CoD.

Section 5.5.1 Class of Device usage, page 245

Original text states]

“A device which is active in the GW role of the Dial-up Networking profile shall, in the Class of Device field:

1. Set the bits ‘Telephony’ and ‘Networking’ in the Service Class field (see Bluetooth Assigned Numbers)
2. Indicate ‘Phone’ as Major Device class (see Bluetooth Assigned Numbers)”

[Replace with]

“A device which implements the GW role of the Dial-up Networking profile shall set the 'Telephony' and Networking' bits in the Service Class field of the Class of Device value.

A device which implements the GW role of the Dial-up Networking profile may indicate 'Phone' as the Major Device class (see Bluetooth Assigned Numbers).”

[End of changes for Erratum 284]

6.18 Health Device Profile V1.0

6.18.1 Erratum 2888 - Confirmed IEEE 11073 20601 events on the first reliable channel

Section 3.4 L2CAP Data Channel Requirements, page 22

[Original text states]

“Association traffic shall be carried on the first Reliable Data Channel that was opened on a given MCL.”

[Replace with]
"Association and confirmed event traffic shall be carried on the first Reliable Data Channel that was opened on a given MCL."

[End of changes for Erratum 2888]

6.18.1 Erratum 2937 - Incorrect recommendation for use of TxWindow in Streaming mode

Section 3.4.2 Configuration of Streaming Data Channels, page 25

[Delete the entire paragraph at bullet 4]

- Streaming Data Channels on Sinks should be configured to have a TxWindow as large as the Sink can support to protect against flushed packets and to maximize channel utilization."

[End of changes for Erratum 2937]

6.18.2 Erratum 2947 - Service Record for HDP Device

Section 5.1 Configuration of Streaming Data Channels, page 30

[Add a new row after row “Service Class #0”]

| ServiceRecordState | UINT 32 | Variable | 0x0002 | O |

[End of changes for Erratum 2947]

Multi-Channel Adaptation Protocol V1.0

6.18.3 Erratum 2993 - Conflict in statements for response packet format in Create command

6.18.3.1 Section 4.1.3.2 Response Packet Format, page 23

[Original text states]

“When the Response Code is not Success, the Response Parameters shall have length zero.”

[Replace with]

“The definition of the Response Parameter field varies by command.”

6.18.3.2 Section 4.1.3.7.1 MD_CREATE_MDL, page 27

[Append text]

“When the Response Code is not Success, the Response Parameter field shall be set to the same value as was indicated in the Configuration field of the corresponding request.”

[End of changes for Erratum 2993]
## 7 Test Specification Impact

<table>
<thead>
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<tbody>
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<td><strong>Erratum 3696</strong> - LE Test Packet not completely defined</td>
<td>TSE 4204</td>
<td>Core</td>
<td>4.0</td>
<td>Volume 6 part F: Direct Test Mode</td>
<td>No technical impact, only editorial</td>
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<tr>
<td><strong>Erratum 2421</strong> - Key press notification mandatory or optional?</td>
<td>TSE 4228</td>
<td>Core</td>
<td>2.1</td>
<td>Volume 2 Part C: Link Manager Protocol</td>
<td>Yes</td>
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<tr>
<td><strong>Erratum 3099</strong> - Minor omission in description of 'Interval' field for Mode Change = Sniff event</td>
<td>TVE 1761</td>
<td>Core</td>
<td>3.0</td>
<td>Volume 2 Part E: Host Controller Interface Functional Specification</td>
<td>Yes</td>
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<td><strong>Erratum 3852</strong> - Table 4.1 GATT requirement does not match GAP requirements. GATT is mandatory if ATT is supported</td>
<td>TSE 4180</td>
<td>Core</td>
<td>4.0</td>
<td>Volume 0 part B: Part B - Bluetooth Compliance Requirements</td>
<td>Yes</td>
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<td><strong>Erratum 3568</strong> - High Speed Only Controller Subsystems</td>
<td>TSE 4181</td>
<td>Core</td>
<td>4.0</td>
<td>Volume 1 part D: Mixing of Specification Versions</td>
<td>Yes</td>
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<td><strong>Erratum 3881</strong> - Clarify that BR-only GATT services will be reported in GATT Discover Primary Services executed on LE</td>
<td>TSE 4222</td>
<td>Core</td>
<td>4.0</td>
<td>Volume 3 Part G - Generic Attribute Profile (GATT)</td>
<td>Yes</td>
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<tr>
<td><strong>Erratum 3929</strong> - Service Changed Client Configuration Characteristic Descriptor</td>
<td>TSE 4225</td>
<td>Core</td>
<td>4.0</td>
<td>Volume 3 Part G - Generic Attribute Profile (GATT)</td>
<td>Yes</td>
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<tr>
<td><strong>Erratum 3915</strong> - Client characteristic configuration</td>
<td>TSE 4225</td>
<td>Core</td>
<td>4.0</td>
<td>Volume 3 Part G - Generic Attribute Profile (GATT)</td>
<td>Yes</td>
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<td>descriptor</td>
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<td><strong>Erratum 3451</strong> - Wanted signal frequency not in line with frequencies supported by non-connectable devices</td>
<td>TSE 3439</td>
<td>Core</td>
<td>4.0</td>
<td>Volume 6 part A: Physical Layer Specification</td>
<td>Yes</td>
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<td><strong>Erratum 3043</strong> - SNK Bitpool capabilities do not reflect actual capabilities of individual SNKs</td>
<td>PTS issue 6413</td>
<td>Profile</td>
<td>A2DP 1.2</td>
<td>Advanced Audio Distribution Profile (A2DP) V1.2</td>
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<tr>
<td><strong>Erratum 2911</strong> - Preconditions to a stream reconfiguration are not clear</td>
<td>TSE 4234</td>
<td>Profile</td>
<td>AVDTP 1.2</td>
<td>Audio/Video Distribution Transport Protocol (AVDTP) V1.2</td>
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<td><strong>Erratum 2961</strong> - Treatment of top bit in Absolute Volume</td>
<td>TSE 2738</td>
<td>Profile</td>
<td>AVRCP 1.4</td>
<td>Audio/Video Remote Control Profile (AVRCP) V1.4</td>
<td>Yes</td>
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<td><strong>Erratum 2814</strong> - Add press and hold feature</td>
<td>TSE 2706</td>
<td>Profile</td>
<td>AVRCP 1.4</td>
<td>Audio/Video Remote Control Profile (AVRCP) V1.4</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Erratum 2459</strong> - Incorrect sequence of indicators update</td>
<td>TSE 4261</td>
<td>Profile</td>
<td>HFP 1.5</td>
<td>Hands-Free Profile (HFP) V1.5</td>
<td>Yes</td>
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<tr>
<td><strong>Erratum 2037</strong> - Allowing AT+CHLD=3 when there is an active and a waiting call contradicts 4.33.2, GSM</td>
<td>TSE 4260</td>
<td>Profile</td>
<td>HFP 1.5</td>
<td>Hands-Free Profile (HFP) V1.5</td>
<td>Yes</td>
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<td><strong>Erratum 2211</strong> - Mismatch between SDP/BRSF and Application Requirements for call waiting+3way</td>
<td>TSE 4265</td>
<td>Profile</td>
<td>HFP 1.5</td>
<td>Hands-Free Profile (HFP) V1.5</td>
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<td><strong>TSE 4266</strong></td>
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<td>HFP 1.5</td>
<td>Hands-Free Profile (HFP) V1.5</td>
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<tr>
<td>Response and Hold Status Reporting</td>
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<tr>
<td><strong>Erratum 3507</strong>-</td>
<td><strong>TSE 3184</strong></td>
<td>Profile</td>
<td>HSP 1.2</td>
<td>Headset Profile (HSP) V1.2</td>
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<td>Backward compatibility issue in HSP 1.2</td>
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<tr>
<td><strong>Erratum 284</strong>-</td>
<td><strong>TSE 3288</strong></td>
<td>Profile</td>
<td>DUN 1.1</td>
<td>Dial-up Networking Profile V1.1</td>
<td>YES</td>
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<tr>
<td>E2473 Remove mandatory use of the 'Phone' Major Device class in CoD.</td>
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<tr>
<td><strong>Erratum 2947</strong>-</td>
<td><strong>TSE 4267</strong></td>
<td>Profile</td>
<td>HDP 1.0</td>
<td>Health Device Profile V1.0</td>
<td>Yes</td>
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<td>Service Record for HDP Device</td>
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<td><strong>Erratum 924</strong>-</td>
<td><strong>TSE 2533</strong></td>
<td>Profile</td>
<td>OPP 1.1</td>
<td>Object Push Profile 1.1</td>
<td>Yes, but the issue has been fixed by OPP1.2</td>
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