IEEE P802.11
Wireless LANs

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| LB 200 MAC Comment Resolution on Short Management Frames |
| Date: 2014-04-07 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Jae Seung Lee | ETRI | 161 Gajeong-dong,Yuseong-gu, Daejeon, Korea | +82 42 860 1326 | jasonlee@etri.re.kr  |
| Il Gyu Kim | ETRI | 161 Gajeong-dong,Yuseong-gu, Daejeon, Korea | +82 42 860 5490 | igkim@etri.re.kr  |
| Seung Chan Bang | ETRI | 161 Gajeong-dong,Yuseong-gu, Daejeon, Korea | +82 42 860 6140 | scbang@etri.re.kr  |

Abstract

This submission proposes comment resolutions on Short Management Frames (Clause 8.7.5.1 and 8.7.5.3)

* CIDs on 8.7.5.1: 1456, 2710, 2435 (3 CIDs)
* CIDs on 8.7.5.3: 1171, 1172, 1173, 1457, 1458, 1459, 1460, 2438, 2439, 2441 (10 CIDs)

Changes in the text refer to: Draft P802.11ah/D1.2

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGah Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGah Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGah Editor: Editing instructions preceded by “TGah Editor” are instructions to the TGah editor to modify existing material in the TGah draft. As a result of adopting the changes, the TGah editor will execute the instructions rather than copy them to the TGah Draft.***

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| --- | --- | --- | --- | --- | --- |
| 1456 | 145 | 8.7.5.1 | The Sequence Control field is not present in Short Management frames of subtype Short probe response. | Replace "The Frame Control, A1, A2, and Sequence Control fields are present in all Short Management frame subtypes." with "The Frame Control, A1, and A2 are present in all Short Management frame subtypes. |  Revised –TGah Editor to make changes shown in 14/0522 |
| 2710 | 145 | 8.7.5.1 | The frame control field is named "FC" in Figure 8-532i and as "Frame Control" in Figure 8-532h. Please make these consistent throughout the draft | Change as per comment |  Revised -“FC” should be changed to “Frame Control” in Figure 8-532i.TGah Editor to make changes shown in 14/0522 |
| 2435 | 145 | 8.7.5.1 | Two lines above it says SC is present in all Short Management frames, so what is "unless stated otherwise" about? | Replace with text from 8.7.3.3 (which could be made generic to all Short frames) |  Revised–Since the Sequence Control field is present in Short Management frames of subtype Action and Action No Ack, we need description on it.TGah Editor to make changes shown in 14/0522 |
| 1171 | 146 | 8.7.5.3 | "Optional IEs" -- there's no such thing as an IE | Rename field "Optional Elements" (note Elements is upper cased because it is part of the name of the field). |  Revised –TGah Editor to make changes shown in 14/0522 |
| 1172 | 147 | 8.7.5.3 | "FC field" -- there is no such field | Don't abbreviate names of fields, quote them exactly."FC field" -> "Frame Control field" |  Revised –TGah Editor to make changes shown in 14/0522 |
| 1173 | 147 | 8.7.5.3 | "Security field is set to 1 if the AP is an RSNA AP."I'm not sure you need to say here that the transmitting STA is an AP. Certainly it wasn't necessary at 146.40. Also there is no antecedent for "the" | "Security field is set to 1 if the transmitting STA is an RSNA STA." |  Revised –TGah Editor to make changes shown in 14/0522 |
| 1457 | 146 | 8.7.5.3 | First sentence of first paragraph of the subclause is redundant (and not std compliant as it contains a "can" not suitable for clause 8 description) and cross-references with subclauses in 10.1.4.X. Simply describe frame format here and they are already referenced in subclauses 10.1.4.X. | Remove first sentence of first paragraph in Line 14 of page 146: "The Short Probe Response frame is a shortened version of Probe Response frame and it can be used instead of Probe Response frame as described in 10.1.4.1 (General), 10.1.4.3.1 (Introduction), and 0.1.4.3.3(Sending a probe response)." |  Revised–TGah Editor to make changes shown in 14/0522 |
| 1458 | 146 | 8.7.5.3 | The frame format of Short Probe Resposne Frame is not consistent with Short Management frame format. Also paragraph starting in line 36 of page 146 is redundant as all those fields are described in the paragraphs that follow it. | In Figure 8-532e replace "FC" with "Frame Control", "DA" with "A1", "SA" with "A2".Add "The A1 field contains the address of the intended recipient of the frame." and add "The A2 field contains the address of the transmitter sending the frame." as two independent paragraphs that precede the paragraph in line 40 of page 146. | Revised –TGah Editor to make changes shown in 14/0522 |
| 1459 | 146 | 8.7.5.3 | Paragraphs starting from line 60 and ending in line 64 include protocol behavior text which should not appear in clause 8. | Remove paragraphs from line 60 to 64 in page 146 and add them in corresponding subclause under 10.1.4.3.3. | Revised –TGah Editor to make changes shown in 14/0522 |
| 1460 | 147 | 8.7.5.3 | In Frame Control field the Compressed SSID is always present but in paragraph startign in line 28 it seems is present only when Full SSID Present field is set to 0. Clarify the precise signaling for the presence/absence of these two fields: Full SSD and Compressed SSID. | As in comment. | Revised –TGah Editor to make changes shown in 14/0522 |
| 2438 | 146 | 8.7.5.3 | This sentence seems useless given the next | Delete | Revised –TGah Editor to make changes shown in 14/0522 |
| 2439 | 147 | 8.7.5.3 | This sentence does not match the figure (it's "BSS BW" and "Interworking Present" in the figure, and there's also a 1MPL field). In general such duplication does nothing but introduce the risk of inconsistency (as it did here). Similar problems at 49.31, 50.32, 50.34. Duplication also at 86.14, 89.49, 90.37, 99.33, 111.26, 133.21, 146.37, 148.21 | Delete (take care where information on which fields are optional is given) |  Revised –TGah Editor to make changes shown in 14/0522 |
| 2441 | 146 | 8.7.5.3 | If the SPR contains either Compressed SSID or full SSID then the Compressed SSID is optional | Add "(optional)" |  Revised –TGah Editor to make changes shown in 14/0522 |

**Discussion:**

**CID 1456, 2710, 2435**

**CID 1171, 1172, 1173, 1457, 1458, 1459, 1460, 2438, 2439, 2441**

See the resolution column in the table.

Modifications made to the Short Beacon frame are also applied to the Short Probe Response frame.

**Proposed Remedy:**

***Instructions to TGah Editor: Change the subclause 8.7.5.1 as follows***

**8.7.5 Short Management frames(#27)**

**8.7.5.1 Format of Short Management frames**

The format of a Short Management frame is defined in Figure 8-532h (Short Management frame format).

The Frame Control, A1, and A2~~, and Sequence Control~~ fields are present in all Short Management frame subtypes.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  | Frame Control | A1 | A2 | Sequence Control | A3 | Frame Body | FCS  |
| * Short Management frame format
 |

The address fields A1 and A2 contain the receiver and transmitter addresses either of which can be an SID field as described in 8.7.3.2 (Address fields).

The Sequence Control field is described in ~~(see~~ 8.2.4.4 (Sequence Control field)~~) is present in all types of management frames unless stated otherwise~~ and is present in Short Management frames of subtype Action and Action No Ack.

The address field A3 (if present, as described in 8.7.3.2 (Address fields) is the BSSID.

The frame body consists of the fields followed by the elements defined for each short management frame subtype.

All fields and elements are mandatory unless stated otherwise and appear in the specified, relative order.

STAs that encounter an element ID they do not recognize in the frame body of a received Short Management frame ignore that element and continue to parse the remainder of the short management frame body (if any) for additional elements with recognizable element IDs. See 9.24.7 (Vendor specific element parsing). Unused element ID codes are reserved.

Table 8-301e (Short Management frame subtypes) defines the different short management frame subtypes.

***Instructions to TGah Editor: Change the subclause 8.7.5.3 as follows***

**8.7.5.3 Short Probe Response frame format**(#12)

~~The Short Probe Response frame is a shortened version of Probe Response frame and it can be used instead of Probe Response frame as described in 10.1.4.1 (General), 10.1.4.3.1 (Introduction), and 10.1.4.3.3 (Sending a probe response).~~ The format of the Short Probe Response frame is shown in Figure 8-532i (Short Probe Response frame format).

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |
|  | FrameControl | ~~DA~~A1 | ~~SA~~A2 | Timestamp | ChangeSequence | Next TBTT (~~O~~optional) | Compressed SSID(optional) | Access Network Options (optional) | Optional ~~IEs~~Elements | FCS  |
| Octets: | 2 | 6 | 6 | 4 | 1 | 3 | 4 | 1 | variable | 4 |
| * Short Probe Response frame format
 |

~~The Short Probe Response frame contains Timestamp, Change Sequence, and either Compressed SSID or full SSID. It optionally contains Next TBTT, Access Network Options, and Optional IEs.~~

The A1 field contains the MAC address of the intended recipient of the frame.

The A2 field contains the MAC address of the transmitter sending the frame.

The Timestamp field contains the 4 least significant octets of the transmitting STA’s TSF timer at the time that the start of the data symbol, containing the first bit of the Timestamp, is transmitted by the PHY plus the transmitting STA’s delays through its local PHY from the MAC-PHY interface to its interface with the WM.(#14/0039r2)

The Change Sequence field is defined as an unsigned integer initialized to 0, that increments when a critical update to the Beacon frame has occurred.

The Next TBTT field is ~~optionally~~present if the Next TBTT Present field in the Frame Control field is 1 and indicates the most significant 3 octets of the 4 least significant octets of the next TBTT. Otherwise, it is not present.

Either a Compressed SSID field or an SSID element is included in the Short Probe Response frame.

The Compressed SSID field is present if the Full SSID Present field in the Frame Control field is 0 and it contains a 32-bit CRC calculated as defined in 8.2.4.8 FCS field, wherein the calculation fields is the SSID field in the Probe Response frame or S1G Beacon frame. An SSID element is not present if the Full SSID Present field in the Frame Control field is 0.

~~When a Full SSID is requested to be included in the Short Probe Response frame, then~~An SSID element as defined in 8.4.2.2 is present ~~included~~ in the Optional ~~IEs~~Elements field ~~part~~ of the Short Probe Response frame if the Full SSID Present field in the Frame Control field is 1. The Compressed SSID field is not present if the Full SSID Present field in the Frame Control field is 1.

The Access Network Options field is ~~optionally~~ present if the ANO Present field in the Frame Control field is 1 and is defined in 8.4.2.91 (Interworking element). Otherwise, it is not present.

The Optional Elements field contains optional elements requested to be included in the Short Probe Response frame such as ~~The~~ Short Beacon Compatibility element~~as defined in 8.4.2.170g (Short Beacon Compatibility element~~) ~~can be included in the Optional IEs part of the Short Probe Response frame~~.

~~Other optional elements can be included in the Optional IEs part of the Short Probe Response frame.~~

The Frame Control field of the Short Probe Response frame is shown in Figure 8-532j (Frame Control field of Short Probe Response frame format).

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |
|  | ProtocolVersion | Type | PTID/Subtype | Next TBTT Present | Full SSID Present | ~~Interworking~~ ANOPresent | BSS BW | Security | 1MHz Primary Channel Location |
| Bits:  | 2 | 3 | 3 | 1 | 1 | 1 | 3 | 1 | 1 |
| * Frame Control field of Short Probe Response frame format
 |

~~The Frame Control field of the Short Probe Response frame contains Next TBTT present field, Full SSID Present field, Internetworking Present field, BSS Bandwidth field and Security field.~~

The Next TBTT present field is set to 1 if the Next TBTT field is included in the Short Probe Response frame and otherwise set to 0.

The Full SSID Present field indicates whether a Full SSID or a Compressed SSID is included in the Short Probe Response frame. ~~If iI~~t is set to 1~~, it~~ to indicate~~s~~ that ~~a Full~~ an SSID element is included and the Compressed SSID field is not included in the Short Probe Response frame. ~~If iI~~t is set to 0~~, it~~ to indicate~~s~~ that the~~a~~ Compressed SSID field is included and the SSID element is not included in the Short Probe Response frame.

The ~~Interworking~~ANO Present field is set to 1 if the Access Network Options field is present; otherwise it is set to 0.

The BSS ~~Bandwidth~~BW field indicates the minimum and the maximum ~~current~~ operating bandwidths of the BSS and is defined in Table 8-32 (Frame Control field BSS BW setting).

Security field is set to 1 if the ~~AP~~transmitting STA is an RSNA ~~AP~~STA.

The 1MHz Primary Channel Location field indicates the location of the 1MHz Primary Channel. If it is set to 0, it indicates that the 1MHz primary channel is located at lower side of 2MHz primary channel. If it is set to 1, it indicates that the 1MHz primary channel is located at upper side of 2MHz primary channel.(#868)