IEEE P802.11
Wireless LANs

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| Proposed Draft Text for Multi-Link element fragmentation |
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Abstract

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: Add another example of a per-STA profile fragmented across two Multi-Link elements which are carried in the Multiple BSSID element

Discussions:

There is a possibility that the length of a per-STA profile is longer than 255 octets, it may happen in the case that the reported STA has many elements that are different from the reporting STA or specific to the reported STA. In that case, the information to be carried in the Multi-Link element will also be longer than 255 octets. 10.28.11 defines a procedure for element fragmentation, but it only works with STAs supporting 802.11ai. In some scenarios defined in TGbe, Multi-Link element is designed to be carried in the Nontransmitted BSSID Profile subelement of a Multiple BSSID element, which is a legacy element and can’t be fragmented. Hence the Multi-Link element shall not be fragmented using the way defined in 10.28.11. This contribution defines a way for fragmentation of Multi-Link element and Per-STA Profile Subelement which is backward compatible.

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

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

35. Extremely High Throughput (EHT) MAC specification

35.3 Multi-link operation

35.3.2 Advertisement of multi-link information in Multi-Link element

***TGbe Editor: Add the following subclause:***

35.3.2.4 Fragmentation of Multi-Link element and Per-STA Profile Subelement

If the length of the information to be carried in a Multi-Link element exceeds 255 octets, or the information cannot fit in a single Multi-Link element which is carried in the Nontransmitted BSSID Profile subelement of a Multiple BSSID element, the transmitting STA shall use multiple Multi-Link elements in the same frame to carry the information. A per-STA profile shall be carried in a single Per-STA Profile subelement, unless the Per-STA Profile subelement cannot fit in a single Multi-Link element. In this case, the per-STA profile is fragmented and is carried in multiple Per-STA Profile subelements, each of which is carried in a Multi-Link element in the same frame.

If there is a need to fragment a per-STA profile across multiple Multi-Link elements, the transmitting STA shall not fragment an element in the per-STA profile across multiple Per-STA Profile subelements, and it shall place the next element in that per-STA profile as the first element in the first Per-STA Profile subelement of the immediately following Multi-Link element. If a per-STA profile is fragmented and carried in multiple Per-STA Profile subelements, the Link ID subfield in the STA Control field shall be set to the same value in each of the Per-STA Profile subelements, which is the Link ID corresponding to the per-STA profile.

An example of a per-STA profile fragmented across two Multi-Link elements is shown in Figure 35-xx (Example of per-STA profile fragmented across multiple Multi-Link elements). In this example, the per-STA profile of the STA operating on the link with a Link ID equal to a is fragmented across two Multi-Link elements, and is carried in the Per-STA Profile subelement x and the Per-STA Profile subelement x+1, which are carried in the Multi-Link element 1 and the Multi-Link element 2, respectively. The Link ID subfield in the STA Control field of the Per-STA Profile subelement x and the Per-STA Profile subelement x+1 are both set to a, which represents that the Per-STA Profile subelement x and the Per-STA Profile subelement x+1 carry the per-STA profile of the same STA that operates on the link with the Link ID equal to a.



Figure 35-xx—Example of per-STA profile fragmented across multiple Multi-Link elements

Another example of a per-STA profile fragmented across two Multi-Link elements which are carried in the Multiple BSSID element is shown in Figure 35-xy (Example of per-STA profile fragmented across multiple Multi-Link elements carried in different Nontransmitted BSSID Profile subelements of the same BSS). In this example, the per-STA profile of the STA operating on the link with a Link ID equal to a is fragmented across two Multi-Link elements (Element L and Element L+1) carried in two Nontransmitted BSSID Profile subelements of BSS i, which are carried in two Multiple BSSID elements. The per-STA profile of the STA is carried in the Per-STA Profile subelement x and the Per-STA Profile subelement x+1. The Link ID subfield in the STA Control field of the Per-STA Profile subelement x and the Per-STA Profile subelement x+1 are both set to a, which represents that the Per-STA Profile subelement x and the Per-STA Profile subelement x+1 carry the per-STA profile of the same STA that operates on the link with the Link ID equal to a.



Figure 35-xy—Example of per-STA profile fragmented across multiple Multi-Link elements carried in different Nontransmitted BSSID Profile subelements of the same BSS

**Straw Poll: Do you support to incorporate the proposed draft text in this document 11-21/1376r1 to the next revision of TGbe Draft?**

**Result: Yes/No/Abstain**