IEEE P802.11
Wireless LANs

|  |
| --- |
| [Beacon Report fragmentation] |
| Date: 2017-09-14 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Gabor Bajko | Mediatek | 2840 Junction Rd |  | Gabor.bajko@mediatek.com |
|  |  |  |  |  |

Abstract

[During 11n amendment development, it was noticed that if the Beacon Report has to include the entire beacon content, then it may happen that the length of the Beacon Report would be larger than the (255-3) octet maximum length of the Measurement Report field of a Beacon Report (in case when the Reported Frame Body subelement is larger than 227 octets), thus some HT, VHT, or IEs defined in subsequent amendments, perhaps critical, could be missed. To solve the problem, 11n amendment adopted at that time a rule to truncate some of the larger and not critical IEs (3 of them, TIM, IBSS DFS and RSNE) to 4 octets, to make sure that all other (defined by that time) IEs would fit into one Measurement Report (see section 9.4.2.22.7 of 802.11-2016).

The argument that by truncating the above mentioned IEs solves the problem is by now outdated, as many more IEs have been defined by a multitude of amendments since then, thus fragmentation of the Reported Frame Body subelement is needed..

To overcome the size limitation of a Beacon Report, this proposal proposes to add in addition to the current truncation of the IEs and the subelement, an optional fragmentation of the Reported Frame Body subelement across multiple Measurement Reports, and defines the details how the reporting STAs can fragment the Reported Frame Body subelement of a Beacon Report, and send the fragments in multiple Beacon Report frames.]

***Editor: add the following line to Table 9-112—Optional subelement IDs for Beacon report, with appropriate adjustments to the Reserved Subelement ID:***

|  |  |  |
| --- | --- | --- |
| Subelement ID | Name | Extensible |
| 2 | Reported Frame Body Fragment ID |  |

***Editor: make the following changes in (9.4.2.22.7 Beacon report)***

The Reported Frame Body subelement contains the requested fields and elements of the frame body of the

reported Beacon, Measurement Pilot, or Probe Response frame. If the Reporting Detail subelement of the

corresponding Beacon request equals 0, the Reported Frame Body subelement is not included in the Beacon

report. If the Reporting Detail subelement equals 1, all fixed fields and any elements identified in a Request

element or Extended Request element in the corresponding Beacon request are included in the Reported

Frame Body subelement, in the order that they appeared in the reported frame.

Some of the elements included into the Reported Frame Body subelement might be truncated, and the subelement itself might be truncated or fragmented over multiple Beacon Reports when its size exceeds the maximum element size, as described below:

If the Reporting Detail field equals 2, all fixed fields and elements are included in the order they appeared in the reported frame.

Reported TIM elements might be ~~are~~ truncated such that only the first 4 octets of the element are reported and the

element Length field is modified to indicate the truncated length of 4. Reported IBSS dynamic frequency

selection (DFS) elements might be ~~are~~ truncated so that only the lowest and highest channel number map are reported

and the element Length field is modified to indicate the truncated length of 13. Reported RSNEs might be ~~are~~

truncated so that only the first 4 octets of the element are reported and the element Length field is modified

to indicate the truncated length of 4.If the length of the Reported Frame Body subelement would cause the

Measurement Report element to exceed the maximum element size, when the Reported Frame Body subelement fragmentation is not supported, then the Reported Frame Body subelement is truncated so that the last element in the Reported Frame Body subelement is a complete element.

If the length of the Reported Frame Body subelement would cause the Measurement Report element to exceed the maximum element size, when the Reported Frame Body subelement fragmentation is supported, then the Reported Frame Body subelement is fragmented over multiple Beacon Reports. When the Reported Frame Body subelement is fragmented, then the Reported Frame Body Fragment ID subelement is present in each Beacon Report frame that contains a fragment of this Reported Frame Body subelement. When the Reported Frame Body Fragment ID subelement is present, the reporting STA does not truncate any of the elements included into the Reported Frame Body subelement.

The Data field of the Reported Frame Body Fragment ID subelement has the following format:

B0 B7 B14 B15

|  |  |  |
| --- | --- | --- |
| Beacon Report ID | Fragment ID number | More Frame Body Fragments |

Bits 8 7 1

The Beacon Report ID field identifies the Beacon Report instance sent as a response to a Beacon Request. The responding STA sets the Fragment ID number field to 0 for the initial fragment and increments it by 1 for each subsequent fragment in a multi-fragment Reported Frame Body subelement of a Beacon Report identified by the Beacon Report ID.

The More Frame Body Fragments field is set to 0 whenever the final fragment of a Reported Frame Body subelement is being transmitted, otherwise it is set to 1.

The Reported Frame Body subelement is fragmented so that the last element in every Reported Frame Body subelement fragment is a complete element.