­­IEEE P802.11
Wireless LANs

|  |
| --- |
| Resolution to Comments : CID 72, 119, 128 |
| Date: 2014-05-21 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Chen Qian | Institute for Infocomm Research (I2R) / CWPAN | 1 Fusionopolis Way, #21-01 Connexis, Singapore | 65-6408-2243 | qchen@i2r.a-star.edu.sg |
| Khiam-Boon Png  |  |  |
| Peng Xiaoming |  |  |
| Francois Chin |  |  |

Abstract

This document presents suggested proposal towards CID 72, 119, 128

***Modify the following definition into 10.3.1 as highlighted in red texts:***

* STA authentication and association

***Discussion:***

CID 72, 119, 128 provide comments about spatial sharing mechanism in IEEE 802.11aj. This proposal is intended to address and resolve the comments with adoption/revision to the suggestions.

***Proposed Resolution:***

**8.4.2.1 General**

*Insert the new rows into Table 8-54 in numeric order:*

**Table 8-54—Element IDs**

|  |  |  |  |
| --- | --- | --- | --- |
| Element | Element ID | Length (in octets) | Extensible |
| SSW Report | ANA | 7 to 257 | Yes |

*Insert the following subclause:*

**8.4.2.162 SSW Report element**

The SSW Report element is used by a non-AP or non-PCP STA to report beamforming training information to AP or PCP (10.31.1). The format of the SSW Report element is asillustrated in Figure 8-401bp.



**Figure 8-401bp─SSW Report element format**

The Element ID field is equal to the value for the SSW Report, specified in Table 8-54.

The Length field for this element indicates the length of Information field.

The Report Info field is formatted as illustrated in Figure 8-401bq.



**Figure 8-401bq─Report field format**

The Initiator AID filed identifies the STA that is the initiator of the beamforming training.

The Responder AID filed identifies the STA that is the responder of the beamforming training.

The Sector Select field is as defined in 8.4a.3.

The DMG Antenna Select field is as defined in 8.4a.3.

The SNR Report field is as defined in 8.4a.3.

The IsInitiatorTXSS/IsResponderTXSS subfield is set to 1 to indicate that an initiator TXSS has been performed between the initiator and the responder. This subfield is set to 0 to indicate that a responder TXSS has been performed between the initiator and the responder.

**9.35.2.5 Sector Sweep ACK**

*Remove the changes in this subsection.*

**10.31.1 General**

*Insert the following paragraphs at the end of this subsection:*

AP or PCP may use the beamforming training information among any pair of STAs within the BSS obtained through the SSW Report information element (8.4.2.162) to achieve spatial sharing and interference mitigation. The AP or PCP can transmit an Information Request frame (8.5.20.4) addressed to a STA for a response with a SSW Report element (8.4.2.162) contained in an Information Response frame (8.5.20.5). A non-PCP/non-AP STA can also send an unsolicited Information Response frame with a SSW Report element after the STA has completed the beamforming procedure with at least another STA.The SSW Report information element may be used to facilitate the selection of candidates for spatial sharing as described in Annex AB.

**10.31.3 Achieving spatial sharing and interference mitigation**

*Remove the changes in this subsection.*

*Insert the following text, Annex AB, after Annex AA:*

**Annex AB**

**(informative)**

**Selection of candidate SPs for spatial sharing**

An AP or PCP uses the SSW Report information element (8.4.2.162) to construct a beamforming training table. Based on the beamforming training table, the AP or PCP selects a pair of exising SP and candidate SP to perform spatial sharing according to the procedures described in 10.31.3.

Each entry of the beamforming training talbe has three items: source AID, destination AID and the best sector for transmitting from source STA to destination STA. The AP or PCP stores the beamforming training results between any pair of STAs among its BSS. If a souce STA and a destionation STA have not beamforming trained, the best sector item is typically given a default sector number.

The select condition is that any source STA involved in an existing SP does not employ the same transmit sector with the one that it employs to communicate with any other STA involved in a candidate SP, and vice versa. If a pair of existing SP and candidate SP satisfies the above condition, the AP or PCP schedules the existing SP and the candidate SP time-overlapping with each other for spatial sharing.

For the same existing SP, if more than one candidate SPs statisfy the above condition, the AP or PCP selects the SP with the largest number of difference between any two of transmit sectors employed by a source STA to communicate with its destination STA and with any other STA involved in the other SP.