IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Proposed Revised Text to Resolve Comments Pertaining to Section 9.33.11 in CC12 | | | | |
| Date: 2014-03-20 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Khiam-Boon Png | Institute for Infocomm Research (I2R) / CWPAN | 1 Fusionopolis Way, #21-01 Connexis, Singapore | 65-6408-2433 | kbpng@i2r.a-star.edu.sg |
| Chen Qian |  |  |
| Peng Xiaoming |  |  |
| Francois Chin |  |  |

Abstract

This document presents proposed revised text towards resolving CID 19-25, 28-32.

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

* STA authentication and association

***Discussion:***

CID 19-25, 28-32 provide comments about section 9.33.11 in IEEE 802.11aj draft D0.01. This document provides the revised text proposal to address the comments with adoption/revision to the accepted proposed remedies.

**Revised Text Proposal:**

***Insert the following subclauses after 9.33.10:***

**9.33.11 Opportunistic Transmission in Alternative Channels**

AP or PCP may support the scheduling of opportunistic data transmission between two or more non-AP/non-PCP CDMG STAs that support such opportunistic transmission in a channel which is not the BSS’s operating channel. The channel for such opportunistic transmission is termed the alternative channel while the BSS’s operating channel is termed the dedicated channel as a contrast in this section. The spectrum access in the alternative channel is divided into three phases: monitor phase, transmission phase and suspension phase. Scheduled transmission in the alternative channel shall start with the monitor phase and then the three phases rotate cyclically until all the scheduled transmissions in the alternative channel are completed as illustrated in Figure 9-46a.

The monitor phase shall last for aMaxBIDuration. During the monitor phase, a CDMG STA that is scheduled to operate in the alternative channel shall listen for the transmission of DMG or CDMG Beacon frames in the alternative channel. If a CDMG STA receives one or more valid DMG or CDMG Beacon frame with a BSSID different from its own, it shall abandon transmission during the transmission phase.

During the transmission phase, a CDMG STA may transmit frames according to the DTI transmission rules (9.33.4). A CDMG STA may continue to listen for the transmission of DMG or CDMG Beacon frames in the alternative channel during the transmission phase when the CDMG STA is not transmitting. If a CDMG STA is not the source or destination STA in an accessperiod, it may switch to the dedicated channel to receive the CDMG Beacon frame or Announce frame send out by the AP or PCP to maintain synchronization with the AP or PCP.

During the suspension phase, a CDMG STA that is scheduled to operate in the alternative channel shall switch to the dedicated channel and be ready to receive transmission from the AP or PCP in the dedicated channel. The CDMG STA may receive the CDMG Beacon frame or Announce frame transmitted by the AP or PCP to maintain synchronization with the AP or PCP during the suspension phase. If a CDMG STA receives a DELTS frame from the AP or PCP during the suspension phase, the CDMG STA should cease opportunistic transmission in the alternative channel.

The schedule of the transmission in the alternative channel is communicated through the CDMG Extended Schedule element (8.4.2.161). The AP or PCP shall transmit the CDMG Extended Schedule element in either or both an Announce frame or a CDMG Beacon frame. The CDMG Extended Schedule element shall contain the scheduling information of all allocations in the alternative channel. The Number of Alternate TX BI field in the CDMG Extendeded Schedule element indicates the number of BIs that makes up the transmission phase. The Number of Suspension BI field in the CDMG Extendeded Schedule element indicates the number of BIs that makes up the suspension phase.

The access periods in the alternative channel may be scheduled to be either CBAPs or SPs but the first access period shall be a SP. The CBAPs in the alternative channel may be used by the PCP/AP to send more CDMG STAs to operate in the alternative channel after the initial setup. The source CDMG STA of the first SP in the alternative channel shall transmit a CDMG Beacon frame at the start of the first transmission phase in the alternative channel and after every aMaxBIDuration within the transmission phase if the duration of the transmission phase exceeds aMaxBIDuration.

The AP or PCP should send a DMG CTS-to-self frame in the ATIs (9.33.3) during the suspension phase to each of the CDMG STAs scheduled to operate in the alternative channel. If a CDMG STA receives one or more valid DMG or CDMG Beacon frame with a BSSID different from its own during the monitor phase, the CDMG STA shall response with a DELTS frame to the AP or PCP with the Reason Code field (8.4.1.7) set to 68 (the alternative channel is occupied) upon the reception of a DMG-CTS-to-self frame from the AP or PCP during the ATI. If a transmission link in the alternative channel cannot be established during the transmission phase, the CDMG STA shall response with a DELTS frame to the AP or PCP with the Reason Code field set to 67 (transmission link establishment in alternative channel failed).

If the AP or PCP received a DELTS frame with the Reason Code field (8.4.1.7) set to 68 in a ATI, the AP or PCP shall transmit a DELTS frame to each of the CDMG STAs scheduled to operate in the alternative channel in the same ATI.



**Figure 9-46a—Opportunistic Transmission in Alternative Channels for CDMG STAs**