IEEE P802.11  
Wireless LANs

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| ECSAf | | | | |
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| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Brian Hart | Cisco Systems | 170 W Tasman Dr, San Jose, CA 95134, USA |  | [brianh@cisco.com](mailto:brianh@cisco.com) |

| **Comments** | | | | | | | | |
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| **Selected** | **CID** | **Page** | **Clause** | **Resn Status** | **Comment** | **Proposed Change** | **Resolution** | **Owning Ad-hoc** |
| 0 | 184 | 827.00 | 9.3.2.3.4 |  | Why can CSAs go out at PIFS but not ECSAs? | Add an item "A STA transmitting an Extended Channel Switch Announcement frame as described in " | Revised. See changes under CID 184 in <motionedDoc#>/ r<motionedrev#> that substantially agrees with the commenter’s proposed change and also deals with unnecessary restrictions on switching to 40 MHz using ECSA frames | MAC |

***Discussion***

Both CSA and ECSA are high-priority mgmt frames, with timeliness needed for regulatory purposes, where every little bit helps, such as PIFS access, so both should be allowed at PIFS. From 10.10.3.2 (Selecting and advertising a new channel in an infrastructure BSS) an AP can use PIFS for ECSAf.

As well, during 11ac development, a related paragraph in 10.15.3.3 (Channel management at the AP and in an IBSS) contains a NOTE that contains the following incorrect statement “because Extended Channel Switch Announcement frames do not convey secondary channel information (i.e., information regarding whether a secondary channel, if permitted in the operating class, is to be used)”. (This line is highlighted in yellow below also) This is incorrect since there are distinct operating classes for 20 MHz, operating classes for 20/40 MHz with an upper primary (lower secondary) and operating classes for 40 MHz with a lower primary (upper secondary). Given that the NOTE is reasoning from an incorrect basis, therefore the whole NOTE is false. Given that the preceding paragraph is reasoning from the same incorrect basis, therefore the preceding paragraph of normative text is also incorrect. Thereforewe delete both the NOTE and the preceding parapgraph of normative text.

***Change***

**9.3.2.3.4 PIFS**

A STA transmitting a Channel Switch Announcement frame as described in 10.9 or transmitting an Extended Channel Switch Announcement frame as described in 10.10

**10.9.8.1 General**

An attempt may be made to move a BSS to a new operating channel. It is an objective that disruption to the BSS is minimized in this process, although it should be recognized that a channel switch might not

successfully move all STAs.

Two procedures are defined for switching channels: the channel switching procedure, which is defined in 10.9.8 and 10.9.9, and the extended channel switching procedure, which is defined in 10.10.

It should also be stressed that the channel switch ~~process~~procedure or extended channel switch procedure is distinct from the regulatory requirement to cease transmission on a particular channel in the presence of radar.

**10.9.8.2 Selecting and advertising a new channel in an infrastructure BSS**

An AP shall inform associated STAs that the AP is moving to a new channel and maintain the association by advertising the switch using Channel Switch Announcement elements in Beacon frames, Probe Response frames, and Channel Switch Announcement frames until the intended channel switch time. The AP may force STAs in the BSS to stop transmissions until the channel switch takes place by setting the Channel Switch Mode field in the Channel Switch Announcement element to 1. The channel switch should be scheduled so that all STAs in the BSS, including STAs in power save mode, have the opportunity to receive at least one Channel Switch Announcement element before the switch. The AP may send the Channel Switch Announcement frame in a BSS without performing a backoff, after determining the WM is idle for one PIFS period (see 9.3.2.3.).

**10.9.8.3 Selecting and advertising a new channel in an IBSS**

The DFS owner shall attempt to make the members of the IBSS aware of the new operating channel by

broadcasting at least one Channel Switch Announcement frame. The DFS owner may transmit the Channel Switch Announcement frame in an IBSS without performing a backoff, after determining that the WM is idle for one PIFS period (see 9.3.2.3.) The DFS owner shall also include the Channel Switch Announcement element in all Beacon frames, Probe Response frames, or Channel Switch Announcement frames until the intended channel switch time. A STA that receives a valid Channel Switch Announcement element shall repeat this element in all Beacon frames and Probe Response frames that it transmits. The DFS owner may attempt to silence STAs in the IBSS until the channel switch takes place using the Channel Switch Mode field in the Channel Switch Announcement element. If possible, the channel switch should be scheduled so that all STAs in the IBSS, including STAs in power save mode, have the opportunity to receive at least one Channel Switch Announcement element before the switch.

**10.10.3.2 Selecting and advertising a new channel in an infrastructure BSS**

When dot11ExtendedChannelSwitchActivated is true, an AP shall inform associated STAs that the AP is moving to a new channel and/or operating class and maintain the association by advertising the switch using Extended Channel Switch Announcement elements in any transmitted Beacon frames, Probe Response frames, and Extended Channel Switch Announcement frames until the intended channel switch time. The AP may request STAs in the BSS to stop transmissions until the channel switch takes place by setting the Extended Channel Switch Mode field to 1 in the Extended Channel Switch Announcement element. If possible, the channel switch should be scheduled so that all STAs in the BSS, including STAs in power save mode, have the opportunity to receive at least one Extended Channel Switch Announcement element before the switch. The AP may send the Extended Channel Switch Announcement frame without performing a backoff, after determining the WM is idle for one PIFS period (see 9.3.2.3.). When both the Extended Channel Switch Announcement and the Channel Switch Announcement elements are transmitted in Public Action frames, they shall be sent in separate frames.

**10.10.3.3 Selecting and advertising a new channel in an IBSS**

The DFS owner that advertises a channel switch shall follow the rules defined in 10.9.8.3 with the following extensions:

a) If a DFS owner is switching to a new channel or to the same channel in a different operating class

and dot11ExtendedChannelSwitchActivated is true, then the DFS owner shall use the Extended

Channel Switch Announcement element and frame. Alternatively, both the Extended Channel

Switch Announcement and the Channel Switch Announcement elements and frames may be used

when Channel Switch Announcement elements and frames are permitted for operation in the band

signified by the new operating class.

b) If a DFS owner is switching to a new channel within the same operating class and

dot11ExtendedChannelSwitchActivated is true, then the DFS owner shall send the Extended

Channel Switch Announcement element and frame, or both the Extended Channel Switch

Announcement and the Channel Switch Announcement elements and frames. If

dot11ExtendedChannelSwitchActivated is false, the DFS owner shall send the Channel Switch

Announcement element and frame, or both the Extended Channel Switch Announcement and the

Channel Switch Announcement elements and frames.

c) If both the Extended Channel Switch Announcement and the Channel Switch Announcement

elements are transmitted in Public Action frames, they shall be sent in separate frames.

The DFS owner may transmit the Extended Channel Switch Announcement frame in an IBSS without performing a backoff, after determining that the WM is idle for one PIFS period (see 9.3.2.3.)

**10.15.3.3 Channel management at the AP and in an IBSS**

~~If an AP or DO STA uses one or more Extended Channel Switch Announcement frames without also using Beacon and Probe Response frames to announce a change of operating class and/or a change in channel(s) and if the new operating class supports either of the behavior limits 13 or 14 as identified in the appropriate table of Annex E (i.e., Table E-1, Table E-2, or Table E-3), then the BSS width (20 MHz BSS or 20/40 MHz BSS) immediately after the switch shall be the same as the BSS width immediately before the transmission of the first Extended Channel Switch Announcement frame that announced the change. The AP or DO STA may subsequently perform a BSS width change.~~

~~NOTE—If an AP or DO STA uses one or more Extended Channel Switch Announcement frames without also using Beacon and Probe Response frames to announce a change of operating class and/or a change in channel(s), then the AP or DO STA cannot change from 20 MHz BSS operation to 20/40 MHz BSS operation as part of that change, even if the new operating class supports 20/40 MHz BSS operation, because Extended Channel Switch Announcement frames do not convey secondary channel information (i.e., information regarding whether a secondary channel, if permitted in the operating class, is to be used).~~