IEEE P802.11  
Wireless LANs

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| DMG Channel Switch Announcement | | | | |
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Resolutions for CID 2105; all changes are relative to 11md **Draft 2.4.**

**CID 2105**

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| --- | --- | --- | --- | --- |
| 2105 | 881.00 | 9.3.4.1 | Decide whether Channel Switch Announcement element is applicable to DMG, or DMG should use only Extended Channel Switch element. Add to few more DMG frames and define behavior accordingly.    First, observations,    -- Channel Switch Announcement is listed as an optional element for DMG Beacon (P881L23) but is missing from Announce and Information Response frames (DMG frames), and optionally present in (band-independent) Probe Response.  -- The definition of element in 9.4.2.18 does not list DMG Beacon, Announce or Information Response frames in last paragraph. It does not mention PCP in addition to AP either.  -- Channel Switch Announcement frame format (9.6.2.6) is not applicable to DMG in its current format but can be made applicable with proper extensions.  -- Extended Channel Switch Announcement element (9.4.2.52) does not list any frames that can include the element  -- As far as I could tell, there is no behavior associated with Channel Switch Announcement in DMG. The channel switching procedure in 11.8.8.2 is for non-DMG and refers to 11.8.8.6 for DMG operation. The channel switch procedure in 11.8.8.6 exclusively uses the Extended Channel Switch element.    Based on above observations, and assuming Extended Channel Switch Announcement element is a superset of Channel Switch Announcement element, I propose DMG to use only the Extended Chanel Switch Announcement element for all channel switching procedures (and other all dot11 MIB options), and remove any reference to Channel Switch Announcement element for DMG. | Remove inconsistencies, considering frame definitions, element definitions, and dot 11 variables that are related to or affect channel switching in DMG. Required changes below, and it is possible that I have missed some,    - If dot11SpectrumManagementRequired is true for DMG, also require dot11ExtendedChannelSwitchActivated to be true  - Change the first sentence in 9.4.2.18 (Channel Switch Announcement element) to "The Channel Switch Announcement element is used by a non-DMG AP, IBSS STA or mesh STA to advertise when it is changing to a new channel and the channel number of the new channel."  - Change the first sentence in 9.4.2.52 (Extended Channel Switch Announcement element) to "The Extended Channel Switch Announcement element is used by an AP or PCP, IBSS STA, or mesh STA to advertise when the BSS is changing to a new channel or a new channel in a new operating class."  - If we want to be consistent with some other element definitions, list all frames that can include the Extended Channel Switch Announcement element in 9.4.2.52. DMG frames are DMG Beacon, Announce, Information Response. It seems the only non-DMG frame is Beacon. And there is also the band-independent Probe Response. [Note: There is a separate general comment on whether we want to keep the practice of listing all frames that can carry an element in the element definition section, which may or may not affect this part].  - Add Extended Channel Switch Announcement element to DMG Beacon, Announce and Information Response frame definitions under applicable dot11 MIB variables  - Remove Channel Switch Announcement element from DMG Beacon, Announce and Information Response frame definitions, where present.  - Map all channel switching procedures to Extended Channel Switch Announcement element, including those under dot11SpectrumManagementRequired. For example, in DMG Beacon frame definition (P881, where both elements are currently listed), we should have only the Extended Channel Switch Announcement element, and Notes should say "The Extended Channel Switch Announcement element is optionally present if dot11SpectrumManagementRequired or dot11ExtendedChannelSwitchActivated is true." Same for Announce and Information Response frames.  - For Probe Response, which is applicable to DMG and non-DMG, both elements are kept with band-specific behavior, edits along the lines of: (P867L59)"The Channel Switch Announcement element is optionally present for non-DMG STAs if dot11SpectrumManagementRequired is true.", and (P869L15) "The Extended Channel Switch Announcement element is optionally  present if dot11ExtendedChannelSwitchActivated is true, or for DMG STAs if dot11SpectrumManagementRequired is true." |

**Discussion:** Revised.

Agree with the comment in principe (highlighted above); channel switch operation in DMG uses only the Extended Channel Switch Announcement element. Following changes remove references to Channel Switch Announcement element in DMG.

Coupling between dot11SpectrumManagementRequired and dot11ExtendedChannelSwitchActivated, in particular, whether former being set should require the latter to be set as well, needs a separate study for Spectrum Management features in DMG, and is skipped here.

**9.3.3.10 Probe Response frame format**

**Table 9-41—Probe Response frame body**

|  |  |  |
| --- | --- | --- |
| **Order** | **Information** | **Notes** |
| … |  |  |
| 10 | Channel Switch Announcement | The Channel Switch Announcement element is optionally present for non-DMG STAs if dot11SpectrumManagementRequired is true. |
| … |  |  |
| 27 | Extended Channel Switch Announcement | The Extended Channel Switch Announcement element is optionally present if dot11ExtendedChannelSwitchActivated is true. |
| … |  |  |

**9.3.4.2 DMG Beacon**

**Table 9-47—DMG Beacon frame body**

|  |  |  |
| --- | --- | --- |
| **Order** | **Information** | **Notes** |
| … |  |  |
| … |  |  |
| 27 | Extended Channel Switch Announcement | The Extended Channel Switch Announcement element is optionally present if dot11ExtendedChannelSwitchActivated is true. |
| … |  |  |

**9.4.2.18 Channel Switch Announcement element**

The Channel Switch Announcement element is used by a non-DMG AP, non-DMG IBSS STA, or mesh STA to advertise when it is changing to a new channel and the channel number of the new channel.

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The Channel Switch Mode field indicates any restrictions on transmission until a channel switch. A non-DMG AP or non-DMG IBSS STA sets the Channel Switch Mode field to either 0 or 1 on transmission. In an MBSS, the Channel Switch Mode field is reserved. See 11.8.9 (Channel Switch Announcement element operation).

**9.4.2.52 Extended Channel Switch Announcement element**

The Extended Channel Switch Announcement element is used by an AP, PCP, IBSS STA, or mesh STA to advertise when the BSS is changing to a new channel or a new channel in a new operating class.

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The Channel Switch Mode field indicates any restrictions on transmission until a channel switch. An AP, PCP, or

an IBSS STA sets the Channel Switch Mode field to either 0 or 1 on transmission as specified in 11.8.8.2

(Selecting and advertising a new channel in a non-DMG infrastructure BSS) and 11.8.8.3 (Selecting and

advertising a new channel in an IBSS). The Channel Switch Mode field is reserved in an MBSS.

**9.6.2.6 Channel Switch Announcement frame format**

The Channel Switch Announcement frame is transmitted by a non-DMG AP, non-DMG IBSS STA, or mesh STA to advertise a channel switch. The format of the Channel Switch Announcement frame Action field is shown in Figure 9-847 (Channel Switch Announcement frame Action field format).

**9.6.21.2 Announce frame format**

**Table 9-486—Announce frame Action field format**

|  |  |  |
| --- | --- | --- |
| **Order** | **Information** | **Notes** |
| … |  |  |
| 22 | UPSIM | The UPSIM element is defined in 9.4.2.166 (UPSIM element).  The UPSIM element is optionally present. |
| 23 | Extended Channel Switch Announcement | The Extended Channel Switch Announcement element is defined in 9.4.2.52.  The Extended Channel Switch Announcement element is optionally present if dot11ExtendedChannelSwitchActivated is true. |
| 24 | Cluster Probe | The Cluster Probe element is defined in 9.4.2.223  (Cluster Probe element(11aj)). The Cluster Probe element is  optionally present. |
| … |  |  |