### **IEEE P802.11 Wireless LANs**

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| Channel Usage | | | | |
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**Abstract**

CID 19478

**Revisions:**

* Rev 1: Initial version of the document.

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| 19478 | 9.4.2.84 | 1122.30 | Evolving use cases suggest upgrades to Channel Usage feature are preferred. | Commenter will bring a proposal. | Revised. Incorporate changes under CID 19478 in 23/1478<motioned Revision> which substantially address the commenter’s concern. |

**Discussion**

P2P sharing can be addressed via two complementary techniques: orthogonality via time (Triggered TXOP Sharing) and/or orthogonality via frequency (11v Channel Usage). TTS, although higher complexity, is fine-grained and the STA’s resources can be reused on the same channel. CU is lower complexity, albeit coarse-grained and typically involves off-channel operation.

During the 11v timeframe there was no Beacon frame protection so Channel Usage was not added to the Beacon since it could be trivially spoofed. Now we have routine Beacon frame protection, Channel Usage can be safely added to the usual mgmt. frames (Beacons, (Re)Assoc frames) (already present in Probe Resp).

**Change text for CID 19478**

***TGbe editor: Add the following row to each of tables 9-60 (Beacon frame body), Table 9-63 (Association Response frame body) and Table 9-65 (Reassociation Response frame body):***

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| --- | --- | --- |
| Order | Information | Notes |
| <TGbe editor to insert in element ID order> | Channel Usage | Zero or more Channel Usage elements are present if dot11ChannelUsageActivated is true. |

11.21.15 Channel usage procedures

The channel usage procedures may be used to assist the STA that operates a noninfrastructure BSS(#3349) or an off-channel TDLS direct link to better coexist with the infrastructure network by exchanging Channel Usage Request and Response frames or receiving Channel Usage element(s) from other management frames.(#3311)(#4009) Implementation of (#3311)channel usage is optional for a WNM STA. A STA that implements (#3311)channel usage has dot11ChannelUsageImplemented equal to true. When dot11ChannelUsageImplemented is true, dot11WirelessManagementImplemented shall be true, or the STA shall support(#546) acting as an S-AP within a CCSS. A STA with dot11ChannelUsageActivated equal to true shall support channel usage and shall set to 1 the Channel Usage field of the Extended Capabilities elements that it transmits.

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The AP may send an unsolicited group addressed or individually addressed Channel Usage Response frame to

the STAs that have requested (#3311)channel usage information if the corresponding (#3311)channel usage

information needs to be updated. The Country element shall be included in the unsolicited and/or group

addressed Channel Usage Response frame. The AP may include the Power Constraint information and EDCA

Parameter in the Channel Usage Response frame. The values of the fields in the Power Constraint and EDCA

Parameter Set elements included in the Channel Usage Response frame shall be the same values of the fields in

the Power Constraint and EDCA Parameter Set elements that are transmitted by the AP.

An AP may also advertise one or more Channel Usage elements in Beacon frames and may transmit unsolicited Channel Usage elements in Probe Response and (Re)Association Response frames in order to recommend regulatory classes and channels for other BSSs or off-channel TDLS direct links. Such Channel Usage elements are subject to the same rules as defined for Channel Usage elements transmitted by the AP in other frames.

Upon receipt of a Channel Usage element in the Channel Usage Response frame, the

receiving STA may use the following:

* The channel usage information as part of channel selection processing to start a

(#3349)noninfrastructure BSS or an off-channel TDLS direct link

* The Power Constraint element, if present, as part of determining its maximum transmit power for

transmissions for the (#3349)noninfrastructure BSS or an off-channel TDLS direct link

* The EDCA Parameter Set element, if present, as part of determining its EDCA parameters for

transmissions for the noninfrastructure BSS(#3349) or an off-channel TDLS direct link

* The QMF Policy element, if present and dot11QMFActivated is true, as part of determining its

classification of Management frames for transmissions for the noninfrastructure BSS(#3349) or an

off-channel TDLS direct link

Upon receipt of Channel Usage element(s) in Beacon, Probe Response or (Re)Association Response frames, the

receiving STA may use the following:

* The channel usage information as part of channel selection processing to start a (#3349)noninfrastructure BSS or an off-channel TDLS direct link

If either a recommended operating class, or a recommended channel, or both are not supported or understood

by the recipient, or if the operating country of the sender is unknown, the recipient shall discard the

corresponding channel usage recommendation. A STA that has not requested (#3311)channel usage

information shall discard an unsolicited group addressed Channel Usage Response frame. A STA should give higher priority to a channel usage recommendation from its associated AP than from a channel usage recommendation received in a Beacon or Probe Response frame received from another AP.