IEEE P802.11  
Wireless LANs

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| Proposed resolution for comments related to  CID 9153, 8810, 8811(HE STA) | | | | |
| Date: 2017-03-09 | | | | |
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Abstract

This submission proposes resolutions for CID 9153, 8810 8811

Interpretation of a Motion to Adopt

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGax Draft. This introduction is not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGax Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

***TGax Editor: Editing instructions preceded by “TGax Editor” are instructions to the TGax editor to modify existing material in the TGax draft. As a result of adopting the changes, the TGax editor will execute the instructions rather than copy them to the TGax Draft.***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CID** | **Line** | **Comment** | **Proposed Change** | **Resolution** |
| 9153 | 28.3.3.6 | It is not clear on the possibility of the operation in secondary channels from 'primary 20 MHz channel as a mandatory mode' description. | Clarify the operation capability on secondary 20 MHz channels of 20 MHz-only STA, e.g., only primary 20 MHz support or else, and if it is required to operate, define the procedure and signaling. | Revised.  Propose to allow 20 MHz-operating STA to operate on any 20 MHz. Please see the text for details. |
| 8810 | 28.3.3.6 | "A 20 MHz only HE STA operates in the primary 20 MHz channel as a mandatory mode." is not correct language for a standard. | Change to "A 20 MHz only HE STA shall only operate in the primary 20 MHz channel." | Revised.  Propose that 20MHz only STA shall support operating on primary channel and may optionally operate on non-primary channels. Please see the proposed text for details |
| 8811 | 28.3.3.6 | "A 20 MHz only HE STA operates in the primary 20 MHz channel as a mandatory mode." Having 20 MHz-only systems operate in only the primary channel is suboptimal. There should be an option for 20-MHz only devices to operate in any 20 MHz channels. | See comment | Agreed in principle  Propose to allow 20 MHz-operating STA to operate on any 20 MHz. Please see the text for details. |

TGax Editor: Please modify the following section as follows:

**9.4.2.218** **HE Capabilities element**

**9.4.2.218.1 General**

An HE STA declares that it is an HE STA by transmitting the HE Capabilities element.

The HE Capabilities element contains a number of fields that are used to advertise the HE capabilities of an HE STA. The HE Capabilities element is defined in Figure 9-589cj (HE Capabilities element format).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  | Element ID | Length | HE MAC Capabilities Information | HE PHY Capabilities Information | Tx Rx HE MCS NSS Support | PPE Thresholds (optional) | STA Channel Switch Outage Time (optional) |
| Octets: | 1 | 1 | 5 | 9 | 2 or more | variable | 1 |
| **HE Capabilities element format** | | | | | | | |

The Element ID and Length fields are defined in 9.4.2.1 (General).

The HE MAC Capabilities Information, HE PHY Capabilities Information, Tx Rx HE MCS NSS Support, ~~and~~ PPE Thresholds and STA Channel Switch Outage Time fields are defined in the subclauses below.

**9.4.2.218.2 HE MAC Capabilities Information field**

The format of the HE MAC Capabilities Information field is defined in Figure 9-589ck (HE MAC Capabilities Information field format).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | B33 | B34 | B35 | B36~~B35~~  B39 |
|  | QTP Support | A-BQR Support | Non-Primary Channel Operation | Reserved |
| Bits: | 1 | 1 | 1 | 4~~5~~ |
| **HE MAC Capabilities Information field format (**B1-B32 are omitted here**)** | | | | |

TGax Editor: Please insert a row below to Table 9-262z (Subfields of the HE MAC Capabilities Information field).

|  |  |  |
| --- | --- | --- |
| **Subfields of the HE MAC Capabilities Information field** | | |
| **Subfield** | **Definition** | **Encoding** |
| Non-Primary Channel Operation | When transmitted by an AP, indicates support for operation of associated STAs on non-primary channels  When transmitted by a non-AP STA, indicates support for operation by the STA on non-primary channels of the BSS with which it is associated | Set to 1 if dot11NonPrimaryChannelOptionalImplemented is set to true, indicating support for operation on non-primary channels.  Set to 0 otherwise. |

TGax Editor: Please insert the following subsection after 9.4.2.218.5

**9.4.2.218.6 STA Channel Switch Outage Time**

The STA Channel Switch Outage Time field is present if the Non-Primary Channel Operation field is set to 1. The STA Channel Switch Outage Time field indicates the amount of time that a STA switching channels will be unavailable, in units of 50 µs, during a channel switch operation. A value 255 indicates that the channel switch outage time is unknown.

TGax Editor: Please insert the following subsection after 9.4.2.225

**9.4.2.226 STA Channel Switch Request Element**

The STA Channel Switch Request element is used to request a change of operating channel for a non-AP STA. The format of the STA Channel Switch Request element is shown in Figure xx (STA Channel Switch Request Element).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  | Element ID | Length | Element ID Extension | Channel Index | Primary Channel Period | Non-Primary Channel Operation Timeout |  |
| Octets: | 1 | 1 | 1 | 1 | 1 | 1 |  |
| STA Channel Switch Request element | | | | | | | |

The Element ID and Length fields are defined in 9.4.2.1 (General).

The Channel Index field is a bitmap field that is used to indicate the 20 MHz subchannels within the BSS operating bandwidth with the least significant bit indicating the lowest 20 MHz subchannel of the BSS bandwidth and the most significant bit indicating the highest 20 MHz subchannel in a 160/80+80 MHz BSS.

Notes: When transmitted by an HE AP, only one bit of the Channel Index field is set to 1 to indicate the subchannel to which the non-AP STA is assigned. When transmitted by an HE non-AP STA, one or more bits of the Channel Index field are set to 1 to indicate the preferred 20 MHz subchannels on which the non-AP STA is willing to operate (27.7.16).

When transmitted by an HE AP, the Primary Channel Period indicates the period of time following each TBTT during which the AP will not transmit any traffic to STAs operating on non-primary subchannels. The field contains an unsigned integer that represents a value in time with units of TU. When transmitted by a non-AP STA, this field is reserved.

When transmitted by a non-AP STA, the Non-primary Channel Operation Timeout field indicates a value of time in units of 8 TUs that is used by the non-AP STA to determine when to switch operation from a non-primary subchannel to the primary subchannel if the STA has not received a trigger (see section 27.16). When transmitted by an HE AP, this field is reserved.

**9.4.2.227 STA Channel Switch Response Element**

The STA Channel Switch Response element is sent by an HE AP or an HE non-AP STA to the STA from which it received a STA Channel Switch Request frame. . The format of the STA Channel Switch Response Request element is shown in Figure xx (STA Channel Switch Response Element).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
|  | Element ID | Length | Element ID Extension | Channel Index | Primary Channel Period | Non-Primary Channel Operation Timeout |
| Octets: | 1 | 1 | 1 | 1 | 1 | 1 |
| **STA Channel Switch Response element** | | | | | | |

The Element ID, Length and Element ID Extension fields are defined in 9.4.2.1 (General).

If the Status Code in the STA Channel Switch Request frame that contains this STA Channel Switch Response element is SUCCESS, then the Channel Index field is specified in 9.4.2.226. Otherwise, the Channel Index field is reserved.

The Primary Channel Period subfield is specified in 9.4.2.226.

The Non-Primary Channel Operation Timeout subfield is specified in 9.4.2.226.

**9.3.3.5 Association Request frame format**

***Order: 11ai adds 24-28, 11ah adds 29-38, 11ak adds 24 (appears to be out of date), 11aj adds two (numbers unassigned)***

***Insert the following new row (header row shown for convenience) into Table 9-29 (Association Request frame body):***

|  |  |  |
| --- | --- | --- |
| **Association Request frame body** |  |  |
| **Order** | **Information** | **Notes** |
| 43 | HE Capabilities | The HE Capabilities element is present when dot11HEOptionImplemented is true; otherwise it is not present. |
| 44 | STA Channel Switch Request | The STA Channel Switch Request element contains the 20 MHz channels that the non-AP STA is willing to operate on. |

**9.3.3.6 Association Response frame format**

***Order: 11ai adds 31-36, 11ah adds 37-49, 11aq adds none, 11ak adds 30-31 (appears to be out of date), 11aj adds three (numbers unassigned)***

***Change Table 9-30 (Association Response frame body) as follows maintaining numeric order (only rows with changes are shown):***

|  |  |  |
| --- | --- | --- |
| **Association Response frame body** |  |  |
| **Order** | **Information** | **Notes** |
| 29 | TWT | ~~The TWT element is optionally present if dot11TWTOptionActivated~~  ~~is true; otherwise not present.~~  The TWT element is present if dot11TWTOptionActivated is true and the TWT element is present in the Association Request frame that elicited this Association Response frame.  The TWT element is optionally present if dot11TWTOptionActivated is true and the TWT Requester Supported field in the HE Capabilities in the Association Request frame that elicited this Association Response frame is one. |
| 54 | HE Capabilities | The HE Capabilities element is present when dot11HEOptionImplemented is true; otherwise it is not present. |
| 55 | HE Operation | The HE Operation element is present when dot11HEOptionImplemented is true; otherwise it is not present. |
| 56 | BSS Color Change Announcement | The BSS Color Change Announcement element is optionally present when dot11HEOptionImplemented is true; otherwise it is not pre-sent. |
| 57 | Spatial Reuse Parameter Set | The Spatial Reuse Parameter Set element is optionally present if dot11HighEfficiencyOptionImplemented is true.(#8111) |
| 58 | STA Channel Switch Response | The STA Channel Switch Response element contains the 20 MHz channel that the non-AP STA is assigned to operate on. |

**9.3.3.7 Reassociation Request frame format**

***Order: 11ai adds 29-33, 11ah adds 34-43, 11aq adds none, 11ak adds 29 (appears to be out of date), 11aj adds two (numbers unassigned)***

***Insert the following row in Table 9-31 (Reassociation Request frame body) (header shown for convenience):***

|  |  |  |
| --- | --- | --- |
| **Reassociation Request frame body** |  |  |
| **Order** | **Information** | **Notes** |
| 47 | HE Capabilities | The HE Capabilities element is present when dot11HEOptionImplemented is true; otherwise it is not present. |
| 48 | STA Channel Switch Request | The STA Channel Switch Request element contains the 20 MHz channels that the non-AP STA is will to operate on. |

**9.3.3.8 Reassociation Response frame format**

***Order: 11ai adds 35-49, 11ah adds 41-52, 11aq adds none, 11ak adds 34 and 30 (appears to be an error), 11aj adds three (numbers unassigned)***

***Change Table 9-32 (Reassociation Response frame body) as follows maintaining numeric order (only rows with changes are shown):***

|  |  |  |
| --- | --- | --- |
| **Reassociation Response frame body** |  |  |
| **Order** | **Information** | **Notes** |
| 42 | TWT | ~~The TWT element is optionally present if dot11TWTOptionActivated~~  ~~is true; otherwise not present.~~  The TWT element is present if dot11TWTOptionActivated is true and the TWT element is present in the Reassociation Request frame that elicited this Reassociation Response frame.  The TWT element is optionally present if dot11TWTOptionActivated is true and the TWT Requester Supported field in the HE Capabilities in the Reassociation Request frame that elicited this Association Response frame is one. |
| 55 | HE Capabilities | The HE Capabilities element is present when dot11HEOptionImplemented is true; otherwise it is not present. |
| 56 | HE Operation | The HE Operation element is present when dot11HEOptionImplemented is true; otherwise it is not present. |
| 57 | BSS Color Change Announcement | The BSS Color Change Announcement element is optionally present when dot11HEOptionImplemented is true; otherwise it is not pre-sent. |
| 58 | Spatial Reuse Parameter Set | The Spatial Reuse Parameter Set element is optionally present if dot11HighEfficiencyOptionImplemented is true.(#8111) |
| 59 | STA Channel Switch Response | The STA Channel Switch Response element contains the channel index that the non-AP STA is assigned to operate on |

TGax Editor: Please modify the following section as follows

**9.6.28 HE Action frame details**

**9.6.28.1 HE Action field**

An HE Action field, in the octet immediately after the Category field, differentiates the HE Action frame formats. The HE Action field values associated with each frame format within the HE category are defined in Table 9-421z (HE Action field values).

|  |  |
| --- | --- |
| **HE Action field values** |  |
| **Value** | **Meaning** |
| 0 | HE Compressed Beamforming And CQI |
| 1 | HE BSS Color Change Announcement |
| 2 | STA Channel Switch Request |
| 3 | STA Channel Switch Response |
| 4-255 | Reserved |

TGax Editor: Please insert the following subsection after 9.6.28.2

**9.6.28.3 STA Channel Switch Request Frame Format**

The STA Channel Switch Request frame is an Action frame of category HE. It is sent by an HE non-AP STA to its associated AP to request switching the operating channel or sent by an HE AP to a non-AP STA to request the non-AP STA to switch its operating channel. The Action field of the STA Channel Switch Request frame contains the information shown in Table 9-xx (STA Channel Switch Request frame Action field format).

Table 9-xx STA Channel Switch Request frame Action field format

|  |  |  |
| --- | --- | --- |
| **Order** | **Information** | **Notes** |
| 1 | Category | The Category field is defined in 9.4.1.11. |
| 2 | HE Action | The HE Action field is defined in 9.6.28.1. |
| 3 | Dialog Token | The Dialog Token field contains an unsigned integer which is used to associate a STA Channel Switch Request with a STA Channel Switch Response. |
| 4 | STA Channel Switch Request | The STA Channel Switch Request element is defined in 9.4.2.226 (STA Channel Switch Request element) |

9.6.28.4 **STA Channel Switch Response frame format**

The STA Channel Switch Response frame is an Action frame of category HE. It is sent by an HE STA in response to a received Channel Switch Request frame. The Action field of a STA Channel Switch Response frame contains the information shown in Table 9-421af (STA Channel Switch Response frame Action field format).

Table 9-421af STA Channel Switch Response frame Action field format

|  |  |  |
| --- | --- | --- |
| **Order** | **Information** | **Notes** |
| 1 | Category | The Category field is defined in 9.4.1.11. |
| 2 | HE Action | The HE Action field is defined in 9.6.28.1. |
| 3 | Dialog Token | The Dialog Token field contains an unsigned integer which is used to associate a STA Channel Switch Request with a STA Channel Switch Response. |
| 4 | Status Code | The Status Code is defined in 9.4.1.9. |
| 5 | STA Channel Switch Response | The STA Channel Switch Response element is defined in 9.4.2.227 (STA Channel Switch Response element) |

TGax Editor: Please insert the following section after section 27.16.

**27.16a 20 MHz Operating STA on Non-primary 20 MHz Channel**

**27.16a.1 Overview**

Only a 20 MHz-only HE STA may operate on a non-primary 20 MHz subchannel. The procedure for the STA to operate on a non-primary 20 MHz subchannel is described in this subclause. The operation on non-primary 20 MHz channel is optional for HE non-AP STAs and HE APs.

A STA shall set the Non-Primary Channel Operation field in the HE capability information element to 1 if dot11NonPrimaryChannelOptionImplemented is set to true.

**27.16a.2 STA Operating Channel Switch Procedure**

A STA operating channel switch procedure may be initiated by an HE STA that has set the UL MU Disable subfield to 0 in its mostly recently transmitted operating mode indication (27.8). Either an HE AP or a non-AP STA may initiate the operating channel switch for the non-AP STA when both the AP and the non-AP STA have set the Non-Primary Channel Operation subfield of the HE Capabilities element to 1.

A 20 MHz-only non-AP STA may include a STA Channel Switch Request Element in a (Re)Association Request frame to inform an HE AP of 20 MHz subchannels on which the non-AP STA is willing to operate. An AP may include a STA Channel Switch Response element in the corresponding (Re)Association Response frame. A STA that received a (Re)Association Response frame without STA Channel Switch Response element shall operate on primary channel after association.

The method for a non-AP STA to choose a set of 20 MHz subchannels to include in the STA Channel Switch Request Element is beyond the scope of this specification. The algorithm for selection by an AP of a 20 MHz non-primary subchannel for operation by a non-AP STA is beyond the scope of this specification.

A STA shall not transmit a STA Channel Switch Request frame or a STA Channel Switch Response frame to a STA that has not indicated support of Non-Primary Channel Operation in its HE Capabilities element.

During the transition time from operating on one channel to another, a non-AP STA may be unable to transmit or receive any frames. The STA may report this channel switch outage delay in the STA Channel Switch Outage Time field (9.4.2.218.6**)** in its HE Capabilities element. The behavior of an HE AP with respect to the STA during such transition time is beyond the scope of this specification.

27.16a.2.1 Non-AP STA-Initiated Channel Switch

A non-AP STA that is associated with an HE AP may transmit a STA Channel Switch Request frame (9.6.28.3) to request a change to its operating subchannel if the receiving AP has indicated support of Non-Primary Channel Operation in its HE Capabilities element. The Dialog Token field of the frame shall be set to a value that the STA chooses in order to allow explicit association between the STA Channel Switch Request and a subsequent STA Channel Switch Response. The Channel Index field shall be set to identify a set of 20 MHz subchannels on which the STA prefers to operate. The Primary Channel Period field is reserved and shall be set to 0. The Non-Primary Channel Operation Timeout is set to a value that the STA chooses and indicates the duration of time that the STA will remain operating on a non-primary subchannel without receiving a trigger from its associated AP before it switches to operation on the primary 20 MHz channel of the BSS.

An AP that has a value of true for dot11NonPrimaryChannelOptionImplemented and that receives a STA Channel Switch Request frame from an associated non-AP STA with at least one bit set to 1 in the Channel Index field that does not correspond to the primary channel shall respond to the STA with a STA Channel Switch Response frame and shall set the Dialog Token field to the same value as the Dialog Token field value from the received frame. The Status Code value shall be set to SUCCESS if the AP accepts any of the STA’s preferred channel for operation by that STA, otherwise, it shall be set to REFUSED. If the Status code value of the STA Channel Switch Response frame is set to SUCCESS, then one bit of the Channel Index field of the STA Channel Switch Response frame shall be set to 1. If the Status code is REFUSED, the AP shall set the Channel Index field to 0.

After receiving a STA Channel Switch Request frame from an associated STA with the one bit set to 1 in the Channel Index field that correspond to the primary channel, an AP shall not respond with a STA Channel Switch Response frame and shall assume that the STA has switched its operation to the primary channel.

If a non-AP STA has received a STA Channel Switch Response frame which is a response to a STA Channel Switch Request frame sent by the STA and whose Status Code field indicates SUCCESS, the non-AP STA shall switch to the channel indicated in the Channel Index field (9.4.2.227) of the received STA channel Switch Response frame if the Channel Index field indicates a different operating channel from the one on which the non-AP STA is currently operating.

27.16a.2.2 AP-Initiated Channel Switch

An HE AP may transmit a STA Channel Switch Request frame (9.6.30.2) to request an associated non-AP STA to switch its operating channel if the receiving STA has indicated support of Non-Primary Channel Operation in its HE Capabilities element. The Dialog Token field of the frame shall be set to a value that the AP chooses in order to allow explicit association between the STA Channel Switch Request and a subsequent STA Channel Switch Response. One bit of the Channel Index field of the STA Channel Switch Request frame shall be set to 1. The Primary Channel Period field is set to indicate a period of time during which the AP will not transmit any 20 MHz frames on any non-primary channel. The time begins at each TBTT and lasts for the time indicated in the Primary Channel Period subfield. The Non-Primary Channel Operation Timeout is reserved and set to 0.

After receiving a STA Channel Switch Request frame from its associated AP with one bit set to 1 in the Channel Index field that does not correspond to the primary channel, a STA shall respond with a STA Channel Switch Response frame. The STA shall set the Dialog Token field to the same value as the Dialog Token field value from the received frame. If the STA accepts the channel switch request, the STA shall set the Status code of the STA Channel Switch Response frame value to SUCCESS and set the Channel Index field to same value as in the received frame. If the STA does not accept the channel switch request, it shall set the Status code to REFUSED and set the Channel Index field to a value that the STA selects to indicate the STA’s preferred channels of 20 MHz only operation.

After transmitting a STA Channel Switch Response frame with a Status Code value of SUCCESS, the STA shall switch operation to the channel indicated in the Channel Index field of the transmitted frame if the Channel Index field indicates a different operating channel from the one on which the non-AP STA is currently operating.

After receiving a STA Channel Switch Request frame from its associated AP with the one bit set to 1 in the Channel Index field that correspond to the primary channel, a STA shall switch its operating channel to the primary channel and shall not respond with a STA Channel Switch Response frame.

**27.16a.2 Channel Access for STAs operating on non-primary 20 MHz Channel**

When operating on a non-primary 20 MHz channel, the non-AP STA shall not use EDCA to gain medium access. The non-AP STA shall transmit only in response to a received trigger frame that allocates RUs to the non-AP STA. The non-AP STA operating on a non-primary channel follows the carrier sensing requirements for UL MU operation (27.5.2.4).

Note: since a non-AP STA operating on a non-primary channel is not required to perform carrier sensing on the primary 20 MHz channel, it cannot set NAV based on frames transmitted on the primary channel. Therefore, a non-AP STAs operating on a non-primary channel relies on its associated AP for protection of its transmissions, while the STA’s NAV is set based on frames received on its operating channel.

When an HE AP transmits frames to a non-AP STA on a non-primary channel, it shall use either non-HT duplicate PPDU or HE MU PPDU format for the transmissions. When transmitting using HE MU PPDU format to a non-AP STAs on a non-primary 20 MHz channel, the AP shall always transmit a preamble signal on the primary 20 MHz channel even if there is no STA allocated on the primary 20 MHz channel for this PPDU transmission. The AP may transmit padding symbols in the data field in the RU that corresponds to the primary 20 MHz using an unallocated AID indicated in the SIG-B User Specific field.

A non-AP STA operating on a non-primary channel should establish an individual TWT agreement with its associated AP and should enter power save mode before starting to operate on the non-primary channel because transmission opportunities on a non-primary channel are scheduled by the AP and the STA should attempt to conserve power between such opportunities.

**27.16a.3 Non-primary Channel Operation Timeout**

A non-AP STA operating on a non-primary channel may switch to the primary channel if it has not received a trigger frame that allocates an RU to the non-AP STA for a duration that is larger than the value indicated in the Non-Primary Channel Operation Timeout field in the most recently received frame transmitted by the STA that had a Status Code value of SUCCESS. Immediately after switching to the primary channel the non-AP STA shall send a frame that requires acknowledgement from the associated AP. An HE AP shall consider an associated non-AP’s operating channel as the primary channel after receiving a frame from the non-AP STA that requires acknowledgement.

**27.16a.4 Broadcast and Multicast Frame Reception for non-AP STAs Operating on Non-primary 20 MHz Channel**

During a STA Channel Switch Request and Response exchange, an HE AP shall include a Primary Channel Period subfield which is used to indicate a period of time during which the AP will not transmit any 20 MHz frames on any non-primary channel. The time begins at each TBTT and lasts for the time indicated in the Primary Channel Period subfield. A STA operating on a non-primary channel may switch to the primary channel to receive Beacon and multicast frames during this time and should switch to its selected operating non-primary channel after the period specified in Primary Channel Period subfield. The non-AP STA may additionally switch to the primary channel to receive Beacon and multicast frames at DTIMs.

Immediately after switching from the primary 20 MHz subchannel to a non-primary 20 MHz subchannel, the non-AP STA shall start a timer that corresponds to the amount of time that the STA has not received a trigger frame that contains an RU allocation for the non-AP STA. The timer is reset every time the non-AP STA receives a trigger frame that contains an RU allocation for it. When operating on the primary channel, the non-AP STA shall suspend the timer that corresponds to the Non-Primary Channel Operation Timeout subfield specified in 27.2.226.

TGax Editor: Please insert the following section at the end of section 6.

6.3.104 STA Channel Switch

6.3.104.1 MLME-STACHANNELSWITCH.request

6.3.104.1.1 Function

This primitive requests the initiation of switching the operating channel for a non-AP HE STA.

6.3.104.1.2 Semantics of the service primitive

MLME- STACHANNELSWITCH.request(

PeerSTAAddress,

Dialog Token,

STA Channel Switch Request parameters

)

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| PeerSTAAddress | MACAddress | N/A | Specifies the peer MAC entity that this request is destined for |
| Dialog Token | Integer | 0-255 | Identifies the STA Channel Switch transaction |
| STA Channel Switch Request parameters | As defined in STA Channel Switch Request element (9.4.2.226) | As defined in STA Channel Switch Request element (9.4.2.226) | Defines the STA Channel Switch Request parameters |

6.3.104.1.3 When generated

This primitive is generated by the SME of an HE AP or a non-AP STA to request switching the operating channel for a non-AP STA.

6.3.104.1.4 Effect of receipt

On receipt of this primitive, the MLME schedules the transmission of a STA Channel Switch Request frame.

6.3.104.2 MLME-STACHANNELSWITCH.confirmation

6.3.104.2.1 Function

This primitive reports the result of the initiation of switching the operating channel for a non-AP STA.

6.3.104.2.2 Semantics of the service primitive

MLME- STACHANNELSWITCH.confirmation(

PeerSTAAddress,

Dialog Token,

ResultCode

)

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| PeerSTAAddress | MACAddress | N/A | Specifies the peer MAC entity that this request is destined for |
| Dialog Token | Integer | 0-255 | Identifies the STA Channel Switch transaction |
| ResultCode | Enumeration | SUCCESS,  REFUSED | Indicates the results of the corresponding MLME-STACHANNELSWITCH.request |

6.3.104.2.3 When generated

This primitive is generated as a result of an MLME-STACHANNELSWITCH.request to indicate the result of that request.

6.3.104.2.4 Effect of receipt

The SME is notified of the result of a MLME-STACHANNELSWITCH.request.

6.3.104.3 MLME-STACHANNELSWITCH.indication

6.3.104.3.1 Function

This primitive reports the receipt of a STA Channel Switch Request frame from a peer STA.

6.3.104.3.2 Semantics of the service primitive

MLME- STACHANNELSWITCH.indication(

PeerSTAAddress,

Dialog Token,

STA Channel Switch Request parameters

)

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| PeerSTAAddress | MACAddress | N/A | Specifies the peer MAC entity that this request is received from |
| Dialog Token | Integer | 0-255 | Identifies the STA Channel Switch transaction |
| STA Channel Switch Request parameters | As defined in STA Channel Switch Request element (9.4.2.226) | As defined in STA Channel Switch Request element (9.4.2.226) | Defines the STA Channel Switch Request parameters |

6.3.104.3.3 When generated

This primitive is generated by the MLME to indicate the receipt of a STA Channel Switch Request frame from a peer STA.

6.3.104.3.4 Effect of receipt

The SME is notified the receipt of a STA Channel Switch Request frame.

6.3.104.4 MLME-STACHANNELSWITCH.response

6.3.104.4.1 Function

This primitive is used to respond to a received STA Channel Switch Response frame from a peer STA.

6.3.104.4.2 Semantics of the service primitive

MLME- STACHANNELSWITCH.response(

PeerSTAAddress,

Dialog Token,

STA Channel Switch Response parameters

)

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| PeerSTAAddress | MACAddress | N/A | Specifies the peer MAC entity that this response is destined for. |
| Dialog Token | Integer | 0-255 | Identifies the STA Channel Switch transaction |
| STA Channel Switch Response parameters | As defined in STA Channel Switch Response element (9.4.2.227) | As defined in STA Channel Switch Response element (9.4.2.227) | Defines the STA Channel Switch Response parameters |

6.3.104.4.3 When generated

This primitive is generated by the SME to respond to a received STA Channel Switch Request frame from a peer STA.

6.3.104.4.4 Effect of receipt

The primitive causes the MAC to send a STA Channel Switch Response frame to the specified peer MAC entity.

TGax Editor: Please modify following section as follows.

6.3..7 Associate

6.3.7.2 MLME-ASSOCIATE.request

6.3.7.2.1 Semantics of the service primitive

*Change the primitive parameters as follows (not all existing parameters in the baseline are shown):*

The primitive parameters are as follows:

MLME-ASSOCIATE.request(

...,

HE Capabilities,

STA Channel Switch Request

VendorSpecificInfo

)

*Insert the following entry into the unnumbered table in this subclause:*

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| STA Channel Switch Request | As defined in 9.4.2.226 |  | Specifies the STA Channel Switch Response parameters. |

6.3.7.4 MLME-ASSOCIATE.indication

6.3.7.4.1 Semantics of the service primitive

*Change the primitive parameters as follows (not all existing parameters in the baseline are shown):*

The primitive parameters are as follows:

MLME-ASSOCIATE.indication(

...,

HE Capabilities,

STA Channel Switch Request

VendorSpecificInfo

)

*Insert the following entry into the unnumbered table in this subclause:*

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| STA Channel Switch Request | As defined in 9.4.2.226 |  | Specifies the STA Channel Switch Request parameters. |

6.3.7.5 MLME-ASSOCIATE.response

6.3.7.5.1 Semantics of the service primitive

*Change the primitive parameters as follows (not all existing parameters in the baseline are shown):*

The primitive parameters are as follows:

MLME-ASSOCIATE.indication(

...,

HE Capabilities,

STA Channel Switch Response

VendorSpecificInfo

)

*Insert the following entry into the unnumbered table in this subclause:*

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| STA Channel Switch Response | As defined in 9.4.2.227 |  | Specifies the STA Channel Switch Response parameters. |

6.3.8 Reassociate

6.3.8.2 MLME-REASSOCIATE.request

6.3.8.2.1 Semantics of the service primitive

*Change the primitive parameters as follows (not all existing parameters in the baseline are shown):*

The primitive parameters are as follows:

MLME-REASSOCIATE.request(

...,

HE Capabilities,

STA Channel Switch Request

VendorSpecificInfo

)

*Insert the following entry into the unnumbered table in this subclause:*

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| STA Channel Switch Request | As defined in 9.4.2.226 |  | Specifies the STA Channel Switch Response parameters. |

6.3.8.4 MLME-REASSOCIATE.indication

6.3.8.4.1 Semantics of the service primitive

*Change the primitive parameters as follows (not all existing parameters in the baseline are shown):*

The primitive parameters are as follows:

MLME-REASSOCIATE.indication(

...,

HE Capabilities,

STA Channel Switch Request

VendorSpecificInfo

)

*Insert the following entry into the unnumbered table in this subclause:*

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| STA Channel Switch Request | As defined in 9.4.2.226 |  | Specifies the STA Channel Switch Request parameters. |

6.3.8.5 MLME-REASSOCIATE.response

6.3.8.5.1 Semantics of the service primitive

*Change the primitive parameters as follows (not all existing parameters in the baseline are shown):*

The primitive parameters are as follows:

MLME-REASSOCIATE.indication(

...,

HE Capabilities,

STA Channel Switch Response

VendorSpecificInfo

)

*Insert the following entry into the unnumbered table in this subclause:*

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| STA Channel Switch Response | As defined in 9.4.2.227 |  | Specifies the STA Channel Switch Response parameters. |