IEEE P802.11  
Wireless LANs

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| --- | --- | --- | --- | --- |
| CC9 Comment Resolutions for CID 395,396,399,400,524,525,529,547,624 | | | | |
| Date: 2013-07-08 | | | | |
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|  |  |  |  |  |

Abstract

These domument proposes resolutions for following comments of P802.11ah D0.1 Comment Correction (CC9) [1].

MAC CID: 395, 396, 399, 400, 524, 525, 529, 547, 624

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** |
| --- | --- | --- | --- | --- |
| 395 | 36 | 8.3.3.5 | TWT' is not included in MLME-ASSOCIATE (in Clause 6.3.7) | Add 'TWT' in MLME-ASSOCIATE related service primitives (in Clause 6.3.7) |
| 396 | 37 | 8.3.3.6 | TWT' is not included in MLME-ASSOCIATE (in Clause 6.3.7) | Add 'TWT' in MLME-ASSOCIATE related service primitives (in Clause 6.3.7) |
| 399 | 38 | 8.3.3.7 | TWT' is not included in MLME-REASSOCIATE (in Clause 6.3.8) | Add 'TWT' in MLME-REASSOCIATE related service primitives (in Clause 6.3.8) |
| 400 | 38 | 8.3.3.8 | TWT' is not included in MLME-REASSOCIATE (in Clause 6.3.8) | Add 'TWT' in MLME-REASSOCIATE related service primitives (in Clause 6.3.8) |
| 524 | 11 | 6.3.7.2.2 | MLME-ASSOCIATE.request, MLME-ASSOCIATE.confirm, MLME-ASSOCIATE.indication, MLME-ASSOCIATE.response, MLME-REASSOCIATE.request, MLME-REASSOCIATE.confirm, MLME-REASSOCIATE.indication, and MLME-REASSOCIATE.response, optionally require TWT parameter. | Add TWT as optional primitive parameter to MLME-ASSOCIATE.request (6.3.7.2.2), MLME-ASSOCIATE.confirm (6.3.7.3.2), MLME-ASSOCIATE.indication (6.3.7.4.2), MLME-ASSOCIATE.response (6.3.7.5.2), MLME-REASSOCIATE.request (6.3.8.2.2), MLME-REASSOCIATE.confirm (6.3.8.3.2), MLME-REASSOCIATE.indication (6.3.8.4.2), and MLME-REASSOCIATE.response (6.3.8.5.2). |

CID 395, 396, 399 and 400 are duplicated with CID 524.

The presense of TWT is controlled by dot11TWTOptionActive as specified in subclause 9.32f.1.

Also, values of TWT Request field and TWT Command Reply are restricted as follows:

* For MLME-ASSOCIATE.request, MLME-ASSOCIATE.indication, MLME-REASSOCIATE.request and MLME-REASSOCIATE.indication, the TWT Request field is set to 1, and the TWT Command field has a value of Request TWT, Suggest TWT or Demand TWT.
* For MLME-ASSOCIATE.response, MLME-ASSOCIATE.confirm, MLME-REASSOCIATE.response and MLME-REASSOCIATE.confirm, the TWT Request field is set to 0, and the TWT Command field has a value of Accept TWT, Alternate TWT, Dictate TWT or Reject TWT.

[Note 1] Resolution of CID 521 (Matthew) may change‘Target Wake Time element’ to ‘TWT element’.

[Note 2] Resolution of CID 540 (Minyoung) may change ‘dot11TWTOptionActive’ to ‘dot11TWTOptionActivated’.

Proposed Resolution for CID 395,396, 399, 400, 524:

Revise:

*(Instruction to TGah Editor) Change subclause 6.3.7 and 6.3.8 as follows;*

### 6.3.7 Associate

**6.3.7.2 MLME-ASSOCIATE.request**

**6.3.7.2.2 Semantics of the service primitive**

*(Instruction to TGah Editor)* *Change the primitive parameter list and associated table, inserting the TWT parameter and table entry as shown in following text in blue;*

The primitive parameters are as follows:

MLME-ASSOCIATE.request(

PeerSTAAddress,

AssociateFailureTimeout,

CapabilityInformation,

ListenInterval,

Supported Channels,

RSN,

QoSCapability,

Content of FT Authentication elements,

SupportedOperatingClasses,

HT Capabilities,

Extended Capabilities,

20/40 BSS Coexistence,

QoSTrafficCapability,

TIMBroadcastRequest,

EmergencyServices,

Sector Capabilities,

AID Request,

S1G Capabilities,

TWT,

VendorSpecificInfo

)

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| TWT | Target Wake Time element | As defined in 8.4.2.170j (Target Wake Time element).  The TWT Request field is set to 1, and the TWT Command field has a value of Request TWT, Suggest TWT or Demand TWT. | Specifies the parameters in the Target Wake Time element.  This parameter is optionally present if dot11TWTOptionActivate is true. |

### 6.3.7.3 MLME-ASSOCIATE.confirm

**6.3.7.3.2 Semantics of the service primitive**

*(Instruction to TGah Editor)* *Change the primitive parameter list and associated table, inserting the TWT parameter and table entry as shown in following text in blue;*

The primitive parameters are as follows:

MLME-ASSOCIATE.confirm(

ResultCode,

CapabilityInformation,

AssociationID,

ListenInterval,

SupportedRates,

EDCAParameterSet,

RCPI.request,

RSNI.request,

RCPI.response,

RSNI.response,

RMEnabledCapabilities,

Content of FT Authentication elements,

SupportedOperatingClasses,

HT Capabilities,

Extended Capabilities,

20/40 BSS Coexistence,

TimeoutInterval,

BSSMaxIdlePeriod,

TIMBroadcastResponse,

QosMapSet,

QMFPolicy,

Sector Operation,

Sector Capabilities,

S1G Capabilities,

AID Response,

TWT,

VendorSpecificInfo

)

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| TWT | Target Wake Time element | As defined in 8.4.2.170j (Target Wake Time element).  The TWT Request field is set to 0, and the TWT Command field has a value of Accept TWT, Alternate TWT, Dictate TWT or Reject TWT. | Specifies the parameters in the Target Wake Time element.  This parameter is optionally present if dot11TWTOptionActivate is true. |

### 6.3.7.4 MLME-ASSOCIATE.indication

**6.3.7.4.2 Semantics of the service primitive**

*(Instruction to TGah Editor)* *Change the primitive parameter list and associated table, inserting the TWT parameter and table entry as shown in following text in blue;*

The primitive parameters are as follows:

MLME-ASSOCIATE.indication(

PeerSTAAddress,

CapabilityInformation,

ListenInterval,

SSID,

SupportedRates,

RSN,

QoSCapability,

RCPI,

RSNI,

RMEnabledCapabilities,

Content of FT Authentication elements,

SupportedOperatingClasses,

DSERegisteredLocation,

HT Capabilities,

Extended Capabilities,

20/40 BSS Coexistence,

QoSTrafficCapability,

TIMBroadcastRequest,

EmergencyServices,

Sector Capabilities,

AID Request,

S1G Capabilities,

TWT,

VendorSpecificInfo

)

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| TWT | Target Wake Time element | As defined in 8.4.2.170j (Target Wake Time element).  The TWT Request field is set to 1, and the TWT Command field has a value of Request TWT, Suggest TWT or Demand TWT. | Specifies the parameters in the Target Wake Time element.  This parameter is optionally present if dot11TWTOptionActivate is true. |

### 6.3.7.5 MLME-ASSOCIATE.response

**6.3.7.5.2 Semantics of the service primitive**

*(Instruction to TGah Editor)* *Change the primitive parameter list and associated table, inserting the TWT parameter and table entry as shown in following text in blue;*

The primitive parameters are as follows:

MLME-ASSOCIATE.response(

PeerSTAAddress,

ResultCode,

CapabilityInformation,

AssociationID,

ListenInterval,

EDCAParameterSet,

RCPI,

RSNI,

RMEnabledCapabilities,

Content of FT Authentication elements,

SupportedOperatingClasses,

DSERegisteredLocation,

HTCapabilities,

Extended Capabilities,

20/40 BSS Coexistence,

TimeoutInterval,

BSSMaxIdlePeriod,

TIMBroadcastResponse,

QoSMapSet,

QMFPolicy,

Sector Operation,

Sector Capabilites,

S1G Capabilities,

AID Response,

TWT,

VendorSpecificInfo

)

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| TWT | Target Wake Time element | As defined in 8.4.2.170j (Target Wake Time element).  The TWT Request field is set to 0, and the TWT Command field has a value of Accept TWT, Alternate TWT, Dictate TWT or Reject TWT. | Specifies the parameters in the Target Wake Time element.  This parameter is optionally present if dot11TWTOptionActivate is true. |

### 6.3.8. Reassociate

### 6.8.8.2 MLME-REASSOCIATE.request

**6.3.8.2.2 Semantics of the service primitive**

*(Instruction to TGah Editor)* *Change the primitive parameter list and associated table, inserting the TWT parameter and table entry as shown in following text in blue;*

The primitive parameters are as follows:

MLME-REASSOCIATE.request(

NewAPAddress,

ReassociateFailureTimeout,

CapabilityInformation,

ListenInterval,

Supported Channels

RSN,

QoSCapability,

Content of FT Authentication elements,

SupportedOperatingClasses,

HT Capabilities,

Extended Capabilities,

20/40 BSS Coexistence,

QoSTrafficCapability,

TIMBroadcastRequest,

FMSRequest,

DMSRequest,

EmergencyServices,

Sector Capabilities,

AID Request,

S1G Capabilities,

TWT,

VendorSpecificInfo

)

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| TWT | Target Wake Time element | As defined in 8.4.2.170j (Target Wake Time element).  The TWT Request field is set to 1, and the TWT Command field has a value of Request TWT, Suggest TWT or Demand TWT. | Specifies the parameters in the Target Wake Time element.  This parameter is optionally present if dot11TWTOptionActivate is true. |

### 6.3.8.3 MLME-REASSOCIATE.confirm

**6.3.8.3.2 Semantics of the service primitive**

*(Instruction to TGah Editor)* *Change the primitive parameter list and associated table, inserting the TWT parameter and table entry as shown in following text in blue;*

The primitive parameters are as follows:

MLME-REASSOCIATE.confirm(

ResultCode,

CapabilityInformation,

AssociationID,

ListenInterval,

SupportedRates,

EDCAParameterSet,

RCPI.request,

RSNI.request,

RCPI.response,

RSNI.response,

RMEnabledCapabilities,

Content of FT Authentication elements,

SupportedOperatingClasses,

HT Capabilities,

Extended Capabilities,

20/40 BSS Coexistence,

TimeoutInterval,

BSSMaxIdlePeriod,

TIMBroadcastResponse,

FMSRespone,

DMSResponse,

QoSMapSet,

QMFPolicy,

Sector Operation,

Sector Capabilities,

S1G Capabilities,

AID Response,

TWT,

VendorSpecificInfo

)

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| TWT | Target Wake Time element | As defined in 8.4.2.170j (Target Wake Time element).  The TWT Request field is set to 0, and the TWT Command field has a value of Accept TWT, Alternate TWT, Dictate TWT or Reject TWT. | Specifies the parameters in the Target Wake Time element.  This parameter is optionally present if dot11TWTOptionActivate is true. |

### 6.3.8.4 MLME-REASSOCIATE.indication

**6.3.8.4.2 Semantics of the service primitive**

*(Instruction to TGah Editor)* *Change the primitive parameter list and associated table, inserting the TWT parameter and table entry as shown in following text in blue;*

The primitive parameters are as follows:

MLME-REASSOCIATE.indication(

PeerSTAAddress,

CurrentAPAddress,

CapabilityInformation,

ListenInterval,

SSID,

SupportedRates,

RSN,

QoSCapability,

RCPI,

RSNI,

RMEnabledCapabilities,

Content of FT Authentication elements,

SupportedOperatingClasses,

DSERegisteredLocation,

HT Capabilities,

Extended Capabilities,

20/40 BSS Coexistence,

QoSTrafficCapability,

TIMBroadcastRequest,

FMSRequest,

DMSRequest,

EmergencyServices,

Sector Capabilities,

AID Request,

S1G Capabilities,

TWT,

VendorSpecificInfo

)

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| TWT | Target Wake Time element | As defined in 8.4.2.170j (Target Wake Time element).  The TWT Request field is set to 1, and the TWT Command field has a value of Request TWT, Suggest TWT or Demand TWT. | Specifies the parameters in the Target Wake Time element.  This parameter is optionally present if dot11TWTOptionActivate is true. |

### 6.3.8.5 MLME-REASSOCIATE.response

**6.3.8.5.2 Semantics of the service primitive**

*(Instruction to TGah Editor)* *Change the primitive parameter list and associated table, inserting the TWT parameter and table entry as shown in following text in blue;*

The primitive parameters are as follows:

MLME-REASSOCIATE.response(

PeerSTAAddress,

ResultCode,

CapabilityInformation,

AssociationID,

ListenInterval,

EDCAParameterSet,

RCPI,

RSNI,

RMEnabledCapabilities,

Content of FT Authentication elements,

SupportedOperatingClasses,

DSERegisteredLocation,

HT Capabilities,

Extended Capabilities,

20/40 BSS Coexistence,

TimeoutInterval,

BSSMaxIdlePeriod,

TIMBroadcastResponse,

FMSResponse,

DMSResponse,

QoSMapSet,

Sector Operation,

Sector Capabilities,,

S1G Capabilities,

AID Response,

TWT,

VendorSpecificInfo

)

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| TWT | Target Wake Time element | As defined in 8.4.2.170j (Target Wake Time element).  The TWT Request field is set to 0, and the TWT Command field has a value of Accept TWT, Alternate TWT, Dictate TWT or Reject TWT. | Specifies the parameters in the Target Wake Time element.  This parameter is optionally present if dot11TWTOptionActivate is true. |

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** |
| --- | --- | --- | --- | --- |
| 525 | 12 | 6.3.7.3.2 | In MLME-ASSOCIATE.confirm, MLME-ASSOCIATE.response, MLME-REASSOCIATE.confirm, and MLME-REASSOCIATE.response, the primitive parameter AssociationID is not needed for S1G STA as it has AID response parameter. | Insert the following text to the Description of the primitive parameter table entry of AssociationID for MLME-ASSOCIATE.confirm (6.3.7.3.2), MLME-ASSOCIATE.response (6.3.7.5.2), MLME-REASSOCIATE.confirm (6.3.8.3.2), and MLME-REASSOCIATE.response (6.3.8.5.2).  ---  This field is not present if the dot11S1GOptionImpemented is true. |
| 624 | 12 | 6.3.7.3.2 | Description of the AID response is very poorly worded and does not provide any real information. | Change text to:  Parameters describing an AID assignment. |

For an S1G STA, the AID response parameter is used to define information about the AID assignment and AssociationID parameter is not used as specified in 8.3.3.6 (Association Response frame format). It is necessary to specify that the AID response parameter is present only if the dot11S1GOptionImpemented is true, and the AssociationID is not present if the dot11S1GOptionImpemented is true.

Proposed Resolution for CID 525 and 624:

Revise:

*(Instruction to TGah Editor) Change subclause 6.3.7 and 6.3.8 as follows;*

### 6.7.3 Associate

### 6.3.7.3 MLME-ASSOCIATE.confirm

**6.3.7.3.2 Semantics of the service primitive**

*(Instruction to TGah Editor) Insert the new editing instruction as follows:*

*Change the following row in the untitled table in 6.3.7.3.2 as follows:*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| AssociationID | Integer | 1–2007 inclusive | If the association request result was SUCCESS, then AssociationID specifies the association ID value assigned by the PCP/AP.  This parameter is not present if dot11S1GOptionImpemented is true. |

*(Instruction to TGah Editor) Change the associated table, modifying the last row as following text shown in blue:*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| AID Response | AID Response element | As defined in 8.4.2.170e (AID Response element) | Parameters describing an AID assignment.  This parameter is present if dot11S1GOptionImpemented is true; otherwise not present. |

### 6.3.7.5 MLME-ASSOCIATE.response

**6.3.7.5.2 Semantics of the service primitive**

*(Instruction to TGah Editor) Insert the new editing instruction as follows:*

*Change the following row in the untitled table in 6.3.7.5.2 as follows:*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| AssociationID | Integer | 1–2007 inclusive | If the association request result was SUCCESS, then AssociationID specifies the association ID value assigned by the PCP/AP.  This parameter is not present if dot11S1GOptionImpemented is true. |

*(Instruction to TGah Editor) Change the associated table, modifying the last row as following text shown in blue:*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| AID Response | AID Response element | As defined in 8.4.2.170e (AID Response element) | Parameters describing an AID assignment.  This parameter is present if dot11S1GOptionImpemented is true; otherwise not present. |

### 6.3.8 Reassociate

### 6.3.8.3 MLME-REASSOCIATE.confirm

**6.3.8.3.2 Semantics of the service primitive**

*(Instruction to TGah Editor) Insert the new editing instruction as follows:*

*Change the following row in the untitled table in 6.3.8.3.2 as follows:*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| AssociationID | Integer | 1–2007 inclusive | If the association request result was SUCCESS, then AssociationID specifies the association ID value assigned by the PCP/AP.  This parameter is not present if dot11S1GOptionImpemented is true. |

*(Instruction to TGah Editor) Change the associated table, modifying the last row as following text shown in blue:*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| AID Response | AID Response element | As defined in 8.4.2.170e (AID Response element) | Parameters describing an AID assignment.  This parameter is present if dot11S1GOptionImpemented is true; otherwise not present. |

### 6.3.8.5 MLME-REASSOCIATE.response

**6.3.8.5.2 Semantics of the service primitive**

*(Instruction to TGah Editor) Insert the new editing instruction as follows:*

*Change the following row in the untitled table in 6.3.8.5.2 as follows:*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| AssociationID | Integer | 1–2007 inclusive | If the association request result was SUCCESS, then AssociationID specifies the association ID value assigned by the PCP/AP.  This parameter is not present if dot11S1GOptionImpemented is true. |

*(Instruction to TGah Editor) Change the associated table, modifying the last row as following text shown in blue:*

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Type** | **Valid range** | **Description** |
| AID Response | AID Response element | As defined in 8.4.2.170e (AID Response element) | Parameters describing an AID assignment.  This parameter is present if dot11S1GOptionImpemented is true; otherwise not present. |

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** |
| --- | --- | --- | --- | --- |
| 529 | 55 | 8.4.1.8 | The last paragraph of subclause 8.4.1.8 AID field specifies the value of AID as 1-2007, and needs to be modified for S1G STA. | Modify the last paragraph of 8.4.1.8 as following.  ----  The value assigned as the AID is in the range 1-8191 for S1G STA or 1-2007 otherwise. It is placed in the 14 LSBs of the AID field, with the two MSBs of the AID field set to 1 (see 8.2.4.2 (Duration/ID field)). |

An S1G STA uses Duration/ID field (8.2.4.2) and SID filed (8.7.3.2) to specify 2 octets AID, and do not use AID fieild (8.4.1.8). So, it is not necessary to modify 8.4.1.8.

Proposed Resolution for 529:

Reject:

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** |
| --- | --- | --- | --- | --- |
| 547 | 174 | 10.5.2 | Subclause 10.5.2 "Setup and modification of the Block Ack parameters" shall be amended to add support of NDP Block ACK frame and BAT frame. | Modify the subclause 10.5.2.2, 10.5.2.3, and Table 10-5 to add support of NDP Block ACK frame and BAT frame.  See 11/13-0668r0 for proposed change. |

The IEEE P802.11ah D0.1 already modifies the subclause 9.21.2 “Setup and modification of the Block Ack parameters” to add support of NDP Block ACK and BAT. The subclause 10.5.2 of IEEE P802.11mc[2] which specifies the procedure for setting up and modifying the Block Ack parameters shall be modified according to modified 9.21.2, with resolutions of CID 74 and 562 (both Alfred).

Proposed Resolution for CID 547:

Revise

*(Instruction to TGah Editor) Insert new subclause 10.5.2.2, 10.5.2.3 and 10.5.2.4 as follows;*

### 10.5.2.2 Procedure at the originator

*Change bullet b) as follows:*

1. If the peer STA is a non-DMG STA, check whether the intended peer STA is capable of participating in the Block Ack mechanism by discovering and examining its “Delayed Block Ack” and “Immediate Block Ack” capability bits. If the recipient is capable of participating, the originator sends an ADDBA frame indicating the TID and the buffer size. If the peer STA is an S1G STA and the recipient is capable of participating in an Immediate Block Ack session, the S1G originator shall set the Block Ack Action field value to NDP ADDBA Request, unless another type of Block ACK response frame is required to include information that is not present in the fields of the NDP Block Ack frame, indicating that the recipient STA should use only NDP BlockAck frames during the Block Ack session. If the originator is a non-AP STA and the intended recipient is AP and capable of participating in an Immediate Block Ack session and both the originator and the recipient support BAT BA operation, the originator may set the Block Ack Action field value to BAT ADDBA Request, indicating that the originator requests the recipient to use only BAT frames during the Block Ack session. If the recipient is capable of participating and the GCRGroupAddress parameter of the MLME-ADDBA.request primitive is present, the originator sends an ADDBA Request frame that includes a GCR Group Address element. All DMG STAs are capable of participating in the Block Ack mechanism.

### 10.5.2.3 Procedure at the recipient

*Change bullet 1) under the bullet b) as follows:*

1. If the result code is SUCCESS, the Block Ack is considered to be established with the originator. Contained in the frame are the type of Block Ack agreement, the type of BlockAck frames and the number of buffers that have been allocated for the support of this block. If the originator STA is an S1G non-AP STA and it has received from the AP a frame containing an S1G Capabilities element with the Asymmetric Block Ack Supported set to true, the Originator Parameter field may be contained in the frame.

### 10.5.2.4 Procedure common to both originator and recipient

*Insert the following rows at the end of Table 10-5:*

**Table 10-5 -- Types of Block Ack agreement based on capabilities and ADDBA conditions for non-DMG STAs**

|  |  |  |
| --- | --- | --- |
| **Capabilities condition** | **ADDBA condition** | **Type of Block Ack**  **agreement** |
| Both STAs are S1G STAs | Block Ack Policy subfield equal to 1 | HT-Immediate |
| Both STAs are S1G STAs and support HT-Delayed Block Ack | Block Ack Policy subfield equal to 0 | HT-Delayed |

**References:**

[1] IEEE 802.11-13/0701r3 “TGah CC9 comments on D0.1”

[2] IEEE P802.11-REVmc/D1.5

[3] IEEE P802.11ac/D5.1

[4] IEEE P802.11af//D5.0