IEEE P802.11
Wireless LANs

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| OBSS MLME cleanup |
| Date: 2011-03-14 |
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Abstract

CID2090 states:

*The usage of MLME-QLOADREQUEST and MLME-MLME-QLOADREPORT primitives is non-standard. Why not just use an MLME-QLOADREQUEST 4-way primitive (.request, .indication, .response, .confirm)?*

with a proposed resolution of:

*Delete MLME-QLOADREPORT primitives. Add MLME-QLOADREQUEST.response (somewhat similar to existing MLME-QLOADREPORT.request). Modify MLME-QLOADREQUEST.confirm that is similar to existing MLME-QLOADREPORT.indication. Same thing with TXOPADVERTISEMENT and TXOPRESPONSE.*

This proposal also proposes resolutions to CID 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011 that all call for a “Protected” parameter to be added.

This document proposes normative text changes to accept this comment. This document is based upon P802.11aa D3.01. Changes from the draft is shown using Word change tracking.

**6.3.3.3 MLME-SCAN.confirm**

**6.3.3.3.2 Semantics of the service primitive**

Insert QLoad Report at the end of the table describing the BSSDescription parameter (note that the entire table is not shown here): (#2002)

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| --- | --- | --- | --- | --- |
| Name | Type | Valid range | Description | IBSS adoption |
| QLoad Report | As defined inframe format | As defined in 8.4.2.aa93 | The values from the QLoad Report element if such an element was present in the probe response frame, else null. The parameter is optionally present only if dot11QLoadReportActivated is true. | Do not adopt |

6.3.aa79 QLoad Report management

This set of primitives supports the process of QLoad reporting between APs as described in .

6.3.aa79.1 MLME-QLOAD.request

6.3.aa79.1.1 Function

This primitive is used by an AP to transmit a QLoad Request to a specified AP.

6.3.aa79.1.2 Semantics of the service primitive

The primitive parameters are as follows:

MLME-QLOAD.request(

 PeerMACAddress(#2197)

 DialogToken

Protected (#2004)

 )

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| Name | Type | Valid range | Description |
| PeerMACAddress(#2197) | MACAddress | Any valid individual MACAddress | The address of the peer MAC entity to which the QLoadRequest shall be sent. |
| DialogToken | Integer | 1–255 | Specifies a number unique to the QLoadReport.request primitive |
| Protected | Boolean | true, false | If true, the request is sent using the Protected QLoad Request Protected Dual of Public Action Frame. If false, the request is sent using the QLoad Request Public Action frame |

6.3.aa79.1.3 When Generated

The primitive is generated by the SME at an AP to request the sending of a QLoad Request to another AP indicated by PeerMACAddress(#2197).

6.3.aa79.1.4 Effect of Receipt

On receipt of this primitive, the MLME constructs a QLoad Request Action management frame if the Protected parameter is false, or a Protected QLoad Request Protected Dual of Public Action frame if the Protected parameter is true. The AP then attempts to transmit this frame to the AP indicated by PeerMACAddress(#2197).

6.3.aa79.2 MLME-QLOAD.confirm

6.3.aa79.2.1 Function

This primitive reports the result of a request to send a QLoad Request.

6.3.aa79.2.2 Semantics of the service primitive

The primitive parameters are as follows:

MLME-QLOAD.confirm(

 ResultCode(#2198),

PeerMACAddress,

DialogToken,

Protected (#2007)

QLoadReport

 )

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| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| ResultCode(#2198)  | Enumeration  | SUCCESS, INVALID PARAMETERS or UNSPECIFIED FAILURE | Reports the outcome of a request to send a QLoad Request |
| PeerMACAddress(#2197)  | MACAddress | Any valid individual MACAddress | The address of the peer MAC entity to which the QLoadRequest shall be sent. |
| DialogToken  | Integer | 0–255 | Specifies a number unique to the QLoadReport.request primitive or 0 when sending an unsolicited report |
| Protected | Boolean | true, false | If true, the response was sent using the Protected QLoad Report Protected Dual of Public Action Frame. If false, the response was sent using the QLoad Report Public Action frame. |
| QLoadReport(#2199) | Set of reports, each as defined in the QLoad Report element | Set of reports, each as defined in the QLoad Report element | Set of reports, each as defined in the QLoad Report element |

6.3.aa79.2.3 When Generated

This primitive is generated by the MLME as a result of an MLME-QLOAD.request primitive indicating the results of that request. This primitive is generated by the MLME as a result of an MLME-QLOAD.request is found to contain invalid parameters, or when the STA receives a response in the form of an QLoad Report frame in the corresponding Robust AV Streaming Action frame.

6.3.aa79.2.4 Effect of Receipt

The SME is notified of the results of the QLoad request procedure.

The SME should operate according to the procedures defined in 10.aa24.1.

6.3.aa79.3 MLME-QLOAD.indication

6.3.aa79.3.1 Function

This primitive indicates that a QLoad Request frame has been received.

6.3.aa79.3.2 Semantics of the service primitive

The primitive parameters are as follows:

MLME-QLOAD.indication(

 PeerMACAddress(#2197)

 DialogToken

Protected (#2005)

 )

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| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| PeerMACAddress(#2197) | MACAddress | Any valid individual MACAddress | The address of the peer MAC entity to which the QLoadRequest shall be sent. |
| DialogToken  | Integer | 1–255 | Specifies a number unique to the QLoadReport.request primitive  |
| Protected | Boolean | true, false | If true, the request was sent using the Protected QLoad Request Protected Dual of Public Action Frame. If false, the request was sent using the QLoad Request Public Action frame. |

6.3.aa79.3.3 When Generated

This primitive is generated by the MLME when a valid QLoad Request Public Action frame or a Protected QLoad Request Public Dual of Public Action frame is received.

6.3.aa79.3.4 Effect of Receipt

On receipt of this primitive, the SME either rejects the request or commences the transaction as described in .

6.3.aa79.4 MLME-QLOAD.response

6.3.aa79.4.1 Function

This primitive is used by an AP to transmit a QLoad Report to a specified AP in response to a QLoad Request.

6.3.aa79.4.2 Semantics of the service primitive

The primitive parameters are as follows:

MLME-QLOAD .response(

 PeerMACAddress(#2197)

 DialogToken

Protected (#2006)

 QLoadReport(#2199)

 )

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| PeerMACAddress(#2197)  | MACAddress | Any valid individual MACAddress | The address of the peer MAC entity to which the QLoadRequest shall be sent. |
| DialogToken  | Integer | 0–255 | Specifies a number unique to the QLoadReport.request primitive or 0 when sending an unsolicited report |
| Protected | Boolean | true, false | If true, the response is sent using the Protected QLoad Report Protected Dual of Public Action Frame. If false, the response is sent using the QLoad Report Public Action frame. |
| QLoadReport(#2199) | Set of reports, each as defined in the QLoad Report element | Set of reports, each as defined in the QLoad Report element | Set of reports, each as defined in the QLoad Report element |

6.3.aa79.4.3 When Generated

The primitive is generated by the SME at an AP in response to the reception of a QLoad Request from the AP indicated by PeerMACAddress(#2197).

6.3.aa79.4.4 Effect of Receipt

On receipt of this primitive, the MLME constructs a QLoad Report Action management frame if the Protected parameter is false, or a Protected QLoad Report Protected Dual of Public Action frame if the Protected parameter is true. The AP then attempts to transmit this frame to the other AP indicated by PeerMACAddress(#2197).

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6.3.aa80 HCCA TXOP Advertisement management

These set of primitives support the process of TSPEC schedule negotiation between an AP and overlapping APs as described in .

6.3.aa80.1 MLME-TXOPADVERTISEMENT.request

6.3.aa80.1.1 Function

This primitive is used by an AP to transmit an HCCA TXOP Advertisement to a specified AP.

6.3.aa80.1.2 Semantics of the service primitive

The primitive parameters are as follows:

MLME-TXOPADVERTISEMENT.request(

 PeerMACAddress(#2197)

 DialogToken

Protected (#2008)

 ActiveTXOPReservations

PendingTXOPReservations

 )

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| PeerMACAddress(#2197)  | MACAddress | Any valid individual MACAddress | The address of the peer MAC entity to which the TXOPAdvertisement shall be sent. |
| DialogToken  | Integer | 0–255 | Specifies a number unique to the TXOPAdvertisement.request primitive  |
| Protected | Boolean | true, false | If true, the request is sent using the Protected HCCA TXOP Advertisement Protected Dual of Public Action Frame. If false, the request is sent using the HCCA TXOP Advertisement Public Action frame." |
| ActiveTXOPReservations | TXOP Reservation | As defined in  | Specifies the HCCA TXOPs that have been created |
| PendingTXOPReservations | TXOP Reservation | As defined in  | Specifies the HCCA TXOPs that are in the process of being created. |

6.3.aa80.1.3 When Generated

The primitive is generated by the SME at an AP to request the sending of an HCCA TXOP Advertisement Public Action frame or Protected HCCA TXOP Advertisement Protected Dual of Public Action frame to the AP indicated by PeerMACAddress(#2197).

6.3.aa80.1.4 Effect of Receipt

On receipt of this primitive, the MLME constructs a TXOP Advertisement Public Action frame if the Protected parameter is false, or constructs a Protected TXOP Advertisement Protected Dual of Public Action frame if the Protected parameter is true. The AP then attempts to transmit this frame to the AP indicated by PeerMACAddress(#2197).

6.3.aa80.2 MLME-TXOPADVERTISEMENT.confirm

6.3.aa80.2.1 Function

This primitive reports the result of a request to perform HCCA TXOP negotiation.

6.3.aa80.2.2 Semantics of the service primitive

The primitive parameters are as follows:

MLME-TXOPADVERTISEMENT.confirm(

 ResultCode(#2198)

PeerMACAddress

DialogToken

Protected (#2011)

AlternateSchedule

AvoidanceRequest

 )

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| ResultCode(#2198)  | Enumeration  | SUCCESS, INVALID PARAMETERS, SCHEDULE\_CONFLICT, or UNSPECIFIED FAILURE |  Indicates the results of the corresponding MLMETXOPADVERTISE.request primitive. |
| PeerMACAddress(#2197)  | MACAddress | Any valid individual MACAddress | The address of the peer MAC entity from which the TXOP Response was received. |
| DialogToken  | Integer | 0–255 | The token identifying(#2196) the TXOP Advertisement and TXOP Response transaction. |
| Protected | Boolean | true, false | If true, the response was sent using the Protected HCCA TXOP Response Protected Dual of Public Action Frame. If false, the response was sent using the HCCA TXOP Response Public Action frame. |
| AlternateSchedule(#2201) | TXOP Reservation | As defined in 8.4.1.aa32 | Specifies an alternate TXOP when status code is non-zero |
| AvoidanceRequest(#2201) | TXOP Reservation | As defined in 8.4.1.aa32 | Specifies a TXOP to avoid when status code is non-zero |

6.3.aa80.2.3 When Generated

This primitive is generated by the MLME as a result of an MLME-TXOPADVERTISEMENT.request primitive indicating the results of that request. This primitive is generated by the MLME as a result of an MLME-TXOPADVERTISEMENT.request is found to contain invalid parameters, when the STA receives a response in the form of an HCCA TXOP Response frame in the corresponding Public Action frame, or when the STA receives a response in the form of a Protected HCCA TXOP Response frame in the corresponding Protected Dual of Public Action frame.

6.3.aa80.2.4 Effect of Receipt

On receipt of this primitive, the SME performs the behavior defined in 10.aa24.3.

6.3.aa80.3 MLME-TXOPADVERTISEMENT.indication

6.3.aa80.3.1 Function

This primitive indicates that an HCCA TXOP Advertisement frame has been received from a peer entity.

6.3.aa80.3.2 Semantics of the service primitive

The primitive parameters are as follows:

MLME-TXOPADVERTISEMENT.indication(

 PeerMACAddress(#2197)

 DialogToken

Protected (#2011)

 TXOPReservations

 )

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| PeerMACAddress(#2197)  | MACAddress | Any valid individual MACAddress | The address of the peer MAC entity from which the TXOP Advertisement was sent. |
| DialogToken  | Integer | 0–255 | Specifies a number unique to the TXOPAdvertisement.request primitive  |
| Protected | Boolean | true, false | If true, the request was sent using the Protected HCCA TXOP Request Protected Dual of Public Action Frame. If false, the request was sent using the HCCA TXOP Request Public Action frame |
| TXOPReservations(#2200) | TXOP Reservation | As defined in  | Specifies the TXOP that is being created by the AP given in PeerMACAddress(#2197) |

6.3.aa80.3.3 When Generated

This primitive is generated by the MLME when a valid HCCA TXOP Advertisement frame is received.

6.3.aa80.3.4 Effect of Receipt

On receipt of this primitive, the SME performs the behavior defined in .

6.3.aa80.4 MLME-TXOPADVERTISMENT.response

6.3.aa80.4.1 Function

This primitive is used by an AP to transmit an HCCA TXOP Response to a specified AP.

6.3.aa80.4.2 Semantics of the service primitive

The primitive parameters are as follows:

MLME-TXOPADVERTISEMENT.response(

 PeerMACAddress(#2197)

 DialogToken

Protected (#2010)

 StatusCode (#2201)

ScheduleConflict(#2201)

 AlternateSchedule (#2201)

 AvoidanceRequest(#2201)

 )

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Valid range | Description |
| PeerMACAddress(#2197)  | MACAddress | Any valid individual MACAddress | The address of the peer MAC entity to which the TXOPAdvertisement shall be sent. |
| DialogToken  | Integer | 0–255 | The token identifying(#2196) the TXOP Advertisement and TXOP Response transaction. |
| Protected | Boolean | true, false | If true, the response is sent using the Protected HCCA TXOP Response Protected Dual of Public Action Frame. If false, the response is sent using the HCCA TXOP Response Public Action frame. |
| StatusCode(#2201) | Enumeration | 0 or <ANA> (as defined in 8.4.1.9) | The result of checking the TXOP Reservation from the corresponding TXOP Advertisement |
| ScheduleConflict(#2201) | Integer  | 1-Number of TXOP reservations | The TXOP Reservation from the HCCA TXOP Advertisement frame that conflicts with an existing or in-progress schedule |
| AlternateSchedule(#2201) | TXOP Reservation | As defined in  | Specifies an alternate TXOP when status code is non-zero |
| AvoidanceRequest(#2201) | TXOP Reservation | As defined in  | Specifies a TXOP to avoid when status code is non-zero |

6.3.aa80.4.3 When Generated

The primitive is generated by the SME at an AP to request the sending of an HCCA TXOP Response to another AP indicated by PeerMACAddress(#2197).

6.3.aa80.4.4 Effect of Receipt

On receipt of this primitive, the MLME constructs an HCCA TXOP Response Public Action frame if the Protected parameter is false, or constructs a Protected HCCA TXOP Response Protected Dual of Public Action frame if the Protected parameter is true. The AP then attempts to transmit this frame to the AP indicated by PeerMACAddress(#2197).

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**References:**