IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Resolution to Comments : CID 2051,2052,2054,2056 | | | | |
| Date: 2014-01-03 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Rob Sun | Huawei Technology | Suite 400, 303 Terry Fox drive,  Kanata, On | +1 613 2781948 | Rob.sun@huawei.com |
|  |  |  |  |  |

Abstract

This document presents suggested proposal towards CID 2051,2052,2054,2056

***Modify the following definition into 10.3.1 as highlighted in red texts:***

* STA authentication and association

***Discussion:***

CID 2051, 2052,2054,2056 provide comments about FILS state machine and its state transition parameters. This proposal is intended to address and resolve the comments with adoption/revision to the suggestions.

***Proposed Resolution:***

**Revised**

### TGai Editor: Please apply the following changes to the subclauses of 10.3,

Notes to editor: the striked lines are removed, the highlight texts are the modifications.

**10.3.3 Frame filtering based on STA state**

The current state existing between the transmitter and receiver STAs determines the IEEE 802.11 frame

types that may be exchanged between that pair of STAs (see Clause 8). A unique state exists for each pair of

transmitter and receiver STAs. The allowed frame types are grouped into classes and the classes correspond

to the STA state. In State 1, only Class 1 frames are allowed. In State 2, either Class 1 or Class 2 frames are

allowed. In State 3 and State 4, all frames are allowed (Classes 1, 2, and 3). In State 5, only frame classes 1

and 2 are allowed.

In the definition of frame classes, the following terms are used:

— Within an infrastructure BSS: both the transmitting STA and the recipient STA participate in the

same infrastructure BSS

— Within a PBSS: both the transmitting STA and the recipient STA participate in the same PBSS

— Within an IBSS: both the transmitting STA and the recipient STA participate in the same IBSS

— dot11RSNAEnabled: reference to the setting of dot11RSNAEnabled at the STA that needs to determine

whether a transmission or reception is permitted.

~~NOTE-The phrase “within a BSS” comprises “within a PBSS,” “within an IBSS,” “within a MBSS,” or~~

~~“within an infrastructure BSS.”~~

STA A participates in the same infrastructure BSS as STA B if at least one of the following conditions is

met:

— STA A is associated with STA B, and either STA A or STA B is an AP.

— STA A receives a frame with the value of its TA field equal to the MAC address of STA B and with

the value of its BSSID field equal to the BSSID of the BSS with which STA A is associated.

— STA A receives an Information Response frame from the AP with which it is associated containing

an explicit indication that STA B is a member of the BSS with which STA A is associated.

STA A participates in the same PBSS as STA B if at least one of the following conditions is met:

— STA A is associated with STA B, and either STA A or STA B is a PCP.

— STA A receives a frame with the value of its TA field equal to the MAC address of STA B and with

the value of its BSSID field equal to the BSSID of the PBSS that STA A has joined or started.

— STA A receives a frame, i.e. an Information Response frame, from its PCP containing an explicit

indication that STA B is a member of the PBSS that STA A has joined.

STA A participates in the same IBSS as STA B if STA A receives a frame with the value of its TA field

equal to the MAC address of STA B and with the value of its BSSID field equal to the BSSID of the IBSS

that STA A has joined or started.

The frame classes are defined as follows:

a) Class 1 frames

1) Control frames

i RTS

ii DMG Clear to send (DMG CTS)

iii CTS

iv Ack

v Grant

vi SSW

vii SSW-Feedback

viii SSW-Ack

ix Grant Ack

x CF-End+CF-Ack

xi CF-End

xii Within an IBSS and within a PBSS when dot11RSNAEnabled is false, Block Ack (Block-

Ack)

xiii Within an IBSS and within a PBSS when dot11RSNAEnabled is false, Block Ack Request

(BlockAckReq)

2) Management frames

i Probe Request/Response

ii Beacon

iii FILS Discovery Frame

iv Authentication

v Deauthentication

vi ATIM

vii Public Action

viii Self-protected Action

ix Within an IBSS, all Action frames and all Action No Ack frames

x Unprotected DMG Action frames

xi DMG: Link Measurement Request and Link Measurement Report frames

xii Within a PBSS when dot11RSNAEnabled is false, all Action and Action No Ack frames

except the following frames:

1) ADDTS Request

2) ADDTS Response

3) DELTS(Ed)

4) Data frames

i Data frames between STAs in an IBSS

ii Data frames between peers using DLS

iii Data frames within a PBSS

5) Extension frames

i DMG Beacon

b) Class 2 frames

1) Management frames

i Association Request/Response

ii Reassociation Request/Response

i Disassociation

c) Class 3 frames

1) Data frames

i Data frames between STAs in an infrastructure BSS or in an MBSS

2) Management frames

i Within an infrastructure BSS, an MBSS, or a PBSS, all Action and Action No Ack frames

except those that are declared to be Class 1 or Class 2 frames (above)

3) Control frames

i PS-Poll

ii Poll

iii SPR

iv DMG DTS

v Block Ack (BlockAck), except those that are declared to be Class 1 (above)

vi Block Ack Request (BlockAckReq), except those that are declared to be Class 1 (above)

Class 2 and Class 3 frames are not allowed in an IBSS. If a STA in an IBSS receives a Class 2 or Class 3

frame, it shall ignore the frame.

A Non-FILS STA shall not transmit Class 2 frames unless in State 2 or State 3 or State 4

A Non-FILS STA shall not transmit Class 3 frames unless in State 3 or State 4.

A FILS STA shall not transmit Class 3 frames unless in state 4. [CID 2051,2054, 2052]

A multi-band capable device that uses OCT to move from State 2 to either State 3 or State 4 shall not transmit

frames before the transmitting STA becomes on-the-air enabled (see 10.32.4).

The use of the word “receive” in 10.3 refers to a frame that meets all of the filtering criteria specified in

Clause 11 and Clause 9.

*Change as follows:*

**10.3.5.1 General**

Subclause 10.3.5 describes the procedures used for IEEE Std 802.11 association, reassociation and disassociation.

The states used in this description are defined in 10.3.1.

Successful Non-FILS [CID 2056] association enables a STA to exchange Class 3 frames. Successful association sets the STA'sstate to State 3 or State 4.

Successful FILS association enables a STA to exchange Class 3 frames. Successful association sets the FILS

STA's state to State 4.

Successful reassociation enables a STA to exchange Class 3 frames. Unsuccessful reassociation when not in

State 1 leaves the STA's state unchanged (with respect to the PCP/AP that was sent the Reassociation

Request (which may be the current STA)). Successful reassociation sets the STA's state to State 3 or State 4

(with respect to the PCP/AP that was sent the Reassociation Request). Successful reassociation when not in

State 1 sets the STA's state to State 2 (with respect to the current PCP/AP, if this is not the PCP/AP that was

sent the Reassociation Request). Successful reassociation sets a FILS STA's state to State 4 and enables it to

exchange Class 3 frames. Reassociation shall be performed only if the originating STA is already associated

in the same ESS.

Disassociation notification when not in State 1 sets the STA's state to State 2. Disassociation notification

when not in State 1 sets a FILS STA's state to State 5. The STA shall become associated again prior to sending

Class 3 frames. A STA may disassociate a peer STA at any time, for any reason.

If non-DMG STA A in an infrastructure BSS receives a Class 3 frame from STA B that is authenticated but

not associated with STA A (i.e., the state for STA B is State 2), STA A shall discard the frame. If the frame

has an individual address in the Address 1 field, the MLME of STA A shall send a Disassociation frame to

STA B.

If DMG STA A in an infrastructure BSS receives a Class 3 frame from STA B that is not associated with

STA A (i.e., the state for STA B is State 2), STA A shall discard the frame. If the frame has an individual

address in the Address 1 field, the MLME of STA A shall send a Disassociation frame to STA B.

If an MM-SME coordinated STA receives an Association Response frame with a result code equal to SUCCESS

and with the value of the Single AID field within MMS element equal to 1, then

- For each of its MAC entities advertised within the MMS element and for which dot11RSNAEnabled

is true, the state is set to State 3. Progress from State 3 to State 4 occurs independently in each such

MAC entity.

- For each of its MAC entities advertised within the MMS element and for which dot11RSNAEnabled

is false, the state is set to State 4.

If the MM-SME coordinated STA in State 3 is assigned an AID for only the MAC entity identified by the

RA field of the Association Response with result code equal to SUCCESS, the MM-SME may repeat the

association procedure for any other MAC entity coordinated by the MM-SME.

Association is not applicable in an IBSS. In an infrastructure BSS, association is required. In a PBSS, association

is optional. APs do not initiate association.