IEEE P802.11

Wireless Access Method and Physical Layer Specification

Additional Issues in D6.0

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1)   Problem created by resolution of other ballot comments:

The source of values for the CF parameter set moved from MIB attributes to MlmeStart.request in D5.2. This has a side effect that the values cannot be changed while the BSS is in operation. There are cases where it is useful, indeed desirable, to change one or both of CFPPeriod and CFPMaxDuration of an operating BSS with point coordinator. Had this restriction been in D5.0 I would have made a technical NO comment about this being overly restrictive. I recommend allowing these to change while the BSS is operating, either as a new Mlme primitive, or reverting to MIB attributes for these values. If the MIB approach is used, the MlmeStart.request can continue to use the parameters as specified, with the added statement that the two MIB attributes are set by a successful completion of the MlmeStart.request.

2)   Inconsistencies

2.1. There is no TIM element in Probe Response frames. The reference should be deleted in 7.3.2.6.

2.2. There are some problems with error codes in the Mlme service primitives. In particular:

MlmeDeauthenticate.confirm (10.3.5.2) cannot report INVALID_PARAMETERS,|
or TOO_MANY_SIMULTANEOUS_REQUESTS

MlmeDisassociate.confirm (10.3.8.2) cannot report INVALID_PARAMETERS,
TIMEOUT, or REFUSED

MlmeJoin.confirm (10.3.3.2) should have BSS_ALREADY_STARTED_OR_JOINED
like MlmeStart.confirm.

2.3. Data rates are encoded in the supported rates elements (7.3.2.2) as octets with bit 7 set to 1 for rates belonging to the basic rate set. In the Mlme Scan/Join/Start primitives there are rate set parameters which are defined to be sets of integers of range 10 through 255, inclusive — which allows specification of rates that cannot be encoded in the supported rates elements of Beacon and Probe Response frames. In the PHY MIB (aSupportedDataRatesTx, 13.1.4.23 and aSupportedDataRatesRx, 13.1.4.24) the rates are represented as sets of integers in the range 00 through 255, inclusive, and there is no mechanism for indicating which are mandatory versus which are optional.

There should be one representation used for the MIB attributes, parameter values, and supported rates elements. The supported rates elements need to be able to represent all legal values from the MIB and/or Mlme parameters. Using 100Kbps increments with only 7 bits, as specified in 7.3.2.2 cannot represent rates faster than 12.7Mbps — which is probably too restrictive for future PHYs, given the pending proposals for 10Mbps PHYs before the Study Group. I suggest using a value in the 200Kbps-500Kbps range as the base unit to get sufficient range of data rates from 7 bits, with the high-order bit used to indicate the basic/mandatory rates in the supported rates elements. An alternative is to use 2-octet values, which expands several management frames.

2.4. There is not a specified timeout for the responding station in a shared key authentication sequence. Presumably that station should not wait forever to receive authentication sequence 3 frame (encrypted challenge text) in response to authentication sequence 2 frame (challenge text) — but since no service primitive is issued to generate the sequence 2 response, there needs to be a global timeout or a timeout parameter in the MIB or in the Mlme Start/Join request primitives.

3)   MIB issues

3.1. Why is aReceiveDtims still a MIB attribute when the other power management parameters that used to be in the MIB became parameters of MlmePowerMgt.request? Suggest changing this to another parameter of MlmePowerMgt.request.

3.2. aUndecryptableCount needs to be moved out of the privacy group to be useful in one of its stated purposes, which is to detect receipt of encrypted frames at stations not supporting WEP.

3.3. aMaxTransmitLifetime is specified to begin at MaUnitdata.request in some places and at the first transmission attempt in other places.

3.4. nDisassociate (11.4.5.1.1) should be clarified to be effective at both stations and APs.