IEEE P802.11

Wireless Access Method and Physical Layer Specification

Proposed Text Changes to Support Recommendation 96/81

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6.1.1   Asynchronous Data Service

This service provides peer LLC entities with the ability to exchange MAC Service Data Units. To support this service, the local MAC shall use the underlying PHY-level services to transport an MSDU to a peer MAC entity, where it will be delivered to the peer LLC. Such asynchronous MSDU transport is performed on a best-effort connectionless basis. There are no guarantees that the submitted MSDU shall be delivered successfully. Broadcast and multicast transport is part of the asynchronous data service provided by the MAC. All Stations are required to support the Asynchronous Data Service. Because operation of certain functions of the MAC may cause reordering of some MSDUs, as discussed in more detail below, there are two service classes within the Asynchronous Data Service. By selecting the desired service class, each LLC entity initiating the transfer of MSDUs is able to control whether MAC entities are or are not allowed to reorder those MSDUs.

6.1.3   Reordering of MSDUs

The services provided by the MAC Sublayer permit, and may, in certain cases require, the reordering of MSDUs. The MAC does not intentionally reorder MSDUs except as may be necessary to improve the likelihood of successful delivery based on the current operational ("power management") mode of the designated recipient station(s). The sole effect of this reordering (if any), for the set of MSDUs received at the MAC service interface of any single station, is a delay in the delivery of broadcast and multicast MSDUs, relative to directed MSDUs, originating from a single source station address. If a higher layer protocol using the Asynchronous Data Service cannot tolerate this possible reordering, the Strictly-Ordered service class should be used. MSDUs transferred between any pair of stations using the Strictly-Ordered service class are not subject to the relative reordering possible when the Reorderable-Multicast service class is used. However, use of the Strictly-Ordered service class at a station precludes simultaneous use of the MAC power management facilities at that station.

In addition, since MSDUs may transit a DS, and certain a DS implementations may reorder MSDUs, it is not possible for the MAC to guarantee MSDU ordering when the source and destination of an MSDU are in different BSSs of an ESS, even when no reordering is performed by the MAC entities themselves.

6.2.1.1   MA-UNITDATA.request

unmodified text omitted

The serviceclass parameter specifies the serviceclass desired for the data unit transfer. 802.11 allows twoone values: Reorderable-Multicast or Strictly-Orderedasynchronous.

6.2.1.2   MA-UNITDATA.indication

unmodified text omitted

The serviceclass parameter specifies the receive serviceclass desired for the data unit transfer. 802.11 allows twoone values: Reorderable-Multicast or Strictly-Orderedasynchronous.

6.2.1.3   MA-UNITDATA-STATUS.indication

unmodified text omitted

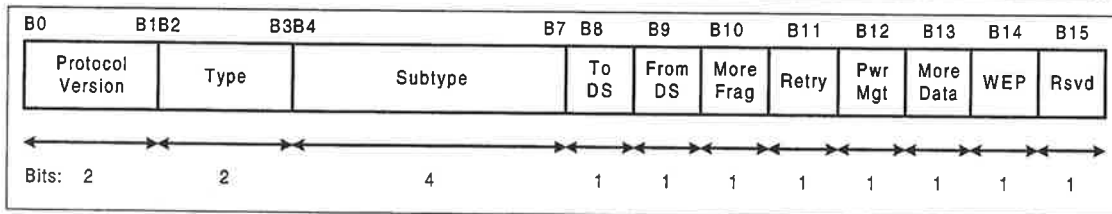802.11 specifies the following values for transmission-status:

a)   successful,
b)   undeliverable (for unacknowledged directed MSDUs when the aShort-Retry-Max or aLong-Retry-Max is reached),
c)   excessive-data-length,
d)   non-null-source-routing,
e)   unsupported-priority (for priorities other than contention or contentionfree),
f)   unsupported-service-class (for service classes other than Reorderable-Multicast or Strictly-Orderedasynchronous),
g)   unavailable-priority (for contention-free when no point coordinator is available, in which case the MSDU is transmitted with a providedpriority of contention), and
h)   unavailable-service-class (for Strictly-Ordered service when the Power Management mode is not Active).

The provided-priority parameter specifies the priority that was used for the associated data unit transfer (contention or contention-free).

The provided-service-class parameter specifies the class of service used for the associated data unit transfer: (Reorderable-Multicast or Strictly-Orderedasynchronous).

7.1.3.1   Frame Control Field

NEED TO EDIT FIGURE TO CHANGE TO SHOW B15 USAGE AS "Order" (I can't edit the Visio drawing)

B0	B1 B2	B3 B4	B7	B8	B9	B10	B11	B12	B13	B14	B15
Protocol Version	Type	Subtype		To DS	From DS	More Frag	Retry	Pwr Mgt	More Data	WEP	Rsvd

Bits: 2   2   4   1   1   1   1   1   1   1   1

7.1.3.1.10 Order (new subclause)

TheOrder field shall be one bit in length and shall be set to 1 in any Data Type frame that contains an MSDU, or fragment thereof, which is being transferred using the Strictly-Ordered service class. This field shall be set to 0 in all other frames.

11.2 Power Management

All traffic buffering and indication functions defined in this subclause apply exclusively to MSDUs, or fragments thereof, which have the Order field =0 in their MAC headers. Outgoing MSDUs which have the Order field =1 are queued for transmission as soon as they become available within the MAC entity, without regard for the possibility of a broadcast or multicast destination address, without regard for the power management state of the destination station(s), and without indication in a TIM or DTIM.