# P802.20b
# IEEE Standard for Local and Metropolitan Area Networks - Virtual Bridged Local Area Networks

# Amendment: Bridging of 802.20

## 2. Normative references

*Insert reference to 802.20 into Clause 2.*
IEEE Std 802.20™, IEEE Std for Local and Metropolitan Area Networks.  Part 20: Air Interface for Mobile Broadband Wireless Access Systems Supporting Vehicular Mobility — Physical and Media Access Control Layer Specification

## 6. Support of the MAC Service

## 6.5 Support of the Internal Sublayer Service by specific MAC procedures

*Insert the following as new Subclause 6.5.7* [This document amends IEEE Std 802.1D™-2004.]**.**

### 6.5.7. Support by IEEE Std 802.20 (MBWA)

#### 6.5.7.1 Support by Wideband mode of IEEE Std 802.20 (MBWA)

The Mobile Broadband Wireless Access Method for the 802.20 Wideband Mode is specified in Clause 5.4 and  Clause 6 through Clause 17 of  IEEE Std. 802.20. Clause 8 of the standard specifies the Wideband Mode Lower MAC Layer Frame structure and   protocol procedures. Clause 7 specifies the Radio Link Sublayer protocol and Clause 6 defines the Services Sublayer of the Wideband  Mode.  Clause 11 defines the Connection Control Plane which controls the state of the air-link by managing the states of individual Lower MAC Layer  protocols, and by providing individual Lower MAC Layer  protocols with operating parameters.

The Basic Packet Consolidation Protocol (IEEE 802.20 subclause 8.2) provides packet consolidation on the transmit side and provides packet de-multiplexing on the receive side. It provides an interface for the Radio Link Sublayer to transport user information from the Services Sublayer.

For packets to be transmitted over the air interface (wireless medium) either from the Access Node (AN) or Access Terminal (AT), the Lower MAC Sublayer shall accept Radio Link Subayer data and control packets and shall generate Lower MAC Sublayer control packets of its own. For packets leaving the air interface (wireless medium) for the AN or AT, the Lower MAC Sublayer shall de-multiplex the received packets and shall deliver the payload to the Radio Link Sublayer. The Radio Link Sublayer shall deliver the payload to the Services Sublayer which includes support for different IEEE802.3 packet based protocols.

### 6.5.7.1.1 Support for Internal Sublayer Service under Wideband Mode of IEEE Std 802.20

The **frame_type**, **destination_address**, **source_address**, **mac_service_data_unit** and **user_priority** parameters of the M_UNITDATA primitive are encoded as described in 6.5.1.

The value of **operPointToPointMAC** (6.4.3) shall be TRUE.

The value of MAC_Enabled shall be determined by the procedure described in 6.5.1.

After the 802.20 AT has registered with the AN, authenticated, and performed capabilities negotiation, and after the stream is established to carry 802 frames, then the value of the **MAC_Operational** parameter shall be determined by the procedure described in 6.5.1. Beforehand, the value of **MAC_Operational** shall be FALSE.

Frame size limits are determined by IEEE Std 802.3™.

### 6.5.7.2 Support by 625k-MC mode of IEEE Std 802.20 (MBWA)

The Mobile Broadband Wireless Access Method for 625k-MC mode is specified in Clause 5.5, Clause 18 through Clause 31, and Annex A of IEEE Std. 802.20. Clause 19 of the standard specifies 625k-MC Mode MAC Frame structure. Clause 23 specifies the MAC Protocol Sublayer function to implement the 625k-MC mode MAC service. Clause 25 specifies Layer 3 (L3) protocol and Clause 26 defines all the primitives used in 625k-MC Mode.

The L3 protocol layer is made up of components with distinct roles in supporting a connection across the air interface. The L3 Connection management (CM) module provides an application level interface to the Layer 4. The L3 protocol creates logical connections to transport higher layer L4 data packets. The L3 Registration Management (RM) module takes the L4 data packets provided by L4 (through L3 CM) and converts them into a form that can be sent over the air interface. On the receiving side, L3 RM converts packets received from the air interface back into network packets before giving them to L3 CM.

Clause 26 defines L4 to L3 CM Interface Primitives for the service access point that shall be provided by L3 CM for the use of L4. Clause 26 defines L3 CM to L4 Interface Primitives for the service access point provided by L4 for the use of L3 CM.

For packets entering air interface (wireless medium) either from BS network or End User Device (EUD), L3 shall accept L4 data and L4 control packets and shall generate L3 control packets of its own, and shall then send them to L2 RLC. For packets leaving air interface (wireless medium) for BS network or EUD, L3 shall accept byte streams from L2 RLC, shall determine whether the packet is a data packet, an L3 control packet, or an L4 control packet, and shall route the L4 control and data packets to Layer 4. Layer 4 includes support for different IEEE802.3 packet based protocols.

### 6.5.7.2.1 Support for Internal Sublayer Service under 625k-MC Mode of IEEE Std 802.20

The **frame_type**, **destination_address**, **source_address**, **mac_service_data_unit** and **user_priority** parameters of the M_UNITDATA primitive are encoded as described in 6.5.1. and presented as an ISS supported IEEE802.3 MAC to the layer L4. The layer 4 triggers the L3 protocol of 625k-MC. The L3 CM module state machine shall respond to requests from the L4 for virtual connections across the air interface,

and requests registrations from the L3 RM to allow the virtual connections to use physical channels (streams).

The value of **operPointToPointMAC** (6.4.3) shall be TRUE.

The value of MAC_Enabled shall be determined by the procedure described in 6.5.1.

Initially, the value of **MAC_Operational** shall be FALSE. After the UT has registered with the BS, authenticated, and performed capabilities negotiation, and after the stream is established to carry 802 frames, then the value of the **MAC_Operational** parameter shall be determined by the procedure described in 6.5.1. Frame size limits are determined by IEEE Std 802.3™.

## Annex A
**(normative)**

## PICS Proforma

*Change the first row of Table A.6 (Media Access Control Methods), by adding lines for 802.20 as follows:*

## A.6 Media Access Control Methods

| Item | Feature | Status | Reference | Support |
|---|---|---|---|---|
| | Which Media Access Control methods are implemented in accordance with the relevant MAC standards? | | | |
| …. | …. | …… | …… | ……. |
| MAC-802.20-WB | IEEE Std. 802.20 Wideband Mode | O.1 | 6.5.7.1 | Yes[  ]/No[  ] |
| MAC-802.20-625 | IEEE Std. 802.20 625k-MC Mode | O.1 | 6.5.7.2 | Yes[  ]/No[  ] |