8. Principles of bridge operation

Change 8.5 and its subclauses, and insert new subclause 8.5.2, renumbering existing 8.5.2 to 8.5.3, as shown:

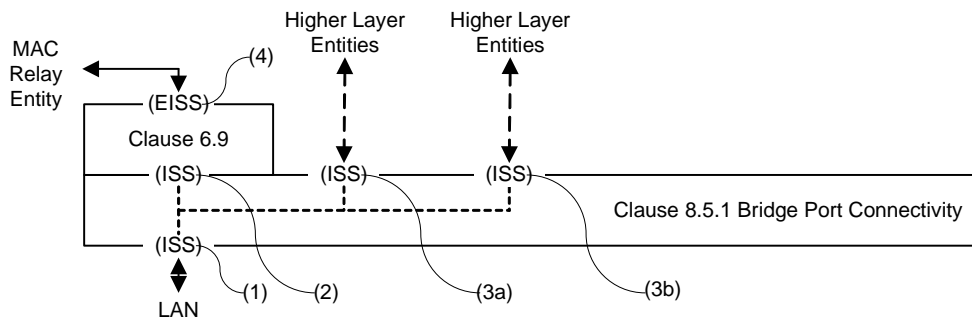### 8.5 Bridge Port Transmit and Receive

The Bridge Port Transmit and Receive process supports the attachment of the Bridge Port to a network. ~~As illustrated in Figure 8-8 and Figure 8-9, it~~ It comprises ~~two components that provide~~ the following functions:

a) In a VLAN-aware Bridge component, mapping ~~Mapping~~ between the EISS (6.8) provided to the MAC Relay Entity and the ISS (6.6), adding, recognizing, interpreting, and removing VLAN tags as specified in 6.9 and illustrated in Figure 8-8;

b) In a VLAN-unaware Bridge component, an optional shim (6.1.5) that uses and provides the ISS (6.6), recognizing and interpreting VLAN tags as specified in 6.20 and illustrated in Figure 8-9.

c) Connectivity, as specified in 8.5.1 (for non-TPMR Bridges) or 8.5.2 (for TPMRs), between the following ISS access points:

1) that provided by the MAC Entity for the LAN attached to the Port, as specified in 6.7;

2) that supporting the ~~EISS for the~~ MAC Relay Entity; and

3) one or more that support Higher Layer Entities attached to the Port (8.5.3)~~; and.~~

3) ~~that provided by the MAC Entity for the LAN attached to the Port, as specified in 6.7;~~

A single Port for a Bridge, known as the Management Port, may support Higher Layer Entities without providing a~~n~~ point of attachment to a LAN (see Figure 8-7).

8.5.1 Bridge Port connectivity

Each M_UNITDATA.indication provided by the ISS access point for an attached LAN [(1) in Figure 8-8] shall result in a corresponding M_UNITDATA.indication with identical parameters at each of the access points supporting the MAC Relay and Higher Layer Entities [(2), (3a) and (~~4~~3b)]. Each M_UNITDATA.request from the ISS access point supporting the MAC Relay Entity shall result in a corresponding M_UNITDATA.indication with identical parameters at each of the access points for the Higher Layer Entities [(3a) and (~~4~~3b)], and a corresponding M_UNITDATA.request with identical parameters at the access point for the LAN [(1)]. Each M_UNITDATA.request from an ISS access point supporting a Higher Layer Entity shall result in a corresponding M_UNITDATA.indication with identical parameters at the access points for the MAC Relay Entity, and at other access points for Higher Layer Entities, and a corresponding M_UNITDATA.request with identical parameters at the access point for the LAN.

Figure 8-8—Bridge Port Transmit and Receive

NOTE—Figure 8-8 shows the relative position of the Bridge Port Transmit and Receive process and the VLAN tagging function (6.9) for a Customer Bridge or Provider Bridge that does not support CFM. For the relative positioning of these functions in a bridge supporting CFM, see Figure 22-4. For the relative positioning of these functions in a Backbone Edge Bridge, see Figure 26-2.

The MAC_Enabled, MAC_Operational, and operPointToPointMAC status parameters for the ISS access point for the MAC Relay Entity and Higher Layer Entities [(2), (3a), and (43b) in Figure 8-8] shall take the same value as that for the LAN (1) if that is present, and shall be True otherwise (i.e., if the Port is a Management Port).

The consequence of the above connectivity is that frames relayed to a Bridge Port are both submitted to that Port's MAC Service users and transmitted on the attached LAN (see 8.13.9).

8.5.2 TPMR Port connectivity

Each M_UNITDATA.indication provided by the ISS access point for an attached LAN [(1) in Figure 8-9] shall result in a corresponding M_UNITDATA.indication with identical parameters at each of the access points supporting the MAC Relay and Higher Layer Entities[(2), (3a) and (3b)].
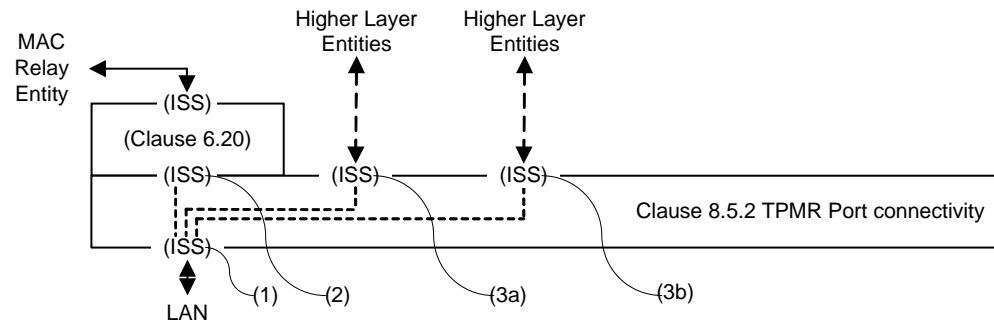

Figure 8-9—TPMR Port Transmit and Receive

Each M_UNITDATA.request from the ISS access point supporting the MAC Relay Entity (2) or a Higher Layer Entity [(3a) or (3b)] shall result in a corresponding M_UNITDATA.request with identical parameters at the access point for the LAN (1).

The MAC_Enabled, MAC_Operational, and operPointToPointMAC status parameters for the ISS access point for the MAC Relay Entity and Higher Layer Entities [(2), (3a), and (3b) in Figure 8-9] shall take the same value as for the LAN (1).

NOTE—These connectivity rules allow a higher layer entity to "listen" on both TPMR Ports to be able to determine the LAN on which a particular frame was received, and ensure that any frames sent by a higher layer entity are propagated only on the LAN associated with the Port on which the frame is transmitted. This differs from the propagation rules for other bridges, where frames transmitted by a higher layer entity are also submitted to the forwarding process, and frames transmitted by the Forwarding Process on a given Port are received by any higher layer entity associated with that Port.

8.5.3 Support of Higher Layer Entities

The MAC Service is provided to a Higher Layer Entity using one of the ISS access points provided for that purpose by the Bridge Port Connectivity function (8.5.1) or the TPMR Port Connectivity function (8.5.2).

Each ISS M_UNITDATA.indication with a destination MAC address that is either the individual address of a MAC service access point (MSAP) provided by the Bridge Port or a group address used by the attached LLC Entity shall cause an MA_UNITDATA.indication at that MSAP with destination address, source address, MSDU, and priority parameters identical to those in the M_UNITDATA.indication. No other indications or frames give rise to indications to the MAC Service user. Each MA_UNITDATA.request at the

MSAP shall result in an M_UNITDATA.request at the ISS access point with identical destination address, source address, MSDU, and priority parameters.

NOTE 1—Appropriate selection of the PVID for a Management Port facilitates attachment of an IP stack supporting an SNMP Management Agent to any selected VLAN relayed by the Bridge. This function is not supported in bridges that do not support the EISS, such as TPMRs.

NOTE 2—Higher Layer Entities attached to a Bridge Port can use the VLAN tag of received frames to achieve VLAN-awareness.

8.6 The Forwarding Process

8.6.3 Frame filtering

Change the text of 8.6.3, Table 8-1, and Table 8-2, as shown:

The Forwarding Process takes filtering decisions, i.e., reduces the set of potential transmission Ports (8.6.1), for each received frame on the basis of

- a) Destination MAC Address;
- b) VID;
- c) The information contained in the Filtering Database for that MAC Address and VID;
- d) The default Group filtering behavior for the potential transmission Port (8.8.6);

in accordance with the definition of the Filtering Database entry types (8.8.1, 8.8.3, and 8.8.4). The required behavior is summarized in 8.8.6, 8.8.8, Table 8-5, Table 8-6, and Table 8-7.

Each of the Reserved MAC Addresses specified in Table 8-1 shall be permanently configured in the Filtering Database in C-VLAN components. Each of the Reserved MAC Addresses specified in Table 8-2 shall be permanently configured in the Filtering Database in S-VLAN components. Each of the Reserved MAC Addresses specified in Table 8-3 shall be permanently configured in the Filtering Database in TPMR components. The Filtering Database Entries for Reserved MAC Addresses shall specify filtering for all Bridge Ports and all VLANs. Management shall not provide the capability to modify or remove entries for Reserved MAC Addresses.

The addresses in Table 8-1, Table 8-2 and Table 8-3 determine the scope of propagation of PDUs within a bridged LAN, as follows:

- e) the ***Nearest Bridge*** group address is an address that no conformant TPMR component, S-VLAN component, C-VLAN component or IEEE 802.1D Bridge can forward. PDUs transmitted using this destination address, or any of the other addresses that appear in all three tables, can therefore travel no further than those stations that can be reached via a single individual LAN from the originating station. Hence the Nearest Bridge group address is also known as the Individual LAN Scope group address.
- f) the ***Nearest non-TPMR Bridge*** group address is an address that no conformant S-VLAN component, C-VLAN component or IEEE 802.1D Bridge can forward; however this address is relayed by a TPMR component. PDUs using this destination address, or any of the other addresses that appear in both Table 8-1 and Table 8-2 but not in Table 8-3, will travel through any TPMRs but will propagate no further than the nearest S-VLAN component, C-VLAN component or IEEE 802.1D Bridge.
- g) the ***Nearest Customer Bridge*** group address is an address that no conformant C-VLAN component or IEEE 802.1D Bridge can forward; however it is relayed by TPMR components and S-VLAN components. PDUs using this destination address, or any of the other addresses which appear in Table 8-1 but not in either Table 8-2 or Table 8-3, will travel through TPMR components and S-