September 24, 2003

To: IEEE RAC

Subject: Request for guidance on EUI vs OUI

802.17 has received the following comments (415 & 363) during its WG ballot on Draft 2.5 of RPR:

> ***Comment:***
>
> RPR OAM and Topology currently use the EUI-64 as a vendor specific protocol identifier. However, the EUI-64 was intended as a globally unique identifier. Further, IEEE 802 in Clause 9 defines the use of OUI as a vendor specific protocol identifier and not EUI. As a result, OUI should be used to align with other 802 standards.
>
> In addition, according to "Guidelines for EUI64: 64-bit Global Identifiers," no more than one EUI-64 value shall be contained within each component that is manufactured. This restriction would prevent an OAM-enabled system from speaking two or more separate organization specific protocols.
>
> As a result, the usage of EUI is not appropriate.
>
> ***Proposed Remedy:***
>
> Replace EUI-64 with OUI as defined by IEEE 802 Clause 9.

The usage of EUI is currently in clause 11.6.4 and 10.11.4.8 of P802.17. These clauses are attached for your information.

802.17 would like to request the IEEE RAC for guidance to help us resolve these comments.

As we are currently approaching sponsor ballot, we would appreciate a response by October 17th so that it can be considered at our interim comment resolution meeting.

Thank you.

Sincerely,
Michael Takefman, Chair IEEE 802.17 Resilient Packet Ring Working Group

10.11.4.7.2 length

The *length* field is set to the size corresponding to ATT_STATION_SEC_MAC in Table 10.23.

10.11.4.7.3 *controlDataUnit* format

The format for the *controlDataUnit* of the secondary MAC address ATT is shown in Figure 10.29

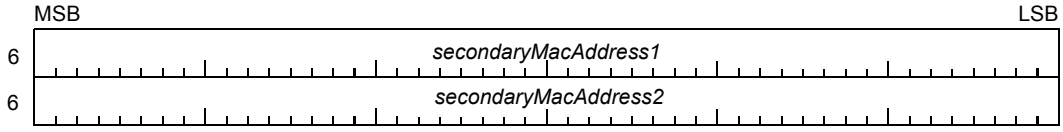

Figure 10.29—Secondary MAC address ATT *controlDataUnit* format

The 48-bit *secondaryMACAddress1* field carries the first secondary MAC address used by a station. If the station does not have any secondary MAC address configured, *secondaryMACAddress1* shall be all zeros.

The 48-bit *secondaryMACAddress2* field carries the second secondary MAC address used by a station. If the station has zero or one secondary MAC addresses configured, *secondaryMACAddress2* shall be all zeros.

10.11.4.8 Organization-specific ATT

The Organization-specific ATT encodes the organization-specific information of the station, and may be included in the ATD frame. This ATT is identified by its distinctive *type*=ATT_ORG_SPEC value (see 10.11.3); its *controlDataUnit* is illustrated in Figure 10.28.

The source of the information contained in the organization-specific ATT is a collection of organization-specific parameters. This information is reported to all other stations on the RPR ring using the organization-specific ATT. The actions taken as a result of receiving or not receiving the information contained in the organization-specific ATT is outside the scope of this standard.

10.11.4.8.1 type

The *type* field is set to ATT_ORG_SPEC.

10.11.4.8.2 length

The *length* field is set to the size corresponding to ATT_ORG_SPEC in Table 10.23.

10.11.4.8.3 *controlDataUnit* format

The format for the *controlDataUnit* of the organization-specific ATT is shown in Figure 10.30.

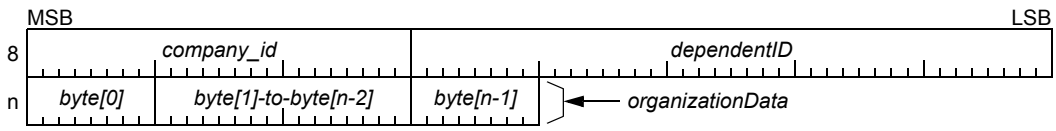

Figure 10.30—Organization-specific *controlDataUnit* format

The first 64 bits specify a globally-unique EUI-64 identifier, consisting of *company_id* and *dependentID* components. The 24-bit *company_id* field is supplied by the IEEE/RAC for the purposes of identifying the organization supplying the (unique within the organization) 40-bit *dependentID*.

The format and function of the remaining *n* bytes are dependent on the initial 64-bit identifier. The exact definition of the function of this organization-specific data is outside of the scope of this standard.

10.12 ATD frame handling

10.12.1 When generated

The ATD frame shall be transmitted as follows:

a) Sent to the broadcast address with a *ttl* value of MAX_STATIONS.
b) Sent on the initial start of RPR topology discovery.
c) Sent periodically.

Additionally, the ATD frame may be broadcast immediately upon change of any value contained in the respective ATD frames.

The ATD frames are sent on a periodic timer configured to *tlvTimerValue*. The ATD frame period shall be configurable from 1 second to 10 seconds with a 1 second resolution and a default value of 1 second.

10.12.2 Effect of receipt

The receipt of this frame on the same ringlet on which it was sent (as indicated in the ringletID field) from any station causes the MAC control sublayer to update its current local topology image.

A station receiving a ATD frame with one or more ATTs of unknown type shall ignore those ATTs and process the rest of the ATD frame as if those ATTs were not present.

10.12.3 Handling of ATD frames during protection

A station in wrapped protection state does not wrap a ATD frame, and strips it after receiving it. The *we* (wrap eligible) bit in the RPR header is set to zero for ATD frames to ensure that they are not wrapped, as described in 8.2. ATD frames continue to be delivered and received on links that are in non-idle protection states.

10.13 Attribute updates

In order to allow other stations time to react to changes in advertised station attributes, stations shall advertise changed values for attributes that use resources (i.e., ATT_STATION_BW, ATT_STATION_NAME, ATT_STATION_SEC_MAC) as follows:

a) Before adding a resource (e.g., more reserved bandwidth or secondary MAC address), advertise the resource usage, then start using it after at least RRTT + 10 milliseconds.
b) After removing a resource usage (e.g., station name), wait at least RRTT + 10 milliseconds before removing advertisement of it.

For attributes for which there is a resource total that should not be exceeded (e.g., reserved bandwidth), there is no control in the MAC to prevent this condition from occurring.

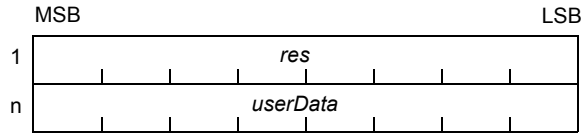

Figure 11.9—Flush frame *controlDataUnit*

11.6.4 Organization specific frame

Figure 11.10 illustrates the OAM echo request/response frame, where only the *controlDataUnit* portion of the frame is colored white.

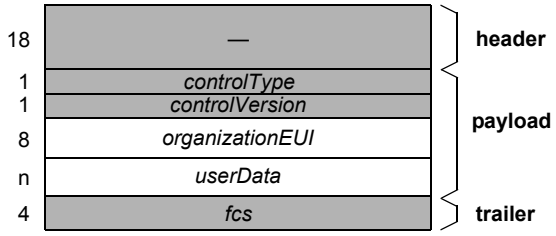

Figure 11.10—OAM organization specific frame format

The organization specific OAM frame encodes the organization specific OAM information of the station, and is optional. If a station does not support the organization specific OAM frame it is allowed to drop the frame without triggering any alarm or indication.

The *controlDataUnit* payload for organization specific frames is illustrated in Figure 11.11.

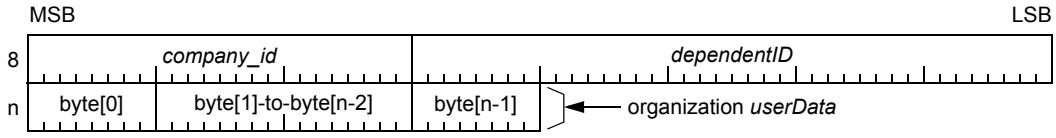

Figure 11.11—Organization-specific payload format

11.6.4.1 *organizationEUI*

The 64-bit *organizationEUI* is an EUI-64 comprised of the *company_id* and *dependentID* fields shown in Figure 11.11.

The *company_id* is a 24-bit OUI field supplied by the IEEE/RAC for the purpose of identifying the organization supplying the (unique within the organization) 40-bit *dependentID*.

11.6.4.2 *userData*

The n-byte *userData* field is optional. The organization specific data field includes organization defined data. The contents and number of bytes in this field is beyond the scope of this standard.