LLC Encapsulation Ethertype for P802.1AC-Rev

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Background and Status of P802.1AC-Rev

- Std 802.1AC specifies the Internal Sublayer Service (ISS) used by 802.1Q bridges and the MAC Service used by bridges and end-stations.
- 802.1Qbz clarifies how to make 802.11 fully compatible with the 802.1Q bridging architecture.
- Together, these standards will allow fully-standardised interoperability between Ethernet and 802.11 networks.
- P802.1AC-Rev is almost ready to go to RevCom.

Need for an LLC Encapsulation Ethertype

- In P802.1AC-Rev, the ISS is Length/Type encoded.
- On LPD media, the length of the frame is not explicitly encoded in the MSDU.
- On EPD media, the meaning of the Length/Type field is determined by its value.
- When bridging from LPD media to EPD media, a method is needed to encode long LLC frames. This is specified in clause 12 using the LLC Encapsulation Ethertype.
  - Without the LLC encapsulation EtherType, a long LLC frame cannot be parsed unambiguously; the Length of an indication with more than 1500 octets of data might be, and of an indication with more than 1536 octets would be, indistinguishable from an EtherType by a station on EPD media.

Need, continued

- Frames with more than 1500 octets of data do exist on 802.11 networks
- Carrying them between Access Points over Ethernet would be useful.

Service Access Points

- On media employing LPD, the SAPs in the header identify the upper-layer protocol:

DSAP address	SSAP address	Control	Information
8 bits	8 bits	8 or 16 bits	M*8 bits

DSAP address = Destination service access point address field

SSAP address = Source service access point address field

Control = Control field [16 bits for formats that include sequence numbering, and 8 bits for formats that do not (see 5.2)]

Information = Information field

* = Multiplication

M = An integer value equal to or greater than 0. (Upper bound of M is a function of the medium access control methodology used.)

Figure 4—LLC PDU format

Subtyping

- In order to preserve the scarce Ethertype resource, the RAC encourages the use of subtyping.
- In this application, subtyping is inherent through the LLC SAP identifier.

Prototyping

- In order to protect against Ethertype waste caused by insufficiently well-designed protocols and protocols without sufficient modification capability, the RAC strongly encourages prototyping of proposed protocols.
- The use of the proposed LLC Encapsulation Ethertype is the same as a successfully deployed proprietary protocol developed by Alteon (Ethertype 8878).