



# 802.17 Proposed Frame Format

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# Base Frame Format



- RPR Header            16 bits
- DA                      48 bits
- SA                      48 bits
- Type                    16 bits
- HEC16                 16 bits
- Payload                N bytes
- FCS32                 32 bits                      Calculated over Payload



# RPR Header Format

TTL	RI	Type	PRI	IOP
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- TTL            8 bits    Remove Packet when TTL == 0
- RI             1 bit     Ring ID
- Type          3 bits    Indicates type of packet
  - Normal Data, Steering Data, Protection Ctrl, Generic Ctrl, BW Ctrl
  - Spares for the future
- PRI            3 bits    Priority mapped from 802.1Q
- IOP            1 bit     Indicates Packet is In or Out of Profile



# Features

- TTL provides mechanism to avoid packets circulating forever
  - Decrement logic includes check to avoid modifying wrapped packets if the ring is in a wrapped state
    - Ring ID does not match local MAC RI
  - Decrement if the node has dropped into Passthru mode from normal operation
- HEC / FCS provide robust error control
  - HEC covers header and allows packets with good address and errored payload to be delivered
  - No need to recalculate FCS hop by hop
- IOP bit is marked for medium priority traffic that is out of profile
  - Subsequent stations will count the packets as part of the fairness algorithms



# Customer Separation

- 802.17 has two objectives
  - The 802.17 MAC shall be payload agnostic
  - The 802.17 shall define an optional method for customer traffic separation
- Customer Separation field (CID) is analogous to the 802.1Q tag
  - CID is actually within the scope of 802.1 and not .17
    - From a layered architectural approach, CID does not belong in header
    - Used by the MAC Client or MAC Relay Entity
  - CID is not actually needed by the MAC for any operation
- Type field holds a value that indicates the existence of the CID
  - 802.17 to request type fields for Payloads that contain the CID field
- Layered approach conforms to both objectives



# Customer Separation

- The client can be responsible for protecting the CID with a HEC if required.
  - Conforms to both objectives



# Conclusions

- The frame format provided satisfies all 802.17 objectives
  - PHY layer independent
  - Client layer independent
  - CID is optional
- The frame format provided satisfied other requests from 802.17 members
  - Ability to deliver packets with errored payload