

VLAN Tagging

802.5 Proposal
November 1996



Requirements and Objectives

- Requirements
 - Tagged frame must be self identifying when inserting the 2 octet VLAN ID
 - Retain existing MAC field locations used for frame forwarding
- Objectives
 - Minimize latency in frame identification
 - Forwarding decisions
 - Ingress/Egress decisions
 - Minimize additional octets

Three Alternatives Considered

- Use of SNAP encoded VPID
- Define a new LSAP for VLAN tagging
- Use of a reserved bit in the Frame Control (FC) Byte

SNAP Encoded VPID

- 10 octets required, 6 octets of SNAP + 2 octets of VPID + 2 octets of VCI
- Evaluation:
 - High octet count
 - High latency incurred to identify the frame

New LSAP for VLAN tagging

- 5 octets required, 2 octets of LSAP + 1 octet control + 2 octets of VCI
- Evaluation:
 - Lower octet count than SNAP header proposal
 - Lower latency incurred to identify the frame
 - 6 octets considered and rejected by committee

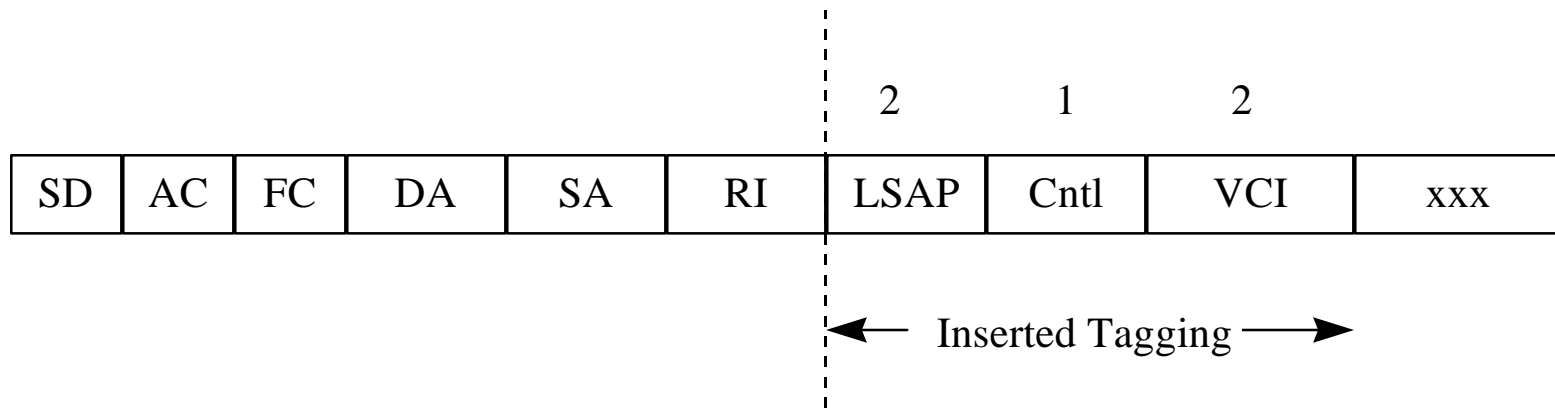
Frame Control (FC) Byte

- 2 octets required, 2 octets of VCI
- Evaluation:
 - Minimizes latency for frame identification
 - Minimizes octet count
 - Legacy hardware/software compatibility issues
 - Solution unique to TR with extension to FDDI

Recommendation

- New LSAP for VLAN tagging
- Key Considerations:
 - Lower latency incurred to identify the frame
 - Fewer Legacy hardware/software compatibility issues

Proposed TR Frame Format



xxx - encapsulated frame starts with LLC header