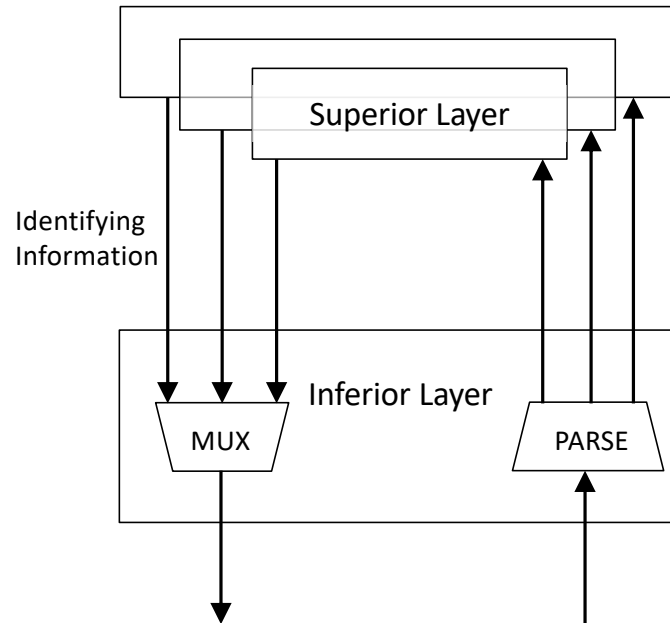# IEEE 1904.2 Universal Management Tunnel
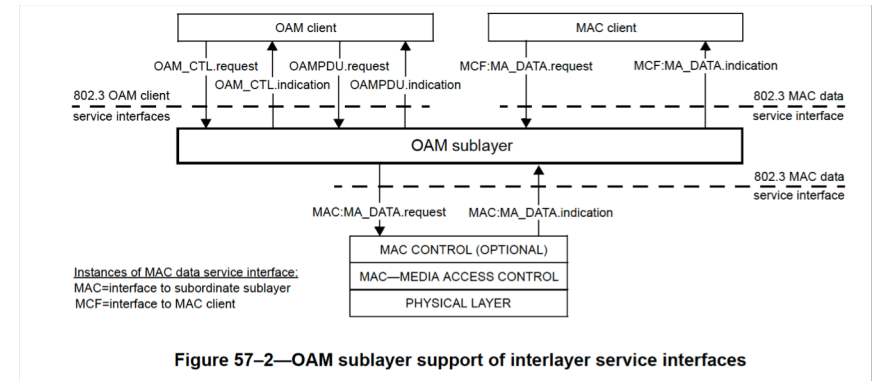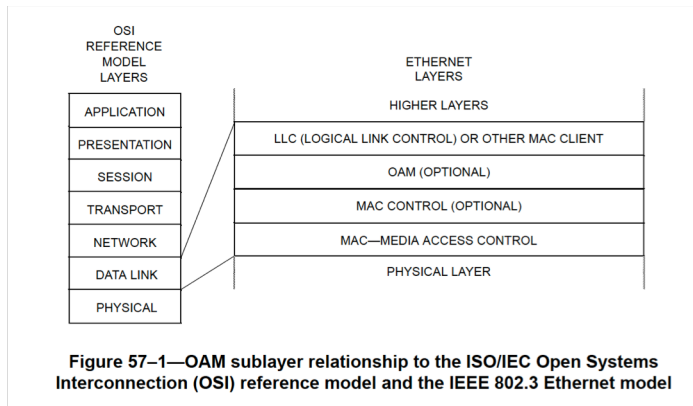
Proposed Layering Diagram

Principles for Layering

- Superior (sub)Layer supplies identifying information
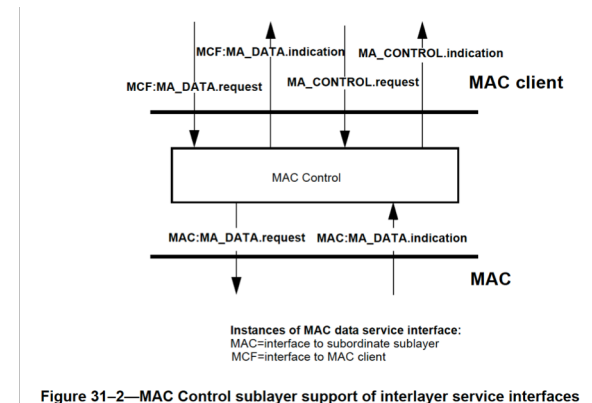
- Inferior (sub)Layer performs multiplexing and parsing

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Examples that Provide Guidance – OAM

Figure 57–1—OAM sublayer relationship to the ISO/IEC Open Systems Interconnection (OSI) reference model and the IEEE 802.3 Ethernet model
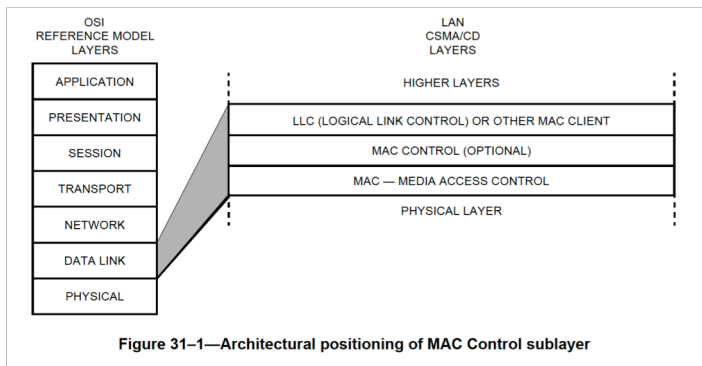

Figure 57–2—OAM sublayer support of interlayer service interfaces
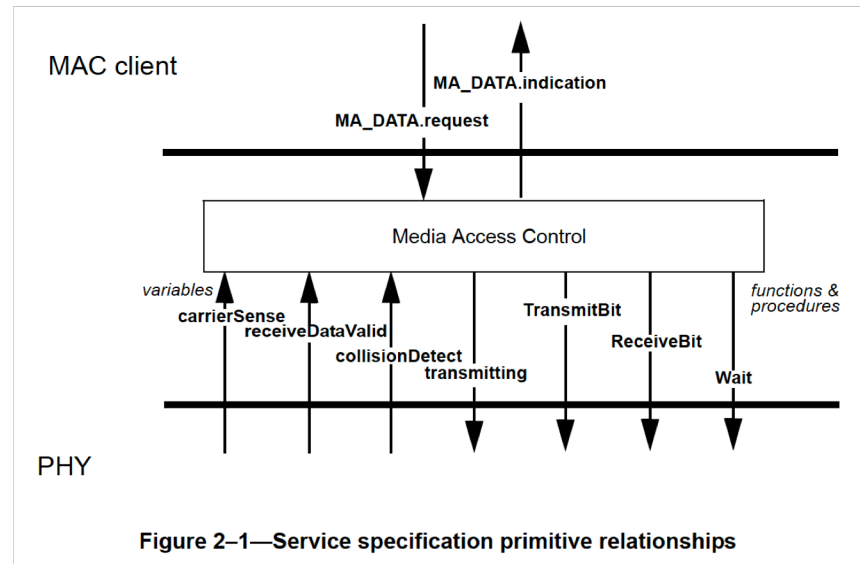
- OAM Falls in the Data Link Layer

- OAM is composed of two entities
  - OAM Client
  - OAM Sublayer

- OAM Client supplies (sa, code, flags, data)

- OAM Sublayer adds (da, slow protos ethertype, slow protos subtype 0x03)

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Examples that Provide Guidance – MAC Control

Figure 31–1—Architectural positioning of MAC Control sublayer

Figure 31–2—MAC Control sublayer support of interlayer service interfaces

- MAC Control Falls in the Data Link Layer

- MAC Control is composed of two entities

  - MAC Control Sublayer

  - MAC Control Client

- MAC Control Client supplies (da, opcode, request operand list)

- MAC Control Sublayer adds (sa, mac control ethertype)

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MAC Client

Figure 2–1—Service specification primitive relationships

- MAC Client asserts MA_DATA.request(da, sa, mac service data unit, fcs)

- MAC Client receives MA_DATA.indication(da, sa, mac service data unit, fcs, reception status)

UMT Layering
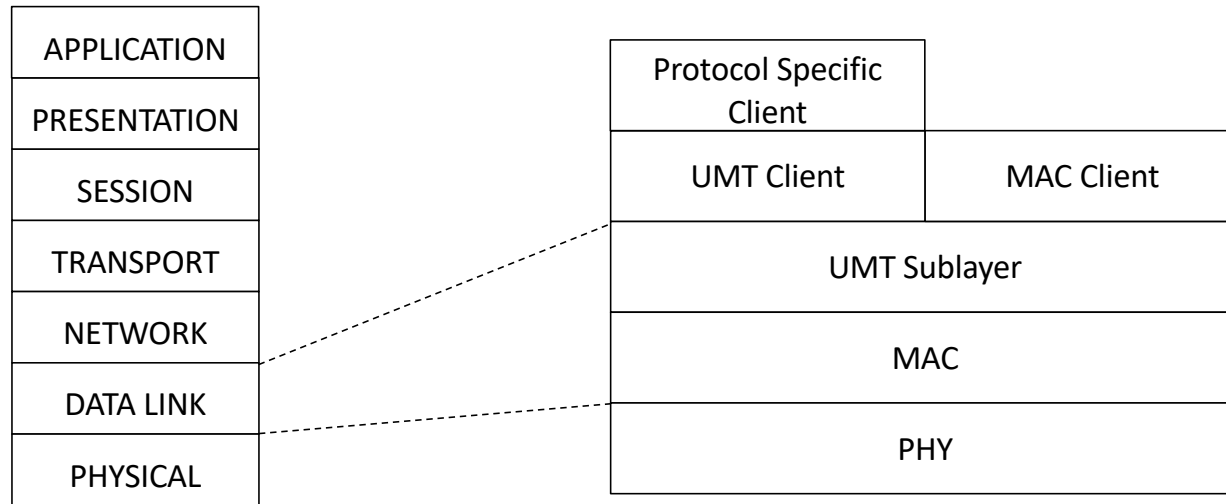
- UMT Sublayer sits just above the MAC
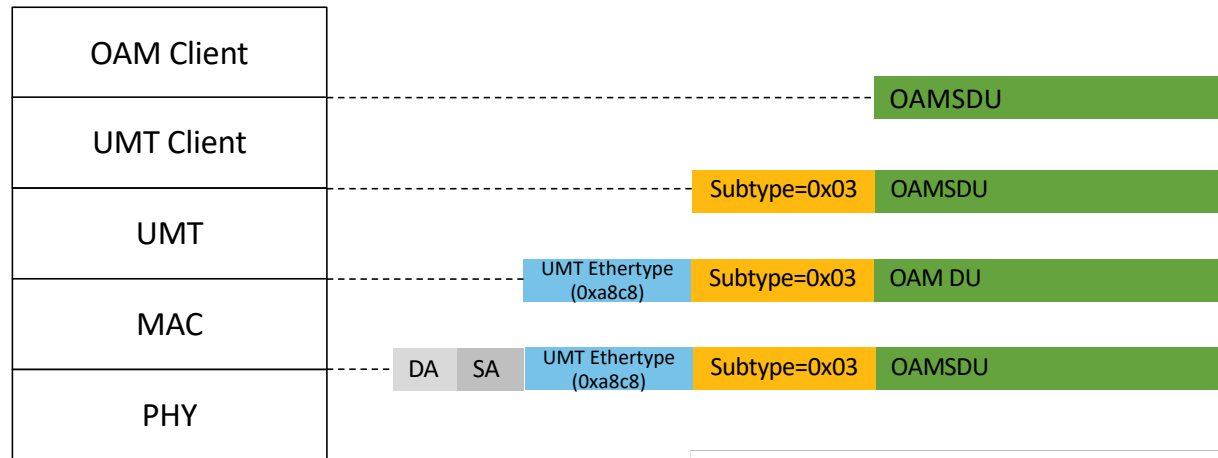
  – Enables UMT to be visible to many client protocols

- UMT Sublayer provides pass-through for MAC Clients not wanting UMT services

  – similar to OAM Sublayer and MAC Control Sublayer

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UMT Stack and UMTPDU Format

APPLICATION		
PRESENTATION		
SESSION		
TRANSPORT		
NETWORK		
DATA LINK		
PHYSICAL		

Protocol Specific Client
UMT Client
UMT Sublayer
MAC
PHY

UMT Client SDU

UMT Subtype	UMT Client SDU

UMT Ethertype (0xa8c8)	UMT Subtype	UMT Client SDU

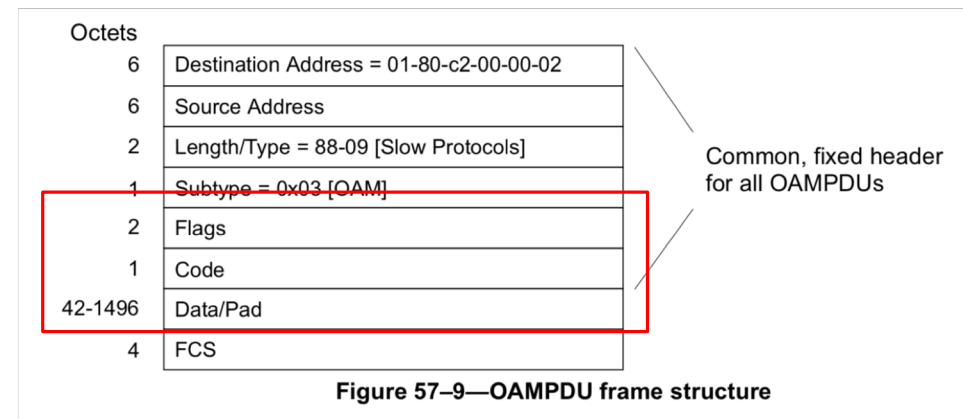| DA	SA	UMT Ethertype (0xa8c8)	UMT Subtype	UMT Client SDU
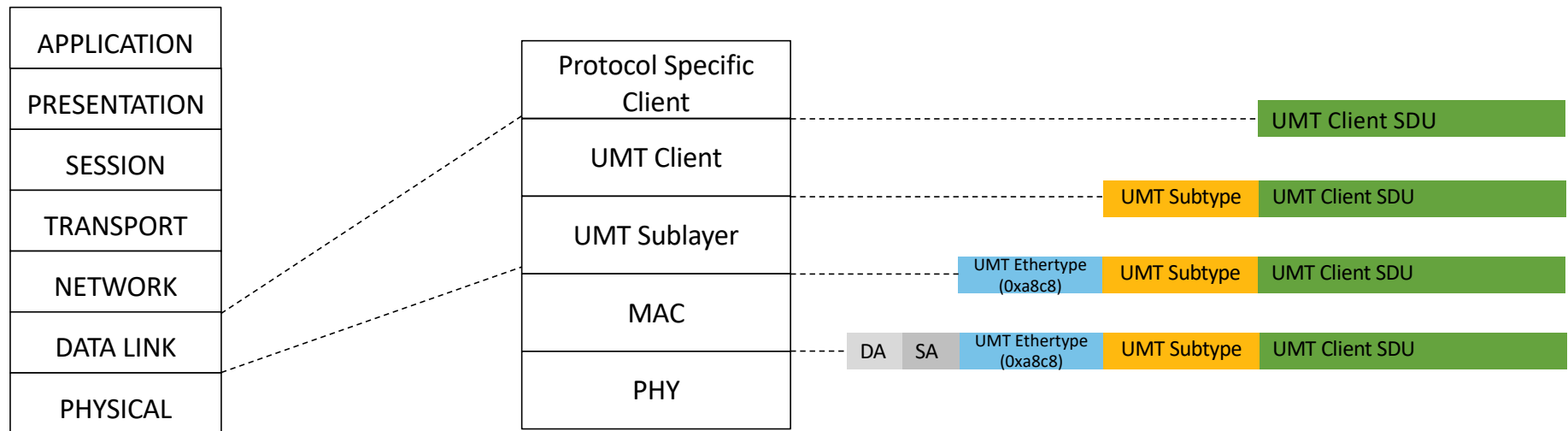
- UMT Sublayer supplies Ethertype (0xa8c8) to identify it at the MAC layer

- UMT Client supplies UMT Subtype to identify it in the UMT Sublayer
  - UMT Client will need to have knowledge of the Protocol Specific Client
  - This departs from the "Superior Layer provides identifying information"

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OAM in a UMTPDU

	OAM Client	OAMSDU
	UMT Client	Subtype=0x03	OAMSDU
	UMT	UMT Ethertype (0xa8c8)	Subtype=0x03	OAM DU
	MAC		
	PHY	DA	SA	UMT Ethertype (0xa8c8)	Subtype=0x03	OAMSDU

- OAMPDU: Is defined in IEEE 802.3 Clause 57

- OAMSDU: OAMPDU without the SA, DA, Slow Protos Subtype, Ethertype, and FCS

Octets		
6	Destination Address = 01-80-c2-00-00-02	
6	Source Address	
2	Length/Type = 88-09 [Slow Protocols]	Common, fixed header for all OAMPDUs
1	Subtype = 0x03 [OAM]	
2	Flags	
1	Code	
42-1496	Data/Pad	
4	FCS	

Figure 57–9—OAMPDU frame structure

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Thank You!
Additional Q&A