IEEE 1904.2 Universal Management Tunnel

Topology Elements

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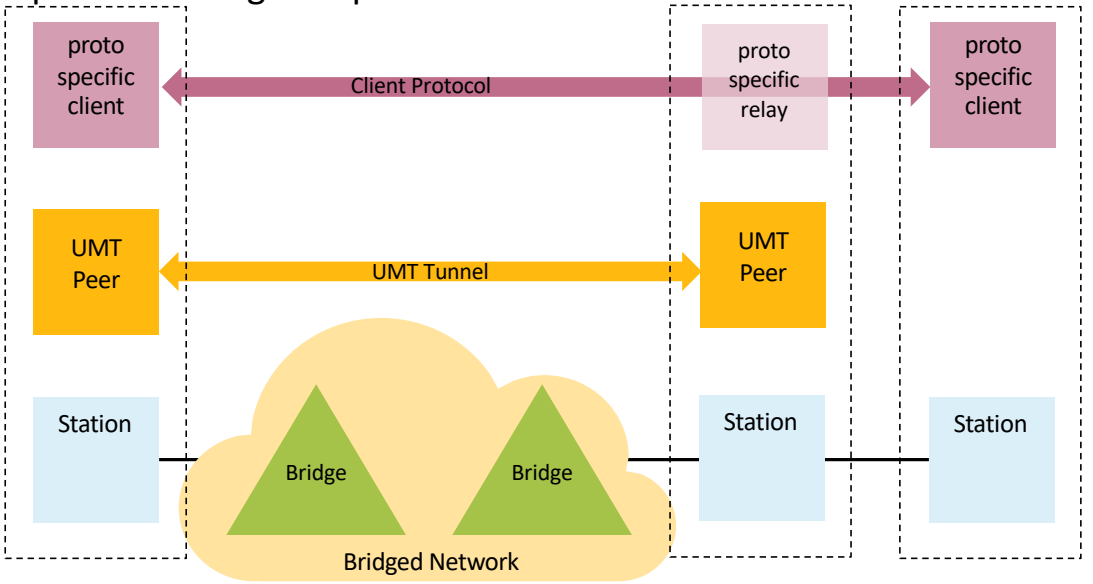
UMT Network Topology Elements

- *UMT Peer*: An entity implementing an instance of the UMT sublayer and UMT client, the combination of which causes a Protocol-Specific Client's data to be encapsulated in a UMTPDU and transmitted to another UMT Peer.
- *UMT Client*: A function in the IEEE 1904.2 model – definition TBD
- *UMT Sublayer*: A function in the IEEE 1904.2 model – definition TBD
- *Protocol-Specific Client*: The entity implementing a protocol being encapsulated in a UMTPDU



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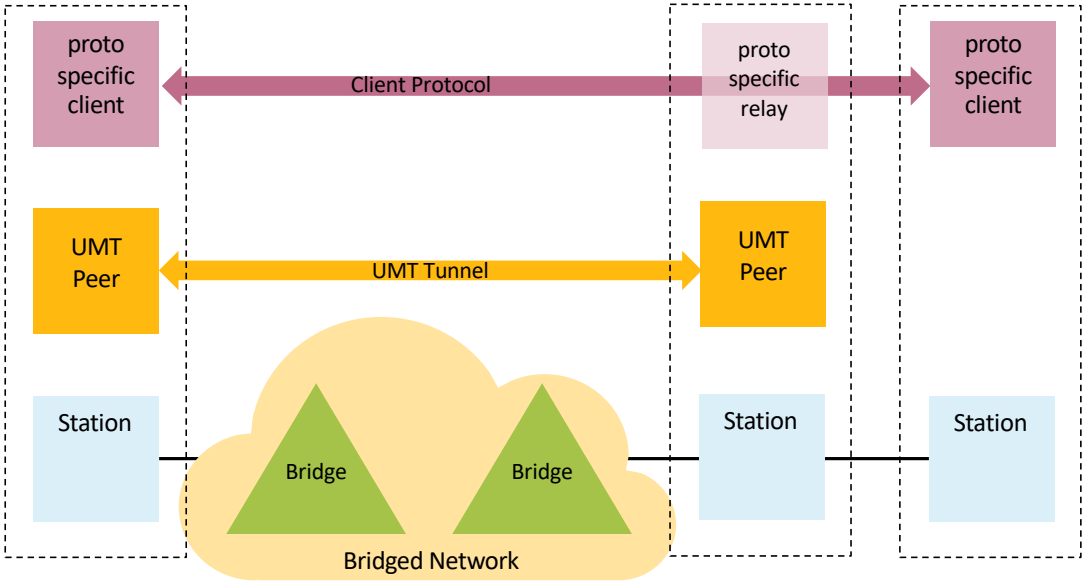
UMT Network Topology Elements

- *Bridged Network*: A general term referring to a Virtual Bridged Network and/or a MAC Bridged Network.
- *MAC Bridged Network*: A term describing a network that relays frames based on MAC-layer addressing. A MAC bridged network as defined in IEEE 802.1Q-2018.
- *Virtual Bridged Network*: A term describing a network that relays frames based on VLAN addressing. A Virtual Bridged network as defined in IEEE 802.1Q-2018.
- *VLAN Bridged Network*: A synonym for Virtual Bridged network as defined in IEEE 802.1Q-2018.



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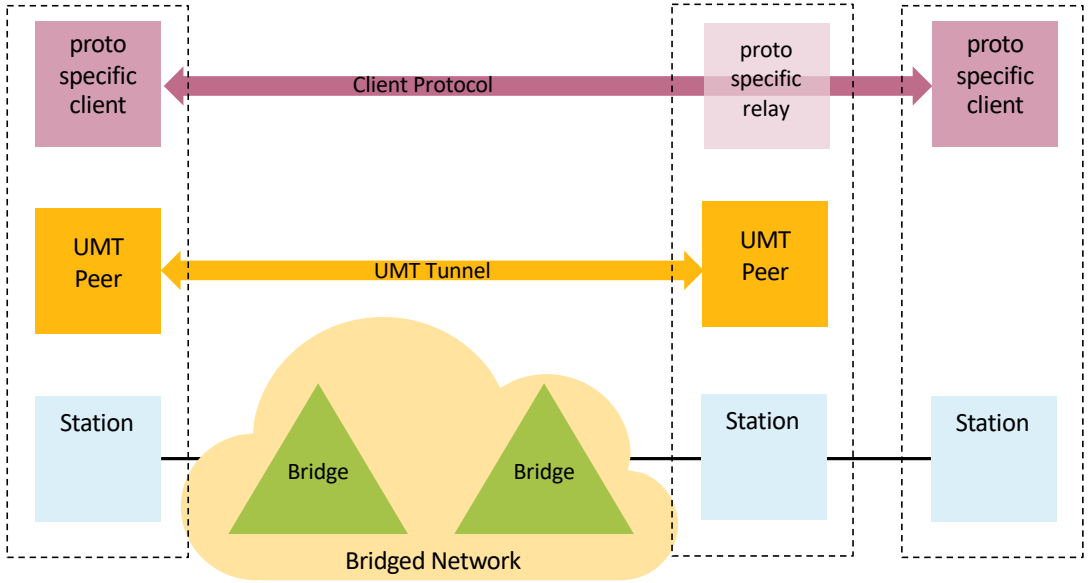
UMT Network Topology Elements

- *Protocol-Specific Relay*: A special case of a Protocol-Specific Client that relays the client protocol from a UMT Peer to a UMT-Unaware station.
- *Station*: As defined in IEEE 802 (end station), is a source and/or destination of link layer traffic
- *Client Protocol*: The protocol being encapsulated in a UMTPDU
- *Bridge*: As defined in IEEE 802.1Q-2018, a MAC bridge or VLAN bridge



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Additional Vocabulary

- *Universal Management Tunnel (UMT)* –
  - The protocol defined by IEEE 1904.2;
  - also refers to an instance of the protocol operating between two implementations of the IEEE 1904.2 protocol
- *UMT Protocol Data Unit (UMTPDU)* – The unit of UMT data sent across a network
- *Service Data Unit (SDU)* – The unit of data carried as payload in service-providing protocol (inferior layer/sublayer in a stack) for a client protocol (superior layer/sublayer in a stack)
- *Protocol Data Unit (PDU)* – The unit of data for a service-providing protocol
- *UMT-Unaware*: Used to describe an entity (station) that does not implement an instance of the UMT sublayer+client, but has a protocol entity that uses a UMT tunnel
- *UMT-Blind*: Used to describe an entity (typically a bridge) that forwards a UMTPDU with no awareness of it being a UMTPDU

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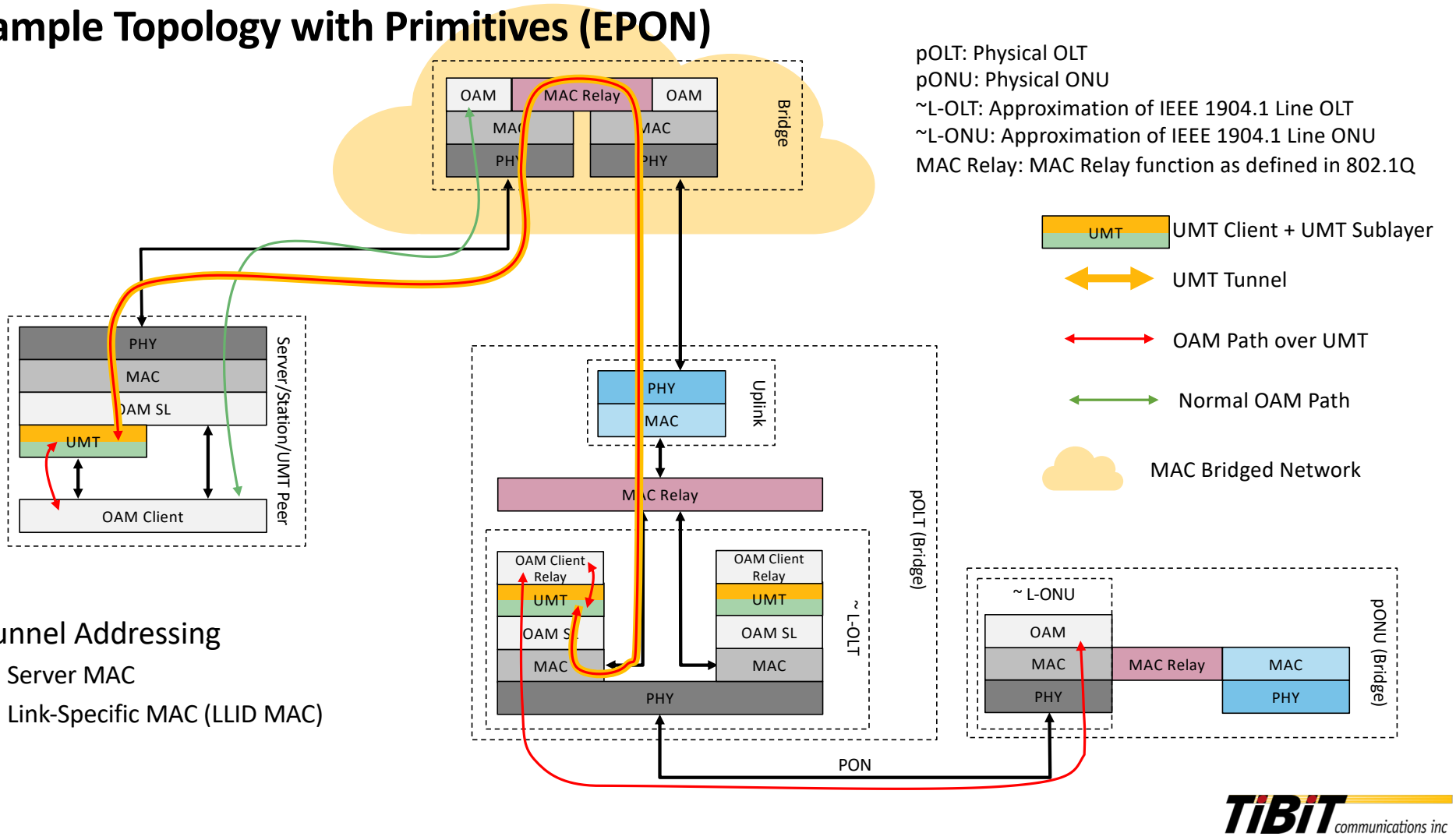
Example Topology with Primitives (EPON)



pOLT: Physical OLT
pONU: Physical ONU
~L-OLT: Approximation of IEEE 1904.1 Line OLT
~L-ONU: Approximation of IEEE 1904.1 Line ONU
MAC Relay: MAC Relay function as defined in 802.1Q

- Tunnel Addressing
  - Server MAC
  - Link-Specific MAC (LLID MAC)

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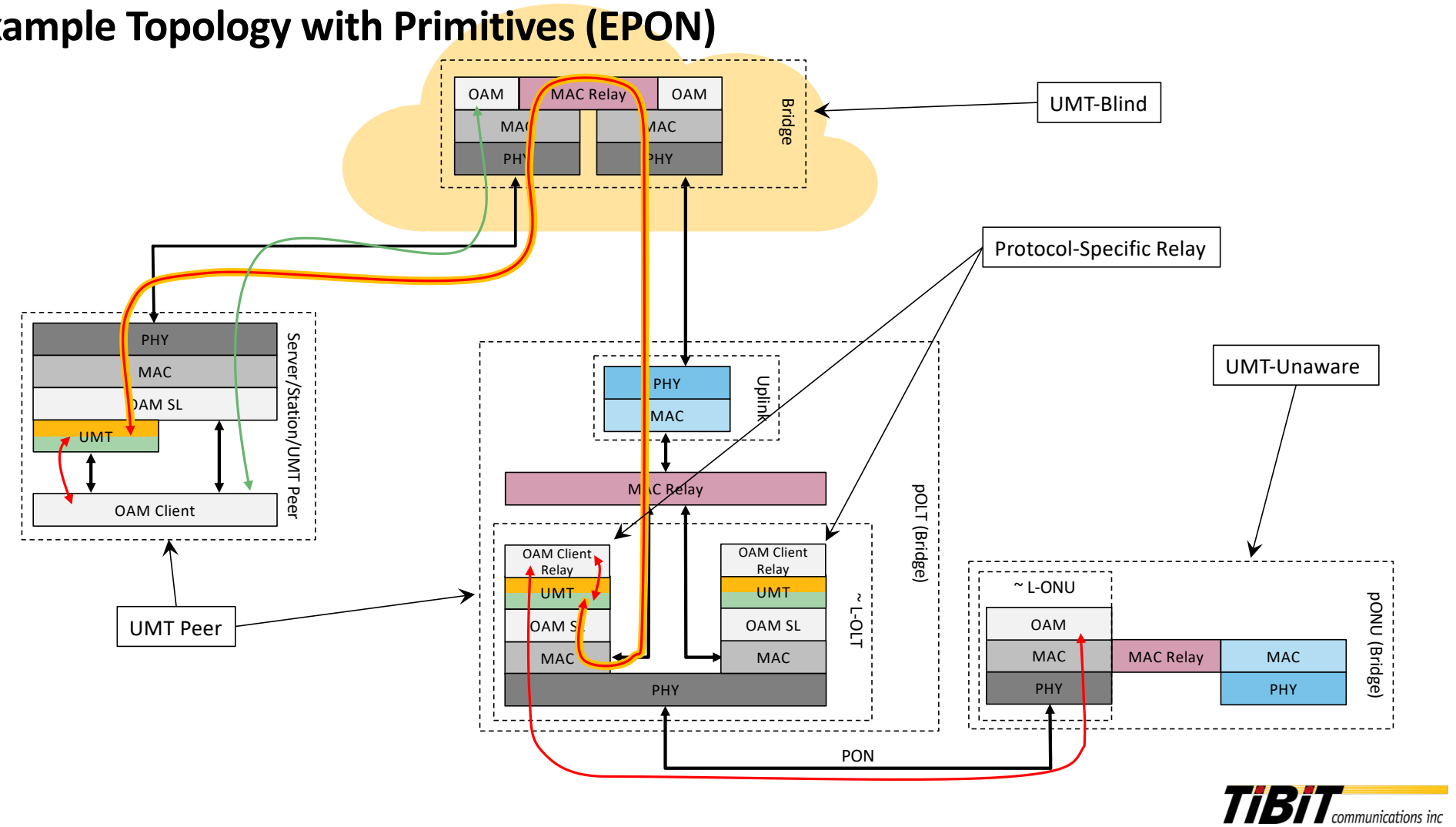
Example Topology with Primitives (EPON)



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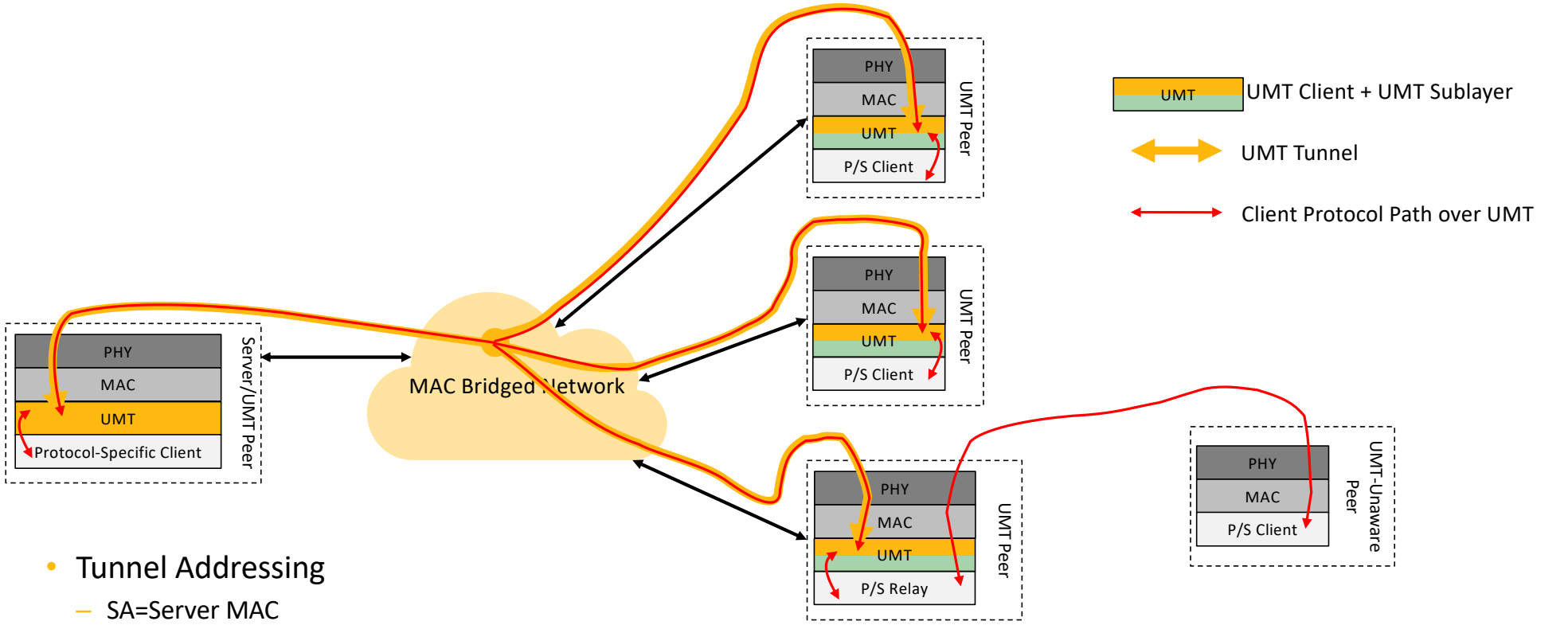
Multicast/Broadcast UMT



- Tunnel Addressing
  - SA=Server MAC
  - DA=Multicast or Broadcast MAC

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Recommendation

- Accept the vocabulary in this presentation as the basis for describing the operation of UMT in IEEE 1904.2

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Thank You!
Additional Q&A

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