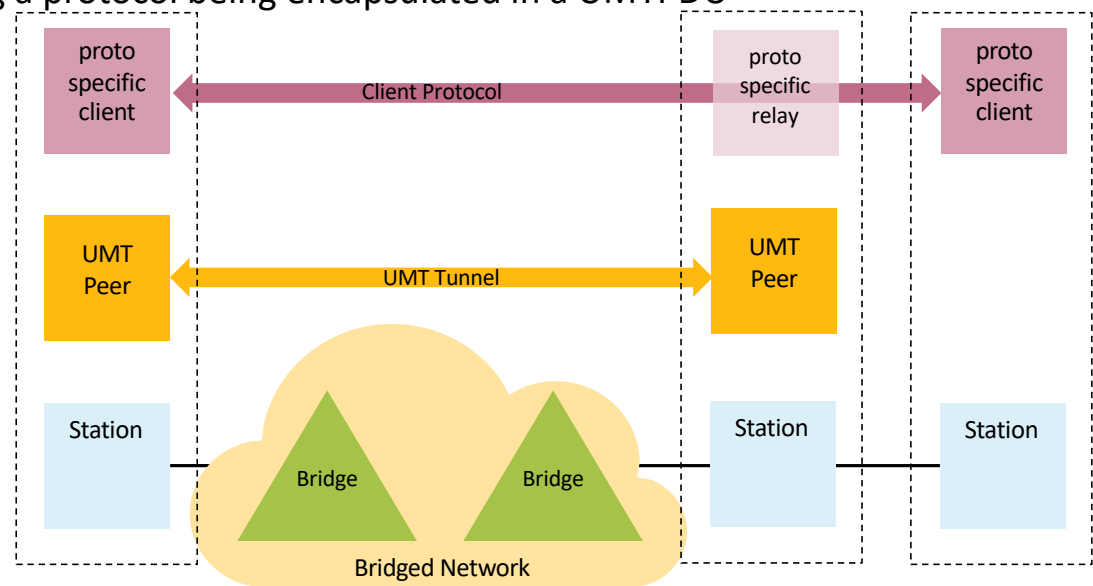


# IEEE 1904.2 Universal Management Tunnel

## Topology Elements

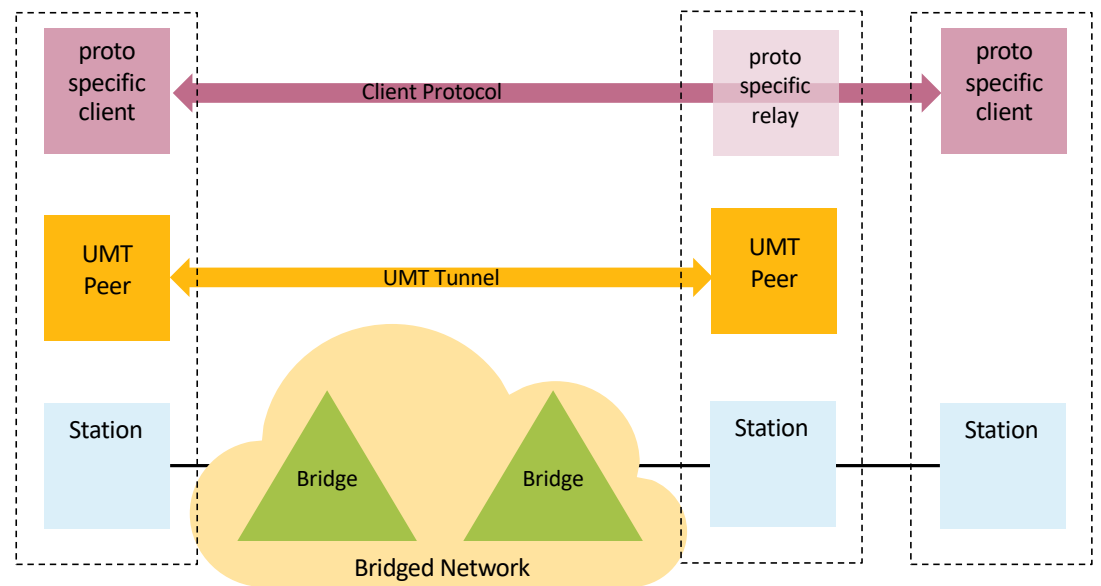
## UMT Network Topology Elements

- 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



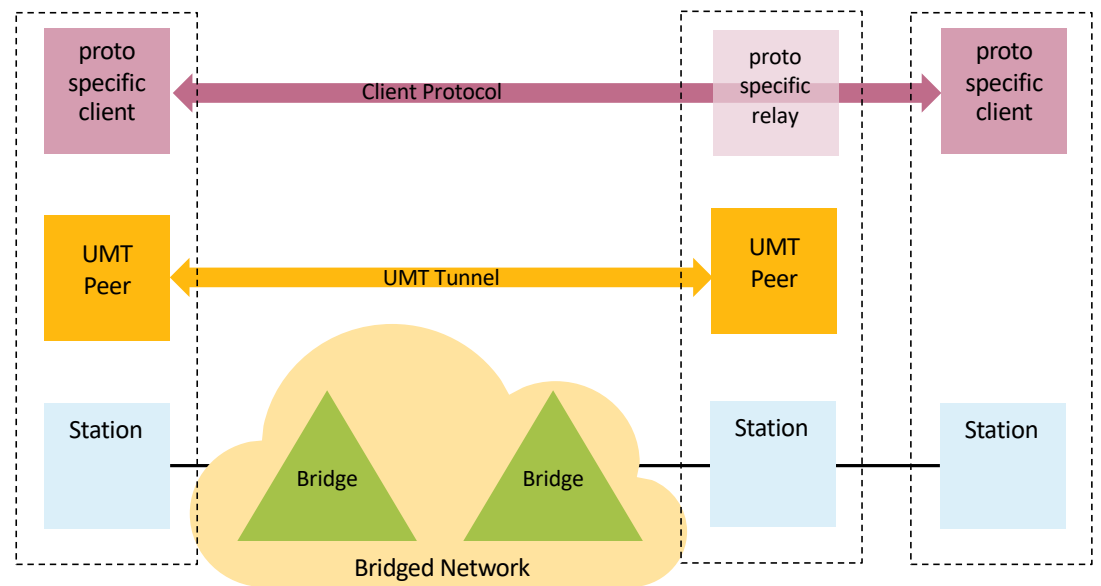
## UMT Network Topology Elements

- 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.



## UMT Network Topology Elements

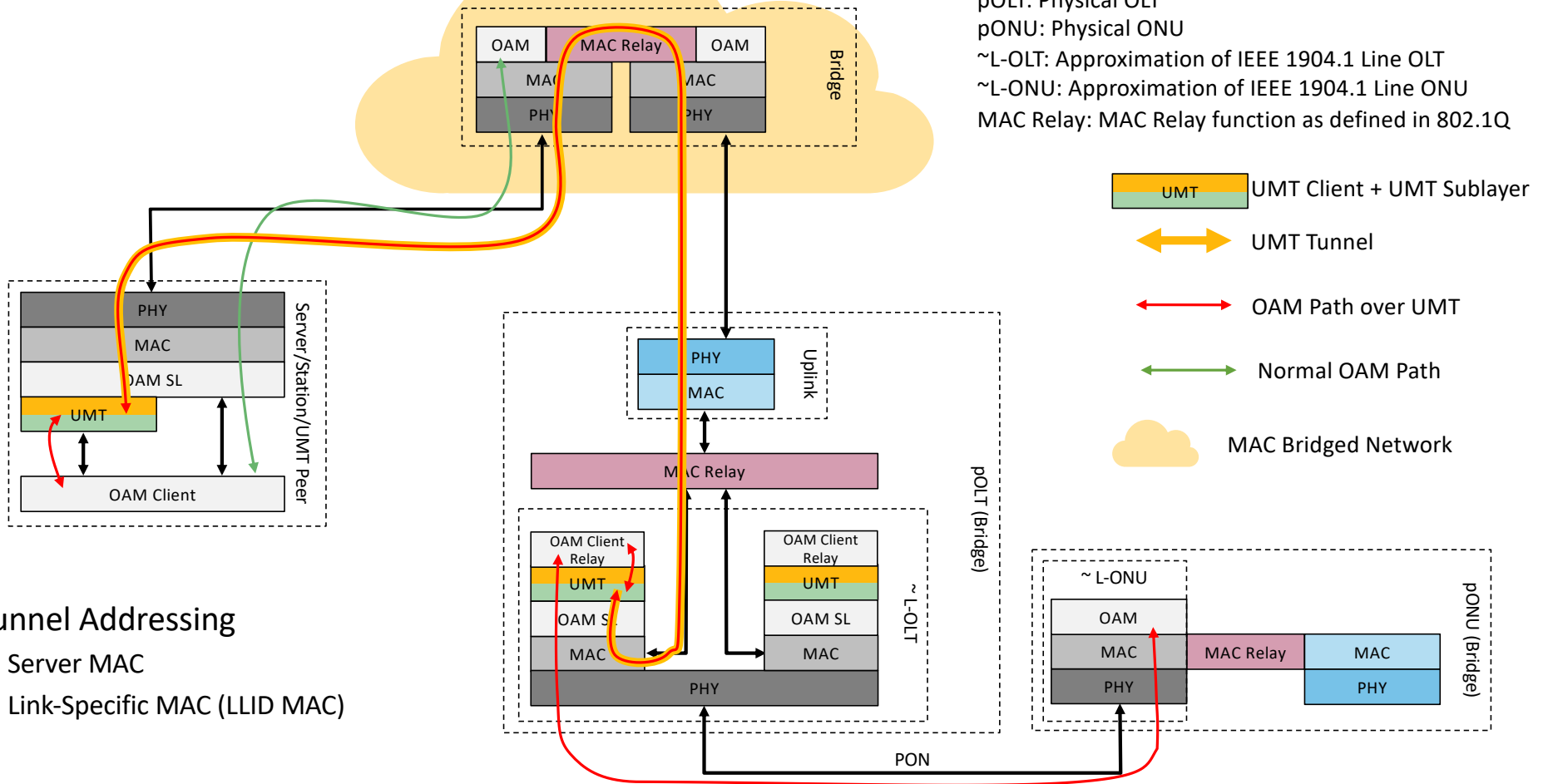
- Protocol-Specific Relay: A special case of a Protocol-Specific Client that relays the client protocol from a UMT Peer to a UMT-Unaware station.
- Station: As defined in IEEE 802 (end station), is a source and/or destination of link layer traffic
- Client Protocol: The protocol being encapsulated in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



## 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

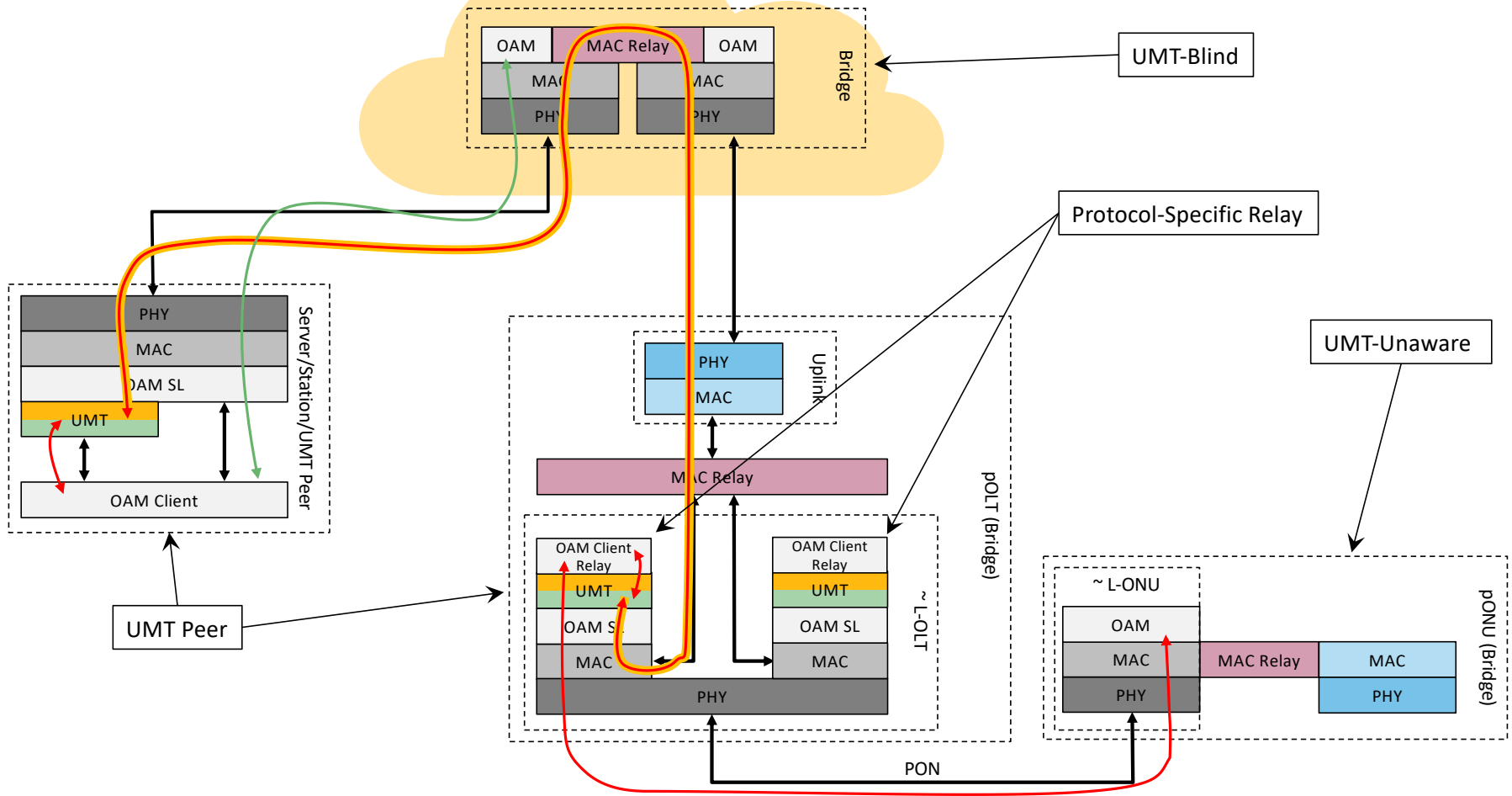
# Example Topology with Primitives (EPON)



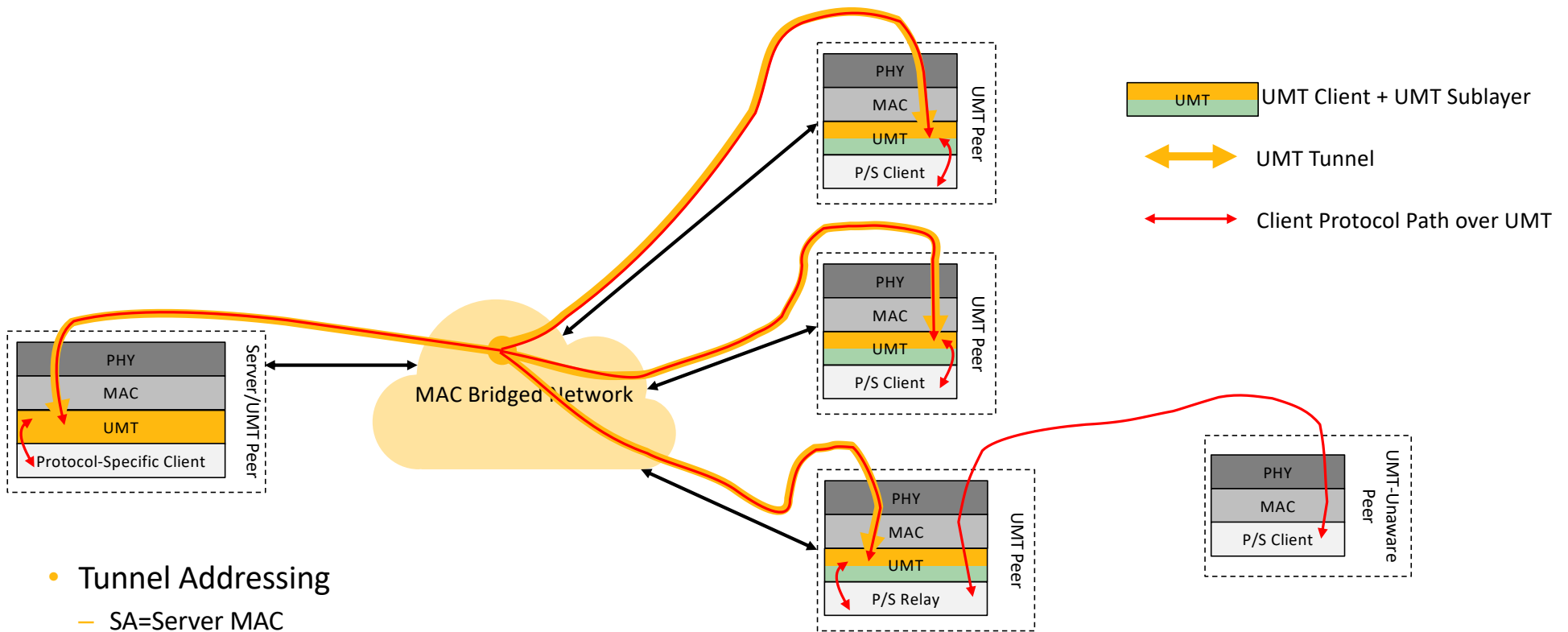
pOLT: Physical OLT  
 pONU: Physical ONU  
 ~L-OLT: Approximation of IEEE 1904.1 Line OLT  
 ~L-ONU: Approximation of IEEE 1904.1 Line ONU  
 MAC Relay: MAC Relay function as defined in 802.1Q

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

# Example Topology with Primitives (EPON)



# Multicast/Broadcast UMT



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



## Recommendation

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

**Thank You!**  
**Additional Q&A**