Review and Progression of 802.1AB-d1.0

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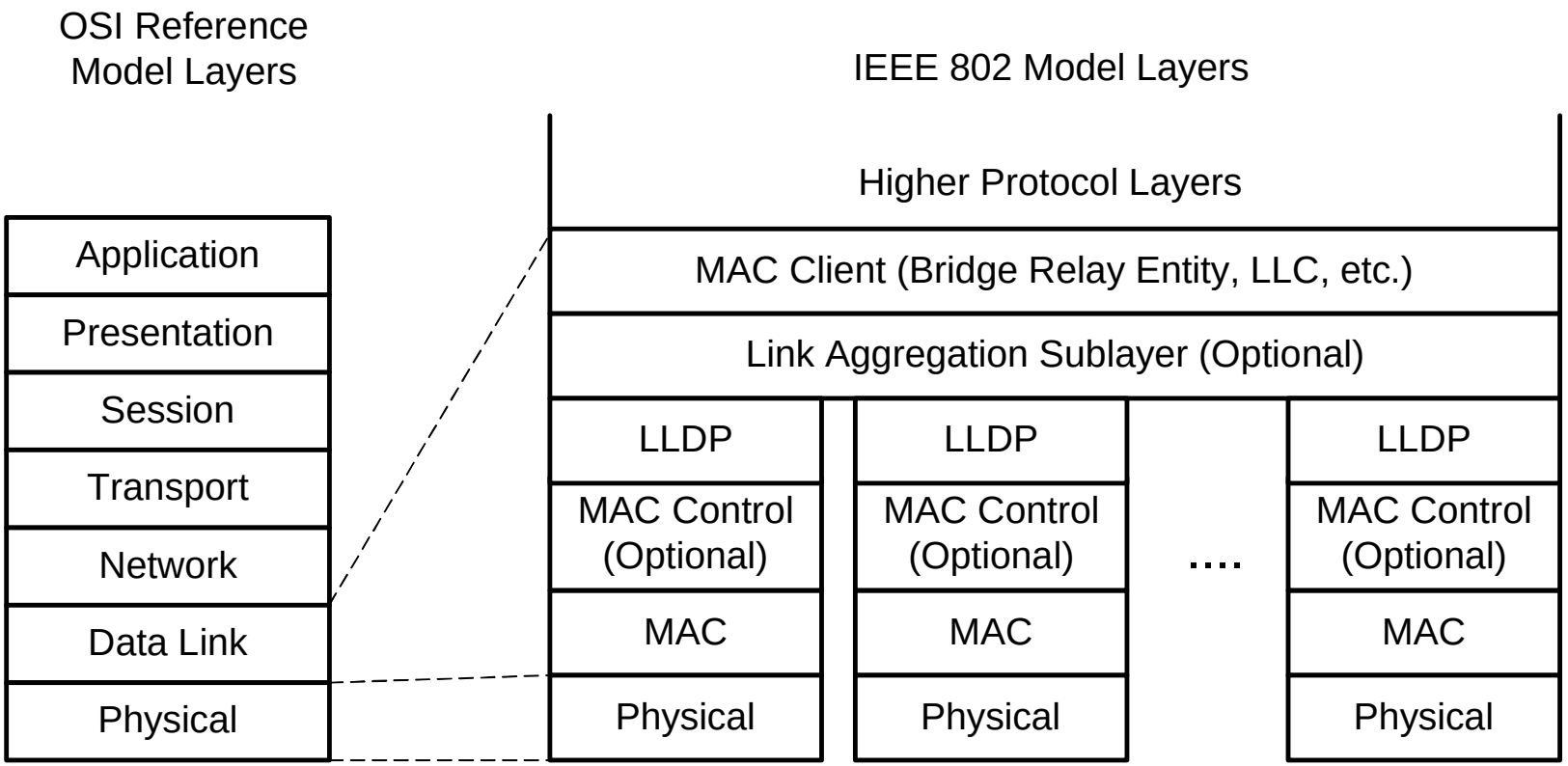
Interesting changes since d0

- Updated scope and purpose based upon recommendations from New Orleans
  - Exact text from PAR, plus further itemized descriptions
- Incorporated single architectural diagram
- Updated LLDP Frame Format per 802.1 style
  - Consistent with LACP and slow-protocol format
- Separated capabilities and current capability configuration vectors
- Modified 802.3 Link-duplex TLV to be consistent with capability and capability configuration separation.
- Revised and expanded frame transmission and reception clauses.

- Issues and proposals to discuss…

Architectural Diagram



Discussion #1: Architecture Diagram

- Diagram shows where protocol fits with respect to link aggregation, but doesn't depict controlled vs uncontrolled port.
- Consideration of running over uncontrolled port
  - Advertising information that could be valuable to 802.1X authentication procedure (e.g. Network Service Identifiers)
  - Alternatively, it could be part of 802.1X in the Req/ID exchange.
  - Why do we want to mandate that this run on the controlled port only?

Issue #2: Principals of Operation are still lite

- Currently covered at a high level
  - Link layer advertisements of info to populate topology MIBs
  - Periodic one-way protocol
  - Various types of information advertised
  - Time-to-live component in frames
  - Non-goals of being a configuration or control protocol
  - Possibility to discover configuration inconsistencies
- Areas for improvement
  - Topology considerations (e.g. forwarding vs non-forwarding devices (repeaters vs bridges/routers))
  - Advertising multiple capabilities and the current status of the capabilities.
  - Further description of the handling of received data and the operation of the object storage managers (e.g. PTOPO MIB)
  - The ageing and removal of stale information via time-to-live mechanism
  - Shutdown process

Issue #3: 802.3 Frame Format Only

- LDPDU is defined for 802.3 only, but document indicates scope covers all 802 media.
- Slow protocols is defined for 802.3 only today
- Questions:
  - Is defining frame format for ring media sufficient?
  - What about others (e.g. 802.11)? Can we do what we did in clause 7 of 802.1X?
  - What else must be done to define slow protocols SAPs for other media?
  - Can we punt other media as done by slow protocols in 802.3 clause 43? (I think this violates the scope).

Issue #4: Max Frame Size

- Slow protocols ‘recommends’ a max PDU size of 128 octets, we have TLVs that can be 256 octets.
- Choices:
  - Select some max, less than media max that accommodates needs.
  - Allow LDPDUs to utilize media max frame size
- Recommendation:
  - Allow LDPDUs to utilize the media max frame size.
  - Specify exact values in figure 8-1

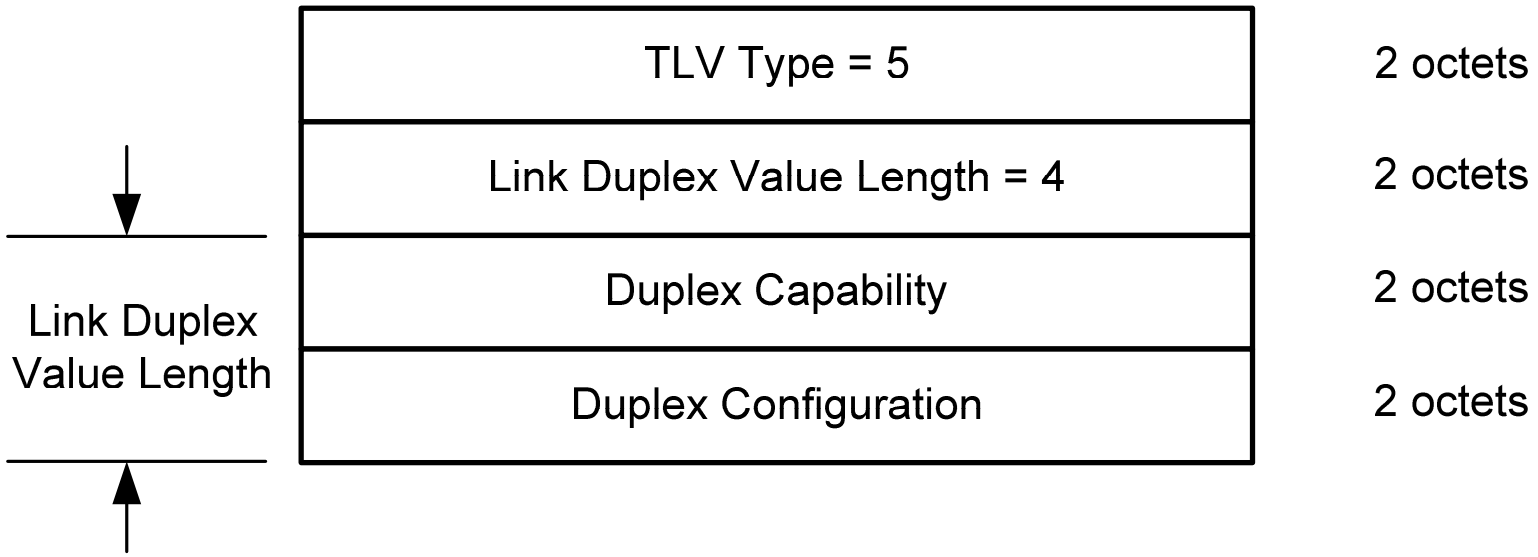
Discussion #5: TLV type definitions

- Current TLV types distinguish mandatory verses optional. Mandatory types are lower values.
- Should we separate and reserve space for future mandatory definitions or let new values be defined sequentially as needed?
- Recommendation:
  - Define as needed. Range checking isn't that critical to implementations.

Issue #6: Mandatory Address TLV

- Current text is unclear on including multiple address TLVs in a single PDU.
  - Indicates that mandatory TLVs must only be included once
  - Indicates that devices may have multiple addresses to advertise, and if none available, always use MAC address
- Recommendation:
  - Clarify that multiple address TLVs may be sent, and that at least one must be sent.
  - Clarify that when multiple exist, but are all included, the ones included should be the ones preferred by the device, or the ones that offers the best management capability.
  - Clarify that the MAC address must only be included if no higher layer addresses are available.

Discussion #7: Duplex TLV changes



- Added both capability and current status words
- Values include:
  - Half-duplex
  - Full-duplex
  - unknown

Issue #8: Capabilities vector incomplete

- Current vector is a mix of status and capability. New philosophy is to have two vectors: device capabilities and status of capabilities
- A capability being indicated provides a hint on how to manage the device for that capability (i.e. MIB reference)
- The status of a capability provides a hint about a possible manual configuration inconsistency
- Current vector includes:
  - PortInAggregation, PVIDEnabled, PortandProtocolPVIDsEnabled, TaggedVLANsEnabled, L2Forwarding, SourceRouteBridging, SpanningTreeEnabled, L3Forwarding, L3MulticastForwarding, HigherLayerForwarding, NonForwardingStation

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Proposed capability vector

Capability	**MIB or Std Reference**
Repeater	802.3 clause x, RFC 2108
Link Aggregation	802.3 clause 43, clause 30c
Bridge	802.1?
Spanning Tree	802.1D
Rapid Spanning Tree	802.1w, draft-bell
Multiple Spanning Tree	802.1s, draft-bell
Access Point	802.11?
Port VLANs	802.1Q, RFC 2674
Port and Protocol VLANs	802.1v
Multiple FDBs	802.1Q clause xxx
IP Router	IP Router RFC ???
IP Multicast Router	IP Multicast RFC ???
IP NAT	RFC ???
???	

Issue #9: Structure for Vendor TLV

- Still need to put some structure on the TLV so it can be stored and indexed from a MIB.
- Proposal:
  - Change reserved field to a sub-type field, allowing 256 vendor specific TLVs.

Other immediate document work items

- Incorporate text, state machines and variables to manage the objects received via the protocol. Use text and algorithms defined in PTOPO MIB as the basis
- MIBs updated or replacement with a placeholder before running 1st ballot.