802.3 SPMD SG:
PLCA Node ID Allocation Strawman

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Background

- Approved Objective 17

  “Specify an optional PLCA node ID allocation method.”
- Simplicity goals
  - Limit technical complexity
  - Reuse existing protocols/techniques

Outline

- Discover mixing segment membership (MAC address list) using LLDP (802.1AB)
- nodeId=0 does nodeId allocation
- nodeId allocation method outside scope
- nodeID assignment distribution using LLDP

Preconditions (more work to come)

- PLCA enabled
- NodeId=0 assigned

NodeId=0

- Uses LLDP to discover mixing segment members.
  - LLDP triggers on change or timeout
  - LLDP has explicit support for “shared media LANs”
- On change of membership (includes startup)
  - assigns node numbers to stations
    - E.g., simple assignment based on sorting MAC address
  - distributes assignments
    - New LLDP TLV, list of MAC Address/NodeId pairs

NodeId!=0

- Participates in LLDP member discovery
- Listens for nodeId assignment distribution.
- If assigned nodeId changes, update aPLCALocalNodeID/local_nodeID
  - Do we need to change plca_en first or does “148.4.4.1 PLCA Control state diagram already deal with local_nodeID changes??

What goes into 802.3da?

- New LLDP TLV added to Clause 79
  - List of MAC Address/nodeId pairs
- Review other 802.3 users of LLDP as pattern for additional changes needed:
  - 78.4 Data Link Layer capabilities
  - 145.5 Data Link Layer classification

Summary

- Use LLDP to:
  - discover mixing segment membership
  - distribute nodeId assigments
- nodeId assignment done by station with nodeId=0
  - assignment algorithm is out of scope

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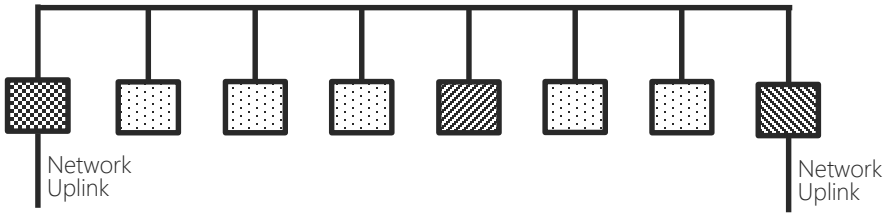
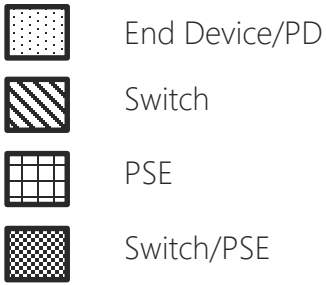
SPMD Topology – ???





- This topology is