802.3at Layer 2 (DLL) and Management Ad-hoc Chair's Report

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Topics

- Containment
- LLDP <--> Clause 30
- Naming
- Clause 30 updates
- State Machine
- Interaction with 802.1
  - Reviewed correspondence with 802.1
  - Preparation for joint meeting with 802.1

Top-Down Approach

- Reviewed options of where material can sit
- Reviewed 802.1 and 802.3 frameworks to understand background and differences
- Based on the constraints, reached consensus on location
- Realigned framework to be consistent with document containing the material
  - Containment, naming, etc.
- Reexamined protocol and state machine behavior
  - Including feedback from some 802.1 members and comments/issues caused by current complexity
  - Consensus to return to advertise nature of the LLDP protocol, realign with PSE/PD historic relationship and simplify machine
- Implemented changes to text based on consensus
  - C30 and C33

Review of .1 Correspondence

- LLDP 802.3 Subtypes are in 802.1AB document
  - .3at TLV would require additional subtype under.3 OUI
  - Current .3 TLVs are in 802.1AB doc
  - Current .3at TLV is in .3at draft
- Subtypes are typically assigned at SA Ballot
  - Potential scheduling issues
- Coming out of the May meeting we had requested a block of subtypes for .3
  - One of which would be used for .3at
  - Balance reserved for other projects like .3az and .3ba
  - Sent our draft for 802.1 to review

Summary of .1 Feedback

- Feedback was not an 802.1 position
  - Opinion of 802.1 Chair and 802.1ABREV Editor
- Feedback consisted of 3 parts
  - Code-points are assigned at SA Ballot (not prior)
  - Documenting the TLVs
    - .3 TLVs today are 2 parts definition and MIB module
    - .3at only contains generic definition and not the SNMP MIB
  - Proposed that all .3 TLVs (definition and MIB), either:
    - Remain in 802.1AB
    - Moved over to 802.3
- L2 State Diagram
  - Stateful use of LLDP: Currently advertise only protocol
  - Concern with the use of ACKs and NACKs

Joint Meeting with 802.1: Options

- We looked at 4 options
  1. Everything in Dot1, tied to AB-REV
  2. Move everything into 802.3
  3. New OUI for 802.3
  4. 802.1 assigns a block of subtypes under the existing OUI to 802.3 to establish an RA within 802.3
     - Subtype assignment to projects at the appropriate time (e.g. Sponsor Ballot)
     - Managed by 802.3 (802.3 Chair or his designated appointee)

Joint Meeting with 802.1: Option 1

- Everything in Dot1, tied to AB-REV
- Advantages
  - Monolithic, same "spot" as before
  - Extension to existing MIB
  - No LoA issues (like .1AX/3ax)
- Disadvantages
  - Timeline
  - SNMP based, MIB only (not 802.3 "Generic" style)
  - Future Maint involves 2 docs/2 WGs/2 PARs

Joint Meeting with 802.1: Option 2

- Move everything into 802.3 (with, perhaps, 802.1 holding back a block for themselves)
- Advantages
  - Monolithic, same "spot" as before in .3.
  - Control our own destiny (i.e. control issuance of our own sub-types)
  - 802.3 "Generic" style
  - Single PAR/Doc/WG for Maint work
- Disadvantages
  - LoA issues (just like .3/.1ax)
  - Timeline/scope (.AB-REV PAR/.3at PAR)
  - Work to convert existing SNMP MIB to .3 Generic style.
  - Would leave LARGE deprecated chunk in the middle of 802.1 MIB

Joint Meeting with 802.1: Option 3

- New OUI for 802.3
- Advantages
  - Monolithic, same "spot" as before.
  - Control our own destiny (i.e. control issuance of our own sub-types)
  - 802.3 "Generic" style
  - Single PAR/Doc/WG for Maint work
  - No LoA issues (like .1AX/.3ax)
- Disadvantages
  - .3at has to do new clause for 802.3
  - How would 802.1 feel about it?
  - Creates 2 address points for what should be the same problem/objective

Joint Meeting with 802.1: Option 4

- 802.1 assigns a block of subtypes under the existing OUI to 802.3 to establish an RA within .3
- Advantages
  - Control our own destiny (i.e. control issuance of our own sub-types)
  - 802.3 "Generic" style
  - Single PAR/Doc/WG for Maint work
  - No LoA issues (like .1AX/.3ax)
- Disadvantages
  - Split MIB

Conclusions for Upcoming Joint Meeting with 802.1 (Denver)

- Based on analysis, proceed with Option 4 for now
- Suggested discussion flow for joint meeting
  - Present 4 options to 802.1 and explain rationale for .3at recommendation
  - Remove subtype from draft till SA Ballot
  - Report on changed state machine structure to remove ACK/NACK business
- Other related discussion
  - Work with 802.1 leadership offline to provide a heads-up on July discussion
  - Ask what 802.1 AVB is doing for LLDP

Proposed Containment and Naming

- D3.0 Containment and naming model is .1 style
  - Confusing to 802.3 reviewers as it is different than the model used in 802.3
  - Assuming option 4, does not make sense to have mixed styles in 802.3
  - Containment was not documented in D3.0
- Consensus to change to a .3 centric model
  - Add a PD containment in parallel with the PSE
    - “2 level box”
  - Append existing PSE object. Create a PD object
  - Create DLL PSE & PD Packages and PD Basic
  - Removed local/remote designation
    - Confusing as there were local remote packages and objects
    - Attributes descriptive. Mirrored attributes preceded “Mirrored”
      - aPDRequestedPowerValue and aMirroredPDRequestedPowrValue

State Machine

- LLDP is an advertise *only* mechanism
  - Idea is whatever is in one MIB will be reflected to a copy (mirrored) in a MIB on the other side of the link
  - Was not intended for a request-response protocol
    - Hence complexity with collisions in our machines
- Same functionality can be achieved without ACK/NACK. Consequences
  - Simplification of state diagrams and variables
    - Init, Running, PSE Realloc, PD Request and LOC
    - Machines mirror each other but have different arcs

REVIEW DRAFT CHANGES

C30 and C33.6, C33.7 and C33.8

Motion 1

- Move that the TF adopts the direction and recommendation as described in diab_1_0608.pdf with respect to 802.3at / 802.1 discussion topics for the July Denver joint meeting

- M: Diab S: Thompson
- Y:21 N:0 A:0
- Tech. (Passes)

Motion 2

- Move that the 802.3at Task Force adopt the text for the DLL and MGMT sections as presented in D3.1_8023at-30_v01_wwd_3.fm and landry_DLLdiags_v03_wwd.fm for inclusion in overall draft D3.1.

- M: Diab S: Thompson
- Y:16 N:0 A:0
- Tech. (Passes)