

# 802.1AX -- Link Aggregation:

## Editor's Report: March 2018

Version 1

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# Preparing 802.1AX-Rev-~~d0.2~~<sup>d0.3</sup>

- AX-Rev-d0.1 went to Task Group ballot in June and comment resolution in July
  - Major changes were in Clause 6 (LACP) and specifically relating to Conversation Sensitive Collection and Distribution (CSCD).
  - Clause 9 (DRNI and DRCP) was mostly untouched.
- AX-Rev-d0.2:
  - Incorporates comment resolutions from first Task Group ballot.
  - Major changes in Clause 9 (DRNI and DRCP)
    - The rest of this presentation summarizes those changes
  - No changes yet to MIB or PICS
    - Do this for Working Group ballot
  - Plan to have second Task Group ballot shortly after ~~November~~ **March\*** meeting (?)

\* This is getting embarrassing!

# Review of January's Key Decisions

1. Eliminate the Three Portal System option
  - Limit Portals to 1 or 2 Portal Systems.
  - Complete overhaul of all DRCP variables, functions, and state machines.
  - Based on this, abandoned draft 0.2 and started draft 0.3 with a new Clause 9 (DRNI and DRCP).
  - So much of Clause 9 has changed that it will not have explicit strikeout and underlined text to show changes; it just has the new text.
2. Update LACP state machines based on Mick's proposal

<http://www.ieee802.org/1/files/public/docs2018/ax-seaman-lacp-suggestions-0118-02.pdf>

# New Gateway Selection

- Going to two Portal Systems instead of three permitted:
  - Replacing the **aDrniConvAdminGateway[]** array
    - A 4096 entry array, indexed by Gateway Conversation ID, where each entry is a list of Portal System Numbers in the order of preference, highest to lowest, for the corresponding preferred Portal System's Gateway to carry that Conversation.
  - With the **Home\_Gateway\_Preference** vector
    - A 4096 bit Boolean vector
  - This change means the entire vector can be exchanged in DRCPDUs, rather than just a MD5 digest of the array.
    - Benefit is that this ultimately allows moving a Conversation from one Portal System to the other without disrupting the traffic on Conversations.

# Biggest question for now:

- What do I do with the DRNI MIB?
  - Deprecate big chunks?
  - Re-root?
  - Other options?

(By the way, not planning on updating the MIB for draft 0.3, but can be working on it while draft 0.3 is going through ballot and comment resolution.)

Slides from January ...

# Three Portal Systems?

- History
  - Support for three Portal Systems proposed as a way to enable hot-swap of one Portal System while always having at least two Portal Systems operational, so have system level resiliency even during maintenance intervals.
  - Support for three Portal Systems accepted as a “stretch” objective for the project: Include in the standard if it is not too complex.
- Feedback
  - Informal discussions with Carrier Ethernet Service Providers at the MEF Forum conclude that they would probably not use the three Portal System option, and would be satisfied having a single Portal Service operational while the other was undergoing maintenance.
  - “Too complex” is a subjective judgement. At this point it still appears that it is possible to get the three Portal System option to work\*, however verifying correct operation (both in the standard and in testing an implementation) requires significantly(!!!) more work than just two Portal Systems.

# Three Portal Systems? (cont.)

- More Feedback:
  - \*Mick has done some analysis with a preliminary conclusion that correctly forwarding data frames between three Portal Systems may require labelling the frames as Up/Down frames and/or labelling with an association to a specific logical IPL (so a logical ring can be supported on a physical chain).
  - Rationale for continuing development of the three Portal System option is based on “momentum” rather than a strong desire for the feature. Informal discussions at 802.1 meetings conclude that interest in the feature ranges from “don’t care” to “absolutely don’t want it”, but not “absolutely want it”.

**Proposal:**

**Eliminate the three Portal System option.**



# Mick's LACP proposal

<http://www.ieee802.org/1/files/public/docs2018/ax-seaman-lacp-suggestions-0118-02.pdf>

- LACP State Machine Overview
  - Informative diagram of state machine inter-dependencies
- Receive Machine
  - Eliminates “port\_moved” variable.
  - Combines LACP\_DISABLED and DEFAULTED states
- Mux Machine
  - Reflects Mux enhancements that were incorporated in draft 0.1 and updated in task group ballot comment resolution
- Transmit Machine
  - Combines function of old Periodic and Transmit State Machines
  - Restarts periodic timer after any LACPDU transmission