IEEE 802.3 Channel Operating Margin (COM) Ad Hoc Closing Report

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IEEE 802.3 COM Ad Hoc

- Ad Hoc Organization
  - Howard Heck, IEEE 802.3 Com Ad Hoc Chair
  - Kent Lusted, IEEE 802.3 COM Ad Hoc Vice-Chair
- Ad Hoc Web and Reflector Information
  - Home Page – https://www.ieee802.org/3/ad_hoc/COM/
  - Reflector Information – https://www.ieee802.org/3/ad_hoc/COM/reflector.html
  - COM Ad Hoc Calls – see IEEE 802.3 Call and Meeting Calendar

Overview

- IEEE Std. 802.3 and amendments normatively specify Channel Operating Margin (COM) via equations and methods in Annex 93A and Annex 178A
  - This is the COM specification
- Example implementations of the equations and methods are provided in software code format, the “COM code”
- The COM code is available via IEEE SA Open Source “802-COM” website

Incorporating New Features and Capabilities

- P802.3dv is likely to want/need new features and capabilities for analysis of 400 Gb/s/lane interconnects
  - Including but not limited to: new/improved MLSD, IAE, active media, SILD, skew compensation, bi-di electrical, ETCC, etc.
- There is value in giving the group a chance to consider and use these capabilities for analysis before they are formally committed to an IEEE 802.3 draft specification
- What should be added to the “COM code”?
  - Somewhere between “nothing” and “everything”
  - Broad consensus to add it is key!

Guiding Philosophy

- If a feature or capability isn't yet in the IEEE 802.3 specification, it shouldn't be in the COM code
  - Until the feature has sufficient consensus from participants or is adopted into a draft amendment
- The rationale:
  - (1) the COM code is, by definition, an example implementation of the equations and methods in the IEEE 802.3 specification or draft amendments.
  - (2) the COM ad hoc's role is to ensure that a proposed feature or capability is correctly implemented in a merge request, not evaluating the merits of a feature/capability
  - (3) minimize the long-term support burden of maintaining many (potentially hundreds) of lines of code for functions that may not ultimately be used

The Path Forward

- Technical proposals for features/capabilities are discussed outside of the COM ad hoc, e.g. P802.3dv Task Force
- Use individual user branches for developing new features
  - Anyone can choose to make their own branch of the code and make that branch public for others to see and use
  - This is the way for people to try out a feature/capability before it is committed to the main trunk
- Feature can be merged into the COM code main trunk when it adopted into the draft specification, or there is sufficient consensus
  - Uses the COM ad hoc merge request process

Open Change Requests

Commit Request #	Submitter	Description	Proposed Disposition
4.16.3	Adam Gregory	Sample Phase Local Search	Accept
4.16.4	Adam Gregory	Bug Fix – Correct RxFFE Taps When Quantization Clip Method = Fast	Accept
4.16.5	Adam Gregory	Defer Calculation of RxFFE Floating Taps	Accept
4p17_1	Hansel D'Silva	Fast Top-K Gaussian Mixture ADC Clip Solver	Accept

Same as https://ieee802.org/3/ad_hoc/COM/public/telecon/261020/lusted_COM_01a_261020.pdf

WG Motion

- Move to generate COM v4.18 from COM 4.17 and the dispositions per 1126_COM_ad_hoc_plenary_close_report, slide 7.

M: Kent Lusted

S: Hansel D'Silva

Technical (>=75%)

Results:

Future Meetings

- COM ad hoc teleconference meetings
  - 8 December 2026, 7-745am Pacific
  - 12 January 2027, 7-745am Pacific

Thank You!