Channel Operating Margin (COM) Code Pathway to Open Source – Update #1

Kent Lusted, Intel Corporation, IEEE P802.3dj Task Force Electrical Track Chair

Background

- IEEE Std. 802.3 and amendments specify Channel Operating Margin (COM) via equations and methods in Annex 93A

- There have been and continue to be contributions of software code implementations of these equations and methods for participants to use

- The contributed COM software code implementation is being widely used by industry participants

- It is increasingly important to ensure that the "reference" code implementation is revision controlled, peer reviewed, cross checked, and bug free and maintained over time

Directional Support

- Much of the Q&A on the March Plenary presentation asked about the next level of details

- There was strong consensus within the P802.3dj Task Force to investigate an open source approach for the COM code

Channel Operating Margin (COM) Code as Open Source?

Kent Lusted, Intel Corporation, IEEE P802.3dj Task Force Electrical Track Chair

https://www.ieee802.org/3/dj/public/24_03/lusted_3dj_05_2403.pdf

Straw Poll #10

I would support investigating an open source approach (for example, the IEEE SA BOG Open Source Committee (IEEE OSCom) framework) for the Channel Operating Margin (COM) code.
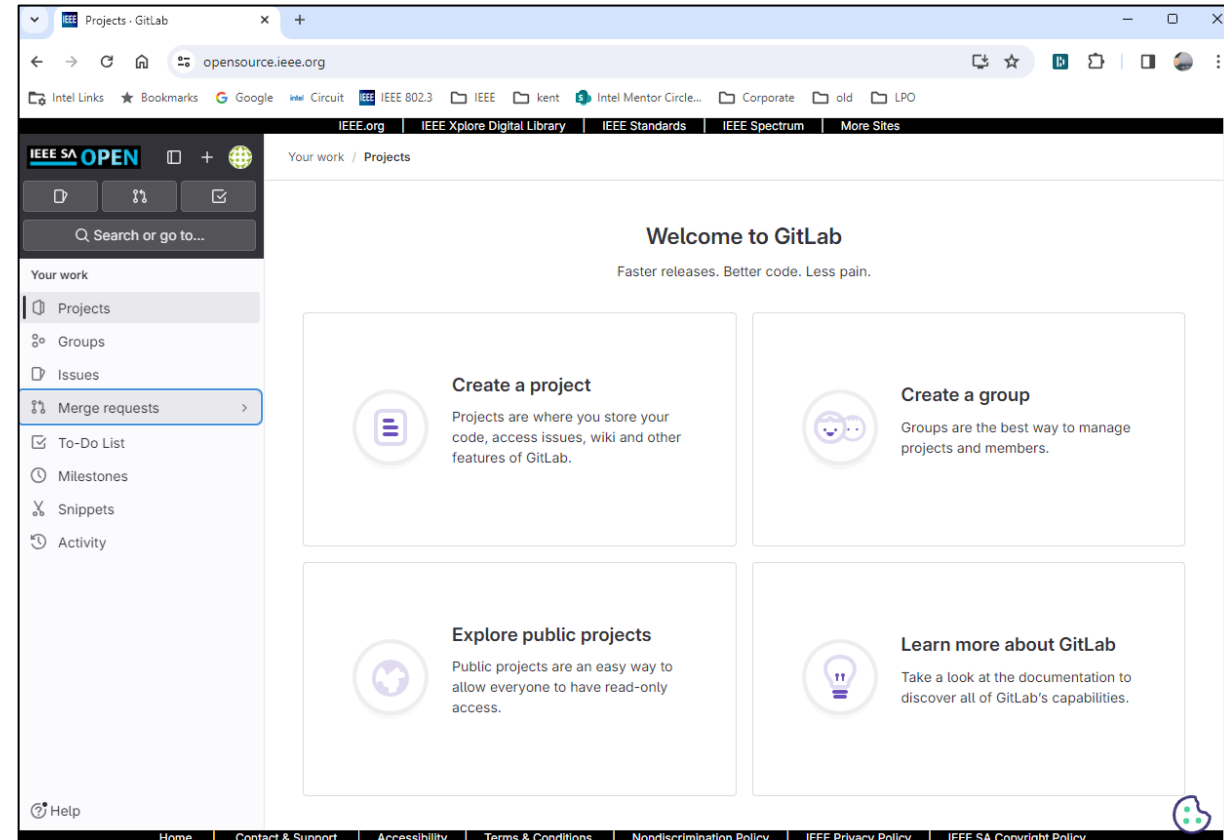
Results (all): Y: 68, N: 2, A: 17

https://www.ieee802.org/3/dj/public/24_03/motions_3cwdj_2403.pdf

A Path via IEEE SA Open Source

- Looking into the use of the IEEE SA BOG Open Source Committee (IEEE OSCom) framework for the COM code
  - https://standards.ieee.org/wp-content/uploads/import/documents/other/OSCOM_Operations_Manual.pdf
  - The IEEE Open Source Platform consists of the code and document repositories, license repositories, communication forums, Project management systems, and related administrative and end-user tools maintained by IEEE for the purpose of hosting Open Source Projects together with the associated governance mechanisms, support mechanisms, and other services offered to participants, users, and consumers of Open Source Projects.

IEEE SA Open Source Repo Option

- Hosted by GitLab
  - https://opensource.ieee.org/
- Free IEEE web account to access
- Full suite of tools available to manage:
  - Access and responsibilities
  - Commit or merge requests
  - Forking, branching and merging
  - Issues and problems
  - Security

Migrating COM Code towards Software Development Processes

- The COM code would benefit from using software development processes and procedures

- If the COM code becomes an open source project, then the contribution, review and approval processes and procedures will need to be created, reviewed, and approved by the stakeholders (TBD)

- In the meantime, the Task Force can leverage the SW development cycle concepts to improve the quality and accuracy of the COM code

Proposed *Short-term* COM Code Change Management Guidelines (WIP)

- Managed at the Task Force level via COM ad hoc for the short-term

- Steps
    1. Requests for changes to the COM code are sent to Kent and Rich as a "Commit Request"
        - Brief title, submitter, description of desired change, suggested remedy
    2. Commit Requests are assigned a number associated with the COM version
        - For tracking purposes
    3. Commit Requests are introduced in the COM ad hoc
        - Details are discussed, if time allows
        - Specific code changes are provided to participants by website or reflector (TBD)
    4. Participants review the Commit Request(s) offline between the COM ad hoc meetings
        - Use of the 3dj electrical track reflector is encouraged for discussion and debate on Commit Requests
    5. A straw poll on a Commit Request is taken at a future COM ad hoc meeting to gauge support
        - If there was support, then a Commit Request becomes part of the next formal COM code release

Summary

- Going forward, we need to ensure that the COM "reference" code implementation is revision controlled, peer reviewed, cross checked, and bug free and maintained over time

- IEEE SA Open Source is a viable option
  - Working towards a solution framework proposal for the May 2024 interim
  - Then prepare a complete proposal for consideration at the July 2024 Plenary

- Let's start applying software development processes to the COM code
  - Start small

Thanks!

Some Things to Consider

- Also possible to store the COM reference spreadsheets and the reference channels, if desired

- Contributors to the Open Source project will need to submit an IEEE Contributor License Agreement (CLA)

- Some responsibilities to assign: Source Project Lead ("Chair") and Maintainers ("Editors")

- Create submission, review, and approval flows that work for us