



IEEE 802

DRAFT

Local and Metropolitan Area Network Standards Committee

Source: IEEE 802 Local and Metropolitan Area Network Standards Committee (LMSC)¹

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From: Paul Nikolich Chair, IEEE 802 LMSC
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Subject Letter of Endorsement, Industry Connections ICAID – New Ethernet Applications

Approval Agreed to by IEEE 802 LMSC EC at July 15th, 2022 IEEE 802 EC Closing Meeting

¹ This document solely represents the views of the IEEE 802 LMSC, and does not necessarily represent a position of the IEEE or the IEEE Standards Association.

Dear Mr Lu and Members of IEEE-SA Industry Connections Committee (ICCom),

This letter is to convey the approval of the attached ICAID for the renewal of “New Ethernet Applications” (NEA) Industry Connections activity by the IEEE 802 Local and Metropolitan Area Network Standards Committee (LMSC).

This Industry Connections activity has been a successful endeavor within IEEE 802, leading to the development of a multitude of IEEE 802.3 Ethernet standards since its initial formation in 2015. Since its last renewal in 2020, the following standardization activities targeting Ethernet applications have leveraged the Industry Connections NEA Activity: 1) Lower cost, short reach, optical interconnects based on 100 Gb/s wavelengths; 2) Precision Time Protocol (PTP) Timestamping clarifications; 3) Automotive Optical Multigig; 4) Next steps in Single-Pair ecosystem; 5) 100 Gb/s over Dense Wavelength Division Multiplexing (DWDM) systems; 6) 400 Gb/s over DWDM systems; 7) Automotive 10G+ Copper; and 8) 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet.

Additional activities leveraging the NEA Industry Connections activity include joint meetings with IEEE 802.1 “Nendica” Industry Connections Activity regarding “Cut-through Forwarding”, and consensus meetings on 1) “High-speed bi-directional optics” and 2) “Ethernet Enhancements for High Performance Computing and Storage Systems”.

The IEEE 802 LMSC will serve as the sponsoring committee of this Industry Connections activity, with direct oversight delegated to the IEEE 802.3 Ethernet Working Group. The following documents will guide the operation of this activity: (1) IEEE 802 LMSC Operations Manual; (2) IEEE 802 Policies & Procedures; (3) IEEE 802 Working Group Policies and Procedures and (4) IEEE 802.3 Operations Manual.

Given the on-going success of this activity in spawning new Ethernet standardization activities within the IEEE 802.3 Ethernet Working Group, IEEE 802 LMSC endorses the approval of this ICAID and the continuation of this activity.

Sincerely,

Paul Nikolich

Chair, IEEE 802 Local and Metropolitan Area Network Standards Committee

New Ethernet Applications

Industry Connections Activity Initiation Document (ICAID)

Version: 5.0, 01 September 2022

IC15-005-05

Instructions

- Instructions on how to fill out this form are shown in red. Please leave the instructions in the final document and simply add the requested information where indicated.
- Spell out each acronym the first time it is used. For example, "United Nations (UN)."
- Shaded Text indicates a placeholder that should be replaced with information specific to this ICAID, and the shading removed.
- Completed forms, in Word format, or any questions should be sent to the IEEE Standards Association (IEEE SA) Industry Connections Committee (ICCom) Administrator at the following address: industryconnections@ieee.org.
- The version number above, along with the date, may be used by the submitter to distinguish successive updates of this document. A separate, unique Industry Connections (IC) Activity Number will be assigned when the document is submitted to the ICCom Administrator.

1. Contact

Provide the name and contact information of the primary contact person for this IC activity. Affiliation is any entity that provides the person financial or other substantive support, for which the person may feel an obligation. If necessary, a second/alternate contact person's information may also be provided.

Name: Jon Lewis

Email Address: Jon.Lewis@dell.com

Employer: Dell Technologies

Affiliation: Dell Technologies

IEEE collects personal data on this form, which is made publicly available, to allow communication by materially interested parties and with Activity Oversight Committee and Activity officers who are responsible for IEEE work items.

2. Participation and Voting Model

Specify whether this activity will be entity-based (participants are entities, which may have multiple representatives, one-entity-one-vote), or individual-based (participants represent themselves, one-person-one-vote).

Individual-Based

3. Purpose

3.1 Motivation and Goal

Briefly explain the context and motivation for starting this IC activity, and the overall purpose or goal to be accomplished.

The growing diversity of applications for Ethernet, including new application areas, is driving the development of a multitude of new standards to be developed. Recent examples of Ethernet standardization activities that originated in the New Ethernet Applications Industry Connections ICAID include: 1) Lower cost, short reach, optical interconnects based on 100 Gb/s wavelengths; 2) Precision Time Protocol (PTP) Timestamping clarifications; 3) Automotive Optical Multigig; 4) Next steps in Single-Pair ecosystem; 5) 100 Gb/s over Dense Wavelength Division Multiplexing (DWDM) systems; 6) 400 Gb/s over DWDM systems; 7) Automotive 10G+ Copper; and 8) 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet.

Additional activities leveraging the NEA Industry Connections activity include joint meetings with IEEE 802.1 “Nendica” Industry Connections Activity regarding “Cut-through Forwarding”, and consensus meetings on 1) “High-speed bi-directional optics” and 2) “Ethernet Enhancements for High Performance Computing and Storage Systems”.

The goal of these activities is to assess requirements for new Ethernet-based applications, identify gaps not currently addressed by IEEE 802.3 standards, and facilitate building industry consensus towards proposals to initiate new standards development efforts.

3.2 Related Work

Provide a brief comparison of this activity to existing, related efforts or standards of which you are aware (industry associations, consortia, standardization activities, etc.).

There are no known open standards / IEEE 802.3 based activity for Ethernet projects to compare against this Industry Connections activity proposal.

3.3 Previously Published Material

Provide a list of any known previously published material intended for inclusion in the proposed deliverables of this activity.

None

3.4 Potential Markets Served

Indicate the main beneficiaries of this work, and what the potential impact might be.

Stakeholders for the Standard: Ethernet has been dominant in the datacom space such as campus, enterprise and data center applications. Stakeholders include component providers (e.g., electrical / optical transceivers, cabling and integrated circuit), system product providers (e.g., switch and NIC), network providers (e.g., installers, network support), bandwidth providers (e.g., carriers), software providers (e.g., network management), providers of network powered or powering devices, and the users of any of these products or services. Recent activities in IEEE 802.3 have helped expand stakeholders for Ethernet into automotive, industrial and access application spaces.

3.5 How will the activity benefit the IEEE, society, or humanity?

Describe how this activity will benefit the IEEE, society, or humanity.

Ethernet is employed in a number of market applications, which are exhibiting a growing diversity in terms of the Ethernet rates and features needed. Solutions spanning these different application spaces and rates will be best addressed by leveraging common technology investments. Ethernet provides ubiquitous low-cost, high-bandwidth communications. Recent global conditions highlighted the importance of being able to maintain communications globally. Ethernet in all its varieties is a critical component in communication infrastructure. This activity will support Ethernet's evolution by enabling industry consensus building on the market/application requirements and identify gaps not currently addressed by IEEE 802.3 standards of new solutions, which will help to foster industry interest in new Ethernet study groups.

4. Estimated Timeframe

Indicate approximately how long you expect this activity to operate to achieve its proposed results (e.g., time to completion of all deliverables).

Expected Completion Date: 09/2024

IC activities are chartered for two years at a time. Activities are eligible for extension upon request and review by ICCOM and the responsible committee of the IEEE SA Board of Governors. Should an extension be required, please notify the ICCOM Administrator prior to the two-year mark.

5. Proposed Deliverables

Outline the anticipated deliverables and output from this IC activity, such as documents (e.g., white papers, reports), proposals for standards, conferences and workshops, databases, computer code, etc., and indicate the expected timeframe for each.

There will be multiple types of deliverables. The first type of deliverable will be the records of the meetings, including minutes and supporting presentations. The second type of output may be the creation of one or more consensus presentations that are used as the basis for one or more Call-for-Interests to study new areas. A third possible type of deliverable may be the creation, as appropriate, of white papers documenting the findings of the IC activity.

5.1 Open Source Software Development

Indicate whether this IC Activity will develop or incorporate open source software in the deliverables. All contributions of open source software for use in Industry Connections activities shall be accompanied by an approved IEEE Contributor License Agreement (CLA) appropriate for the open source license under which the Work Product will be made available. CLAs, once accepted, are irrevocable. Industry Connections Activities shall comply with the IEEE SA open source policies and procedures and use the IEEE SA open source platform for development of open source software. Information on IEEE SA Open can be found at <https://saopen.ieee.org/>.

Will the activity develop or incorporate open source software (either normatively or informatively) in the deliverables? No

6. Funding Requirements

Outline any contracted services or other expenses that are currently anticipated, beyond the basic support services provided to all IC activities. Indicate how those funds are expected to be obtained (e.g., through participant fees, sponsorships, government, or other grants, etc.). Activities needing substantial funding may require additional reviews and approvals beyond ICom.

None

7. Management and Procedures

7.1 Activity Oversight Committee

Indicate whether an IEEE Standards Committee or Standards Development Working Group has agreed to oversee this activity and its procedures.

Has an IEEE Standards Committee or Standards Development Working Group agreed to oversee this activity? Yes

If yes, indicate the IEEE committee's name and its chair's contact information.

SIEEE Committee Name: IEEE 802 LAN/MAN Standards Committee

Chair's Name: Paul Nikolich

Chair's Email Address: p.nikolich@ieee.org

Chair's Phone: +1 857 205 0050

Working Group Chair: IEEE 802.3 Ethernet Working Group

Chair's Name: David Law

Chair's Email Address: dlaw@hpe.com

Chair's Phone: +44 1631 563729

Contact Information for Working Group Vice-Chair

Vice-Chair's Name: Adam Healey

Vice-Chair's Email Address: adam.healey@broadcom.com

Vice-Chair's Phone: +1 610 712-3508

Additional IEEE committee information, if any. Please indicate if you are including a letter of support from the IEEE Committee that will oversee this activity.

Yes, a letter of support is attached.

IEEE collects personal data on this form, which is made publicly available, to allow communication by materially interested parties and with Activity Oversight Committee and Activity officers who are responsible for IEEE work items.

7.2 Activity Management

If no Activity Oversight Committee has been identified in 7.1 above, indicate how this activity will manage itself on a day-to-day basis (e.g., executive committee, officers, etc.).

N/A

7.3 Procedures

Indicate what documented procedures will be used to guide the operations of this activity; either (a) modified baseline *Industry Connections Activity Policies and Procedures* ([entity](#), [individual](#)), (b) *Abridged Industry Connections Activity Policies and Procedures* ([entity](#), [individual](#)), (c) Standards Committee policies and procedures accepted by the IEEE SA Standards Board, or (d) Working Group policies and procedures accepted by the Working Group's Standards Committee. If option (a) is chosen, then ICom review and approval of the P&P is required. If option (c) or (d) is chosen, then ICom approval of the use of the P&P is required.

IEEE 802 LMSC Operations Manual, IEEE 802 P&P, IEEE 802 Working Group Policies and Procedure, IEEE 802.3 Operations Manual

8. Participants

8.1 Stakeholder Communities

Indicate the stakeholder communities (the types of companies or other entities, or the different groups of individuals) that are expected to be interested in this IC activity and will be invited to participate.

Stakeholders identified to date includes but are not limited to: users and producers of systems and components for servers, network storage, networking systems, data centers, high performance computing, telecommunications carriers, automotive, and industrial applications.

8.2 Expected Number of Participants

Indicate the approximate number of entities (if entity-based) or individuals (if individual-based) expected to be actively involved in this activity.

120 Individuals

8.3 Initial Participants

Provide a few of the entities or individuals that will be participating from the outset. It is recommended there be at least three initial participants for an entity-based activity, or five initial participants (each with a different affiliation) for an individual-based activity.

Use the following table for an individual-based activity:

Individual Name	Employer	Affiliation
Jon Lewis	Dell Technologies	Dell Technologies
John D'Ambrosia	Futurewei, US Subsidiary of Huawei	Futurewei, US Subsidiary of Huawei
David Ofelt	Juniper Networks	Juniper Networks
Xinyuan Wang	Huawei	Huawei

8.4 Activity Supporter/Partner

Indicate whether an IEEE committee (including IEEE Societies and Technical Councils), other than the Oversight Committee, has agreed to participate or support this activity. Support may include, but is not limited to, financial support, marketing support and other ways to help the Activity complete its deliverables.

Has an IEEE Committee, other than the Oversight Committee, agreed to support this activity?

No

If yes, indicate the IEEE committee's name and its chair's contact information.

IEEE Committee Name: Committee Name

Chair's Name: Full Name

Chair's Email Address: who@where

Please indicate if you are including a letter of support from the IEEE Committee.