

# IEEE 802 “*Network Enhancements for the Next Decade*”

## Industry Connections Activity

### (Nendica):

## Status

Roger Marks  
(EthAirNet Associates; Huawei)

[roger@ethair.net](mailto:roger@ethair.net)

+1 802 capable

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# ICA Overview

- IEEE 802 “*Network Enhancements for the Next Decade*” Industry Connections Activity (ICA)
  - ICA: Industry Connections Activity
  - Authorized by IEEE SA
    - Through “Industry Connections Committee (ICCom)”
    - via an “Industry Connections Activity Initiation Document (ICAID)”, parallel to a PAR
    - “Industry Connections activities provide an efficient environment for building consensus and developing many different types of shared results. Such activities may complement, supplement, or be precursors of IEEE Standards projects, but they do not themselves develop IEEE standards.”

# Nendica History

- Outgrowth of a recommendation of IEEE 802 5G Standing Committee of 2016
  - Seeking “an external view into general 802 access network” to “support many 802 MACs and PHYs”
  - that view evolved during ICAID development
- ICAID
  - March 2017 - March 2019: original ICAID
  - March 2019 - March 2021: renewed ICAID
  - March 2021: extension through September 2021
  - July 2021: IEEE 802 review of proposal to renew through September 2023

# Nendica “Motivation and Goal”

- Expiring ICAID emphasizes contrast with IMT-2020
  - removed in current renewal proposal
- Proposed revision:
  - The goal of this activity is to document emerging requirements and directions for IEEE 802 networks, identify commonalities, gaps, and trends not currently addressed by IEEE 802 standards and projects, and facilitate building industry consensus towards proposals to initiate new standards development efforts. Encouraged topics include enhancements of IEEE 802 communication networks and vertical networks as well as enhanced cooperative functionality among existing IEEE standards in support of network integration. Topics concerning higher-layer applications related to new standards development in the IEEE 802.1 Working Group are also specifically expected and encouraged. Findings related to existing IEEE 802 standards and projects are forwarded to the responsible working groups for further considerations.
  - <https://mentor.ieee.org/802.1/dcn/21/1-21-0011-05-ICne.docx>

# Nendica Overview

- Web site
  - <https://1.ieee802.org/802-nendica/>
- Voting
  - organized under 802.1 WG
  - no members; anyone attending may vote on all motions
- Document storage –mentor
  - [https://mentor.ieee.org/802.1/documents?is\\_group=ICne](https://mentor.ieee.org/802.1/documents?is_group=ICne)
- Mailing List
  - [STDS-802-NEND@LISTSERV.IEEE.ORG](mailto:STDS-802-NEND@LISTSERV.IEEE.ORG)
- Organization
  - Work Items to develop Nendica Reports for publication
  - Study Items for less formal activity, or for proposing a Work Item
- ICAID renewal proposal adds:
  - “Topics concerning higher-layer applications related to new standards development in the IEEE 802.1 Working Group are also specifically expected and encouraged.”

# Published Nendica Reports

- IEEE 802 Nendica Report: The Lossless Network for Data Centers (ISBN 978-1-5044-5102-4)
  - Editor: Paul Congdon
  - Published 2018-08-17
- IEEE 802 Nendica Report: Flexible Factory IoT — Use Cases and Communication Requirements for Wired and Wireless Bridged Networks (ISBN 978-1-5044-6229-7)
  - Editor: Nader Zein
  - Published 2020-04-17
- IEEE 802 Nendica Report: Intelligent Lossless Data Center Networks (ISBN 978-1-5044-7741-3)
  - Editor: Liang Guo and Paul Congdon
  - Published 2021-06-22

# Study Item: “Cut-Through Forwarding in Bridges and Bridged Networks” [CTF]

- Leader, Johannes Specht
- Initiated March 2021
- Developed IEEE 802 tutorial (7 July 2021)
  - “Cut-Through Forwarding (CTF) among Ethernet networks”
  - identified relevant markets in industrial networks, high-performance computing networks, and audio/video networks
  - ~130 attendees
- **Follow-up discussion planned for Nendica meeting of 2021-08-05**
  - **All those interested in CTF encouraged**
  - **Particularly hoping for 802.3 experts**

# Study Item: “Evolved Link Layer Architecture” [ELLA]

- Initiated 22 July 2021
- goal is “producing, by the November 802 Plenary, an informal report documenting:
  - Summary of aspects missing from current IEEE 802 Architecture documentation
  - Potential benefits enabled by additional architectural details
  - Impact of new and evolving technologies on architecture
  - Architectural optimization in specific network environments
  - Possible standardization recommendations
- **Encouraging all those interested in 802 Architecture**
- **Welcoming WGs to identify a contact person.**



# Nendica Meetings

- Have been meeting Thursdays (09:00-11:00 ET)
- May expand to additional meetings, with 10 day notice
  - Date, time, telecon link, and agenda

# Nendica Outreach

- Nendica Chair met during (or just before) the July Plenary with parts of 802.1, 802.3, 802.15, 802.19
- Willing to meet with WGs/TAGs on request; either:
  - General Nendica status
  - Specific topic discussion with technical experts
  - Other, as appropriate