IEEE 802 Network Enhancements for the Next Decade
Industry Connections Activity (Nendica) Initiation Document (ICAID)
Version: 2.0d1, 2019-01-07
IC17-001-02 Approved by the IEEE-SASB 21 March 2019

Instructions

- Instructions on how to fill out this form are shown in red. It is recommended to leave the instructions in the final document and simply add the requested information where indicated.
- 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: Roger Marks
Email Address: r.b.marks@ieee.org
Phone: +1 802-227-2253
Employer: none
Affiliation: Huawei

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

While operating as a subgroup under IEEE 802.1, any person attending a meeting may vote on all motions (including recommending approval of the deliverables). A vote is carried by 75% of those present and voting Approve or Disapprove. Purpose

2.1.   Motivation and Goal

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

The mobile industry is currently pursuing the development of the next generation mobile communication networks fulfilling the requirements for extreme mobile broadband, massive machine-type communication, and ultra-reliable and low latency communications as specified in ITU-R M.2083 for IMT-2020.
Many of the observed trends and use cases described in ITU-R M.2083 apply as well to communication infrastructures which do not belong to the IMT domain because they do not rely on high-velocity scenarios or on licensed radio spectrum.

IEEE 802 technologies are mainly deployed in communication infrastructures outside of the IMT domain, and may require enhancements to address the emerging requirements of networks for the next decade.

The goal of this activity is to assess, outside of the IMT activity, emerging requirements for IEEE 802 wireless and higher-layer communication infrastructures, 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. Findings related to existing IEEE 802 standards and projects are forwarded to the responsible working groups for further considerations.

2.2.   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 IEEE 802 based activities comparable to this Industry Connections activity proposal. The proposed activity addresses topics distinct from the IEEE 802.3 'New Ethernet Applications' Industry Connections activity. It will cooperate when findings may benefit both activities.

2.3.   Previously Published Material

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

None

2.4.   Potential Markets Served

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

IEEE 802 technologies are deployed in a huge number of market applications, which are exhibiting a growing diversity in terms of the features needed. Solutions spanning these different application spaces and feature requirements will be best addressed by leveraging common technology approaches. This activity will enable

industry consensus building on the market/application requirements and identify gaps and trends not currently addressed by IEEE 802 standardization of new solutions, which will help to foster industry engagements in new study groups and standardization topics.

During the 2017-2019 initial term of this IEEE 802 Nendica activity, two primary markets were addressed:

(1) Nendica's Lossless Data Center Networks (LLDCN) Work Item led to publication in August 2018 of the IEEE 802 Nendica Report on "The Lossless Network for Data Centers." An active PAR (IEEE P802.1Qcz, on Congestion Isolation) arose from the Work Item. The activity fed into in the organization of a well-attended IEEE 802/IETF Data Center Workshop in Bangkok in November 2018 that suggested the value of further development. As a followup to that workshop, the North American Network Operators Group (NANOG) has invited additional cooperative activity. These discussions could lead to an effort toward development of a revision of the LLDCN report.

(2) Nendica's Flexible Factory IoT (FFIOT) Work Item has led to the development, in August 2018, of a Nendica Draft Report on "Wired/Wireless Use Cases and Communication Requirements for Flexible Factories IoT Bridged Network." The work has been subjected to an open Call for Comments and is being revised based on subsequent comment resolution. Publication is anticipated in 2019, following the renewal of the IEEE 802 Nendica activity.

3. **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: 3/2021

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

4. **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 two deliverables:
- Records of the meetings, including minutes and supporting presentations.
- A set of reports documenting the findings of the IC activity, with recommendations regarding new standardization topics, documentation of use cases and user needs for those topics, and proposed organizational approaches to ensure effective participation from user communities

5. 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 ICCom.

This IC activity would benefit from support of IEEE staff toward the communication of activities among key organizations, including those already operating under IEEE and those representing user communities or potentially cooperative standardization bodies.

6. Management and Procedures

6.1.   IEEE Sponsoring Committee

Indicate whether an IEEE sponsoring committee of some form (e.g., an IEEE Standards Sponsor) has agreed to oversee this activity and its procedures.

Has an IEEE sponsoring committee agreed to oversee this activity?: Yes

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

Sponsoring Committee Name: IEEE 802 LAN/MAN Standards Committee
Chair's Name: Paul Nikolich
Chair's Email Address: p.nikolich@ieee.org
Chair's Phone: 857-205-0050

Working Group Chair: IEEE 802.1 Higher Layer LAN Protocols Working Group
Chair's Name: Glenn Parsons
Chair's Email Address: glenn.parsons@ericsson.com
Chair's Phone: 613-963-8141

6.2.   Activity Management

If no IEEE sponsoring 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

6.3.   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,* or b) Sponsor or Working Group policies and procedures accepted by the IEEE-SA Standards Board. The chosen policies and procedures must be reviewed by ICCom

IEEE 802 Policies & Procedures
IEEE 802 LMSC Operations Manual
IEEE 802 Working Group Policies & Procedures

IEEE 802 Nendica Report Development Process
   <https://1.ieee802.org/802-nendica/ieee-802-nendica-procedures>

7. <u>Participants</u>

7.1. <u>Stakeholder Communities</u>

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 include but are not limited to: users and producers of systems and components for networking systems, data center networks, high performance computing, cloud computing, telecommunications carriers, automotive, intelligent transport systems, eHealth, smart cities, smart buildings, Internet of Things (IoT), factory automation, and industrial applications. External standardization bodies and industry organizations, such as the Internet Engineering Task Force (IETF), North American Network Operators Group (NANOG), and Telecommunications Industry Association (TIA), have been engaged with Nendica activities and will be encouraged to participate in enhanced cooperation.

7.2. <u>Expected Number of Participants</u>

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

50 individuals

7.3. <u>Initial Participants</u>

Provide a list 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 entity-based activity:

Entity	Primary Contact	Additional Representatives
Entity Name	Contact Name Email Address Phone Number	Name, Email Address Name, Email Address

Use the following table for an individual-based activity:

Individual	Contact Information	Employer	Affiliation
Max Riegel	maximilian.riegel@nokia.com +49 173 293 8240	NSN	Nokia
Joseph Levy	jslevy@ieee.org +1.631.622.4139	InterDigital Communications, Inc.	InterDigital Communications, Inc.
Roger Marks	roger@ethair.net +1 802 227 2253	EthAirNet Associates	Huawei

Glenn Parsons	glenn.parsons@ericsson.com +1-613-963-8141	Ericsson	Ericsson
Paul Nikolich	p.nikolich@ieee.org +1-857-205-0050	Self	self
Nader Zein	Nader.zein@emea.nec.com +44-7720415848	NEC Europe	NEC Europe-NLE
Hao Wang	wanghao.frdc@gmail.com +86-13810170565	Fujitsu R&D Center	Fujitsu
Paul Congdon	paul.congdon@tallac.com +1-916-765-4056	Tallac Networks	Huawei

Supporters to be confirmed