Optical Networks 2020

Industry Connections Activity Initiation Document (ICAID)

Version: 2.0, October 7, 2019

IC17-015-02 Approved by the IEEE-SASB 7 November 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.

Primary Contact:
Name: Peter Winzer
Email Address: peter.winzer@nokia-bell-labs.com
Employer: Nokia Bell Labs
Affiliation: Nokia Bell Labs

Alternative Contact:
Name: Xiang Liu
Email Address: xiang.liu@huawei.com
Employer: Huawei
Affiliation: Huawei

IEEE collects personal data on this form, which is made publicly available, to allow communication by materially interested parties and with Sponsors 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.

Optical Networks 2020 (ON2020) is a global association that drives innovative optical network solutions to better meet the optical networking demands in the cloud era towards year 2020 and beyond. It aims to define new optical network requirements and specifications, develop general network technology roadmaps and evolution scenarios, and foster an open and sustainable ecosystem for end users, service providers, and equipment and component vendors to collectively address the optical networking demands in the cloud era. Freed from near-term thinking, competition, and looking beyond existing standardization efforts, the program will help to set longer-term goals and directions that the fiber-optic communications industry should be expected to work towards.

ON2020 has conducted successful workshops at major optical networking conferences in the past two years, and formed six sub-working groups on key aspects for optical technologies. The group has faced challenges in volunteer resource availability to progress the deliverables proposed in 2017 to meet the desired time frames. This renewal ICAID proposes a 6 month extension to complete existing commitments and provide an orderly path toward closure, while in parallel exploring a transition of the active volunteers and work activities for inclusion in other IEEE relevant activities, potentially within IEEE Communications Society, IEEE Photonics Society or the recently formed Roadmapping community within IEEE Technical activities.

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 numerous standards and multi-source agreements (MSAs) covering optical components (particularly transceivers) as well as ROADMs (eg the Open ROADM MSA www.openroadm.org). Similarly, there are activities such as the Telecom Infra Project (www.telecominfraproject.com) which are addressing specific short-term needs of certain subsets of the optical communications space.

ON2020 has a broader, longer-term remit than most of the above, although the developments within these standardization and MSA activities will articulate to, and inform the thinking of, the ON2020 participants.

Developments in Software Defined Networking and Network Function Virtualization (eg the Open Networking Foundation www.opennetworking.org) are also complementary to the ON2020 activities.

3.3. Previously Published Material

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

The ON2020 has already published reports of its previous meetings, together with a series of presentations arising given at a workshop held in conjunction with the OFC 2017 conference in March 2017. It also provided an initial readout based on responses to a survey of communications service providers in the US, EU and Asia. Copies of all these documents can be found on the ON2020 website at http://on2020.org/download.html.

ON2020 has held very well attended workshops, sometimes exceeding 150 attendees, at OFC 2018, OFC2019 and ECOC 2019. Presentations and audio from these events were maintained on the group's iMEET collaboration area for use of the sub-working group participants.

3.4. Potential Markets Served

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

Optical networking equipment and component vendors; communications service providers

3.5. How will the activity benefit the IEEE?

ON2020 is comprised of volunteers who are among the leading global experts in optical networking technology. IEEE benefits from this thought leadership for defining a vision of the role of these technologies in emerging communications networks and applications, providing a strong IEEE community of experts in these domains, and helping to define needs for future standards to enable these technologies and applications.

In addition, optical communications technologies underpin our society with fiber-optics used as the sole transmission technology of the Internet (in core, metro, and datacenter networks), as well as of 5G wireless (as a fronthaul/backhaul technology). Maintaining a visionary optical communications activity is something the IEEE cannot risk to miss.

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: 05/2020

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.

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.

Deliverables to complete by May 2020

Complete committed ON2020 workshops/presentations at IEEE GlobeCom and OFC 2020

Complete a summary paper on ON2020's findings and recommendations based on the interactions of the past two years

Explore a transition/migration of ON2020 activities and volunteers to identify and integrate with other IEEE societies and programs that can benefit from the deep optical networking expertise of the ON2020 participants

Original Deliverables

Develop long-term industry visions beyond current product deployments and beyond concrete product roadmaps. (No near-term thinking, competition, standardization constraints.)

Develop commonly agreed-upon goals and directions that the fiber-optic communications industry should be expected to work towards.

Develop a plan for migration to an industry alliance, in accordance with the expectations of the IC activity.

The outcomes of these over the next 12 months would be one or more white papers summarizing the developed vision and overall industry directions. Current activities cover the areas of T-SDN, ROADM/OXC, 5G-oriented optical networks, and next-generation WDM and optical link technologies. In the medium term, these white paper(s) would be extended to encompass other aspects of optical networking.

To facilitate these developments, we will hold workshops and information sessions as part of the major optical communications in the US (OFC), Europe (ECOC) and Asia (ACP). These continue the existing series of workshops held at OFC and ECOC in 2016 and 2017. These workshops will continue to form part of the programming of these conferences and we are coordinating with the various conference organizers to facilitate this. As such, there will be no direct cost to the ON2020 activity for these workshops.

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 ICCom.

No immediate funding is required. In the interim, most meetings will be via teleconference and any in-person activities will seek companies to act as meeting hosts. The basic support services provided to IC activities will be sufficient to meet the needs of this activity.

7. Management and Procedures

7.1. 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?:
The Photonics Society has indicated that it wishes to support the activity. The nature of the support will be worked out between ON2020 and the Photonics Society.

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

Sponsoring Committee Name: IEEE Photonics Society
Chair's Name: Chennupati Jagadish
Chair's Email Address: Chennupati.jagadish@anu.edu.au

Additional sponsoring committee information, if any.

7.2. 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).

Activity officers will be elected at the start to manage the work of the program

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,* (b) Sponsor policies and procedures accepted by the IEEE-SA Standards Board, or (c) Working Group policies and procedures accepted by the Working Group's Sponsor. If option (a) is chosen, then ICCom review and approval of the P&P is required. If option (b) or (c) is chosen, then ICCom approval of the use of the P&P is required.

The Industry Connections baseline P&Ps for individual programs will be used.

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 from optical networking system and component manufacturers, along with communications service providers will be encouraged to join the activity.

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.

The current iMeet roster for ON2020 has just over 100 interested participants

8.3. Initial Participants

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 individual-based activity:

Individual	Employer	Affiliation
Peter Winzer	Nokia Bell Labs	Nokia Bell Labs
Xiang Liu	Huawei	Huawei
Dogan Atlas	Infinera	Infinera
Brandon Collings	Lumentum	Lumentum
Simon Poole	Finisar	Finisar