IEEE 802 Network Enhancements for the Next Decade Industry Connections Activity

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- Announcement
  - IEEE-SA sent eBlast to multiple societies and sponsors

Guidelines for IEEE-SA Meetings

- **All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.**

- **Don't discuss the interpretation, validity, or essentiality of patents/patent claims.**

- **Don't discuss specific license rates, terms, or conditions.**

    - Relative costs, including licensing costs of essential patent claims, of different technical approaches may be discussed in standards development meetings.

        - Technical considerations remain primary focus

- **Don't discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.**

- **Don't discuss the status or substance of ongoing or threatened litigation.**

- **Don't be silent if inappropriate topics are discussed… do formally object.**

If you have questions, contact the IEEE-SA Standards Board Patent Committee Administrator at patcom@ieee.org or visit http://standards.ieee.org/about/sasb/patcom/index.html

See *IEEE-SA Standards Board Operations Manual*, clause 5.3.10 and "Promoting Competition and Innovation: What You Need to Know about the IEEE Standards Association's Antitrust and Competition Policy" for more details.

This slide set is available at https://development.standards.ieee.org/myproject/Public/mytools/mob/preparslides.ppt

Participation in IEEE 802 Meetings

Participation in any IEEE 802 meeting (Sponsor, Sponsor subgroup, Working Group, Working Group subgroup, etc.) is on an individual basis

- **Participants in the IEEE standards development individual process shall act based on their qualifications and experience. (https://standards.ieee.org/develop/policies/bylaws/sb_bylaws.pdf section 5.2.1)**

- **IEEE 802 Working Group membership is by individual; "Working Group members shall participate in the consensus process in a manner consistent with their professional expert opinion as individuals, and not as organizational representatives". (subclause 4.2.1 "Establishment", of the IEEE 802 LMSC Working Group Policies and Procedures)**

- **Participants have an obligation to act and vote as an individual and not under the direction of any other individual or group. A Participant's obligation to act and vote as an individual applies in all cases, regardless of any external commitments, agreements, contracts, or orders.**

- **Participants shall not direct the actions or votes of any other member of an IEEE 802 Working Group or retaliate against any other member for their actions or votes within IEEE 802 Working Group meetings, see https://standards.ieee.org/develop/policies/bylaws/sb_bylaws.pdf section 5.2.1.3 and the IEEE 802 LMSC Working Group Policies and Procedures, subclause 3.4.1 "Chair", list item x.**

By participating in IEEE 802 meetings, you accept these requirements. If you do not agree to these policies then you shall not participate.

(Latest revision of IEEE 802 LMSC Working Group Policies and Procedures: http://www.ieee802.org/devdocs.shtml)

Agenda for January meeting

- Introduction
- Role of the IC activity
  - Background (the origins of this IC Activity)
  - Project Objectives/Scope/Deliverables
  - Example deliverable
- Deliverable development
  - Flexible Factory IOT
    - Draft ToC and Skeleton for the Flexible Factories IoT report
    - Input contribution, drafts on the "Overview" and "Factory Overview and Operation environment" sections
  - Lossless Network for Data Centers
- Other Contributions
- Actions/Next Steps

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Introductions

- Please add your name
  in join.me next to **(You)**
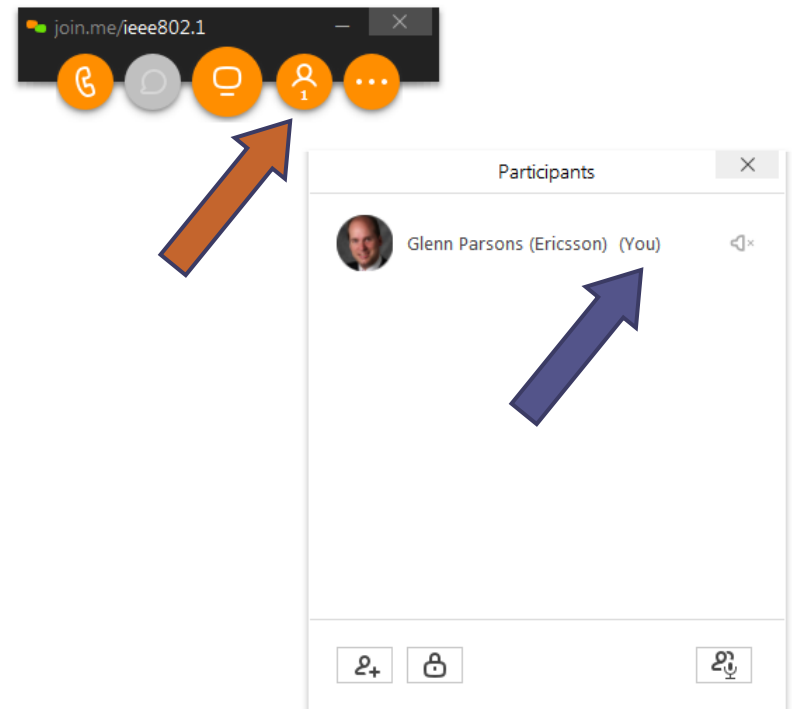
Role of the Industry Connections Activity

IC17-001-01

Background – IEEE 5G SC Action A: Candidate Approach – "IEEE 5G"

- specify an 802 access network
  - could be based on P802.1CF
    - "network reference model defines a generic foundation for the description of IEEE 802 access networks, which may include multiple network interfaces, multiple network access technologies, and multiple network subscriptions, aimed at unifying the support of different interface technologies, enabling shared network control and use of software-defined networking (SDN) principles"
  - provides an external view into general 802 access network
  - could support many 802 MACs and PHYs
  - could plug into incumbent mobile operator networks
    - for example, expand the notion of LWA so that the cellular network supports 802 rather than 802.11
    - gives 802 a strong supporting role in cellular 5G networks
  - could support integration into other operator networks
    - e.g. cable TV or fixed telecom
    - gives 802 a central role in non-cellular 5G networks
  - feasible for 802 access network to support both
  - need not promote it as an "IEEE 5G" network

From 802 5G SC report

IEEE-SA Industry Connections activity

- Aimed for technical group discussions (far) ahead of starting PAR discussions.
  - http://standards.ieee.org/develop/indconn/
  - ICAID (Industry Connections Activity Initiation Document) request form for approval
    - http://standards.ieee.org/develop/indconn/icaid_form.doc

- Use of Industry Connections in IEEE 802
  - https://mentor.ieee.org/omniran/dcn/16/omniran-16-0083-00-5gaa-use-of-industry-connections-in-ieee-802.pptx

- Further resources:
  - http://standards.ieee.org/about/sasb/iccom/resources.html

802 NEND Objective

- 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.

Operating practice

- Voting
  - ▫ 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.
- Reciprocal attendance rights for 802 WGs
  - ▫ policy is per home WG
- Approval
  - ▫ Until March 2019
- Document storage – 802.1 website & mentor
  - ▫ http://1.ieee802.org/802-nend/
  - ▫ https://mentor.ieee.org/802.1/documents?is_group=ICne
- Mailing List
  - ▫ http://listserv.ieee.org/cgi-bin/wa?SUBED1=STDS-802-NEND&A=1
  - ▫ STDS-802-NEND@LISTSERV.IEEE.ORG

Potential Markets

- 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 3 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.

Deliverable

- There will be two deliverables:
  - Records of the meetings, including minutes and supporting presentations.
  - A report 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. It is expected that the first draft of the report documenting the findings of the IC will be available in March 2018.
- Related work
  - 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.

Report deliverables

- There can be multiple "reports"
- There is no report deliverable template and the variation is significant
- Sample deliverable of two other IC activities.
  - slide decks per topic (like 802.3 NEA does - http://www.ieee802.org/3/ad_hoc/ngrates/public/17_11/index.html)
  - detailed white paper (like the Ethically Aligned Design - http://standards.ieee.org/develop/indconn/ec/autonomous_systems.html)

Deliverable Development

Deliverables

- Flexible Factory IOT
  - Draft ToC and Skeleton for the Flexible Factories IoT report – Nader Zein (NEC)
  - Input contribution, drafts on the "Overview" and "Factory Overview and Operation environment" sections
- Lossless Network for Data Centers
  - Plan for report - Paul Congdon (Huawei)

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Contributions

Potential contribution topic areas

- Greater connections with customers of IEEE 802 technologies
- Requirements of various operators
- IOT (including Smart grid IOT)
- Factory automation
- Future wireless networks
- Learning possibilities
- High performance communications
- Cable industry requirements and evolution
- Mobile and constrained devices
- Data Centre networking
- Tactile networks
- New user domains

Next meeting

Future meetings

- 802 plenaries
  - Tuesday evening
- Conference Calls
  - Wednesdays– 8am ET
    - Jan 10th
    - Feb 14th
  - Will be cancelled if no agenda requests

Actions

Actions

- Progress deliverables
- Solicit more contributions
- Reach out to more customers
- Find evangelists
- Start report …

- Contact me to help!