Introduction into the Industry Connections Activity Initiation Document (ICAID) addressing the IEEE 802 5G SC Action A

2017-03-12

Max Riegel, Nokia

(OmniRAN TG Chair)

Motion at 802.1 Nov '16 closing plenary

- Authorize OmniRAN TG to create an ICAID proposal addressing the 5G SC Action A and authorize the 802.1 chair to pre-circulate the ICAID proposal to the EC for consideration.
  - Moved: Max Riegel
  - Second: John Messenger
  - Vote: 22, 0, 1

Introduction to the IEEE 802.1 ICAID

IEEE 802 5G SC

IEEE 5G SC/IMT-2020 Standing Committee

- Chartered by EC ballot
  - Active Feb - July 2016
  - Chaired by Glenn Parsons
- Authorized Scope
  - To provide a report on the following items to the EC:
    - Costs and benefits of creating an IEEE 5G specification
    - Costs and benefits of providing a proposal for IMT-2020, considering possible models of a proposal:
      - as a single technology,
      - as a set of technologies,
      - or as one or more technologies within a proposal from external bodies (e.g., 3GPP)
  - During its lifetime, to act as the communication point with other IEEE organizations on this topic.

5G SC Conclusion

- Action A: Establish a kind of IEEE "5G" for the non-mobile environment
  - Organized by 802.1 WG (Industry Connections project)
- Action B3: Ensure IEEE 802.11 is becoming well integrated in the incumbent mobile operator 5G universe
  - Organized by 802.11 WG (Liaison with 3GPP)
- Spectrum issues handled by 802.18
- Joint 802.1/802.11 meetings as necessary for coordination of actions A & B3
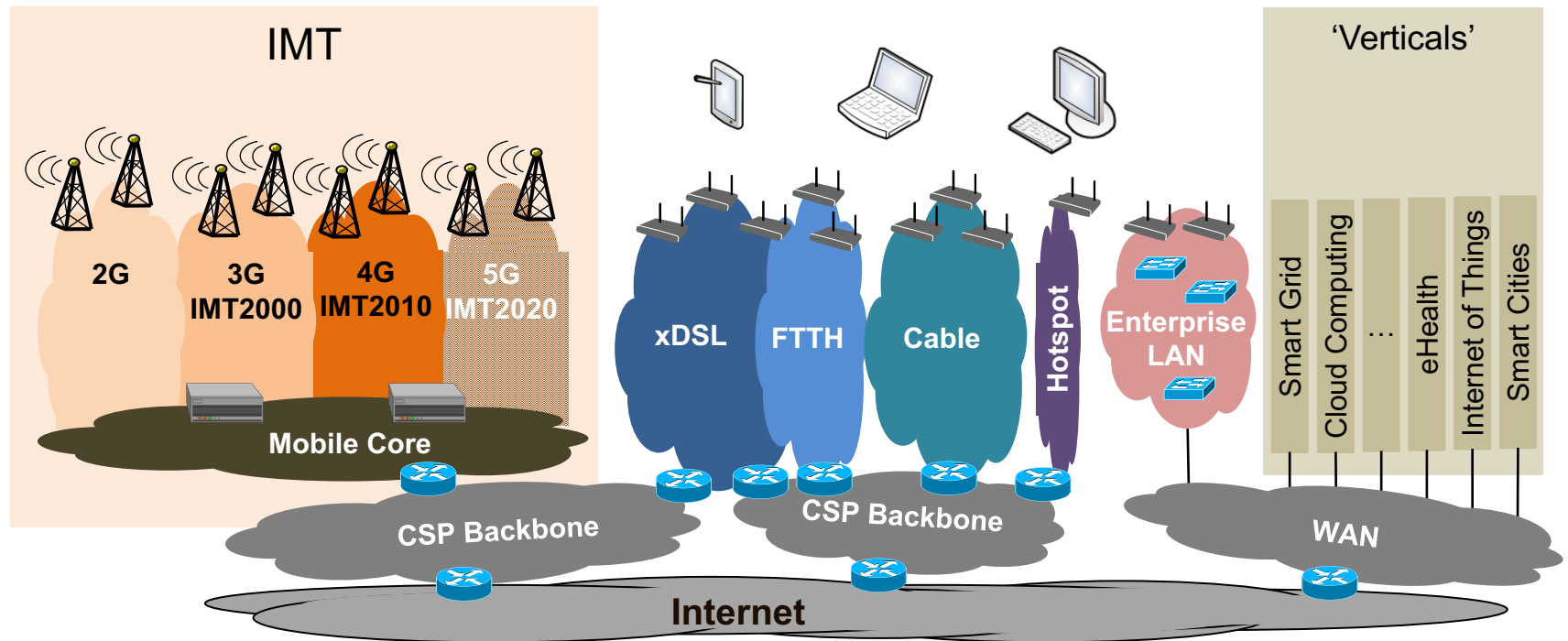
Action A: IEEE "5G" specification Candidate Approach

- 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

Scope and title
of the Industry Connections activity

- *"IEEE next generation communication infrastructure specifications that support enhanced broadband, massive machine type communication and ultra-reliable and low latency communications not belonging to mobile networks"*

- Working title (Some better marketing slang would be desirable;-).
  - **IEEE 802 network enhancements for the next decade**

IEEE 802 networking is predominantly happen in non-IMT networks

Network deployments aside of mobile networks

- Other operators of public communication networks than mobile network operators
  - MSO
  - FNO
  - Hotspot operators

- 'Verticals' represented in IEEE standards like
  - Smart Grid
    - http://standards.ieee.org/develop/msp/smartgrid.pdf
  - Cloud Computing
    - http://standards.ieee.org/develop/msp/cloudcomputing.pdf
  - Internet of Things (including Green Community Networks)
    - http://standards.ieee.org/develop/msp/iot.pdf
  - Intelligent Transportation Systems
    - http://standards.ieee.org/develop/msp/its.pdf
  - eHealth
    - http://standards.ieee.org/develop/msp/ehealth.pdf
  - Smart Cities
    - http://standards.ieee.org/develop/msp/smartcities.pdf

Aims of '5G SC Action A'

- New deployments of IEEE 802 by better addressing deployment needs
  - Unifying technical approaches among various deployment domains by better communications
  - Development of further amendments to fulfill particular requirements.
- Faster adoption of emerging trends to IEEE 802 standards by better understanding of market evolution.
  - More direct involvement of "customers" in the evolution of IEEE 802 technologies

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INDUSTRY CONNECTIONS

Industry Connections (IC) Program

- An efficient, economical, neutral environment for building consensus
  - Supports incubation of new technologies, standards and services
  - Help groups to solve shared problems and produce shared results
  - Minimal effort, time and expense to begin collaborative work
  - Respected, neutral, third-party home for activities and results
  - Efficient path toward prestigious IEEE publication/standardization
  - Flexible options for evolution, transition and conclusion of activities

- Possible Outputs of IC Activities
  - Proposals for standards
  - White papers
  - Peer-reviewed guides and position papers
  - Workshops and other events
  - Databases and registration services
  - Software, tools and web services
  - Other jointly developed results

- Complements IEEE-SA "formal" standards activities

Study Groups vs. Industry Connection Activity

- Study Group (per IEEE 802 LMSC P&P)
  - When a Sponsor is presented with a proposal concerning a standards development project, the Sponsor may form a Standards Study Group to examine the proposal to determine if there is a need for a standard to be developed.
  If the proposal merits formation of a project, the Study Group will draft a PAR for consideration by the Sponsor.

- Industry Connections Activity
  - An Industry Connections activity is initiated when a group of companies or individuals recognizes a need for collaboration and consensus within a technical area, and often before they fully understand what form that collaboration should take.
  - Does not replace standards process, but may precede.

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IEEE 802 NETWORK ENHANCEMENTS FOR THE NEXT DECADE

[802SEC] Proposed Industry Connections activity – IEEE 802 network enhancements for the next...

Glenn Parsons <glenn.parsons@ERICSSON.COM> sent by **1 more**
Tuesday, 7 February 2017 at 21:52
To: STDS-802-SEC@LISTSERV.IEEE.ORG

Colleagues,

A draft IEEE-SA Industry Connections Activity Initiation Document (ICAID) form in relation to a proposed IEEE 802.1 Industry Connections activity for IEEE 802 network enhancements for the next decade has been prepared:
https://mentor.ieee.org/omniran/dcn/16/omniran-16-0084-04-5gaa-draft-icaid-for-5g-sc-action-a.docx

This is the result of the 802.1 OmniRAN TG addressing the EC 5G/IMT-2020 SC Action A.   The ICAID was developed in a number of special meetings of OmniRAN TG with participation across IEEE 802. The discussions leading to the agreed ICAID are captured in the following meeting minutes:

Dec 6th confcall: https://mentor.ieee.org/omniran/dcn/16/omniran-16-0093-00-5gaa-dec-6th-5gaa-conference-call-minutes.docx
January 18th F2F meeting: https://mentor.ieee.org/omniran/dcn/17/omniran-17-0012-00-5gaa-jan-18th-5gaa-f2f-meeting-minutes.docx
Jan 31st confcall: https://mentor.ieee.org/omniran/dcn/17/omniran-17-0016-00-5gaa-jan-31st-5gaa-confcall-minutes.docx

Based on past practice in relation to previous IEEE 802.3 Industry Connection activities, an ICAID requires the endorsement of both the IEEE 802.1 Working Group and the IEEE 802 Executive Committee. This ICAID is pending IEEE 802.1 Working Group endorsement at the March plenary.   After this approval I will place it on the IEEE 802 Executive Committee closing agenda.

While the 802 P&P does not require pre-circulation nor review by other WGs, please let your WG members aware of this ICAID. If there is any interest or comments please encourage your members to join the OmniRAN TG session at the March plenary.

I would further note that the submittal deadline for the March SASB is Feb 10th.   As a result, I will pre-submit to ICcom, but will remove it from their agenda if either 802.1 or EC endorsement fails.

Cheers,
Glenn.

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Motivation

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 future communications.

Goal

The goal of this activity is to assess emerging requirements for IEEE 802-based communication infrastructures outside of the IMT domain, 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. Topics concerning enhanced cooperative functionality among existing IEEE standards in support of network integration will be encouraged. Findings related to existing IEEE 802 standards and projects are forwarded to the responsible working groups for further considerations.

Potential markets served

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.

Proposed deliverables

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.

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GOING FORWARD

Steps during this week for final approval

- Since February 7th, a few comments have been received on the ICAID proposal.
  OmniRAN TG will address comments and create final proposal in its Wednesday PM2 special session.

- Proposed ICAID will be brought up for approval in the 802.1 closing plenary on Thursday.
  - 50% majority vote required

- Proposed ICAID has to be confirmed by the closing EC plenary on Friday.
  - 50% majority vote required

After approval ...

- Glenn has to decide how to operate the Industry Connection activity
  - OmniRAN has prepared the ICAID proposal, however the topic is related to whole IEEE 802.1 and the other 802 WGs as well.
- Involvement of all 802.1 TGs required, as well as close cooperation with stakeholders in the other IEEE 802 WGs
  - BTW: OmniRAN could act as host for the special meetings of the IC activity.

Thinking further…
Getting in touch with the verticals?

- Can IEEE SA headquarter help to establish communications to the verticals?
  - Who are the staff liaisons for the verticals?
- Can we do a kind of structured assessment to determine where IEEE 802 matters most?
  - Are IEEE 802 networks already deployed?
- How would we initiate discussions?
  - Presentations at standardization meetings?
  - Workshops on IEEE conferences?

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QUESTIONS, COMMENTS?