

IEEE 802
Local and Metropolitan Area Network Standards Committee

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Konstantinos Karachalios, Secretary, IEEE-SA Standards Board

SUBJECT: Collaboration proposal

DATE: 13 October 2016

Dear Madam Wang,

Summary

The IEEE 802 LAN/MAN Standards Committee (IEEE 802) would like to collaborate with the 3rd Generation Partnership Project (3GPP) towards support of IMT-2020 and next generation networks. We suggest that this begin with developing a common understanding of interworking with IEEE 802 networks in meeting the requirements of next generation networks. We also believe it would be helpful for our organizations to identify mutually agreeable collaboration mechanisms that takes into account the existing procedures of each organization. We propose some collaborative approaches and request the 3GPP Project Coordination Group (PCG) to suggest further details consistent with its goals and operating procedures.

Background Information

IEEE 802 would like to inform 3GPP of its recent activity on 5G standardization topics and explore developing a relationship to coordinate on mutually agreed topics as a result.

IEEE 802 EC 5G/IMT-2020 SC activity:

The IEEE 802 Executive Committee (EC) 5G/IMT-2020 Standing Committee (SC) was chartered the by IEEE 802 EC (from February to July 2016) to study standardization options for IEEE 802. Specifically, the main deliverable was to provide a report on the following items:

- Costs and benefits of creating an IEEE 5G specification
- Costs and benefits of providing a proposal for IMT-2020 in ITU-R

The Standing Committee delivered its final [report](#) at the July 2016 IEEE 802 plenary in San Diego, USA. That report was endorsed by the IEEE 802 LMSC EC.

The Standing Committee evaluated four options:

A – An IEEE “5G” specification

An 802 Access Network specification that provides a general external view into an 802 access network, could support many 802 MACs and PHYs, and could plug into incumbent cellular or other operator networks

B – IMT-2020 proposal

B1: Direct IMT-2020 – single technology

Develop and submit an IEEE proposal to adopt some IEEE 802.11 radio interface technology as an IMT-2020 RIT.

B2: Direct IMT-2020 – set of technologies

Develop and submit an IEEE proposal to adopt a coherent set of IEEE 802 radio interface technologies as an IMT-2020 SRIT, possibly integrated in an IEEE 802 Access Network.

B3: IMT-2020 – external body proposal

Support development of a 3GPP proposal incorporating references to the use of IEEE 802.11, or an IEEE 802 Access Network.

The Standing Committee benefitted from a wide breadth of contributions and views that helped derive the cost-benefit analysis and conclusion of this report. The report concluded that, while the four Actions addressed under the Standing Committee scope are not mutually exclusive, there is a preference for Action B3, with a secondary desire to progress Action A.

The recommended next steps included the disbandment of the 5G Standing Committee, as well as a number of follow-up actions that would be driven by existing IEEE 802 Working Groups (WG), notably:

- Action A - organized by 802.1 Higher Layer LAN WG (e.g., initiate [Industry Connections](#) project)
- Action B3 - organized by 802.11 Wireless LAN WG (e.g., liaise with 3GPP)
- Spectrum issues led by 802.18 Radio Regulations Technical Advisory Group (RR TAG)
- Hold joint 802.1/802.11 meetings as necessary for coordination of actions A & B3

Further details can be found on the web site: http://ieee802.org/Stand_Com/5G/

IEEE 802.11 Activity:

The IEEE 802.11 Wireless LAN (WLAN) Working Group sent a liaison ([RP-161804](#) and [SP-160691](#)) to 3GPP TSG RAN and TSG SA in September 2016 requesting opinions on the desirability of improving WLAN aggregation and integration and the potential of the inclusion of WLAN in an IMT-2020 submission. The liaison also asked for suggestions on how the 802.11, RAN and SA groups can work together to improve overall network performance.

The WLAN activity will support the IMT-2020 requirement to support interworking, per ITU-R M.2083 (“IMT Vision – Framework and overall objectives of the future development of IMT for 2020 and beyond”):

“IMT-2020 will interwork with other radio systems, such as RLANs, broadband wireless access, broadcast networks, and their possible future enhancements. IMT systems will also closely interwork with other radio systems for users to be optimally and cost-effectively connected.”

IEEE 802 OmniRAN Activity:

In the IEEE 802.1 Higher Layer LAN Working Group, the OmniRAN Task Group is organizing discussions to develop an “Industry Connections” activity to gather industry requirements and explore a packaging of IEEE 802 technologies that could be self-sufficient or used to interface with external core networks.

Opportunities for collaboration

IEEE 802 would like to collaborate with PCG to investigate ways that 3GPP and IEEE 802 can work together towards support of IMT-2020. We suggest that this begin with developing a common understanding of the role of interworking with IEEE 802 networks in meeting the IMT-2020 requirements (e.g., referring to M.2083).

We also believe it would be helpful for our organizations to identify mutually agreeable collaboration mechanisms that take into account the existing procedures of each organization. Note that the IEEE-SA has mechanisms to enable IEEE 802 to share its working drafts with external organizations for comment and, where necessary, to establish memoranda of understanding (MoUs) with external organizations to enable productive cross-organization collaboration.

Working together, we hope to agree on mechanisms, aligned with 3GPP aims and operating methods, for 3GPP and IEEE 802 to work together, enabling:

1. Direct communication at the working level (e.g., technical subgroups of 802, RAN, SA)
2. Representation of 3GPP in IEEE 802, and IEEE 802 in 3GPP
3. The exchange and resolution of comments on relevant draft working documents

Request for Action

We look forward to your views on collaboration and our specific suggestions. We also recognize that a successful approach may require a deeper common understanding of our organizations. As a step forward, we invite representatives of 3GPP to attend our upcoming Plenary Session, or a future one, to discuss how IEEE 802 and 3GPP can collaborate for our mutual benefit and to promote improved interworking that will enable “users to be optimally and cost-effectively connected”. Your alternative approaches to initiating collaboration are also welcome.

The IEEE 802 Plenary Session will be held on 6-11 November in San Antonio, TX USA. Information on future meetings is available at <http://ieee802.org/meeting>. Please feel free to contact the IEEE 802 Chair to address any logistical issues.

Regards,

/s/ Paul Nikolich

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