Proposed Liaison

From IEEE 802

To 3GPP Project Coordination Group (PCG)

The IEEE 802 LAN/MAN Standards Committee (LMSC) 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.

The IEEE 802 Executive Committee (EC) 5G/IMT-2020 Standing Committee 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. 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 an 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.
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> 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/

The IEEE 802.1 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. In addition, the IEEE 802.11 WG has already sent a liaison to 3GPP RAN and SA to proposing development of a relationship towards some level of inclusion of 802.11 within the 3GPP IMT-2020 solution (see RP-161804). As an example of the benefit, the liaison to 3GPP RAN and SA highlighted the opportunity to improve handling of WLAN for IMT-2020, notably WLAN aggregation in RAN and WLAN integration in the packet core in SA.

It is worth noting that ITU-R M.2083 ("IMT Vision – Framework and overall objectives of the future development of IMT for 2020 and beyond") includes a requirement to allow interworking:

> "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".

As a result, the IEEE 802 LMSC 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 come to a mutually agreeable collaboration mechanism that takes into account the existing procedures of each organization. We suggest that this include, for example:

1. Encouragement of joint participation in IEEE 802 and 3GPP to facilitate informal working level communication
2. Description of formal representation of 3GPP in IEEE 802, and IEEE 802 in 3GPP
3. Description of how relevant subgroups of IEEE 802 and 3GPP share their working drafts
4. Description of mechanisms to allow exchange and resolution of comments on draft working documents.

We look forward to working with you.