IEEE P802.11  
Wireless LANs

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| AANI July 2019 Meeting Minutes | | | | |
| Date: 2019-07-18 | | | | |
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Abstract

Minutes from the AANI SC meetings held during the 802.11 WLAN Working Group Session on 14-19 July 2019, in Vienna, Austria: Monday, 15July PM2 (notes provided by Alan Berkeman) and Thursday, 18 July AM1 (notes provided by Carlos Cordeiro).

Notes merged and edited into this document by Joseph Levy (InterDigital) AANI SC Chair.

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# Monday, 15 July 2019, PM2

**Administration:**

**Chair: Joseph LEVY, InterDigital**

**Secretary Acting: Alan Berkema, HP Inc.**

**Meeting called to order by the Chair 16:00 CET** (about20 persons in the room.)

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document: [11-19/1022R1](https://mentor.ieee.org/802.11/dcn/19/11-19-1022-01-AANI-aani-sc-agenda-july-2019.pptx)

**Monday – PM2**

1. **Call for Secretary**
2. **Administrative: Reminders, Rules, Guidelines, Resources, Participation, Approval of Minutes**
3. **Background/Status**
4. **Technical Discussion / Contributions**
   1. **Proposal on Interworking between IEEE 802.11 WLAN and 3GPP 5G Core Network– Hyun Seo Oh (ETRI)**
   2. **801.11ax performance evaluation – IMT-2020 requirements**
      1. **Updated 11ax evaluation for IMT-2020 Dense Urban, adding mobility**
      2. **Updated summary of 802.11ax performance evaluation in IMT-2020 Indoor Hotspot and Dense Urban**
      3. **Draft press release on 802.11ax performance evaluation in IMT-2020 Indoor Hotspot and Dense Urban**

**Thursday – AM1**

1. **Continuation of Technical Discussion / Contributions**
   1. **ITU-R WP5D IMT-2020 Status – Final Proposals – Joseph Levy (InterDigital)**
   2. **Continue discussion on draft press release**
   3. **Draft LS to 3GPP SA on: WLAN Integration in 5G system Rel-17 (revised, see below)**
2. **Future Sessions Planning**

The Chair call for a volunteer for secretary, Alan Berkema volunteered.

The above agenda was reviewed and revised to add item 1.c) Draft LS to 3GPP SA on: WLAN Integration in 5G system Rel-17 to the Thursday AM 1 agenda.

No additional agenda items for Monday PM2 and the Agenda was approved.

The Chair reviewed the IEEE guidelines – slides 5-7 of [11-19/1022R1](https://mentor.ieee.org/802.11/dcn/19/11-19-1022-01-AANI-aani-sc-agenda-july-2019.pptx).

Minutes from the May 2019 Meeting in Atlanta, GA, USA: [11-19/0940r0](https://mentor.ieee.org/802.11/dcn/19/11-19-0940-00-AANI-aani-may-2019-meeting-minutes.docx) were approved without comment or objection.

The Chair announced that the IEEE 802 Nendica will meet this week: Monday 15 July, EVE – 19:30-21:30. Roger Marks (Nendica Chair) provided an update: [1-19/0053r0](https://mentor.ieee.org/802.1/dcn/19/1-19-0053-00-ICne.pptx): key meeting topic to include flexible factory IoT and Lossless Network for data centers

The Chair gave a quick review/background of AANI – slides 11-14 of [11-19/1022R1](https://mentor.ieee.org/802.11/dcn/19/11-19-1022-01-AANI-aani-sc-agenda-july-2019.pptx), and provided a verbal update of the Nufront IMT2020 proposal activity: Nufront submitted a RIT proposal based on EUHT, and submitted and then withdrew their SRIT proposal based on EUHT and 802.11ax.

**Contributions:**

[**11-19/1160r1**](https://mentor.ieee.org/802.11/dcn/19/11-19-1160-01-AANI-proposal-on-interworking-between-ieee-802-11-wlan-and-3gpp-5g-core-network.pptx) **“Proposal on interworking between 802.11 WLAN and 3GPP 5G Core Network”, was presented by Hyun Seo OH (ETRI).**

Proposes developing technical report on WLAN interworking with 5G core network

Q: Would it require changes to 802.11 MAC/PHY spec.

A: No spec changes necessary

Q: What is the plan for the development work? is the interface to be defined by IEEE or 3GPP?

A: Propose here in IEEE 802.11.

Q: Then what? do you expect 3GPP to adopt the output?

A: They want to define the interface between 802.11 and NWu interface (see slide 11)

Q: Have you already started talking to 3GPP to get supporters? 3GPP R15 & R16 are being finalized so it too late to be a part of the SA (system Architecture) so would they consider R17?

A: No, the interface is not clearly defined/specified enough

Q: 802.11 does not have an upper layer -- should the work be done and published; and then sent to 3GPP for their use; or a short version of the planned way forward? Would this work for devices that do not require a SIM? if it could that case, this could be good for market.

A: Would work for dual connectivity. assumption is that the UE has SIM.

Comment: it would be good if they could think about NAS that isn't SIM.

The Chair made comment: as far as he knows, 3GPP believes they have defined enough/to a point in the networking that they can interwork with any other technologies and isn’t planning to further define interworking between 80.211 and their currently defined interface.

The Chair plans to take straw poll on this proposal on Thursday to seek interested parties, who are interested in exploring working on 802.11 interworking to the defined 3GPP 5G Core Network interface. This work may address: defining an interface in 802.11 that interworks with the defined 3GPP interface and possibly generate suggestions to 3GPP to improve their interface to improve interworking.

[**11-19/1284r0**](https://mentor.ieee.org/802.11/dcn/19/11-19-1284-00-AANI-summary-of-802-11ax-self-evaluation-for-imt-2020-embb-indoor-hotspot-and-dense-urban-test-environments.docx) **– “Summary of 802.11ax Self Evaluation for IMT-2020 EMBB Indoor Hotspot and Dense Urban Environments” - Sindhu Verma (Broadcom)**

Slide 4 provides Conclusion 1: 802.11ax satisfies the primary PHY/MAC requirements for the IMT-2020 eMBB Indoor Hotspot and Dense Urban test environments.

The Chair presented slides 16-17 of [11-19/1022R1](https://mentor.ieee.org/802.11/dcn/19/11-19-1022-01-AANI-aani-sc-agenda-july-2019.pptx) – describing the current 802.11 “Press Release” process.

The Chair then conducted a straw poll (slide 18 - [11-19/1022R1](https://mentor.ieee.org/802.11/dcn/19/11-19-1022-01-AANI-aani-sc-agenda-july-2019.pptx)):

**Should the AANI SC recommend to the 802.11 WG that a “press release” be developed to publicize that P802.11ax meets the salient requirements of IMT-2020 Indoor Hotspot and Dense Urban environments?**

(Y/N/abstain): (13/0/3)

The Chair announced he will create an official motion for the next AANI session for vote and then if the vote passes provide the motion to the 802.11 working group closing session on Friday.

The Chair called for AOB, there was none.

The Chair asked if there was any objection to amending the agenda to move the presentation of 11-19/1024R0, “ITU IMT-2020 Status – Final Proposals” from the Thursday AANI SC time slot to now. There was no objection.

**11-19/1024r0 “ITU-R WP5D IMT-2020 Status – Final Proposals” – Joseph Levy (InterDigital)**

Slide 2:

Q: Is this a summary of the information on the ITUR web site?

A: Yes, the ITUR web site was used to create the summary

Slide 3: 6 groups had proposals, only 3GPP provided a SRIT.

Slide 4: Schedule shows they are on time.

Q Are all the rights based on the same interface?

A Yes, base line is 3GPP with enhancements, except for Nufront

Slide 6: Shows additional detail of the proposals

Proposals are available but require a TIES account for access.

Slide 10 provides references

Q: Are the documents based on simulations?

A; Yes, combinations of analytical and simulations, no measured numbers

Q: Need to understand what goes into the Press Release, can IEEE ID the interface to compare “Apples to Apples” of what IEEE has prepared to compare to what 3GPP has created. Do not want a “Food Fight”

A: Configurations are specified so IEEE can identify what was done against the specified requirements. There was general consensus that we do not want a “Food Fight”

**The Chair recessed the meeting at 9:45am CET**

# Thursday, 18 July 2019, AM1

**Administration:**

**Chair: Joseph LEVY, InterDigital**

**Secretary Acting: Carlos Cordeiro, Intel**

**Meeting called to order by the Chair 08:00 CET** (about 12 persons in the room)

**Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document: 19/1022r4

1. Call for Secretary
2. Administrative: Reminders, Rules, Guidelines, Resources, Participation
3. Continuation of Technical Discussion / Contributions
   1. [11-19/1215r0](https://mentor.ieee.org/802.11/dcn/19/11-19-1215-00-AANI-3gpp-wlan-integration-in-5g-system-rel-17.pptx) “3GPP WLAN Integration in 5G System Rel-17” – Thomas Derham (Broadcom)
   2. [11-19/1300r0](https://mentor.ieee.org/802.11/dcn/19/11-19-1300-00-AANI-draft-ls-to-3gpp-wlan-integration-r17.docx) draft LS to 3GPP SA on WLAN Integration in 5G System Rel-17
   3. [11-19/0728r1](https://mentor.ieee.org/802.11/dcn/19/11-19-0728-01-AANI-euht-evaluation-mobility.pptx) 802.11ax performance evaluation – Jun Lee (Nufront)
   4. 802.1 TSN LS from 3GPP SA
   5. Continue discussion on press release
4. Motions
5. Future Sessions Planning

The Chair asks for someone to be secretary. Carlos Cordeiro volunteers.

The Chair goes through slide 3 – Reminders and Rules.

The Chair reviewed the agenda for the session, called for additions or modifications, there were none. The agenda was accepted without objection.

The Chair goes through slides 6-8, covering Guidelines for IEEE-SA meetings, links to relevant sources, and Participation in IEEE 802 meetings.

**Technical Discussion / Contributions:**

[**11-19/1215r0**](https://mentor.ieee.org/802.11/dcn/19/11-19-1215-00-AANI-3gpp-wlan-integration-in-5g-system-rel-17.pptx) **“3GPP WLAN Integration in 5G System Rel-17” – Thomas Derham (Broadcom)**

Contribution provides:

(1) a status update on 3GPP Release 15 and 16 work in integrating WLAN access as another RAT in the 5G System architecture

(2) a description of the approved work to be continued in Release 17

(3) a proposal for IEEE to indicate in indicating its support to 3GPP SA for the continuation of this work.

Then, it proposes:

* That IEEE 802.11 send an LS to 3GPP SA to:
  + Indicate its support for continuation of the work of integrating WLAN access as another RAT in the 5G System per the following study items:
    - Study on enhancement of support for 5WWC (SP-190562), and
    - Study Extended Access Traffic Steering, Switch and Splitting support in the 5G system architecture(SP-190558)

Q. How do you define managed Wi-Fi and relationship to QoS?

A. Author described QoS model of Wi-Fi, IPSec tunnels and the need to map Wi-Fi QoS to those tunnels and the 5G access model.

Q. Are these all the study item proposals related to Wi-Fi?

A. The author believes these are the only ones in SA. There may be more in RAN. Proposal is to focus on SA only.

Comment: we need to make sure these are the only study items.

Q. How is the 5WWC related to Wi-Fi? Why would 3GPP define wireline/wireless integration with Wi-Fi and not 5G?

A. This is what 3GPP members are proposing, we are just proposing to support it. The question of why 3GPP would do the work is something they have to discuss.

Comment: 11ax provides a step forward in being able to meet QoS.

Author reviews proposed LS: <https://mentor.ieee.org/802.11/dcn/19/11-19-1300-00-AANI-draft-ls-to-3gpp-wlan-integration-r17.docx>. Changes are made on suggestions from members.

The Chair announces that motion on the LS will be made during this session.

[**11-19/0728r1**](https://mentor.ieee.org/802.11/dcn/19/11-19-0728-01-AANI-euht-evaluation-mobility.pptx) **802.11ax performance evaluation – Jun Lee (Nufront)**

Author sent an email to the Chair about this proposal and the new results. The author itself is not at attending this meeting, and so the Chair himself walked through the deck.

The contribution has preliminary results show that 11ax can meet the ITU requirements on mobility in Dense Urban eMBB scenario.

There are discussions in the meeting room about the assumptions of the simulation. Unfortunately, the author is not in the room to answer questions.

Q.: there is a discussion about adding these results somewhere and press release. What are the next steps?

A.: more discussion is needed before anything can be done, particularly since the author is not present to explain.

The Chair will communicate with author. Need simulation results from at least 2 sources to verify the results.

**802.1 TSN LS from 3GPP SA**

The Chair notes LS received from 3GPP that indicates 3GPP is using IEEE 802.1 TSN in support of the industrial automation vertical. The LS asks 802.1 about two issues in 802.1 TSN and is asking 802.1 to respond. - <http://www.ieee802.org/1/files/public/docs2019/liaison-3gppsa2-1908630-5g-integration-with-tsn-0719.pdf> - “LS on 3GPP 5G System support for integration with IEEE TSN networks” 3GPP # S2-1908630, from SA WG2 Meeting #134, 24-28 June 2019, Sapporo, Japan.

**The Chair called for Motion - #1 – approval of an LS to 3GPP SA:**

The IEEE 802.11 WG approves sending the contents of [11-19/1300r1](https://mentor.ieee.org/802.11/dcn/19/11-19-1300-01-AANI-draft-ls-to-3gpp-wlan-integration-r17.docx) draft LS to 3GPP SA on WLAN Integration in 5G System Rel-17 to 3GPP TSG SA and cc’ed to IEEE 802 EC, IEEE 802.1 WG, granting the WG Chair editorial license.

Moved: Thomas Derham, Seconded: Carlos Cordeiro, Result: y-n-a 13-0-1

**The Chair called for Motion - #2 – request for a press release:**

The IEEE 802.11 WG recommends to IEEE 802 EC that a request for the development of a press release (or similar) announcing that P802.11ax meets the salient requirements of IMT-2020 Indoor Hotspot and Dense Urban environments, as described in [11-19/1284r0](https://mentor.ieee.org/802.11/dcn/19/11-19-1284-00-AANI-summary-of-802-11ax-self-evaluation-for-imt-2020-embb-indoor-hotspot-and-dense-urban-test-environments.docx), be developed.

Moved: Shubhodeep Adhikari, Seconded: Sindhu Verma,

Result: y-n-a 12-0 -0

[Note; motion was modified and adopted by the 802.11 WG: The IEEE 802.11 WG recommends that a request for the development of a press release (or similar) announcing that P802.11ax meets the salient requirements of IMT-2020 Indoor Hotspot and Dense Urban environments, as described in [11-19/1284r0](https://mentor.ieee.org/802.11/dcn/19/11-19-1284-00-AANI-summary-of-802-11ax-self-evaluation-for-imt-2020-embb-indoor-hotspot-and-dense-urban-test-environments.docx), be developed. y-n-a 46-0-2.]

**Future session planning**

The Chair indicates that the group is contribution driven and that it will meet again in September at the Hanoi F2F meeting.

The Chair asked if there is interest in meeting (e.g., over a conference call) to decide whether to develop a technical report on core network integration between WLAN and 3GPP, related to contribution: [11-19/1160r1](https://mentor.ieee.org/802.11/dcn/19/11-19-1160-01-AANI-proposal-on-interworking-between-ieee-802-11-wlan-and-3gpp-5g-core-network.pptx) Proposal on Interworking between IEEE 802.11 WLAN and 3GPP 5G Core Network– Hyun Seo Oh (ETRI). Five (5) members indicated interest. The Chair indicated that he will attempt to schedule a conference call over the reflector in the next few weeks.

**Having exhausted the agenda, the meeting adjourned at 9:45 am CET.**

**References:**