IEEE P802.11
Wireless LANs

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| AANI November 2019 Meeting Minutes |
| Date: 2019-11-12 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Graham Smith | SRT |  |  |  |
| Joseph LEVY | InterDigital Communication, Inc. | 2 Huntington Quadrangle 4th floor, South WingMelville, NY 11747 | +1.631.622.4139 | joseph.levy@interdigital.com |

Abstract

Minutes from the AANI SC meetings held during the 802.11 WLAN Working Group Session on Nov 12, 2019 in Waikoloa. Edited by Joseph Levy (InterDigital) AANI SC Chair. Note: in this document: Q – proceeds discussion questions, C – proceeds comments, A – proceeds answers/replies (in response to a question or comment), and the Chair: proceeds action or statements by the AANI SC Chair.

# Tuesday Nov 12, 2019, AM2

**Administration:**

**Chair: Joseph LEVY, InterDigital**

**Secretary Acting: Graham Smith (SR Technologies.**

**Meeting called to order by the Chair 10:30 local time** (about40 persons in the room.)

**Proposed Meeting Agenda:**

The meeting agenda is shown below, and published in the agenda document: [11-19/1744R2](https://mentor.ieee.org/802.11/dcn/19/11-19-1022-01-AANI-aani-sc-agenda-july-2019.pptx)

1. **Call for Secretary**
2. **Administrative: Reminders, Rules, Guidelines, Resources, Participation, Approval of Minutes**
3. **Background/Status**
4. **Technical Discussion / Contributions**
	* Initial technical draft report on interworking between 3GPP 5G network & WLAN - Hyun Seo OH (ETRI)
	* Summary of 802.11ax Self Evaluation for IMT-2020 EMBB Indoor Hotspot and Dense Urban Test Environments Sindhu VERMA (Broadcom)
	* Simulation Evaluation of 802.11ax for IMT-2020 eMBB Dense Urban Scenario - Muhammad Haider (Hewlett Packard Enterprise)
5. **Future Sessions Planning**

The Chair: call for a volunteer for secretary, Graham Smith volunteered.

**Approval of the agenda:**

The Chair: Is there any objection to accepting this agenda?

C – YES

Q - Was it not agreed at closing Plenary last meeting that this group be closed?

Chair - No and note that we are contribution driven.

Q - When will we get conclusion of this group?

Chair – The AANI SC is an 802.11 standing committee, and as with any standing committee is formed and dissolved by the 802.11 WG Chair. This group will conclude when 802.11 Chair decides to conclude this standing committee.

Q - When will that happen?

C - An objection to accepting agenda and taking the contribution “Draft LS to 3GPP SA on: WLAN Integration in 5G system Rel-17” was made.

The Chair call for a vote:

Yes: 17, No: 2 – the proposed agenda is accepted

**The Chair reviewed the IEEE guidelines.**

**Approval of the Minutes:**

Minutes from the September 2019 Meeting in Hanoi, Vietnam:[11-19/1702r0](https://mentor.ieee.org/802.11/dcn/19/11-19-1702-00-AANI-aani-september-2019-meeting-minutes.docx), approved with no comments or objection.

Nendica Reminder:

The Chair announced that the IEEE 802 Nendica will be meeting at this meeting

* Tuesday 12 November – EVE: 19:30-21:30 (Note error in 19/1774r2)
* Thursday 14 November – AM1: 08:00-10:00

NENDICA Chair was not in room so no verbal update was given (Note, this occurred later in meeting)

**Background and Status:**

Update on Press Release (Slide 11 of 19/1774r2).

* At the July 802.11 meeting the WG agreed to a “press release” on “IEEE P802.11ax meets the salient requirements of IMT-2020 Indoor Hotspot and Dense Urban environments”
* The 802.11 WG Chair designated the following SMEs to work with IEEE staff to generate the “Press Release”:
	+ Sindhu Verma (Broadcom)
	+ Shudhodeep Adhikari (Broadcom)
	+ Joseph Levy (InterDigital)
* The SMEs have provided initial input to IEEE staff
* IEEE staff has provided drafts for SME for review
* The SMEs have provided feedback on the drafts
* A “final” version of the “Press Release” is available ([11-19/1865r0](https://mentor.ieee.org/802.11/dcn/19/11-19-1865-00-0000-press-release-for-aani.docx))

The Chair called for questions or concerns?

No questions or concerns were provided

C - The 802.11 WG Chair gave an updated that some comments have been received. Later today a new version will be uploaded to Mentor.

Update on ITU IMT-2020 Status (slide 12 of 19/1774r2)

* At the July 802.11 meeting the WG agreed to a “press release” on “IEEE P802.11ax meets the salient requirements of IMT-2020 Indoor Hotspot and Dense Urban environments”
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Status on Proposal on Interworking (Slide 13 19/1774r2)

* At the July meeting a proposal was made: [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)
* At the September meeting more details were provided: [11-19/1529r1](https://mentor.ieee.org/802.11/dcn/19/11-19-1529-01-AANI-objective-and-scope-of-technical-report-on-interworking-between-5g-core-network-and-wlan.docx), “Objective and scope of technical report on interworking between 5G core network and WLAN”, Hyun Seo Oh (ETRI)
* The discussion held during the September meeting did not yield sufficient support to initiating work to generate a technical report.
* The proponents have provided a new contribution.

Chair noted that authors have submitted an updated report.

Nendica reminder (2):

Chair of Nendica entered room. AANI Chair asked if any objections if an update was given.

No objection and Slides presented from 19/0078r0 (802.1 document).

**Discussion / Contributions:**

[11-19/2046](https://mentor.ieee.org/802.11/dcn/19/11-19-1843-00-AANI-initial-technical-draft-report-on-interworking-between-3gpp-5g-network-and-wlan.docx) - Initial technical draft report on interworking between 3GPP 5G network & WLAN - Hyun Seo OH (ETRI)

“Current WLAN access network cannot access to 5G core network. So, the station cannot provide dual access of 5G and WLAN using 5G core networks. Therefore, it needs WLAN interworking to 5G network.

The initial technical draft report on WLAN interworking to 3GPP 5G network describes the interworking reference model and two types of interworking, and defines the necessary functionalities and specific procedures that enable WLAN access networks to interwork with 3GPP 5G network for data throughput improvement and QoS management.”

Technical Report is 19/1843r0. Presenter displayed this. Gap, QoS and Conclusions are still empty.

Work Plan:

* January 2020 meeting: 1st draft of technical report will be updated
* March 2020 meeting: 2nd draft of technical report will be updated
* May 2020 meeting: The technical report will be completed. If any comments will be received, then technical report will be updated through discussions during ANNI (*sic*) meeting.

Straw Poll:

*“For the technical report IEEE 802.11-19/1843ro, do you agree to support developing it by joining co-author?”*

*Note: Supporting co-authors: Hyun Seo OH (ETRI), Hanbyeog CHO (ETRI), Yoohwa Kang (ETRI), Chang Han OH (allRadio Co. Ltd), Shinho CHO (allRadio Co. Ltd), Raeman KIM (allRadio Co. Ltd), Si Young HEO (KT), Yangseok Jeong (KT), Hyeong Ho LEE (Nevision Telecom Inc., Korea Univ.), Youngjae KIM (TTA), Choon Sik Lim (RCN)*

The Chair called for: Comments? Questions?

Q - Clarify if any difference between contents of report and Specification for 3GPP?

A - Same interface. Same terminology.

Q - Is it same terminology? Note that 802.1cf is working on these interfaces already.

A - Will check again

C - No specific signaling protocol in 802.1cf. Recommends specific interface protocol. Need to clarify and differences.

The Chair stated: AANI not empowered to make any changes to existing specifications

C - At high level will support this. Need to find Gaps. On Straw Poll do not understand “support developing it by joining co-author”, maybe it should say “support the development of such a document”. Need to clarify White Paper description of what is already there, e.g. IEEE does this, 3GPPP does this and differentiate between the two. Discussion of such details is needed.

Q - Is there a suggested edit to Straw Poll?

A - Yes, along the lines of “Do you support AANI developing a technical report etc.”

Q - Proposal is to write technical support, with purpose and status, can you report on that? What are you trying to achieve, what do you expect?

A - Identify problems…

Q - So no real status within the working group, but you are asking people to work with you?

A – Yes to develop the technical information, focused on technical part only.

Q - So once written, what will it be used for?

A - Used for reference for standardization. Hence will need some form of formal status within the Working Group.

Q - Can we publish White Papers within AANI?

Chair: Anything out of AANI should have some actionable part. Technical information from this report may generate some action that the 802.11 WG could work with, the AANI SC can only make recommendations to the WG. AANI SC does not do Spec development, though it can write LSs.

WG Chair opined that this work sounds like a Technical Report similar to what would be generated by a TIG and that there may or may not be additional actions. This work can be done in the AANI SC.

Straw Poll:

*“For the technical report IEEE 802.11-19/1843r0, do you support the development of the report?”*

Result: 18/0/9

[11-19/1284r1](https://mentor.ieee.org/802.11/dcn/19/11-19-1284-01-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 Test Environments Sindhu VERMA (Broadcom)

Chair asked if it was intended to present updated version of 11-19/1284r2? Others noted that r2 is not on server. 11-19/1284r1 is the new version, but just corrects a typo – no need to present.

[11-19/1522r2](https://mentor.ieee.org/802.11/dcn/19/11-19-1522-02-AANI-simulation-evaluation-of-802-11ax-for-imt-2020-embb-dense-urban-scenario.pptx) - Simulation Evaluation of 802.11ax for IMT-2020 eMBB Dense Urban Scenario - Muhammad Haider (Hewlett Packard Enterprise), presented by Dorothy Stanley (HPE)

This presentation encompasses results from simulations on evaluating 802.11ax performance in terms of meeting IMT-2020 requirements for eMBB Dense Urban scenario for both UL and DL, in accordance with the methodology specified by ITU-R

Results show that 802.11ax in its current configuration satisfies the IMT-2020 eMBB Dense Urban requirements for both 5th percentile and average spectral efficiency and the Mobility requirement.

The Chair called for question or comments?

Q - 80% indoor 20% outdoor users moving, clients are all over and moving, right?

A - Yes

Q – When a STA moves move from one cell to another cell what happens? How does model take this into account?

A - Re-associates with strongest cell.

C - Thanks for this work. Great news that 11ax meets these requirements.

Q - How is the upper layer application management handled?

A - Analysis is only from MAC/PHY point of view. The IMT-2020 requirements do not require one to do anything else. So, the upper layer application management is out of scope.

C - If you have any specific questions on the simulation, then please contact authors. Note that 11ax does really well with performance well over the requirement.

Q - Now we have this report will there be a new report generated to address both sets of simulations?

A - Not planned, but could produce a summary of both that can be referenced in the Press Release.

**Motion**

*“The AANI SC approves the inclusion of the results provided in 11-19/1522r2 in a possible outgoing summary report from the 802.11 WG.”*

Mover: Dorothy Stanley

Second: Andrew Myles

Discussion

C - All documents are on Mentor. Purpose of summary report is to point at the public documents.

Q - Are there discrepancies between the reports?

A - The conclusions are the same. There are slight differences, but the point is that the salient requirements are met by 11ax.

Q - Will we present all the results in the summary report?

A - That is the intent

C – The requirements (IMT-2020) allow for various assumptions to be made, these assumptions may be different between companies. The simulations therefore, may yield different results, but the conclusions are in alignment.

Result: Yes: 26, No: 0, Abstain: 0

Action on Chair to bring a summary report to the WG for approval and inclusion in the “press release”.

**Future session planning**

No planned teleconferences. IF need a teleconference will bel schedule with at least 10 days’ notice.

Requesting one 2-hour time slot for the meeting in Irvine, CA in January.

The Chair called for comments, there were none

Looked at Topics for Contribution slide 16 19/1744r2

The Chair called for AOB, there was none.

**Having exhausted the agenda, the meeting adjourned at 12.18 pm local time.**