IEEE P802.11
Wireless LANs

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| Wireless Next Generation (WNG) Standing CommitteeMeeting Minutes for September-2019 MeetingHanoi, Vietnam |
| Date: 09-17-2019 |
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Abstract

Meeting Minutes for the WNG SC meeting held in Hanoi, Vietnam, in September 2019.

**WNG Session #1: September 17th, 2019, 8:00 AM to 10:00 AM Hanoi Time**

Chair: Jim Lansford (Qualcomm)

Vice Chair & Secretary: Lei Wang (Futurewei)

**Meeting Agenda:**

The meeting agenda is shown below, and is also published in the agenda document:

<https://mentor.ieee.org/802.11/dcn/19/11-19-1414-02-0wng-agenda-for-wng-sc-2019-september.ppt>

* Call Meeting to Order
* Agenda approval
* Attendance reminder
* Documentation reminder
* Announcements
* Approval of Previous meeting minutes
	+ Minutes from July WNG Meeting
		- <https://mentor.ieee.org/802.11/dcn/19/11-19-1310-00-0wng-wng-sc-meeting-minutes-2019-july-vienna.docx>
* Presentations
	+ Tuesday 17 September 2019, 08:00 – 10:00
	+ Tuesday 17 September 2019, 19:30 – 21:30
* Plans for November 2019
* Adjournment

**Meeting Minutes:**

* Chair called the meeting to order at 8:03am Hanoi time on Tuesday, September 17th, 2019.
* Chair reminded the group to record the attendance of this meeting, by using the IEEE Attendance Tool.
* Agenda approval:

<https://mentor.ieee.org/802.11/dcn/19/11-19-1414-02-0wng-agenda-for-wng-sc-2019-september.ppt>

* The agenda was approved by unanimous consent
* Chair also noted the affiliation FAQ, anti-trust FAQ, ethics code, IEEE 802.11 policies and procedures, and IEEE 802 policies and procedures
* Chair covered the voting rules for WNG SC, being a standing committee
* Approval of previous meeting minutes
	+ Minutes from 2019-July WNG Meeting

<https://mentor.ieee.org/802.11/dcn/19/11-19-1310-00-0wng-wng-sc-meeting-minutes-2019-july-vienna.docx>

* Approximately 160 people attended the WNG Session.
* Presentation #1: “Wi-Fi Sensing: Cooperation and Standard Support” – Claudio Da Silva (Intel)

<https://mentor.ieee.org/802.11/dcn/19/11-19-1416-00-0wng-wi-fi-sensing-cooperation-and-standard-support.pptx>

* + Summary of Discussion
		- Presenter indicated that he has a Strawpoll to form a TIG and would like to run it after the other two presentations in this morning session.
		- Clarified that there was training at the beginning.
		- Pointed out this is just an example, just to show feasibility, for external factors, e.g., interferences, will need further investigation; and need more work to make the system more robust and efficient.
		- Provide more info about the movement: a 10-year old boy, random movement.
		- Clarified that the Phase-1 in the 3-phase approach on slide 6 is basically used to enable the applications, where MAC/PHY supports are needed.
		- Discussed if any PHY changes: Reuse the PHY, and it will be up to the group to discuss the PHY change proposals.
* Presentation #2: Presentation #2: “Wi-Fi Sensing: follow up” – Tony Xiao Han (Huawei)

<https://mentor.ieee.org/802.11/dcn/19/11-19-1500-00-0wng-wi-fi-sensing-follow-up.pptx>

* + Summary of Discussion
		- Discussed the Machine Learning as presented in this contribution.
		- Commented that the presented sensing applications can be done, plus more human body movement, e.g., stand up, sit down, etc., even can be done with one pair of transmitter and receiver.
		- Discussed the sampling frequency: 300 per second, for CSI based.
		- Discussed the CSI-based and Radar: current results show no significant differences, plan to do more work on the topic.
* Presentation #3: “Wi-Fi Sensing in 60GHz band” – Alecs Eitan (Qualcomm)

<https://mentor.ieee.org/802.11/dcn/19/11-19-1551-01-0wng-wi-fi-sensing-in-60ghz-band.pptx>

* + Summary of Discussion
		- Discussed the fine synchronization on slide 21: using 11ad/ay, one bean direct to other stations, can achieve very good accuracy for mono-static radar.
		- Explained the numbers on slide 22: 73ns long Golays in TRNs allows up to ~20 meters measurements, if travels back and forth, then corresponds to 10m range.
		- Discussed the relationship with 11bb: this presentation is about 60GHz, using existing Wi-Fi. For multi-static, use exist Wi-Fi hardware, just do software upgrade to allow coordination.
* WNG SC Chair, Jim, proposed to run the “straw poll 1” in Presentation #2, 19/1500r0, as it basically includes all the possible options of the next step.

**Straw Poll: What is your preference for the proper venue for future work/presentations for “Wi-Fi sensing” technologies?**

* + Topic Interest Group (TIG): 105
	+ Study Group (SG): 8
	+ Continue the presentations in WNG before creating a TIG/SG: 18
	+ Not interested in further work/presentations in 802.11: 0
	+ No opinion: 6
	+ Summary of Discussion
		- Commented that the uses cases and applications seem still need more discussions;
		- Working Group Chair clarified that TIG can start work right after the September meeting upon approval in this week, while SG needs to be approved in November plenary meeting.
	+ Straw Poll result:
	+ 105
	+ 8
	+ 18
	+ 0
	+ 6
* Recessed at 10:00am Hanoi Time.

**WNG Session #2: September 17th, 2019, 7:30 PM to 9:30 PM Hanoi Time**

Chair: Jim Lansford (Qualcomm)

Vice Chair & Secretary: Lei Wang (Futurewei)

**Meeting Minutes:**

* Chair called the meeting to order at 7:32pm Hanoi time on Tuesday, September 17th, 2019.
* Chair reminded the group to record the attendance of this meeting, by using the IEEE Attendance Tool.
* Chair reminded the group the meeting agenda that was approved by the morning session of WNG:

<https://mentor.ieee.org/802.11/dcn/19/11-19-1414-02-0wng-agenda-for-wng-sc-2019-september.ppt>

* Approximately 50 people attended the WNG Session.
* Presentation #4: "Wi-Fi sensing: Some important use cases, possible realizations, and the need of standardization“ – Oscar Au (Origin Wireless)

<https://mentor.ieee.org/802.11/dcn/19/11-19-1626-01-0wng-802-11-sensing-applications-feasibility-standardization.pptx>

* + Summary of Discussion
		- Questioned how often to send the signals in the sleep monitoring example, and the answer was about 10 to 100Hz.
		- Discussed the size of the transmitted packets: very short packets, no data, but no specific quantified size or duration available at this time.
		- Clarified multiple items for the example of Locationing /Tracking on slide 10, including:
			* there is 1 transmitter and 1 receiver
			* no training required
			* Use Map to do the correction
			* Don’t see any issues with furniture
		- Discussed a comparison of the measurement result numbers of 802 sensing vs. radar, but no specific technical reasons why radar is not as good as 802 sensing.
* Presentation #5: “Wi-Fi Sensing Application: Multipath Enhanced Device Free Localization” – Paul Unterhuber (German Aerospace Center – DLR)

<https://mentor.ieee.org/802.11/dcn/19/11-19-1580-00-0wng-wi-fi-sensing-application-multipath-enhanced-device-free-localization.pptx>

* + Summary of Discussion
		- Clarified the required computational power does not need any special computers, just regular laptops is sufficient;
		- Discussed the calibration requirement: after initial calibration, no further calibration is needed, if no changes in the settings;
		- Discussed the number of routers shown in slide 11 vs. one router in a normal home, and clarified that it is not a matter of number of routers, instead, it is about the number of transceivers. In the example of a regular home, although normally one router, there are many transceivers, e.g., laptops, cell phones, etc.
* Plan for 2019-November meeting:
	+ Call for contributions: the WNG chair will issue a call for contributions before the 2019-November meeting.
* Any other business
	+ Question: Are there any more Strawpolls?
	+ Chair: we had a pretty “exhausted” Strawpoll in the morning session today; and the results had a clear indication of the group’s preference. So, seems no need to run any more strawpolls now.
* Adjourned at 8:38pm Hanoi Time.