IEEE P802.11
Wireless LANs

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| Wireless Next Generation (WNG) Standing CommitteeMeeting Minutes for May-2018 MeetingWarsaw, Poland |
| Date: 05-10-2018 |
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Abstract

Meeting Minutes for the WNG SC meeting held in Warsaw, Poland, in May, 2018.

**WNG Session #1: Tuesday, May 8th, 2018, 8:00 AM to 10:00 AM Warsaw Time**

Chair: Jim Lansford (Qualcomm)

Vice Chair: Lei Wang (Huawei)

**Meeting Agenda:**

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

<https://mentor.ieee.org/802.11/dcn/18/11-18-0642-02-0wng-agenda-for-wng-2018-may.ppt>

* Call Meeting to Order
* Agenda approval
* Attendance reminder
* Documentation reminder
* Approval of Previous meeting minutes
	+ Minutes from March

<https://mentor.ieee.org/802.11/dcn/18/11-18-0219-00-0wng-wng-meeting-minutes-of-2018-march-chicago-meeting.docx>

* Announcements
* Confirmation of chair and vice-chair
* Presentations
	+ Tuesday 8 May 2018, 08:00 – 10:00
* Plans for July 2018
* Adjournment

**Meeting Minutes:**

* Meeting called to order at 8:00am Warsaw time on Tuesday, May 8, 2018, by Chair, Jim Lansford.
* Agenda approval:

<https://mentor.ieee.org/802.11/dcn/18/11-18-0642-02-0wng-agenda-for-wng-2018-may.ppt>

* The agenda was approved by unanimous consent
* The chair also noted the affiliation FAQ, anti-trust FAQ, ethics code, IEEE 802.11 policies and procedures, and IEEE 802 policies and procedures
* The chair covered the voting rules for WNG SC, being a standing committee
* Approximately 153 people attended the WNG Session #1.
* Vice Chair Election:
	+ Chair issues the last call for nomination; and also informed the group that we have one candidate so far, i.e., current Vice Chair, Lei Wang.
	+ No response to Chair’s last call for nomination.
	+ Motion: Shall the Wireless Next Generation Standing Committee confirm Lei Wang as the Vice-Chair for the next two year term?
		- Moved: Adrian Stephens
		- Seconded: Jon Rosdahl
		- Discussion: none
		- Vote:
			* unanimous consent (153 present)
* Presentation #1: “16 Spatial Stream Support in Next Generation WLAN” -- Sameer Vermani (Qualcomm)

[Https://mentor.ieee.org/802.11/dcn/18/11-18-0818-03-0wng-16-spatial-stream-support-in-next-generation-wlan.pptx](https://mentor.ieee.org/802.11/dcn/18/11-18-0818-03-0wng-16-spatial-stream-support-in-next-generation-wlan.pptx)

* + Summary of Discussion
		- Discussed the channelization, max channelization; pointed out that Tx/Rx are scattered; channels are covered pretty diversely;
		- Clarified that the current study does not consider outdoor, mobility, channel estimation complexity, or power consumption; can look those areas for future study;
		- Clarified no antenna selection in the simulations;
		- Discussed whether to focus on both MU and SU; pointed out that even in SU case, still show encouraging result; would like it for SU too;
		- Clarified that the simulations had constrains on totally Tx power; and the simulations used proprietary technics to measure the channels and always had 2 streams per STA;
		- Clarified that the simulations used 20MHz channel, random user selection, and normalized pathloss.
		- Clarified that it is not full loading in the simulations, as if adding more loading, the more complexity; based on 11ac experience, stop at 75% loading.
		- Chair encouraged people to have offline discussions, due to limited time in the meeting.
* Presentation #2: "EXtreme Throughput (XT) 802.11" -- Laurent Cariou (Intel)

<https://mentor.ieee.org/802.11/dcn/18/11-18-0857-00-0wng-beyond-802-11ax-throughput-enhancement-utilizing-multi-bands-across-2-4-5-6ghz-bands.pptx>

* + Summary of Discussion
		- Discussed the new features vs. the frequency bands, particularly, 320MHz channel will be focused on the 6GHz band, while other features will focus on existing bands and the new 6GHz band.
		- Comments from 11ax chair: not a good time to start a new project there, as we don’t have an approved 11ax draft spec yet; will get lots of comments from the letter ballot, need resources to resolve comments; even now still fighting with 11ba for resources; 11ax is next-gen of Wi-Fi, currently we don’t have any 11ax deployments; we should wait a little bit more to start SG, e.g., in November or next March.
		- Response to 11ax chair’s comment: a new project will help 11ax comment resolution; timeline ready, don’t wait too long, there will be gaps; we need to move faster than 11ax;
		- Discussed the 6GHz band may have other technologies, e.g., LTE; we need to consider the other users to use that band; we may not be able to use the band as expected; more flexibility and coexistence should be considered; and we should to initiate a project sooner than later;
		- Discussed the proposal of 2-year cadence on major PHY amendment releases from 802.11, need to talk about the roadmap, start with a bucket of features, and look at the top of the feature list; Bluetooth has cadence approach, we could look into how they have been doing with this approach;
		- Discussed the multiband operation: already have multiband operation 2.4 and 5Ghz; expect most AP will have 3 bands, 2.4, 5, and 6; need some improvement in the current multiband operation with 2.4 and 5GHz; need further clarification and discussion on multiband operation and aggregation;
		- Commented on that the project scope discussion needs to look into use cases, looking for one killer use case vs. a set of multiple use cases;
		- Commented that a higher PHY date rate, does not mean a higher date rate for users.
		- Commented that most mobile devices have 2 antenna, so 16Stream is more for AP throughput or network throughput, not for STA throughput.
		- Commented that we further discussions on the scope, not to fix the scope as mentioned in the SP text at this moment.
		- Clarified that the 2nd bullet on slide 8 need further discussion, even not mention it in the SP text.
		- The presenter indicated that he would like to discuss and run the SP in the Thursday AM-2 WNG session, not in this session.
* Presentation #3: "Beyond 802.11ax – Throughput Enhancement Utilizing Multi-bands across 2.4/5/6 GHz Bands“ - Minyoung Park (Samsung)

<https://mentor.ieee.org/802.11/dcn/18/11-18-0857-00-0wng-beyond-802-11ax-throughput-enhancement-utilizing-multi-bands-across-2-4-5-6ghz-bands.pptx>

* + Summary of Discussion:
		- Commented that channel aggregation is good to have, but not sure of multiband operation; TX on one band and Rx on another band require work not only in chip, but also at system level, not sure it is a must-to-have, or just a nice-to-have; and agreed further discussions are needed;
		- Discussed on the 80MHz as the minimum bandwidth at 6GHz slide 5, considering the current dot11 minimum bandwidth is 20MHz; if three channels in 6GHz, how to manage not to get wasted; and agreed that it needs further discussion;
		- Discussed coexistence in 6 GHz, e.g., how to ensure others to treat 6GHz the same way.
		- Discussed the 6GHz band allocation status: 6GHz may be open in US and Europe, and Europe may be slightly more aggressive than US.
* Chair announced that there will be another WNG Session this week for the remaining two contributions and SPs.
* Recess at 9:58am Warsaw time.

**WNG Session #2: Thursday, May 10th, 2018, 10:30 AM to 12:30 AM Warsaw Time**

Chair: Jim Lansford (Qualcomm)

Vice Chair: Lei Wang (Huawei)

**Meeting Agenda:**

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

<https://mentor.ieee.org/802.11/dcn/18/11-18-0642-03-0wng-agenda-for-wng-2018-may.ppt>

* Call Meeting to Order
* Agenda approval
* Attendance reminder
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* Announcements
* Confirmation of chair and vice-chair
* Presentations
	+ Tuesday 8 May 2018, 08:00 – 10:00
	+ Thursday 10 May 2018, 10:30-1230
* Plans for July 2018
* Adjournment

**Meeting Minutes:**

* Meeting called to order at 10:30am Warsaw time on Thursday, May 10, 2018, by Chair, Jim Lansford.
* Agenda approval:

 <https://mentor.ieee.org/802.11/dcn/18/11-18-0642-03-0wng-agenda-for-wng-2018-may.ppt>

* The agenda was approved by unanimous consent
* The chair also noted the affiliation FAQ, anti-trust FAQ, ethics code, IEEE 802.11 policies and procedures, and IEEE 802 policies and procedures
* The chair covered the voting rules for WNG SC, being a standing committee
* Approval of previous meeting minutes
* The minutes of 2018-March Chicago meeting:

<https://mentor.ieee.org/802.11/dcn/18/11-18-0219-00-0wng-wng-meeting-minutes-of-2018-march-chicago-meeting.docx>

* + The minutes were approved by unanimous consent.
* Approximately 130 people attended the WNG Session #2.
* Presentation #4: “Next Generation PHY/MAC in Sub-7GHz” – David Xin Yang (Huawei)

<https://mentor.ieee.org/802.11/dcn/18/11-18-0846-02-0wng-next-generation-phy-mac-in-sub-7ghz.pptx>

* + Discussed the two options presented in slide 6 and slide 7 to improve 802.11 standards development process, seeing more preferences to Option-1 on slide 6, as Option-2 on slide 7 may need further clarification or definitions, e.g., how to guarantee each phase in the Option-2 to have stable spec; what’s the outcome of each phase, etc.;
	+ Discussed some another ideas to improve 802.11 standards development process, e.g., use single TG for multiple projects; have a specific group to writing PARs; not strictly require a SG to write a PAR as everyone can write a PAR and bring it back to the WG; get something out in every 2-year; do projects in parallel vs. in sequential; etc.
	+ Commented on that lots of time may be needed to figure out the diagram on slide 16, then if we know what to do, e.g., 16SS, no need to work on use cases / requirements, we can just do it with a narrowed feature set.
	+ Commented on slide 3, very helpful, have dates to have the diagram or documented schedule; and also pointed out that, when bring technical components to Market, we develop a package, e.g. 11n and 11ac, we actually developed 2 releases to the market.
	+ Commented that the comparison regarding 802.1’s faster spec development may not be fair, as we have a large group of people comparing to 802.1. Note that we have hundreds of people, while 802.1 usually have a much smaller group.
	+ Straw Poll #1: Which option on page 6 and 7 do you like to speed up the standard development of a major PHY/MAC project?
		- Option-1: 33
		- Option-2: 10
		- Abstain: 16
		- Need more info: 38
	+ Straw Poll #2: the presenter decided not to run SP #2 this time.
* Presentation #5: Next Generation Home Use Case -- Yuichi Morioka (Sony)

<https://mentor.ieee.org/802.11/dcn/18/11-18-0903-01-0wng-next-generation-home-use-case.pptx>

* + No questions or comments.
* Straw Poll from Presentation #1

<https://mentor.ieee.org/802.11/dcn/18/11-18-0789-10-0wng-extreme-throughput-802-11.pptx>

* + SP on slide 15:

**Do you agree to start a study group to define new features of 802.11 on bands between 1 and 7.125 GHz with the primary objective to increase peak throughput with the following candidate features: 320MHz bandwidth, multiband aggregation and operation, and 16 spatial streams.  In addition,**

* + The study group will discuss high throughput applications such as video-over-WLAN, AR and VR
	+ The study group may discuss additional objectives and features. Final set of features shall be determined within 6-months, which should be also the maximum duration of study group.
	+ The study group may define procedural enhancements to make 802.11 standards development more efficient and scalable.
	+ Summary of Discussion
		- Discussed about the goal of the 6-month max duration of SG in the SP text, and reached a consensus that the goal of the text is to complete the SG in 6-month.
		- Discussed the idea of forming a TIG this Friday, so that the group could have teleconference calls before July and have meeting in July, as the SG will be approved at the end of July meeting.
		- Clarified that the 6-month counts from SG group formation approval.
	+ SP Results:
		- Yes: 82
		- No: 1
		- Abstain: 21

* Plan for 2018-July meeting:
	+ Call for contributions: the WNG chair will issue a call for contributions before the 2018-July meeting.
* Any other business: none
* Adjourned at 11:49am Warsaw Time