IEEE P802.11
Wireless LANs

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| IEEE 802.11 TGbb Task Group on Light Communications May, 2019 Atlanta Minutes |
| Date: 2018-05-16 |
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Abstract

This document contains the Task Group on Light Communications (TGbb) meeting minutes from the IEEE 802.11 Atlanta meeting, May 2019.

**IEEE 802.11 Task Group TGbb**

**Monday, May 13, 2019, AM2 Session**

Attendance: around 19 people.

1. The IEEE 802.11 TGbb meeting was called to order at by the Chair, Nikola Serafimovski (pureLiFi). Tuncer Baykas (Vestel) recorded the minutes.

1. The Chair reviewed the IEEE-SA patent policy, logistics, and reminders, including meeting guidelines and attendance recording procedures.
	* It is reminded all to record their attendance.
2. The Chair introduced the overall agenda for the week
* Submissions to be discussed
	+ Evaluation Framework document
	+ Hear PHY proposals
	+ Hear MAC proposals
	+ Conference call schedule
1. The Chair run a motion to approve the Agenda.

**Approve the proposed agenda in doc. 11-19/614r2 for the week**

**Move: Harry Bims**

**Second: Volker Jungnickel**

**It was approved with unanimous consent.**

1. The Chair run a motion to approve the teleconference minutes

**Approve the minutes from the teleconference in doc. 11-19/0633r0.**

**Move: Sunwook Kim**

**Second: Harry Bims**

**Motion passed with unanimous consent.**

1. The Chair run a motion to approve the teleconference minutes

**Approve the minutes from the teleconference in doc. 11-19/0523r0.**

**Move: Sunwook Kim**

**Second: Vinayagam Mariappan**

**Motion passed with unanimous consent.**

1. Nikola Serafimovski (pureLiFi) presented doc. 11-19/0847r0 as PHY layer proposal.
	* During this discussion, Tuncer Baykas (Vestel) took over the role as Chair to allow Nikola Serafimovski to contribute to the technical discussion.

 C: ITU-T Technology can be brought here as a technology.

C: Simulation results will be provided. Current simulations are suggesting that a delta of 1.5 MHz is a good value.

C: The PHY impacts the optimum shift value.

C: The group should be careful while determining the optimum PHY.

C: IEEE 802.11 standards are not available as baseband chips.

C: If we go to 802.11ax we can access new MAC layer properties, but currently there are no baseband chips and modifications take time.

C: Switching from 2.4 GHz and 10 MHz would be a big change and 802.11ax would be main focus.

C: Maybe there should not be any mandatory PHY mode

C: In July session performance results will be provided

Q: Did you consider the effect of PWM?

A: Anything over 1 MHz would take care it.

Strawpoll Should the mandatory offset for existing 802.11 PHY modes as described in Slide 6 set to be 1.5 MHz for TGbb?

Y 3

N 5

A 9

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Should the 11ax be used as the mandatory mode?

Y 1

N 7

A 10

1. Kai Lennert Bober (Fraunhofer HHI) presented LC Optimized PHY for LV doc. 11-18/865r0.

Q: Is the preamble of G9991 compatible with 802.11?

A: The preamble is constructed the same way but the bits are different?

Q: Is the sampling rates different?

A: Yes they are but you can work with the same clock.

Q: Is Bit loading and water filling the same?

A: Water-filling optimizes information per bit loading is an implementation.

Q: Slide 6 and 7, is there a new PHY SAP?

A: Just the waveform is required. Any PHY SAP can be used.

C: This presentation is an introduction as a successful technology

C: Gain scaling is used (Frequency domain transmit spectrum shaping)

C: MIMO is considered

C: There is preamble and header

C: There will be a preamble which can be understood by every one.

Q: Did you use the same light source?

C: For one line yes

Group recessed until PM2

**Monday, May 13, 2019, AM2 Session**

Attendance = 20 people in the room

Chair called the meeting to order

1. The Chair reviewed the IEEE-SA patent policy, logistics, and reminders, including meeting guidelines and attendance recording procedures.
	* It is reminded all to record their attendance.
2. Strawpoll

Are you interested in further presentations discussing the potential suitability of the G.9991 PHY for 802.11bb?

Y 6

N 0

A 5

1. Jeong Gon Kim (Korea Polytechnic University) presented VLC based Simulation Results in Enterprise and Industrial Environment comments on 11-19/875r2.
	* Q: What is your clock speed?
	* A: The Bandwidth is 20 MHz.
	* C: Please provide the 802.11a performance.
	* C: EbNo value of 80 dB is too high
	* C: The frontend should be transparent
	* C: Normal link budget says 20-30 dB should be enough.
	* Q What is the pulse shape?
	* A: I will check it with my student.
2. Volker Jungnickel (Fraunhofer HHI) presented Updated PHY Evaluation Framework 11-19/877r0
3. Motion to accept the changes in doc 11-19/0877r0 and apply them to the 11-19/0187r3 and create 11-19/0187r4

Moved: Volker Jungnickel

Seconded by: Marc Emmelman

Y: 8

N: 0

A: 2

Motion passes

1. Nikola Serafimovski (pureLiFi) presented doc. 11-19/0848r0 Evaluation methodology for MAC proposals.
	* During this discussion, Tuncer Baykas (Vestel) took over the role as Chair to allow Nikola Serafimovski to contribute to the technical discussion.
	* C: Simulation scenarios should not be in this document.
	* C: At least one channel model should be selected as mandatory mode.
	* C: The group should have at least on scenario that every proposer should have?
	* C: The mechanism for MAC evaluation should be captured
	* C: Group discussed how many scenarios should be considered.
	* Q: Any objection to have one baseline scenario? What should be that scenario?
	* Q: Any objection to have two baseline scenarios of the PHY layer?
	* C: Industrial and Enterprise Conference Room are selected as baseline scenarios
	* C: It is not clear how to do MAC simulations
	* C: Initial curves should be available for PHY layer.
	* C: Group decided to finalize the review of the document
	* Q: How do you determine the out of time delivery?
	* A: It is a PHY layer determination
	* End to End latency is measured from the time the MAC at the transmitting BSS, receives a packet the until the time that the MAC at receiving at successfully receives.
	* Group is content with the transmission latency part.
	* C: We can improve the document this week.
	* 11-19/0848r1 will be uploaded and discussed during the week

The meeting is recessed until TUE PM2.

**Tuesday, May14, 2019, PM2 Session**

Attendance = 20 people in the room

1. The IEEE 802.11 TGbb meeting was called to order at by the Chair, Nikola Serafimovski (pureLiFi). Tuncer Baykas (Vestel) recorded the minutes.

1. The Chair reviewed the IEEE-SA patent policy, logistics, and reminders, including meeting guidelines and attendance recording procedures.
	* It is reminded all to record their attendance.
2. Suhwook Kim (LG) LC MAC Submission 11-19/0757r1
	* C: It is very high level.
	* C: Why do you support Contention Free Access?
	* Q: What is BSS color?
	* A: It is an short identifier in PHY layer.
	* C: OFDMA took a long time to implemented.
	* C: OFDMA could be implemented easily and is available in all coming 11ax (Wi-Fi 6) chipsets
	* C: OFDMA is an example contention free access.
	* C:
3. The Chair asked comments for the strawpoll.

**Do you agree to define contention free channel access in 11bb MAC.**

 **Detailed operation TBD**

Strawpoll text is changed to

**Should a contention free channel access be defined in 11bb MAC to avoid hidden terminal problem that would occur with physical listen before talk?**

Examples of contention free access mechanism include HCCA trigger based OFDMA

It does not include RTS CTS

Detailed operation TBD

Y 5

N 0

Moe information required 12

1. Nikola Serafimovski (pureLiFi) presented proposed-mac-channel-access-features-for-tgbb doc. 11-19/0846r1.

During this discussion, Tuncer Baykas (Vestel) took over the role as Chair to allow Nikola Serafimovski to contribute to the technical discussion

* + C: We shouldn't restrict resource blocks.
	+ C: More work need to implement it with bit loading
	+ C: More explanation is needed.
1. Nikola Serafimovski (pureLiFi) continue presentation of MAC proposal evaluation methodology doc. 11-19/848r1.
	* C: Group discussed possible ways to go forward
	* .C: Add sentence define characteristics of the PHY underlying in the proposals PER vs SNR for the relevant MCS
	* C: Add sentence Derive SINR for all users from every AP
	* C: Delete examples for simulations
	* C: Keep baseline scenarios
	* 11-19/848r2 is saved
2. Motion to accept the changes in doc 11-19/0848r2 and apply them to the 11-19/0187r4 and create 11-19/0187r5

Moved: Kai Lennert Bober

Seconded by: Marc Emmelmann

Y: 8

N: 0

A: 8

Motion passes

The meeting is in recess.

**Wednesday, May 16, 2019, PM2 Session**

Attendance = 20 people in the room

1. The IEEE 802.11 TGbb meeting was called to order at by the Chair, Nikola Serafimovski (pureLiFi). Tuncer Baykas (Vestel) recorded the minutes.

1. The Chair reviewed the IEEE-SA patent policy, logistics, and reminders, including meeting guidelines and attendance recording procedures.
	* It is reminded all to record their attendance.
2. The Chair introduced the schedule for this meeting slot.
3. **Motion**

**“Amend the proposed agenda for the week as shown in doc. 11-19/614r3.”**

**Move: Suhwook Kim**

**Second: Marc Emmelman**

**Approved with unanimous consent, motion passes**

1. Volker Jungnickel (Fraunhofer HHI) presented doc. 11-19/916r0.
	* It provides Mac Simulation Methodology based on measurements
	* C:Select PHY mode such that a PER is achieved.
	* C: The Mac simulations should only consider PER values.
	* C: System proposals should include PHY and MAC simulations.
	* C: PHY evaluation methodology takes care of it.
	* C: Mobility is random change in SNR
	* C: How do estimate the achievable rate, given that you don’t have the PHY?
	* C: Use the MEASEM, use BER

Strawpoll:

* + Do you think TGbb should solve the open problems for MAC layer simulation methodology?

Y:7

N:0

A:8

1. **TGbb request the following teleconference schedule**
	* 8:30 AM EDT 27 May
	* 8:30 AM EDT 11 June
	* 8:30 AM EDT 25th of June

 **Move: Marc Emmelman**

**Second: Suhwook Kim**

1. **Approved with unanimous consent, motion passes**
2. Motion to adjourn by unanimous consent

Approved

The meeting was adjourned.