IEEE P802.11
Wireless LANs

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| IEEE 802.11 TGbb Task Group on Light Communications TGbb MayMeeting Minutes |
| Date: 2021-05-11 |
| Author: |
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Abstract

This document contains the Task Group on Light Communications (TGbb) May plenary meeting minutes

**IEEE 802.11 Task Group TGbb**

**Monday, May 10, 2021, 11:15AM (ET)**

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

1. The Chair reviewed the IEEE-SA patent policy, logistics, and reminders, including meeting guidelines and attendance recording procedures.
	* No essential patents are claimed.
	* It is reminded all to record their attendance through the IMAT system.
2. The Chair introduced the overall agenda in doc. 11-21/651r2 for the meeting.
	* Comments on D.04 will be discussed.
3. **TGbb Motion** to approve the agenda in 11-21/651r2.

**Motion approved unanimously.**

1. **TGbb Motion** to approve the minutes.

**Motion tabled.**

1. 11-21/0724r2 is presented by Nancy Lee and Volker Jungnickel

C:These coomets can be resolves one by one. We can check the technical comments.

C:Groups discussed how to mark editorial comments.

CID 4: Editor accepted to delete blue notes and check with other editors.

CID 15: Different wavelength are accepted for different PHYs.

Q: Do we need to specify wavelength for different PHYs? We need it for common mode.

C: We can provide an explanation.

C: An explanation would be beneficial for the reader.

Agreed in principle. Resolution is postphoned, Nancy Lee will work on the final text.

CID 16

C: Other modulations should also be approved.

 Agreed in principle. Resolution should be revised, Nacy Lee will to work on the text.

CID 17

Q: Why was modulation order limited?

A: It was for simplicity. But it is not a good reason.

C: 1024-QAM is challenging today but it may not be in the future.

C: It is better to future proof the standard.

Acepted

CID 18

C: MIMO can be done by LC

C: Leave out the line 13 in 32.3.4.1

C: A note in comment could be added.

Comment accepted.

CID 20

C: Page 12, Group discussed multiple front ends.

C: Can we remove the the figures?

C: Having the concept is good. The explanation could be improved.

C: The figures can stay.

Comment is rejected.

CID 23:

C: A formula should be provided

C: No onjection from the group.

Comment accepted.

CID 26:

C: Typo should be corrected in line 22 of 32.3.5.3

C: A revised resolution is provided THE LC HE PLME shall be the same section as the 27.4 except the following changes.

Revised resolution is accepted.

CID 28:

C: It makes sense.

Q: Do we need to define 3 different values?

A: Maybe 2 values could be used.

Nanc Lee chould provide a revised resolution.

CID 29:

C: There should not be two different versions.

Resolution is postponed.

CID 30:

Comment accepted

Latest version of G9991.h will be checked

CID 36:

Comment accepted

CID 38:

Comment posptponed to check G.9961

CID 40:

Comment posptponed to check G.9961

CID 42:

C: Related to CID29

Postponed

CID 45:

C: An Annex C will be created.

Accept with changes.

1. Group is in recess..

**Tuesday, May 11, 2021, 9:00AM (ET)**

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

1. The Chair reviewed the IEEE-SA patent policy, logistics, and reminders, including meeting guidelines and attendance recording procedures.
	* No essential patents are claimed.
	* It is reminded all to record their attendance through the IMAT system.
2. The Chair introduced the overall agenda in doc. 11-21/651r3 for the meeting.
	* Relayed CCA test results is added to the agenda
	* We need to add a discussion on 802.11 and 802.15 to not to have overlapping LC meetings.
3. **TGbb Motion** to approve the agenda in 11-21/651r3.

**Motion approved unanimously.**

1. Chong Han (PureLifi) presented 11-21/0722r1

Q:Why is the RTS/CTS performance is so low?

A: RTS/CTs is in MAC, CCA is in PHY. When you allow relayed CCA you remove the hidden node problem.

A: Even the RTS creates a interference. It is like listen before talk.

A: Sensing the channel improves the performance.

Q: What do you mean in slide 4 RTS/CTs is on all the time?

A: RTS/CTS is active at all times.

Q: What is the threshold?

A: It is zero. And small and large packets are send.

C: Trafic patterns can be explained.

C: 1500 bytes is the packet size.

1. Chong Han (PureLifi) presented 11-21/0280r3

Q: It is hard to follow the argument. Maybe it would be good to have. Why is it better than RTS/CTS? Could you explain is one more time?

A: This is similar to PCF used in 802.11.

A: It is a simple amplify and forward scheme, which removes the hidden node problem. When hidden node problem is solved, rest of the RTS/CTS and similar one are working

A: The system work without relayed CCA but with the relayed CCA it works better.

A:There is no requirement of implementing of anything.

C: Is full duplex necessary?

A:No It is amplify and forward.half duplex works.

C: Implementation is a big challenge. 100 dB amplification is necessary.

Q: Why do you keep the name relayed CCA?

A: We need to use the term repetition CCA. Thank you for pointing.

Q: Line 7 page 1 How does AP detects transmissons?

A: AP detects multiple incoming transmissons, and stop its own.

Q: Non AP detects something and relays to AP. What is sent exactly?

A: A decodable message.

Q: What does AP send if it is not a decodebale data?

A: AP does basic amplify and forward. We are providing the most basic method but better methods can be implemented.

C: More explanation could be better. A clean explanation would be better.

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1. Chong Han (PureLifi) presented 11-21/0798r1

C:If you want add text here it should cover both.

A: It is implementer depenedent.

C: I am not even sure if anything has to be added.

C: Light signals are converted to electrical signals could be written.

C: Maybe in the CCA section, we may need to say existing CCA method are working.

C: Repetition is in the most ideal case decodeable. I missed the point why anything has to be added.

C: CCA works fine if it is detected.

Q: Why don’t we use RTS/CTS?

A: Experimental results show that RTS/CTS is not working well. RTS signal causes interference. 21/722r1 slide 6 is shown.

C: There could ne something wrong with the RTS.

A: Please check the results.

New documents will be prepared according to todays’ discussion.

C: Configurations could be presented in the 11-21/0722r1. Interreptions shouldn’t occur.

1. Volker Jungnickel indicated there is no update in LC optimized PHY.
2. Chong Han (PureLifi) presented 11-21/r1772r4
	* New paragraph is provided in front of 31.2

C: Where are the changes are made?

A: It is in the other document. We will add senteces.

C: Do we new subclauses or embed it to existing one?

A: Embedding would be easier.

C: We are having hard time to review this text since it depends on 11/545r1. Second Clause 26 is not created yet.

1. Chong Han (PureLifi) presented 11-21/r846r2
2. Chong Han (PureLifi) presented 11-21/r545r2

Q: Is there only one proposal to replace UL RA?

A: Yes, ULRA would be put in UL MU.

C: Repeated CCA could benefit here as well. It is good to have highly scheduled systems. It is an optional change.

C: I am not sure the need for those changes.

Q: Is there a real implementation?

A: Not yet but we would like to discuss.

1. Group is in recess.

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| **Wednesday, May 12, 2021, 9:00AM (ET)** |  |
| 1. The IEEE 802.11 TGbb meeting was called to order at by the Chair, Nikola Serafimovski (pureLiFi). Tuncer Baykas (Hyperion) as a temporary secretary recorded the minutes.

 1. The Chair reviewed the IEEE-SA patent policy, logistics, and reminders, including meeting guidelines and attendance recording procedures.
	* No essential patents are claimed.
	* It is reminded all to record their attendance through the IMAT system.
2. The Chair introduced the overall agenda in doc. 11-21/651r4 for the meeting.
3. **TGbb Motion** to approve the agenda in 11-21/651r4.

**Motion approved unanimously.**1. Volker Jungnickel (HHI) presented 11-21/0812r0.

Q:How can we decouple different PHYs?A: We suggest to use is in PHY Layer. Assigining differet bands would solve it. 1. Volker Jungnickel (HHI) presented 11-19/0388r0.
	* Slide 10 shows the general idea.
	* It was the high level intention.

Q:CSMA/CA was the idea for 802.11. A: Since we stating with 802.11a. LCO PHY and LC CM PHY will use very basic MACs.C: For the production grade chips, when 802.11bb comes out Wifi6 cabaple chips will be inside.Modern generation devices will have scheduling.C: Current draft allows to build Common mode device. Putting restirctions would be disadventegoues.C: C: Determinstic Access, is reflected in market needs. I encourage the group to find deterministic solutions. I have some questions 1. Time sensitive protocol is discussed with 802.1. 802.11be works with them. 802.11bb may want to work as well.
2. There is some work done in 802.11ad and ay in MAC level. Group may want to look at them.

C: 802.11ad and 802.11ay MAC could be checked and how 802.11ax is connected to those should be checked.C: Some people in 60 GHz may come.1. Chong Han (PureLifi) presented 11-21/0813r0.
	* The text applies to LC Common and LC HE modes.
	* At the moment it is not determiend if it applies to LC optimized.
	* This work should be better “CCA requriements for HE PHY in 27.2.6 Support for non-HT, HT and VHT formats and 27.3.20 Receiver specification”
	* CCA Requirements should be 32.3.5.4
2. Chong Han (PureLifi) presented 11-21/0280r5.

Group worked on the 11-20/813r1, Backoff could be removed…Q:How do we handle an non LC device? Would the throughput be reduced?A: There will some implementation issues but it can be solved.Group is in recess.**Wednesday, May 12, 2021, 11:15AM (ET)**1. The IEEE 802.11 TGbb meeting was called to order at by the Chair, Nikola Serafimovski (pureLiFi). Tuncer Baykas (Hyperion) as a temporary secretary recorded the minutes.

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	* No essential patents are claimed.
	* It is reminded all to record their attendance through the IMAT system.
2. The Chair introduced the overall agenda in doc. 11-21/651r5 for the meeting.
3. **TGbb Motion** to approve the agenda in 11-21/651r5.

**Motion approved unanimously.**1. The Chair presented 11-21/1290r8

C:We are not ready for the letterballot to start in July.C: We need a doable timeline.C: We publish D.05 in May.C: We provide changes in JuneC: In July we have D0.6C: Will we have all comments resolved in May. C: Group worked on the new timeline. C: Some new comments need action. Group created 18/1290r9 1. Approve the minutes from the Mar 2021 interim meeting, specifically: doc. 11-21/0446r2

By:Matthias Wendt Seconded By:Tuncer BaykasMotion is approved with unanimoous consent 1. Approve the minutes between the Mar. 2021 and the May. 2021 meeting, specifically:

doc. 11-21/0801r1doc. 11-21/0802r2By:Matthias Wendt Seconded By:Tuncer BaykasMotion is approved with unanimous consent 1. Instruct the Technical Editor to follow the instructions and content provided in doc. 11-21/0813r1 and incorporate the changes into Draft 0.5

By:Nancy LeeSeconded By Tuncer BaykasMotion is approved with unanimous consent 1. Approve the proposed timeline revision for TGbb in doc. 11-18/1290r9 and the teleconferences associated in the document.

Move: Matthias WendtSecond: Volker Jungnickel Motion is approved with unanimous consent Motion is approved with unanimous consent 1. Motion to adjourn approved by unanimous consent.
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