IEEE P802.11
Wireless LANs

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| IEEE 802.11 TGbb Task Group on Light Communications TGbb July Meeting Minutes |
| Date: 2022-7-12 |
| Author: |
| Name | Affiliation | Address | Phone | Email |
| Chong Han | pureLiFi |  |  | Chong.han@purelifi.com  |
| Tuncer Baykas | Ofinno |  |  | tbaykas@ieee.org  |

Abstract

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

**IEEE 802.11 Task Group TGbb**

**July 12th, 2022, 8:00AM (EDT)**

1. The IEEE 802.11 TGbb meeting was called to order at by the Chair, Nikola Serafimovski (pureLiFi).
2. 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 and pay the registration fee.
3. The Chair introduced the overall agenda in doc. 11-22/855r3 for the meeting.
	* Comment resolutions on D2.1 will be discussed.
	* Review MDR report 11-22/0975r0
	* Review 11-22/1087r0 and 11-22/1088r0
4. Motion to accept the agenda.
	* Approved with unanimous consent.
5. Robert Stacey walks through the editorial comments in 11-22/0975r0 the report of the TGbb Mandatory Draft Review. Recommendations for changes to the P802.11bb draft bring the draft into improved compliance to IEEE-SA and WG11 style. TE to reply and apply the corresponding editorial comments proposed in the report 11-22/0975r0. D3.0 will have the MDR complied. Note: MDR needs to be complied before going to SA ballot.
	* Discussion on the usage of word ‘should’ on P19L1 and P19L3. How to create measurable criteria for the determination of ‘sufficient spatial separation’ is difficult in the LC. The criteria for spatial separations will be understood by the implementors. Hence, the comment was rejected.
6. TE started the comment resolutions on comments in the 11-22/0949r1.
	* CID 2 is accepted
	* CID 3 is accepted
	* CID 4 is accepted with notes to TE
	* CID 5 is accepted
	* CID 19 is revised
	* CID 20 is accepted
	* CID 21 is revised
	* CID 22 is revised
	* CID 23 is accepted
	* CID 24 is revised
	* CID 25 is accepted
	* CID 6 is accepted
	* CID 8 is revised
	* CID 7 is accepted
	* CID 9 is accepted
	* CID 10 is accepted
	* CID 11 is accepted
	* CID 27 is accepted
	* CID 28 is revised
	* CID 30 is rejected
7. Group recessed

Room Attendance.

Remote Attendance:

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| --- | --- |
| **Name** | **Affiliation** |
| Baykas, Tuncer | Ofinno |
| Bluschke, Andreas | Signify |
| Jungnickel, Volker | Fraunhofer Heinrich Hertz Institute |
| Lee, Nancy | Signify |
| Serafimovski, Nikola | pureLiFi |
| Stacey, Robert | Intel Corporation |
| Wendt, Matthias | Signify |
| Chakrabarti, Samita | Verizon |
| Chen, Evelyn | Ericsson |
| Fang, Juan | Intel |
| Stanley, Dorothy | HPE |
| Haasz, Jodi | IEEE |
| Han, Chong | pureLiFi |

**July 12th, 2022, 10:30AM (EDT)**

1. The IEEE 802.11 TGbb meeting was called to order at by the Chair, Nikola Serafimovski (pureLiFi).
2. 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.
3. Motion to accept the agenda. in doc. 11-22/0855r3 for the meeting.
	* Approved with unanimous consent.
4. TE started the comment resolutions on comments in the 11-22/0949r2.
	* CID 36 is revised
	* CID 37 is revised
	* CID 38 is revised. TE presented 11-22/1088r0, the table of channel mapping between LC and RF channels at 5 GHz and 6GHz bands. TE presented 11-22/1087r0. Channel mapping is not fundamentally changed but the way to present the mapping, including adding a table for explaination and revise the channel mapping text. TE added the explaination text on the usage of PrimaryChannelLower/UpperBehavior in the text. The Group discussed on the necessity of inserted text and revise the text input (new text is available in doc. 11-22/1087r1).
	* CID 39 is postponed
	* CID 41 is revised. Question about whether the ‘reference clock’ shall be synchronised is discussed in the group. There are other ways to implement such as i.e., synchronising to a separate clock.
	* CID 12 is accepted
	* CID 13 is revised
	* CID 14 is revised
5. Group recessed.

Room Attendance.

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| Lee, Nancy | Signify |
| Serafimovski, Nikola | pureLiFi |
| Wendt, Matthias | Signify |
| Chakrabarti, Samita | Verizon |
| Han, Chong | pureLiFi |
| Kureev, Aleksey | IITP RAS |
| Tolpin, Alexander | Intel |
| Regev, Dror | Huawei |
| Yu, Mao | Anyka |
| Vicent, Santi | MaxLinear |

**July 13th, 2022, 8:00AM (EDT)**

1. The IEEE 802.11 TGbb meeting was called to order at by the Chair, Tuncer Baykas (Ofinno).
2. 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 and pay the registration fee.
3. The Chair reviewed the overall agenda in doc. 11-22/855r3 for the meeting.
4. TE started the comment resolutions on comments in the 11-22/0949r3.
	* CID 18 is revised
	* CID 12 is revised
	* CID 15 is accepted
5. Robert Stacey walks through the doc. 11-22/1108r0 regarding the LC STA definition, CCA requirements subclause, and etc. Discussion on MAC clause modifications for LB. Robert to prepare the text for suggested input under the MAC clause. An updated version r1 was uploaded for review and to be discussed on Thursday.
6. TE presented the doc. 11-22/1087r1.
7. continues the comment resolutions on comments in the 11-22/0949r3.
	* CID 16 is rejected
8. Group recessed.

Room Attendance.

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| Lee, Nancy | Signify |
| Stacey, Robert | Intel Corporation |
| Wendt, Matthias | Signify |
| Chakrabarti, Samita | Verizon |
| Chen, Evelyn | Ericsson |
| Au, Edward | Huawei |
| Han, Chong | pureLiFi |

**July 13th, 2022, 10:30AM (EDT)**

1. The IEEE 802.11 TGbb meeting was called to order at by the Chair, Nikola Serafimovski (pureLiFi).
2. 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.
3. The Chair reviewed the agenda. in doc. 11-22/0855r3 for the meeting.
	* Add one more session at AM2 on Thursday.
4. TE continued the comment resolutions on comments in the 11-22/0949r3.
	* CID 17 is revised. Remove the LC definition.
	* CID 1 is postponed
	* CID 34 is accepted
	* CID 33 is accepted
	* CID 26 is accepted
	* CID 13 is postponed
5. TE presented 11-22/1114r0 to assist the resolution of CID 39. A graph for the mixed mode operation of the RF antennas and LC optical antennas was proposed.
	* Multiple links may enhance the efficiency of the system.
	* Need to modify 4.30.
	* How do devices detect each other? Multiple RF antennas.
	* Quantify the operations. In literature, there were a number of studies on this mixed mode operation.
	* If one of the means failed such as due to obtacles by LoS, the other antennas may work to enhance the robustness of the system.
	* Optimal selection of antennas. WiFi system is different from the cellular system.
	* CID 39 is postponed after discussion.
6. Robert Stacey presents doc. 11-22/1108r1 to show how it is related to CID 39.
	* The standard has to be implementable.
	* Figure 32-1 gives an example of the LC STA.
	* Operating class and channel number are selected, then IF channel number is derived.
	* Discussion over the necessity introducing new changes to channelisation and the current LC IF only system due to the contribution in doc. 11-22/1114r0.
	* Robert suggested to have different sets of fomulas for different bands channels.
	* It is sugguested to add clarification to doc. 1087r1. The LC STAs are specified to work on the channels, as modified in 1087r2 temporarily.
	* Discussion to continue on Thursday AM1.
7. Group recessed.

Room Attendance.

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| Serafimovski, Nikola | pureLiFi |
| Wendt, Matthias | Signify |
| Han, Chong | pureLiFi |
| Stacey, Robert | Intel |
| Yaron, Ben-Arie | Huawei |
| Ptasinski, Henry | Element78 Comm |
| Kureev, Aleksey | IITP RAS |
| Madpuwar, Girish | Broadcom |
| Vicent, Santi | MaxLinear |
| Bahn, Chrisy | IEEE SA |
|  |  |

**July 14th, 2022, 8:00AM (EDT)**

1. The IEEE 802.11 TGbb meeting was called to order at by the Chair, Nikola Serafimovski (pureLiFi).
2. 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 and pay the registration fee.
3. The Chair updated the overall agenda in doc. 11-22/855r4 for the meeting.
	* Approved with unanimous consent.
4. TE continued the comment resolutions on comments in the 11-22/0949r4.
	* Robert Stacey presents doc. 11-22/1108r2
		+ Check how 4.3.29 CMMG STA presented in 802.11.
		+ Add MAC features description in 4.3.30. Clause 31 was then be safely deleted.
		+ Split the Figure 32-1 to two figures to demonstrate the example transmitter and receiver block diagram.
		+ Update the PHY section
	* TE presented 11-22/1114r1 to assist the resolution of CID 39.
		+ Equal MCS could be designed in the future.
		+ Choosing MCS lacks supporting mechanism to realise it currently in the 802.11.
5. Chair started a straw poll on whether to include the contribution in 11-22/1108r2 into D3.0
	* Y2 N4 A4
	* TE withdraw CID 39
6. The 11-22/0960r0 is taken off from the agenda.
7. Motion to approve the minutes from the May 2022.
	* Motion passed unanimously.
8. Motion to approve the minutes between May and July 2022 meeting.
	* Motion passed unanimously.
9. Motion to Approve the comment resolutions for all of the comments in doc. 11-22/0949r5 for TGbb Draft 2.1 and the changes in the MDR report 11-22/0975r1 and instruct the editor to produce a Draft 3.0 that includes the agreed changes.
	* Motion passed unanimously.
10. Motion on ‘Having approved resolutions to comments from LB 263 in doc. 11-22-0678r7 and resolutions to comments from CC 42 in doc. 11-22-0949r5 as well as resolutions to the findings in the MDR report in doc. 11-22-0975r1, Ask the WG to start a 15-day WG re-circulation LB for Draft 3.0.’
	* Result (Y / N / A 8 / 0 / 0)
11. Motion to ask the WG to make P802.11bb D2.0 available for purchase
	* Discussion on the Motion.
	* İt will enhance the popularity and acceptance of 802.11bb if the Draft is made available for purchase.
	* Not confident on the D2.0 version to be shared.
	* To be continued in the next session.
12. Group recessed.

Room Attendance.

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| Chen, Evelyn | Ericsson |
| Au, Edward | Huawei |
| Han, Chong | pureLiFi |
| Serafimovski, Nikola | pureLiFi |
| Bahn, Christy | IEEE SA |
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**July 14th, 2022, 10:30AM (EDT)**

1. Motion to ask the WG to make P802.11bb D2.0 available for purchase
	* Continue to discuss on the Motion.
	* D2.0 is less stable than D3.0. Suggested motioning to make D3.0 for purchase when it is available.
	* Straw poll on ‘Ask the WG to make P802.11bb D2.0 available for purchase.’
		+ Result (Y / N / A 3 / 5 / 1)
2. Motion to ‘Ask the WG to make P802.11bb D3.0 available for purchase, conditional upon D3.0 passing WG re-circulation ballot.’
	* + Result (Y / N / A unanimously passed (10 voters))
3. Telephone conference planning
	* 1 Aug. for D3.0 release
	* 30 day LB
	* 6 Sept. at 11:00 EDT (17:00 CET) for 1h
4. Volker presented 11-22/0960r0 in reply to the comments from 11-22/0831r0.
	* The document was updated to reflect the latest version of the changes in the upcoming draft.
	* References to the comment resolution related contributions were added.
5. Group adjourned.

Room Attendance.

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| Han, Chong | pureLiFi |
| Serafimovski, Nikola | pureLiFi |
| Stanley, Dorothy | HPE |
| Riegel, Max | Nokia |
| Stavridis, Athanasios | Ericsson |