IEEE P802.11  
Wireless LANs

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| IEEE 802.11 TGbb Task Group on Light Communications  TGbb September 2021  Meeting Minutes | | | | |
| Date: September 15, 2021 | | | | |
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Abstract

This document contains the Task Group on Light Communications (TGbb) September Interim 2021 meeting minutes

**IEEE 802.11 Task Group TGbb**

**September 13, 2021, 11:15-13:15 EDT**

1. The IEEE 802.11 TGbb meeting was called to order at by the Chair, Nikola Serafimovski (pureLiFi). Matthias Wendt (Signify) 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 register and record their attendance through the IMAT system
2. The Chair introduced the overall agenda in doc. [11-21/1305r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1305-01) for the call.

Agenda Agreement

Submissions to be discussed

General

Architecture review for TGbb

Doc. 11-21/1498r0

ITU-R liaison review

Doc. 11-21/1457r1

Doc. 15-21/0434r1

Comments on Draft 0.6

Doc. 11-21/1453r1

Doc. 11-21/1455r1

MOTIONS

Approval of meeting minutes

Motions to include new text into Draft 0.7 from the week

AOB

Telecon schedule

Agenda approved with unanimous consent.

1. Nancy Lee (Signify) presents “Architecture questions concerning LC” in [11-21/1498r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1498-00)

Discussion of the contained topics with TGbb team and members of ARC SC:

* + discussion on reuse of RF chip topic
    - The up-down-conversion architecture is implementation but still so important for market entry with given chips that it needs to be shown.
    - It is not an ARC matter, could be well in the informative annex, but it may be very prominent in implementations in the field so making normative text from it may be still reasonable for standard to include: "If you are doing it by downconversion then this is the correct way to do it."
    - Related channelization may be aligned by means of an adapted SW layer. So these are implementation related and beyond the standard.
    - Perhaps the standard should explain what’s needed for e.g. a 2.4 GHz chip to use 11bb channelization, e.g., mapping from 2.4 GHz channel number X to LC channel number 1
    - But do not talk about chips but rather standard entities like PHY.
    - LC baseband channel is actually IF channel (e.g., 26 MHz center frequency)
    - Comment: Antenna connector definition (slide 7) is ambiguous.
    - Response: Focus is on RX path, e.g. reuse existing CCA SNR thresholds
    - Comment: Clarify purpose of the antenna connector term.
    - Concluded that antenna connector reference point is different in “ideal” architecture vs. up/down conversion architecture
  + discussion on Multiple OFE topic
    - Figure represents MIMO. Let’s remove the sentence “MIMO out of scope” from the text as experiment shows current chipsets can do it with OFEs
    - Purpose of including something in the standard is to ensure interoperability. Current text doesn’t specify interoperable MIMO for LC. Should either fully specify MIMO for LC or remove the figure.
    - TGbb needs to decide is MIMO a thing for which we need to have interop?
  + Discussion of LC STA
    - Regarding slide 18
    - Definitely do not try to globally change e.g. “an HT STA” to “an HT STA or LC HT STA”
    - Should be feasible to handle by adding wordings something like: "an LC STA using LC HT PHY mode is also an HT STA, except features XYZ don’t apply." Can build on text that states which subclauses of HT PHY don’t apply to LC
    - QoS STAs probably already covered as all clauses after 11e say e.g. “an HT STA is also a QoS STA”

1. Group is in recess at 13:05 .

**September 14, 2021, 9:00-11:00 EDT**

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

1. The Chair reviewed the IEEE-SA patent policy, logistics, and reminders, including meeting guidelines and attendance recording procedures.
2. Tuncer Baykas (Hyperion Technologies) presents “Liaison\_Response\_to\_ITU-R\_WP\_1A on VLC standards” in [11-21/1457r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1457-01-0000-liaison-response-to-itu-r-wp-1a-on-vlc-standards.docx)
   * Discussion on the document
   * The chair informed that the group will create the document and upload it to mentor. Afterwards ITU SC will check and it will discussed in 802.18
   * It is suggested to use terms Free Space Optical Communications (long range point to point), Wireless Local Area Communications using Light (short range, multiple access), Optical Camera Communications (low date rate unidirectional), instead of visible light communication and beam steered infrared light communication
   * Related abbreviations added
   * It is stated that “IEEE is providing comments” should be added
   * VLC enhances security and operates in RF hostile environments
   * Group added that LC frequencies should stay unlicensed
   * New version will be uploaded after the meeting
3. Volker Jungnickel presented D0.6 of the draft standard

* Antenna connector definition should be changed
* Purpose of antenna connection definition (e.g. for CCA mechanism) should be clarifed
* In the scope it is stated that we don’t support MIMO so 32.3.6.3.3 could be removed
* We need to go to letterballot in November
* MIMO is a valid LC feature and some text should be provided
* We need to clarify which HE STA capabilities apply or not apply.
* For each of the PHY modes how LC STA’s operate, e.g. LC HE STA may not be defined but requirements should be defined
* A proposal should be provided to explain it.

1. Chong Han (pureLiFi) presented “Channel numbering for LC HT and LC VHT PHY modes” in [11-21/1453r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1453-01-00bb-channel-numbering-for-lc-ht-and-lc-vht-phy-modes.docx)
   * The explanation of which channel number is supporting which channel bandwidth is supported and which channels are supported by each PHY
   * Refer to Annex E for channel numbers and channel bandwidth and refer to the related subclause for channel bandwidth
   * All information should stay only in one place, don’t duplicate
   * State in the document valid operating channel numbers by regulatory domain is defined in Table E-4 of E.1
   * In 32.3.2.1.2 the term regulatory domain can be removed
   * Revision to be uploaded as r2.
2. Chong Han (pureLiFi) presented “Proposed text for MAC supporting LC HT and LC VHT PHY modes” in [11-21/1455r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1455-01-00bb-proposed-text-for-mac-supporting-lc-ht-and-lc-vht-phy-modes.docx)
   * The list of functionalities should be converted to a line by line list.
   * What is the justification of selecting these subclauses?
   * Group checked what is currently available for operation.
   * If all the subclauses stated are mandatory for LC to operate it should be explained. Otherwise it is puzzling to include subclauses that do not appear related to LC
   * We can state which clauses are optional
   * Restructure info into a table to explain mandatory and optional subclauses for different PHYs.
3. Group is in recess at 11:00 .

**September 15, 2021, 9:00-11:00 EDT**

1. The IEEE 802.11 TGbb meeting was called to order at by the Chair, Nikola Serafimovski (pureLiFi). Matthias Wendt (Signify) recorded the minutes.

Continue with the Agenda in doc. [11-21/1305r2](https://mentor.ieee.org/802.11/dcn/21/11-21-1305-02)

General

* + Comments on Draft 0.6
    - Doc. [11-21/1455r2](https://mentor.ieee.org/802.11/dcn/21/11-21-1455-02)
    - Doc. [11-21/1499r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1499-00)
    - Doc. [11-21/1453r2](https://mentor.ieee.org/802.11/dcn/21/11-21-1453-02)

MOTIONS

* + Approval of meeting minutes
  + Motions to include new text into Draft 0.7 from the week

AOB

* + Telecon schedule

1. The Chair reviewed the IEEE-SA patent policy, logistics, and reminders, including meeting guidelines and attendance recording procedures.
2. Chong Han (pureLiFi) presented “Proposed text for MAC supporting LC HT and LC VHT PHY modes” in [11-21/1455r2](https://mentor.ieee.org/802.11/dcn/21/11-21-1455-02-00bb-proposed-text-for-mac-supporting-lc-ht-and-lc-vht-phy-modes.docx)
   * The list of functionalities is converted to a line by line list.
3. Chong Han (pureLiFi) reported that “Channel numbering for LC HT and LC VHT PHY modes” in [11-21/1453r2](https://mentor.ieee.org/802.11/dcn/21/11-21-1453-02-00bb-channel-numbering-for-lc-ht-and-lc-vht-phy-modes.docx) is uploaded with the changes agreed to yesterday
4. Nancy Lee (Signify) presented “Comments on P802.11bb/D0.6” in [11-21/1499r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1499-00)
   * all CCIs accepted with the exception for the listed ones below:
     + CCI-4 modified remedy
   * Comment resolutions uploaded as [11-21/1499r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1499-01-00bb-comments-on-p802-11bb-d0-6.xlsx)
5. Motions:

**Motion** to approve the minutes from the July 2021 meeting

Approve the minutes from the July. 2021 plenary meeting, specifically:

doc. [11-21/1163r0](https://mentor.ieee.org/802.11/dcn/21/11-21-1163-00)

Move: Tuncer Baykas

Second: Matthias Wendt

Motion approved with unanimous consent.

**Motion** to approve the minutes between the July 2021 and September 2021 meeting

Approve the minutes between the July 2021 and the September 2021 meeting, specifically:

Doc. [11-21/1502r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1502-01)

Move: Matthias Wendt

Second: Tuncer Baykas

Motion approved with unanimous consent.

**Motion**

Having approved comment resolutions for all of the comments in doc. [11-21/1499r1](https://mentor.ieee.org/802.11/dcn/21/11-21-1499-01) for TGbb Draft 0.6  
Instruct the editor to prepare Draft 0.7 incorporating these resolutions.

Move: Matthias Wendt

Second: Volker Jungnickel

Motion approved with unanimous consent.

**Motion**

Instruct the editor to replace P14L24-L29 in Draft 0.6 with P2L2–L11 of doc. [11-21/1453r3](https://mentor.ieee.org/802.11/dcn/21/11-21-1453-03) into Draft 0.7.

Move: Tuncer Baykas

Second: Nancy Lee

Motion approved with unanimous consent.

1. The Chair reviewed the Timeline in [11-18/1290r10](https://mentor.ieee.org/802.11/dcn/18/11-18-1290-10) and will request 6 slots in November Plenary.

5 Teleconferences are planned during October:

8 Oct. (11:00 EDT) 2h

18 Oct. (11:00 EDT) 2h

20 Oct. (11:00 EDT) 2h

21 Oct. (11:00 EDT) 2h

25 Oct. (11:00 EDT) 2h

New version [11-18/1290r11](https://mentor.ieee.org/802.11/dcn/18/11-18-1290-11) containing the new Telecon slots generated.

1. Group has exhausted the agenda and is adjourned at 11:05.