IEEE P802.11
Wireless LANs

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| Minutes of the 2024-09-11 meeting of the IEEE 802.11 Enhanced Light Communication Study Group |
| Date: 2024-09-12 |
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Abstract

This document contains the minutes of the September 2024 meeting of the IEEE 802.11 Enhanced Light Communication (ELC) Study Group.

Abbreviations:

Q: Question

A: Answer

C: Comment

Revision history:

R0: Minutes for second meeting slot only

R1: Minutes of both meeting slots combined, integrating text from 11-24/1636r0

**ELC Meeting slot# 2 September 10, 2024 AM1**

1. The IEEE 802.11 ELC SG meeting was called to order at by the Chair, Nikola Serafimovski (pureLiFi).
2. Tuncer Baykas volunteered to take minutes
3. The Chair reviewed the IEEE-SA patent policy, logistics, and reminders, including meeting guidelines and attendance recording procedures.
4. No essential patents claimed.
5. It is reminded all to record their attendance through the IMAT system and pay the registration fee.
6. The Chair nominated Volker Jungnickel (Fraunhofer HHI) as the Vice Chair.
7. Volker Jungnickel is elected as the Vice Chair with unanimous consent.
8. Chair introduced the overall agenda in doc. 11-24/1598r1 for the meeting.
9. **Motion to accept the agenda in 11-24/1598r1.**

**Approved with unanimous consent.**

1. Volker Jungnickel presented 11-24/1594r0

Q: Would there be Multiple LC technology in the system?

A: It is possible to use one LC technology for management other for data

Q: Would RF be only downlik or both UL and DL?

A: It could be discussed in the future.

C: This is SG so we need to discuss which topics will be part of the scope

1. Nikola Serafimovski presented doc. 11-24/1599r0

C: Channelization and larger bandwidth should be considered in detail.

C: Multiplexing should be increased

C: Simple integration with baseband is added

C: Power saving and increased coverage area, was changed into methods to reduce PAPR

C: Underwater communication could be considered

C: PAPR discussion could be delayed

C: 400-500nm should be added to the spec

C: Coexistence is discussed, should not be mixed with backwards compatibility

Group recessed.

**ELC Meeting slot# 2 September 11 2024 AM1**

1. At 8:05, the Chair, Nikola Serafimovski (pureLiFi) calls the meeting of the IEEE 802.11 Enhanced Light communication Study Group (SG) to order.
2. Guido R. Hiertz acts recording secretary of the SG.
3. The chair presents 11-24/1598r2. The chair reminds attendees of their obligations when participating in the SG’s meeting.
4. At 8:09, the chair presents page 14 of the slide deck and introduces the proposed agenda.
5. At 8:10, attendees approve the proposed agenda by unanimous consent.
6. At 8:12, Mohamed Islim (pureLiFi) presents 11-24/1627r0. He concludes his presentation at 8:23. Attendees discuss the presentation.

C: The blue shift is a well-known issue. We have discussed this in IEEE 802.11 TGbb. In IEEE 802.11bb we assumed the use of dichroic filters.

A: I appreciate that you bring the topic to our attention.

C: It will be interesting to see what kind of channelization we can achieve. We will not reach DWDM with 22 nm bandpass, but maybe, CWDM with less than a 100 nm bandpass.

C: Is it possible to use a CDMA-type enconding or matched-filters to separate the wavelengths?

A: This is the task of the optical filter here.

C: Depending on the angle that light is reaching the filter, filters show very different behaviors. The filter characteristic has a high directionality. As the angle increases the cut-off areas change.

1. At 8:32, Stefan Videv (Kyocera) presents 11-24/1628r0. He concludes his presentation at 8:46.

C: What is the range you can achieve underwater?

A: We are looking at communication in the horizontal and not the vertical range. Hundreds of meters should be possible. The achievable communication distance depends a lot on water quality. It’s not the depth that is the issue. If there are not many sediments, there are less issues. A coastal area with shallow water is more of a problem.

C: Can you refer us to the SDO that does standards for underwater communication? Best doing this by creating a revision of the document and putting the reference inside. They could be invited to our meetings, or we could exchange liaison letters with them.

C: We have activities on positioning in IEEE 802.11. These are separate projects. The PHY layer provide means to do measurements and the results can be accessed via an interface from the higher layer, where the fine time measurements (FTMs) are performed, as defined e.g. in IEEE 802.11az and IEEE 802.11bk.

C: Does water quality also impact acoustic communication?

A: Yes, it does. There are various effects.

C: If you consider relay deployments in ELC, please do not reinvent the wheel. The standard already incorporates several relay solutions and modes, including IEEE 802.11s.

1. At 8:58, the chair presents 11-24/1599r1. Attendees discuss the draft PAR and propose modifications and improvements. Related discussions finished at 09:53.
2. Afterwards, the Chair presents the following straw poll:

“Is there any objection using the Scope defined in doc. 11-24/1599r2 (section 5.2.b) as the starting point for the ELC PAR?”

1. No attendee expressed disagreement with the question asked.
2. At 09:55-10:00, the Chair presents the following motion:

**“Is there any objection using the Scope defined in doc. 11-24/1599r2 (section 5.2.b) as the starting point for the ELC PAR?”**

**Moved: Juan Carlos Zúñiga**

**Seconded: Volker Jungnickel**

There is no discussion.

**Attendees approve the motion by unanimous consent.**

1. At 10:02, the Chair declares the SG’s meeting adjourned.