IEEE P802.15
Wireless Specialty Networks

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| IEEE 802.15.13 November, 2018 Interim Meeting Minutes for Bangkok, Thailand |
| Date: 2018-11-13 |
| Author: |
| Name | Affiliation | Address | Phone | Email |
| Chong Han | pureLiFi |  |  | Chong.han@purelifi.com |
| Volker Jungnickel | HHI |  |  |  |
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Abstract

# This document contains the TG13 Multi-Gigabit/s Optical Wireless Communications Meeting minutes from the November Plenary meeting in Bangkok, Thailand.

**IEEE 802.15.13**

**Tuesday, November 13, 2018, AM1**

Attendance

Volker Jungnickel (HHI)

Kai Lennert Bober (HHI)

Tuncer Baykas (Mediopol Uiversity)

Nikola Serafimovski (pureLiFi)

Chong Han (pureLiFi)

Xu Wang (VLNComm, remote)

Arturo Campos (GiGaLiFi)

Vinayagam Mariappan (SNUST)

YEONG MIN JANG (Kookmin University)

1. The Chair presented the agenda doc. 15-18/0530r0 and read the relevant attendance and IP elements.
2. The agenda (doc. 15-18/0530r1) was approved with unanimous consent.
3. Meeting minutes for September 2018 Interim (doc. 15-18/0525r1) were approved with unanimous consent.
4. Meeting minutes for the teleconferences between the September 2018 interim and the November 2018 plenary (doc. 15-18/0528r1) were approved with unanimous consent.
5. Xu presented doc. 15-18/0562r0 including GTS allocation/deallocation, HCM allocation frame,
	1. Xu proposed to remove receive GTS, requirement of ACK for GTS request.
	2. Xu proposed to balance the requests from all devices in the GTS assignment mechanism, and accept based on capacity.
	3. Xu proposed new frame for HCM allocation. Volker questioned the concept that how to combine the GTS with HCM. Volker concerns that HCM is good for UL, but no difference for DL. Xu agreed with the benefits of HCM. This proposal is for DL. Chong commented on the type and subtype are to be confirmed once we have a comprehensive list of frames. Lennert commented that type 00 is for management frames which has up to 16 in terms of numbers in total. Chong responded that the list of the management frames is to be agreed since many of them may not be needed. Volker questioned if necessary to duplicate the HCM info in both PHY and MAC. Lennert and Xu confirmed duplication of the info is necessary; every device needs to know the info before decoding.
	4. Xu proposed new frame for MCS request command to adjust MCS based on cannel condition. Lennert commented this frame could be control frame instead of management frame. Xu agreed to deem this as control frame.
	5. Xu proposed new frame for LED selection request/respond in the multi-LED transmitter. Volker asked whether to select one or a group of LEDs. Xu answered it does not have to be a group of LEDs; delay is not considered in the proposal. Offline discussion is arranged on Thursday AM1.

The meeting is in recess.

**Tuesday, November 13, 2018, AM2**

Attendance

Volker Jungnickel (HHI)

Kai Lennert Bober (HHI)

Tuncer Baykas (Mediopol Uiversity)

Nikola Serafimovski (pureLiFi)

Chong Han (pureLiFi)

Xu Wang (VLNComm, remote)

Arturo Campos (GiGaLiFi)

Vinayagam Mariappan (SNUST)

Yeon Min Jang (Kookmin University)

Friedbert Behrens (FBconsulting)

Harry Bims (Bims Laboratories Inc.)

1. The Chair presented the agenda in doc. 15-18/0530r1 and read the relevant attendance and IP elements.
2. Chong Han (pureLiFi) presented doc. 15-18/0487r0 which contains a high-level text description of the non-beacon enabled MAC.
* It has been discussed that this descriptive text goes into Chapter 4. Lennert and Xu will agree upon a similar text for the beacon-enabled mode. Lennert has a prepared a draft that will be uploaded as soon as possible.
1. Chong Han (pureLiFi) presented doc. 15-18/0488r0 which contains descriptive text for the non-beacon-enabled mode.
* There was a discussion about what text goes to which chapter and how to structure the draft. This discussion was postponed to the time when the to-do list is created.
* There was a discussion on the role of CFP and CAP in non-beacon-enabled mode.
* The switch between the different beacon-enabled/non-beacon-enabled MAC modes will be in the general MAC frame structure under “protocol version”.
* There was a discussion about the channel access in non-beacon-enabled mode.
* **From now on BE = beacon-enabled, NBE = non-beacon-enabled**
* Q: How to handle priority-classified traffic?
* A: This is handled after the “keep-it-simple-and-stupid” (KISS) mode. So there is no prioritization of traffic at all in NBE MAC mode.
* **It was agreed to distinguish Contention-access based polling period (CAPP) and Contention-free Polling Period (CFPP) from now on to avoid confusion between NBE and BE mode**
* Mechanism for ACK/NACK for polled frames in Fig. 4: ACK is not for current but for previous DL frame.
* After 4 retransmissions a packet will be dropped
* Q: Where the coordinator is situated, in each light.
* A: Yes.
* Q: So a packet will be dropped even if it is received by another light.
* A: Yes, again using KISS.
* C: The NBE MAC mode is a very simple MAC, while maintaining a functional system. And there is the BE MAC mode which is more complex but handles all these issues.
* Q: Can we keep it KISS but without ACK to increase throughput.
* A: Possibly yes.
* There was an intense discussion on Fig. 2 in the document. It was mentioned that due to the polling of other devices, and the proposed aggregation of ACK and data, there is a delay of ACK information.
* Missing an ACK results in a retransmission which can be discarded.

1. Lai Lennert Bober (Fraunhofer HHI) presented doc. 15-18/0410r1 which contains an update of the slides on multiple optical frontends.
* Q: You can ask for a reconnect?
* A: Only if there is no more beacon detected. Then the device goes into disconnected mode. Next time it will inform the coordinator if it has received a beacon.
* Q: Can we call this SDMA?
* A: SDMA is often used for MIMO with zero forcing.
* There has been some confusion on the use of the term and some other terms were suggested but not found clearer either.
* TAP definition caused some discussion. It was clarified that each frontend can be seen with one or more taps, where one tap per OFE is typical.

The session is recessed until PM1.

**Tuesday, November 13, 2018, PM1**

Attendance

Volker Jungnickel (HHI)

Kai Lennert Bober (HHI)

Carlos Cartras (HHI)

Tuncer Baykas (Mediopol Uiversity)

Nikola Serafimovski (pureLiFi)

Chong Han (pureLiFi)

Arturo Campos (GiGaLiFi)

Vinayagam Mariappan (SNUST)

Yeon Min Jang (Kookmin University)

1. The Chair presented the agenda in doc. 15-18/0530r1 and read the relevant attendance and IP elements.
2. The Chair asked how many sessions to be needed for next IEEE meeting in January. 8 sessions will be asked for.
3. Kai Lennert Bober (Fraunhofer HHI) continued to present doc. 15-18/0410r1 which contains an update of the slides on multiple optical frontends.
	1. Lennert presented the typical superframe example.
	2. Q: why is there IDLE period in the CFP?
	3. A: this is from the perspective of one device. Other devices will utilize the ‘IDLE’ period.
4. Kai Lennert Bober (Fraunhofer HHI) presented doc. 15-18/0563r0 to list the open points.
	1. Lennert stated Ethertype protocol discrimination is needed. Q: this is outside the scope of TG13. TBC.
	2. Lennert suggested to have aggregation of frames inside MSDU is needed. To be continued.
	3. Use 1 bit reserved in the Frame Control field in the MAC header to indicate the ‘Last fragment’ for defragmentation. The bit will be 1 if this is the last fragment; otherwise 0.
	4. Refer the related sections/subsections for security in 802.15.4y.
	5. To be continued in Wed. PM1.

The session is recessed until PM1 on Wed.