**IEEE 802.15**

**Wireless Specialty Networks (WSN)**

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| Project | IEEE P802.15 Working Group for Wireless Specialty Networks (WSN) |
| Title | **802.15 WG & CAC Minutes March 2023 Hybrid Meetings** |
| Date Submitted | [17 March 2023] |
| Source | [Ann Krieger][U.S. Department of Defense][Clint Powell][ Platforms, Inc.][Chandler, AZ] | email: [AnnKrieger.dod@gmail.com]Voice: [+1.614.545.8255]Voice: [+1.480.586.8457]Fax: [--]email: [cpowell@ieee.org] |
| Re: | [March 802.15 Session] |
| Abstract | [IEEE 802.15 Working Group & CAC Minutes] |
| Purpose | [Official minutes of the Working Group Opening/Mid-week/Closing/Joint and CAC Sessions] |
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**142th IEEE 802.15 WSN SESSION**

**Held Hybrid from Atlanta Hilton (all times in local)**

**Mar 12-17, 2023**

# 802.15 WG Opening

# Monday, 13th March 2023

**10:33 AM** WG Chair, Clint Powell (Meta), called the meeting to order and opened the WG Agenda ([*15-22-0090-04*](https://mentor.ieee.org/802.15/dcn/23/15-23-0090-04-0000-march-2023-agenda-for-802-15.xlsx))

**Announcements**

WG 1st Vice-Chair, Phil Beecher (Wi-SUN Alliance) discussed the meeting requirements:

* You must be registered to participate in any of these session meetings. TG chairs, if there is someone on your call that has not paid, remove them from the WebEx.
* DVL list will go out to the voters on record.
* Register your attendance in IMAT and if you have any problems please reach out to Phil Beecher. 75% Attendance = 9 time slots (any 9 of the 12)
* Get motions to the WG chairs as soon as possible and immediately after your TG closing meeting.

Lunch is included in your registration and will be served on the first floor.

WG Chair asked for new participants to speak up; there was one person in the room and none on-line.

## Legal

WG Chair presented the SASB dates, on a tab in the agenda ([*15-23-0090-04*](https://mentor.ieee.org/802.15/dcn/23/15-23-0090-04-0000-march-2023-agenda-for-802-15.xlsx))

WG Chair informed the group of and displayed the IEEE-SA patent policy presentation
slides 0-5 ([*http://standards.ieee.org/board/pat/pat-slideset.ppt*](http://standards.ieee.org/board/pat/pat-slideset.ppt)).

* WG Chair asked the participants who wished to declare a Letter of Assurance (LoA) or to identify patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) that the participant believes may be essential for any of the ongoing activities within the 802.15 WG.
* No essential patent claims were brought forth.

WG Chair displayed and read the standard IEEE Anti-Trust statement.

WG Chair displayed and read the standard IEEE Copyright Policy, including Code of Ethics.

WG Chair went through the agenda.

## WG Approvals

Ann Krieger (US DoD) **moved** to *approve the agenda (*[*15-23-0090-04*](https://mentor.ieee.org/802.15/dcn/23/15-23-0090-04-0000-march-2023-agenda-for-802-15.xlsx)) and Gary Stuebing (Cisco Systems, Inc) seconded the motion. Following no objection, the agenda was approved.

Ann Krieger (US DoD) **moved** *to approve the previous meeting minutes (*[*15-23-0039-00*](https://mentor.ieee.org/802.15/dcn/23/15-23-0039-00-0000-802-15-wg-cac-min-jan-2023-hybrid-interim.docx)*)* and Thomas Kuerner (TU Braunschweig) seconded the motion. Following neither discussion nor objection the minutes were approved. There were no matters resulting from the previous minutes.

NesCom/RevCom updates – 802.15.13 has been approved. There will be a tutorial on Light Communications (P802.15.13 & P802.11bb) on Monday night.

Regulatory TAG (P802.18) opening is on Tuesday AM2. 802.15 members will receive reciprocal credit. We need a good liaison to 802.18.

## General and Administrative

WG Chair presented the general meeting information:

* Voters: (voters: 135, nearly: 14, aspirant: 30)
* There was a discussion on how one gets their voting rights.

Ben Rolfe (BCA) gave the treasurers report ([*EC-23-0003-02*](https://mentor.ieee.org/802-ec/dcn/23/ec-23-0003-02-WCSG-wireless-treasurer-report-2023.pptx)):

* Our bank balance is larger than normal.
	+ We received a surplus from the May 2022 meeting in Warsaw, with the money being held at the meeting planner until recently. The registration was set for mixed-mode, but we didn’t have the in-person so we saved there. It was fortuitous that we could move the date for this venue to May 2024.
	+ Penalty paid by January 2023 venue, helped to bolster funds.
* We have adjusted registration fees as we learn the costs of mixed mode.
* About 605 attending (in person and remote) in Baltimore. We are approaching our pre-pandemic numbers of around 300 in-person. We are not losing the in-person attendance due to remote that we expected.
* Make hotel reservations soon for the May 2023 wireless interim as we have a block at a reduced rate that we must fill. Registration costs ($600/$800/$1000) Budget for May was presented.
* Budget for September was displayed, the venue is back in Atlanta – Buckhead.
* It does cost a lot more to do a mixed mode meeting. Also, food & meeting space has also increased. Forecasting is difficult. Need the reserve to be higher than before because we need to be prepared for cancellations. i.e. March 2022 cancelled, $1M penalty. Negotiated that 802 Wireless would use this for May 2023, but still had a $300K penalty.
* Deadbeat consequences were listed.

The March 802.15 CAC meeting minutes are included in the WG minutes
*(this document, 15-22-0139-00)*

The Wireless Chairs Steering Committee meeting minutes are contained in
*(document #:ec-23-0045-WCSG -minutes)*

The WG still needs

* A WG Secretary – It requires taking minutes at the opening, mid-week and closing plenaries. There are also two CAC meetings; one on Sunday and one on Wednesday morning. And finally are the LMSC meetings for Plenaries on Sunday and Friday. We have a template for the minutes.
* Volunteer to setup New WG15 Webpages (prefer using WordPress)
* Volunteer to set up automate voting rights calculator (Visual Basic or Python)

WG Chair showed 802.15 WG Opening report that was shown at the combined wireless opening previous to this meeting ([*15-23-0091-04*](https://mentor.ieee.org/802.15/dcn/23/15-23-0091-04-0000-march-2023-opening-report-for-802-15.pptx)*)*

* Displayed the Org chart showing the new SG Privacy which is working towards TG status.

The WG 1st Vice-Chair will be sending out polls for Future meeting.

The WG chair reviewed the information about the May meeting deadlines.

Because of the mixed mode, TG chairs need to have either yourself or a vice-chair is in the room. We have found that Scarlet is the best solution for the mixed mode sessions and is in every room.

## 802.15 Status Reports (Goals/Objectives for the Week)

TG 15.3mb (5 meetings)

* 1st one joint with THz
* Working on the info for the joint 802.1 meeting and on comment resolution.

SC THz – (2 meetings) one with TG3mb.

TG 4ab – NG-UWB (9 meetings) document #146 on mentor,

* Technical break outs – sometimes 2 rooms per slot.
* Had 4 people on the waiting list but was able to accommodate them.
* Goal for the week – consensus to allow to start a draft. Hope to have a schedule for draft 0 by closing with the plan to have a draft 0 posted for the May meeting.

Standing Committee - WNG (1 meeting)

* 3 presentations – OFDM, updates on sub-GHz, Regulatory changes in India.

Task Group 4me Revision to 2020 (4 meetings)

* Draft 2 is in private area and a couple of submissions at this meeting

Task Group 6ma – (BAN/VAN) (3 meetings) and a joint session with 4ab.

* Summary of submitted draft proposals.
* Commonality with 4ab and 6ma
* Feasability with 802.1, TSN

Task Group 7a – OCC (3 meetings)

* Discussions.

Task Group 13 – Multi Gigabit/sec OWC (0 meetings)

* No meetings - approved

Task Group 16t – 802.16 Lic-NB Amendment (4 meetings)

* Complete technical content

SG Privacy (3 meetings)

* Work on comments from working groups.

SC IETF (1 meeting)

* Next meeting is in 2 weeks, and agendas have not been posted yet.

Joint 802.1/802.15 Mtg. (1 meeting)

* TG 3mb is presenting.

SC – Maintenance& Rules (3 meeting)

* Reviewing PAR submissions from other groups.
* Updates to the operations manual.
* Review of Project plan, with plan to present it as a tutorial.

## New Business

WG Chair asked if there was any new business. None was raised.

## Any Other Business

Tribute to Donna Ferguson is located at the registration table.

WG Chair asked if there was any other business. Nothing was raised.

## WG Recess

**11:54 PM** WG Chair recessed the meeting

# 802.1 / 802.15 Joint Mtg.

# Tuesday, 14 March 2023

**6:30 PM** 802.15 WG vice Chair Phil Beecher (Wi-SUN) and 802.1 WG Chair Glenn Parsons (Ericsson) called the meeting to order.

This activity is looking at 802.1 features/concepts that can be applied to the various 802.15 standards.

Glenn shared the [agenda](https://1.ieee802.org/2023-03-plenary-joint-1-15-agenda/) and went through the IEEE patent (there was no response) and other legal [slides](https://www.ieee802.org/1/files/public/templates/admin-TG-intro-0721-v01.pdf).

Thomas Kürner (TU Braunschweig) presented “Overview on IEEE Std 802.15.3 (Presentation to joint 802.15/802.1 Meeting)” (*document #* [*15-23-0135-00*](https://mentor.ieee.org/802.15/dcn/23/15-23-0135-00-03ma-overview-on-ieee-std-802-15-3.pdf)) :

* History of 802.15.3
* Applications include Intra-Device Communications, Data Centers, Kiosk Downloads, backhaul/fronthaul.
* Chipsets are available for 802.15.3e.
* Currently there is a revision project for 802.15.3 (mb), which includes new frequency bands and fixed a timing issue as well as a roll up of previous amendments.
* Future applications of THz applications may include mobility and mesh networks.
* What is the link to IEEE 802.1?
	+ Changing from 64 bit addresses to 48 bit addresses
	+ 802.1ACct

There were several questions:

* Correction on Slide 14, 484 bits? Yes, that needs to be corrected in the document.
* There is no need to modify IEEE Std 802.1AC content related to IEEE Std 802.1Acct.
* In the 802.15.3 amendments, the only things that were changed were the PHY layers
* QOS table (slide 15) – was referencing 802.1D but now it needs to reference 802.1Q
* TSN (slide 16) is the next step. It helps that you already have the 802.1AC convergence layer. What TSN features do you need? Don’t know yet, need to find out what applications need and the use cases.
* What is Dynamic Addressing (slide 16)? Privacy, not having a static address– may come up in a mobile environment.
* What applications do you see using TSN? If you want to separate your base station or more on the backhaul link. But the backhaul doesn’t have as stringent requirements. Let 802.1 know when you have requirements.
* 802.1 did a profile of TSN for Fronthaul, please leverage that.

802.15.3 was slotted to be used at the Olympics in Japan to help get people through the turnstiles quickly as well as for multimedia to phones.

802.15.3 is in good shape to be compatible 802.1.

Next session, July 2023 in Berlin, will be on 802.15 TG6 (Body area networks), planning to begin at 1800 local time for one hour. 802.15 will review the presentation internally. This will conclude all the 802.15 TGs. We will then circle back on having discussions about the base bridging or enabling TSN.

**7:01pm** 802.1 Chair adjourned the meeting

# 802.15 WG Mid-week

# Wednesday, 15th March 2023

**10:40 AM** WG Chair, Clint Powell (Meta) called the meeting to order displaying (document #[*15-22-0090-05*](https://mentor.ieee.org/802.15/dcn/23/15-23-0090-05-0000-march-2023-agenda-for-802-15.xlsx))

Announcements:

* Prior to Covid if a meeting got changed a quick email went out. Now it is not as simple due to WebEx keys. Therefore there are a lot updates to the agenda sent out over the listserv. Most of them are deleting and swapping times/rooms. Please send requests by the end of PM1 for any meetings the next day so the administrators can update their sites and IMAT is as correct as possible.
* Social tonight – exit the side door. 6pm-9:30pm – have your badge. The food and drinks will be at the whale tank.
* Closing tomorrow during PM2.
* Registration for this meeting is required and register your attendance on IMAT – 75% criteria.
* TG chairs please provide your motions to Clint and Phil ASAP or immediately after your last session. Closing meeting is PM2. Direct Vote Live will be used for all motions at closing, and the emails should be sent out later today.
* 802.18 regulatory Opening – one time occurrence. Can someone please be a liaison?
* Still looking for a full-time secretary and some volunteers to automate the spreadsheet for voting (10 hrs) and update the website (1 week)

Polls about future meetings – look in your email today and please return by EOB today.

Upcoming Meetings:

* May 2023 Wireless Interim in Orlando, Florida (Hilton – on Disney Property)
	+ Hotel rates outside our block rate is considerably more.
* July 2023 Plenary in Berlin.
* Every mixed meeting needs to have a TG chair, vice-chair or other designated officer to run video and audio portion of the virtual meetings.

All TG, SG and SC chairs gave a quick verbal status. There are currently 3 motions.

**SC THz Closing Report:** Thomas Kuerner (TU Braunschweig) presented ([*15-23-0161-02*](https://mentor.ieee.org/802.15/dcn/23/15-23-0161-02-0thz-sc-thz-closing-plenary-slides-meeting-march-2023.pptx) )

* Motion:

Move that 802.15 WG reviews and approves the response to the liaison from ETSI ISG THz in doc. IEEE 802.15-23-0134-03 and forward it to 802.18 TAG for submission to 802 LMSC

Moved: Thomas Kuerner

Second: Phil Beecher

Y: 41 A: 2 N: 0

* No meetings in Orlando, but will need one in Berlin.

**SG Privacy** : Tero Kivinen (self) Motions:

* Working on PAR and CSD, comments from .1, .3, .11 and one from the LMSC
* Motion to LMSC on Friday so it can become a TG
* Motion – to approve the PAR and CSD. – need to post by 6:30 Wednesday

WG Motion: move that the PAR and CSD contained in documents 15-23-0040-02 and 15-23-0041-05 respectively, be approved by the IEEE 802.15 WG and that the EC be requested to forward the PAR to NesCom. The 802.15 working group chair and technical editor are authorized to make additional modifications to the PAR and CSD as needed to reflect EC discussion at its closing meeting.

Moved by: Tero Kivinen

Seconded by: Phil Beecher

Discussion:

* + Amend motion: Change “will maintain” to “maintains”
	+ Use present tense to set up for the proper time at publishing.
	+ Any objection to the Friendly amendment to the motion – none.

**WG Motion**: move that the PAR and CSD contained in documents 15-23-0040-02 (Scope amended to change "will maintain" to "maintains") and 15-23-0041-05 respectively, be approved by the IEEE 802.15 WG and that the EC be requested to forward the PAR to NesCom. The 802.15 working group chair and technical editor are authorized to make additional modifications to the PAR and CSD as needed to reflect EC discussion at its closing meeting.

Moved by: Tero Kivinen

Seconded by: Phil Beecher

Y 42, A 3, N 0

**SC M/Rules** : Phil Beecher (Wi-SUN)

* **802.15 WG - Motion to seek approval of the 802 LMSC to send the 802.15.4-2020 cor 1 to ISO/IEC JTC1**

WG Motion: Move that the IEEE 802.15 WG requests that IEEE 802 LMSC submit IEEE Std 802.15.4-2020 cor1 to ISO/IEC JTC1 SC6 for liaison and adoption under the PSDO agreement.

Moved by Phil Beecher

Second by Gary Stuebing

Discussion – none

Y 46, A 3, N 0

**11:44** 802.15 Midweek recessed by WG Chair Clint Powell (Meta)

**Wireless Next Generation (WNG)**

**11:07** 802.15 WNG Called to order by Ben Rolfe (BCA)

The WNG slides were presented ([*15-23-0122-02*](https://mentor.ieee.org/802.15/dcn/23/15-23-0122-02-wng0-march-agenda-and-meeting-slides.pptx)), the agenda was reviewed and nothing was added or deleted.

**11:50** Presentation: Low data rate extension of the 802.15.4-2020 OFDM PHY by Thomas Almholt (Texas Instruments) ([*15-23-0094-00*](https://mentor.ieee.org/802.15/dcn/23/15-23-0094-00-wng0-low-data-rate-extension-of-the-802-15-4-2020-ofdm-phy.ppt) ).

* The proposal was discussed:
	+ There was a study of existing IEEE PHY’s
	+ TI is seeking a patent – but will license it under the IEEE terms.
* The speaker asks that the WG to consider the proposed long range extension of the SUN OFDM PHY with the goal of being adopted by the IEEE 802.15
* Questions:
	+ You defined a set of requirements: users, market sizes?
		- Grid space (gas & water meters) they want a standards before they switch out what they are currently doing.
		- Building automation
		- Amazon has an interest.
		- 600-700M units year. Long range is about ½ of that (100-300M/year)
	+ SUN OFDM – 800 kbits/sec.
	+ It looks like we have a solution, but not the problem yet. Interesting but insufficient, but that is what at SG is for. Like to see how fast you are turning it on and off.
* Will discuss with WG chair on next steps – either IG or SG.
	+ Gage interest, how many think we should proceed? 20 + 2 = 22
	+ Who would participate? 11 + 2 = 13

**12:20** CMSA Gap Analysis Between IEEE Std 802.15.4 and Japanese Standards JJ-300.10 by Phil Orlik (Mitsubishi) ([*15-23-0167-00*](https://mentor.ieee.org/802.15/dcn/23/15-23-0167-00-0000-the-csma-gap-analysis-between-ieee-802-15-4-and-japanese-standard-jj-300-10.pptx)).

* After being discussed at the January Interim, they took a longer look at it.
* This is to be an update of what they have already looked at and will continue their work in the Interest Group.

**12:33** 802.15.4 Channel Plan update for India sub-1GHz band by Phil Beecher (Wi-SUN) ([*15-23-0179-00*](https://mentor.ieee.org/802.15/dcn/23/15-23-0179-00-wng0-update-to-india-sub-1ghz-spectrum-regulation.pptx)).

* Original 865-867 MHz but they want to extend it to 865-868MHz.
* Proposal: Increase the upper boundary of the 866MHz Band specified in 802.15.4 from 867 to 868.
* We would like to do this in 802.15.4me and will discuss with the TG chair

**12:37** WNG Adjourned by Ben Rolfe

# 802.15 WG Closing

# Thursday, 16th March 2023

**4:04 PM** WG Chair, Clint Powell (Meta) called the meeting to order displaying the closing agenda (document #[*15-22-0090-06*](https://mentor.ieee.org/802.15/dcn/23/15-23-0090-06-0000-march-2023-agenda-for-802-15.xlsx))

## Announcements

Announce name and affiliation when you speak.

WG Vice-Chair Phil Beecher (Wi-Sun Alliance) did an attendance check in IMAT and 1 person did not have the 75% attendance (9 out of 12 meetings). Attendance closes when we adjourn.

Direct Vote Live (DVL) will be used for all votes. You should have received an email with a link. If you did not, please let Clint or Phil know. All votes are recorded below as Y x, A x, N x (Yes, Abstain, No)

802.15 is still in need of a secretary, we have some incentives. Reminder we have a couple projects for someone who has web or excel experience.

**Future Meetings**

Polls – You should have received an email regarding a Poll about future sessions. Please complete it before 8am Friday morning to allow us to get the information to the closing LMSC meeting Friday afternoon.

The next plenary will be in Orlando Florida (USA) in May, the details were discussed in the opening and mid-week. Book early.

All TG/SG/IG chairs were reminded that an officer is needed at the in-person meeting to run the technology for those meetings. Contact us as soon as possible if it is someone other than the Chair.

## Closing Reports

**4:06 PM 802.15 WG** Closing Agenda by Clint Powell (Meta)

**TG3mb Closing Report**: Thomas Kurner presented: [*15-23-0162-01*](https://mentor.ieee.org/802.15/dcn/23/15-23-0162-01-03ma-tg3mb-closing-plenary-slides-meeting-march-2023.pptx) (needs 1 slot for May):

***TG3b:*RecirculationBallot**

***Move****that 802.15 WG start a Standards Association Recirculation Ballot of CA document 15-22-0462-05-03ma-coexistence-assurance.doc and document P802.15.3-D5 (as edited in accordance with the instructions in document 15-23-0164-04-03ma). Comment resolution on recirculation ballots between sessions will be conducted via reflector email and via teleconferences announced to the reflector as per the LMSC 802 WG P&P.*

*Moved By: Thomas Kürner*

*Seconded By: Phil Beecher*

*Discussion: none*

*Y 41, A 3, N 0*

**TG3mb: Form a comment resolution group**

***Move****that 802.15 WG approve the formation of a Comment Resolution Group (CRG) for the Standards Association balloting of the P802-15-3-Rev B-D5.pdf  with the following membership: Thomas Kürner (Chair), Iwao Hosako, Josep Jornet, Shoichi Kitazawa and Jörg Robert. The CRG is authorized to approve comment resolutions, edit the draft according to the comment resolutions, and to approve the start of recirculation ballots of the revised draft on behalf of the 802.15 WG. Comment resolution on recirculation ballots between sessions will be conducted via reflector email and via teleconferences announced to the reflector as per the LMSC 802 WG P&P.*

*Moved By: Thomas Kürner*

*Seconded By: Phil Beecher*

*Discussion: More than 1 affiliation?* ***Yes****; Are they all voting members?* ***Yes***

*Vote: Y 42, A 3, N 0*

**SC THz Closing Report:** done in the mid-week (0 slots in May)

**TG4ab Closing Report**: Ben Rolfe (BCA) presented [*15-23-0189-00*](https://mentor.ieee.org/802.15/dcn/23/15-23-0189-00-04ab-tg4ab-march-2023-closing-report.pptx)(9 slots in May, including one with 6ma)

**WNG Closing Report**: Ben Rolfe (BCA) discussed verbally (1 slot in May)

* 1st presentation on more OFDM modes, generated interesting discussion
	+ WG chair agreed we should start an Interest Group
	+ Thomas Almholt (Texas Instruments) agreed to be IG chair
* 2nd presentation - More discussion on sub1 GHz in Japan in the IG
* 3rd presentation - Channel Plan update for India sub-1GHz band is being absorbed into 802.15.4me.

**TG4me Closing Report**: Gary Steubing (Cisco) presented [*15-23-0066-02*](https://mentor.ieee.org/802.15/dcn/23/15-23-0066-02-04me-802-154me-march-2023-opening-and-closing.pptx)(4 slots in May)

**TG6ma Closing Report**: Ryuji Kohno (YNU/YRP-IAI) presented [*15-23-0175-00*](https://mentor.ieee.org/802.15/dcn/23/15-23-0175-00-006a-tg15-6ma-closing-report-for-march-2023.pptx)(4 slots in May - Preferences – do not overlap with 4ab, AM1is the best)

**TG7a Closing Report:** Yeong Min Jang (Kookmin University) presented [*15-23-0186-01*](https://mentor.ieee.org/802.15/dcn/23/15-23-0186-01-007a-15-7a-occ-tg-closing-report-march-2023.pptx) (3 slots in May)

**TG13 Closing Report:** Volker Jungnickel (Fraunhofer HHI) presented [*15-22-0081-03*](https://mentor.ieee.org/802.15/dcn/23/15-23-0081-03-0013-tg13-closing-report-for-january.pptx)(1 slot just in case in May)

* Still in IEEE editors phase – waiting.

**TG16t Closing Report:** Tim Godfrey (EPRI) presented [*15-23-0191-01*](https://mentor.ieee.org/802.15/dcn/23/15-23-0191-01-016t-march-2023-tg16t-closing-report.pptx)(4 slots in May)

* We would like a broader group of commenters – need to brain storm on this.
	+ SA ballot stage, there can be a public review. How do you get them a draft?
	+ If they sign up for 1 meeting, they can download the draft.
	+ Can we give temporary voting rights?
	+ First assess if anyone wants to read it, and propose resolutions.

**SG Privacy Closing Report:** Tero Kivinen (self) presented [*15-23-0157-03*](https://mentor.ieee.org/802.15/dcn/23/15-23-0157-03-0017-sg-priv-march-opening-and-closing-slides.pptx) (2 slots in May– one early in the week and one late in the week – not against .11bh & .11bi)

* WG motions at the mid-week.
* If we don’t get approved at the LMSC on Friday we need to extend the study group:

***Motion:****that the 802.15 Working Group seeks approval from the IEEE 802 LMSC to extend the study group in 802.15 to develop the PAR and CSD documents for “Study Group Privacy”*

*Moved Tero Kivinen*

*Seconded: Phil Beecher*

*Discussion:*

*Y 40, A 1, N 0*

**SC-IETF Closing Report:** Tero Kivinen (self) – verbal report at midweek (1 slot in May)

**Joint Session 802.1/802.15** Phil Beecher (Wi-SUN) verbally reiterated what was reported at the mid-week. (1 slot to do the pre-review of 6ma in May for the 802.1/802.15 joint in July)

**SC-Maintenance:** Phil Beecher (Wi-SUN) presents [*15-23-0138-01*](https://mentor.ieee.org/802.15/dcn/23/15-23-0138-01-0mag-scm-opening-and-closing-report-plenary-march-2023.pptx)(3 slots in May)

* Please look over new project task list and make comments: [*15-23-0083-01*](https://mentor.ieee.org/802.15/dcn/23/15-23-0083-01-0mag-project-task-list.xlsx)

**Liaison Reports**

**802.24 Liaison Report –** Tim Godfrey (EPRI) gave a verbal report:

* Working on the 3 white papers.
* Looking at a new activity in Vehicle charging.
* Same meeting pattern in May (Tues & Wed PM4)

**802.18 RRTAG Liaison Report –** Edward Au gave a verbal report:

* If you have any comments, please let them know
* Climate changes – energy efficiency.

**802.19 Coexistence TAG Liaison Report –** Ben Rolfe (BCA) gave a verbal report.

* There is a table of all the frequencies used for IEEE 802.

**802.11 –** no liaison present

## AOB

Register for Orlando – take advantage of the early bird pricing.

Please take the ePoll, the LMSC would like to see if the in-person/remote options are changing. This session is roughly split at 500-500. Normal is 600 in-person, so we are not back to normal, but hopefully getting close and we have added additional people attending due to the remote.

Question about DVL motion for 7a – it was put in DVL as a place-holder, but they didn’t want to run it this session.

**WG Adjourn**

**5:21 PM** The WG Chair Clint Powell adjourned the meeting

# Annex A Total attendance (in-person + remote) = 146

|  |  |  |
| --- | --- | --- |
| Last Name | First Name | Affiliation |
| Adakeja | Olubukola | Teradyne, Inc. |
| Aldana | Carlos | Facebook |
| Al-kadi | Ghiath | STMicroelectronics |
| Almholt | Thomas | Texas Instruments Inc. |
| Amezawa | Yasuharu | Mobile Techno Corp. |
| Andre | Jean-Marie | ST micro |
| Anliker | Claudio | ETH Zurich |
| Anzai | Daisuke | Nagoya Institute of Technology |
| Bahn | Christy | IEEE STAFF |
| Bansal | Ankur | SAMSUNG ELECTRONICS |
| Barbour | Ian | IEEE STAFF |
| Barras | David | 3db Access AG |
| Baykas | Tuncer | Ofinno |
| BEECHER | PHILIP E | Wi-SUN Alliance |
| Beg | Chris | Cognitive Systems Corp. |
| Berger | Catherine | IEEE STAFF |
| Bettesh | Ido | Apple Inc. |
| Bims | Harry | Bims Laboratories, Inc. |
| Bober | Lennert | Fraunhofer Heinrich Hertz Institute |
| Brown | Monique | National Institute of Info. and Comms. Tech(NICT) |
| Buyukbas | Afsin | Ict authority of Turkiye |
| Calvert | Chris | Landis Gyr Group Worldwide |
| Canchi | Radhakrishna | Kyocera International Inc |
| Chaplin | Clint | Self |
| Chen | Run | New Radio Technology Co., Ltd. |
| Chitrakar | Rojan | Huawei International Pte Ltd |
| Cho | Hangyu | LG ELECTRONICS |
| Choi | Jinsoo | LG ELECTRONICS |
| Corbalan Pelegrin | Pablo | NXP Semiconductors |
| Danev | Boris | 3db Access AG |
| De Ruijter | Hendricus | Silicon Laboratories |
| Dotlic | Igor | Qorvo |
| Ekrem | Ersen | Google, LLC |
| EMMELMANN | MARC | SELF |
| Gan | Ming | Huawei Technologies Co., Ltd |
| Gilb | James | General Atomics Aeronautical Systems, Inc. |
| Godfrey | Tim | Electric Power Research Institute, Inc. (EPRI) |
| Granhaug | Kristian | Novelda |
| Grosswindhager | Bernhard | NXP Semiconductors |
| Gruber | Josef | Infineon Technologies |
| Guo | Jianlin | Mitsubishi Electric Research Labs (MERL) |
| Ha | Taeyoung | Samsung Electronics Co., Ltd. |
| Harada | Hiroshi | Kyoto University; National Institute of Info. and Comms. Tech(NICT) |
| Hartman | James | Landis Gyr Group Worldwide |
| Henry | Jerome | Cisco Systems, Inc. |
| Hernandez | Marco | National Institute of Info. and Comms. Tech(NICT) |
| Hirata | Masayuki | Osaka Univ. Grad School of Med., Dept of Neurological Diag. and Rest. |
| HOSAKO | IWAO | National Institute of Info. and Comms. Tech(NICT) |
| Huang | Lei | Huawei Technologies Co., Ltd |
| Huszak | Gergely | KONE |
| Ichapurapu | Ravi | Amazon Lab126 |
| Ikegami | Tetsushi | Meiji University |
| Jang | Yeong Min | Kookmin University |
| Jeffries | Timothy | Futurewei Technologies |
| Jiang | Jinjing | Apple Inc. |
| JOO | SEONG-SOON | Korea Platform Service Technology (KPST) |
| Jornet | Josep Miquel | Northeastern University |
| Jungnickel | Volker | Fraunhofer Heinrich Hertz Institute |
| Juntunen | Juha | Meteor Communications Corp. |
| Kabbinale | Aniruddh | SAMSUNG |
| Kalkundrikar | Vishal | Ondas Networks |
| Kandhalu | Arvind | Amazon Lab126 |
| Kasamatsu | Akifumi | National Institute of Info. and Comms. Tech(NICT) |
| Keren | Rani | Huawei Technologies Co., Ltd |
| Kerry | Stuart | OK-Brit; Self |
| Kim | Minsoo | YRP International Alliance Institute |
| Kitazawa | Shoichi | Muroran IT |
| Kivinen | Tero | Self Employed |
| KOBAYASHI | Takumi | YRP International Alliance Institute |
| Kohno | Ryuji | YNU/CWC UofOulu; YNU/YRP-IAI |
| Krebs | Alexander | Apple Inc. |
| Krieger | Ann | US Department of Defense |
| kristem | Vinod | Apple Inc. |
| Kuechler | Wolfgang | NXP Semiconductors |
| Kuerner | Thomas | TU Braunschweig |
| Kuramochi | Takashi | Lapis Technology |
| Lee | Hong Won | LG ELECTRONICS |
| Lee | Jaegook | SAMSUNG ELECTRONICS |
| LEE | Mingyu | Samsung Electronics Co., Ltd. |
| Lemsitzer | Stefan | NXP Semiconductors |
| Leong | Frank | NXP Semiconductors |
| Li | Huan-Bang | National Institute of Info. and Comms. Tech(NICT) |
| Lim | Sang-Kyu | Electronics and Telecommunications Research Institute (ETRI) |
| Lin | Wei | Huawei Technologies Co., Ltd |
| Lindskog | Erik | Samsung |
| LIU | CHENCHEN | Huawei Technologies Co., Ltd |
| Liu | Yong | Apple, Inc. |
| Luo | Xiliang | Apple, Inc. |
| Ma | Li | MediaTek Inc. |
| Mueller | Robert | DENSO |
| Murray | Carl | Qorvo |
| Nagai | Yukimasa | Mitsubishi Electric Corporation |
| Namboodiri | Vamadevan | SAMSUNG ELECTRONICS |
| Neirynck | Dries | Ultra Radio Ltd |
| Niewczas | Jaroslaw | Qorvo |
| Orlik | Philip | Mitsubishi Electric Corporation |
| Pakrooh | Pooria | Qualcomm Technologies, Inc. |
| Palmer | Clark | Meteorcomm LLC |
| Parthasarathi | Srivathsa Masthi | NXP Semiconductors |
| Patel | Tushar | Teradyne, Inc. |
| Petrov | Vitaly | Northeastern University |
| Pirhonen | Riku | NXP Semiconductors |
| Powell | Clinton | Powell Wireless Consulting, LLC |
| QIAN | BIN | Huawei Technologies Co., Ltd |
| Rahmani | Mohammad | SPARK Microsystems |
| Redlich | Oded | Toga Networks, a Huawei company |
| Robert | Joerg | TU Ilmenau/Fraunhofer IIS |
| Rolfe | Benjamin | Blind Creek Associates |
| Saito | Hiroki | ARIS Inc. |
| Salazar Cardozo | Ruben E | SKG Waves |
| Sand | Stephan | German Aerospace Center (DLR) |
| Sasaki | Shigenobu | Niigata University |
| Sayrafian | Kamran | National Institute of Standards and Technology |
| Segev | Jonathan | Intel corporation |
| Sekine | Norihiko | National Institute of Info. and Comms. Tech(NICT) |
| Shah | Kunal | Apple Inc. |
| SHAHAR | MENASHE | Ondas Networks |
| Shellhammer | Stephen | Qualcomm Incorporated |
| Shilo | Shimi | Huawei Technologies Co., Ltd |
| So | Youngwan | Samsung Electronics Co., Ltd. |
| Stuebing | Gary | Cisco Systems, Inc. |
| Sturek | Don | Itron Inc. |
| Sumi | Takenori | Mitsubishi Electric Corporation |
| Sun | Li | Huawei Technologies Co., Ltd |
| Sun | Li-Hsiang | MediaTek Inc. |
| Suzuki | Takafumi | National Institute of Info. and Comms. Tech(NICT) |
| Tian | Bin | Qualcomm Incorporated |
| Tomeba | Hiromichi | SHARP CORPORATION |
| Verma | Lochan | Apple, Inc. |
| Verso | Billy | Qorvo |
| Wang | Pu | Mitsubishi Electric Research Laboratories (MERL) |
| Wang | Yi-Hsiu | Zeku |
| Wendt | Matthias | Signify |
| Wilhelmsson | Leif | Ericsson AB |
| Wisland | Dag | Novelda AS; University of Oslo |
| Wu | Kuan | Huawei Technologies Co., Ltd |
| Xiao | Libra | NewRadio Technology Co., Ltd. |
| Yang | Shang-Te | Apple, Inc. |
| Yang | Xun | Huawei Technologies Co., Ltd |
| YE | ZHENZHEN | Red Point Positioning |
| Yong | Su Khiong | Apple, Inc. |
| Yoon | Jeonghwan | LG ELECTRONICS |
| Yoon | Kangjin | Meta Platforms Inc. |
| Zakaib | Larry | SPARK Microsystems |
| Zeisberg | Sven | ZIGPOS GmbH |
| Zou | Qiyue | Meta |

# 802.15 CAC Mtg.

# Sunday, 12th March 2023

## Attendance

Clint Powell

Phil Beecher

Ann Krieger

Ben Rolfe

Tim Godfrey

Tero Kivinen

Gary Stuebing

Clint Chapman

Thomas Kurner

Ryuji Kohno

Christy Bahn

Marco Hernandez (on-line)

Yeong Min (on-line)

## Minutes

**5:45 pm**: WG Chair, Clint Powell (Meta) called the mtg. to order and presented the agenda (document #[*15-23-0090-03*](https://mentor.ieee.org/802.15/dcn/23/15-23-0090-03-0000-march-2023-agenda-for-802-15.xlsx))

General Announcements:

* Attendance for 802.15 in IMAT is as follows
	+ 12 slots are deemed as 100%, therefore 75% is 9 slots.
* Reminders: Chairs show opening slides and ask patent claim question.
* Reminder of dead beat – 1 in 802.15 – Run Chen
* Still use a WG Secretary, not looking for a WG vice-chair to help with website (word press) and to automate voting rights.
* Update on Nescom and RevCom dates.

March Meetings:

* 802 Wireless Chairs (WCSC) meeting: 4pm to 5:30pm on Sun. Mar 12, 2023
* Opening 802.15 WG CAC meeting: 5:30pm to 6:30pm on Sun. Mar 12, 2023
* Opening Wireless Joint meeting: 8:00am to 9:00am on Mon. Mar 13, 2023
* Opening 802.15 WG meeting: 9:00am to 10:00am on Mon. Mar 13, 2023
* Mid-Week 802.15 WG CAC meeting: 7:30am to 8:30am on Wed. Mar 15, 2023
* Mid-Week 802.15 WG meeting: 10:30am to 11:30am on Wed. Mar 15, 2023
* Closing 802.15 WG meeting: 4pm to 6pm on Thurs. Mar 16, 2023
* Joint meeting with 802.1/802.15 Tues. Mar 14, 2023

Subgroup Status and Objectives for March Plenary.

* Task Group 3mb (5 meetings)
	+ One with SC Thz – wanted to do ballot resolution, but are unsure.
* Study Group THz (2 meetings )
	+ ETSI Thz – work on draft.
	+ Go to a working group motion for .18 – It needs to be a counted vote
* Joint 802.1/802.15 Mtg (1 meeting)
	+ Now from 630pm-8pm
* Task Group 4ab – NG-UWB (8 meetings)
	+ Full agenda – working on Draft 0
	+ Time in the agenda for technical breakouts (including virtual breakouts)
* SC WNG (1 meeting)
	+ There will be three presentations look at 122r2
* Task Group 4me Revision to 2020 (4 meetings)
	+ A couple of submissions
* Task Group 6ma – (BAN/VAN) (3 meetings)
	+ One joint meeting with 4ab.
* Task Group 7a – OCC (3 meeting)
	+ Comment resolution (4) start 2nd CRG recirculation process.
	+ We can do a WG motion in the closing
	+ Need information from all No votes.
	+ Who is in the room – Vice Chair
* Task Group 16t – 802.16 Lic-NB Amendment (3 meetings) - Godfrey
	+ Working on draft
* SC Privacy (3 meetings)
	+ Work on comments from the PAR
* SC IETF (1 meeting)
	+ Not much – the IETF is in 2 weeks.
* Standing Committee – SC-M (2 meetings)
	+ Review the template from Tero from the January meeting.

Upcoming Meetings:

* March 2023 – Plenary in Atlanta, social at the Atlanta Aquarium.
	+ If you want to purchase a ticket to the social, check with the registration desk.
	+ Transportation – 6pm – 9:30 pm. (Main Aquarium closes at 9:00)
* May 2023 – Wireless Interim in Orlando

AOB:

* PAR on Privacy comments
* 802.1/802.15 joint topics
* WG Awards for Publish Standards
* Lunch is provided in the Crystal ballroom.

**6:20pm** WG chair recessed until Wednesday (730-830am)

# 802.15 Mid-Week CAC Mtg.

# Wednesday, 15th March 2023

## Attendance

Clint Powell

Phil Beecher

Ann Krieger

Tim Godfrey

Ben Rolfe

Tero Kivinen

Ryuji Kohno

Clint Chapman

Gary Stuebing

Stuart Kerry (on-line)

## Minutes

**7:36am**: WG Chair, Clint Powell (Meta) called the mtg. to order and presented the agenda ([15-23-0090-06](https://mentor.ieee.org/802.15/dcn/23/15-23-0090-06-0000-march-2023-agenda-for-802-15.xlsx))

General Announcements:

* 6a will give the next presentation to 802.1 in July, with a dry run to the WG in May. We have completed the “circle of all the dots”, giving an overview of all the gaps and opportunities for projects between 802.1 and 802.15.
* Cancellation/additions to changes to rooms are changed in the graphic and sent out to the WG. But due to mixed mode, we also need to change the IEEE schedule. Therefore any changes for following day to be sent to the WG Chair and Vice-Chairs by end of PM1.
* Please ask in TG – We still need a WG secretary, and volunteer for website (1 week), automate voting rights (30 hours).
* NesCom/RevCom – SASB dates is in a tab in spreadsheet.
* Social tonight in the aquarium.

Subgroup Status and Objectives for March Plenary

* Task Group 4ab – NG-UWB
	+ Closing motions – No
	+ EC Agenda items – No
	+ PAR extension needed – No
* Standing Committee – WNG
	+ Closing motions – No
	+ EC Agenda items – No
* Study Group Privacy
	+ Closing motions – Yes (1)
	+ Mid-week motion – Yes
		- Approve comment responses
		- PAR & CSD
	+ EC Agenda items – No
* Task Group 6ma – (BAN/VAN)
	+ Closing motions – No
	+ EC Agenda items – No
	+ PAR extension needed – No
	+ Expect draft text? In May – first letter ballot in September. Nov/Jan Sponsor Ballot
* Task Group 7a – OCC
	+ Closing motions – No
	+ EC Agenda items – No
	+ PAR extension needed – No
	+ Expecting to go into recert – after looking at last draft, not all comments were addressed. Need to get it cleaned up and back in May. To give Tero/James time to review (mid April)
	+ Must follow IEEE SA process – when most of the meetings are remote, we need to instill a little more discipline
	+ 5 officers – none are here,
	+ When you ask for meetings, need to know who will be physically present. Needs to be an appointed officer – other officer designated by the chair
* Task Group 16t – 802.16 Lic-NB Amendment
	+ Closing motions – No
	+ EC Agenda items – No
	+ PAR extension needed – No
* Task Group 4me Revision to 2020
	+ Closing motions – No
	+ EC Agenda items – No
	+ PAR extension needed – No
	+ Putting together draft 3 – ready my mid april. Taking into May meeting – July for first ballot.
	+ May is the last time to add new stuff.
	+ When we do a reorg, it is truly a reorg – no technical changes (those will all be done after the reorg.
* SC THz
	+ Motion at mid week (going to 802.18) counted vote.
	+ Would like to give a closing at the mid-week.
* Task Group 3mb
	+ Finished comment resolution. Not sure if draft will be ready.
	+ Closing motions – Yes (2) CRG and approval of comments
	+ EC Agenda items – No
	+ PAR extension needed – No
* Standing Committee – SC-M, Rules
	+ Closing motions – No
	+ EC Agenda items – No
	+ Have submitted no comments to other PAR
	+ JTC1 – we did the motion in the working group 15.4, but not all got into the EC.
		- Motion for corrigendum (mid-week)
		- Motion 3mb – tell them that it is on the way, leave it for now, do it in July.
		- Issues in IEEE legal with ISO legal, is holding it up. We will know more about it next week. IPR issues are internal to ISO
* Joint 802.1/802.15 Mtg
	+ Closing motions – No
	+ EC Agenda items – No
	+ 802.3 gave a presentation.
* Standing Committee – IETF
	+ Closing motions – No
	+ EC Agenda items – No
* Task Group 13 – Multi Gigabit/sec OWC
	+ IEEE editor has been assigned

Any Other Business:

* Ad-hoc meetings set up in advanced, come to Clint to request a room.
* Awards?
* 10 year rule – has a very obscure exception. Need to start our revisions sooner. If there is no active work, then put out a revision. Need to be more pro-active. We should have done it for 6ma so it will be in-active in IEEE, but active in ISO. You cannot do an amendment but can do a revision. But the LOAs stay because of ISO. Every 5 years we need to look at it.

**8:34am** WG chair adjourned the CAC meeting.