

## **Project: IEEE P802.15 Working Group for Wireless Specialty Networks (WSN)**

**Submission Title:** TG 15.4ab October 2023 Telecon Meeting Slides

**Date Submitted:** 8 Jan 2024

**Source:** Benjamin A. Rolfe (Blind Creek Associates)

**Contact:**

**Voice:** +1 408 395 7207, **E-Mail:** ben.rolfe @ ieee.org

**Re:** **Task Group 4ab: 802.15.4 UWB Next Generation**

**Abstract:** Meeting Slides for interim Webex (TC)

**Purpose:** Continue project progress

**Notice:** This document has been prepared to assist the IEEE P802.15. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.

**Release:** The contributor acknowledges and accepts that this contribution becomes the property of IEEE and may be made publicly available by P802.15.



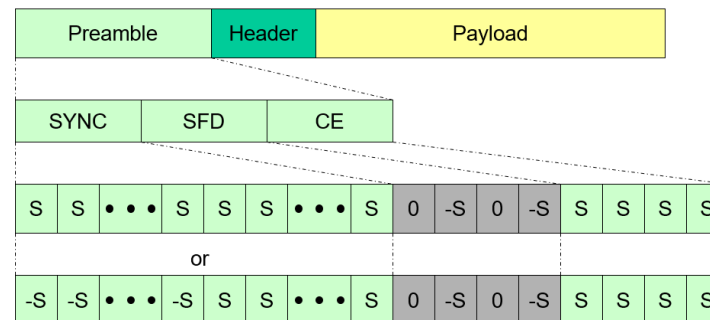
# Task Group 15.4ab

## Next Generation UWB Amendment

January 9<sup>th</sup> 2024 Interim Webex

# MEETING PREAMBLE

Stuff you need to know before we get to the meeting content



# IEEE-SA Patent, Copyright, and Participation Policies

See: <https://grouper.ieee.org/groups/802/sapolicies.shtml>

IEEE-SA Patent Slides for Standards Development Meetings (.pdf)

<https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.pdf>

IEEE-SA Standards Board Patent Committee (PatCom) home page

<https://standards.ieee.org/content/ieee-standards/en/about/sasb/patcom/index.html>

IEEE-SA Participation Policy meeting slide set - individual method (.pdf)

<https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/Participant-Behavior-Individual-Method.pdf>

Working Group Copyright Materials

<https://standards.ieee.org/ipr/copyright-materials.html>

<https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/ieee-sa-copyright-policy-2019.pdf>

# Ways to inform IEEE

- Cause an LOA to be submitted to the IEEE SA (patcom@ieee.org); or
- Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible; or
- **Speak up now and respond to this Call for Potentially Essential Patents**

If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance, please respond at this time by providing relevant information to the WG Chair

# IEEE 802 Ground Rules

Respect ... give it, get it

NO product pitches

NO corporate pitches

NO prices

NO restrictive notices – (no confidentially notices in email)

Presentations must be openly available

# Task Group Rules

- Discussion: Everyone present is welcome
- Straw polls: Everyone present may vote
- Formal motions: WG voters
  - To make, second and vote
- Patent policy for PAR activities applies
- All the usual rules of conduct

Please identify yourself on first contact with name and affiliation

# AGENDA

1. Meeting preamble and notices
2. Recap and schedule
3. Late / additional comments discussion
4. Editorial exceptions
5. Comment triage
6. Next Steps
7. Any other business
8. Adjourn



# RECAP

## 5.2.b Scope of the project (As approved):

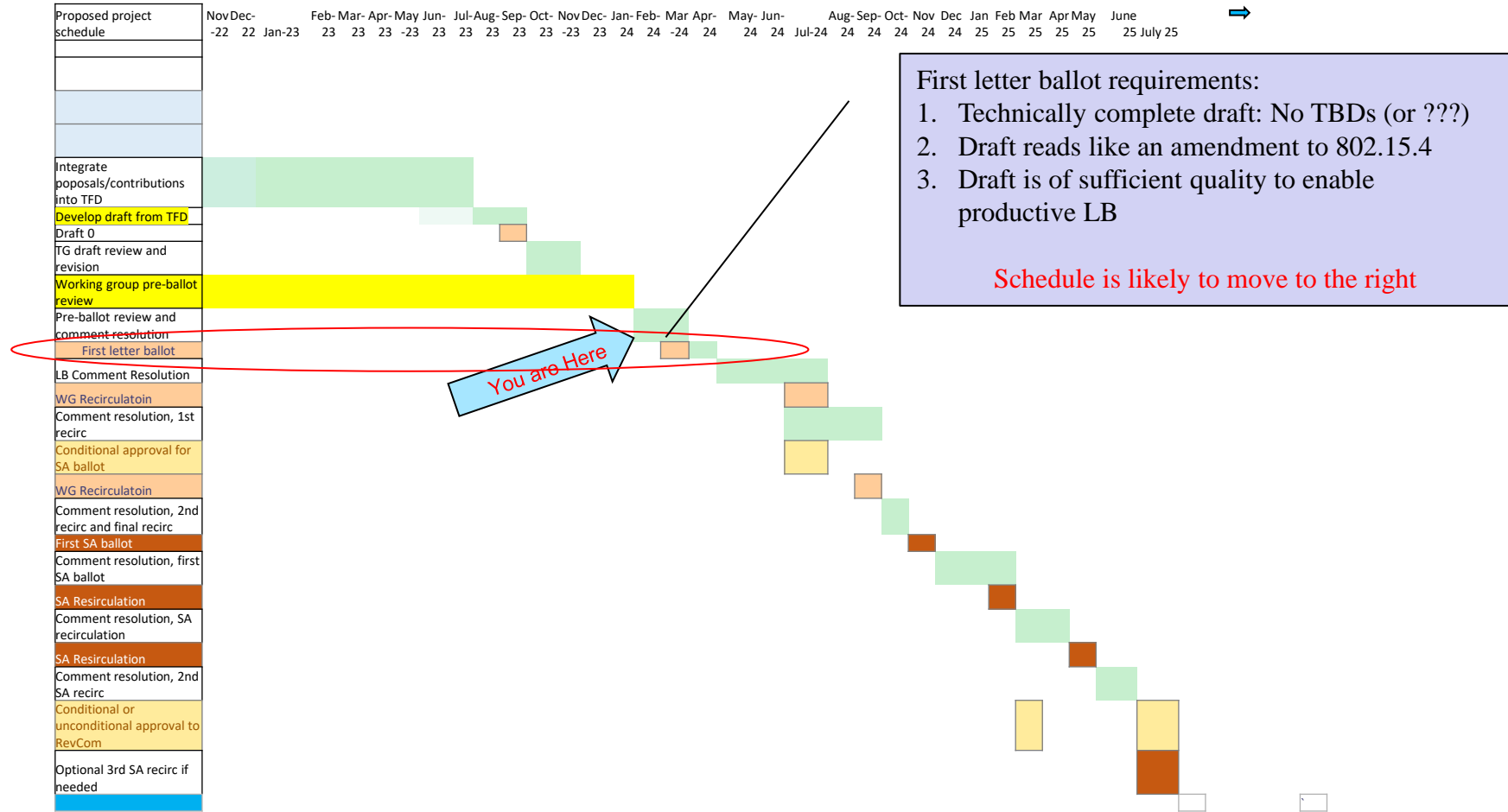
This amendment enhances the Ultra Wideband (UWB) physical layers (PHYs) medium access control (MAC), and associated ranging techniques while retaining backward compatibility with enhanced ranging capable devices (ERDEVs).

Areas of enhancement include:

- additional coding, preamble and modulation schemes to support improved link budget and/or reduced air-time relative to IEEE Std 802.15.4 UWB;
- additional channels and operating frequencies;
- interference mitigation techniques to support greater device density and higher traffic use cases relative to the IEEE Std 802.15.4 UWB;
- improvements to accuracy, precision and reliability and interoperability for high-integrity ranging; schemes to reduce complexity and power consumption;
- definitions for tightly coupled hybrid operation with narrowband signaling to assist UWB;
- enhanced native discovery and connection setup mechanisms;
- sensing capabilities to support presence detection and environment mapping;
- and mechanisms supporting low-power low-latency streaming as well as high data-rate streaming allowing at least 50 Mb/s of throughput.

Support for peer-to-peer, peer-to-multi-peer, and station-to-infrastructure protocols are in scope, as are infrastructure synchronization mechanisms. This amendment includes safeguards so that the high throughput data use cases do not cause significant disruption to low duty-cycle ranging use cases.

### Project Schedule (working baseline)



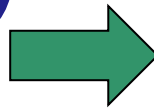
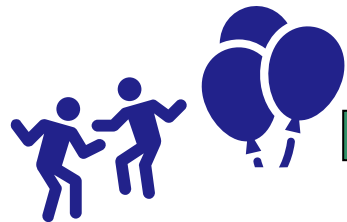
First letter ballot requirements:

1. Technically complete draft: No TBDs (or ???)
2. Draft reads like an amendment to 802.15.4
3. Draft is of sufficient quality to enable productive LB

Schedule is likely to move to the right

# Schedule Major Milestones

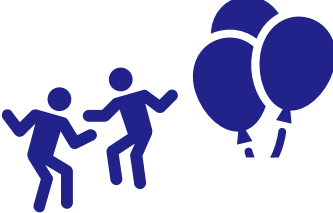
## Near Term Working Milestones



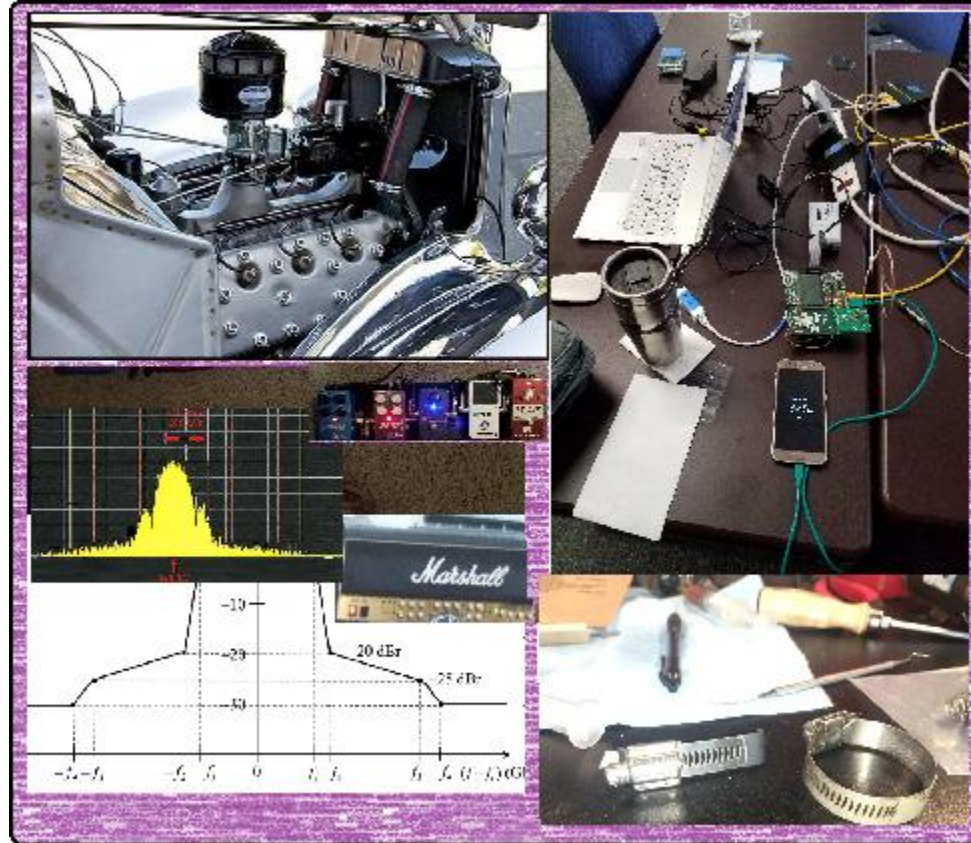
	Original Schedule	Current Schedule
Call for proposals	November 2021	
Cut-off for new features (high level feature set), PHY	May 2022	
Cut-off for new features (high level feature set), MAC	July 2022	
<b>Draft 0</b>	Post-January 2023	Post March July Sept 2023
TG draft review and revision complete	February - March 2023	Mar-June 2023 Sept 2023 - Oct 2023
<b>Working group pre-ballot CLOSED</b>	March – May 2023 (following March meeting)	July August Sept Oct Nov 2023
First letter ballot	June 2023 (following meeting)	Nov/Dec 2023 Before March 2024
...		



# Draft and Comment Collection

- ✓ **Complete the draft** 
- ✓ **Complete comment collection on draft**
- **Triage comments**
- **Resolve comments**
  - **Editorial – to editor**
  - **Technical – group, assign, resolve**

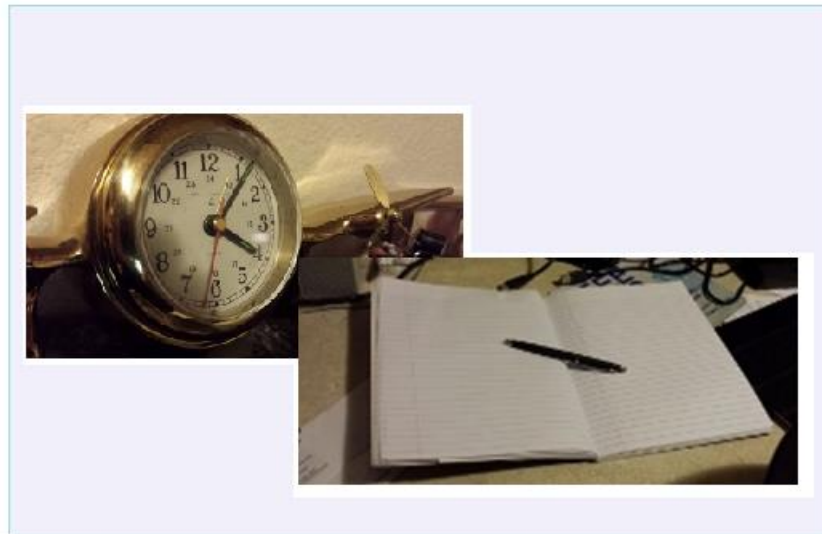
# Technical Topics



# Comment Resolution

- **Review consolidated comments**
- **Consider any additional comments**
- **Comment Categories:**
  - MMS w/NBA (Alex)
  - MMS wo/NBA (Carl)
  - New frame format for NBA (Alex)
  - Ack changes (Billy)
  - RSS (Sven)
  - SSBD (Larry)
  - Other channel access (Ben)
  - Security (Rojan)
  - Multi-node ranging (Hyper-block) (Youngwan)
  - Narrow Band functionality (Alex)
  - Device discovery and association
    - Ranging (Alex)
    - Data [proposed: Carlos]
  - Parameter Negotiation (Billy)
  - Wake-up Radio (Billy)
  - UWB data offload (Youngwan)
  - Narrow Band PHY (Bin Q)
  - UWB PHY (HRP) (Vinod)
  - UWB PHY (LE) (Larry)
  - Sensing (Pooria. Bin Q)
  - **PICS**

# Editor's Corner





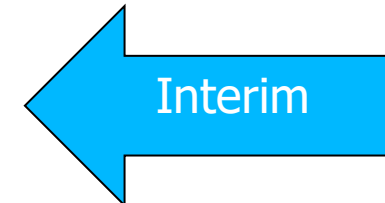
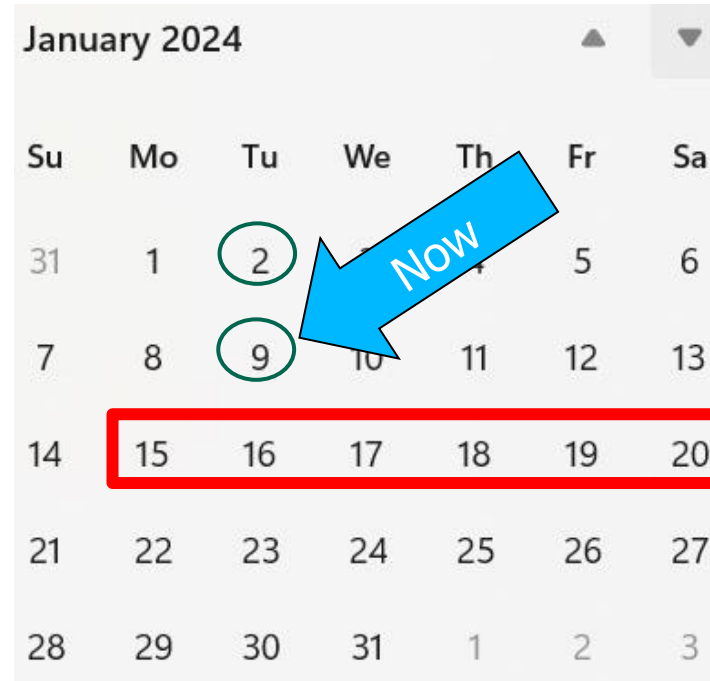
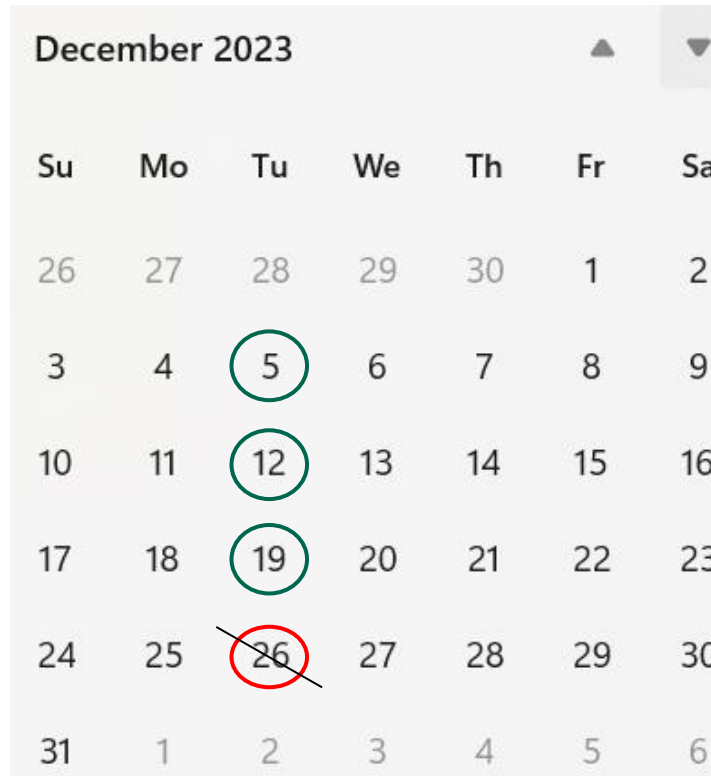
# Next Steps



## January 2024

S	M	T	W	T	F	S
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

# Interim telecon/Webex schedule



**Weekly on Tuesday commencing 5-December 06:00 PT**

If no agenda items by COB Friday before, call will be cancelled

# Planning for Interim

- Still time to register if you haven't
  - Required for in person AND remote attendees
- Agenda (preliminary): [15-23-0637-01](#)
- Primary objectives:
  - Comment resolution
  - Complete CAD
- Other fun stuff
  - Joint meeting with 802.11 CoEx SC (Tuesday PM3)
  - Contributions for coexistence meeting?

# Other Business





**Adjourned**

**Thanks**