**IEEE P802.15**

**Wireless Specialty Networks**

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| Project | IEEE P802.15 Working Group for Wireless Specialty Networks (WSNs) – 802.15.4ab |
| Title | **Text for Co-scheduling for Sensing and Ranging** |
| Date Submitted | 09 September 2022 |
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| Re: |   |
| Abstract | This document provides details of MAC features for 4ab |
| Purpose | Support development of technical content for the draft |
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**6.9 Ranging, relative positioning, and localization**

**6.9.1 Ranging measurements**

**6.9.1.1 Overview**

***Insert the new text at the end of 6.9.1.1 as follows***

An ERDEV that supports sensing is called a sensing-capable ERDEV (SC-ERDEV). Sensing can be achieved by an SC-ERDEV by using the HRP UWB PHY defined in the standard. Support for sensing is optional.

**6.9.7.2 Ranging Block and round structure**

***Insert the new text at the end of 6.9.7.2 as follows***

A controller may perform both ranging and sensing activities with its controlees by using ranging block and round structure. Figure 6-9-xx shows an illustration of block structure with ranging and sensing being performed in multiple rounds. Each block consists of a whole number of rounds, where a round is a period of sufficient duration to complete one entire sensing cycle involving the set of SC-ERDEVs participating in the sensing exchange or a period of sufficient duration to complete one entire range-measurement cycle involving the set of ERDEVs participating in ranging exchange. Each round, based on whether it is a sensing round or a ranging round, is further sub-divided into an integer number of sensing slots or ranging slots respectively. In Figure 6-9-xx, the block is divided into N rounds, which may cater to either sensing or ranging activity. Each sensing round consists of P sensing slots. Each ranging round consists of M ranging slots. The sensing slot and the ranging slot duration may be different from each other. The slot duration and the number of slots making up a round can be changed between rounds. A controller sending an RCM with the modified configuration whenever a change is required can achieve this.



**Figure 6-9-xx Illustration of block, round and slot with sensing and ranging performed in multiple rounds**