**IEEE P802.15**

**Wireless Specialty Networks**

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| Project | IEEE P802.15 Working Group for Wireless Specialty Networks (WSNs) – 802.15.6ma | |
| Title | **Proposed text for 6ma MAC – Interference Avoidance** | |
| Date Submitted | July 4, 2023 | |
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| Re: | Contribution to IEEE 802.15.6ma | |
| Abstract | This document provides a text draft of 6ma MAC for interference avoidance of coexisting dependable BANs in clause 6.13. | |
| Purpose | Support development of technical content for the draft | |
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***Insert the sub-clause 6.13.4 as follows:***

**6.13.4 Adaptative superframe with access adjustment and regulation**

For coexisting multiple dependable BANs that have various grades of services, dependable BANs form a dependable BAN group to mitigate or to avoid interference among coexisting dependable BANs. The dependable BAN group has a hierarchy that consists of one coordinator hub and leaf hubs.

The coordinator hub organizes leaf hubs that let not collide beacon broadcasting by using synchronized Beacon Access Phase management and regulate access not to interfere preemptive data frame transmission by using access adjustment and access regulation based on the priority of access phases.

**6.13.4.1 Beacon Access Phase shifting**

A dependable BAN group maintains synchronized beacon access phase based on a beacon broadcasted from the coordinator of the dependable BAN group. Leaf hubs of a dependable BAN group follows BAP of the coordinator hub.

The length of superframe of a dependable BAN can be specified with integer to multiply base superframe length. When a dependable BAN synchronize coordinator beacon access phase, the beacon access phases of coexisting dependable BANs are synchronized at all times even though different length of superframe, as shown in Figure xx.

A coordinator of dependable BAN assigns a beacon slot for each leaf hub to avoid collision on broadcasting beacon.

When a leaf hub detects the difference of the start time by listening a D-Beacon from a coordinator hub, the leaf hub shifts the BAP of its BAN in two steps that prior informs a BAP shifting to nodes of its BAN.and shifts at next superframe.

**6.13.4.2 Access adjustment**

A leaf hub may adjust the start of access phases by setting access offset of beacon period. A leaf hub can listen all the hub’s beacons of a dependable BAN group on the synchronized BAP. A leaf hub integrates the access phases of all BANs by overlapping and can control the congestion on a access phase by differing the start of its access phase.

**6.13.4.3 Access regulation**

A leaf hub may regulate the access based on the integrated access phase overlapping to mitigate interference by not transmitting. A leaf hub regulates the transmission in access phase based upon the hub priority and access phase priority:

BAP > EAP > Scheduled MAP > RAP > CAP