**IEEE P802.15**

**Wireless Specialty Networks**

|  |  |  |
| --- | --- | --- |
| Project | IEEE P802.15 Working Group for Wireless Specialty Networks (WSNs) | |
| Title | More easy ones | |
| Date Submitted | 15-May-2025 | |
| Source | [Benjamin A. Rolfe] [Blind Creek Associates] | E-mail: [ben.rolfe @ ieee.org ] |
| Re: | Comments: 254 | |
| Abstract | Some more almost easy ones | |
| Purpose | Resolve comments 254 | |
| 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. | |

Recommended Resolutions

# Proposed resolution Revised

CID 254

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 254 | 16 | 6.6.3.4 | 18 | This paragraph mentioned three times about the AIFS value being xxx, but we see both "is" and "shall be" and "equal to". Should keep consistent, say "The value of AIFS shall be xxx" or "The value of AIFS is equal to xxx" or something suitable. | As in comment |

Proposed resolution: Revised

Resolution detail:

Replace text with:

The value of AIFS when generating an Imm-Ack depends upon the PHY in use, and shall be set as follows:

* For SUN PHYs, LECIM PHYs, or TVWS PHYs AIFS is equal to 1ms.
* For the high-rate pulse repetition frequency UWB PHY when operating as an enhanced modulations device (HRP-EMDEV) sending Imm-Ack, the AIFS value is equal to the value of the *macEmdevImmAckAifs* Period attribute in Table 8-36
* For the HRP UWB PHY when operating as other than an HRP-EMDEV, the value of AIFS is equal to *macSifsPeriod*.
* The value of AIFS is equal to *macSifsPeriod* for all other PHYs.

Discussion: The first part of the paragraph in the base standard uses AIFS in normative statements (requirements). Current base text:

For the high-rate pulse repetition frequency UWB PHY based enhanced modulations device (HRP-EMDEV) sending Imm-Ack, the AIFS shall be equal to the value of the macEmdevImmAckAifsPeriod attribute in Table 8-36, otherwise, when generating an Imm-Ack using the HRP UWB PHY, the value of AIFS is equal to macSifsPeriod. The value of AIFS is equal to macSifsPeriod for all other PHYs.

There is inconsistency in language in the base standard. So we might as well fix it. Note that per the base standard AIFS applies to the Imm-Ack only (see figure

# Further explanation – base standard value of AIFS

In IEEE Std 802.15.4-2024 the text in the section being modified by the above resolution currently defines the value of AIFS as:

The transmission of an Ack frame outside the CAP shall commence AIFS after the reception of the last symbol of the Data frame or MAC command. The transmission of an Ack frame in the CAP shall commence either AIFS after the reception of the last symbol of the Data frame or MAC command or at a backoff period boundary. In the latter case, the transmission of an Ack frame shall commence between AIFS and (AIFS + macUnitBackoffPeriod) after the reception of the last symbol of the Data frame or MAC command. The value of AIFS is 1 ms for the SUN PHYs, LECIM PHYs, or TVWS PHYs. The value of AIFS is equal to macSifsPeriod for all other PHYs.

Here it says “Ack frame” which one might think means any Ack frame, Imm-Ack or Enh-Ack. The D02 text adds to this only values for HRP:

For the high-rate pulse repetition frequency UWB PHY based enhanced modulations device (HRP-EMDEV) sending Imm-Ack, the AIFS shall 20 be equal to the value of the macEmdevImmAckAifsPeriod attribute in Table 8-36, otherwise, when generating an Imm-Ack using the HRP UWB PHY, the value of AIFS is equal to macSifsPeriod.

The proposed text in the resolution detail does not alter the specified AIFS value for any other existing PHY from the base standard nor change what we add for HRP other than to clean up the language to be consistent. So it doesn’t break AIFS for all other PHYs than it already is broken.

Figure 6-1—IFS usage only Imm-Ack is shown. The timing of Enh-Ack is left undefined. This is the origin of the comment in the explanation that AIFS applies only to the Imm-Ack. The current base text is ambiguous.