**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) | |
| Title |  | |
| Date Submitted | 17 August 2011 | |
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| Re: | Editorial instructions in support of proposed resolutions to sponsor ballot comments (J. Simon) | |
| Abstract | Editor instructions for fixing ACK/NACK encoding | |
| Purpose | Provide instructions to the editor to correct problems identified with the TSCH ACK/NACK time correction description in the sponsor ballot draft D6 review. | |
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The ACK/NACK Time Correction header IE is described as a 16-bit signed integer, which requires all 16-bits be used, but the MSB is described as being reused to indicate a NACK. The original intent was to bound the correction to +/- 2 ms, so we only need 11 bits of the field for actual representation. Language needs to be added to indicate how to handle the encoding properly.

0 to 2047 µs = 0x000 - 0x7FF

-1 to -2048 µs = 0xFFFF - 0xF800

So we can mask the value with 0xFFF and only look at the lower 3 nibbles. We OR the result with 0x8000 to indicate a NACK.

***Editor’s instructions – Modify third paragraph of 5.2.4.3.6 and figure 43a as follows:***

The Time Sync Info field shall specify time synchronization information and ACK/NACK status. This field is constructed by taking a signed 16-bit 2’s compliment time correction in the range of -2048 to 2047 µs, and logically AND’ing it with 0xfff, and OR’ing again with 0x8000 to indicate a NACK. This field shall be set as indicated in Table 4i.

Table 4i— Values of the Time Sync Info field for ACK with timing Information

|  |  |
| --- | --- |
| Range | Description |
| ~~0x0000–0x7fff~~ | ~~Time correction, in μs, signed 16 bit integer (2’s complement).~~ |
| ~~0x8000~~ | ~~MSB set to indicate NACK~~ |
| 0x000 – 0x7ff | ACK with positive time correction in µs. |
| 0x800 – 0xfff | ACK with negative time correction is µs. |
| 0x8000 – 0x87ff | NACK with positive time correction in µs. |
| 0x8800 – 0x8fff | NACK with negative time correction is µs. |