**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) | |
| Title | Suggested Changes for Pulse Shaping Section 16.4.5 | |
| Date Submitted | 26 February 2020 [presented at the CRG call on 2020/02/22] | |
| Source | Jochen Hammerschmidt (Apple Inc.), | J\_hammerschmidt@yahoo.com |
| Re: | Contribution to TG4z for IEEE 802.15.4z regarding pulse shape | |
| Abstract | Contribution to TG4z amendment of IEEE Std 802.15.4-2015 | |
| Purpose | This submission proposes text to for the IEEE Std 802.15.4z draft amendment to IEEE Std 802.15.4. | |
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| EXTRA NOTE(s):  n/a |

**BACKGROUND / INTRODUCTION:**

This documents follows up on presentation 15-20-0084-00-004z, by providing first concrete suggestions to further update pulse shaping section 16.4.5.

Note that this material was presented and reviewed in the TG 4z CRG call on Monday Feb 22, 2020.

**16.4.5 Baseband impulse response**

*[further suggestion insertion after formerly approved insertion]*

For reference purposes, the operation of an ERDEV in particular should furthermore include a transmit mode in which each transmitted pulse *p(t)* closely follows the above mathematical formula of the root raised cosine reference pulse *r(t)* for a specific roll-off factor of beta=0.45 over at least +/- 4 chip intervals. The deviation of the baseband transmit pulse *p(t)* relative to the maximum peak amplitude of the reference pulse *r(t)* with beta=0.45 in this mode should be less than TBD % over the pulse duration,

*|p(t) – r(t, beta=0.45)| / max(|r(t)|) < TBD %, for all t = +/-4T*

Besides, an ERDEV shall be equipped to know and communicate to peer ERDEVs its own exact transmit pulse shape; correspondingly, an ERDEV shall be able to obtain a peer ERDEV’s transmit pulse shape and configure its receiver algorithms for time-of-flight extraction with this information. To that end, the pulse shape utilized by an ERDEV transmitter may be communicated between peer ERDEVs via an offline procedure, and/or during in-band and/or out-of-band connection setup steps, and/or via real-time messaging.

***[END]***