IEEE P802.11
Wireless LANs

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| Liaison Statement to ETSI BRAN |
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Abstract

R5: Status updated to approved. Editorial updates. (WG chair)

This document contains an approved Liaison Statement from IEEE 802.11 to ETSI BRAN related to Packet Detect / Energy Detect (PDED) issues, and particularly the next revision of EN 301 893

**Liaison statement**

**TO:**

* Edgard Vangeel, ETSI BRAN Chair, evangeel@cisco.com

**CC:**

* Paul Nikolich, IEEE 802 Chair, paul.nikolich@att.net
* Andrew Myles, IEEE 802.11 Coexistence Standing Committee Chair, amyles@cisco.com

**SUBJECT:** Next revision of EN 301 893

**DATE:** 12 May 2017

Dear Edgard,

This is an approved liaison statement from IEEE 802.11. It does not necessarily reflect a position of the IEEE, the IEEE Standards Association or IEEE 802.

The IEEE 802.11 Working Group has been monitoring the work in ETSI BRAN to develop version 2.1.0 of Harmonized Standard (HS) EN 301 893. The revised adaptivity clause in EN 301 893 is of interest to the IEEE 802.11 Working Group (WG) because it is one aspect of sharing of the 5 GHz unlicensed band in Europe, particularly as new non-802.11 technologies might be introduced into the band.

The IEEE 802.11 Working Group is pleased to note that EN 301 893 v2.1.0 continues the tradition of previous versions of the standard by explicitly allowing the use of IEEE 802.11 conformant equipment at the same energy detection threshold that has defined in 1999, in combination with IEEE 802.11’s own preamble detection mechanism (which we will refer to as the “dual threshold option”). In contrast, EN 301 893 v2.1.0 requires non-IEEE 802.11 conformant equipment to use a more conservative energy detection-only mechanism and threshold.

The inclusion of the dual threshold option in EN 301 893 recognizes ETSI BRAN’s history of developing HiperLAN/2 Physical Layer (PHY) design in close collaboration with the IEEE 802.11 WG. The jointly developed preamble and energy detection mechanisms for the HiperLAN/2 and IEEE 802.11 standards had been established when the 5 GHz band had a technology dependent assignment in Europe. A continued inclusion of the dual threshold option permits the industry to put existing IEEE 802.11 designs unmodified to the European market.

The dual threshold option in EN 301 893 v2.1.0 has been drafted in a way that it applies to existing IEEE 802.11a, 802.11n, and 802.11ac based equipment. However, it does not yet apply to IEEE 802.11ax equipment, which will be the basis of the next generation of 802.11. This is reasonable because IEEE 802.11ax was not even at draft stage when EN 301 893 v2.1.0 was being developed.

The IEEE 802.11 WG understands that ETSI BRAN is planning to start a new effort in about July 2017 to revise EN 301 893 yet again. We highlight two of the items that might be addressed in the revision process:

* *Consider a single ED threshold limit value applicable to all technologies*
* *Consider a general review of the adaptivity section (including ED threshold) in light of new technologies*

It is the view of the IEEE 802.11 Working Group that the best way to ensure fair and efficient use of the 5 GHz band is for all technologies to embrace the robust and proven, dual threshold mechanism used by the IEEE 802.11 standard. The IEEE 802.11 WG recognises that the introduction of an energy detection-only mechanism (such as defined in EN 301 893), as a sharing mechanism, does have the important benefit of technology neutrality. Therefore, the IEEE 802.11 Working Group supports the ongoing inclusion of an energy detection-only mechanism in EN 301 893.

The IEEE 802.11 WG recommends that the upcoming revision of EN 301 893 should also maintain the existing dual threshold option, and extend its applicability to IEEE 802.11ax conformant equipment, as well as equipment based on other technologies that would like to implement a dual threshold scheme.

Allowing the use of both the energy detection-only mechanism and the dual threshold option in EN 301 893:

* **Continues fair sharing** of the 5 GHz unlicensed band for equipment using either the energy detection-only mechanism or the dual threshold option. Simulations in ETSI BRAN, 3GPP RAN1 and IEEE 802.11 Working Group have shown fair sharing occurs in most use cases when these mechanisms are used together with appropriate thresholds
* **Promotes technology neutrality** by allowing a wider diversity of sharing mechanisms to be employed at the choice of implementers, ie both the energy detection-only and dual threshold options
* **Avoids a backward technology step**, which would occur if the dual threshold option was restricted in favour of an energy detection-only mechanism
* **Minimises the socio-economic risk** of deprecating the well-established and proven sharing dual threshold option used by IEEE 802.11 today.

The IEEE 802.11 WG will make use of its existing liaison with ETSI BRAN to monitor ETSI BRAN’s plans to revise EN 301 893. The IEEE 802.11 Working Group would be delighted to assist ETSI BRAN in relation to these topics.

Sincerely,

Adrian Stephens
Chair, IEEE 802.11 Working Group
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