IEEE P802.11
Wireless LANs

|  |
| --- |
| Clause 16 and 17 Deprecation  |
| Date: 2013-10  |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Graham Smith | DSP Group | 1037 Suncast Lane, #112El Dorado Hills, CA 95762 | 916 358 8725 | Graham.smith@dspg.com |
| Mark Hamilton  | Spectralink |  |  | Mark.hamilton@spectralink.com |
| Mark Rison | Samsung |  |  | m.rison@samsung.com |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This document contains proposed changes to satisfy CIDs 2423, 2424, 2411, 2412

**CID 166Introduction.**

**CIDs** 2423, 2424, 2411, 2412 are proposals to deprecate in some manner, the use of clause 16 and clause 17 data rates.

These CIDs and the deprecation of Clauses 16 and 17 were discussed at length in 11mc on Thursday PM 1 on November 13, 2013.

**“Deprecated”**

It was established/decided that the term ‘Deprecated’ is used with the meaning of “discouraged”. Hence 11b is discouraged by all three Proposals presented here and which were also presented during the 11mc discussions.

This may have the interpretation that in the future it could be upgraded to “Obsolete and may be removed” in 11md, but in 11mc it is “deprecated”. A ‘three step approach’ was discussed that consisted of the steps:

1. “Deprecated”. Notice that the referenced text is ‘discouraged’ and any new devise is discouraged from using it. It is also a notice that in future it is likely to be made ‘obsolete’
2. “Obsolete” is a notice that the referenced text should not be used in any new product and in addition is likely to be removed in subsequent revisions of the Standard.
3. Remove

Based upon the ‘3 step’ rule, it is reasonable to assume that if Clauses 16 and 17 were ‘deprecated, then they would not be removed until 2022 at the earliest.

**Proposal A:**

Deprecate Clauses 16 and 17. Make no changes to Clause 19.

Discussion

Rationale is that this clearly sends the message but it does keep Clause 16 and 17 data rates mandatory in Clause 19 which would probably cause confusion and definitely invite many comments. For this reason, this is not recommended as a viable option.

**Proposal B:**

Deprecate Clauses 16 and 17 and make changes to Clause 19 to make use of Clause 16 and 17 data rates optional (and also deprecated, i.e. discouraged).

This requires following changes to Clause 19.1.2

**19.1.2 Introduction**

The ERP builds on the payload data rates of 1 and 2 Mb/s, as described in Clause 16 (DSSS PHY specification for the 2.4 GHz band designated for ISM applications), that use DSSS modulation and builds on the payload data rates of 1, 2, 5.5, and 11 Mb/s, as described in Clause 17 (High rate direct sequence spread spectrum (HR/DSSS) PHY specification), that use DSSS and CCK. The ERP draws from Clause 18 (Orthogonal frequency division multiplexing (OFDM) PHY specification) to provide additional payload data rates of 6, 9, 12, 18, 24, 36, 48, and 54 Mb/s. Of these rates, transmission and reception capability for 1, 2, 5.5, 6, 11, 12, and 24 Mb/s data rates is mandatory.

Replace with

**19.1.2 Introduction**

The ERP builds on the payload data rates of 1 and 2 Mb/s, as described in Clause 16 (DSSS PHY specification for the 2.4 GHz band designated for ISM applications), that use DSSS modulation and builds on the payload data rates of 1, 2, 5.5, and 11 Mb/s, as described in Clause 17 (High rate direct sequence spread spectrum (HR/DSSS) PHY specification), that use DSSS and CCK. The ERP draws from Clause 18 (Orthogonal frequency division multiplexing (OFDM) PHY specification) to provide additional payload data rates of 6, 9, 12, 18, 24, 36, 48, and 54 Mb/s. Of these rates, transmission and reception capability for 1, 2, 5.5, and 11 Mb/s are optional and deprecated, but transmission and reception capability for 6, 11, 12, and 24 Mb/s data rates is mandatory.

**Discussion**

A problem with this proposal is that existing APs tend to Beacon at 1Mbps. Hence, new 11g devices that did not support 11b rates would not receive the beacons and this could cause problems in the ‘changeover’ period. Hence, this proposal is not recommended.

**Proposal C:**

Deprecate Clauses 16 and 17 and make changes to Clause 19 to make use of Clause 16 and 17 data rates optional for transmit but mandatory for receive.

This requires following changes to Clause 19.1.2

**19.1.2 Introduction**

The ERP builds on the payload data rates of 1 and 2 Mb/s, as described in Clause 16 (DSSS PHY specification for the 2.4 GHz band designated for ISM applications), that use DSSS modulation and builds on the payload data rates of 1, 2, 5.5, and 11 Mb/s, as described in Clause 17 (High rate direct sequence spread spectrum (HR/DSSS) PHY specification), that use DSSS and CCK. The ERP draws from Clause 18 (Orthogonal frequency division multiplexing (OFDM) PHY specification) to provide additional payload data rates of 6, 9, 12, 18, 24, 36, 48, and 54 Mb/s. Of these rates, reception capability for 1, 2, 5.5, 6, 11, 12, and 24 Mb/s data rates is mandatory, transmission capability for 1, 2, 5.5, and 11 Mb/s is optional and deprecated, but transmission capability for 6, 11, 12, and 24 Mb/s data rates is mandatory.

**Discussion:**

In Proposal C, the reception of 11b rates is still mandatory, therefore new 11g devices would still receive 1Mbps beacons. The deprecation of the transmission of the 11b rates still provides a clear indication that new 11g APs could start to use 6Mbps for Beacons, and new STAs use 6Mbps for probes. The reception of 11b provides ‘protection’ to 11b STAs in the meanwhile. It could be that in 11md the step to ‘Obsolete” could be made directly for the reception of 11b packets rather than the ‘optional and deprecated step, but that can be addressed in 11md.

This Proposal is recommended.

**Proposed Resolution:**

**REVISED**

Add following directly after the heading for Clause 16.

“Clause 16 is deprecated.”

Add following directly after the heading for Clause 17.

“Clause 17 is deprecated.”

Replace

**19.1.2 Introduction**

The ERP builds on the payload data rates of 1 and 2 Mb/s, as described in Clause 16 (DSSS PHY specification for the 2.4 GHz band designated for ISM applications), that use DSSS modulation and builds on the payload data rates of 1, 2, 5.5, and 11 Mb/s, as described in Clause 17 (High rate direct sequence spread spectrum (HR/DSSS) PHY specification), that use DSSS and CCK. The ERP draws from Clause 18 (Orthogonal frequency division multiplexing (OFDM) PHY specification) to provide additional payload data rates of 6, 9, 12, 18, 24, 36, 48, and 54 Mb/s. Of these rates, transmission and reception capability for 1, 2, 5.5, 6, 11, 12, and 24 Mb/s data rates is mandatory.

With

**19.1.2 Introduction**

The ERP builds on the payload data rates of 1 and 2 Mb/s, as described in Clause 16 (DSSS PHY specification for the 2.4 GHz band designated for ISM applications), that use DSSS modulation and builds on the payload data rates of 1, 2, 5.5, and 11 Mb/s, as described in Clause 17 (High rate direct sequence spread spectrum (HR/DSSS) PHY specification), that use DSSS and CCK. The ERP draws from Clause 18 (Orthogonal frequency division multiplexing (OFDM) PHY specification) to provide additional payload data rates of 6, 9, 12, 18, 24, 36, 48, and 54 Mb/s. Of these rates, reception capability for 1, 2, 5.5, 6, 11, 12, and 24 Mb/s data rates is mandatory, transmission capability for 1, 2, 5.5, and 11 Mb/s is optional and deprecated, but transmission capability for 6, 11, 12, and 24 Mb/s data rates is mandatory.