Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Comments on "IEEE 802.16, Recommended Practices to Facilitate the Coexistence of Broadband Wireless Access (BWA) Systems" revised 2000-02-24**
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Re:	IEEE 802.16, Recommended Practices to Facilitate the Coexistence of Broadband Wireless Access (BWA) Systems, revised 2000-02-24
Abstract	Proposed changes (mainly editorial) to "IEEE 802.16, Recommended Practices to Facilitate the Coexistence of Broadband Wireless Access (BWA) Systems" revised 2000-02-24
Purpose	This contribution contains proposals for improving the Coexistence document
Notice	This document has been prepared to assist IEEE 802.16. 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.
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Page 1, Section 1, Line 4:

This document provides guidelines for minimizing interference in Broadband Wireless Access (BWA) systems. Pertinent coexistence issues are addressed and recommended engineering practices provide guidance for system design, deployment, co-ordination and frequency usage. The document covers the 10 to 66 GHz frequencies in general, but is focused on the range of ~~20 to 40~~23.5 to 43.5 GHz.

We are "focusing" on Range 2, therefore I suggest that we are consistent with section 1.3 “Frequency Ranges”

Page 2, Section 1.3, "Digital modulation" Lines 2-5:

Digital modulation: The process by which some characteristic (frequency, phase, amplitude or combinations thereof) of a carrier frequency is varied in accordance with a digital signal. ~~For complex digital modulation, either the carrier state (phase, freqeuncy and/or amplitude) is changed multiple times during an information bit interval (spread spectrum), or the state of multiple carriers is changed at intervals much less frequent than a bit interval (e.g., OFDM).~~ Digital modulation is characterized by discrete changes of state for the carrier signal rather than continuous changes as in analog modulation.

I do not think that the sentence "For complex digital ....(e.g., OFDM)." is correct e.g. QAM16 is not covered. - I think that the remaining two sentences are sufficient and recommend deleting the second sentence. If this sentence is retained, then correct spelling of "frequency" in parenthetical phrase.

Page 3, Section 1.3, final paragraph “Repeaters”:

"Repeaters" paragraph is not in alphabetic sequence - re-order

Page 4, Section 1.4, Line 15-16:

~~"[Add reference to Canadian frequency plans]"~~

~~"[Add reference to USA frequency plans for LMDS]"~~

FCC CC Docket 92-297 "Second report and Order, Order on Reconsideration and Fifth Notice of Proposed Rulemaking" adopted March 11, 1997

Delete Canadian reference, as covered later in page in Industry Canada documents. I have suggested a FCC LMDS reference

Page 4, Section 1.4, lines 16-27

Industry Canada RSS 191	“Local Multi Point Communication Systems In The 28 GHz Band; Point-To-Point And Point-To-Multipoint Broadband Communication Systems In The 24 GHz And 38 GHz Bands”

Industry Canada SRSP-324.25	"Technical Requirements for Fixed Radio Systems Operating in the Bands 24.25 - 24.45 and 25.05 - 25.25 GHz"
Industry Canada SRSP-325.35	"Technical Requirements for Local Multipoint Communication Systems (LMCS) Operating in the Band 25.35 - 28.35 GHz"
Industry Canada SRSP-338.6	"Technical Requirements for Fixed Radio Systems Operating in the Band 38.6 - 40.0 GHz"
~~SRSP~~RABC	"A Radio Advisory Board of Canada Supporting Study Leading to a Coordination Process For Point-To-Multipoint Broadband Fixed Wireless Access Systems in the 24, 28 and 38 GHz Bands"

Correct indentation for 5 Canadian docs - RSS191, SRSP324.25, SRSP325.35, SRSP338.6, Radio Advisory Board of Canada doc

Change designation of Industry Canada and Radio Advisory Board of Canada documents.

Page 5, Section 2.2, last line

There are a couple of blank lines at bottom of page.

Page 6, Section 2.2, line 2

The F~~I~~ interfaces are generally standardized, being points of connection to core networks.

The text references an "I" interface. I don't see an "I" interface on Fig 2-1 - is this a typo.

Page 8, Section 3.1.1, line 5

Since interference within a given area is directly related to the ~~excitance~~ emissions from various transmitters, it is important to have some upper limits on transmitted power~~. Or~~, or more accurately, limits for the equivalent isotropically radiated power spectral density.

Change "excitance" to "emissions". Connect phrase to sentence.

Page 8, Section 3.1.1, line 9

The spectral density should be assessed with ~~an integration~~ bandwidth ~~of not more than~~integrated over 1 MHz; i.e. these limits apply over any 1 MHz bandwidth.

The original text suggests that any bandwidth less than 1 MHz is acceptable. Nortel believes that while measurements with bandwidth less than 1 MHz are acceptable, they MUST be integrated to a 1 MHz bandwidth for specification or comparison.

This same issue occurs in several of the following paragraphs Para 3.1.1.1, line 4; Para 3.1.1.2, line 4; Para 3.1.1.3.1, line 5; Para 3.1.1.3.2, line 6; Para 3.1.1.4, final line. Nortel recommends a similar correction.

Page 8, Section 3.1.1.1, line 6

Note for the specific sub band 25.25-27.5 GHz, the limits set out in ITU-R Document 7D-9D/TEMP/~~XX~~ XX should be used, which are specified as follows:

An unequivocal reference to the ITU doc is needed and should also be listed in section 1.4.

There is a spurious "." in section 3.1.1.1, line 5.

Page 9, Section 3.1.1.2, final line

A lower limit is specified for unfaded conditions, as described in 3.1.2.~~.~~ Note for the specific subband 25.25-25.75 GHz, the recommended subscriber EIRP limits , as defined by ITU-R Temp document ~~XX~~XX, are as follows:???????

An unequivocal reference to the ITU doc is needed and should also be listed in section 1.4.

There is apparent a section of text extracted from an ITU doc missing.

There is a spurious "." in section 3.1.1.2, line 6.

Page 9, Section 3.1.1.3, line 2

These may operate on~~- —~~frequency or use different frequencies from….

"on-frequency" is one word, but splits across lines in printout. Same phrase occurs in Section 3.1.1.3.2, line 5

Page 10, Section 3.1.1.4, line 1

Inband Intercell Links (ICLs) are point to point (PTP) radios ~~operating within Frequency Range 2 when used~~.

Final phrase does not make sense – delete.

Page 10, Section 3.1.1.4, equations

Power spectral density = P_{TX} – 10 Log (BW_{MHz}) = 0 – 10Log(50) = -17 dBW/MHz

EIRPSD = P_{TX} – 10 Log (BW_{MHz}) + G_{TX} = -17 + 42 = 25 dBW/MHz.

Add "spectral" for correctness. Correct error in equation.

Page 11, Section 3.1.2, lines 2, 4

BWA subscriber stations conforming to the equipment design parameters recommended by this practice should not transmit an EIRP spectral density of more than ~~15~~ 14 dBW/MHz under unfaded conditions, i.e. for clear sky conditions. This requirement is met if the maximum EIRP spectral density produced by the

equipment is always less than ~~15~~ 14 dBW/MHz, or it may be met by employing adaptive transmit power control to reduce EIRP spectral density below this limit during unfaded conditions, i.e. in clear or no-rain conditions .

The hub is specified at 14 dBW/MHz in section 3.1.1.1, why change here? There is a line feed in the middle of the paragraph.

Page 12, Section 3.2.2, lines 2-3

There is a line feed in the middle of the paragraph.

Page 12, Section 3.3, line 3

Correct spelling of “interference”.

Page 13, Section 3.3, paragraph 3, line 4

Correct spelling of “addition”.

Page 17, Section 3.4.2.3, lines 4-5

It is recommended that the PIM of BWA antennas perform at 100 dBc or better ~~in regards to passive intermodulation~~.

Use simpler language.

Page 21-22, Section 3.4.3.1.2.3.3-.5

There is a key to the graphs in section 3.4.3.1.2.3.5, that presumably refers to the preceding two graphs. It is difficult to see if both Max and Min co-polar exist as only two curves are apparent.

Page 30, Section 6.1.1

Bullets “ii” and “iii” refer to *inband* receive power from the desired transmitter and may be restrictive on the desired signal level in some cases. Is this what is meant?

Bullets “ii” to “v” can be simplified to listing only half of the band – either “27.5 to 27.925 GHz” or “27.925 GHz to 28.35 GHz”. Recommend this simplification be used.

In bullets “ii” and “vi”, change “BST” to “BTS”

Bullet “iv” has a spurious “.” at the end.

Is “will” the correct verb rather than “shall” or “should”?

Page 31, Section 6.1.3

6.1.3 Canadian Band Plan for the 38 GHz ~~[add us and others – leland]~~

Delete parenthetical phrase in title.

Page 32, Section 7.1, paragraph 3, line 1-2

Change “LMCS” to “LMDS” in two places.

Page 33, Section 7.1, paragraph 5, line 1-2

Delete spurious “)”. Change “LMCS” to “LMDS”

Page 40, Section A.1.2, paragraph 2, line 1

Change “A.x.1” to “A.1.1”

Page 40, Section A.2,

In title, delete parenthetical “(keith)”

Page 41, Appendix B, Abbreviations

Add “RSS Radio Standards Specification – equipment regulation used in Canada”

Modify “SRSP ????” to “SRSP Standard Radio System Plan – regulatory system plan used in Canada

Page 42, Appendix B, Glossary

Section 1.3 has definitions – can these be consolidated with Glossary?

Correct spelling of “different” in FDD item.

Correct spelling of “hierarchical” in OC-3 item