| **Comment by:** | Peter Ecclesine | **Membership Status:** | Member | **Date:** 30-Oct-2009 |

| **Comment #** E1 | **Document under Review:** P802.16h/D12 | **Ballot ID:** sb_16hR5 |

Comment   **Type** Editorial   **Part of Dis** ☐ **Satisfied** ☐   **Page** 190   **Line** 30   **Fig/Table#**   **Subclause** Annex A

There is no text referring to B49 and B50.

Suggested Remedy

Remove References B49 and B50 and renumber B51 here and 6.4

GroupResolution   **Decision of Group:**   Agree

Reason for Group's Decision/Resolution

Group's Notes

Editor's Notes   **Editor's Actions**   a) done

| **Comment by:** | Peter Ecclesine | **Membership Status:** | Member | **Date:** 30-Oct-2009 |

| **Comment #** E2 | **Document under Review:** P802.16h/D12 | **Ballot ID:** sb_16hR5 |

Comment   **Type** Editorial   **Part of Dis** ☐ **Satisfied** ☐   **Page** 7   **Line** 1   **Fig/Table#**   **Subclause** 4

Ineterference has an extra "e"

Suggested Remedy

Interference

GroupResolution   **Decision of Group:**   Agree

Reason for Group's Decision/Resolution

Group's Notes

Editor's Notes   **Editor's Actions**   a) done

| **Comment by:** | Peter   Ecclesine | **Membership Status:** | Member | **Date:** | 30-Oct-2009 |

Comment # E3　　　　　　　**Document under Review:** **P802.16h/D12**　　　　　**Ballot ID:** **sb_16hR5**

Comment　　**Type** Editorial　　**Part of Dis** ☐　**Satisfied** ☐　　**Page** 7　　**Line** 20　　**Fig/Table#**　　**Subclause** 4

The renaming to IEBBSn and IEBSSn means these two entries are not in alphabetical order, nor is IEB listed.

Suggested Remedy

Add Interference Evaluation Burst and put the clause entries in alphabetical order

GroupResolution　　　　　　　　**Decision of Group:** **Agree**

Reason for Group's Decision/Resolution

Group's Notes

Editor's Notes　　　　　**Editor's Actions**　　a) done

| **Comment by:** | Peter   Ecclesine | **Membership Status:** | Member | **Date:** | 30-Oct-2009 |

Comment # E4　　　　　　　**Document under Review:** **P802.16h/D12**　　　　　**Ballot ID:** **sb_16hR5**

Comment　　**Type** Editorial　　**Part of Dis** ☐　**Satisfied** ☐　　**Page** 65　　**Line** 50　　**Fig/Table#**　　**Subclause** 15.3.1.3

As was commented in the recirculation of D10, Only capitalize the A in Annex to follow the IEEE Style guide.

Suggested Remedy

Replace "ANNEX" with "Annex" in all clause 15 occurrences.

GroupResolution　　　　　　　　**Decision of Group:** **Agree**

Reason for Group's Decision/Resolution

Group's Notes

Editor's Notes　　　　　**Editor's Actions**　　a) done

Comment by: Peter Ecclesine   **Membership Status:** Member   **Date:** 30-Oct-2009

Comment # E5   **Document under Review:** P802.16h/D12   **Ballot ID:** sb_16hR5

Comment   **Type** Editorial   **Part of Dis** ☐ **Satisfied** ☐   **Page** 97   **Line** 36   **Fig/Table#**   **Subclause** 15.3.5.2

The heading "Interference Evaluation Burst scheduling" should be numbered to follow the IEEE Style guide.

Suggested Remedy

Number it 15.3.5.2.1

GroupResolution   **Decision of Group:** **Agree**

Reason for Group's Decision/Resolution

Group's Notes

Editor's Notes   **Editor's Actions**   a) done

Comment by: Peter Ecclesine   **Membership Status:** Member   **Date:** 30-Oct-2009

Comment # E6   **Document under Review:** P802.16h/D12   **Ballot ID:** sb_16hR5

Comment   **Type** Editorial   **Part of Dis** ☐ **Satisfied** ☐   **Page** 188   **Line** 36   **Fig/Table#**   **Subclause** 15.7

The headings "Overview" and "Architecture" should be numbered to follow the IEEE Style guide and be consistend with the rest of clause 15 (e.g., 15.4.1.1 Overview)

Suggested Remedy

Number them 15.7.1 and 15.7.2

GroupResolution   **Decision of Group:** **Agree**

Reason for Group's Decision/Resolution

Group's Notes

Editor's Notes   **Editor's Actions**   a) done

Number as 15.7.3 for Operation

| **Comment by:** | Mariana Goldhamer | **Membership Status:** | Member | **Date:** 4-Nov-2009 |

| **Comment #** E7 | **Document under Review:** **P802.16h/D12** | **Ballot ID:** **sb_16hR5** |

Comment | **Type** General | **Part of Dis** ☐ **Satisfied** ☐ | **Page** 97 | **Line** 12 | **Fig/Table#** | **Subclause** 15.3.5.2

The resolution to comment D10 in the previous recirc. has some problems: the text is not placed at the right place or references to the proper clauses are missing or the change of the title in clause 15.3.5.2 is not correctly reflected.

Suggested Remedy

1. Move the phrase starting at line 12 at the end of the page; insert the word "also" after "may be". 2. Delete on line 41 the word "predefined". Note: the definition on page 96, line 60 includes what shall be transmitted. 3. On line 8, after "are the strongest", add "and apply the procedures described in clause 15.4.4" Note: the procedures in 15.4.4 refer to 15 3.5, so with this change the reference loop is closed. 4. On page 119, insert "and the interference evaluation," on line 23, after "identification". Note: this is needed due to the change of the titles in 15.3.5. 5. On page 119, line 46, change:Identification of the source of interference, using the procedures defined in 15.3.5" to " Interference evaluation and identification of the source of interference, using the procedures defined in 15.3.5;" 6. On page 98, line 16, replace "shall" with "can". Note: here is a pure description, no need for "shall".

GroupResolution   **Decision of Group:** **Principle**

1. Implement contribution C802.16h-09/0022r1 to replace "signature" with "Interference Evaluation Burst"
2. Move the phrase starting at line 12 at the end of the page; insert the word "also" after "may".
3. Delete "(see 8.5.1)" in the entire document

Reason for Group's Decision/Resolution

Group's Notes

Editor's Notes   **Editor's Actions**   a) done

Comment by:	Ronald G Murias	**Membership Status:**	Member	**Date:** 4-Nov-2009

Comment # E8   **Document under Review: P802.16h/D12**   **Ballot ID: sb_16hR5**

Comment   **Type** Technical   **Part of Dis** ☒ **Satisfied** ☐   **Page** 34   **Line** 58   **Fig/Table#**   **Subclause** 8.4.14.5

I am dissatisfied with the resolution to Comment D4 in 802.16-09/0053r2.

The PAR Scope says "This amendment specifies improved mechanisms, as policies and medium access control enhancements, to enable coexistence among license-exempt systems based on IEEE ..."

What "policy" or "MAC enhancement" detects saturation levels of the RF signal? What "MAC enhancement" is defined that can detect "mid-saturation" as specified in 8.4.14.5 and defined in the second table of 11.12?

The group response to the comment speaks about avoiding "PHY protocol" changes, but the PAR does not say "you cannot touch PHY protocol". The PAR limits the group to policies and MAC enhancements. Simply avoiding PHY protocol changes does not mean the group has not violated the PAR.

Suggested Remedy

Remove 8.4.14.5 and related material from 802.16h

GroupResolution   **Decision of Group:**   **Disagree**

Reason for Group's Decision/Resolution

This comment is a reiteration of the comment D4 in recirc.4 and of the comment C9 in Recirc. 3.

The detection and communication of the saturation state is a "mechanism", allowed by the PAR, which permits the detection of the interference experienced by the receiver, especially in cases when the interference levels are extremely high and can cause the receiver de-sensitization, such that the interference detection may not be possible by regular means. The MAC enhancement consists of messages which should be transmitted by the SS to its Base Station. The existing hardware will do the RF measurement and will comunicate the results using the MAC management SAP.

Group's Notes

Editor's Notes   **Editor's Actions**   b) none needed

Comment by:	Ronald G Murias	**Membership Status:**	Member	**Date:** 4-Nov-2009

Comment # E9		**Document under Review:** **P802.16h/D12**	**Ballot ID:** **sb_16hR5**

Comment   **Type** Technical   **Part of Dis** ☒ **Satisfied** ☐   **Page** 96   **Line** 53   **Fig/Table#**   **Subclause** 15.3.5.2

I remain dissatisfied with the resolution to Comment C52 and Comment D10. I argued that the use of the "radio signature" is clearly a PHY mechanism and is out of scope of the amendment.

The changes adopted in C802.16h-09/0020 do little more than re-name the mechanism from "Radio Signature" to "Interference Evaluation Burst", but requirements remain, such as "A receiver shall listen to the media during the Interference Evaluation Burst slot and determine which interferers are the strongest." How does the receiver do this? What new mechanism (within the scope of the PAR) can be used to do this?

Regarding the scheduling of the interference evaluation burst, all transmitters shall transmit a "predefined signal". What predefined signal are they to transmit, and how is this within the scope of MAC enhancements?

Suggested Remedy

Remove all material related to the "Interference Evaluation Burst"

GroupResolution   **Decision of Group:**   **Principle**

Instruction to the Editor: Implement changes in the contribution C802.16h-09/0021r2

Reason for Group's Decision/Resolution

This comment is a reiteration of the comments C52 and D10, as the author indicates.

We disagree that there is any PHY changes and we believe that the mechanism described 15.3.5.2. provides sufficient means to determine the strongest interferers. It is trivial for the receiver to measure the signal strength from these transmissions during interference-free slots. We provided a better explanatory text of the mechanism with the scope to better clarify its operation.

Group's Notes

Editor's Notes   **Editor's Actions**   a) done

Comment by: Michelle Turner   **Membership Status:** Member   **Date:** 5-Nov-2009

Comment # E10   **Document under Review:** **P802.16h/D12**   **Ballot ID:** **sb_16hR5**

Comment   **Type** Editorial   **Part of Dis** ☒ **Satisfied** ☐   **Page** 0   **Line** 0   **Fig/Table#**   **Subclause** 0

This draft meets all editorial requirements.

Suggested Remedy

GroupResolution   **Decision of Group:** **Agree**

Reason for Group's Decision/Resolution

Group's Notes

Editor's Notes   **Editor's Actions**   a) done

Comment by:	Lei Wang	**Membership Status:** Member	**Date:** 5-Nov-2009

Comment # E11	**Document under Review:** P802.16h/D12	**Ballot ID:** sb_16hR5

Comment   **Type** Technical   **Part of Dis** ☒ **Satisfied** ☐   **Page** 87   **Line** 27   **Fig/Table#**   **Subclause** 15.3.4.1.1

Comment 577 in Sponsor Ballot database 802.16-08/047 provides important direction on PAR scope issues within the amendment. There are a number of mechanisms in IEEE P802.16h/D12 that violate the PAR's scope. The feature defined in subclause 15.3.4.1.1 entitled 'DL timing adjustment for Coexistence Signalling' introduces enhancements to physical layer specification. MAC layer specification is permitted in the PAR scope while physical layer changes are not. Subclause 15.3.4.1.1 introduces an On-Off Keying signaling scheme. This fact is noted on page 87, line 42 of IEEE P802.16h/D12. This is a new PHY concept with a new modulation scheme added to the standard and is therefore out of scope. Furthermore there is no specification of nature of the signals in the On-Off Keying scheme. It is not possible to implement this feature based on the specification provided; making inter-operability impossible.

Suggested Remedy

PHY features introduced in IEEE P802.16h/D12 are out of scope of the PAR and should be removed from the draft specification. Therefore remove subclause 15.3.4.1.1 and align the remaining specification accordingly.

GroupResolution   **Decision of Group:** **Disagree**

Reason for Group's Decision/Resolution

This comment is a reiteration of comment A7 in Recirc. 1 and comment D7 in Recirc. 4.
CSI is driven by MAC level scheduling and is not a PHY mechanism. In addition, we note that in the 802.16 Standard, the MAC layer adjusts the timing of transmissions, whether in the downlink or in the uplink. The new feature in 15.3.4 is based on the MAC usage of the current PHY scheme in the existing standard.

Group's Notes

Editor's Notes   **Editor's Actions**   b) none needed

| **Comment by:** | Lei Wang | **Membership Status:** | Member | **Date:** 5-Nov-2009 |

| **Comment #** E12 | **Document under Review:** P802.16h/D12 | **Ballot ID:** sb_16hR5 |

Comment   **Type** Technical   **Part of Dis** ☒ **Satisfied** ☐   **Page** 99   **Line** 44   **Fig/Table#**   **Subclause** 15.4

Resolution of Comment 577 in Sponsor Ballot database 802.16-08/047r4 modified section 15.4 (of IEEE P802.16h/D7a) together with other sections by means of contribution IEEE C8021.16h-08/042. Furthermore resolution to Comment 696 consolidated section 6.4.1.3.4 (of IEEE P802.16h/D7a) by means of contribution IEEE C8021.16h-08/043. The motivation for these comments and subsequent resolutions was centered on PAR scope issues related to coexistence with systems other than 802.16. The 802.16h amendment still contains features and references pertaining to coexistence with systems other than 802.16. Comment 577 has therefore not been completely addressed. Using the argument that there is an implicit assumption that the amendment needs to coexist with other systems is not valid; in this case the amendment is clearly targeting inappropriate band. The amendment IEEE P802.16h/D12 contains 9 references to 'bursty systems'. 'Bursty systems' within the sense of the amendment are defined and exemplified by the term Wireless LANs. Furthermore there is 1 references '802.11'. Coexistence with these or other systems is out of scope and therefore any specification should be removed. Specification of coexistence with 'bursty systems' is focused in section 15.4.1 and its sub sections specifically 15.4.1.4.1, and uses the feature name of 'CX-CBP'. Section 15.4.1.4 makes specific mention of coexistence with systems other than 802.16 systems.

Suggested Remedy

Delete section 15.4.1 and its subsections to remove specification of coexistence with 'bursty systems'. Remove other coexistence features related to coexistence with systems other than 802.16. Remove all references to 'bursty systems' throughout the draft and align the remaining specification accordingly. Remove all references to explicit coexistence with '802.11' systems throughout the draft and align the remaining specification accordingly. In light of these far reaching and extensive changes the document may have to be sent back to the Working Group for redrafting.

GroupResolution   **Decision of Group:**   **Disagree**

Reason for Group's Decision/Resolution

This comment is a reiteration of comment A9 in Recirc. 1.
The 802.16h PAR Scope includes "facilitate the coexistence of such systems with primary users", where "such systems" refer to 802.16-based systems and primary users belong to systems which are based on non-802.16 technologies. Such primary users are the Radio LANs, also called "Wireless LANs". Radio LANs were identified by ITU-R Resolution 229 (WRC-03) as part of the PRIMARY WAS (Wireless Access Systems) in 5GHz.
The text in the Resolution 229 says:
"The World Radiocommunication Conference (Geneva, 2003), considering
a)   that this Conference has allocated the bands 5 150-5 350 MHz and 5 470-5 725 MHz on a PRIMARY basis to the mobile service for the implementation of wireless access systems (WAS), including radio local area networks (RLANs);"
With no doubt the coexistence with wireless LANs and 802.11, having a "primary" status in 5GHz, is in the scope of the 802.16h PAR.
The standard defines coexistence mechanisms, but there is no linkage between a specific mechanism and a frequency band. The IEEE

802.16-2009 standard also defines generic PHY/MAC protocols, not linked to a specigfic frequency band.

Group's Notes

Editor's Notes   **Editor's Actions**   b) none needed

2009/09/10   **IEEE 802.16-09/0062r3**

Comment by: Binyang XU   **Membership Status:**   Nonmember   **Date:** 2009/11/05

Comment # **E50001**   **Document under Review:** **P802.16h/D12**   **Ballot ID:** **sb_16hR5**

Comment   **Type** Technical   **Part of Dis** ☐ **Satisfied** ☐   **Page** 190   **Line** 53   **Fig/Table#**   **Subclause**

By current distributed system architecture, neighboring BSs share common channel by a find-to-fill manner to avoid interference based on spectrum utilization information retrieved from distributed databases. From optimization point of view, the solution is not necessary spectrum efficiency optimal, although it simplify signaling. We can alternatively allow neighboring BSs cooperatively make their spectrum utilization by complying with predetermined optimization rule, e.g. non-cooperative/cooperative game playing.

Suggested Remedy

To support this enhancement, new definition of optimization criteria should be added into information of distributed database for WirelessMAN-CX system.

GroupResolution   **Decision of Group:**   **Disagree**

Reason for Group's Decision/Resolution

The current approach defined in the current IEEE 802.16h amendment allows for flexibility in the optimization algorithm that is used. The exact algorithm is beyond the scope of the standard. There are no specific text changes. It is too late for doing such changes in this phase of the Sponsor Ballot.

Group's Notes

Editor's Notes   **Editor's Actions**   b) none needed