Comment by: Ecclesine Peter **Membership Status:** Member **Date:** 2009/09/19

Comment # D1 **Document under Review:** P802.16h/D11 **Ballot ID:** sb_16h4

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

80216-09/46r3 shows recirc 3 comments c09, c10, c48, c50 and c51 are disagreed with by the comment resolution committee, however no resolution or discussion is shown. I disagree with the silence of these comment resolutions, and vote disapprove the Draft 11 recirculation package because it lacks resolutions for these comments.

Suggested Remedy

The Comment Resolution Committee shall provide Group Resolution discussion for all required comments, and this includes required comments like c03, where only Editor's notes are given.

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

Reason for Group's Decision/Resolution

1. We have adressed all the comments. All the mentioned comments have resolutions or reasons.
2. The rationale for each comment resolution was properly available in myBallot to each ballot group member. It appears that the balloter overlooked this information but later recognized its availability, per the following email from the balloter:
   "Thanks for the pointers to final SB recirc 3 comment resolutions, which address all comments.
   I withdraw my comments #1, 4 and 5, leaving my comments #2, 3 and 6 as technical disapprove comments."

Group's Notes

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

Comment by: Ecclesine Peter **Membership Status:** Member **Date:** 2009/09/19

Comment # D2 **Document under Review:** P802.16h/D11 **Ballot ID:** sb_16h4

Comment **Type** Technical **Part of Dis** ☒ **Satisfied** ☐ **Page** 5 **Line** 34 **Fig/Table#** **Subclause** 3.165

Definition of Primary (Spectrum) Users is inexact, because the example does not state that in some regulatory domains MOBILE services and RADIOLOCATION services are both primary, but in a regulatory domain where MOBILE services are not primary, then the third sentence applies.

Suggested Remedy

Change second sentence to clearly state "An example of such radio services, allocated in a same frequency band (5 GHz) are the PRIMARY RADIOLOCATION services and the SECONDARY MOBILE services, including the implementation of Radio LANs.

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

Replace the existing definition of "Primary (Spectrum) Users" with "Users of radio services that have a regulatory PRIMARY status in a band. In a given frequency allocation there may be SSU, non-SSU, or both SSU and non-SSU, assigned as primary users."

Reason for Group's Decision/Resolution

Group's Notes

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

3.165

Comment by: Ecclesine Peter **Membership Status:** Member **Date:** 2009/09/19

Comment # D3 **Document under Review:** P802.16h/D11 **Ballot ID:** sb_16h4

Comment **Type** Technical **Part of Dis** ☒ **Satisfied** ☐ **Page** 6 **Line** 1 **Fig/Table#** **Subclause** 3.174

The scope of the PAR is for fixed systems only. This definition refers to MSs, which are not within the scope of 802.16h. The Comment Review Committee failed to make the change in the Recirc 3 c05 Group Resolution (and c07 resolution, you should have looked at the D10 redline draft at the indicated page and line).

Suggested Remedy

Remove "or MSs"

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

Reason for Group's Decision/Resolution

Group's Notes

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

Comment by: Ecclesine Peter **Membership Status:** Member **Date:** 2009/09/19

Comment # D4 **Document under Review:** P802.16h/D11 **Ballot ID:** sb_16h4

Comment **Type** Technical **Part of Dis** ☒ **Satisfied** ☐ **Page** 34 **Line** 61 **Fig/Table#** **Subclause** 8.4.14.5

I agree with SB recirc 3 comment c09 that Draft 10's inserting 8.4.14.5 Receiver saturation indication is a PHY function, which is out of scope of this amendment: "Detecting whether a saturation state has been reached based on the input signal level is a PHY function, which is out of scope of this amendment."

Suggested Remedy

Remove 8.4.14.5.

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

Reason for Group's Decision/Resolution

1. The clause 8.4.14 starts with the following sentence: "All requirements on the receiver apply to the RF input connector of the equipment.". The requirement refers to the product implementation and NOT to a PHY protocol change, such that it is not precluded by the P802.16h PAR.
2. The rationale for each comment resolution was properly available in myBallot to each ballot group member. It appears that the balloter overlooked this information but later recognized its availability, per the following email from the balloter:
   "Thanks for the pointers to final SB recirc 3 comment resolutions, which address all comments.
   I withdraw my comments #1, 4 and 5, leaving my comments #2, 3 and 6 as technical disapprove comments."

Group's Notes

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

Comment by: Ecclesine Peter **Membership Status:** Member **Date:** 2009/09/19

Comment # D5 **Document under Review:** P802.16h/D11 **Ballot ID:** sb_16h4

Comment **Type** Technical **Part of Dis** ☒ **Satisfied** ☐ **Page** 32 **Line** 15 **Fig/Table#** **Subclause** 8.3.6.2.10

I agree with SB recirc 3 comment c10 that Draft 10's inserting 8.3.6.2.10 OFDM Periodic Channel Measurement IE is a PHY function, which is out of scope of this amendment. "This section defines a new PHY layer channel measurement IE. According to the PAR, "This amendment specifies improved mechanisms, as policies and medium access control enhancements, to enable coexistence among license-exempt systems based on IEEE Standard 802.16 and to facilitate the coexistence of such systems with primary users." PHY layer enhancements are not covered by the scope as defined in the PAR."

Suggested Remedy

Remove 8.3.6.2.10 OFDM Channel Measurement IE, along with 8.4.5.3.34 and 8.4.5.3.35.

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

Reason for Group's Decision/Resolution

1.The mentioned Information Elements are information elements used by MAC messages, as REP REQ/RSP (Report Request/Response). The content either specifies how the interference measurements are requested/responded or a simple frame count. They are NOT related to new PHY elements, as modulation, coding, MIMO modes, etc. The Information elements in the amended standard are PHY-specification dependent and they are located in the OFDM or OFDMA sections. In 802.16-2009 the section 8.3.6 has the title "8.3.6 Map message fields and IEs" and the section 8.4.5 has the title "8.4.5 Map message fields and IEs".
The addition of a MAC Information element is not related to a change of the PHY protocols, such that it is fully covered by the PAR Scope.

2.The rationale for each comment resolution was properly available in myBallot to each ballot group member. It appears that the balloter overlooked this information but later recognized its availability, per the following email from the balloter:
"Thanks for the pointers to final SB recirc 3 comment resolutions, which address all comments.
I withdraw my comments #1, 4 and 5, leaving my comments #2, 3 and 6 as technical disapprove comments."

Group's Notes

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

Comment by: Ecclesine Peter **Membership Status:** Member **Date:** 2009/09/19

Comment # D6 **Document under Review:** P802.16h/D11 **Ballot ID:** sb_16h4

Comment **Type** Technical **Part of Dis** ☒ **Satisfied** ☐ **Page** 34 **Line** 52 **Fig/Table#** **Subclause** 8.4.14.3.2

I agree with SB recirc 3 comment c08 that Draft 10's insertion of text specifies the capabilities of the PHY section of the receiver and is out of scope of 802.16h.

Suggested Remedy

Remove changes to 8.4.14.3.2 "in macro cell applications and a maximum signal of -35 dBm in micro cell applications."

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

Reason for Group's Decision/Resolution

The clause 8.4.14 starts with the following sentence: "All requirements on the receiver apply to the RF input connector of the equipment." The requirement refers to the performance of the product implementation and NOT to a PHY protocol change, such that it is not precluded by the P802.16h PAR. As the LE product has much lower transmit powers and the distance between BS and SS can be very short, hence the need to protect the receiver with tighter specification, than that of the macro BS.

Group's Notes

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

Comment by: Murias Ronald G **Membership Status:** Member **Date:** 2009/09/20

Comment # D7 **Document under Review:** P802.16h/D11 **Ballot ID:** sb_16h4

Comment **Type** Technical **Part of Dis** ☒ **Satisfied** ☐ **Page** **Line** **Fig/Table#** **Subclause** 15.3.4

I am dissatisfied with the resolution of Comment c03 in 802.16-09/0046r3.
Clause 15.3.4:
- specifies CSI (co-existence signaling interval)
- CSI slot is inserted before the TTG interval
- essentially increasing the TTG interval to allow a single BS to transmit, clearly a PHY function
- in the base standard, TTG related parameters are all in the PHY sections
- 15.3.4.4 (P95L38) calls for the BS to set the monitoring mode of all SS. This implies everyone in the area must have CX mode in order for it to work. What about incoImpatible SS?
- in 15.3.4.1.1 the BS sets a transmission timing parameter according to a bit value it is sending. This is clearly PHY.

Suggested Remedy

Delete Clause 15.3.4

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

Instruction to editor: implement the text changes in C802.16h-09/0019

Reason for Group's Decision/Resolution

CSI is driven by MAC level scheduling and is not a PHY mechanism.

Group's Notes

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

Comment by: Murias Ronald G **Membership Status:** Member **Date:** 2009/09/20

Comment # D8 **Document under Review:** P802.16h/D11 **Ballot ID:** sb_16h4

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

I am dissatisfied with the resolution of Comment c04 in 802.16-09/0046r3. The "license-exempt" issue remains, and the amendment is in violation of its PAR.
- "Principle" did not resolve comment C04, with the following clarification from the group:
"license-exempt frequencies" or "license-exempt bands" should be taken to mean the situation where licensing authorities do not coordinate individual assignments of frequency bands to operators, regardless of whether the spectrum in question has a particular regulatory status as license-exempt or licensed.

Suggested Remedy

Remove all material in the amendment that refers to anything that is not license-exempt, including material pertaining to situations where licensing authorities do not coordinate individual assignments of frequency bands to operators.

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

1, Delete 3.158, 3.159, 3.161
2. Page 55: Delete "The MAC and PHY profiles defined for licensed bands may be also used in conjunction with Wireless-MAN-UCP and WirelessMAN-CX systems. The PHY profile should be appropriate for the usage in the target operational band."
3. Insert an editorial instruction to delete from section 1.3.3 in 802.16-2009:
"It is recognized that some administrations require notification of terminal location for certain services in some license-exempt bands, which is a form of licensing. Conversely, it is possible to have uncoordinated usage within a licensed allocation. In these and other similar cases, the pertinent issues for license-exempt usage remain as described in the preceding paragraph.
In the context of this standard, the use of the term “license-exempt frequencies” or “license-exempt bands” should be taken to mean the situation where licensing authorities do not coordinate individual assignments of frequency bands to operators, regardless of whether the spectrum in question has a particular regulatory status as license-exempt or licensed."

Reason for Group's Decision/Resolution

Group's Notes

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

Comment by: Murias Ronald G **Membership Status:** Member **Date:** 2009/09/20

Comment # D9 **Document under Review:** P802.16h/D11 **Ballot ID:** sb_16h4

Comment **Type** Technical **Part of Dis** ☒ **Satisfied** ☐ **Page** 6 **Line** 1 **Fig/Table#** **Subclause**

I am dissatisfied with the resolution of comment #c05 in 802.16-09/0046r3. There are still at least two references to an "MS" in this amendment, which is out of scope.

Suggested Remedy

Remove all references to "MS" in the document

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

Reason for Group's Decision/Resolution

Group's Notes

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

2 "MSs" (/MSs) (or MSs) reference in D11 are removed.

Comment by: Murias Ronald G **Membership Status:** Member **Date:** 2009/09/20

Comment # D10 **Document under Review:** P802.16h/D11 **Ballot ID:** sb_16h4

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

I am dissatisfied with the resolution of comment c52 in 802.16-09/0046r3. The use of the "radio signature" is clearly a PHY mechanism and is out of scope of the amendment.
- "radio signature" measurement done in the "master subframe"
- measurement includes "relative spectral density", which is a PHY level measurement not currently mandated
- "radio signatures" may be RSBSn (BS) or RSSSn (SS)
- 15.3.5.2 P75L64: "send data in a way to represent power density characteristics of cumulative radio signatures"?

Suggested Remedy

Remove 15.3.5.2 and all other material referring to "Radio Signature".

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

Instructions to Editor:
1. Delete 3.166
2. Implement the text changes in C802.16h-09/0020.

Reason for Group's Decision/Resolution

The previously named "Radio signature" mechanism (according to the contribution C802.16-09/0020 will be called "Interference Evaluation Burst") is actually a scheduling mechanisms allowing the evaluation of the interference created by a certain radio transmitter belonging to another system. The text in C802.16-09/0020 was improved, removing the un-used "relative spectral density". Multiple regular data transmissions may be scheduled in the same time, allowing the receiver to evaluate the aggregate interference.
There is no PHY change in this mechanism.

Group's Notes

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

Comment by: Jigang QIU **Membership Status:** Nonmember **Date:** 2009/09/18

Comment # D40001 **Document under Review:** P802.16h/D11 **Ballot ID:** sb_16h4

Comment **Type** Technical **Part of Dis** ☐ **Satisfied** ☐ **Page** 135 **Line** 13 **Fig/Table#** **Subclause** 15.4.4

According to 802.16h interference prevention procedure, an interference control mechanism based on power-control can operate during Slave or Shared sub-frames. The defined interference control mechanism is just “after-the-event interference control” style. Only when the interference caused to it has been detected, the interfered system can initiate the interference control procedure. That is, the interfered master system requests the interfering slave system to reduce the transmit power by P dB. In addition, this type of interference control mechanism is very spectrum-consuming, since many resources are needed to transmit the message such as the power control commend, etc.

Actually, the performance of interference control can be improved greatly, through limited information exchange between the master system and the slave system. Obviously, the SSs located at the overlapping zone will cause or suffer the interference to/from its neighborhood more likely. The resource blocks, which are not allocated for the master SSs located in the overlapping zone by the master system, shall try be scheduled to the slave SSs which are not located in the overlapping zone. And then the slave BS/SSs can operate with higher transmission power. Vice versa, during the resource blocks which are allocated for the master SS located in the overlapping zone, the slave BS /SSs shall operate with limited power or stop transmission. In such a case, the interference between the master system and the slave system can be decreased greatly.

Suggested Remedy

Insert the following words after “The interference control procedures should use interferer identification as described in clause 15.3.5” in clause 15.4.4.

The interference control procedures are composed of two steps: 1) Firstly, adopt limited coordination among systems to avoid the interference, where the slave system schedules its resource blocks according to the master system's scheduling information. It is noted that here the master system's scheduling information is not the instant scheduling information, and it is just the long-time scale information based on UE grouping. 2) Secondly, adopt power-control mechanism to lighten the interference.

The initiative of the interference control mechanism based on limited coordination among systems rests with: Since the SSs located at the overlapping zone will cause or suffer the interference to/from its neighborhood more likely, the slave system shall try to avoid operate in the resource blocks, which are allocated for the master SSs located at the overlapping zone. The detailed procedure of the interference control mechanism based on limited coordination among systems is illustrated as follows:

---The BS groups its SSs into Overlapping SSs and Non-Overlapping SSs by the Identification mechanism of the interference source defined in clause 15.3.5. If some of its SSs are interfered by the interfering neighbor system, these SSs are grouped into the overlapping SSs. If not, the corresponding SSs are grouped into the non-overlapping SSs.

---Each system implements coarse scheduling for its master sub-frame operation according to the SSs grouping information and the service load information. It is noted that the coarse scheduling for the master sub-frame operation is invariable for multiple MAC frames. Here, the coarse scheduling procedure is mainly used to determine: the number of resource blocks preserved for the overlapping SSs and the initial distribution of these resource blocks.

---The coexistence systems communicate the coarse scheduling information with each other, through the background IP connection or the air interface. The information about the number of resource blocks allocated to the overlapping and the initial distribution of these resource blocks can be encapsulated in the CXP messages.

---The system working as master further implements the fine resource allocation, to allocate the preserved resource for its overlapping SSs and other resources to its non-overlapping SSs.

---Based on the received the coarse scheduling information, other systems working as slave implement the fine scheduling to control interference, according to following rules:

o In the DL resource blocks allocated for the overlapping master SSs, all slave BSs shall operate with limited power or stop their transmission.
o In other DL resource blocks, which are not allocated for overlapping master SSs, the corresponding resource blocks shall try to be scheduled to any non-overlapping slave SSs. In such a case, the transmission of slave BSs can operate with higher power.
O In the UL resource blocks allocated for overlapping master SSs, the corresponding resource blocks can not be allocated to any slave SS or the slave SSs only can operate with limited power.
o In other UL resource blocks, which are not allocated for overlapping master SSs, the corresponding resource blocks shall try to be allocated to non-overlapping slave SSs. In such a case, the transmission of non-overlapping slave SS can operate with higher power.

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

Reason for Group's Decision/Resolution

We apreciate the benefits of the proposed interference mitigation mechanisms, however:
- in this stage of P802.16h drafting it is much too late for introducing new text. Our activity is focused in addressing the few Sponsor Ballot comments and approve the standard.
- the proposed mechanism needs additional messages for inter-BS communication; the messages which are not being defined by the commenter.
- the proposed mechanism may be considered in the next 802.16 revision.

Group's Notes

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