IEEE 802.16 Working Group on Broadband Wireless Access

http://WirelessMAN.org

14th November 2002

LMSC Motion:

802.16 WG requests conditional approval to forward draft standard 802.16.2a to LMSC letter ballot, subject to successful completion of a Working Group recirculation ballot.

The following supporting information is provided:

1. The prior recirculation ballot closed on 13th November 2002.

2. Following comment resolution, the voting was as follows:

Approve:	60
Disapprove:	1
Abstain:	6
Approval ratio:	98.4%
Return ratio:	72%

3. A confirmation ballot is scheduled to open on 18th November 2002 and close on 3rd December 2002.

4. A resolution meeting is scheduled for 5th December 2002

5. The comments for which voters did not accept working group resolutions are attached, together with the related working group comments..

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Document under Review: P802.16.2a/D2-2002 **Ballot Number:** **Comment Date**

Comment # 076 **Comment submitted by:** Marianna Goldhammer Member

Comment Type Technical, Binding **Starting Page #** 51 **Starting Line #** **Fig/Table#** 29 **Section** 18

3.5GHz is a FDD designed band to minimize interference between base-stations and subscriber stations, on adjacent allocations; this should be reflected in BS-BS separation recommendations, for different providers in the same area, adjacent channel, for all combinations:
BS-BS, BS-SS, SS-SS. Antenna directivity is an important factor in interference scennario, and P-MP systems shoiuld be treated separately from Mesh systems.

Suggested Remedy

Make the interference study separately for FDD P-MP and Mesh, and TDD P-MP and Mesh, and include the missing scennarios: BS-SS, SS-SS, or delete section 18

Proposed Resolution **Recommendation:** Rejected **Recommendation by** GJG

No additional action needed beyond that covered by other comments

Reason for Recommendation

The proposition that 3.5 GHz is an FDD band is not correct. It is often a paired band but regulation in many territories allows both FDD and TDD and a choice of system architecture (PMP or mesh).
Issues associated with FDD/TDD and mesh systems are dealt with under other comments.
The interference scenarios requested have already been analyzed and the contributions are summarized and referenced in the document
The existing contributions already take account of antennas appropriate to PMP
Ther new mesh information uses antenna patterns appropriate to mesh systems

Resolution of Group **Decision of Group:** Rejected

Reason for Group's Decision/Resolution

The proposition that 3.5 GHz is an FDD band is not correct. It is often a paired band but regulation in many territories allows both FDD and TDD and a choice of system architecture (PMP or mesh).
Issues associated with FDD/TDD and mesh systems are dealt with under other comments.
The interference scenarios requested have already been analyzed and the contributions are summarized and referenced in the document
The existing contributions already take account of antennas appropriate to PMP

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Ther new mesh information uses antenna patterns appropriate to mesh systems

Group's Notes

Group's Action Items

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

Editor's Questions and Concerns

Editor's Action Items

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Document under Review: P802.16.2a/D2-2002 **Ballot Number:** **Comment Date**

Comment # 095 **Comment submitted by:** Marianna Goldhammer Member

Comment Type Technical, Binding **Starting Page #** 60 **Starting Line #** **Fig/Table#** 33 **Section** 21.6

3.5GHz is a FDD designed band to minimize interference between base-stations; this should be reflected in BS-BS, SS-SS, RS-RS separation recommendations, for different providers in the same area, adjacent channel. Antenna directivity is an important factor in interference scennario, and P-MP systems shoiuld be treated separately from Mesh systems.

Suggested Remedy

Make the interference study separately for FDD P-MP and Mesh, and TDD P-MP and Mesh, or delete section 21;
Add RS-RS interference scennario

Proposed Resolution **Recommendation:** Rejected **Recommendation by** GJG

Reason for Recommendation

The 3.5 GHz band is not restricted to FDD. The recommendations already cover all the necessary worst case couplings between BS - BS and BS - SS combinations. New input now available on mesh systems in a separate comment.

Resolution of Group **Decision of Group:** Rejected

Reason for Group's Decision/Resolution

The 3.5 GHz band is not restricted to FDD. The recommendations already cover all the necessary worst case couplings between BS - BS and BS - SS combinations. New input now available on mesh systems in a separate comment.

Group's Notes

Group's Action Items

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

Editor's Questions and Concerns

Editor's Action Items

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Document under Review: P802.16.2a/D2-2002 **Ballot Number:** **Comment Date**

Comment # 086 **Comment submitted by:** Marianna Goldhammer Member

Comment Type Technical, Binding **Starting Page #** 56 **Starting Line #** **Fig/Table#** **Section** 20

3.5GHz is a FDD designed band to minimize interference between base-stations; this should be reflected in deployment recommendations, for different providers in the same area, adjacent channel. Antenna directivity is an important factor in interference scennario, and P-MP systems shoiuld be treated separately from Mesh systems.

Suggested Remedy

Make the deployment co-ordination recommendations separately for FDD P-MP and Mesh, and TDD P-MP and Mesh, or delete section 20

Proposed Resolution **Recommendation:** **Rejected** **Recommendation by** PW

Reason for Recommendation

The 3.5 GHz band is not restricted to FDD. The existing analysis already covers a complete set of interference cases relevant to FDD, TDD and mixed interference scenarios.
New mesh analysis is available in a separate comment.

Resolution of Group **Decision of Group:** **Rejected**

Reason for Group's Decision/Resolution

The 3.5 GHz band is not restricted to FDD. The existing analysis already covers a complete set of interference cases relevant to FDD, TDD and mixed interference scenarios.
New mesh analysis is available in a separate comment.

Group's Notes

Group's Action Items

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

Editor's Questions and Concerns

Editor's Action Items

2002/11/14

Document under Review: P802.16.2a/D2-2002 **Ballot Number:** **Comment Date**

Comment # 116 **Comment submitted by:** Marianna Goldhammer Member

Comment Type Technical, Binding **Starting Page #** 84 **Starting Line #** 33 **Fig/Table#** **Section** Annex J

The power level is by far too low

Suggested Remedy

Align the power level used in simulation with the maximum TM4 allowed level; use EN 301 021

Proposed Resolution **Recommendation:** **Accepted-Modified** **Recommendation by** PW

Keep existing analysis which is relevant to LOS systems as defined in the contributions and calculations.
Marianna Goldhammer to provide details and calculations for an alternative high power scenario appropriate to non - LOS conditions.

Reason for Recommendation

The existing analysis is relevant
There is no information available for the alternative scenario.

Resolution of Group **Decision of Group:** **Accepted-Modified**

Keep existing analysis which is relevant to LOS systems as defined in the contributions and calculations.
Marianna Goldhammer to provide details and calculations for an alternative high power scenario appropriate to non - LOS conditions.

Reason for Group's Decision/Resolution

The existing analysis is relevant
There is no information available for the alternative scenario.

Group's Notes

New material must be available in time for recirculation.

Group's Action Items

Editor's Notes **Editor's Actions** b) awaiting missing input

Editor's Questions and Concerns

Editor's Action Items

2002/11/14

Document under Review: P802.16.2a/D2-2002 **Ballot Number:** **Comment Date**

Comment # 119 **Comment submitted by:** Marianna Goldhammer Member

Comment Type Technical, Binding **Starting Page #** 85 **Starting Line #** **Fig/Table#** **Section** Annex K

3.5GHz is a FDD designed band to minimize interference between base-stations; this should be reflected in simulations, for different providers in the same area, adjacent channel. Antenna directivity is an important factor in interference scennario, and P-MP systems shoiuld be treated separately from Mesh systems.

Suggested Remedy

Insert simulations for FDD, TDD, mesh

Proposed Resolution **Recommendation:** **Rejected** **Recommendation by** GJG

Reason for Recommendation

The 3.5 GHz band is not restricted to FDD. The recommendations and simulations already cover all the necessary worst case couplings between BS - BS and BS - SS combinations. Antenna RPEs were specified for BS and SS relevant to the adopted system models. New input is now available on mesh systems in a separate comment.

Resolution of Group **Decision of Group:** **Rejected**

Reason for Group's Decision/Resolution

The 3.5 GHz band is not restricted to FDD. The recommendations and simulations already cover all the necessary worst case couplings between BS - BS and BS - SS combinations. Antenna RPEs were specified for BS and SS relevant to the adopted system models. New input is now available on mesh systems in a separate comment.

Group's Notes

Group's Action Items

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

Editor's Questions and Concerns

Editor's Action Items

2002/11/14

Document under Review: P802.16.2a/D2-2002 **Ballot Number:** **Comment Date**

Comment # 077 **Comment submitted by:** Marianna Goldhammer Member

Comment Type Technical, Binding **Starting Page #** 51 **Starting Line #** **Fig/Table#** **Section** 18

3.5GHz being designed for FFD, the BS, SS and RSshould be defined from frequency allocation p.o.v., only the lines in fig. 31 being insufficient.

Suggested Remedy

Clarify what kind of frequency allocation is proposed for BS-SS, RS-SS, RS-RS links

Proposed Resolution **Recommendation:** Rejected **Recommendation by** GJG

Reason for Recommendation

3.5 GHz is not just an FDD band so the remedy suggested for fig 31 is not appropriate.
The channel arrangements are local decisions and not a matter for consideration in a recommended practice.

Resolution of Group **Decision of Group:** Rejected

Reason for Group's Decision/Resolution

3.5 GHz is not just an FDD band so the remedy suggested for fig 31 is not appropriate.
The channel arrangements are local decisions and not a matter for consideration in a recommended practice.

Group's Notes

Group's Action Items

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

Editor's Questions and Concerns

Editor's Action Items

2002/11/14

Document under Review: P802.16.2a/D2-2002 **Ballot Number:** **Comment Date**

Comment # 212 **Comment submitted by:** Marianna Goldhammer Member 2002/11/11

Comment Type Technical, Binding **Starting Page #** 50 **Starting Line #** 42 **Fig/Table#** 31 **Section** 19.1

The maximum power in the document should be consistent defined, independent of P-MP or Mesh.

P-MP defines max. power at BS or SS. Mesh defines peak power and average power. Not clear if the calculations were made with peak (maximum) power, as in P-MP case.

Suggested Remedy

Mesh and P-MP. Make the Mesh calculations using the peak (maximum) power only. We look at interference between Mesh and P-MP, not at intra-system nterference

Proposed Resolution **Recommendation:** **Accepted-Modified** **Recommendation by** Jack Garrison

Delete the entry for peak power from table 31

Reason for Recommendation

All calculations (mesh and PMP) use mean power.

Resolution of Group **Decision of Group:** **Accepted-Modified**

Delete the entry for peak power from table 31

Reason for Group's Decision/Resolution

All calculations (mesh and PMP) use mean power.

Group's Notes

Group's Action Items

Editor's Notes **Editor's Actions**

Editor's Questions and Concerns

Editor's Action Items

2002/11/14

Document under Review: P802.16.2a/D2-2002 **Ballot Number:** **Comment Date**

Comment # 213 **Comment submitted by:** Marianna Goldhammer Member 2002/11/11

Comment Type Technical, Binding **Starting Page #** 55 **Starting Line #** 53 **Fig/Table#** **Section** 21.6

Clarify that in general the BS-BS or SS-SS interference are relevant only to TDD/TDD or TDD/FDD.

Suggested Remedy

Add:
The BS-BS or SS-SS interference are relevant only for TDD/TDD or TDD/FDD deployment scennarios. In case of FDD/FDD, the results are totaly different.

Proposed Resolution **Recommendation:** **Accepted-Modified** **Recommendation by** Phil Whitehead

In the case where both interfering and victim systems are FDD and operate with the same uplink and downlink channel allocation plan, it may be possible to reduce the guard band requirement for the same area, adjacent channel scenario.

Reason for Recommendation

The case where all systems are guaranteed to be FDD and operate with the same up/downlink channel arrangement is improbable.

Resolution of Group **Decision of Group:** **Accepted-Modified**

Add after line 52 the following sentence: "In the case where both interfering and victim systems are FDD and operate with the same uplink and downlink channel allocation plan, it may be possible to reduce the guard band requirement for the same area, adjacent channel scenario."

Reason for Group's Decision/Resolution

Group's Notes

Group's Action Items

Editor's Notes **Editor's Actions**

Editor's Questions and Concerns

Editor's Action Items

2002/11/14

Document under Review: P802.16.2a/D2-2002 **Ballot Number:** **Comment Date**

Comment # 214 **Comment submitted by:** Marianna Goldhammer Member

Comment Type Technical, Binding **Starting Page #** 56 **Starting Line #** **Fig/Table#** 34 **Section**

Add simulation results for FDD/FDD BS to BS, SS to SS, BS to SS, SS to BS

Suggested Remedy

Proposed Resolution **Recommendation:** **Rejected** **Recommendation by** Phil Whitehead

Reason for Recommendation

There is no requirement for BS to BS or SS to SS calculations for FDD systems, unless they have opposite up/downlink channel arrangements, in which case, the table already contains valid results. For the SS to BS and BS to SS cases, the current results apply to FDD and TDD.

Resolution of Group **Decision of Group:** **Rejected**

Reason for Group's Decision/Resolution

There is no requirement for BS to BS or SS to SS calculations for FDD systems, unless they have opposite up/downlink channel arrangements, in which case, the table already contains valid results. For the SS to BS and BS to SS cases, the current results apply to FDD and TDD.

Group's Notes

Group's Action Items

Editor's Notes **Editor's Actions**

Editor's Questions and Concerns

Editor's Action Items

2002/11/14

Document under Review: P802.16.2a/D2-2002 **Ballot Number:** **Comment Date**

Comment # 215 **Comment submitted by:** Marianna Goldhammer Member 2002/11/11

Comment Type Technical, Binding **Starting Page #** 44 **Starting Line #** 23 **Fig/Table#** **Section** 17.2.4

It is not clear what power was used in Mesh calculations (peak or average). Mesh mention -6dBW vs. 1dBW for SS in P-MP, and a difference of aprox. 6dB in antenna gain. The cell size of P-MP and Mesh coresponds to these differences (2km vs. 7km). Nevertheless, the co-ordination free distances (60km vs. 6km) are not consistent.

Delete 6 km .

Suggested Remedy

Change to:
No coordination is needed in a given direction if the transmitter is greater than 80 km
from either the service area boundary or the neighbor's boundary (if known) in that direction.

Proposed Resolution **Recommendation:** **Accepted-Modified** **Recommendation by** Nico van Waes

clarified by resolution of comment 199

Reason for Recommendation

Resolution of Group **Decision of Group:** **Accepted-Modified**

Reason for Group's Decision/Resolution

clarified by resolution of comment 199

Group's Notes

Group's Action Items

Editor's Notes **Editor's Actions**

Editor's Questions and Concerns

Editor's Action Items