Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**802.16 Session #14 TG4 Meeting Minutes**
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Re:	Session #14 TG4 Meeting Minutes
Abstract	Minutes
Purpose	
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802.16b TG4 Meeting Minutes

IEEE 802 Portland Plenary 7/9 – 7/13, 2001

Monday 7/9/2001

1pm-3.30pm: IEEE 802.16 Opening plenary.
4pm-6pm: Joint TG3/4 session – chair Brian Kiernan.
Agenda discussed and approved for the whole week.

Plenary ran over time allotment. No TG4 or joint TG3/4 MAC group meeting.

***************Joint TG3 and TG4 MAC minutes**********

Tuesday   7/10/2001

Joint TG 3-4 MAC Meeting opened at 8AM

Subir announced that the agenda for the day would be comment resolution on the 01/01 document. The session #14 comment database(AKA current database) is 80216ab-01_04.pdf

Vladimir motions(#1) to discuss and determine if table of contents of "MAC Material" section in 01/01 document is appropriate/correct and if found incorrect to change it.

Lei seconded the motion(#1).

Discussion on the motion #1.

Friendly amendment made by Lei to identify "MAC and PHY Interface" as target area.

Vladimir accepts friendly amendment.

Ken motioned #1A to call the question

Walt seconded motion #1A.

Vote on motion #1A: 17 yeas, 0 nays – question called on motion #1

Vote on motion #1: 12 yeas 2 abstentions, motion #1 passes

Motion #2: Ken motions that each section in the MAC document that addresses frequency band dependencies be augmented with four additional subcategories – one for common material and one each for the PHY dependent aspects – SC, OFDM and OFDMA.

Discussion of the motion #2.

Walt seconded the motion(#2).

Discussion continued.

Motion #2 vote: 13 yeas, 1 nay Motion #2 passes.

Subbu motioned (motion #3) to create a third major section in the document – a MAC and PHY Interface section. This would be done with the goal of permitting both PHY and MAC groups access to this material.

Ken seconded the motion#3.

Discussion of motion #3.

Motion #3 vote: 10 yeas, 0 nays, motion #3 passes.

Vladimir noted that the Message Formats and ARQ algorithms sections needed to be subsections under an ARQ heading. He recommended the use section 6.2.4 in original TG1 document.

All comments on the 01/01 document in the session#14 comment database were addressed except the ARQ comments, which were saved for the following day.

An ad-hoc group will be run by Bob Nelson to discuss the issue of timing and time unit definition for SC and OFDM.

Wednesday 7/11/2001

A proposed joint MAC 3/4 agenda for Wednesday was presented

Walt made a motion (#4) to adopt the agenda.

Ken seconded motion #4.

Vote on motion #4: proposed agenda for Wednesday on ARQ is accepted.

Ken made motion #5: The IEEE 802.16ab MAC must specify a state machine for an ARQ algorithm (e.g. GbN or SR)

Motion #5 seconded by Kai Chang

Motion was discussed.

Motion to call the question Heinz (#6)

Joe Hakim seconded the motion (#6). 16 yeas, 2 nays - motion carries

Vote on motion (#5): 10 yeas, 10 nays, Chair decides - motion carries

Ken Motions (#7): There will be a single ARQ algorithm in the 802.16ab MAC.

Rick Baugh seconds the motion (#7).

Discussion of motion #7.

Vote on motion #7: 18 yeas, 5 nays, motion carries.

Subir Motions (#8): The Block Sequence Numbering scheme will be the only one supported in the 802.16ab MAC specification.

Joe Hakim seconded the motion (#8)

Discussion on the motion.

Jori Arrakoski made a motion (#9) to table the motion #8.

Heinz seconded motion #9.

Vote on motion #9: 14 yeas, 11 nays, motion carries. Motion #8 is tabled.

Subbu motions (#10) to have Selective-Repeat be the ARQ algorithm for the 802.16ab document.

Walt seconded the motion (#10)

Discussion of the motion.

Vote on motion #10: 20 yeas, 5 nays, motion carries.

Walt motioned (#11) that motion #8 be taken off the table.
Itzik seconded the motion (#11).

Vote on motion #11: 28 yeas, 0 nays, motion carries

Discussion on motion #8.

Huanchun motions (#12) to call the question.

Paul seconded the motion (#12).

Vote on motion #12: 30 yeas, 0 nays motion #12 carries

Vote on motion #8: 16 yeas, 14 nays, motion carries

Walt motioned (#13) that the ARQ algorithm in the 802.16ab document support piggybacked acknowledgements.

Jori Arrakoski seconded motion #13.

Discussion on the motion #13.

Itzik motions (#14) to table motion #13.
Yigal seconded the motion (#14).

Vladimir offered a friendly amendment to have the motion (#13) tabled until all current (Session #14 comment database) comments concerning the resolution of the transmission of acknowledgements for the 01/01 document are considered.

Itzik accepted the friendly amendment to motion #14.

Discussion of the motion #14.

Walt motions (#15) to call the question on motion #14.
Subir seconded motion (#15)

Vote (motion #15): 16 yeas, 1 nay, motion #15 carries.

Vote (motion #14): 10 yeas, 9 nays, motion to table #13 carries as specified.

ARQ Comments on 01/01 in current (session #14) database begin to be addressed.

All ARQ comment resolutions marked as accepted in the "decision of group" box were voted on by the TG _ MAC group. All of the votes were unanimous. The box marking serves as a record of the particular vote.

All of the ARQ related comments in the database were addressed by 5PM.

Huanchun asked if the comments that were late would be addressed. Subir replied that they would be addressed if time was available on Thursday afternoon following the planned 9AM joint TG3/4 meeting.

The completion of ARQ comment addressing in the session #14 database causes the tabled motion #13 to be taken off of the table.

Discussion was requested, none was offered.

Vote on motion #13: 12 yeas, 0 nays, motion #13 carries.

A straw poll was held as to whether the 01/01 document with modifications from comment resolutions and ARQ resolutions, should be adopted as the MAC group working document. The vote was unanimously against adopting the document as the working group MAC document. The reason cited by the majority was that the document was too rough to adopt. Another reason cited was that adopting the document at this point would make it more difficult (50% v 75% votes) to modify and that the large numbers of changes needed would be slowed id the document was adopted.

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Thursday 7/12/2001

The Morning and Afternoon sessions were used to hold a joint TG3 and TG4 meeting. The goal was to address comments in the current comment database that concerned the MAC/PHY Interface. A record of all of the comment resolutions can be found in the comment database that was adopted on Friday at the TG3 closing plenary. A large number of ad hoc committees were created to address specific areas of concern. Their leaders are noted in the TG3 minutes.

The following is the report produced by the Timing group ad hoc group headed by Bob Nelson. Presented at TG3/4 PHY and MAC meeting.

**********End of Joint TG3 and TG4 MAC minutes**********

**********TG4 PHY minutes**********

Tuesday July 10, 2001
TG4 PHY meeting – chair Sanjay Moghe.
The group discussed agenda for Tuesday and Thursday. Agenda approved unanimously.

Marianna presented the Breezecom position versus FCC proposal for changing ISM and UNII rules. The group reviewed and modified the Mariana's proposal.

The group took a strawpoll on FCC limitations for PMP systems at CPE side:
1. Same as PTP-ISM: 30dBm power no limit on antenna gain (6 votes)
2. Same as PTP-ISM: 30dBm power no limit on antenna gain, but limit on 20deg beam aperture in horizontal plane (7 votes)
3. Same as PTP-UNII: 30dBm power then -1dB for every 1dBi over 23dBi (limits 53dBm EIRP) (3 votes)
4. 30dBm power then -1dB for every 3dBi over 6dBi up to 27dBi, -1dB for every 1dB over 23dBi (limits 48dBm ?? EIRP) (4 votes)
5. 30dBm power then -1dB for every 2dBi over 6dBi up to 27dBi, -1dB for every 1dB over 23dBi (limits 43.5dBm ?? EIRP) (3 votes)
6. As it is now for PMP: 36dBm EIRP: -1dB for every 1dBi over 6dBi (9 votes)

Motion made by Jori, seconded by Nico: To limit to 30dBm power and 36dBm EIRP.
Hostile amendment made by Octavian, seconded by Joe: To preserve rules as in UNII for PTP and PMP.
Amendment passes with 17 votes for, 3 against.
Amended motion: In the interest of the FWA group, we ask FCC not to reduce the peak power, the power density or EIRP limits for the 5.7GHz UNII/ISM band. Motion passes with 17 votes for, 3 votes against.

The group discussed and resolved comments 148, 151 – 164, 007 as follows:

Discussion on comment 151 started with contribution 802.16.4c-01/34 presented by Yossi and Zion.
Discussion extended to several motions:
- Motion made by Zion, seconded by Yossi: Approve the comment as it is: 64-OFDM, 256-OFDM and 2k OFDMA shall be mandatory modes; implementing one shall be enough to be standard compliant.
- Motion made by Hikmet, seconded by Joe: Adopt for TG4 PHY the TG3 OFDM PHY.
- Amendment made by Anader, seconded by David: Adopt entire TG3 PHY for TG4.
- Motion made by Jori, seconded by Octavian: Adopt for TG3 the TG4 OFDM PHY.
Chair called to order, and explained that only one motion can be made at a time. The group agreed to postpone discussions and voting till Wednesday afternoon when a larger room will be available. Agenda adjusted accordingly.

Wednesday July 11, 2001

8am-2.30pm: TG3/4 PHY joint session – chair Brian Kiernan
The groups reviewed comments referring to common parts of the document
TG4 PHY session 3pm–5pm - chair Sanjay Moghe

The discussions on comment 151 have been restarted from the point left on Tuesday.
Anader agreed to remove his amendment from the table:
- Amendment made by Anader, seconded by David: Adopt entire TG3 PHY for TG4 – removed by Anader on Wednesday afternoon.
The Chair ruled the motions made by Hikmet and Jori as out of order:
- Motion made by Hikmet, seconded by Joe: Adopt for TG4 PHY the TG3 OFDM PHY – ruled out of order by the Chair.
- Motion made by Jori, seconded by Octavian: Adopt for TG3 the TG4 OFDM PHY – ruled out of order by the Chair.
Sanjay requested to concentrate discussion on the actual comment 151 and the motion made by Zion:
- Motion made by Zion, seconded by Yossi: Approve the comment as it is: 64-OFDM, 256-OFDM and 2k OFDMA shall be mandatory modes; implementing one shall be enough to be standard compliant.

Zion, seconded by Yossi amended his own motion: Approve the comment as it is: 64-OFDM, 256-OFDM and 2k OFDMA shall be mandatory modes; implementing one shall be enough to be standard compliant until further study will narrow the three modes to one mandatory and two optional.

Hostile amendment (Hikmet, Joe): Approve the comment as amended: 256-OFDM and 2k OFDMA shall be mandatory modes; implementing one shall be enough to be standard compliant until further study will narrow the two modes to one mandatory and one optional.

Hostile amendment to the Hikmet's amendment made by David, seconded by Nico: Approve the comment as amended: 64-OFDM, 256-OFDM and 2k OFDMA shall be mandatory modes until further study will narrow the three modes to one mandatory and two optional. To be compliant CPE must support all mandatory modes but base-stations may support only one.

Friendly amendment to the David's amendment made by Jori: Approve the comment as it is: 64-OFDM, 256-OFDM and 2k OFDMA shall be mandatory modes until further study will narrow the three modes to one mandatory and zero-two optional. To be compliant CPE must support all mandatory modes but base-stations may support only one.

Friendly amendment accepted by David. The amended amendment fails with 14 votes for, 25 against.

Discussion continued on the hostile amendment by Hikmet. Several people suggested to get back to the original motion since there was little time left.

Sanjay ruled to get back to the original motion as amended by originators:
• Approve the comment as it is: 64-OFDM, 256-OFDM and 2k OFDMA shall be mandatory modes; implementing one shall be enough to be standard compliant until further study will narrow the three modes to one mandatory and two optional.

Discussions restarted on the amended motion.
Nico calls to question. Approved with 36 votes for, 0 against.
Motion made and amended by Zion fails with 23 votes for, 32 against.

Motion to adjourn for the evening was made by Nico and seconded by Octavian. Motion passes with 37 votes for and 21 votes against.

Thursday July 12, 2001

Discussion on comments 152 and 153 started with contributions 802.16.4c-01/04 and 802.16.4c-01/04 presented by Yossi and Shawn, respectively. The group decided to discuss comments 152 and 153 together with TG3 since preamble design is common between both groups.

The group decided to discuss comment 156 together with TG3 and to ask a proposal from Nico on the topic.
The group approved comment 159 but it still needs to be discussed with TG3.
Comment 148 approved but the group decided that more input is needed from Yossi.

Motion made by Larry, seconded by Durga to accept the minutes from session 13.
Hostile amendment made by Zion seconded by Yossi to remove from the minutes the paragraph referring to the vote on accepting TG4 PHY baseline document.
Amendment ruled out of order by Sanjay and Durga.
Motion passes with 22 votes for, 16 against.

**********End of TG4 PHY minutes**********

Friday 7/13/2001

TG4 Closing Plenary session

Chair – Durga
Showed agenda
Ming Fay made the motion to approved the agenda, Sanjay seconded the motion. Motion approved with 7 for and 0 against the motion.

Durga nominated David Chauncey to the coexistence ad hoc group to put together TG4 stand on coexistence. Members of the group Marianna, Ming Fay, Sanjay

David Chauncey presented the three regulatory issues.

Motion by Sanjay seconded by Brian to adopt all the PHY related comments approved during session 14 TG4 PHY session as additions to the baseline document 80216ab-01_01
Motion approved 10 to 0

Motion made be Sanjay seconded by Bob Ward to approve Durga's presentation for the Working group Plenary session. Motion approved by 10 to 0

Motion made by Nico Seconded by Sanjay to adapt the 20 MHz channel plan for the 5.75 GHz band

Motion approved 14,0

Motion made by Nico Seconded by Sanjay to adapt the 10 and 5 MHz channel plan for the 5.75 GHz band

Motion approved 14,0

Motion to adopt the comment 144 by Yossi on the Mesh network 12 for 0 against 1 abstained

Ken made a motion to adjourn.
Motion was seconded by Sanjay.

Motion passes by a voice vote.

Meeting Adjourned at 9:30 AM.