

Monday September 10, 2001

Ken called meeting to order at 6:20 PM

Mesh Mode

Mika Kasslin gave a five minute review of the new mesh mode text comment (01/39).

Itzik brought up the issue of QoS support difficulties of Mesh Mode.

John Sydor noted that no scheduling algorithm has been described. Mika noted that none would be as it is out of the scope of a MAC specification.

Vladimir brought up collision and synchronization issue. Jori explained that once the first element is active, that all others model their behavior to match. The element builds its own view of a neighborhood.

Vladimir also brought up the issue of coordinating a transmitter and receiver where explicit schedules are used.

Basic operation questions were posed by working group members.

Comments 234, 241,244,254: approved, causing new text from #39 to be used instead in this section. (accepted with vote 6 yeas, 1 nay)

Ken asked Mika to circulate a request for membership in an ad hoc discussion group for Mesh mode.

License Exempt Interference Mitigation and Co-existence

A query for the PHY groups will be put forward as a comment which will request that they define mechanisms necessary to address coexistence. John Sydor will provide the text. Ken is responsible for delivering the comment to Nico.

Clause Editors

Ken announced that Vladimir would act as the OFDM PHY MAC editor. That is, he will ensure that any MAC elements where there are OFDM PHY-specific sections were correct for OFDM. Itzik has been assigned an identical function for OFDMA.

Bandwidth Request using CDMA Codes in OFDMA (OFDM)

Itzik has updated the text and removed proposal language in comment (need comment # for MAC-PHY ad hoc report for reference) W/contribution #32

Itzik will provide a comment to coordinate the output of the ad hoc (#32) with the latest developments in the PHY group.

Ranging Enhancement

Itzik has updated the text and removed proposal language in comment (need comment # for MAC-PHY ad hoc report for reference) W/contribution #32

Itzik will provide a comment to coordinate the output of the ad hoc (#32) with the latest developments in the PHY group.

The ad hoc decided that the ranging section belongs in the MAC-PHY section of the document.

License Exempt Dynamic Frequency Selection

A comment regarding the applicability of DFS to licensed bands was discussed. John Sydor will be requesting some tools for DRFM from the PHY group. The DFS messages will be linked to these PHY tools. Once these messages are defined, simple example algorithms for DFS will be provided in this section.

Ken adjourned the meeting at 9:00 PM

Currently only relevant to OFDMA, and possibly to OFDM.

Tuesday

Comment 245 — Ranging & DFS was discussed.

Comment 249 — Make license exempt interference mitigation optional. (3 yeas, 8 nays)

Comment 246 — Additional wording for DFS was considered. Vote: 11 yeas, 0 nays

Comment 247 — Wording regarding requirements. Mika will provide more information before voting.

Comment 248: - Again waiting for Mika text.

Comment 251: - Ranging text , comment approved unanimously via voice vote

ARQ

Huanchun presented a brief review of the results of the ARQ ad hoc.

Yigal presented his ARQ text.

Subir suggested that the group proceed through each ARQ element in the ad hoc recommendation and vote on those.

Motion#1: To use the output of the ad hoc on ARQ (#28) as a baseline for voting on ARQ element inclusion in the official document. This will require a 50% vote.
Ken MADE MOTION#1, Itzik seconded the motion.

Yigal made a friendly amendment to interpret negative votes on motion#1 to mean that the ARQ (#22r1) document should serve as the baseline for voting. Ken accepted the friendly amendment.

Ken made a motion (#2) to table this motion (#1) until 8:00 PM to ALLOW FOR OFFLINE NEGOTIATION ON WORDING. Itzik SECONDED the motion.
Vote: 16 yeas, 1 neas motion #2 carries.

Meeting adjourned at 5:45 PM for dinner.

Procedure for comments raised

Comment 243: Proposes the complete use of contribution 22 for the ARQ section of the official document.

Discussion of 243 — Vladimir explained that the Block Sequence Numbering scheme in contribution 22 is not the same as that voted in by the previous meeting's resolutions.

A list of ARQ relevant issues was generated for the purpose of reconciling differences between the texts for comments 243 and 313:

1. Fixed set vs. arbitrary ARQ block size (32,64,128)
2. Fragmentation on byte or ARQ block boundary vs. on ARQ block boundary only
3. Block numbering scheme is slightly modified to allow packing transmission with re-transmissions
4. No 'A-bit' mechanism, Specify the receiver side behavior
5. Error detection based on CRC-32
6. Connection setup handshake that guarantees interoperability
7. Remove the UIUC mechanism for assigning BW to ACKs (and insert another mechanism)

Motion (#3) by Walt to use a 4 — 2048 byte block size (ARQ issue #1 above). Lei seconded the motion.

Too much discussion of motion 3 followed.

Walt motioned (#4) to call the question. Paul seconded (#4).

Vote (#4): 9 yeas, 6 nays motion fails (66% required).

Vote on motion #3: 15 yeas, 0 nays, motion 3 passes.

Yigal motioned (#5) to have the ARQ mechanism allow for fragmentation on a byte or ARQ block boundary. Motion #5 seconded by Itzik.

Discussion.

Vladimir made a motion (#6) to divide motion 5. Paul seconded motion #6.

Motion 5a: Allow fragmentation on block boundary.

Motion 5b: Allow fragmentation on byte boundary.

Discussion followed.

Vote: 15 yeas, 0 nays motion carries.

Vote 5a: 17 yeas, 0 nays motion carries

Discussion followed.

Motion(#7) to call the question by David, seconded by Paul.

Vote 7: 12 yeas, 3 nays motion carries

Vote 5b: 9 yeas, 10 nays, motion fails

Wednesday

A new queuing scheme was imposed to force progress on issues. 10 minutes was allotted for each issue.

Yigal motioned (#8) to have the block numbering scheme as noted in issue #3. Itzik seconded.

Huanchun, Subbu, Vladimir and Itzik each received 2 minutes of discussion on this motion.

Yigal received 60 seconds to rebut each comment.

Vote: 12 yeas, 4 nays motion #8 carries

Motion #9 made by Yigal to use text in #22r1 to use the A-bit mechanism as an additional signal that will trigger the sending of acknowledgement, and the A bit shall appear in the ARQ subheader or the packet subheader and to specify the receiver behavior.

Itzik seconded motion #9.

Huanchun, Vladimir, Walt, Paul, Itzik each received 90 seconds.

Yigal received 60 seconds to rebut each comment.

Huanchun motioned (#10) to split motion #9. Baruch seconded motion 9.

Motion 9a: Use the A-bit mechanism as an additional signal that will trigger the sending of acknowledgement, and the A bit shall appear in the ARQ subheader or the packet subheader.

Motion 9b: Require the specification of the receiver behavior according to 22r1 as an optional feature.

Discussion followed.

Huanchun, Vladimir, Yigal Walt and Subbu provided comments.

Brian motioned (11) to call the question on motion 10. Huanchun seconded the motion(11).

Vote:unanimous approval for 11.

Vote on (10): 13 yeas, 6 nays motion 10 carries

Vladimir called question(motion12) on 9a , Paul seconded(12). Unanimous approval(12) (voice)

Vote motion 9a: 15 yeas, 4 nays motion 9a carries

Vladimir asked for clarification on motion 9b.

Vladimir motioned to split motion(#13) 9b.

9ba Require the specification of the receiver behavior.

9bb Specify it according to 22r1 as an optional feature.

No second for motion 13.

David motions (#14) to call the question. Huanchun seconded #14. Unanimous approval of #14.

Vote for 9b: 15 yeas, 2 nays, motion 9b carries.

Yigal motioned (#15): Require that CRC-32 be present for ARQ connections. Itzik seconded motion #15.

Discussion followed.

Itzik motioned(16) to call question Huanchun seconded(#16), Unanimous approval of #16.

Vote motion #15: 10 yeas, 5 nays - motion 15 carries.

Yigal motioned (17) Use text in 22r1, with changes reflecting prior decisions, that requires connection setup handshake that guarantees interoperability (section 6). Itzik seconded (17)

Discussion followed.

Walt motioned (18) to call the question. Vladimir seconded (18). 18 approved unanimously.

Vote motion #17: 11 yeas, 5 nays motion 17 carries.

Yigal motioned (#19) to remove the UIUC mechanism for assigning BW to ACKs and may use a specific connection for sending ACK data. Walt seconded motion #19.

Discussion followed.

Vladimir called (motion 20) the question Walt seconded unanimous approval

Vote on motion #19: 12 yeas, 7 nays motion 19 carries.

Vote on comment 243 with modifications denoted in the summation of the previous motions.

Vladimir motioned (21) to accept modified comment 243 incorporating the previously accepted motions and using accordingly the appropriate portions of the ad hoc ARQ output #28 document. Walt seconded 21.

Discussion followed.

David motioned 22 to table the motion 21 until after the vote on comment 313. Lei seconded the motion 22.

Discussion followed.

Walt motioned(23) to call the question. Subbu seconded the motion(23). Unanimous approval of call(23).

Vote on motion 22: 13 yeas, 8 nays motion 22 carries.

Subbu motions (24) to table a vote on comment 313 until Thursday 8:00 AM and the presentation of a combined text. Itzik seconded 24.

Discussion followed.

Itzik(25) called the question. Vladimir seconded 25. Vote on 25 unanimous approval.

Vote on motion 24: 7 yeas, 8 nays, motion 24 fails.

Huanchun motioned (26) to accept 313 with ad hoc output contribution 28 plus motions/changes required for previous relevant motions under comment 243. (75% required): Randall seconded 26.

Discussion followed.

Vladimir (27) to call question on 26 Baruch seconded 27. 27 unanimously approved.

Vote on motion 26: 16 yeas, 12 nays motion fails 75% rule.

Discussion on 21.

Vladimir motioned (21) to accept modified comment 243 incorporating the previously accepted motions and using accordingly the appropriate portions of the ad hoc ARQ output #28 document. Walt seconded 21.

Huanchun (28) calls the question on motion 21. Walt seconded 28. Vote for calling the question — unanimous approval of 28.

Vote on motion 21: 12 yeas, 11 nays — motion 21 fails.

The chair assigned the contributors of comments 243 and 313 to get together and merge both documents in light of the contributions.

Moved the joint MAC meeting to the PHY meeting for covering MAC-PHY comments.

Vladimir presented the output of the MAC-PHY ad hoc.

Discussed report.

Comment 332 - Change of MAC-PHY Table of contents proposed by MAC-PHY ad hoc was accepted modified.

Comment 331 - Document 35 which discusses single carrier accepted without dispute. Accepted.

Comment 333 — moves SC MAP information from 6.2xxx to 8.3xxx section. Accepted.

Comment 329 — Suggests including contribution 26 in document. Accepted modified.

Comment 330 — Suggest including text of contribution #32. Accepted modified.

Thursday

8:30 AM — Members of the joint MAC meeting were told that the MAC ARQ ad hoc would continue working on ARQ while the remaining members joined the joint PHY meeting to examine other issues.

Joint PHY/MAC meeting minutes follow.

PHY ARQ was addressed. Comments 304 — 310 , 304, 305 accepted, 306 — 310 were tabled until session 16. Comments 304, 305 were reconsidered and subsequently tabled.

Comment 334 — MAC need for RSSI and ranging — accepted modified.

Remainder of this meeting minutes can be found in TG3 minutes.

3:00 PM Joint MAC meeting reconvened.

Huanchun presented text for the adaptive antenna(#81).

Comment 320 vote: 5 yeas, 13 nays, comment rejected.

Paul motioned (29) to place text of contribution 81 in an informative appendix AND remove the current adaptive antenna text from the MAC section of the document AND change the term OFDMA to any PHY within 81. Jori seconded motion 29.

Discussion followed.

Vladimir motioned (30) to table #29 until the PHY group has approved adaptive antenna text. Huanchun seconded 30.

Itzik (31) called the question. Seconded Yossi (31). Unanimous approval (31).

Vote 30: 6 yeas, 11 nays, motion to table 29 fails.

Vlad (31) called 29 Yossi seconds Unanimous approval for 29.

Vote 29: 19 yeas, 4 nays motion passes (75% required)

Comment 236 accepted.

Comment 247 accepted.

Comment 248 superceded

ARQ review

Contribution 80216abc_01/75 was presented as the compromise text for ARQ.

Paul motioned (32) to accept contribution 80216abc_01/75 via comment 339. Huanchun seconded #32.

Vote (#32) : 15 yeas, 0 nays motion 32 approved.

Three additional comments were submitted to solicit text for specific issues.

Motion #1 comes off the table. As a compromise has been reached offline by originator of the motion, motion #1 is ruled out of order by the Chair (Ken).

Friday

The chairman, Durga presented the closing TG4 plenary.

Ken motioned(33) to accept the minutes from session 14. David C. seconded motion 33. 33 was approved unanimously.

Ken motioned(34) to approve the Session #14 minutes. David C. seconded the motion 34. 34 was unanimously approved.

Ken motioned(35) to approve the submission of document 802.16ab-01/7r4 (comments) to the working group. Jori seconded motion 35. Motion 35 passed unanimously.

Nico motioned (36) to approve a letter to EP Bran (on server — number pending). Ken seconded 36. Motion 36 passed unanimously.

Durga presented the TG4 status presentation, which would be presented at the WG closing plenary.

Henry motioned 37 to accept the closing plenary presentation. David C. seconded motion 37.

Ken motioned (38) to adjourn the meeting. Anader seconded motion 38. Motion 38 approved unanimously.