Project	**IEEE 802.20 Working Group on Mobile Broadband Wireless Access** <**http://grouper.ieee.org/groups/802/20/**>
Title	**Draft Meeting Minutes, 802.20 Interim Meeting - Session #24, Fairmont La Reine Elizabeth Hotel, Montreal, Canada, May 14-17, 2007**
Date Submitted	**2007-06-01**
Source(s)	Don Gillies, Recording Secretary QUALCOMM, Incorporated Email: dgillies@qualcomm.com 5775 Morehouse Drive San Diego, CA, 92121
Re:	**802.20 Session #24**
Abstract	Draft of the Minutes of the Session #24
Purpose	Minutes of the Session.
Notice	This document has been prepared to assist the IEEE 802.20 Working Group. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.
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Patent Policy	The contributor is familiar with IEEE patent policy, as outlined in Section 6.3 of the IEEE-SA Standards Board Operations Manual <http://standards.ieee.org/guides/opman/sect6.html#6.3> and in *Understanding Patent Issues During IEEE Standards Development* <http://standards.ieee.org/board/pat/guide.html>.

IEEE 802.20 Meeting Notes
Montreal, Canada
14-17 May 2007

Arnie Greenspan, 802.20 Chair
Jim Mollenauer, Vice-Chair
Mark Klerer, Vice-Chair
Don Gillies, Recording Secretary (Approved at this session)

Monday, May 14, 2007

AM2 Session.
There was no official recording secretary for this session.

The AM2 morning session was abbreviated because the posted paper schedule for 802.20 did not list an AM2 802.20 meeting. There was no official recording secretary for the morning meeting and the chair presented his introductory slides again at the beginning of the afternoon session.

The AM2 session ended at approximately 11:10 a.m.
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The PM1 session began at 1:30 p.m.

Don Gillies, Volunteer Recording Secretary.

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As a result of the revision of the IEEE Patent Policy there was a new set of IEEE patent slides to be presented. The secretary was instructed that the cover page was read aloud, and 5 slides were shown. The chair read slides #1, #2, #3, #4, and #5, aloud in the meeting.

In response to the chairs request whether anyone had an IPR statement to make, Jim Tomcik made the following statement on behalf of Qualcomm:

"Qualcomm may have intellectual property underling a contribution that, if adopted, could be essential to the practice of the standard. If it does we will timely comply with all IEEE requirements regarding IPR and disclosure. Qualcomm has already filed a LOA, for 802.20, as posted on the IEEE-SA website."

The chair opened with an outline of the meeting.

ARNIE SLIDES
Dallas Status
- disbanded balloting constituency
- documents in questions and under attack
- letter ballot – draft standard
- multiple appeals over multiple issues
- new appointed chair.

Montreal Status
- collegial and polite discussions of views
- doc set of 802.20reviewed and modified
- new work plan approved. call for proposal and issues
full and partial proposal submitted for Motorola, Samsung, LGE and Qualcomm.

The chair announced that Donald Gillies had volunteered to take the minutes.

The chair said, the volunteers for the two vice chair positions that had been approved by 802.20 were approved by the standards board and endorsed by the 802 EC. The chair also noted that a volunteer for the position of recording secretary, Mr. Don Gillies, had been identified. He stated that, hopefully the two new vice chairs and recording secretary's efforts will be up to the quality of Yvette Ho Sang.

The chair stated that he believes we have made tremendous progress.

The chair stated that there was confusion over 802.20 efforts in support of 802.18.

A letter was sent to 802 oversight committee, expressing unhappiness with the functioning of meetings and activities in Orlando.

To summarize, the chair stated that he believes that consensus has not yet been achieved.

The chair stated that the goals for this week were.

(a) Review the harvest of 1st practice ballot and begin evaluation of initial draft, with emphasis that this will be a practice ballot only.
(b) Develop the next draft.
(c) Develop schedule/plan for next practice ballot. "the next time we go to a practice ballot, we will expect everyone to obey rules, comments on comment sheets, tell us how to make repairs. Leniency with respect to rule violations will not continue." In particular, comments that are not submitted on time and on comment forms will not be accepted.
(d) Develop plan for next WG ballot.

When we are ready, must vote a motion passing by 75% to get through the sponsor ballot and then publish the standard

The chair stated that because this meeting is not a plenary and we do not have a quorum at this meeting, we cannot vote to approve the minutes.

What we will do instead is to address issues.
  - people with minutes concerns to have these concerns posted on website.
  - we will try to judge concerns and post modified minutes

We will try to have an electronic vote between meetings to approve the modified minutes.
The chair was reluctant to take time to argue the Orlando minutes in Montreal since there was no quorum and there might not be adequate agenda time.

We have 378 draft comments to get through, about one third are technical and two thirds are editorial.

ORDER OF BUSINESS
Comments with suggested corrective actions will be addressed first. After discussion, we will ask submitter if they agree with the resolution.

Comments submitted without corrections suggested, or nonspecific comments, will be addressed 2nd. If a consensus solution is found, and submitter agrees, then we will adopt that resolution.

Items not submitted on the practice ballot forms will be addressed at low priority. In the future, if unofficial methods are used for submission, the items will not be considered at all.

There was concern about the title of the editorial group, which is implementing the 802.20 harmonization with UMB. This group was referred to as an Editorial Task Group - a group

approved for maintaining editorial integrity of 802.20 draft.

The chair agreed to the correction to his document to refer to the group as an Editorial Group, not as an Editorial Task Group.

Editorial Group Members
Chair Mark Klerer (Qualcomm)
Jim Tomcik (Qualcomm)
Anna Tee (Samsung)
Val Oprescu (Motorola)
Young Yoon (LG)
Radhakrishna Canchi (Kyocera)

The Editorial Group was created from sponsors of contributions who all got 1 member.
A contentious point was whether 2 members of editorial group should be from Qualcomm.
It was pointed out that the minutes read that "Mark Klerer AND one member from each company will be on committee."

The chair wanted us all to stop arguing over semantics of minutes regarding editorial group.

There was still concern over Qualcomm having 2 votes on all votes in the editorial committee. The Chair clarified that the editorial group chair shall vote only when needed to break a tie.

Mr. Klerer, the Editorial Group Chair led the discussion to address the Practice Letter Ballot comments.

The disposition of the Practice Letter Ballot comments was recorded in the Practice Letter Ballot spreadsheet which is posted in the Members Area of the 802.20 web-site. The comments were addressed in order, beginning with the white boxes (editorial comments) of Sheet1 of the Practice Letter Ballot spreadsheet. Only comments with action items or which led to extended discussions are recorded below.

There was an issue of whether we go to 9th-level headings. If we collapse the headings further, sections will be huge. Using IEEE 802 TOC we only use 5 header levels. (1) We at times have 50 pages with no headers for searching. This will also result in a loss of clarity (2). Since we are trying to track UMB using the same headers allows UMB linkage / cross referencing and comparisons. Some areas have extra layers for no technical reason, but EGC believes no way to get to 5 layers of headers. Suggest we look at this when ready to go to letter ballot.

There are many "no text" blank pages. The editor requested permission to delete all blank pages until the final version, since these will jump around as the documented is edited.

The chair requested that the following be noted in the minutes. Quote, "Is there any objection to adjusting the page breaks until the letter ballot?" No objection was noted from the audience.

Do we want to pick a uniform terminology (BS / AN and MS / AT / UT)?? The spec proposed AT and AN. Some liked the telco terminology. Another suggestion was to use both in the introduction. There were suggestions to preserve the ambiguities to be in sync with UMB. Resolution by editor was to later revisit the issue, and he wants text from the commenters.

There was a pseudo-editorial change to Figure 6, why? If one looks at RLP QoS, it's a side filter, not a bearer protocol stack. It was agreed that we would move to align UMB with the 802.20 spec in this area.

On seqno 115 : Jim Tomcik agrees to do research on this.

On seqno 147 : NAKDelayTimerInUse – fix caps. align with UMB. accepted.

On seqno 153 : Needs further research. harmonize with UMB. TBD.

On seqno 172 : missing PDF borders. In general, PDF borders were often destroyed by the Adobe Acrobat conversion. The chair has agreed to do his best to restore borders. The borders do appear in the MS-Word document, just not in the PDF document.

On seqno 281 : In general, some global name changes of primitives has caused disagreement between articles and nouns. The chair agrees to seek these out and change a -> an, an -> a, etc.

The PM2 session closed at approximately 6:15pm

Tuesday, May 15, 2007.

The AM1 meeting began at 8:30 am.

The morning opened with continuation of editorial (typos, etc.) comments discussion and approval, led by the Editorial Group chair. This process had not been completed on the previous day. At 9 am work on the last editorial comment (of which there were a total of 262) was completed. Nearly all of the editorial changes had been accepted.

The group then moved to discussion of technical comments.

There was a request to show which text was copied from UMB and which text was copied from 802.20 and what if anything is new. Editorial chair said that this will be taken as an action item, but agenda right now is to dispose of technical concerns in the spreadsheet. To close the issue, it was asked at what level of heading should summaries of text source changes be given? It was agreed to give details at level-4 or level-5, the required levels in IEEE headings. There are 9 section levels in the document and excessive detail would be onerous. It was thought that not all 1800 pages of original source material that went into the resulting 1000-page draft should be annotated.

Session break at 10:00 am.
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The AM2 meeting began at 10:35 am.

Seqno 16. Next version of document will contain marked-up changes from the 0.1 spec. There will also be a separate document that describes what has been added or changed from UMB.

On Seqno 19-21. A comment asked to put references to another 3GPP2 document, because it is a matter of IEEE policy not to copy information from another spec because the specs will eventually diverge. It was pointed out that references to other specs can become outdated and it's better to have editorial control over your own specification. A document without pointers is self-contained and easier to review. Given that we've received complaints that our document is hard to follow, pointers might possibly make it even more difficult to understand.

On Seqno 22. The comment is of a general nature and is not yet actionable.

There was discussion on whether to use colors to show changes from the 0.1 spec. The editorial chair is willing to provide change bars for all editorial and technical changes accepted at this meeting. It was agreed not to use colors to differentiate change types.

A separate spreadsheet ("Editor Proposed TBD Resolution File-Disp.xls") was created to address "TBD" items in the specification, since there were many technical comments asking for TBD's to be filled in. On the spreadsheet, a green code means a purely editorial TBD request, such as a request to add a reference to another section.

In some cases, since we harmonized with a UMB spec that was a "work in progress" some subsections of this spec were populated by placeholder TBD's and have been completed since the 802.20 0.1 spec was released. The editor proposed to adopt UMB text that was released after the 802.20/0.1m spec was released.

In other cases, the TBD item is not adopted by 802.20 and the proposal is to delete the TBD text.

On Seqno 33. The spec is missing a description of bit-order and byte-order (i.e. big-endian, little-endian), and it was agreed to add this to the spec to assure inter-operability.

On Seqno 125, 125, 129-134. There was a request to define the "InUse" instance of a protocol. These terms (InUse and InConfig) are used all over the document but not explicitly defined.

Meeting closed at 12:00 noon.
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The PM1 meeting began at 1:40 pm.

On Seqno 60. Don Gillies was tasked with coming up with text to define the InUse and InConfiguration technical terminology, to be defined in the introduction.

On Seqno 123, 125, 129-134. Don Gillies was given an action item to research the transaction ID for ReservationOn and the Xon/Xoff messages to understand if it's a single transaction ID space or separate ID spaces. In particular, can several requests be outstanding if there is a single transaction ID.

On Seqno 149, The issue is whether this value of the NakAckEnableFwd attribute is still the default for Stream #7 which is no longer reserved for EAP. Jim Tomcik agreed to take the action item.

The PM1 meeting ended at 2:57 pm.
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The PM2 meeting began at 3:34 pm.

On Seqno 205, There was discussion on whether the 5 Mhz lower limit on the bandwidth for the wideband FDD mode should be retained in the 802.20 specification consistent with Draft 2.1, or whether we should be adopting FDD UMB wholesale which contains a 1.25 Mhz mode. The issue was left unresolved.

On Seqno 207, A listing of all logical and physical channels would be helpful. Since the timeline is tight, the source was asked for an initial draft of the channels. The source will propose a descriptive appendix of channels, and this will be updated / corrected as much as possible by the editorial group.

On Seqno 243, There was discussion on whether the document should contain performance parameters for inter-operability. Other standards such as 802.16 do not have this type of detail in their standard. The choices are (a) It's doable, (b) It's not doable, (c) Why do we need to do it if nobody else does it? It was mentioned that the 802.11 specification goes further in this area. It was suggested that a previous contribution by Mr. Jim Tomcik was sufficient only for vendors building both sides of the system in tandem. The chair was advised by IEEE 802 EC that a separate document for interoperability would not be acceptable.

The persons requesting interoperability parameters were asked to propose a set of parameters for interoperability. There was concern that with only one single list of parameters, further discussions would lead them to want to propose additional parameters for specification, but that might not be allowed by the committee.

It was pointed out that a minimum performance specification is a much more difficult thing to specify than to get an interoperability set of parameters specified.

An action item was given to the requesters to come up with a list of parameters they wanted specified, with the assurance that the floor would be open to new parameters in subsequent versions of the draft.

On Seqno 338-340, The MIB has changed from the previous version of 802.20 since the MIB needed to be consistent with the base specification for which it defines the management information.

Comment number 378 was a proposal for flexible pilot tones, especially for the case of SISO mode. The new structure places pilot tones in the corners of 8x16 assignment blocks. One question is how to do channel estimation if the tile pilots are transmitted at a different power level from common primary pilot tones. The proposal included fields to be added to FLABs and RLABs to support this new proposal, including a delta pilot power offset. In addition, the meaning for each delta step size could be carried over the overhead messages channel(s). As a result, flexible pilots could be superimposed on top of 8x16 tiles carrying traffic data.

Some concerns expressed were, (a) This proposal is similar to a proposal last March, and simulation performance should be included in the proposal to prove that there is a performance gain, and (b) the FLAB and RLAB bits are precious since signaling performance is critical to system performance, and adding 6 bits will likely cause the system to lose at least 1 dB in overall link budget. (c) The idea of mixing common pilots and dedicated pilots will introduce additional T2P signaling requirements, (d) By introducing 2x4 block size, it is said to improve system granularity, but even with today's 128 modulation symbols and 1 bits/sec/Hz, we only have 128 bits in an edge-user tile which is insufficient to carry voice except if ROHC is used, and even if ROHC is used the flexible pilot tones would consume enough capacity prevent the carrying of VOIP on the RL in a 8x16 block.

The responses were, to point (a) In the last meeting the proposal for multiplex BRCH and DRCH was adopted into UMB, except for the detailed design.

To point (b) concerning signaling requirements for additional pilot formats. But FL already has 3 pilot formats which use 2 bits; adding one more format does not really increase the signaling overhead. Using the proposed structure we can save 16-24 dedicated pilots with only an additional 6 bits of signaling required.

To point (c) If the user wants to do joint interpolation between primary and dedicated pilots they can do it with this format.

To point (d), the 4 or 8 sub carrier tiles are example default values, but other default values can be used, and overridden through the system information block in the forward broadcast control channel. In fact, this proposal allows pilot sizes to be shrunk so that pilots need not last for full duration of MAC packets, freeing up carriers for new data symbols. If the tile sizes are too small then larger default values can be selected.

The proposed feature also consumes performance in terms of broadcast parameters. A requirement that this needs to be mandatory in the reverse link is questionable, given that there is no field experience that shows this is needed. Better terminology than NE and SW should also be used in the final specification to indicate pilot position.

The proposer mentioned that overhead messages are only consumed if you want a choice other than the default value. For terminology we can pilot orientation zero and one as shown in Figure #1 of today's contribution or found in the March contribution.

On Seqno 245, the originator did not yet agree to action in the spreadsheet.

The meeting closed at 6:10 pm.

Wednesday, May 16, 2007

AM1 session

The meeting opened at 8:30 am.

The chair noted that our practice ballot vote had
76 returned
65 approved
9 no votes
2 abstentions
1 returned with a bad header

Don Gillies volunteered to be our recording secretary. Since we have no quorum we cannot vote officially to approve or disapprove of him. Nevertheless, the chair prefers to have a poll, can anyone move the question?

Nancy Bravin moved to approve Don Gillies as recording secretary.
Radhakrishna Canchi seconded the motion.

In an informal vote, basically all but two approved of the recording secretary and there were 2 abstainers. We will reaffirm this vote when there is an official quorum in San Francisco. (See however below, where it is made clear that no such reaffirmation is required).

A member asked for their contribution attached as part of their Practice Letter Ballot to the editorial process to be given a number and posted to the website. Chair offered to post the document. There was an objection by the editor, as this would disassociate the contribution from the comment or post the information twice.   The chair stipulated that this was not going to become a precedent. It was mentioned that other groups immediately convert complex contributions into postings on the public website. It was agreed that a ballot contribution must be made 3 working days before the letter ballot closes, and this technique cannot be used to delay a letter ballot comment. This time is needed to get a number assignment according to official rules.

A member requested that that ballot #2 instructions be modified to say that if you want a regular contribution number your contribution must be submitted 3 days before balloting closes. Because the contribution is associated with the ballot such a contribution cannot be modified. One will only be able to submit a second contribution. You cannot post a coversheet and 3 days later post the rest of the contribution.

The chair mentioned that the day ended yesterday with discussing an extended contribution that was controversial. After discussions, chair and 2 vice-chairs wanted to table discussion, so that at the next meeting we can see if additional material will satisfy people who have issues and concerns about the contribution. The submitter clarified that at Orlando the meeting minutes did not reflect a request for additional simulations.

So there is an action item for the submitter to bring additional performance simulation results to support their contribution, for the next meeting.

The editorial chair commenced to continue resolution of practice letter ballot comments.

The agenda this morning is to finish technical comments near the front that were skipped yesterday. These comments generally concern the editorial process for the next version of the document, rather than proposing changes to the document itself.

On Seqno 152, It has been withdrawn.

On Seqno 1, There were concerns about the synchronization between this ballot and the latest version of the UMB specification. In response the chair stated that since this was a practice ballot (and not an official ballot), the chair believed that in light of the significant progress with the editorial comments that it was still a good idea to have a practice ballot.

The editorial chair proposed that a comparison to UMB 2.1 up to level 5 and a TDD design marked as open and 128/256 FFT model should still be left open for discussion.

There was still an objection to the loss of the 128/256 FFT models.

The meeting chair emphasized that this was a practice ballot and that if there was a complaint about missing material then it should be addressed by a new contribution. The editorial chair asked if the comparison to D2.1 and a TDD design marked as open are partially satisfactory, if the 128/256 mode is still open for discussion? The commenter responded that it was satisfactory if the 128/256 mode would be revisited.

On Seqno 2, The commenter was concerned about support for implementation, for example, is every protocol (unless otherwise noted) applicable to both TDD and FDD implementation? The editorial chair proposed to address this issue in the text. It was pointed out that this could become an extended process and the chair asked if the commenter could provide a draft of text to handle this issue. The editorial chair proposed that we mention in the introduction that unless otherwise noted, protocols must be implemented for both FDD and TDD implementation.

On Seqno 4, The first draft was created by the editorial chair, in moving forward can the process be more collaborative? The 802.20 chair said in summary, the next draft will follow the process outlined in the Editorial Group charter.

The chair stated that in the new document, whole sections will be said to be the same with minor typographic name changes. There will not be a complete word-by-word document showing technology lineage e.g. for each sentence or word.

The AM1 session adjourned at 10:00 am.
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The AM2 session began at 10:45 am.

The chair shows an instructional video reminding the audience that "We're talking about PRACTICE".

On Seqno 6, concern that two "802.20 terminals" can be built that cannot inter-operate. It is suggested that we break into sub-standards, 802.20a, 802.20b, etc., where conformance to one mode assures inter-operability. As there was no text associated with this comment, the editor with the concurrence of the submitter agreed that it should be left unresolved.

On Seqno 8, A slide presentation was presented expressing concerns in the editorial process. This slide presentation is available on the website as document C802.20-07/28.

A commenter from the floor said that they believed that the complaints about the editorial process have been addressed, that many points of the contributions were, therefore, moot, and wondered why we could not proceed to the practice ballot.

The AM2 session adjourned at 12:04 pm.
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The PM1 session began at 1:35 pm.

On Seqno 9, An attendee requested to be on record that they would prefer to add back all of the 802.20 text concerning TDD and 128/256 FDD. It was stated that most of this text is now so

outdated that it would likely have to rejected through an amendment process, and the editor prefers that a new and more flexible solution would be proposed to the standard for this purpose.

On Seqno 10, The editor hopes that the parties involved reach agreement during the mid-afternoon break and return in the PM2 session with a proposed resolution to the editorial comment.

On Seqno 89, The comment was accepted as agreed to in the "LLC Comment by Hou (London)".

On Seqno 128, There seems to be a problem in UMB that if one does not want the user to retry for an unspecified reason, there is no way to specify "do not retry", via a "forever" retry timeout. Or perhaps a "Not authorized" response to a reservation response should include a "forever" time code (or at least specify that the field should be ignored in this case.) One can tell a user "Not authorized", but room for other types of error reasons is not included.

On Seqno 378, The resolution is to not to add in the changes, but to wait for more simulation results and to consider the contribution at the next meeting.

The discussion then moved towards revisiting items that had been tabled.

On Seqno 28, concern about the usage of "access network" in the specification. Perhaps the definition of "AN" should be redefined to "Access Node" rather than "Access Network". Another commenter stated that the difference was immaterial and synchronization with UMB was preferred. A potential way forward was identified, i.e. adopt some additional text along the lines of the comment before last, e.g. the sector is used interchangeably with the base station or access network. In other parts of the spec it says that "Access Network" and "Base Station" are used interchangeably, even though Figure 13 shows that a Base Station is clearly a subset of a access network in the general case. The pictures in Figure 1 are inconsistent with Figure 3 because there are multiple access networks in Figure 1. The suggestion was to start at 8:30am on Thursday to resolve the "Access Network" vs. "Base Station" terminology issue in the document.

On Seqno 123, 125, 129-134, The solution adopted is to remove section 11.1.9, TransactionID management in common algorithms and data structures, and adopt text from UMB 1.0.

On Seqno 252, It was resolved by giving an example of a PMK exchange protocol such as EAP.

On Seqno 33, Bit and byte ordering of messages. The information appears in the document at the end of 1.4.12. However, there is a question as to whether the 625 portion of the text follows this convention? The submitter for the 625 mode stated that it appeared to be consistent. On further inspection, it was found to be reversed in 625 mode. The solution adopted was to describe that 625 mode would have exceptional bit and byte order.

On Seqno 45, 46, and 60, All are in abeyance (awaiting resolution).

On Seqno 60, Section 1.4.9 should be retitled so that InUse and InConfiguration is found in the section title, and further, the first two expository sentences describing InUse and InConfiguration in 1.1.2 of D2.1 should be brought in from D.2.1.

On Seqno 149, Stream #7 is no longer dedicated to EAP and is a general-usage stream and it needs to be gone from the spec.

On Seqno 162, No progress.

According to the Editorial Chair, the following items were still open. (1) Definition of AT/AN issue with numerous comments e.g. Seqno 28. (2) The full list of open Seqno's is 28, 29, 45, 46, 86,

89, 114, 115, 153, 167, 179, 206, 232, 280, about 8 will get solved if the AT/AN definitional ones are resolved.

The chair stated that to make time for resolution of the definition of AT/AN in the spec, the session tomorrow would start at 9am.

The session closed at 4:50 pm.

Thursday, May 17, 2007.

Starting at 8:20 an Informal discussion took place on Terminology. In Attendance were :

Don Gillies
Jim Mollenauer
Jim Ragdale
Tingfang Ji

A slide was presented covering terminology in other standards. The salient points were, (a) Draft 2.1: AT/AN, (b) ATIS: UT/BS, (c) UMB: AT/AN, (d) 802.16e: MS/BS, (e) 802.11: STA, AP. It was pointed out that all air link communications terminates at the "BS", so "BS" is a natural term to use. On the other hand, some higher-level protocols (such as access) eventually terminate in an authentication (radius) hierarchy, deep in the backhaul. The term "AN" was chosen on purpose to be ambiguous so as to avoid making assumptions on functional partitioning in system construction. It was also mentioned that more people understand MS/BS since these are commonly used in telecom standards. Finally, it was said that no matter what is chosen, there is a serious problem in the introduction which equates the "BS" with an "AN". A strong argument was in favor of keeping in synchrony with 3GPP2/UMB.

Because the impact of changing terminology has not been studied carefully, it was decided that the concerned parties would scope out the impact and mutually agree (perhaps through a teleconference) on a decision to be brought to the next meeting to settle these issues.

The terminology discussion ended at roughly 8:45.

The AM1 Session began at 9:04 am.

SEE ATTACHED SLIDES

Kazuhito Ishida (Qualcomm) and Kuzihiro Murakami (Kyocera) opened with a Liaison Report from ARIB BWA Subcommittee (see C802.20-07/29r1) . ARIB is the Association of Radio Industries and Businesses. ARIB is a Japanese association and one of their main purposes is investigation and R&D for radio system technical standards.

For next-generation TDD, the choices are (a) Next-Generation PHS, (b) Mobile WiMax, (c) 802.20 (2 versions). The Japanese bands available for these standards are 2535 Mhz to 2630 Mhz, for a total of 95 Mhz of bandwidth. In Q2 of this year a licensing policy will be released. The BWA subcommittee of ARIB studies BWA systems and has 3 subgroups to study the available standards for adoption as ARIB standards (802.20 has only a single group.) ARIB would like help in incorporating 802.20 TDD into a form that can be used in Japan.

The BWA subcommittee would like to work closely with 802.20 to coordinate internationally the standards development.

Liaison requires confirmation by a vote of 802.20WG. Kazuhito Ishida would be the ARIB Liaison representative. The 802.20 chair mentioned that because we do not have a quorum at this meeting, we cannot vote on the liaison. The 802.20 chair said he will take the presentation to the chair of 802 generally to find out if we need an 802 endorsement to vote on this liaison. The opinion is that such a liaison would be beneficial.

The chair will take an action item that 802.20 liaison approval shall be voted in the next meeting, assuming there is 802 endorsement on the liaison.

When the presentation was finished, the Editorial Chair continued to discuss the resolution of technical comments.

On Seqno 28, 29, 45, 46, 57, In the introductory sections 1.1 and 1.3 the ETG will use combination terminology (AN/BS), aligning us with both UMB and HC-SDMA. Further changes to the rest of the document will require a contribution in future meetings. For item 29, FL/RL vs. DL/UL we will adopt the definitions provided by the ad-hoc group. In the definition use AN/BS, AT/UT terminology. In technical sections retain native terminology.

On Seqno 86, the issue of timer watchdog is contentious. In particular, to pass certification tests, it is difficult to determine what tests will be performed to certify compliance with section 5.2.3.1, the watchdog timer on hardware/RF/software malfunction. It would be difficult to produce black box tests to certify compliance with this requirement. The resolution adopted is to use the word "should" rather than "shall".

Don Gillies volunteered to take an action item to find out why the watchdog timer appears twice in the document, not just once.

The AM1 session adjourned at 10:03
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The AM2 session began at 10:35

On Seqno 153, the minimum number of streams is 0x0b in earlier versions of the draft and may be there for a reason, therefore, we would like to keep the present requirement, so the proposed solution was to withdraw the request, and there were no objections from the audience.

On Seqno 114, 115, The XonStatus is part of the session state, and this will be reflected at the end of the Basic QoS Management protocol, and in addition, with perhaps some expository text at the front of this sub-chapter.

On Seqno 167, It was agreed to amend the text dealing with Priority Order to make it a parameter that "may" be present. Currently the text seems to be purely definitional which appears to be an error.

On Seqno 232, We needed to verify the reference, and the editorial chair did indeed verify the reference on the previous evening.

On Seqno 280, The suggested fix is declined, and to settle this issue, the table will be changed to be consistent with the text.

On Seqno 78, Commenter did a search for this and found that hyphens are used most commonly for documenting keep-alive timers.

On Seqno 232 Reopened, the decision is to not accept the solution and instead use the solution as part of TDD proposed by the editorial chair.

Attention then turned to a short-term solution about what to do about 128/256 FFT size. The resolution was that we will circulate the new draft with technical content as is (for that topic), and a note in the PHY indicating that there is a 128/256 FFT size issue that is still an open issue, left open to further comment.

Radhakrishna Canchi gave a presentation on Minimum RF performance characteristics of Base Station (BS) and user terminals (UT) in 625k-MC mode (see C802.20-07/31). Specifications for AT/UT parameters are contained in Chapter 5 of the HC-SDMA specification. Specifications for AP/MS requirements is in Chapter 6 of the HC-SDMA specification. These requirements can be incorporated into 802.20 by simply referencing these chapters in the 802.20 draft. There was concern from the audience that some new additions to 625k-MC mode in 802.20 may no longer be covered completely by the HC-SDMA specification.

The meeting adjourned at 11:27 am with the understanding that people would return at 12:30.
=======================
The PM1 session resumed at 12:37 pm.

Seqno K-1 and K-4, Discussion ensued of how erasures are declared in the system. The requester wants guidelines for SNR values to trigger handover. In particular, receiver sensitivity feeds into whether an erasure is declared by a terminal which feeds into handoff decisions.   It was said that sections 7.6 and 7.7 of the specification explain how handoff threshold parameters are downloaded to the AT and managed by the AT.

Seqno K-2, More detail needs to be added to p317 to, for example, prevent a rogue terminal from spurious initiating handoff repeatedly. The resolution was that the issue would be resolved in the next meeting by a contribution by the K-2 submitter.

Seqno K-3, If DRLSS is different than RLSS then the access terminal should initiate handoff. In the discussions, it was pointed out that for battery reasons or for the purposes of disjoint forward and reverse links, the terminal does not always want to hand off to its desired FLSS even when its signal strength indicates that a handoff would be beneficial.

Seqno K-5, The discussion of LDPC codes, costs of IPR are out of scope of this meeting, the issue of the addition of LDPC codes to the standard is determined to still be an open issue.

Seqno 86, The idea on 5.2.3.1 watchdog timers is to change some "shall" phrases to "should" in order to ensure that vendors are able to make compliant boxes, since the definition of what constitutes a malfunction is not defined in the specification.

At 1:44 the editorial chair announced that all comments on the draft had been addressed.

The editorial chair put up a slide describing the schedule for the development of the draft for the next Practice Letter Ballot, this slide was modified as a result of WG discussion, as follows :

=====================
May 28, 2007 – draft 0.2m (marked up version of 0.1m) will be circulated to the ETG, incorporating editsA comparison document of 0.1 to D2.1 (to header level 5) will be circulated to ETG.

June 4, 2007 – ETG conference call

June 8, 2007 – start of PLB2 practice ballot period.

July 9, 2007 – close of PLB2 contribution period. Official 802.20 submissions asking for a contribution number should be submitted 3 days earlier (July 6, 2007).

July 16-20, 2007 – PLB2 comment resolution at 802.20 plenary session.
=====================

Contributions requesting a 802.20 official document number should be submitted 3 days in advance of the PLB close date. A title page is insufficient because often it will change. There is also a concern of people from reversing numbers and titles from clients asking for several doc numbers.

It was suggested that ETG members give a personal email address to Mark, to be certain of being able to receive a large contribution package through a firewall.

Since there was time left on the agenda, we then turned to revising the minutes of the previous

meeting. Decisions in these matters are reflected in change bars to the minutes of the Orlando meeting.

It was pointed out that in the past some groups have allowed time for people to request that information and quotes be read into the minutes.

Action Item for the recording secretary, in the future, problems could be avoided by avoiding the summarization of contributions, since the presenters may feel that the summary has not done justice to their contribution.

With respect to the first set of proposed changes in C802.20-07/30,

change (1), there was controversy and it was tabled until later, if time is available.
change (2a), no decision.

Tom Kolze stated for the record that he felt that the minutes should remain at the level of fine detail as in the previous Orlando Meeting.

It was proposed that we poll the audience in terms of the methodology and level of detail used in the future to record minutes of these meetings. A slide was presented to facilitate a straw poll.

==============
Methodology for capturing contribution presentation in the minutes
- contribution xxx was presented
- summary of results, if any, e.g. contribution was adopted, we need more info, etc.
==============

The straw poll on meeting termination was taken at 3:30pm. The result of the straw poll was :

26 in favor
2 opposed
1 abstain

As the meeting was scheduled to end at 3:00pm, the chair thanked everyone for their hard work at this meeting.

A motion to adjourn was made by Jerry Upton.
Anna Tee seconded the motion.

The Montreal Meeting adjourned at 3:31 pm.

Last Name	First Name	Jan07 Voters	Mar07 Voters*	Mar06	May06	Nov 06	Jan07	Mar 07	May 07
Agis	Edward	M	M	1	1	1			
Agrawal	Avneesh	M	M	1					
Ahmadi	Sassan	M	M	1	1	1			
Ahn	Jae Young	M	M	1	1				
Alamouti	Siavash	M	M	1	1				
Ali	Murtaza	M	M	1					
Alphonse	Jean	M	M	1					
Arefi	Reza	M	M	1	1				
Bajaj	Rashmi	M New	M New	1		1			
Barriac	Gwen	M	M	1			1	1	1
Bavafa	Moussa	M	M	1	1	1			1
Bernstein	Jeffrey	M	M	1		1	1	1	1
Bims	Harry	No	No						
Bravin	Nancy	M	M	1		1	1	1	1
Budianu	Petru	No	No						1
Bussey	Chris	M	M	1		1	1	1	1
Cai	Sean	M	No	1					
Canchi	Radhakrishna	M	M	1	1	1	1	1	1
Carlo	Jim	M	M	1					
Carneiro	Edson	M	No	1				1	1
Carson	Peter	M	M	1			1	1	
Castell	Harold P.	M	M	1		1		1	
Chae	Suchang	M New	M New	1	1				
Chen	Yao	No	No		1				
Cho	Juphil	M	M	1		1			
Choi	Hyoungjin	M New	M New	1					
Choi	Yang-Seok	M	M	1	1				
Chong	Chia-Chin	M New	M New		1		1		
Chun	Jin Young	M	M	1					
Chung	Jaeho	M	M	1		1			
Cleveland	Joseph	M	M			1			

6/10/2007

Last Name	First Name	Jan07 Voters	Mar07 Voters*	Mar06	May06	Nov 06	Jan07	Mar 07	May 07
Collins	Robert	No	No						
Comstock	David	M New	M New	1	1				
Dean	Chris	M	M	1		1	1	1	1
Dhaliwal	Upkar	No	No						
Dodd	Donald	M	M	1					
Dorward	Lynne	M	M	1				1	
Dunn	Doug	M	M	1		1	1	1	
Eilts	Henry	M	M	1	1	1			
Epstein	Mark	M	M	1	1	1	1	1	1
Feder	Peretz	M	M	1					
Ferguson	Alistair	M	M	1					
Fong	Mo-Han	No	No						
Freeland	Graham	M	M	1		1	1	1	
Gal	Dan	M	M	1					
Garcia-Alis	Daniel	M	M	1		1	1	1	
Garg	Deepshikha	M	M	1		1		1	
Gillies	Donald	No	No						1
Gomes	Eladio	M	M	1		1		1	
Gore	Dhananjay	M	M	1		1	1		1
Gorodetsky	Svetlana	M	M	1		1		1	1
Gowaikar	Radhika	No	No						1
Gorokhov	Alexei	M	M	1		1	1		
Greenspan	Arnie	M	M			1	1	1	1
Guo	Qiang	M	M	1	1				
Haug	John	No	No				1		
Hou	Victor	M	M	1	1	1	1	1	1
Hu	Rose	M	M	1	1	1			
Hu	Teck	M	No	1	1				
Humbert	John	M New	M New						
Huo	David	M	M	1			1		
Hur	Yerang	M New	M New	1	1				
Ibbetson	Luke	M	M	1		1			

Last Name	First Name	Jan07 Voters	Mar07 Voters*	Mar06	May06	Nov 06	Jan07	Mar 07	May 07
				Appendix - 1: 802.20 Attendance Credit; May 2007					
Iimuro	Kazuyoshi	M	M	1		1	1		
Ikeda	Yutaka	No	No			1			
Ishida	Kazuhito	No	**M New**				1	1	1
Jeong	Byung-Jang	M	M	1		1			
Jette	Alan	M	M	1	1	1	1	1	1
Ji	Baowei	M	M	1	1	1			
Ji	Tingfang	M	M	1		1	1	1	1
Jones	Dennis	M	M	1				1	1
Joo	Pan Yuh	No	No		1				
Kadous	Tamer	M	M	1		1	1		
Kalhan	Amit	M	M	1		1	1	1	1
Kanai	Takeo	No	No			1			
Kang	Hyunjeong	M New	M New	1					
Katayama	Masahide	No	No			1			
Khademi	Majid	M	M	1		1			1
Khandekar	Aamod	M	M	1		1	1	1	
Khatibi	Farrokh	M	M	1		1	1	1	1
Kiernan	Brian	M	M	1	1				
Kim	Hyeon Soo	M	M	1	1	1			
Kim	Jae-Ho	M New	M New	1	1				
Kim	Peter J.W.	M New	M New	1					
Kim	Tae Young	M	M	1	1	1	1		
Kim	Yong Ho	M	M	1		1			
Kim	Young-Ho	M New	M New	1	1		1		
Kim	**Young Kyun**	M	**No**	1					
Kim	Youngsoo	M	M	1	1	1			
Kimura	Shigeru	M	M	1		1			
Kitahara	Minako	M	M	1		1	1	1	1
Kitamura	Takuya	M New	M New		1				
Klerer	Mark	M	M	1	1	1	1	1	1
Knisely	Douglas	M	M	1	1	1		1	

Last Name	First Name	Jan07 Voters	Mar07 Voters*	Mar06	May06	Nov 06	Jan07	Mar 07	May 07
Appendix - 1: 802.20 Attendance Credit; May 2007									
Kolze	Tom	M	M	1	1	1		1	1
Koo	Changhoi	M	M	1	1	1			
Koplyay	Ferenc	M New	M New	1	1				
Kujawski	Fred E.	No	No			1			
Kwon	Dong Seung	M New	M New		1				
Kwon	Young Hyoun	M	M	1					
Lalaguna	Pablo	M	M	1		1			
Lawrence	Lisa	M	M	1				1	1
Lee	Heesoo	M	M	1	1	1	1	1	1
Lee	Jungwon	M New	M New	1					
Lee	Mihyun	M	M	1		1	1		
Lee	Sungjin	M New	M New	1					
Lee	Wook-Bong	M	M	1	1				
Li	Jun	M New	M New		1				
Li	Thomas	No	No		1				
Li	Yingyang	M	M	1	1	1			
Li	Yong	No	No						1
Lim	Hyoung Kyu	M	M	1	1				
Lin	Jiezhen	M	M	1	1				
Liu	Walter	M New	M New	1	1				
Lu	Jianmin	No	M New		1				
Ma	Steven	M	M	1	1				
Maez	Dave	No	No						
Martynov	Irina	M	M	1		1	1	1	1
Martynov	Michael	M	M	1		1	1	1	1
McGinniss	David	M New	M New	1					
McMahon	Anthony	M	M	1		1	1	1	
McMillan	Donald	M	M	1		1			
Miyazono	Max	M	M	1		1		1	1
Mollenauer	James	M	M	1	1	1		1	1
Murakami	Kazuhiro	M	M	1		1		1	
Murphy	Peter	M	M	1					

Last Name	First Name	Jan07 Voters	Mar07 Voters*	Mar06	May06	Nov 06	Jan07	Mar 07	May 07
Naaman	**Laith**	M New	M New	1					
Nabar	Rohit	M	M	1		1			
Nagai	**Yukimasa**	M New	M New	1					
Nagaraj	Shirish	No	No					1	
Naguib	Ayman	M	M	1			1		1
Naidu	Mullaguru	M	M	1		1	1	1	1
Nakamura	Kenichi	M	M	1		1			
Nakamura	Tetsuya	M	M	1		1	1		1
Nakano	Shinji	M	M	1		1	1		
Nguyen	Nha	M	M	1		1	1	1	1
Noh	Taegyun	M	M	1	1	1			
Novick	Fred	M	M	1		1		1	
O'Brien	Francis	M New	**M**				1	1	1
Odlyzko	Paul	M	M	1	1				
Oguma	Hiroshi	M	M	1	1	1			
Oh	Changyoon	M New	M New	1	1				
Panicker	John	M New	M New	1	1				
Park	Chul	M	M	1	1	1			
Park	DS	M	M	1	1	1			
Park	Jeongho	M	M	1	1	1			
Park	**Sung-Eun**	No	No						
Park	Won-Hyoung	M	M	1	1				
Patel	**Chirag**	No	No						1
Patzer	Steve	M	M	1	1				
Pfann	Eugen	M	M	1		1	1	1	
Pirhonen	Riku	M	M	1	1	1		1	
Pittampalli	**Eshwar**	M New	M New						
Poisson	Sebastien	M	M	1		1		1	1
Prakash	Rajat	M	M	1	1	1	1		
Preece	Rob	M	M	1		1	1	1	1
Puthenkulam	Jose	M	M	1	1				

Last Name	First Name	Jan07 Voters	Mar07 Voters*	Mar06	May06	Nov 06	Jan07	Mar 07	May 07
Qian	Xiaoshu	M	M	1	1				
Ragsdale	James	M	M	1	1	1		1	1
Rajadurai	Rajavelsamy	M New	M New	1	1				
Rajkumar	Ajay	M	M	1	1				
Sampath	Hemanth	M	M	1		1	1		1
Sano	Masato	M	M	1		1	1		
Santhanakrishnan	Anand	M New	M New	1	1				
Sasaki	Shigenobu	M	M	1	1	1			
Seo	Bangwon	M	M	1	1	1			
Shields	Judy	M	M	1				1	1
Shively	David	M	M	1		1		1	
Shono	Takashi	M	M	1	1	1			
Sider	Justine	No	No						
Sihn	Gyung Chul	M	M	1	1	1			
Sivanesan	Kathiravetpillai	M	M	1		1			
Song	Young Seog	M	M	1	1	1			
Sorensen	Henrik	M New	M New	1					
Springer	Warren	M	M	1					
Srinivasan	Roshni	M	M	1	1	1	1		
Staver	Doug	M	M	1				1	1
Stuby	Richard	M	M	1	1	1		1	
Suh	Mark	M	M	1	1	1	1	1	
Sun	Jing	No	No						1
Surcobe	Valentin	M	M	1	1	1		1	1
Suzuki	Tomohiro	M	M	1		1	1	1	1
Tan	Teik-Kheong	No	No			1			
Teague	Harris	M	M	1		1	1	1	
Tee	Lai-King Anna	M	M	1	1	1	1	1	1
Tomcik	James	M	M	1	1	1	1	1	1
Ulupinar	Fatih	M	M	1					

Last Name	First Name	Jan07 Voters	Mar07 Voters*	Mar06	May06	Nov 06	Jan07	Mar 07	May 07
Upton	Jerry	M	M	1	1	1	1	1	1
Vaidya	Rahul	M New	M New	1	1				
Valbonesi	Lucia	M	M	1	1				1
Valls	Juan Carlos	M	M	1		1	1	1	1
Vijayan	Rajiv	M	M	1		1	1	1	
Vivanco	Silvia	M	M	1		1	1	1	1
Wasilewski	Thomas	M	M	1		1		1	
Watanabe	Fujio	M New	M New					1	
Wieczorek	Alfred	M	M		1			1	
Wilson	Joanne	M	M	1	1	1	1		
Wu	Geng	M New	M New	1	1				
Yaghoobi	Hassan	M	M	1	1				
Yallapragada	Rao	M	M	1		1	1	1	
Yeh	Choongil	M	M	1	1	1			
Yin	Hujun	M	M	1	1				
Yoon	Young	No	No						1
Youssefmir	Michael	M	M	1		1			
Yuda	Tetsuya	M	M	1					
Yun	Jungnam	M New	M New	1	1				
Yuza	Masaaki	M	M			1			
Zhang	Xin	No	No						
Zhou	Yan	No	No						
Zhu	Peiying	M New	M New	1					
		 		Affiliation needed before attendance can be granted					
		 		Affiliation received after 11 March 2007					
		 		Voting membership may be lost if next Plenary not attended					

Appendix - 2: 802.20 Declarations of Affiliation

	Last Name	First Name	Employer	Affiliation	Ultimate Parent of Employer	Ultimate Parent of Affiliation	URL1
1	Agis	Ed	Intel Corporation	Same	Not Applicable	Not Applicable	www.intel.com
2	Agrawal	Avneesh	Qualcomm, Incorporated	Same	Not Applicable	Not Applicable	www.qualcomm. com
3	Ahmadi	Sassan	Intel Corporation	Intel Corporation	Intel Corporation	Intel Corporation	www.intel.com
4	Ahn	Jae Young	ETRI	Same	N/A	N/A	www.etri.re.kr
5	Alamouti	Siavash M.	Intel Inc.	Same	N/A	N/A	www.intel.com
6	Ali	Murtaza	Texas Instruments, Inc.	Same	Not Applicable	Not Applicable	www.ti.com
7	Alphonse	Jean R.	Lucent Technologies	Same	Not Applicable	Not Applicable	www.alcatel-lucent.com
8	Alsaleh	Haggar	Consultant	Same	Not Applicable	Not Applicable	
9	Arefi	Reza	Intel Corporation	same	same	same	www.intel.com
10	Bajaj	Rashmi	France Telecom R&D	same	Orange Ftgroup	OrangeFTGroup	www.francetelecom.com/en
11	Barriac	Gwen	Qualcomm, Incorporated	Same	Not Applicable	Not Applicable	www.qualcomm. com
12	Bavafa	Moussa	Broadcom Corporation	Same	Not Applicable	Not Applicable	www.broadcom.com
13	Bernstein	Jeff	Telecommunications Management Group, Inc.	QUALCOMM, Incorporated	Not Applicable	Not Applicable	www.tmgtelecom.com
14	Bims	Harry	Protocomm Systems, LLC	Apple Inc.	Not Applicable	Not Applicable	www.protocommsystems.com
15	Bravin	Nancy	Self	Qualcomm	Not Applicable	Qualcomm	www.qualcomm. com
	Budianu	Petru Cristian	Qualcomm	Same	Not Applicable	Not Applicable	www.qualcomm. com
16	Bussey	Chris J.	Bussey Consulting Services, Inc.	Qualcomm	Chris J Bussey	Not Applicable	www.qualcomm. com
17	Cai	Sean	ZTE USA Inc.	Same	ZTE Corp	Not Applicable	www.zteusa.com
18	Canchi	Radhakrishna	Kyocera Telecommunications Research Corporation.	Same	Kyocera Corporation.	Kyocera Corporation	www.ktrc-na.com
19	Carlo	Jim	J.Carlo Consulting LLC	Huawei Technology	Not Applicable	Not Applicable	www.huawei.com
20	Carneiro	Edson	EPEC Solutions Inc.	Qualcomm Brazil	Not Applicable	Qualcomm	www.epecsolutions.com
21	Carson	Peter	Qualcomm, Inc.	Same	Not Applicable	Not Applicable	

802.20 Declarations of Affiliation

	Last Name	First Name	Employer	Affiliation	Ultimate Parent of Employer	Ultimate Parent of Affiliation	URL1
22	Castell	Harold P.	Bussey Consulting Services, Inc.	Qualcomm	Chris J Bussey	Not Applicable	www.qualcomm. com
23	Chae	Suchang	ETRI(Electronics and Telecommunications Research Institute)	Same	Not Applicable	Not Applicable	www.etri.re.kr
24	Chen	Yao	Beijing Samsung Telecommunication	Same	Samsung Electronics Company	Not Applicable	www.samsung.com
25	Cho	Juphil	Kunsan National University	Same	Not Applicable	Not Applicable	www.kunsan.ac.kr
26	Choi	Hyoungjin	TTA	same	Not Applicable	Not Applicable	www.tta.or.kr
27	Choi	Yang-Seok	Intel Corporation	Same	NA	NA	www.intel.com
28	Chong	Chia-Chin	DoCoMo USA Labs	Same	NTT DoCoMo	N/A	www.docomolabs-usa.com
29	Chun	Jin Young	LGE	Same	Not Applicable	Not Applicable	www.lge.com
30	Chung	Jaeho	KT Corporation	Same	Not Applicable	Not Applicable	www.kt.co.kr
31	Cleveland	Joseph	Self-Employed	Same	Not Applicable	Not Applicable	
32	Comstock	David	Huawei Technologies Co,Ltd	Same	Not Applicable	Not Applicable	www.huawei.com
33	Crozier	Eugene	SR Telecom Inc	Same	Not Applicable	Not Applicable	www.srtelecom.com
34	Dean	Christopher	Telecommunications Management Group, Inc. (TMG)	Qualcomm, Inc.	Not applicable	Not applicable	www.tmgtelecom.com
35	Dhaliwal	Upkar	Future Wireless Technologies, L.P.	Same	Not Applicable	Not Applicable	www.futurewirelesstech.com
36	Dodd	Don	Morningstar Mergers	same	N/a	N/a	Mstarmgt@aol.com
37	Dorward	Lynne	TMG Inc./LADCOMM Corporation	Qualcomm, Inc.	Not applicable	Not applicable	www.ladcomm.com*
38	Dunn	Doug	Kyocera Telecommunications Research Corporation	Same	Kyocera Corporation	Kyocera Corporation	www.ktrc-na.com
39	Eilts	Hank	Texas Instruments, Inc.	Same	Not Applicable	Not Applicable	www.ti.com
40	Epstein	Mark	Qualcomm	same	NA	NA	www.qualcomm.com
41	Feder	Peretz	Lucent Technologies	Bell Laboratories	Lucent Technologies	NA	www.lucent.com
42	Ferguson	Alistair	Selbourne Associates	Same	Not Applicable	Not Applicable	
43	Fong	Mo Han	Nortel	Same	Not Applicable	Not Applicable	www.nortel.com

802.20 Declarations of Affiliation

	Last Name	First Name	Employer	Affiliation	Ultimate Parent of Employer	Ultimate Parent of Affiliation	URL1
44	Freeland	Graham	Steepest Ascent Ltd	same	Not Applicable	Not Applicable	www.steepestascent.com
45	Gal	Dan	Lucent Technologies	same	Not Applicable	Not Applicable	www.lucent.com
46	Garcia-Alis	Daniel	Steepest Ascent Ltd	same	Not Applicable	Not Applicable	www.steepestascent.com
47	Garg	Deepshikha	Kyocera Telecommunications Research Corporation.	Same	Kyocera Corporation.	Kyocera Corporation	www.ktrc-na.com
48	Gil	Gye-Tae	KT	Same	Not Applicable	Not Applicable	www.kt.co.kr/kthome/eng/index.jsp
49	Gillies	Donald	Qualcomm Incorporated	Same	Not Applicable	Not Applicable	www.qualcomm.com
50	Gomes	Eladio Rodrigues	EPEC Solutions Inc.	Qualcomm Brazil		Qualcomm	www.epecsolutions.com
51	Gore	Dhananjay	Qualcomm, Incorporated	Same	Not Applicable	Not Applicable	www.qualcomm. com
52	Gorodetsky	Svetlana	Gorodetsky Consulting	Qualcomm Inc.	Not applicable	Not applicable	
53	Gorokhov	Alex	Qualcomm Inc.	Same	Not Applicable	Not Applicable	www.qualcomm.com
54	Gowaikar	Radhika	Qualcomm Inc.	Same	Not Applicable	Not Applicable	www.qualcomm.com
55	Greenspan	Arnie	AROSCO Inc.	Same	Not Applicable	Not Applicable	
56	Guo	Qiang	Motorola, Inc.	Same	Not Applicable	Not Applicable	www.motorola.com
57	Haug	John	Motorola, Inc.	Same	Not Applicable	Not Applicable	www.motorola.com
58	Hou	Victor	Broadcom Corporation	Same	Not Applicable	Not Applicable	www.broadcom.com
59	Hu	Rose	Nortel Networks	Same	Not Applicable	Not Applicable	www.nortel.com
60	Hu	Teck	Siemens Network LLC	Same	Siemens AG	Siemens AG	www.siemens.com
61	Humbert	John	Sprint Corporation	Same	Not Applicable	Not Applicable	www.sprint.com
62	Huo	David	Lucent Technologies	Same	Not Applicable	Not Applicable	www.lucent.com
63	Hur	Yerang	POSDATA Co. Ltd.,	Same	Not Applicable	Not Applicable	www.posdata.co.kr
64	Ibbetson	Luke	Vodafone Group Services Limited	same	not applicable	Not Applicable	www.vodaphone.com
65	Iimuro	Kazuyoshi	Kyocera corporation	Same	Not Applicable	Not Applicable	www.kyocera.co.jp
66	Ikeda	Yutaka	Sharp Corp	same	not applicable	not applicable	www.sharp-world.com
67	Ishida	Kazuhito	Qualcomm Inc.	same	Not applicable	Not Applicable	www.qualcomm.com

802.20 Declarations of Affiliation

	Last Name	First Name	Employer	Affiliation	Ultimate Parent of Employer	Ultimate Parent of Affiliation	URL1
68	Jeong	Byung Jang	ETRI	Same	Not Applicable	Not Applicable	www.etri.re.kr
69	Jette	Al	Motorola, Inc.	Same	Not Applicable	Not Applicable	www.motorola.com
70	Ji	Baowei	Samsung Telecommunications America, LLP	Same	Samsung Electronics Company	Not Applicable	www.samsungtelecom.com/
71	Ji	Tingfang	Qualcomm, Incorporated	Same	Not Applicable	Not Applicable	www.qualcomm. com
72	Jones	Dennis	Taliesen North Consulting	Qualcomm	Not Applicable	Not Applicable	
73	Joo	Panyuh	Samsung Electronics	Same	Samsung Electronics	Not Applicable	www.samsung.com
74	Kadous	Tamer	Qualcomm, Incorporated	Same	Not Applicable	Not Applicable	www.qualcomm. Com
75	Kalhan	Amit	Kyocera Telecommunications Research Corporation	Same	Kyocera Corporation	Kyocera Corporation	www.ktrc-na.com
76	Kanai	Takeo	Symbies, Inc.	Softbank BB Corp.	N/A	N/A	www.symbies.com/
77	Kang	Hyunjeong	Samsung Electronics Company	Same	Samsung Electronics Company	Not Applicable	www.samsung.com
78	Katayama	Masahide	Kyocera Corp	same	not appliciable	Not Applicable	www.kyocera.co.jp
79	Kawabata	Hiro	Qualcomm	Same	not Applicable	Not Applicable	www.qualcomm.com
80	Khademi	Majid	Khademi Consulting	Qualcomm	Not Applicable	Not Applicable	www.qualcomm. com
81	Khandekar	Aamod	Qualcomm, Incorporated	Same	Not Applicable	Not Applicable	www.qualcomm. com
82	Khatibi	Farrokh	Qualcomm, Incorporated	Same	Not Applicable	Not Applicable	www.qualcomm.com
83	Kiernan	Brian	Interdigital Communications Corp	same	not applicable	Not Applicable	www.interdigital.com
84	Kim	Hyeon Soo	Samsung Electronics Company	Same	Samsung Electronics Company	Not Applicable	www.samsung.com
85	Kim	Jae-Ho	ETRI	Same	Not Applicable	Not Applicable	www.etri.re.kr
86	Kim	Peter	TTA	same	Not Applicable	Not Applicable	www.tta.or.kr
87	Kim	Taeyoung	Samsung Electronics Company	Same	Samsung Electronics Company	Not Applicable	www.samsung.com
88	Kim	Yong Ho	LGE	Same	Not Applicable	Not Applicable	www.lge.com
89	Kim	Young Ho	Samsung Electronics Company	Same	Samsung Electronics Company	Not Applicable	www.samsung.com

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	Last Name	First Name	Employer	Affiliation	Ultimate Parent of Employer	Ultimate Parent of Affiliation	URL1
90	Kim	Young Kyun	Samsung Electronics Company	Same	Samsung Electronics Company	Not Applicable	www.samsung.com
91	Kim	Youngsoo	Samsung Electronics Company	Same	Samsung Electronics Company	Not Applicable	www.samsung.com
92	Kimura	Shigeru	Kyocera Corp.	Same	Not Applicable	Not Applicable	www.kyocera.co.jp
93	Kitahara	Minako	Kyocera Corp.	Same	Not Applicable	Not Applicable	www.kyocera.co.jp
94	Kitamura	Takuya	Fujitsu Limited	Same	Not Applicable	Not Applicable	www.fujitsu.com
95	Klerer	Mark	QUALCOMM Flarion Technologies	Same	QUALCOMM, Incoroporated	Not Applicable	www.qualcomm.com/qft/
96	Knisely	Douglas	Airvana, Inc.	Same	Not Applicable	Not Applicable	www.airvana.com
97	Kolze	Tom	Broadcom	same	Not applicable	Not applicable	www.broadcom.com
98	Koo	Changhoi	Samsung Telecommunications America, LLP	Samsung Electronics	Same	Same	www.samsungtelecom.com
99	Koplyay	Ferenc	Freescale Semiconductor	Same	N/A	N/A	www.freescale.com
100	Kujawski	Fred	AirCell Inc.	Same	Not Applicable	Not Applicable	www.aircell.com
101	Kwon	Dong-Seung	ETRI	same	Not applicable	Not applicable	www.etri.re.kr
102	Kwon	Young-Hyoun	LGE	Same	Not Applicable	Not Applicable	www.lge.com
103	Lalaguna	Pablo	MedStar Systems, LLC	Qualcomm		Qualcomm	www.medstarsystems.com
104	Lawrence	Lisa	CTCI	Qualcomm	Same	Same	www.ctci.ca
105	Lee	Heesoo	ETRI	Same	Not Applicable	Not Applicable	www.etri.re.kr
106	Lee	Jungwon	Marvell Semiconductor Inc	Same	Marvell Technology Group, Ltd	Not Applicable	www.marvell.com
107	Lee	Mihyun	Samsung Electronics Company	Same	Samsung Electronics Company	Not Applicable	www.samsung.com
108	Lee	Sungjin	Samsung Electronics Company	Same	Samsung Electronics Company	Not Applicable	www.samsung.com
109	Lee	Wook-Bong	LGE	Same	Not Applicable	Not Applicable	www.lge.com
110	Li	Jun	Nortel Networks, Inc.	Same	Nortel Networks, Inc.	Not Applicable	www.nortel.com
111	Li	Thomas	Huawei Technologies Co,Ltd	Same	not applicable	Not Applicable	www.huawei.com

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	Last Name	First Name	Employer	Affiliation	Ultimate Parent of Employer	Ultimate Parent of Affiliation	URL1
112	Li	Yingyang	Beijing Samsung Telecommunication	Same	Samsung Electronics Company	Not Applicable	www.samsung.com
113	Li	Yong	Qualcomm Inc	Same	Not Applicable	Not Applicable	www.qualcomm.com
114	Lim	Hyoung Kyu	Samsung Electronics Company	Same	Samsung Electronics Company	Not Applicable	www.samsung.com
115	Lin	Jiezhen	Siemens Network Ltd, Beijing	Siemens Ltd., China	Siemens AG	Siemens AG	www.siemens.com.cn
116	Liu	Walter	FutureWei Technologies, In	Same	Huawei Technologies Co.,Lt	N/A	www.futurewei.com
117	Lo	Titus	Neocific, Inc.	Same	N/A	N/A	
118	Lu	Jianmin	FutureWei Technologies, In	Same	Huawei Technologies Co.,Lt	N/A	www.futurewei.com
119	Ma	Steve	Freescale Semiconductor	Same	N/A	N/A	www.freescale.com
120	Maez	David	Navini Networks	Same	Not Applicable	Not Applicable	www.navini.com
121	Martynov	Irina	Belgud International	Qualcomm		Qualcomm	
122	Martynov	Michael	Belgud International	Qualcomm		Qualcomm	
123	McGinniss	David S.	Sprint Nextel	Same	Not Applicable	Not Applicable	www.sprint.com
124	McMahon	Anthony	Institute for System Level Integration	Strathclyde University	Not applicable	Not applicable	www.sli-institute.ac.uk
125	McMillan III	Donald C.	Advanced Network Technical Solutions, Inc.	Same	N/A	N/A	www.antsinc.com
126	Miyazono	Max	Qualcomm Inc	Same	Not Applicable	Not Applicable	www.qualcomm.com
127	Mollenauer	Jim	Technical Strategy Associates	Motorola Inc.	Not applicable	Not Applicable	www.Technicalstrategy.com
128	Murakami	Kazuhiro	Kyocera Corporation	Same	Not Applicable	Not Applicable	www.kyocera.co.jp
129	Murphy	Peter A.	Intel Corp.	Same	Not applicable	Not applicable	www.intel.com
130	Naaman	Laith	Intel Corp.	Same	Not Applicable	Not Applicable	www.intel.com
131	Nabar	Rohit	Marvell Semiconductor Inc	Same			www.marvell.com
132	Nagai	Yukimasa	Mitsubishi Electric	Same	Not Applicable	Not Applicable	www.mitsubishielectric.co.jp/
133	Nagaraj	Shirish	Motorola	Same	Not Applicable	Not Applicable	www.motorola.com
134	Naguib	Ayman	Qualcomm Inc.	Same	Not Applicable	Not Applicable	www.qualcomm.com

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	Last Name	First Name	Employer	Affiliation	Ultimate Parent of Employer	Ultimate Parent of Affiliation	URL1
135	Naidu	Mullaguru	Qualcomm, Incorporated	Same	Not Applicable	Not Applicable	www.qualcomm. com
136	Nakamura	Kenichi	Fujitsu Limited	Same	Not Applicable	Not Applicable	www.fujitsu.com/global/
137	Nakamura	Tetsuya	NTT MCL Inc.	same	NTT Corp.	Not Applicable	www.nttmcl.com
138	Nakano	Shinji	Kyocera Corp.	Same	Not Applicable	Not Applicable	www.kyocera.co.jp
139	Navidi	Pierre	XG Stream Ltd	OAK GLOBAL SA	Not Applicable	Not Applicable	
140	Ngo	Chiu	Samsung Electronics	Same	N/A	N/A	www.samsung.com
141	Nguyen	Nha	Bussey Consulting Services, Inc.	Qualcomm	Chris J Bussey	Not Applicable	www.qualcomm.com
142	Noh	Taegyun	ETRI	Same	Not Applicable	Not Applicable	www.etri.re.kr
143	Novick	Fred	Bussey Consulting Services, Inc.	Qualcomm	Chris J Bussey	Not Applicable	www.qualcomm.com
144	O'Brien	Francis E.	Lucent Technologies	Same	Lucent Technologies	Not applicable	www.lucent.com
145	Odlyzko	Paul	Motorola	same	Not Applicable	Not Applicable	
146	Oguma	Hiroshi	Industrial Technology Institute Miyagi Prefecture Government	Tohuku University	Not Applicable	Not Applicable	www.mit.pref.miyagi.jp
147	Oh	Changyoon	Samsung Electronics Company	Same	Samsung Electronics Company	Not Applicable	www.samsung.com
148	Oprescu	Val	Motorola, Inc.	Same	Not Applicable	Not Applicable	www.motorola.com
149	Palanivelu	Arul	Marvell Semiconductor Inc	Same			www.marvell.com
150	Panicker	John	NORTEL	Same	Not Applicable	Not Applicable	www.nortel.com
151	Park	Chul	ETRI(Electronics and Telecommunications Research Institute)	Same	Not Applicable	Not Applicable	www.etri.re.kr
152	Park	DS	Samsung Electronics Company	Same	Samsung Electronics Company	Not Applicable	www.samsung.com
153	Park	Jeongho	Samsung Electronics Company	Same	Samsung Electronics Company	Not Applicable	www.samsung.com
154	Park	Sung-Eun	Samsung Electronics Company	Same	Samsung Electronics Company	Not Applicable	www.samsung.com
155	Park	Won-Hyoung	SK Telecom	Same	Not Applicable	Not Applicable	www.sktelecom.com

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	Last Name	First Name	Employer	Affiliation	Ultimate Parent of Employer	Ultimate Parent of Affiliation	URL1
	Patel	Chirag S.	Qualcomm	Same	Not Applicable	Not Applicable	www.qualcomm.com
156	Patzer	Steve	Intel Corp.	SAME	Not Applicable	Not Applicable	
157	Pfann	Eugen	University of Strathclyde	same	not applicable	not applicable	www.strath.ac.uk
158	Pirhonen	Riku	Nokia Siemens Networks	Same	Nokia	Not Applicable	www.nokiasiemensnetworks.com
159	Pittampalli	Eshwar	Lucent Technologies	Same	Not Applicable	Not Applicable	www.lucent.com
160	Poisson	Sebastien	Oasis Wireless Inc	Qualcomm	N/A	N/A	www.oasiswireless.net
161	Prakash	Rajat	Qualcomm Inc	Same	Not Applicable	Not Applicable	www.qualcomm.com
162	Preece	Rob	Bussey Consulting Services, Inc.	Qualcomm	Chris J Bussey	Not Applicable	www.qualcomm.com
163	Puthenkulam	Jose	Intel Corporation	Same	Not Applicable	Not Applicable	www.intel.com
164	Qian	Xiaoshu	Intel Corporation	Same	N/A	N/A	www.intel.com
165	Ragsdale	Jim	Ericsson Inc	Telefon AB - L.M. Ericsson	Telefon AB - L.M. Ericsson	same	www.ericsson.com/us
166	Rajadurai	Rajavelsamy	Samsung India Software Operations Private Limited	Same	Samsung Electronics Company	Same	www.samsungindiasoft.com
167	Rajkumar	Ajay	Lucent Technologies Inc.	Same			www.lucent.com
168	Sampath	Hemanth	Qualcomm, Incorporated	Same	Not Applicable	Not Applicable	
169	Sano	Masato	Kyocera Corp.	Same	Not Applicable	Not Applicable	www.kyocera.co.jp
170	Santhanakrishnan	Anand	Stevens Institute of Technology	Same	Not Applicable	Not Applicable	www.stevens.edu
171	Sasaki	Shigenobu	Niigata University	Same	Not applicable	Not Applicable	www.niigata-u.ac.jp
172	Seo	Bangwon	ETRI	Same	Not Applicable	Not Applicable	www.etri.re.kr
173	Shields	Judy	LADCOMM	Qualcomm	NA	NA	
174	Shively	David	Cingular Wireless	Same	AT&T / BellSouth	Same	www.cingular.com
175	Shono	Takashi	Intel K.K.	Same	Intel Corporation	Same	www.intel.co.jp

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176	Sihn	Gyung-Chul	ETRI	Same	Not Applicable	Not Applicable	www.etri.re.kr
177	Sivanesan	Kathiravetpillai	Samsung Electronics Company	Same	Samsung Electronics Company	Not Applicable	www.samsung.com
178	Song	LeiLei	Marvell Semiconductor Inc	Same			www.marvell.com
179	Song	Young Seog	ETRI	same	Not applicable	Not applicable	www.etri.re.kr
180	Sorensen	Henrik	Agere Systems	Same	Not applicable	Not Applicable	www.agere.com
181	Springer	Warren	Springer Associates	Same	Not Applicable	Not Applicable	
182	Srinivasan	Roshni	Intel Corporation	Same	Not Applicable	Not Applicable	www.intel.co
183	Staver	Doug	3581969 Canada Inc.	Same	Not Applicable	Not Applicable	
184	Stuby	Rick	Agere Systems	Same	Not Applicable	Not Applicable	www.agere.com
185	Suh	Mark	Samsung Telecommunications America	Same	Samsung Electronics Company	Not Applicable	www.samsungtelecom.com
186	Sun	Jing	Qualcomm	Same	Not applicable	Not Applicable	www.qualcomm. com
187	Surcobe	Valentin	Motorola	same	Not applicable	Not Applicable	www.motorola.com
188	Suzuki	Tomohiro	Kyocera Corp.	Same	Not Applicable	Not Applicable	www.kyocera.co.jp
189	Tan	Teik-Kheong (TK)	NXP Semiconductors	Same	Not Applicable	Not Applicable	www.nxp
190	Teague	Harris	Qualcomm, Incorporated	Same	Not Applicable	Not Applicable	www.qualcomm.com
191	Tee	Anna	Samsung Telecommunications America	Same	Samsung Electronics Co., Ltd.	Not Applicable	www.samsungwirelss.com
192	Tomcik	Jim	Qualcomm,	Same	Not Applicable	Not Applicable	www.qualcomm.com
193	Ulupinar	Fatih	Qualcomm, Incorporated	Same	Not Applicable	Not Applicable	www.qualcomm.com
194	Upton	Jerry	Self, JUpton Consulting	Qualcomm and Self	NA	Qualcomm, Inc. and Self	
195	Vaidya	Rahul	Samsung India Software Operations Private Limited	Same	Samsung Electronics Company	Same	www.samsungindiasoft.com

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	Last Name	First Name	Employer	Affiliation	Ultimate Parent of Employer	Ultimate Parent of Affiliation	URL1
196	Valbonesi	Lucia	Motorola, Inc.	Same	Not Applicable	Not Applicable	www.motorola.com
197	Valls	Juan Carlos	Telecommunications Management Group	Qualcomm, Inc.	Not applicable	Not applicable	www.tmgtelecom.com
198	Vijayan	Rajiv	Qualcomm, Incorporated	Same	Not Applicable	Not Applicable	www.qualcomm.com
199	Vivanco	Silvia	Telecommunications Management Group	Qualcomm	Not applicable	Not applicable	www.tmgtelecom.com
200	Ward Jr	Robert M	Northrop Grumman	Same	N/A	N/A	
201	Wasilewski	Tom	Qualcomm Incorporated	Same	Not Applicable	Not Applicable	www.qualcomm.com
202	Watanabe	Fujio	DoCoMo Communications Laboratories USA, Inc.	Same	NTT DoCoMo USA, Inc.	Not Applicable	www.docomolabs-usa.com
203	Wieczorek	Al	Motorola, Inc.	Same	Not Applicable	Not Applicable	www.motorola.com
204	Wilson	Joanne	ArrayComm, LLC	Same	Ygomi, LLC	Ygomi, LLC	www.arraycomm.com
205	Wu	Geng	Nortel Networks.	Same	Not Applicable	Not Applicable	www.nortel.com
206	Xiaoshu	Qian	Intel Corp	Same	N/A	N/A	www.intel.com
207	Yaghoobi	Hassan	Intel Corporation	Same	Not Applicable	Not Applicable	www.intel.com
208	Yallapragada	Rao	Qualcomm, Incorporated	Same	Not Applicable	Not Applicable	www.qualcomm.com
209	Yeh	Choong il	ETRI	same	Not applicable	Not applicable	www.etri.re.kr
210	Yin	Hujun	Intel Corp.	Same	N/A	N/A	www.intel.com
211	Yoon	Young	LG Electronics Mobile Research LLC	Same	LG Electronics Inc.	Not Applicable	www.lge.com
212	Youssefmir	Michael	Self	ArrayComm		Ygomi Group	www.arraycomm.com
213	Yuda	Tetsuya	Kyocera Corp.	Same	Not Applicable	Not Applicable	www.kyocera.co.jp
214	Yun	Jungnam	POSDATA Co. Ltd.,	Same	Not Applicable	Not Applicable	www.posdata.co.kr
215	Yuza	Masaaki	NEC Infrontia Corp.	same	NEC Corp.	Not Applicable	www.necinfrontia.co.jp
216	Zhang	Xin	Qualcomm	Same	Not Applicable	Not Applicable	www.qualcomm.com
217	Zhou	Yan	Qualcomm	Same	Not Applicable	Not Applicable	www.qualcomm.com

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	Last Name	First Name	Employer	Affiliation	Ultimate Parent of Employer	Ultimate Parent of Affiliation	URL1
218	Zhu	Peiying	Nortel	Same	Not Applicable	Not Applicable	www.nortel.com
219							
220							