

Project	IEEE 802.16 Broadband Wireless Access Working Group	
Title	Draft Meeting Minutes - Sub10 Study Group – Jan 10 – 11, 2000, Richardson, Texas	
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Re:	Minutes of Meeting	
Abstract		
Purpose		
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Session #5 – Sub10 Study Group Meeting Minutes

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Overview

At its last meeting, the IEEE 802.16 Broadband Wireless Access Working Group authorized the creation of a Study Group to “investigate establishing air interface specifications for fixed point to multi-point Broadband Wireless Access systems operating in frequency bands below 10 GHz.” The output of the group would be a recommendation to proceed or not proceed with this effort and, if the recommendation is to proceed, a draft Project Authorization Request (PAR) for presentation and vote at the January 802.16 Working Group interim meeting.

There were several items that needed discussion and decisions prior to actual generation of a PAR.

1. Is there a need for an Air Interface Standard for <10 GHz BWA?
2. If the answer to (1) is yes, then how should this activity merge with current 802.16 activities?
3. Which frequency bands should the group address? Are there specific bands?
4. Is there duplication with other Standards Development Organizations?

Monday Evening

The Monday session began at 7:00 PM and was attended by 88 people. The session provided information to the session members and initiated discussions of the above and other issues. After introductions, the Chair opened with a description of the objectives of the Study Group. This was followed by presentations on the sub 10 GHz market, frequencies and other issues by Industry Canada, Alcatel, ADC Telecommunications, the Wireless Communications Assoc. and the Study Group Chair.

At the completion of the presentations there was considerable discussion of marketplace requirements, technical issues and some of the 802.16 organizational concerns associated with standardization of the sub 10 GHz frequencies. After about an hour of discussion, the Chair asked if any attendees objected to the standardization of air interfaces at frequencies below 10 GHz within IEEE 802.16. There were three objections. All other attendees indicated that standardization was desirable. **One** objection is attached as Appendix A. Based on these results, it was decided to continue the Study Group session on the following day for preparation of a PAR. The meeting recessed at approximately 10:15 PM.

Tuesday Morning

The morning session was called to order at 8:30 AM. The Chair presented the draft PAR contribution and solicited comments as the draft underwent a line by line review. Many modifications were made as the meeting progressed. It was believed that the PAR should be broad and not limit itself to any specific bands below 10 GHz – either licensed or unlicensed. In fact, the frequency range was extended to 11 GHz to encompass the international 10.5 GHz band.

There was also considerable discussion regarding the potential commonality of the sub10 MAC with the 802.16.1 MAC. As the 802.16.1 MAC is not yet established, much of this discussion was inconclusive, however it led to a lot of discussion as to whether this PAR should be a supplement to the current 802.16.1 PAR (802.16.1a) or a new PAR (802.16.3). The chair called for a vote on this matter with 24 attendees voting in favor of a new PAR and 8 members voting in favor of a supplement. The Chair also pointed out that the PAR asks “Are you aware of any patents relevant to this Project?” and requested attendees to make early disclosure of any potential IPR. Individuals from two companies answered that

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their companies may have relevant IPR. The amended draft PAR was then accepted by the attendees with no objections.

The attendees then addressed the Five Criteria that accompany the PAR to the IEEE 802 Executive Committee. Some revisions were made to the draft primarily in the Distinct Identity Section and the document was accepted by acclamation with no objections. Finally, the Study Group prepared a set of Recommendations that would be presented to the Working Group Plenary. These were also accepted by acclamation with no objections.

George Fishel volunteered to chair a Functional Requirements drafting group to review the current 802.16.1 Requirements Document in light of the sub10 GHz markets. He solicited inputs from Study Group attendees. Brian Petry volunteered as editor. (The evening session made this an Ad Hoc.)

The Chair then informed the attendees that although it appeared the Study Group's work was done, he would still hold the previously scheduled Tuesday evening session. This would permit participation by those interested members that were unable to attend the morning session due to conflicts with other 802.16 meetings. The meeting recessed at 12:15 PM.

Tuesday Evening

The Study Group reconvened at 7:00 PM with 87 attendees. The Chair informed the attendees that the primary purpose of the meeting was to review the work done by the Study Group earlier in the day and to reach maximum consensus on the documents prior to submission to the Working Group Plenary. The Chair then reopened discussion on the draft PAR by reviewing the changes made in the morning session and soliciting comments.

There were a number of comments and questions on the revised draft mostly centering on the revised frequencies and the decision to treat this as a new standard rather than an amendment to the current 802.16.1 PAR. These and other comments were resolved after lengthy discussions and numerous motions and votes on specific document wording. Discussions of the Project completion date resulted in further limitation of the Scope of the PAR. The Study Group by a vote of 47 for, 0 Opposed, and 1 abstention then accepted the revised PAR.

The discussion next turned to the Five Criteria. Some revisions were made to reflect the changed PAR while others were made to improve the document. The revised Five Criteria were then accepted by the Study Group by unanimous voice vote. Finally, the Study Group Recommendations were substantially revised and then accepted by unanimous voice vote. An Ad Hoc to initiate writing of Functional Requirements was approved, also by unanimous voice vote. This will be led by George Fishel with Brian Petry as document editor. The Chair thanked all attendees for their participation and adjourned the meeting at approximately 11:00 PM.

APPENDIX A – A Dissenting Opinion

Paul Thompson
Paul Thompson Associates
January 11, 2000

Subject: Dissenting vote on creating a PAR for Sub-10 GHz FWA Air Interface(s)

I come to the IEEE 802.16 meeting as a strong advocate for the process of Standardization, having previously participated in that process at the IEEE 802.11 (Wireless Lan) and IEEE 1394.1 (Firewire Bridge) Committees. It is because I hold the process of Standardization in general, and the

IEEE in particular, in such high regard that I apply a stringent test to the initiation of new Standardization efforts. My negative vote in the straw poll about extending the IEEE 802.16 Air Interface Standardization effort below 10 GHz was entered because I did not feel, after hearing the evening's discussion, that the IEEE 802.16 committee's concept of what is to be standardized and for what purpose had matured to a point where it merited the writing of a PAR.

Following is a more detailed discussion of my logic:

1. The IEEE is a very prestigious organization. When the IEEE makes a declaration of intent to Standardize, there is an air of legitimacy attached to the effort which raises, throughout the telecommunications industry, the expectation of success. In order to preserve the IEEE's prestige, I feel that it is incumbent on the members of the various Committees to be very selective in the topics on which they make a declaration of intent to Standardize. I feel that the IEEE should have a overwhelmingly clear image of the prospect for success in a Standardization effort when it is launched so that it does not often suffer the indignity of, for instance, the IEEE 802.14 cable modem Standardization effort which has been terminated.
2. A major portion of my fixed wireless consulting business is conducted in both the licensed and unlicensed frequency bands below 10 GHz. I routinely work with service providers, spectrum speculators and manufacturers in that regime. I know how difficult it has been to devise business plans and actual equipment deployments which pass the ultimate test: they are successful businesses. There is a wide variety of applications which have been tried (and continue to be tried) which are inspired, in part, by the disparate spectrum size and regulatory restraints that exist in the individual bands between 2 and 10 GHz. (In the USA, the picture is further distorted by the political posturing of large frequency block holders which is aimed more at opening the marketplace than really instituting wireless service.) The creation of a Standard has, to me, an implication of "optimality" or "appropriateness" for a specific purpose. I fail to see how a single Standard would achieve "optimality" or "appropriateness" for the disparate needs of all the Sub-10 GHz bands.
3. I don't feel that a PAR should be a prescription for a fishing expedition. Since the evening's discussion provided no compelling evidence which illuminated the objectives or advantages of Standardization below 10 GHz, I entered the only vote which seemed logical to me: to defer the writing of a PAR until the objectives and advantages could be verbalized in such a way that there was the expectation of success of the Standardization process.
4. I feel that the IEEE's reputation can be best enhanced when it engages in Standardization efforts which foster an industry. The IEEE 802.11 Standard was rightfully cited during the discussion as one which has that prospect. This is due in large measure to the commodity nature of the wireless LAN applications: one wants the consumer to be able to purchase the equipment from his corner electronics store, install it with the same ease as he would a cordless telephone and to proliferate the radios without concern for mutual interference or optimal performance. In my experience, the fixed wireless environment below 10 GHz for the licensed bands is fundamentally different than that of wireless LANs. FWA Service providers must control both ends of the radio links in terms of the equipment used and its actual deployment. They will also religiously control who accesses their networks and for what services. There are also a few dominant licensed holders which, I feel, will set a de facto standard for the equipment once they make their selection. I feel that the IEEE should concentrate its energy in places where it can make a significant impact on the landscape of telecommunications. The discussion about Standardization below 10 GHz did not offer any evidence that having a Standard for that regime would have such an impact.