Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Minutes of meeting of Coexistence Task Group at Session #18, St Louis**
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Re:	Coexistence Task Group activities in Session #18
Abstract	N/A
Purpose	To provide a record of the meeting
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Minutes of meeting of Coexistence Task Group

11-15 March 2002, St. Louis, MO, USA

- Chaired by Phil Whitehead, Radiant Networks Plc
- Minutes prepared by Phil Whitehead

Tuesday 12th March 2002

1. The meeting was called to order at 09.10
2. The draft agenda was modified and unanimously accepted (revision 1, attached to these minutes).
3. A tentative schedule was agreed for the week.
4. The draft minutes of session #17 were unanimously approved.
5. PW reported on the status of the TG2 work. This was the fourth formal meeting of the group. A set of draft system parameters to be used in coexistence simulations and calculations was prepared at meeting #15. These have been used as the basis for a number of coexistence simulations, carried out and presented at sessions #16 and 17. Simulation work for the various point to point scenarios made good progress but less work has been completed for the 2-11 GHz scenarios. In particular, it was noted that there have been no simulations for the 2.5 GHz band.
6. Rebecca Chan presented two papers relating to satellite sharing for the 5 GHz band. One paper sets out the Industry Canada position for the next WRC. The other paper provides a technical basis for the proposals. These papers are available on the 802 server. It was concluded that there may be issues for TGa to consider but that there would be no significant impact on the current TG2 work programme (there are no known satellite sharing problems associated with the licensed bands in the 2-11GHz frequency range).
7. Two revised input papers from Jack Garrison providing simulations for the 10.5GHz and 3.5 GHz band (adjacent area, same frequency case) were reviewed. These contain revised antenna patters, corrected parameters for interference limits and a slightly different range of system geographical spacings (now cover 20-80 km). With these modifications, the results were provisionally agreed. The results need to be added to section (3) of the working document.
8. A new paper was presented by Jack Garrison providing simulation results for the 3.5GHz same area/ adjacent channel case (BS to SS interference). It was noted that the NFD values used are typical (there is very little data available on this topic). Rain fading is negligible in this band over the distances covered. The main conclusion is that a guard band between systems can be avoided in many cases (possible exception is where 64 QAM modulation is employed). The results were provisionally agreed and can be added to the working document.
9. A second new paper was presented by Jack Garrison providing simulation results for the 3.5GHz same area/ adjacent channel case (this time for SS to BS interference). In this case, a guard band is more likely to be needed, except for 4 QAM systems. The results were provisionally agreed and can be added to the working document.
10. Reza Arefi presented a new paper, showing the impact of adaptive antennas on coexistence in a 3.5 GHz system. The scenario analysed was for the co-channel adjacent area case, with an adaptive antenna used at the BS of one system and conventional sector antenna used in the other system. Conclusions on this paper were deferred until the next day.

Wednesday 13th March 2002

11. Meeting opened 09.10
12. A further review of the paper from Reza Arefi took place. This resulted in a request to make some additions and modifications as follows:
    a. A single interferer should be used (not the sum of several)
    b. Indicate the highest value of interference at a given system spacing
    c. Indicate the additional isolation needed to reduce the worst value to I/N = -6dB (e.g. by avoiding pointing the adaptive antenna in certain directions or by changing channels)

    Reza agreed to make these modifications and resubmit as a formal contribution.
13. Jack Garrison presented the results of a brief analysis of fading due to rain at 10.5GHz, as a function of required availability. The results indicate that a 1-3dB differential between wanted and unwanted signals could occur, as compared to the 3.5 GHz case where rain fading is negligible. This data may be helpful in extrapolating the 3.5 GHz simulation results to the 10.5 GHz band.
14. Jack Garrison presented a paper analysing the requirement for isolation in a 3.5 GHz system, based on the BS – BS same area interference scenario. The isolation could be achieved by use of guard channels or other techniques. It was agreed that further work should be carried out on this topic. Jack agreed to revise and submit as a formal contribution within approximately one week.
15. Reza Arefi proposed to prepare a further contribution on the impact of adaptive antennas, for the next session. This will cover the BS to BS interference scenario
16. A table of preliminary results, produced by PW was introduced. Conclusions were deferred until later in the meeting
17. the ETSI technical report TR 101 853 was reviewed, to decide whether it contained useful material for inclusion or reference in the amended recommended practice. It contains an analysis of interference between point to point links and PMP cells, in a wide range of frequencies. The following conclusions were reached:
    a. The analysis does not provide quantitative results, other than some examples
    b. The scenarios and formulae are applicable but specific IEEE parameters need to be added in order to produce quantitative results

    Barry Lewis agreed to consider scenarios B! to B4 and add the necessary IEEE data
18. Remi Chayer agreed to locate and review the relevant RABC report on coexistence between point to poin t systems and PMP systems and report on any useful relevant sections by next meeting
19. The table of preliminary results was further reviewed and revised. A version of this was unanimously agreed and will be posted as an output of the meeting. A future version should add all the references to the input documents on simulations. PW will add these refs prior to the next meeting.

Thursday 14th March 2002

20. Meeting opened 9.15
21. The output document on preliminary simulation results was approved for posting
22. The timeline was reviewed. It was noted that the end date can not be met for the 2.5 GHz work due to lack of contributions. It was proposed to defer work on the 2.5 GHz band in order to allow the other results to be included in the amended recommended practice, without further delay to the end date.
23. The draft minutes were provisionally agreed.
24. A review was made of the closing report. After a number of small modifications, the report was unanimously accepted.

25. There being no other business, the meeting was adjourned.

Revised Agenda for Coexistence Task Group Meeting at session #18

Philip Whitehead
Radiant Networks Plc

This will be the fourth formal meeting of the task group, following approval of the PAR. The meeting will open 12th at 09.00. Other arrangements and timing are tba.

The timings of the individual agenda items will be determined during the opening task group session.

1. Adoption of a final agenda
2. Review of draft minutes of TG2a from session #17
3. Introduction – status of task group
4. Call for volunteers (editor, secretary)
5. Consideration of input contributions (Jack Garrison's revised docs.)
6. Consideration of other input documents
    i. Rebecca Chan
    ii. Jack Garrison
    iii. Reza Arefi
7. Review of draft timeline (Note 1)
8. Revisions to working document
9. Review output documents
10. Possible joint meeting with TGa / representatives
11. Preparation for next meeting – working methodology (Note 2)
12. AOB

Note 1: The timeline calls for the majority of simulations to be completed during March 2002. A careful review of the timeline and the detailed project scope will therefore be required during this meeting.

Note 2: Working arrangements for the next meeting need to be reviewed, since a number of important contributors may not be able to attend.

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