

DRAFT**Minutes of 802.16 Coexistence Study Group at Session #14
9-12 July 2001, Portland Oregon.**

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

Monday 9th July 2001

1. The coexistence study group meeting was called to order at 16.45. The schedule for the week was planned and agreed. Meeting adjourned at 17.30.

Tuesday 10th July 2001

2. Meeting reconvened at 08.30, in joint session with TG3. A presentation of the input paper "System architecture for 2-11 GHz Coexistence Simulations" was made. A sub – group of volunteers from TG3 (Phil Kelly and Avi Freedman) agreed to join the study group meeting at 2pm in order to complete the tables of system parameters and provide an outline system configuration for the purpose of carrying out new simulations of interference.
3. The TG2a participants reconvened in separate session following the joint meeting with TG3 (Hood River Suite).
4. The draft agenda was unanimously approved after one modification (additional item). The revised agenda is attached to these draft minutes.
5. The draft minutes of session #13 were unanimously approved without amendment.
6. Two input documents were noted, the first relating to parameters and system configurations to be used in future simulations. A major task at this meeting was to complete these documents in preparation for detailed work on simulations. The second document contained an analysis of antennas suitable for use around 25 GHz and 38 GHz.
7. The status of the completed recommended practice was briefly discussed.
8. The paper on antennas was presented by Bob Whiting. It compares practical antennas from various suppliers (not named) with FCC specifications for point to point link antennas. A "composite" RPE for the available set of antennas was also produced. Bob Whiting was requested to add the ETSI EN 301 833 class 2 RPEs to the charts, for comparison This standard is widely used in Europe and elsewhere for point to point link systems. This was agreed and conclusions on how to apply the data were deferred until this could be done.
9. There was a short discussion on the types of antennas used in the 2-11 GHz frequency range. There are 3 frequency bands of interest: 2.5 GHz, 3.5 GHz and 10.5 GHz. Further discussion was deferred until after the discussion on systems parameters for 2-11 GHz systems.
10. The paper on system parameters for point to point systems was presented by Phil Whitehead. Draft system parameters for the scenario including "multi – link point to point systems" were unanimously agreed. An output document is available.
11. The TG3 volunteers joined the meeting and the second part of the paper on system parameters for simulation purposes was presented by Phil Whitehead. After

considerable discussion, parameters for most of the entries in the 3 tables (corresponding to the 3 main frequency ranges of interest) were unanimously agreed.

The meeting was adjourned at 16.00 in order to allow members to participate in the TG3 discussion on channel models, as this is highly relevant to TG2a simulation work.

Wednesday 11th July 2001

Meeting reconvened at 08.30

12. The discussions on system parameters for 2-11 GHz systems was concluded with virtually all parameters in the tables agreed unanimously. A small number of entries could not be completed due to lack of suitable source information. Nevertheless, it was agreed that a basis for starting simulation work was now available.
13. It was noted that FCC appendix D to the two - way ruling for MMDS band (FCC 98-231) contains a channel model for the MMDS band.
14. Phil Whitehead demonstrated the use of a simulation tool that deals with interference between systems containing multiple point to point links and point to multipoint systems. It was proposed that modifications to the tool in order to correspond with the newly agreed point to point system parameters be carried out before the next meeting. This was agreed.
15. David Chauncey presented the results of interference simulations for an MMDS system in Chicago. The simulation tool used to produce these results would be a valuable candidate for future TG2a work. David Chauncey indicated that it was likely that further results could be made available for consideration.
16. The ETSI TM4 liaison letter was discussed. Several of the work items listed in the letter were agreed to be of significant interest to IEEE members working on coexistence:
 - 40 GHz MWS standard (especially the block edge mask and EIRP considerations)
 - Antennas for the 30 – 40.5 GHz frequency range
 - AFA (a technique for mitigating interference in FBWA systems that is particularly applicable to TDD operation)
 - Mixed mode modulation (emission mask applying when a system can operate with more than one type of modulation)Further details of these items should be sought from ETSI TM4
17. The discussion on parameters for point to point links was re-opened in order to complete the second table. This relates to the case where a point to point link, licensed and coordinated by the regulatory body concerned, operates in the same frequency band as FBWA systems. The parameters for the table were unanimously agreed. An output document is available
18. Bob Whiting presented an update of the antenna RPE paper, now including the comparison with ETSI specifications. A set of slightly modified “composite” RPEs was presented, on the basis that it is likely that manufacturers will wish to meet ETSI standards, and published information may be out of date. The differences are small and relate to cross - polar performance. It was unanimously agreed to adopt the “composite” RPEs for nominal 1 foot diameter antennas for use in all the initial

simulations of point to point systems at c. 25 GHz and c. 38 GHz. An output document is available.

19. It was noted by Jack Garrison that NSMA has a working group WG23 studying coexistence. Previous attempts to make contact with this group to consider possible cooperation were not successful. Bob Whiting agreed to try again to make contact with WG23.

Meeting adjourned 15.30

Thursday 12th July 2001

Meeting called to order at 10.30

20. Preparation for next meeting: The following actions are planned in preparation for the next meeting:

- The 3 main output documents from session#24 will be used as the basis for starting simulation work
- Phil Whitehead will modify the existing simulation tool to deal with the multiple point to point link scenario, before the next meeting
- Bob Whiting will research antenna parameters for the 10.5 GHz band
- Jack Garrison will prepare link budgets for 3.5 and 10.5 GHz systems, including simplified channel models. In addition, JG will review constraints on frequency use and the number of carriers to be used per site. On completion of this work and agreement of the results, the actual simulations can be started
- A call for contributions will be made on simulation tools and results, especially for MMDS (for which JG does not have enough data to carry out a useful analysis).

21. A review was made of the closing report. After a number of small modifications, the report was accepted.

22. A review was made of the draft minutes. The minutes were corrected and clarified and then provisionally accepted (to be posted as draft minutes, for approval at the next meeting).

23. AOB – no issues raised

Meeting adjourned at 12.05

Main Output Documents

- Parameters for point to point systems
- Parameters for 2-11 GHz systems
- Antenna RPEs for 25 and 38 GHz
- Draft minutes of meeting

Revised agenda for session #14

1. Report on status of coexistence recommended practice
2. Follow up actions from last meeting
3. Review of draft minutes of TG2a from session #13
4. Introduction – status of study group
5. Call for volunteers (editor, secretary)
6. PAR requirements – consideration of any new input requests
7. Consideration of input documents
8. Sub – 11 GHz parameters and system models for simulation purposes (joint with TG3 members) [input contribution available]
9. Point to point system parameters and system models for simulation purposes
10. Review of antenna requirements
11. Review of draft timeline
12. Joint meeting with TG3 (provisional)
13. Preparation for task group activities at future sessions
14. Review of closing report with TG3
15. Channel model discussion

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