IEEE P802.15
Wireless Personal Area Networks

Project	IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)	
Title	**Minutes of the conference call on the channel model**	
Date Submitted	[12 April 2006]	
Source	[Abbie Mathew] [NewLANS, Inc.] [238 Littleton Road, Westford, MA 1886, U.S.A.]	Voice: [+1-617-283-1363] E-mail: [amathew@newlans.com]
Re:	[Minutes of the conference call – TG3c Channel Model Subgroup]	
Abstract	[]	
Purpose	[]	
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Date

The 41st conference call was held at times listed below.

Los Angeles	April 10	Monday	9:00 PM
Boston	April 11	Tuesday	Midnight
Moscow	April 11	Tuesday	8:00 AM
Seoul, Tokyo	April 11	Tuesday	1:00 PM
Canberra	April 11	Tuesday	2:00 PM

Participants

1	Akira Akeyama
2	Chang-Soo Choi
3	Alexei Davydov
4	Nobuhiko Kuribayashi
5	Zhiguo Lai
6	Alexander Maltsev
7	Abbie Mathew
8	Ali Sadri

Issues Discussed & Action Items

Alexander and Alexei reviewed document [15-06-0201-00-003c-imst-data-processing-methodology]. Listed below are the salient points of their presentation.

i. They proposed that the Fourier method is the best candidate to estimate time, angle and power from the IMST data.
ii. There was some discussion on the color scheme used in Figure1, Figure 2 and Figure 3. Suggestion was made to put a color legend in each Figure. Figure 1 is based on directional receiver antennas, while Figure 2 and 3 is based on biconical receiver antennas. The document will be revised to reflect this.
iii. Decision has to be made on the threshold level setting for the AOA/TOA of the beams. Suggestion was made to set a 30 dB threshold from the peak level.

Next Conference Call

The next conference call will be at following times.

Los Angeles	April 17, Monday	5:00 PM
Boston	April 17, Monday	8:00 PM
London	April 18, Tuesday	1:00 AM
Singapore	April 18, Tuesday	8:00 AM
Seoul, Tokyo	April 18, Tuesday	9:00 AM
Canberra	April 18, Tuesday	10:00 AM

The dial-in phone number and the access code are +(641) 985-8000 and 657719# respectively.

The agenda of the conference call will be as follows.

a) Discussion on the two-ray model – refer to Appendix-A
b) Update on the outdoor environment
c) Agreement on the threshold level setting
d) Discussion on the measurement table
e) UMass presentation – still tentative

APPENDIX - A

From: sawahiro@nict.go.jp [mailto:sawahiro@nict.go.jp]
Sent: Wednesday, April 12, 2006 6:59 AM
To: Sadri, Ali S
Cc: Abbie Mathew; Yozo Shoji; cschoi@nict.go.jp; Su-Khiong Yong
Subject: Re: comments for Channel Model & UMD

Dear Ali Sadri

I fully agree with your idea.
It would be great if the TG3c group has an optional analysis like that, because no dual directional channel model has been obtained.

Four kinds of Tx-antenna were used in our NICT measurement data. I believe that TG3c group can find a kind of relationship by comparing the measurement data with simulated ray tracing results.

Regards,
Sawada

From: Abbie Mathew [mailto:abbie.mathew@verizon.net]
Sent: Monday, April 10, 2006 7:51 AM
To: 'Yozo Shoji'
Cc: 'cschoi@nict.go.jp'; 'sawahiro@nict.go.jp'; 'Sadri, Ali S'; Su-Khiong Yong (ysk@ieee.org)
Subject: RE: comments for Channel Model & UMD

Shoji-san,
Your point is well taken. I have forward a copy to Su-Khiong for his comments.
-Abbie-

From: Sadri, Ali S [mailto:ali.s.sadri@intel.com]
Sent: Monday, April 10, 2006 6:32 AM
To: Yozo Shoji; Abbie Mathew
Cc: cschoi@nict.go.jp; sawahiro@nict.go.jp
Subject: RE: comments for Channel Model & UMD

In general I see Four distinct environments based on our applications:

- Desktop (WPAN): two-ray model (need to specify K and the delay)
- Cross-room (wireless HDMI): SV with LOS component (need K, delay and the SV parameters)
- House/enterprise (WLAN): "pure" SV (need the SV parameters)
- Outdoor/Backhaul: LOS One or Two ray model (need to specify K and the delay)

Regards:

Ali Sadri
Intel Corporation

From: Yozo Shoji [mailto:shoji@nict.go.jp]
Sent: Sunday, April 09, 2006 10:10 PM
To: Sadri, Ali S; Abbie Mathew
Cc: cschoi@nict.go.jp; sawahiro@nict.go.jp
Subject: comments for Channel Model & UMD

Dear Dr. Ali Sadri, and Dr. Abbie Mathew,

I'm sorry if I'm misunderstanding, but I'm worried about the following things after reading the draft of UMD and channel model final model (draft) at this stage. So, I'd appreciate it if you could tell me or give me some comments to my worry.

Regarding UMD, we are considering file or display sharing between PC devices as an important application for TG3c standard.

In addition, we believe that this kind of application is most likely to be used on a desk or a table at meeting or conference situations.

In some of those situations, we experimentally found that the channel is dominated by, well-known "two path channel model", and the path loss suffers from serious signal fading depending on antenna height and device position quite sensitively. These are inherent phenomenon in millimeter-wave system which uses directional antennas.

Therefore we proposed to introduce two-path model, or merge it into SV-model in Denver meeting. (please refer contribution 06/109r0) although the merging may require additional measured data because there does not exist enough DATA including AoA information.

Our worry is actually here, that is, it seems like the channel modeling final report (draft) is including just a SV-model, and it is about to be accepted as a generic channel model.

If SV-model can really express all the channel phenomenon including the case for such a desk top applications, we can of course accept it. However if our understanding is true, that means, SV-model has a difficulty to express channel characteristics when the mmW devices are used on a desk top with LoS conditions, we are really worried that the system might suffer from serious signal fading even if the devices are created to meet the TG3c standard in near future.

I'm looking forward to hearing your comments soon,

Sincerely yours,

Yozo Shoji,