IEEE P802.22
Wireless RANs

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| Minute of IEEE 802.22b Task group at Atlanta Face-to-Face Meeting  |
| Date: 2012-5-28 |
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Abstract

This document presents the minutes of IEEE 802.22b task group at Atlanta Face-to-Face Meeting from 14th May 2012 to 17th May 2012.

**IEEE 802.22b Task Group**

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**15th May (Tuesday), PM1**

**Minutes:**

1. The meeting was called to order by Chair Dr Pyo.

2. Attendance was marked.

3. Peter Flynn from Texas Instrument was warmly welcome and introduced himself as new comer.

4. IEEE patent policy was read out.

5. Agenda as contained in 22-12-0046-03-000b was reviewed and discussed. No objection was heard. It was agreed unanimously.

6. Opening report as contained in document number: 22-12-0053-00-000b was presented.

7. The following motions were carried out:

**Motion** to approve March 802.22b agenda as contained in 22-12-0046-03-000b

Move: Chang-woo Pyo

Second: Shigenobu Sasaki

No objection was heard. The motion was passed unanimously.

**Motion** to approve March 802.22b minutes as contained in 22-12-0051-00-000b

Move: Chang-woo Pyo

Second: Shigenobu Sasaki

No objection was heard. The motion was passed unanimously.

**Motion** to approve 802.22b conference call minutes for 27th March 2012, 10th April 2012 and 24th Arpil 2012 as contained in 22-12-0049-00-000b, 22-12-0050-00-000b and 22-12-0052-00-000b.

Move: Chang-woo Pyo

Second: Shigenobu Sasaki

No objection was heard. The motion was passed unanimously.

8. Two contributions for link budget analysis (22-12-0054-r0 and 22-12-0055-r0) will be presented in the remaining portion of this session.

9. As suggested by Dr. Sasaki, Contribution 22-12-0055-r0 will be presented first, followed by contribution 22-12-0054-r0.

10. Contribution on Preliminary Link Budget Analysis (22-12-0055-r0) was presented by Zhang Xin from NICT.

11. The following comments were received after the presentation.

a. It was questioned that why 11 dBi is set for H-CPE atenna gain. The answer was this value was chosen based on contribution 22-04-0002-18-0000-wran-reference-model.

b. It was suggested to modify figure on slide 12. Penetration loss is to be separated from implementation loss on the receiver side, and put together with path loss. As a result, table on slide 13 should be modified accordingly too.

c. Penetration loss takes typical values between 10 dB to 20 dB. It was suggested that it should take the minimum value so that the maximum range can be found.

d. Based on the value calculated, in the case of L-CPE to H-CPE, do you think this range is a bit small?

Ans: This is a good point. This value relates to number of hops designed in the system. We will modify this calculation based on the comments received above, and decide based on the final value.

e. Why is H-CPE regarded as fixed, isn’t it mobile in our use case B1?

Ans: It is regarded as fixed from the EIRP point of view, not from the mobility point of view.

12. Contribution on Link Budget Analysis (22-12-0054-r0) was presented by Bingxuan Zhao from Niigaata University.

13. The following comments were received after the presentation.

a. How is 158.27 Km obtained? Ans: This is a theorectical value based on free space model.

b. It was questioned that “Is the PSD is fixed or the total transmission power is fixed? Do you mean the PSD for each subcarrier is the same?”

Ans: The maximum PSD for per 100 KHz is fixed. According to the base standard of IEEE 802.22, 2048 subcarriers are used in the 6 MHz bandwidth, so, the 100 KHz frequency band can cover a lot of subcarriers. The PSD for each sub-carrier is not the same, however, the limit PSD of the subcarriers in the 100 KHz should be not greater than the upper bound the indicated in slide 3.

c. It was questioned that “When part of the TV band is used for data transmission, doesn’t the transmission PSD increase because the total power is fixed?”

Ans: We do not think so. As we just interpreted, the PSD for per 100 KHz should satisfy the FCC rule. It is not the case of narrowing down the bandwidth while keeping the total transmission power fixed. In that case, the PSD for per 100 KHz could be higher than the limitation according to that FCC 3rd MO&O.

d. It was questioned that “What is the difference between your link budget analysis and the previous presentation from NICT?”

Ans: There are a number of differences between us. First, we considered the link budget in the adjacent channel. According to the FCC rule, the portable devices can operate in either non-adjacent channels or adjacent channels of the operating channel of the incumbent devices. Secondly, the propagation channel models are different. Third, previous contribution considers 6 MHz TV band, while ours consider part of the TV bands.

14. The meeting was recessed at 15:30.

**IEEE802.22b Task Group**

**15th May (Tuesday), PM2**

**Minutes:**

1. This session was occupied by 802.22 working group working on “802.22 Inputs to 802.18 on ITU-R Question 236/1”.

**IEEE802.22b Task Group**

**17th May (Thursday), AM1**

**Minutes:**

1. The meeting was called to order by Chair Dr Pyo.

2. Attendance was marked.

3. Agenda as contained in 22-12-0046-03-000b was reviewed and discussed. The task for the day was to present and discuss the Selection criterion document (22-12-0025-02-000b) for 802.22b.

4. Selection document 2-000b was presented by Dr. Pyo.

Followings were the discussions after the presentation.

5. There was a question raised on the performance criteria: packet loss – MAC, Frame loss—MAC. It was suggested to consider Reference BER for PHY layer(TBD)

6. It was asked about the difference between .22 and other group.

Ans: IEEE 802.22b does not only consider use case on metering, but also consider use case on monitoring. Hence, higher data throughput, and range are required.

7. It was suggested to have medical monitoring to be included under broadband service extension due to high resolution video transmission.

Ans: Our use case doesn’t support very high resolution video picture such as surgical image, the transmission just include daily picture.

8. It was suggested to remove Critical infrastructure in TV Whitespace, because this requires the presence of permanent frequency band transmission.

Ans: This related to the availability of TVWS. Some studies show that in TVWS, there are always some channels available.

Ask: As I know, in some cities, such as New York, there are no channels available. We can’t guarantee TVWS available in any place.

Ans: We will consider this suggestion.

9. It was suggested to include downlink video transmission (on demand video such as marine broadband service).

Ans: Simplified study cases are good. Downlink video transmission may not be applicable to mesh topology.

10. Ask: How should we use this table in section 3 for the evaluation of proposal?

Ans: It only serves as a summary for the following content.

Ask: Should each proposal meet all this requirements?

Ans: This is a good point. We need to discuss. Smart metering is mandatory, broadband service is optional, more like ad hoc communication. This is only performance study. The network topology is point to multipoint, including relay. The other is multi-hop

11. A question was raised on the number of L-CPE that can be supported in a network. 2500 is a bit low.

An: The exact value is to be decided.

12. To show the efficiency of our proposal, we have to assume different packet length to simulate, not the maximum packet length.

Ans: One metering packet length will be added.

13. The packet length: is it single packet length or aggregated packet length? In figure 5, one packet length is 1500 byte.

Ans: You are right, I will clarify this.

14. What is the ratio between downlink and uplink?

Ans: In this model, we only assume uplink, downlink has no data packet, only management signal.

15. The discussion of selection criteria document will be continued in teleconference.

 Future teleconferences are scheduled as followed:

5th June 2012, Tuesday, 9 Pm EDT 10 AM JST

26th June 2012, Tuesday, 9 Pm EDT 10AM JST

16. IEEE 802.22b task group was adjourned.