IEEE P802.22
Wireless RANs

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| Minute of IEEE 802.22b Enhancements for Broadband Services and Monitoring Applications Task Group Teleconference-2 |
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Abstract

This document presents the minute of IEEE 802.22b Enhancements for Broadband Services and Monitoring Applications Task Group teleconference-2 held on 28th Feb, 2012 9:00 pm EDT.

**IEEE 802.22b Task Group Teleconference-2 Minutes**

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**28th Feb, 0915-1103 PM EDT**

**Attendees:**

Antony Franklin (ETRI), Shigenobu Sasaki (Niigata University), Chang Woo Pyo (NICT), Zhang Xin (NICT), , Apurva Mody (BAE System), Mingtuo Zhou (NICT), Nancy Bravin (Bravin Consulting).

**Minutes:**

1. It was called to order by Chang-woo Pyo at 9:15pm EDT.

2. Agenda document number: 22-12-0017-00-000b was presented by the Chair. No objection was heard, it was approved unanimously.

3. IEEE patent policy was read out by the Chair.

4. Document number 22-12-0018-00-000b was first presented by the Chair.

5. There was a doubt if L-CPE requires power control, because that increases the complexity. **Ans:** Power control is proposed because battery power may be used and there is a need to keep the battery longer. It was suggested that instead of power control, power efficiency can be put down.

6. There was a question raised regarding the distance. Why 20 Km is chosen for H-CPE, is it for multi-hopping, because our base standard can support more than 20 Km.

7. A question was raised regarding 10 hops as stated in the presentation document, 10 hops between H-CPE or between H-CPE and L-CPE will be a relatively complex system. **Ans:** Yes, agree. Number of hops depends on the use cases. For example, in use case A1/A2/A3, 3 or 4 hops are sufficient. But in use case B1/B2, a larger number of hops may be required.

**Ask**: In use case B1, larger coverage area is required, such as 500Km. For example, in the case of Sunami, the water wipes out everything, all the infrastructure are destroyed. We may need to have a coverage area of 100Km\*Km. In the base standard, in single hop, because the distance between CPE is large, so this problem can be settled. But in our new standard, because the range is 1Km, hence it is understandable that more hops are required.

**Ask:** Explanation on Additional slide in the presentation material (Asynchronous H-CPE connections and Synchronous H-CPE connections).

**Ans:** L-CPE is less than 1Km, H-CPE ranges from 10-20 Km. all the network models are based on these two connections.

**Ask**: Do you really want to consider these two network topologys in 802.22b?

**Ans:** Yes. In the case of vocano, several hundreds of L-CPE will cover the hot spot, and one H-CPE to gather all the information and transport to base station.

**Ask**: all the metering technology can be done using other technology, why do we need to do all in 802.22b? For L-CPE, because only single hop and gathering information is needed, why can’t we use existing technology? If the main issue is to have multi-hopping in H-CPE, that would be a big improvement in 802.22b.

Before the chair answered this question, another participant shared her thought.

**Ask:** Sensing is critical, because if there is any breakdown, you can still find the database with sensing function. Cost will increase, but this is useful in critical infrasture monitoring.

The above opinion is supported. In order for H-CPE to reach 10 Km, we need to have directional antenna. MIMO has low directional gain.

**Ask:** Directional Antenna is placed in CPE to have a range of 50 Km. So in order to reduce the range to 10-20 Km; can we use semi directional antenna?

**Ans**: You have to go back to the master OFDMA spreadsheet Gerald have for 802.22. We can discuss that during the plenary, 60 dBi atenna gain is required in order to close the link. The range is around 10Km. The range that is greater than 10Km is an eexceptional case where the antenna is on top of a mountain which creates almost an LOS scenario.

8. There was a brief discussion on link budget calculation based on the master OFDMA spreadsheet created by Gerald.

9. Functional requirement document 1-000b was presented by the Chair. Two comments were received:

One is regarding [Requirement 05], it was suggested to change to”This amendment should provide one class of CPE supporting multi-hop connections”. However, some members still favour the old version.

Another is regarding [Requirement 06], it was suggested to remove and combine with [Requirement 05]. Due to time constrain, more discussion will be carried out in the face-to-face meeting.

10. At 1103 EDT, teleconference was adjourned.