Project	**P1900.7: Radio Interface for White Space Dynamic Spectrum Access Radio Systems Supporting Fixed and Mobile Operation**
	http://www.dyspan-sc.org/
Title	**Minutes of teleconference Feb 20, 2013**
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Date Submitted	**Feb 27, 2013**
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Re:	
Abstract	
Purpose	
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IEEE 1900.7 WS Radio WG
Feb 20, 2013
Teleconference meeting
Chair: Stanislav Filin
Vice Chair: Oliver Holland
Secretary: Muhammad Zeeshan Shakir

Wed Feb 20, 2013, 8:00 AM

1. Call to Order

The meeting was called to order by the Chair Stanislav Filin on Wed Feb. 20, 2013 at 08:10 AM UTC.

- The WG secretary performed roll call for attendance:

Attendance: Stanislav Filin, Alexander Galvis Quintero, Oliver Holland, Adrian Kiks, Ignatius Lee, Dongming Li, Sajeev Manikoth, Dominique Noguet, Vankatesha Prasad, Vinh Dien Hoang, Muhammad Zeeshan Shakir, Huaizhou Shi, Dariusz Wiecek, Jiantao Xue, Xin Zhang, Nicolas Cassiau, Baher Mawlawi, Jean-Baptiste Doré, Guoru Ding.

Summary:

- 19 members are present.
- 9 voting members/10 attendance, the quorum is achieved.

2. Approval of Agenda

The chair present agenda for the meeting and highlight that there are three contributions to be presented during the technical contribution session.

__Motion__

To approve Feb 20 meeting agenda 7-13-0007-00

Moved by VP
Seconded by Oliver

The Chair asked for any discussions. None. The question was called.
The Chair made a call for any objections. No objections.

The motion was approved with unanimous consensus.

3. Call for Essential Patent Claims

The Chair showed patent policy to the group.

The Chair made a call for essential patent claims. No new essential patent claims were indicated.

4. Approval of minutes of Jan 8 meeting minutes 7-13-0006-00

The Secretary presented minutes of Jan 8 meeting briefly. The important decision of Jan 8 meeting was election of WG technical editor. Hoang has been elected as WG technical editor for the standard.

Motion

To approve Jan meeting minutes 7-13-0006-00

Moved by Hoang
Seconded by Lee

The Chair asked for any discussions. None. The question was called.
The Chair made a call for any objections. No objections.

The motion was approved with unanimous consensus.

5. Status report

The WG Chair presented the status report **7-13-0012-00**

The Chair asked for any discussions. None. The question was called.
The Chair made a call for any objections. No objections.

6. Technical Contributions

6.1 Internet of Things Use Case

- The chair asked Dongming Li to present the first contribution. The contribution is available as 7-13-009-00. Dongming Li presented the contribution.
- Hoang mentioned his reservation on inclusion of the new use cases at this stage. He further clarifies that he does not have objection to include the new use case. However, at this stage we appreciate to have draft standard.
- Zeeshan said further that that we already have some of the main classification where some of the internet of things use cases can be accommodated. Such as Hydraulic monitoring can be considered under Marine networks and crane security monitoring can be considered under transportation networks.

6.2 <u>PHY layer based on FBMC</u>

- The chair disconnected during the discussion and Oliver acted as a chair in absence of Stanislav.
- Zeeshan presented the agenda for next contribution. Oliver asked Dominique to present the next contribution 13-010-01. Dominique presented the contribution to the WG.
- During the presentation Stanislav rejoined the meeting and acted as a chair.
- The chair asked the WG for any question and concerns on the contribution. Stanislav asked Dominique in OFDM we have multiple sub carriers does FBMC support downlink? Dominique said yes it does support however, adjacent carriers may overlaps.
- Xin wants to know the cost of implementation of this physical layer. Dominique said if she want to know in terms of operations? Xin said in terms of hardware implementation. Dominique said further that we do not know the exact answer to this question. In fact it depends on the size of the market.
- Adrain further elaborated that FBMC is gaining support since last few months in comparison with OFDM. Regarding the complexity there are recent papers which provide filter bank costing and somehow similar kind of analogy can be developed for OFDM. This is similar in terms of transmitter side. Estimator is the main block and this is the main cost we need to pay. Complexity with the receiver side may need to be investigated. FBMC is already in tetra and some other standards.
- Stanislav said why complexity involved with estimation? Adrain replied that this is the one of disadvantage of the cyclic prefix and we have to use it for interference. Xin said further what kind of communication rate modulation is target? May be long or short range? Dominique said range determination may be a question of link budgeting. Dominique said if Xin is interesting in link budget calculation, then they can look at the earlier contribution where they have provided such calculation. However, on BER vs SNR curve receiver sensitivity can be calculated.
- Stanislav said performance is similar as we have in ODFM. Dominique said we have already stressed on FBMC and if we have the similar performance and we have gain in ACLR then this is good for white space communications.
- Adrian said lot of work on FBMC also on MIMO and beam forming aspects is also comparable these days. May be in the future we have presentation on pros and cons of FBMC and OFDM.
- Oliver said this is very interesting work and should be incorporated along the draft standard. He suggests it is good to study the complexity and cost of the devices.
- Dominique said in terms of complexity we only provided in terms of OFDM transmitter and FBMC transmitter. Now for the receiver side may be it is difficult but the complexity of OFDM receiver side can be evaluated form the document provided earlier and maybe we can say for FBMC receiver side it is expected to be similar somehow. Dominique further said this also depending on size as well.
- Dariusz inquired about the measurement of ACRL and comparison for both OFDM and FBMC. Dominique said this is available in document number 12 which provide such comparison. It can be observed that the 55 dB is the protection margin used by the FCC. In EU and UK the same is adopted. Dominique said he is not familiar with this document and many of the question related can be understood from there. Hoang clarifies

that the document number is 10 not 12. In this presentation document number is 38. Dominique said yes it is to be corrected in the other version.

- Adrian said he supported Oliver to provide the comparison on receiver side and it would be good to have all the pros and cons. However, we can say current approx. cost of the receiver side is smaller and then it would be good for all of us to know.
- Dominique said yes but complexity would be in the same range and may not be able to evaluate how much more and less in terms of percentage.
- Oliver said this is interesting to take this forward toward contribution and this seems necessary to map in terms of complexity and cost.

6.3. White Space Dynamic Spectrum Access Radio Systems

- Stanislav disconnected and Zeeshan presented the next agenda which is contribution 13-011-00. The acting chair asked presenter to present the contribution. The contribution was presented to WG by Baher.
- Oliver said this is interesting idea and it would great to see further development in this may be during London meeting. There was discussion on Hybrid use of the access techniques between Baher, Zeeshan and Oliver. The discussion was on the use of CSMA, on the channel efficiency. It was also discussed that it is useful to combine with the other potential channel sharing methods toward the technical development of the draft standard.
- Dominique said they will target to present some technical contribution on this may be by the time we have London meeting.

6.4. Summary of Contributions

Since Chair of the WG was disconnected. Secretary and vice chair summarize the discussions as follows:

1. Contribution 1: We have to find out possibility of the including internet of things under current consolidated use case. May be by the next London meeting we will discuss this by WG voting and with the concern of Chair and Editor of the WG.
2. Contribution 2: We will be expecting a presentation based on study to learn the complexity and cost estimations for receiver side of FBMC and may be a detailed comparison based on FBMC and OFDM.
3. Contribution 3: We will be looking forward to have technical contribution may be in London meeting.

7. Next meeting
- March 13, 2013, 8am-10am UTC
- April 23- 26, 2013, co-located with IEEE DySPAN plenary session

8. AOB

The chair made a call for any other business. None.

9. Adjourn

Motion

To adjourn meeting

Moved by Oliver

Seconded by Ignatius

Motion is approved by unanimous consent.

The meeting adjourned 10:15 UTC.