

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 June 25-28, 2012 Meeting Grenoble France
DCN	1900. 7-12-0029-00
Date Submitted	July, 07 2012
Source(s)	Minutes taken by Vinh-Dien Hoang, hvdien@nict.com.sg Minutes compiled by Muhammad Zeeshan Shakir, muhammad.shakir@kaust.edu.sa
Re:	
Abstract	
Purpose	
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IEEE 1900.7 WS Radio WG
June 25-28, 2012
Grenoble, France
Chair: Stanislav Filin
Vice Chair: Oliver Holland
Secretary: Muhammad Zeeshan Shakir

Session AM 1: Monday June 25, 2012 8:30 AM

1. Call to Order

The meeting was called to order by the Chair Stanislav Filin on Monday June 25 at 8:30 AM France local time. The Chair appoints Vinh-Dien Hoang as IEEE 1900.7 WG Acting Secretary for the duration of the June 25-28 meeting with the following responsibility:

- Help IEEE 1900.7 WG Secretary to record minutes of the June 25-28 meeting for the sessions that the Secretary cannot attend

The Chair asked Secretary Muhammad Zeeshan Shakir to perform roll call for attendance.

Attendance

Name		Employer	Affiliation	Attendance							
Last	First			25 Jun	26 Jun		27 Jun			28 Jun	
				AM1	AM2	PM1	AM1	AM2	PM1	AM1	AM2
Aljuaid	Muhammad	Saudi Aramco	Saudi Aramco	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Filin	Stanislav	NICT	NICT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hoang	Vinh-Dien	NICT	NICT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Holland	Oliver	King's College London	King's College London	Yes	Yes	Yes	No	No	No	No	No
Lee	Ignatius	ISS international	Self	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Noguét	Dominique	CEA	CEA LETI	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prasad	Vankatesha	TU Delft	TU Delft	Yes	Yes	Yes	Yes	Yes	No	No	No
Shakir	Muhammad	Texas A&M/KAUST	Texas A&M/KAUST	Yes	No	No	No	No	No	No	No
Tran	HaNguyen	NICT	NICT	Yes	No	No	No	No	No	No	No
Xue	Jiantao	BUPT	BUPT	Yes	No	Yes	Yes	No	Yes	No	Yes
Zhang	Xin	NICT	NICT	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes

The secretary performed roll call for attendance:

- 11 participants present
- 09 voting members out of total 13 voting members (quorum is achieved)

2. Approval of Agenda

Motion

To approve June 25-28 meeting agenda **7-12-0034-01**

Moved by Muhammad Zeeshan Shakir

Seconded by Dominique Noguet

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 May 21 meeting

- The Secretary presented minutes of May 21, 2012 meeting briefly.
- The updated version of contributed **7-12-0031-00** presented by Shi needed to be replaced since the current version of document is corrupted.
- VP agreed assured to upload the revision.

Motion

To approve June 25-28 meeting minutes **7-12-0035-00**

Moved by Vinh-Dien Hoang

Seconded by Oliver Holland

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 Chair presented the opening report **7-12-0036-00**

The Chair asked for any discussions. None. The question was called.

The Chair made a call for any objections. No objections.

The session AM2 moved to following day. The agenda has been updated **7-12-0034-02**.

The session AM1 ended at 9:45 AM.

Session AM 2: Tuesday June 26, 2012 10:15 AM

1. Call to order

Attendance: Aljuaid Muhammad, Filin Stanislav, Hoang Vinh-Dien, Holland Oliver, Lee Ignatius, Noguét Dominique, Prasad Vankatesha, Zhang Xin, Shi HuaiZhou

2. Agenda for AM2

- User case comments resolutions: 1 comment from Muhammad Aljuaid
- General system requirement comments resolution: 6 comments from Adrian

3. Comment resolutions for merged user case contribution

- Muhammad Aljuaid presents his comment: "The value of the BS Aggregate Data Rate will be made equal to the value of the Terminal Peak Data Rate. If this is a right understanding, then I've the following comment: Some terminals could be subject to hardware limitations more than the BS. For example, MIMO of 8 antennas could be implemented for a base station while some terminals especially the mobile ones might have one or two antennas only. In this case, the BS may perform a MU-MIMO and have a higher aggregate rate compared to the peak data rate of a single terminal"
- Filin asked for suggestion from Muhammad to change the uses cases, Muhammad wanted to change High speed vehicle backbone network user cases. Hoang suggested BS data rate to be 20Mbps. Muhammad wanted it to be 3 times higher than terminal data rate, at 30Mbps. Hoang agreed.
- Filin asked for other user cases. Muhammad wanted to change home/office and Maritime grid networks user cased. Filin, Hoang and Muhammad agreed value 10Mbps for terminal and 30Mbps for BS in home/office user case and 30mpbs for BS in maritime grid network user case. Comment resolved.
- Results will be sent to Hoang for consolidation in the merged user cases and uploaded to the mentor website.

4. Comment resolutions for general system requirement contribution

Adrian - the commenter is not presented. Filin presented all the comments.

- **4.1. Comment number #1:** Andrian proposed to create a table of a couple of modes of operation - these modes will define the class of the WSD, i.e.
 - Mode/Class 1 - the WSD shall support transmission scheme with a spectral efficiency of at least 1/bit/s/Hz
 - Mode/Class 2 - the WSD shall support transmission scheme with a spectral efficiency of at least 2/bit/s/Hz
 - Mode/Class 3 - the WSD shall support transmission scheme with a spectral efficiency of at least 4/bit/s/Hz
 - Filin and Oliver pointed out that the specific classes will be defined during the definition of the radio interface. At this point it is preliminary to define such classes. Hoang agreed. This comment was rejected for the reason above.
- **4.2. Comment number #2:** Andrian mentioned that in Section 6.3, it is better to say that on the boundaries WSD should support best-effort traffic, while in the 100m range real-time application could be used (as stated in the first note).
 - Oliver suggested creating a table of a couple of modes of operation - these modes will define the class of the WSD. To which Dominique and Hoang are afraid it will be used as the guidelines for people later.
 - The WG agreed to modify requirement in 6.3 to be as following: "The P1900.7 shall be sufficiently flexible to support a variety of coverage scenarios as described in the merged Use Case document." Comment resolved.
- **4.3. Comment number #3:** Andrian would like to support the ability of White-space transceivers (at least base station) to use cooperative transmission and to use multi-antenna techniques.
 - The WG thinks that at this point it is too preliminary to impose requirements to support specific transmission techniques. However, this does not restrict from contributing in future. Comment rejected with the reason above.
- **4.4. Comment number #4:** Andrian questioned could the WS devices communicate directly between each other (without base station) - something like Device-to-Device communication?
- The WG added the following statement to the requirement in 4.6: "The P1900.7 architecture should support terminal-to-terminal as an amendment to the above network topologies."

The session AM2 ended at 12:10 PM.

Session PM1: Tueaday June 26, 2012 13:30 PM

1. Call to order:

Attendance: Aljuaid Muhammad, Filin Stanislav, Hoang Vinh-Dien, Holland Oliver, Lee Ignatius, Noguét Dominique, Prasad Vankatesha, Xue Jiantao, Zhang Xin, Shi HuaiZhou

2. Agenda for PM1

- Continue with the remaining comments on general requirement contribution
- Selection of frequency bands

3. Continued with comment resolutions for general system requirement contribution

- **3.1. Comment number #5:** Andrian questioned the contribution to intentionally limit the coexistence requirements to other cognitive-radio bases systems and suggest the contribution mentions about coexistence with licensed systems as well.
 - The comment was rejected for the reason that this had been mentioned in session 5.2
- **3.2. Comment number #6:** Andrian suggested the contribution mention that the WSD can work in overlay/underlay/interweave modes, shall we select only one operating mode, or could be the potential amendment.
 - This comment is rejected because the mode of operation is defined by radio regulations and thus is not mentioned in the general requirements.

4. Selection of frequency bands

- Filin gave reason for this selection because current scope is too big by saying WS generally. The WG need to specify more details, i.e. which frequency range is considered?
- Hoang suggested to limited to TV WS only, to which Filin was afraid of using the word "limited"
- Filin prepared a motion to decide on frequency band to TV WS for MAC and PHY. Decision on this motion is delayed to the next session for WG to have more time to consider.
- Filin proposed changed to the Agenda for the above motion in AM1 27/6/2012. Hoang also proposed changed to the Agenda for contribution **7-12-0040-00** and **7-12-0041-00**.

Motion

To approve the new agenda **7-12-0034-03**

Moved by Oliver Holland

Seconded by Vinh-Dien Hoang

Motion approved by acclamation.

Filin reminded that people need to register in order to attend the WG.

The session PM 1 ended at 14:10 PM.

Session AM1: Wednesday June 27, 2012 08:30 AM**1. Call to order**

Attendance: Aljuaid Muhammad, Filin Stanislav, Hoang Vinh-Dien, Lee Ignatius, Noguét Dominique, Prasad Vankatesha, Xue Jiantao, Shi HuaiZhou

2. Agenda for AM1

- Selection of frequency band
- Selection of topology

3. Selection of frequency band

Dominique asked what definition of TV WS is, what exactly is TV WS? Muhammad referred the group to WS definition in 1900.1 documents.

Motion

"The IEEE 1900.7 WG selects TV white space frequency bands as a target frequency bands for the development of radio interface including medium access control sub layer(s) and physical layer(s) of white space dynamic spectrum access radio systems supporting fixed and mobile operation. The term "white space" is understood as defined in IEEE Standard 1900.4a-2011."

Moved by Dominique Noguét
Seconded by Vinh-Dien Hoang

Results: No: 0; Abstain: 2; Yes: 3

Motion is passed.

3. Selection of topology

- VP presented the contribution **7-12-0042-01**, proposed to add following features:
 - Point to point communication between terminal as mandatory
 - Multihop point to point communication between terminals as optional
 - Hierarchical topology as optional
 - Fairness in channel assignment as optional

Motion

To update the current agenda and pass the new agenda contribution **7-12-0034-04**
(Moved contribution **7-12-0040-01** to AM2 session)

Moved by Ignatius Lee
Seconded by Vankatesha Prasad

Motion approved by acclamation.

The session AM 1 ended at 10:10 AM.

Session AM2: Wednesday June 27, 2012 10:15 AM

1. Call to order

Attendance: Aljuaid Muhammad, Filin Stanislav, Hoang Vinh-Dien, Lee Ignatius, Noguét Dominique, Prasad Vankatesha, Zhang Xin

2. Agenda for AM2

- Contribution **7-12-0040-01**
- Selection of topology

3. Selection of Topology

- Vinh-Dien Hoang presented contribution **7-12-0040-01**

Motion

- P1900.7 shall support point-to-multipoint topology
- P1900.7 may support relay stations
- P1900.7 may support terminal-to-terminal communication

Moved by: Vankatesha Prasad
Seconded by: Vinh-Dien Hoang

Results: No: 0; Abstain: 1; Yes: 6

Motion is passed.

- VP proposed motion for 1900.7 may support fairness in channel allocation which seconded by none.
- VP proposed motion for 1900.7 shall support multichannel allocation or channel reusing which did not second by anyone.

The session AM 2 ended at 11:55 AM.

Session PM1: Wednesday June 27, 2012 13:30 PM

1. Call to order:

Attendance: Aljuaid Muhammad, Filin Stanislav, Hoang Vinh-Dien, Lee Ignatius, Noguét Dominique, Xue Jiantao, Zhang Xin

2. Agenda for PM1

- Contribution **7-12-0037-01**, **7-12-0038-00** and **7-12-0039-00**

3. Presentation of contribution

- Dominique presented contribution **7-12-0037-01**
 - Zhang Xin asked " what other filter have u considered before moving on using FBMC, and what are the complexity for other filter?" to which Dominique referred her to contribution **7-12-0024-00**
 - Zhang Xin asked "what is the complexity for FBMC?" to which Dominique reply the last one is the difference between single filter and filter bank in implementation.
- Dominique presented contribution **7-12-0038-01**
 - Filin want to know in slide 13 the reason DVB-T time domain Spectral Efficiency Gain is less than frequency domain Spectral Efficiency Gain but for 802.11a/g time domain Spectral Efficiency Gain is more than the frequency domain Spectral Efficiency Gain?
 - Dominique: Spectrum Allocation is more relaxed in 11a/g compared to DVB-T
 - Filin: In slide 7, why transition is needed
 - Dominique: For synchronization purposes.

Motion

To update the current agenda and pass the new agenda contribution **7-12-0034-05**
(Moved contribution **7-12-0039-00** to AM2 the following day)

Moved by Dominique Noguét
Seconded by Vinh-Dien Hoang

Motion approved by acclamation

The session PM1 ended at 15:25.

Session AM1: Thursday June 28, 2012 08:30 AM

1. Call to order

Attendance: Aljuaid Muhammad, Filin Stanislav, Hoang Vinh-Dien, Lee Ignatius, Noguét Dominique, Zhang Xin

2. Agenda for AM1

- Contribution **7-12-0039-00, 7-12-0041-00**
- Draft development process

3. Presentation of contributions

- Dominique presented contribution **7-12-0039-00**.
 - Zhang Xin asked: "Does sub-carrier system design is compatible with LTE"
 - Dominique: No, not compatible.
 - Zhang Xin asked: "Is channel bandwidth 8 Mhz?"
 - Dominique: Yes
 - Zhang Xin: "What is the sampling frequency for this bandwidth"
 - Dominique: 40 Mhz and this is just an example for the sake of comparison, not a suggestion for 1900.7 to follow.
- Hoang presented contribution **7-12-0041-00**
- Dominique commented on network reference model to properly illustrate the Point-Multi Point topology
- Hoang refereed to 802.16 for comparison.
- Filin suggests revising the contribution and presented next time, Hoang agree to look at it.
- Dominique commented on slide 4, 1900.7 entities should be highlighted. Hoang agreed.

4. Draft development process

Filin want to know any suggestion from the group on draft development process
 Hoang want to know any timetable for the draft which Filin said not available as the contribution yet.

The session AM1 ended at 9:35 AM.

Session AM2: Thursday June 28, 2012 10:15 AM

1. Call to order

Attendance: Aljuaid Muhammad, Filin Stanislav, Hoang Vinh-Dien, Lee Ignatius, Noguét Dominique, Xue JianTam, Zhang Xin

2. Agenda for AM2

- Closing report
- Future meetings

- AOB

3. Closing report

Filin presented closing report as contribution **7-12-0043-01**

4. Future meetings

Motion

To approve the following schedule for the next meetings of the IEEE 1900.7 WG

- July 25, 2012, teleconference, 10AM – 12PM, UTC
- August 22, 2012, teleconference, 10AM – 12PM, UTC
- September 26, 2012, teleconference, 10AM – 12PM, UTC

Moved by Dominique Noguét

Seconded by Ignatius Lee

Motion approved by unanimous consent.

Motion

To approve to have F2F meeting of the IEEE 1900.7 WG co-located with IEEE 1900.6 WG meeting within the week of October 8-12 in Beijing, China

Moved: Jiantao Xue

Seconded: Vinh-Dien Hoang

Motion is approved by unanimous consent

5. AOB

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

Motion

To adjourn meeting

Moved by Dominique Noguét

Seconded by Vinh-Dien Hoang

Motion is approved by unanimous consent

The session AM 2 ended at 11:25 AM.