IEEE P802.19
Wireless Coexistence

|  |
| --- |
| Nov 2010 TG1 Minutes |
|  Date: 8th to 12th Nov. 2010  |
| Author(s): |
| Name | Company | Address | Phone | email |
| Junyi Wang | NICT | 3-4 Hikarino-oka, Yokosuka, 239-0847, Japan | +81 46 847 5088 | Junyi Wang@nict.go.jp |

The document records the IEEE 802.19 TG1 minutes of 802 Wireless Plenary Session in Dallas, Texas, USA during Nov. 8 -12, 2010

IEEE 802.19 TG1 Chair: Tuncer Baykas
IEEE 802.19 TG1 Vice Chair: Mika Kasslin
IEEE 802.19 TG1 Secretary: Junyi Wang

**Notice:** This document has been prepared to assist IEEE 802.19. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.

# MEETING MINUTES

First session of the meeting was called to order on Monday 8 Nov. 2010 at 11.35 AM.

### APPROVE AGENDA

The Chairman opened the meeting and presented the agenda in Document 802.19-10-0159r0.

The chair scheduled presentation slots for the following proposals

1. Monday PM1: Proposal\_for\_802.19.1 coexistence draft, Part I, 10/111r3, from I. Reede
2. Monday PM2: Proposal on coexistence system services and protocols, 10/156r0, from M. Kasslin
3. Tuesday AM2: Procedures and Protocols, 10/148r1, From J. Wang
4. Tuesday PM2: Coexistence mechanism and its algorithm, 10/145r0, form R. Sawaii
5. Wednesday AM2: TVWS coexistence procedures and protocols, 10/147r0 from J. Lee
6. Wednesday PM1: System description and reference model proposal , 10/149r1, from H. Kang
7. Wednesday PM2: Coexistence System Proposal, 10/146r0, from J. Kwak

The chair scheduled presentation slots for the following contributions

1. Monday PM2: Device Security Standards Overview, 10/152r0 , from A. Reznik
2. Tuesday PM1: Wideband Digital RF, from A. Reznik
3. Wednesday PM2: Examples of coexistence system usage from M. Kasslin.
4. Thursday PM1: RDF Semantics, from J. Kwak

The chair suggested Thursday PM1 for figuring out agreement on the proposals.

There were some discussions on whether the group need to discuss regulations. The group agreed to have some discussions

**Motion**

To approved agenda with above changes (to be reflected in Doc 159r1).

Moved by I. Reede

Seconded by M. Kasslin

Motion passed. 0:05 PM

### APPROVAL OF SEPTEMBER MEETING AND TELECONFERNECE MINUTES

**Motion**

To approve the September meeting minutes in doc IEEE 802.19-10/0139r1 , and teleconference minutes in doc 10/150r0, 10/154r0 and 10/158r0

Motion passed by unanimous consensus. 0:10 PM

### IEEE IPR STATEMENT

The TG Chair informed the TAG about the IEEE patent policy and showed the set of 5 slides identified as “Highlights of the *IEEE-SA Standards Board Bylaws* on Patents in Standards” available at the IEEE PATCOM web site (<http://standards.ieee.org/board/pat/pat-slideset.ppt>). He directed the secretary to record the fact that this presentation was made in the minutes for the meeting.

* 0:15 PM - The WG Chair made a call for essential patents: none made.

### 802.19 TG 1 November Meeting Opening Report

The chair presented the document 10/157r0.

**Motion**

To accept the late proposals in the official list

Moved by M. Kassilin

Seconded by I. Reede

Motion approved.

Meeting recessed 0:17 PM

# Main Body

Note: The italic indented text is copied directly from the presented documents.

### Monday PM1

**IEEE 802.19-10/0111r4 Proposal\_for\_802.19.1 coexistence draft, Part I**

Presented by I.Reede, AmeriSys Inc

D. Lee: Do you need public address for devices. I. Reede: No, for simple mode we do not have to take care of it.

D. Lee indicated that if you are going to have coexistence decision between CMs within devices, you need another CM on top of these CMs.

D. Lee questioned on the reason to have bubbles. I. Reede answered that there are some shadows where you have no coverage. Bubble is used to build the map of the topography. It is used in CDS for coexistence decision.

M. Kassilin questioned on the functionalities of CDS, and asked whether CDS is the CDIS in SDD. I. Reede: CDS is different from CDIS, it facilities discovering the database for consulting.

J.Kwak indicated that the function of CDS in fact it is the sub-function of CDIS. I. Reede: We agreed that if CDIS could be taken out of local devices, CDS is the component of CDIS

J.Kwak questioned on reason to have unique ID for domain and bubble? I. Reede: There would be millions of bubbles. The bubble can be considered as pixel, it is filled volume using to describe the coverage. Bubble is translation of a domain. It is the 3D volume with low/high frequency and polarizations.

J.Kwak indicated that if variable rate control is expected in the coexistence system, everybody shall select as low as possible rate.

I. Reede indicated that bubble is used for signal while circle is used to express the worst case for interference.

S. Filin: Is that acceptable to disclose your base station location. I. Reede answered that that information may not be disclosed to the users. They may be shared among entities in a limited way.

D. Lee: Why do you assume if there is no LOS you have no communication? I. Reede: We assume there are no reliable communications.

S. Shellhammer clarified that in general I. Reede is trying to produce the SNR for each channel. Ivan agreed.

J. Kwak: Is the transmit position described in the domain. If you did, you just need to analyze the closed bubble. I. Reede disagreed and claimed that it may not be that simple.

S. Filin: Do you think the coexistence system can control the transmit power of each channel? I. Reede: All information required for power control, such as antenna gain is recorded in CDS

I. Reede claimed that CDS cannot be operated by the third party because it is not allowed to share information among operators.

The session recessed 3:33PM

### Monday PM2

**IEEE 802.19-10/0156r0 Proposal on coexistence system services and protocols**

Presented by M. Kasslin, Nokia Corporation

M. Kasslin clarified that TVBD is the entities which connects to CE which is not TVBD-M in Joe’s proposal. And Nokia’s proposal does not depend on Joe’s proposal.

J. Kwak: why are you taking all information from TVBD if a TVBD subscribe the management service? M. Kasslin: The system need to provide good enough information for TVBD to make decision by himself.

I. Reede indicated that the management services are somehow similar to the simple mode in his proposal, while information services are similar to his advanced mode.

M. Kasslin clarified that they do not support peer-to-peer like TVBD-to-TVBD communication.

I. Reede indicated that If BPSK is used, interference range is 3 times bigger than the service range. So you cannot count on peer-to-peer communication to resolve the interference.

M. Kasslin said that if the TVBD subscribes management service and follows the instruction, but the tings become bad, the TVBD may unsubscribe the management service

**IEEE 802.19-10/0152r0 Device Security standards overview**

Presented by A. Reznik, InterDigital

Session recessed 5:43PM

### Tuesday AM2

Session called to order 10:35 AM

**IEEE 802.19-10/0153r0 Protocols and procedures (Part I)**

Presented by S. Filin, NICT

I. Reede: TVWS database is not required to answer the prospective request from a non-TVBDs. So the request from CE may be necessary. S. Filin: The mechanism is used for some particular cases.

P. Ruuska: How to find the neighbors or candidate neighbors. S. Filin : For all cases, we cannot tell they are 100% neighbors. Our concept is more close to “maybe neighbors”.

M. Kasslin: There is no service definition. S. Filin: Services definitions are not the proper time for this conference.

J. Kwak: what is neighbor you mentioned? S. Filin: Neighbor is the TVDBs which have overlapping coverage area. We may clarify these in the proposal.

It is questioned what CE does, after CE receives de-registration announcement. S. Filin: CE may search for another CM.

**IEEE 802.19-10/0154r0 Protocols and procedures (Part II)**

Presented by J. Wang, NICT

P. Ruuska: what is event message used for. The event messages are used to tell what happens and what changes. For example if the TVWS get strong interference. It triggers event to inform this.

11:55 AM Ivan explained the concept of bubbles by using some figures.

Session recessed 0:28 AM

### Tuesday PM1 WG/TG1 joint session

TG1 Session called to order 1:35 PM

**IEEE 802.11-wng/1238r0 Digital RF Transceiver To Meet Needs of Emerging Spectrum**

Presented by A. Reznik, InterDigital

A. Reznik clarified that LTE channel 13 although is not shown in the presentation is supported by the proposal

**IEEE 802.19-10/0160r0 Output Power Management**

Presented by R. Sawai, Sony

S. Shellhammer : Is that true that current FCC is inefficient to protect incumbent? FCC does not specify it but we shall analyze.

**IEEE 802.19-10/0161r0 Resource management for TVWS network coexistence**

Presented by R. Sawai, Sony

P. Ruuska clarified that slide 13 seems that networks are interfering to each other although access points of the two networks cannot contact each other.

**2:30 PM The chair made a call for cancelling the Tuesday PM2 session and changing the agenda accordingly. No objection.**

2:40 PM TG1 Session recessed and switched to the WG session.

### Wednesday AM2

Session called to order 10:32 AM

**IEEE 802.19-10/0162r0 TVWS Coexistence procedures and protocols (Part II)**

Presented by J. Lee

M. Kasslin questioned on whether CM always makes decision for TVBD? J. Lee: YES.

Y. Demessie: What is the illegal channel means? J. Lee The channel not used by TVBD in a specific location.

A. Reznik: The TVBD may not be aware of their illegal use.

E. Kim: If the users intentionally use the channel illegally, we may not prevent. But if they do not want to use legally, CM may control the situation and comment to the users.

Y. Demessie: Coexistence concept look likes the coexistence with incumbents, which is not coexistence between similar networks, it this true? J. Lee agreed and claimed that CM may also have this functionality.

It is claimed that the group has to consider both the coexistence among similar networks, but also need to consider the coexistence between incumbent and second users.

S. Filin: The coexistence command is general to avoid illegal channel use, which maybe another important topic.

A. Reznik: There are some political problems between 802.22 and 802.19, in 802 .19, we are doing coexistence between second users, but we cannot stop others.

S. Filin: we need to consider some cases when TVBD starts to behave illegally.

J. Kwak: we cannot do like police of regulations.

Based on the above discussion, I. Reede raised the following strawpoll :

**Strawpoll**

Should P802.19.1 involve itself in policing the operation of illegally behaving devices?

Yes 6 No 8 Abstain 11

Discussions on the strawpoll

A. Reznik: Policing is against the scope of P802.19.

M. Kasslin questioned on the difference between “illegally behaving” and “misbehaving”. I. Reede answered : “Misbehaving” : Devices become out of control; “illegally behaving” devices’ behave does not follow the regulation.

A. Reznik suggested removing misbehaving from the strawpoll. I. Reede agreed.

It was questioned on the meaning of “policing”. I. Reede: To enforce rule over the operating networks. If the devices do not follow the rule, stop them.

E. Kim: What if they are not intentional to do so? I. Reede: we do not care they are intentionally or not intentionally.

A. Reznik indicated again that the strawpoll is just to express the feeling of the group, not to ban it.

Session recessed 0:10PM

### Wednesday PM1

Session called to order 1:35PM

**IEEE 802.19-10/0163r0 802.19.1 Procedures**

Presented by H. Kang, ETRI

J. Kwak: Does the procedure work well when you consider the channel parameters. Kang: TVBD may request more than one channels, CM has to check whether the channels are available.

A.Reznik: How is your definition of registered channel? H. Kang: Channel used by incumbent.

H. Kang: Channel shifting is not considered. If they need more than one channel, they may first register.

I. Reede: Channel number may not be integer; You may put some application in between two channels. S. Shellhammer supported.

**IEEE 802.19-10/0164r0 802.19.1 protocols**

Presented by D. Lee, ETRI

P. Ruuska: Is there any event based measurement? NO, there is none.

The chairman scheduled the presentation of “Open issues in 802.19.1 System design” from M. Kasslin in Thursday AM1

**Motion**

 To change the agenda with the schedule of the above presentation

Moved by I. Reede

Seconded by M. Kasslin

Motion passed.

Session recessed 2:30 PM

### Wednesday PM2

Session called to order 1:35PM

**IEEE 802.19-10/0146r1 Coexistence System Proposal**

Presented by J. Kwak, InterDigital

J. Kwak was appreciated for the agreement from Nokia on their services and messages.

I. Reede indicated that interference level depends on transmit power and victim receiver sensitivity. J. Kwak agreed and mentioned that this is the reason why collecting TVBD information is necessary.

H. Kang: Is this the Quit period for incumbent or second users. J. Kwak: It is the period for your network to find interference energy from other network.

I. Reede: There may be some noise from electronic derives which makes impossible to measure during quiet period. J. Kwak: the quiet period is to synchronize different systems.

**IEEE 802.19-10/0165r1 Implementation aspects of a 802.19.1 coexistence system**

Presented by P. Ruuska and M. Kasslin

H. Kang : The might be some fairness problem if some TVBD makes decision for himself while some other TVBDs‘ decision made by P802.19.1 system. M. Kasslin: Fairness cannot be completely guaranteed, we try to have simple algorithm and feasible to implement.

A.Reznik indicated that the most implementable deployment is the case there is no management by the system. D

I. Reede: We should favour management service over information services since we may not share any information.

J. Kwak: Unless a TVBD realize the allocation can be guaranteed, this TVBD would like to follow the instruction of the systems. If the TVBD is not satisfied, it may de-subscribe from systems. It is a trust and training process.

J. Kwak: How can you remove your neighbours? M. Kasslin: if the TVBD shut down from the system.

S. Shellhammer: If we cannot let every win, no one will use it.

Session recessed 6:07PM

### Thursday AM1

Session called to order 8:05AM

**IEEE 802.19-10/0166r0 Open issues in system design**

Presented by M. Kasslin, Nokia Corporation.

T. Baykas indicated that there are some legal issues we have not addressed well in the group.

M. Kasslin: People may be very sensitive to their locations. J. Kwak: Location itself is not a private.

M. Kasslin: Whether we choose private or performance shall go to FCC. This legal domain shall be aware of.

H. Kang: Why do we need retransmission protocol? M. Kasslin : The transport port shall take retransmission responsibility.

S. Shellhammer: TVBD may not report measurement on time; it may be based on their schedule.

**IEEE 802.19-10/0168r0 Perspectives on Architecture for IEEE 802.19.1**

Presented by M. Cummings, enVia

D. Lee : How about multiple devices case. M. Cumming: Devices do not talk to each other, but talk with network of their own.

D. Lee: May a single device connect to multiple servers. M. Cumming: You may connect to multiple severs, but you are banned to use only one.

D. Lee: what happen if there is interference from other station on the border? M. Cumming: FCC has their rule to deal with border problem. If you go to Canada, you have to follow Canadian rule. Europe may have a single rule, the rule may not change, but you have to do handover between servers.

I. Reede: You may simultaneously connect to different servers and dialogue with both servers until you cross the border.

**9:20 AM The chair made a call for cancelling the Thursday AM2 session and changing the agenda accordingly. No objection.**

**Thursday AM2 was cancelled.**

### Thursday PM1

Session called to order 1:35PM

**IEEE 802.19-10/0169r0 Overview of Resource Description Framework (RFD/XML)**

Presented by J. Kwak, InterDigital

**IEEE 802.22-10/073r3 IEEE 802.22 Overview and Core Technologies**

Presented by Apurva N. Mody, BAE Systems

J. Kwak: How to handle it if multiple operators operated over few channels. I.Reede: The BSs talk to each other to share channel based on spectrum etiquette. Apurva N. Mody : In the frame structure, we have quit-period where neighbour network can sends beacon for this negotiation.

I. Reede: You cannot guarantee services if you are sharing channels with others.

Session recessed 3:35PM

### Thursday PM2

Session called to order 4:25PM

TG1 Closing Report

There were some discussions on when to upload the proposal document in order to present in f2f meeting.

The final decision of the group is that “The proposal shall be uploaded to the mentor server before face-to-face meeting.” There is no deadline limit anymore.

There were some discussions on whether we shall keep following the down selection procedure or not.

The final decision of the group is to keep following the down selection procedure that the group has agreed, if there are some problems, the group may consider changing it.

Motion to adjourn the TG1 meeting of Plenary Session in Dallas, Nov. 8 -12, 2010

Moved by I. Reede

Seconded by A. Reznik

Motion adjourned.