IEEE P802.19
Working Group

WG and TG1 January 2010 Minutes

Date: 1-2010

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Abstract

This document contains minutes of 802.19 Working Group and 802.19 TG1 held at IEEE802 Plenary in Atlanta.

The main tasks of TG1 for the week were:

- **Develop a process document laying out the stages of standard development**
  - Requirements
  - Evaluation criteria
  - Steps for contributions, evaluations, voting, etc.
- **General technical discussions on possible architectures**
- **Start a document on Terminology**
- **Develop a call for submissions to be sent out after the session in preparation for future sessions**
- **Schedule Conference Calls**
- **Plan for March session**

The main tasks of WG for the week were:

- **Joint meeting with 802.11 and 802.22**
- **Nomination for TG1 and SC officers**

MEETING TIMES

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY
08:00-08:30		Joint Opening Plenary	TG1 TVWS Coexistence		
08:30-09:00					
09:00-09:30		Break			
09:30-10:00					
10:00-10:30			Break	Break	Break
10:30-11:00		802.19 WG Opening	TG1 TVWS Coexistence	802.19 WG Midweek	TG1 TVWS Coexistence
11:00-11:30					
11:30-12:00					
12:00-12:30					
12:30-13:00		Lunch	Lunch	Lunch	Lunch
13:00-13:30					
13:30-14:00		TG1 TVWS Coexistence	TG1 TVWS Coexistence	TG1 TVWS Coexistence	TG1 TVWS Coexistence
14:00-14:30					
14:30-15:00	NEW MEMBERS ORIENTATION				
15:00-15:30					
15:30-16:00	Break	Break	Break	Break	Break
16:00-16:30	WIRELESS LEADERSHIP MEETING	TG1 TVWS Coexistence	TG1 TVWS Coexistence	TG1 TVWS Coexistence	802.19 WG Closing
16:30-17:00					
17:00-17:30					
17:30-18:00				Break	
18:00-18:30		Dinner	Dinner		Dinner
18:30-19:00				Social	
19:00-19:30					
19:30-20:00		Joint 11/19/22 Meeting TVWS Coexistence			
20:00-20:30					
20:30-21:00					
21:00-21:30					
21:30-22:00					
22:00-22:30					

Meeting Minutes

Monday AM1 Work Group meeting

First session of the meeting was called to order on Monday 19 January 2009 at 10:30.
T. Baykas (NICT) volunteered to be acting secretary for this meeting.

APPROVE AGENDA

S. Shellhammer (Quallcomm) opened the meeting and introduced the agenda in Document 802.19-09-100R1
Approved by acclamation10:40

Discussion:
S. Shellhammer reminded the group about elections for both in Working Group and Task Group.
S. Shellhammer will act as TG acting chair during Los Angeles meeting.

APPROVE MINUTES FROM NOVEMBER MEETING

Motion to approve November meeting minutes (10/0001r0).
Approved by acclamation 10:47

IEEE IPR STATEMENT

The Chairman 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. He asked if anyone wished to make a disclosure. No one spoke up.

REMINDER ABOUT USE OF AUTOMATED ATTENDANCE SOFTWARE

The attendance system was reviewed and all delegates were asked to report any problems logging attendance to the Chair.

IEEE 80219-10-02r0: January Opening Report (S. Shellhammer)

S. Shellhammer (Envia) explained how to gain and lose voting rights in 802meeting.
S. Shellhammer explained how election process in 802.19.
Objectives for the group during January meeting are stated, including,

- Process document
- General discussion on architecture
- Develop a call for submissions

Mark Cummings suggested having a presentation about new information about TVWS.
S. Shellhammer suggested to add to TG agenda.

Preparing for joint 11/19/22 meeting

IEEE 80219-10-12r0: January 2010 Joint 11-15-22 TVWS Meeting (S. Shellhammer)

Discussion:
S. Shelhammer asked groups preference on liaisons.
M. Cummings asked how voting rights will work for liaisons.
I. Reede explained that a liaison keeps its voting rights as long as he/she stays as a liaison of the group.

S. Shellhammer asked if we want to show opening report?

J. Kwak suggested to show most recent report.
S. Shellhammer agreed to make changes if there is a change in the group.

Discussion on questions from 802.11af acting chair,

-How does 802.19 plan to get universal acceptance of their coexistence mechanism?
Group decided to answer with,

- One goal is to provide an incentive to adopt based on improved performance for those to adopt.
- We do not expect universal acceptance of this standard, just as any other standard.

-If universal adoption is not possible, how does 802.19 plan to keep the use of these mechanisms from disadvantaging those who do use them?

Group decided to answer with,
- Group plans to examine this issue in the requirements process.

802.11 Liaison report
No reports
802.22 Liaison report
No reports

General Discussion
M. Cummings asked the status of the press release,
S. Shellhammer answered that it is accepted by EC and it is sent to IEEE and it will be released shortly.
M. Cummings suggested 802.19 members to forward press release to related organizations.

M. Cummings explained that a paper is written by TVWS SG contributors to communication magazine special issue.

Group recessed at 11:30am.

Monday PM1 Task Group meeting

Meeting convened at 1:30pm

Motion to accept agenda IEEE 802.19-09/0001r1
Motion approved by acclamation . 1:40pm

Document IEEE 80219-10-0009r0: On Standardization Process of 802.19.1 by T. Baykas

Tuncer Baykas presented this presentation to start standardization process discussion in the group.

Document IEEE 80219-10-0010r0 Possible Coexistence Cases in TVWS and Topics to be Considered in P802.19.1 by M. Azizur Rahman

S. Shellhammer commented that the use cases presented could be part of functional requirements document.

IEEE 80219-10-0008r1 TVWS Coexistence Use Cases presented by Yohannes Alemseged

Group discussed if mobility should be part of the standard.
Joe Kwak (InterDigital) commented that compliance with regulatory issues is part of the MAC/PHY standards.
Mobility should be part of the standard. Ivan Reede (AmeriSys)a greed.

Asked if device adhoc networks is considered.?
Yohannes Alemseged (NICT) answered they are discussed in use case 4.

Meeting was recessed at 3:28pm

Tuesday PM2 Task group meeting

Meeting was reconvened @ 4:07pm

News by M. Cummings

There is a suggestion to make squeeze TV band and reollacate.

FCC issued another document in November. It is about how TVWS database will be constructed and supported. An issue will be how to synchronize different databases.

Mark Cummings explained possible database systems,

1 Repository systems it provides a grid network and forwards all info to service providers,. Service Providers download data everyday from Repository system.
2 Repository systems provide only information about incumbents service providers calculate in there is tvws incumbent according to received data.
3 Systems are interconnected. Each database communicate with each other about new information about TVWS incumbents.

Ivan Reede there are operating licensed users in Canada. Canada divides the market into 2, into unlicensed internet providers, licensed providers which became incumbents and broadcasters.

Licensed users have full broadcast rights in the group.

Mark Cummings suggests to have someone from Industry Canada for teleconference.
S. Shellhammer explained that 802.19 can ask someone from 802.18 , which deals with regulations.

IEEE 80219-10-0004r0 P802.19.1 Assumptions by S. Filin(NICT)

Group discussed the document.
M. Cummings stated some of the points are not assumptions but conclusions. We can not have conclusions at this moment.

Joe Kwak asked the purpose of the presentation of this document.
S. Filin said that during the teleconferences there were discussion about scope and this presentation. This document helps the group to focus on specific issues.

S. Shellhammer stated it is good to have an assumption document. Group should discuss the details.

IEEE 80219-10-0005r0 P802.19.1 Requirements by S. Filin

This contribution show possible requirements for 802.19.1.
Joe Kwak.
Can you clarify what enable mean in slide 3?
S. Filin it means to include.

Mark Cummings believe this document may be in between requirements and architecture.

Joe Kwak said requirements are put on entities. Currently since no entity is specified. Without an architecture this is a useful starting point.

I Reede asks if we ask other standards to incorporate our standard or put alongside with any other standard.
S. Shellhammer said that this will be implemented alongside.
Our aim should not be other standards but TVBD implementers.

Discussion on 802.19.1 Ad Hoc Committees

Committees:
Group needs to discuss how to arrange the teleconferences and etc.

Process:

· Tuncer
· Mark
· Ivan
· **Mika**
· Stanislav
· Hiroshi
· Ariton

- Functional Requirements:

· Stanislav
· Haguen
· Yohannes
· Aziz
· Junyi
· Gabriel
· Riku
· Paivi
· Pyo
· **Ivan**

Discussion on Evaluation Criteria:

Ivan suggested that Evaluation Criteria may not be useful to choose any proposal. Since in 802 the selection, people can vote for any proposal regardless if they support on evaluation criteria or not.

Evaluation Criteria:
- **Tuncer**
- Stanislav

Terminology
- **Steve**

Architecture:
T. Baykas asked if we want to take contributions or have an ad hoc committee. Group decided to go for both.

Architecture
• Mark
• Mika
• Ariton
• Joe
• Stanislav
• Haguen
• Yohannes
• Gabriel
• Aziz
• Syed

- Paivi
- Junyi
- Kang
- **Tuncer**
- Ivan

Recess at 6:00pm

Tuesday PM3 Joint meeting of 802.11/802.19/802.22

Meeting called to order7:30pm

IEEE 80219-10-0012r0 January 2010 Joint 11-15-22 TVWS Meeting by S. Shelhammer

Agenda discussion:

Wendong Hu added questions from 802.22 to agenda

Agenda Items:

Regular Joint 11/19/22 Meeting:

Peter Ecclestine asked that if regular joint meetings are necessary.
The reason is two of the groups do not have any technical documents yet.

Steve Shellhammer believes that starting March groups will have enough technical documents and may have technical discussions.

Bruce Kramer suggested, to schedule regular meetings and cancel if necessary.

Gerald Chouinard: Supported previous commenters, having one meeting

Steve Shellhammer: The plan will be to schedule the meeting, announce it in previous session and announce the agenda 30 days prior.

Steve Shellhammer asked if Tuesday evening is acceptable for everyone.
No objections.

Steve Shelhammer asks if rotating chairs is a good idea and if chairs of TGs or WGs do the job.

Eldad Perahia stated that it was Task Group chairs between TG3c and .11ad.

Peter Ecclestine prefers 1 chair.

Bruce Kramer preferred 1 chair. Agenda is more important.

Discussion on Liaisons

Wendong:
802.22 does not want to grant rights.

Peter Ecclestine: Liaisons should be unidirectional
Eldad Perahia: He prefers reporting from 802.19 to 802.19.
Bruce: He believes populating with liaisons does not have any need currently.

Joe Kwak: The reason for the joint meeting is to use TVWS. It is about discussing about TVWS regulations and how to meet requirements. 802.19 is to generate coexistence. To exchange ideas between 802 TVWS groups is beneficial for all.
Liasions will bring extra information from an outsider point of view, this will improve the task groups.

B. Kramer: Currently the task is ill defined. We need more clarity what they are going to do.

S. Shelhammer: It is early to choose liaisons.

P. Ecclestine: 802.11 groups are time starved. Currently, Tuesday nights is enough.

S. Shellhammer: We will continue with Tuesday night meetings only.

Discussion on 802.11af

Rich Kennedy: The purpose of this amendment is to allow 802.11 wireless networks to be used in the TV white space

The amendment should not duplicate functionality that is being standardized in other Task Groups that are likely to complete before 802.11af.

There is no need for backwards compatibility with 2.45 GHz ISM operation.

Joe Kwak:Will 802.11af group address FCC R&O with a MAC/PHY amendmend?
Peter Ecclestine: FCC rules are to strict currently for broad market potential and technical feasibility, therefore we wont meet those requirements currently.

Gerard Chouinard: It shows two different approaches from two groups.

S. Shellhammer: 802.11 won't meet FCC regulations.

W. Hu: Will you provide coexistence solutions?

P. Ecclestine: We will provide a coexistence document. It should be discussed by chip vendors.

B. Kramer: 802.11af had only 1 meeting. It is early to talk about coexistence documents.

P. Ecclestine: The requirements for filtering is too harsh.

G. Chouinard: 802 can submit FCC its suggestions on filtering.

Ivan Reede: Current systems are much smaller.

S. Shelhammer: What are the possible applications of 802.11af?

P. Ecclestine: We will give a new channel plan in regulated markets.

Discussion on 802.19.1

IEEE 802.19-10/0002r1 Opening report by S. Shellhammer

Discussion on 802.22

Wendong Hu: We have experience in every aspect of TVWS communication. We are adding portable communication requirements.

Questions from 802.11 af to 802.19.1
(slide 9 of 10/0012r2)

Winston Caldwell : 802.22 needs to adapt coexistence method. Will 802.19 try to consider the ideas used in 802.22 for coexistence?

S. Shellhammer: 802.19 wont impose any changes to any other standard.

Winston Caldwell: He hopes 802.19 will keep this in mind.

P. Ecclestine: What is percentage of new people in the group?

S. Shellhammer: %50 is new.

G. Chouinard: CBP coexistence beacon protocol used in 22 can be shown to 802.19.1 as an example and groups can work together. Groups may work together to affect the regulators.

Comment from 802.22
Wendong Hu:
A common understanding of 802 on TVWS operations should be generated.
802.11 af, 802.19.1 and 802.22 should coordinate to enhance TVWS coexistence.

S. Shellhammer: These are questions which can be answered during joint meetings.

P. Ecclestine: 802 didnt have a common language for previous standards. It is late to come up with a common understanding.

S. Shellhammer: Should the groups work on regulations?

P. Ecclestine: We need bring new information. There is no need unless we can say anything new.

W. Hu: Will 802.19 provide a Mac/phy standard.

S. Shellhammer: We are not planning to create a Mac?Phy standard.

W. Hu: How .11af and .22 will coexist without .19?

B. Kramer: Minimum will be regulatory documents.

Discussion about next meeting:
S. Shellhammer: Groups can review technical documents.

P. Ecclestine: 802.11af can bring indoor channel models.

M. Cummings: Memory, bandwidth and sex, you cannot have too much. TVWS is large unlicensed band which gives a big chance to success. If we succeed we can ask more unlicensed spectrums from users.

S. Shellhammer: Any possible documents from 802.22?

Ivan Reede: 802.22 provide channel models to 802.11.

Joe Kwak: Since the range and channel models are different, will 802.11 stay as LAN?

P. Ecclestine: Transmit power control wil be part of standard. There are extended range products already in the market. If we don't see the need, 802.11af won't go for range extension.

S. Shellhammer: What is the point of having a standard?

P. Ecclestine: You can change the regulations using the standards.

Meeting adjourned at 9:30pm

Tuesday AM1 TASK group meeting

Meeting reconvened 08:10
Around 20 people,

Change AGENDA

Motion to change the agenda in Document 802.19-09-100R3
Approved by acclamation8:12

IEEE 80219-10-0013r0 Architecture by M. Kasslin

Ivan Reede: Slide 4 WISPs can have SMEs, managers of SMEs could be a separate entity. When a device is put in the system and look for a control entity.

System can work under ssh channel.

Ivan Reede sensing could be treated as separate entity.

S. Filin:
Do you assume connection is wired or wireless?
Personal opinion is it could be wired.

How to discover in case of wired?
Mark: Database can be used.

Ivan Reede: Clearing house is only functional possibility. Sometime the network s doesn't have IP addresses. Discovery could be a real problem.

S. Filin:
Can we obtain information from PHY/MAC?
It should be possible.

M. Cummings:
I have a list of information what types of information is needed.

Yohannes: What is the scalability?
Distributed and centralized should be used.

Ivan Reede: There can be a decision tree.

S. Filin: What is the of of spectrum sensing?
Sharing of the information.

IEEE 80219-10-0007r1 Architecture by S. Filin

S. Shellhammer: If there is no coexistence database doesn't exist, how to find each other.

S. Filin: Some cases it could be possible

Slide 7: Blue arch could be a tunnel through coexistence database. To enable virtual link.

Ivan. Reede: The difference coexistence database and and coexistence management server.

S. Filin they are logical entities to improve presentation. It is to avoid to reduce confussion.

S. Shellhammer: It looks like we will require database. It could be provided by FCC database makers.

Mika Kasslin: In our architecture, devices without connection could be use some of the parts.

Hyunduk Kang: How sensing only device makes the connection.
S. Filin: Sensing only devices may have connection to IP.

Ivan Reede: We can have two types mechanisms, the ones with connection, the ones without connection like csma/cd .

Group recessed at 9:55

Tuesday AM2 TASK group meeting

Meeting reconvened 10:30
Around 20 people,

Change AGENDA

Motion to change the agenda in Document 802.19-09-100R3
Approved by acclamation 8:12

IEEE 80219-15-0015r0 Candidate types of information that need to be exchanged between SME's by M. Cummings

Ivan: I agree with most items. I want to add a point capability of the link .
Mark Cummings: It is more on local spectrum situation.
Mika Kasslin:Are all info necessary for coexistence?
Mark It is a starting point . Group can discuss to add or remove.
Ivan stated that the presentation should be given to chair at least before the presentation.

IEEE 80219-15-0014r3 Evaluation criteria

Comments:
Add impact on hardware
Impact on other standards.
Change radio resources to communication resources.

Group discussed that whole evaluation criteria could be 2-3 pages with

Group recessed at 11:30 am

Tuesday PM1 TASK group meeting

Meeting reconvened 1:30 pm

IEEE 80219-10-0011r1 Process by J. Kwak

Filin, Incremental process may delay the process.

Joe Kwak, It is a possibility.

Strawpoll
Which standard development process do you support for 802.19.1?

Complete proposals 7
Incremental proposals 9
Not Sure 1

Discussion on Process document:

Group discussed about the system design document.

System Design
a) Architecture of the system, b) Terminology, c) Outline for the draft d) Requirements

Strawpoll Should we develop a system design document?

Yes 16
No 0
Abstain 3

Do you believe SDD should include system architecture section?
System architecture is a number of entities with interconnections.

Yes 18
No 0
Abstain 1

Should the SDD should include an outline of the draft?

Yes 9
No 0
Abstain 9

Outline of the draft: ordered set of clauses of the draft; outline of the draft should be consistent with architecture. (high level organization of the draft)

Recess at 3:30 pm

Tuesday PM2 TASK group meeting

Meeting reconvened 4:00 pm

Discussion on terminology
Group discussed if terminology of the standard should be put or not.
T. Baykas suggested that having many terms will delay the process.

Group discussed if terminology should be prepared

Should the SDD include terminology used within the SDD?

Yes 18
No 0
Abstain 0

Terminology=Section on core terminology

Discussion on functional requirements

Joe Kwak discussed that functional requirements could be part of SDD.

Should the SDD should include system requirements?

Yes 18
No 2
Abstain 0

Strawpoll 6 :
Should the SDD include assumptions?

Yes 19
No 0
Abstain 2

Assumptions- Definition of operation environment of 802.19.1

Strawpoll 7 : Should be evaluation criteria be part of the process document?

Yes 1
No 14
Abstain 3

Straw poll 8 : Should timeline be produced by the group:
No Objections

Straw poll 9: Should we delay the evaluation criteria document decision?
Yes 6
No3
Absent 9

Group recessed.

Wednesday AM2 Working Group midweek plenary

Meeting called to order 10:40 am by S. Shellhammer.

Announcement by S. Shellhammer,
to register Beijing meeting.

Motion to change the agenda in Document 802.19-09-100R5
Approved by acclamation 3:44

Opening Nominations for wg Chair,
S. Shellhammer nominated himself for WG Chair.

Opening Nominations for WG ViceChair,
S. Shellhammer nominated Ivan Reede for WG Vice Chair.

Opening Nominations for WG Secretary,
Ivan Reede nominated Mark Austin for WG Secretary.

Opening Nominations for TG1 Chair.
No nominations yet

Opening Nominations for TG1 Vice Chair.
No nominations yet

Opening Nominations for TG1 Secretary.
No nominations yet

Discussion on planning agenda for coming meetings

T. Baykas suggested to have 1 hour opening session for WG.
S. Shelhammer aggreed and he said he will check it.

For midweek planary, suggestion from Joe Kwak to have WG/TG joint meetings.
S. Shehammer agreed.

About 802.11af,
Joe Kwak suggested to prepare the agenda according to other groups to improve communications between groups.
Group agreed.

About closing plenary,
Joe Kwak suggested to have it Thursday PM3 and move during midweek plenary if necessary.

WG recessed. At 11:06am.

Wednesday PM1 Task Group Meeting

Meeting called to order by Steve Shellhammer at 1:40pm

S. Shellhammer announced accepted changes in WG.

Group Started Discussion on Requirements,

Ivan Reede asked S. Filin to demonstrate his presentation again.
IEEE 80219-10-0005r0 P802.19.1 Requirements by S. Filin

S. Shellhammer asked the the definition of colocated,
S. Filin said networks which are in the same area.

Ivan Reede asked if networks with overlapping interference areas or with overlapping covered areas should beconsidered for discovery ?
S. Filin said the problem could be taken more general case where there is need for coexistence between two networks.

Pavi (Nokia): Should be only networks of devices to discover each other?

S. Filin asked how to determine the difference between network? Why to to detect a device which are not transmitting to antoher device.

Joe Kwak asked if in slide 3 first sentence should to be changed from TVBD networks to TVBD devices.

S. Filin said he prefers to say TVBD networks and TVBD devices.

Pavi: What do you mean by discovery?
S. Filin This problem started in the group on how connecting one network to another one using wired connection.

Mika: The requirements should be for generic cases.

Ivan: Suggestion to bring a empty document and filling one by one.

Mika: The definition of discovery should be clarified.

Pavi: We can categorize requirements from scope of the PAR?

S. Shellhammer suggested to add terminology at the end.

Group continue working on the definition on discovery.

S. Filin suggested discovery should have two results
1 Awareness of presence of other. 19 with which one wishes to exist
2 Some ID with which this network can establish communication

Joe Kwak suggested that the requirement should be more general and wants to use term “nearby”.
S. Filin: 802.19 believes it should be more specific.

Group discussed if IP connectivity is an assumption or not.
Mika: We believe group should not limit that.
Ivan Reede takes the notes for the meeting.

Joe Kwak suggested that this document should be high level document.

Notes taken by ad hoc chair Ivan Reede:

“1- Requirements
Requirements should be on the proposed system
For example, the coexistence system shall facilitate or provide a means to exchange between different TVWS devices and networks
Provide wording for system requirements for the coexistence system as single entity
Categorize requirements
Provide general functional requirements should be categorized according to the following categories
– Discovery
Communications
Etiquette
Algorithms

Improve the coexistence environment for all the connected devices

2- Functional requirements categories

2.1 Discovery

The result of the discovery should be at minimum
-only .19 devices and networks are considered
2 results
first result: awareness of presence of other .19 nearby devices with which one wishes to coexist

sniffing or promiscuous listening of advertised information? Should we allow or forbid this?

second result: some ID (eg IP address, MAC address)
with which this network can establish communication, if such an ID exists.
some kind of range, properties, attributes, characteristics

do we assume .19 devices have backhaul IP connectivity?
should be an option?
we should focus on devices that do have IP connectivity and in a later phase worry about devices which have no IP connectivity
do we require that all 802.19.1 devices have IP connectivity?
do we require over the air connectivity and no IP connectivity?
do we accept no connectivity at all required? (behavioural coexistence of CSMA/CD)
do we require .19.1 device make them selfs dicsoverable

some devices may not internet access
different types of PHY may not be able to establish communication

P802.19.1 shall enable discovery of P802.19.1.compliant TVBD networks or devices

P802.19.1 shall enable discoevery of other devices or networks

It does not necessarilly imply communication

Does it imply location discovery

2.2- Communications
Requires awareness of the existence of the other device/network
If dicsovery happened
We may want to limit ourselfs to devices which can communicate

2.3- Etiquette
Avoidance
Sharing

2.4- Algorithms
(examples: spectrum assignment, transmit parameter selection)

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Terminology

Discovery: means become aware of nearby devices and networks

Overlapping Coverage Area

Overlapping Interference Area”

Group recessed at 3:30pm

Wednesday PM2 Task Group

Meeting called to order 4:05 pm

IEEE 80219-10-0016r0 TVWS Architecture Options by Joe Kwak

FCC database is not dynamic and nationwide, Coexistence database should be dynamic,
How will it that be possible?

Coexistence service providers could be smaller.

Pavi: What about the support to sensing only devices?

Joe: If they have internet access. It is ok.

Mika: I agree that, Coexistence Spectrum Manager is too centralized.
Joe: It is optional, it can provide policies.

Mika: Slide 11, explain interface B.

Joe: It provides connection from heterogeneous systems to Coexist Dbase.

Mika: Does the functions of Coexist Service Provider be divided.

Joe: Yes

Ivan: How Coexistence Dbase will share information?
Joe: The only need is unique identities. It doesn't need to be real identity.

Joe: How sensing only will coexist with mode 1?
Ivan: Joe stated that it it is hard to achieve with this system, however there are possible ways.

IEEE 802.18/0008r0 presented by S. Shellhammer

It includes 802.18 Comments to FCC .

Number 8 Group added "Fixed and Mode II personal/portable" to the sentence.
Ivan suggested to remove RSA requirement since it is broken.
Group accepted.

S. Shellhammes suggested to ask what the group men "providing its correct geolocoation data "?

Group provided editorial changes.

Ivan Reede stated that he wants to know where the comments came from.

Group started to work on terminology by Steve Shellhamer.

Group decided to collect terms which is needed to define

S. Shellhammer put terms to be defined

Joe Kwak volunteered to collect the definitions to the next meeting.

Joe Kwak is added to Terminology ad hoc committe as chair.

Group recessed. 6.00pm

Thursday AM2 Task Group Meeting

Meeting called to order 10:35 pm

Change AGENDA

Motion to change the agenda in Document 802.19-09-100R6
Approved by acclamation 8:12

Architecture discussion led by T. Baykas:

We should include all ideas from contributors and come up with a complete package.

Possibilities
Entity point of view
Functional point of view (Interlayer descriptions)

Boundary between .19 and others

Dow we include a client or are we going inside the devices

How high are we going up to application layer or not?

Note that 802.11 has a handsoff approach, it may not be the case for 802.19

If there is an agreement in the group for coexistence server, it is a good starting point.
Hardware architecture could be very detailed.

High level system architecture should be the starting point.

802.22 has server entities, but they call them logical entities such as geolocater.

We need to define functions and behavior and then place them in the architecture. We shouldn't define implementation.

"We need to define entities (we need to describe what an entity does), testable, which are exposed, interfaces and service access points in architecture. External entities should be identified. Architecture should show external boundaries."

Straw poll 10: To accept above paragraph as guidelines to an architecture contribution?

Yes: 16
No: 0
Abstain: 0

External (Upper layer) entities should be defined more detailed. Functions should be defined.

We should show which entities are defined outside the group although part of the architecture.

802 specifies interfaces which are testable.
Testable: Produced according to a specification and compliance can be tested.

Should client-based architecture elements be minimized?

Mika's proposal does not include in every device a .19 client. Each manufacturer can decide how to use it.

Some level of interface description will reduce misunderstandings in future.

SDD should not be a limitation to contributions in the future. However there could be short descriptions for interfaces. Examples to help high level understanding, such as what kind of information.

"We need to define entities with their high level functions, exposed interfaces that show their major information flow items, and service access points in architecture. All external entities should be identified. Architecture should show external boundaries."

Straw poll 11: To replace previously adopted paragraph with the above paragraph as guidelines to an architecture contribution?

Yes: 15
No: 0
Abstain: 0

Reference layered model?
Contribution from Mika has one.

Do we need to discuss SAPs during SDD discussions?
It could be provided to assist SDD discussion but not part of it.

Reference model should be mentioned in outline of the draft, which is part of the SDD.

Straw poll 12: Should reference model description be part of the SDD?

Yes: 0
No: 9
Abstain: 12

Group recessed at 12:00pm

Thursday PM1 Task Group Meeting

Meeting called to order 13:40 pm

Group discussed system requirements section of SDD.

1- Requirements
Requirements should be on the proposed system
For example, the coexistence system shall facilitate or provide a means to exchange between different TVWS devices and networks
Provide wording for system requirements for the coexistence system as single entity
Categorize requirements
Provide general functional requirements should be categorized according to the following categories
– Discovery
Communications
Etiquette
Algorithms

Improve the coexistence environment for all the connected devices

"Provide wording for system requirements for the coexistence system as a single entity. Provide general functional requirements, which should be categorized according to the following categories.

- **Discovery**
- **Communications**
- **Etiquette**
- **Algorithms**
- **General"**

Straw poll 13: Should the paragraph above be used as guidelines for functional requirements section of the SDD?

No Objections.

Group discussed to have an ad hoc for assumptions section.
Group decided to add assumptions section to be discussed with architecture.

Group decided to go voting for SDD.
Group discussed how to add sections to SDD. Joe suggested to have a vote.

Ivan rejected idea.

Just voting for the SDD is ok. Group recessed at 12:00pm.

Joe Kwak joined terminology ad hoc as chair. Below is the list of ad hoc committees. Chair are shown in bold.

802.19.1 Ad Hoc Committees

Process

- Tuncer
- Mark
- Ivan
- **Mika**
- Stanislav
- Hiroshi
- Ariton

Functional Requirements

- Stanislav
- Haguen
- Yohannes
- Aziz
- Junyi
- Gabriel
- Riku
- Paivi
- Pyo
- **Ivan**

Evaluation Criteria

- **Tuncer**
- Stanislav

Terminology

- **Joe**
- Steve

Architecture and Assumptions

- Mark
- Mika
- Ariton
- Joe
- Stanislav
- Haguen
- Yohannes
- Gabriel
- Aziz
- Syed
- Paivi
- Junyi
- Kang
- **Tuncer**
- Ivan

Group recessed at 3:30pm

Thursday PM2 Work Group Meeting

Meeting called to order 4:10 pm

Group discussed possible teleconference times.

Conference Calls of Ad Hoc Committees with People who will provide teleconference numbers

- Process (Mika)
- Requirements (Ivan / Tuncer)
- Architecture and Assumptions (Tuncer)
- Ad Hoc - Sync (Tuncer)

	Pacific	**Eastern**	**Finland**	**Japan**
Tuesday calls (Eastern)	**3 AM**	**6 AM**	**1 PM**	**8 PM**
Thursday calls (Eastern)	**8 PM**	**11 PM**	**6 AM**	**1 PM**

Task Group 1 Conference Calls

Day	Date	Start Time	End Time	Ad Hoc	Ad Hoc Chair
Tuesday	February 2	6 AM Eastern Time	7 AM Eastern Time	Process	Mika Kasslin
Thursday	February 4	11 PM Eastern Time	12 AM Eastern Time	Architecture and Assumptions	Tuncer Baykas
Tuesday	February 9	6 AM Eastern Time	7 AM Eastern Time	Process	Mika Kasslin
Thursday	February 11	11 PM Eastern Time	12 AM Eastern Time	Process	Mika Kasslin
Tuesday	February 16	6 AM Eastern Time	7 AM Eastern Time	Requirements	Ivan Reede
Thursday	February 18	11 PM Eastern Time	12 AM Eastern Time	Architecture and Assumptions	Tuncer Baykas
Tuesday	February 23	6 AM Eastern Time	7 AM Eastern Time	Requirements	Ivan Reede
Thursday	February 25	11 PM Eastern Time	12 AM Eastern Time	Architecture and Assumptions	Tuncer Baykas
Tuesday	March 2	6 AM Eastern Time	7 AM Eastern Time	Requirements	Ivan Reede
Thursday	March 4	11 PM Eastern Time	12 AM Eastern Time	Architecture and Assumptions	Tuncer Baykas
Tuesday	March 9	6 AM Eastern Time	7 AM Eastern Time	Ad Hoc - Sync	Tuncer Baykas
Thursday	March 11	11 PM Eastern Time	12 AM Eastern Time	Ad Hoc - Sync	Tuncer Baykas

Motion to adjourn.
Approved by acclamation.

Attendance list:

Last Name	First Name	Affiliation
Ali	Syed	CERDEC U.S. Army
Barr	John	Jrbarr, Ltd.
Baykas	Tuncer	National Institute of Information and Communications Technology (NICT)
Carney	William	OakTree Wireless
Chang	Kapseok	Electronics and Telecommunications Research Institute (ETRI)
Cummings	Mark	enVia
Demessie	Yohannes	National Institute of Information and Communications Technology (NICT)
Dickey	Susan	Caltrans
Filin	Stanislav	National Institute of Information and Communications Technology (NICT)
Fisher	Wayne	ARINC, Inc.
Gloger	Reinhard	Nokia Siemens Networks
Harada	Hiroshi	National Institute of Information and Communications Technology (NICT)
Kafle	Padam	Nokia Corporation
Kang	Hyunduk	Electronics and Telecommunications Research Institute (ETRI)
Kasslin	Mika	Nokia Corporation
Kato	Shuzo	National Institute of Information and Communications Technology (NICT)
Kim	Yongsun	ETRI
Kwak	Joseph	InterDigital Communications, LLC
Kwon	Hyoungjin	ETRI
Lan	Zhou	National Institute of Information and Communications Technology (NICT)
Mangold	Stefan	Disney Research
Pirhonen	Riku	Nokia Corporation
Purnadi	Rene	Research In Motion Limited
Reede	Ivan	AmeriSys Inc.
Ruuska	Paivi	Nokia Corporation
Sawada	Hirokazu	Tohoku University
Shellhammer	Stephen	Qualcomm Incorporated
Sherlock	Ian	Texas Instruments Incorporated
Song	Chunyi	National Institute of Information and Communications Technology (NICT)
Sum	Chin-Sean	National Institute of Information and Communications Technology (NICT)
Tran	Ha	National Institute of Information and Communications Technology (NICT)
Varshney	Prabodh	Nokia
Villardi	Gabriel	National Institute of Information and Communications Technology (NICT)
Wang	Junyi	National Institute of Information and Communications Technology (NICT)
Woo	Pyo	National Institute of Information and Communications Technology (NICT)
Xhafa	Ariton	WG802.19