

DRAFT

IEEE 802.16h License-Exempt Task Group Meeting Minutes

Session #45 – Mont Tremblant, Quebec, Canada.

Chair: Mariana Goldhamer, Alvarion
 Vice Chair: Paul Piggin, NextWave Broadband Inc.
 Editor: Xuyong Wu, Huawei
 Secretary (Acting): Paul Piggin, NextWave Broadband Inc.

Tuesday 25 September 2006

Day one: The meeting opened at 8:20am.
 Mont Tremblant, Quebec, Canada.

1. Opening of the License-Exempt Task Group at Session #45

Planned meeting times:

Tuesday 25 September: 8am-12noon, 1pm-6pm.
 Wednesday 26 September: 8am-12noon, 1pm-6pm.
 Thursday 27 September: 8am-12noon, 1pm-6pm.

2. Revision and approval of the License-Exempt Task Group agenda

The agenda for the week (IEEE 802.16h-06/024) was discussed and finalized accordingly:

- *Opening of the License-Exempt Task Group Sessions.*
- *Revision and approval of the License-Exempt Task Group agenda for the week.*
 - *Discussion of meeting slot timing.*
- *Approval of the minutes for Session #44 – document: IEEE 802.16h-06/019.*
- *Commentary database with reply comments – document: IEEE 802.16h-06/022r1.*
 - *Accept late comments.*
- *Contributions*
 - *Accept late contributions.*
- *Discussion on submitting the Working Document (IEEE 802.16-06/015r2) as Draft Standard.*
- *A.O.B.*
- *Close of meeting*

Proposed timing and order for comments / contributions

- *Control Channel concept.*
 - *Presentations and consolidation of options: IEEE C802.16-06/085, 091, 086.*
- *Comments with contributions.*
- *Issue of 802.16 and 802.11 coexistence.*
 - *Fix a slot (120 min) Wednesday afternoon 15:30.*
 - *Contribution IEEE C802.16h-06/074.*
 - *Discussion.*
 - *Liaison to 802.11y and other relevant groups.*
- *Contributions:*

- IEEE C802.16-06/071, 072, 073, 074, 075, 076, 078, 079, 080, 081, 082, 083, 084, 085, 086, 089, 090, 091, 092, 093, 094, 095.
- Preparation of the Closing Plenary
 - Thursday 16:30

Mariana Goldhamer (Chair) proposed accepting the agenda in document IEEE 802.16h-06/024.

The agenda was approved by unanimous voice vote at 8:30am.

3. Approval of the Minutes for Session #44 – IEEE 802.16h-06/019

The meeting reviewed the draft minutes from Session #44 – document IEEE 802.16h-06/019.

Motion (8:35am): To accept minutes of the session #44.

Proposer: Xuyong Wu.

Second: John Sydor.

The minutes for the previous meeting at session #44 in San Diego,CA, were approved with no objection.

Xuyong Wu expressed thanks to Paul Pign for his working as secretary and minute taking during Session #44. The meeting thanked Paul for his work.

4. Working Group Review: Comment/reply comment resolution of Third Working Group Review

Mariana Goldhamer (Chair) proposed accepting, for consideration during this session, the late comments.

There was no objection to accepting the late comments. The late comments were accepted for consideration.

Mariana Goldhamer (Chair) proposed accepting, for consideration at this session, the late contributions.

There was no objection to accepting the late contribution. The late contributions were accepted for consideration.

The *Commentary* database (IEEE C802.16h-06/022r1) containing comments and reply comments from the Third Working Group Review was considered. Comments with associated contributions were considered first, following discussion of contributions specifically related to the *Control Channel* concept.

Comment: 2163

A scheme for the absolute identification and numbering of Coexistence Control Channel Slots

John Sydor, Shanzeng Guo

Communication Research Centre

Contribution: IEEE C80216h-06/091

This contribution proposed to define a scheme that would identify the intervals of time in which the Coexistence Control Channel (CX_CC) slots were available.

Final decision was deferred to be revised to consider signalling with 802.11.

Comment: 2091

Proposed structure to harmonize the CMI and CSI timing in control channel

Wu Xuyong
Huawei

Contribution: IEEE C80216h-06/085

This contribution proposed a common frame structure for the CMI and CSI in order for a unified approach to be realised and to form a *Control Channel*.

The contribution was deferred for revision. Contribution IEEE C80216h-06/085r1 was developed for information only.

~ ~ ~ The meeting adjourned at 10:14pm ~ ~ ~

~ ~ ~ The meeting reconvened at 10:46am ~ ~ ~

Comment: 2027

Consolidated concept on minimal coexistence requirements, including the functional definition of the CX Control Channel

Mariana Goldhamer
Alvarion

Contribution: IEEE C80216h-06/086

This contribution proposed to consolidate the concept of minimal coexistence requirements, including the functional definition of the CX *Control Channel*.

The contribution was defer for further editorial harmonisation in sub clause 15.5.1.3.

The meeting considered comments in the *Commentary* database (IEEE C802.16h-06/022r1) with associated contributions.

Comment: 2014

Clarification on the reference time point for T_Start and T_End in the credit token based co-existence protocol

David Grandblaise
Motorola

Contribution: IEEE C80216h-06/078

This contribution proposed clarification to comments #1018, #1020 (action items), #1021, #1022 and #1026 of the session #44 Working Group Review. These comments were from *Commentary* database 80216h-06/020.

The group decision and **Action Items** for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

Comment: 2016

This comment considered contribution C80216h-06/078. Superseded by 2014.

Comment: 2028

This comment considered IEEE C80216h-06/087. IEEE C80216h-06/087 seeks to consider the contribution IEEE C80216h-06_089. IEEE C80216h-06/087 was withdrawn.

Attributes of co-existence zone

Soma Bandyopadhyay
TATA Consultancy Services Limited

Contribution: IEEE C80216h-06/089

This contribution contained proposed attributes of the co-existence zone (CXZ).

This contribution was deferred due to a lack of clarity. More information to be obtained via email discussion with Soma during the session.

~ ~ ~ The meeting adjourned at 12:22pm ~ ~ ~

~ ~ ~ The meeting reconvened at 1:35am ~ ~ ~

Comment: 2070

Flow charts merging for the BS initialization procedure

Wu Xuyong
Huawei

Contribution: IEEE C80216h-06/083

This contribution proposed to merge flow charts h8 and h9 (illustrating the BS initializing procedure) into one and attempting to retain all useful illustrations, according to the related action item from Session #44.

The group decision for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

Comment: 2091

This comment considered contribution C80216h-06/085. Comment superceded since the contribution had already been considered as part of the *Control Channel* discussion.

Comment: 2115

Using energy pulses for interference identification between 802.16 systems

Wu Xuyong
Huawei

Contribution: IEEE C80216h-06/082

Based on the result of *16h-Pulses ad hoc* this contribution proposed a mechanism using energy pulse in interference identification. This was a first output of the ad hoc.

The contribution was for information only.

After extended debate Carl Ekland called the question.
Second: Wu Xuyong.

No objection.

Motion (2:37pm): To create an ad hoc for defining the interference criteria and a transmission method complying with the 802.16 PHY and using RSSI detection for inter-system communication.

Proposer: Xuyong Wu
Second: Mariana Goldhamer

There was no objection to accepting this resolution. An ad hoc was created.

Comment: 2119

Description of the negotiation for sub-frame distribution

Wu Xuyong
Huawei

Contribution: IEEE C80216h-06/084

The contribution was proposed to complement the negotiation for sub-frame distribution, according to similar action items in session #44.

The group decision for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

Comments 2020, and 2021

These comments address contribution IEEE C80216h-06/084 so were superceded based on the resolution of comment 2119.

Comment 2125

Parameters for 802.16h support in different regulatory bands

Mariana Goldhamer
Alvarion

Contribution: IEEE C80216h-06/076

The author sought to defer this contribution for further harmonisation.

Comment: 2127

This comment addressed contribution IEEE C80216h-06/084 so was superceded based on the resolution of comment 2119.

Comment: 2128.

Text remedies for the credit token based co-existence protocol section

David Grandblaise
Motorola Labs

Contribution: IEEE C80216h-06/079

The contribution proposed to follow up on the meeting observations from Session #44 and provide some editorial text remedies on the credit token co-existence rental protocol section and related sections. The text remedies were proposed for sections 15.4.2.5 and 15.5.2 of the Working Document.

The group decision for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

Comment: 2129.

Clarification on the credit token based co-existence protocol principle

David Grandblaise
Motorola Labs

Contribution: IEEE C80216h-06/080

This contribution proposed clarification to comment #1104 (Action Item) of Session #44 and the Working Group Review. This contribution proposed text remedies on the credit token based

protocol principle related to co-existence conflicts avoidance. The proposed text remedies were intended to be included in sections 15.4.2.5.3.3 of the Working Document.

~ ~ ~ The meeting adjourned at 3:30pm ~ ~ ~

~ ~ ~ The meeting reconvened at 3:52am ~ ~ ~

Discussion of contribution IEEE C80216h-06/080 continued.

The group decision and **Action Item** for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

Comment: 2132

The comment referred to contribution IEEE C80216h-06/088. This contribution did not exist. Comment rejected.

Comment: 2137

The comment referred to contribution IEEE C80216h-06/084. This contribution was considered in comment 2119. Comment superceded.

Comment: 2138

The comment referred to contribution IEEE C80216h-06/076. The comment was deferred for further harmonisation with contribution IEEE C80216h-06/073.

Comment: 2141

The comment referred to contribution IEEE C80216h-06/087. This contribution did not exist. Comment rejected.

Comment: 2142

P802.16h Working Document structure and purpose clarification

Paul Piggin

NextWave Broadband Inc.

Contribution: IEEE C80216h-06/071

This document proposed some revisions to the structure of the P802.16h Working Document.

The contribution was deferred for further editorial changes arising during presentation of the contribution.

~ ~ ~ The meeting adjourned at 18:45pm ~ ~ ~

Wednesday 27 September 2006

Day two: The meeting opened at 8:10am.
Mont Tremblant, Quebec, Canada.

Comment: 2143

Proposed P802.16h terminology definitions

Paul Piggini
NextWave Broadband Inc.

Contribution: IEEE C80216h-06/072

This contribution defined terms used in the Working Document. The material was intended for Clause 3 '*Definitions*'.

The group decision for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

Comment: 2144

Specification of operational environments for non-exclusively assigned and licensed bands

Paul Piggini, Ken Stanwood
NextWave Broadband Inc.

Contribution: IEEE C80216h-06/073

This contribution proposed additions to the P802.16h Working Document describing the operational environment for various bands of interest where 802.16 systems could operate in a non-exclusively licensed or assigned fashion, competing with other systems and technologies.

The group decision for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

Comment: 2138

Parameters for 802.16h support in different regulatory bands

Mariana Goldhamer
Alvarion

Contribution: IEEE C80216h-06/076

This contribution provided a template and data for a number of bands in which minimum optional parameters are required. The contribution also sought to reduce the number of possibilities within the interference-free sub-frame approach.

The group decision for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

This comment was also covered by comment 2125. Comment 2125 was therefore superceded.

~ ~ ~ The meeting adjourned at 9:59pm ~ ~ ~

~ ~ ~ The meeting reconvened at 10:28am ~ ~ ~

Comment: 2140

Procedures for spectrum sharing with specific spectrum users

Mariana Goldhamer

Alvarion

Contribution: IEEE C80216h-06/081

This contribution sought to address primary users other than radars operating at 5GHz – which had, to date, only been considered in detail in the Working Document.

The group decision for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

Comment 2146

Action items from Session #44

Paul Piggitt

NextWave Broadband Inc.

Contribution: IEEE C80216h-06_075

This contribution contained a resolution of action items assigned during Session #44.

The group decision for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

Comment: 2159

Dynamic Interference Maintenance in Coexistence Community

Shulan Feng

Hisilicon Tech. Co., Ltd.

Contribution: IEEE C80216h-06/094

This contribution proposes interference relationships scenarios in the coexistence community, including interference relationship release, potential interference detection, and searching for idle channels.

An **Ad Hoc** was created to cover the questions and suggestions in the contributed document. The Ad Hoc scope statement was: "*Ad-Hoc on interference management in the network entry and the operating stage, define the problem to be resolved, look for solutions*".

Comment: 2160

REP_RSP and REP_REQ MAC message modifications for Co-Channel Interference Detection and Resolution in Synchronized WirelessMAN-CX Same Profile Systems

John Sydor, Shanzeng Guo
Communication Research Centre

Contribution: IEEE C80216h-06/090

This contribution modified two MAC messages and deleted two previous MAC messages to the draft IEEE802.16h working document.

This contribution was withdrawn.

~ ~ ~ The meeting adjourned at 12:03pm ~ ~ ~

~ ~ ~ The meeting reconvened at 13:14am ~ ~ ~

Comment: 2161

Changes to Working Draft Document for conformance of Same PHY Profile Processes and the CX_CC concept

John sydor, Shanzeng Guo
Communication research Centre

Contribution: IEEE C80216h-06/092

This contribution considered with the development of the Coexistence Control Channel (CX_CC) concept that there were a number of *Same PHY* profile processes that needed to be changed to conform to the new concept.

The contribution was defer for further editorial amendment.

The meeting considered the previous deferred contributions.

Comment: 2142

Deferred from yesterday (Tuesday 26 September 2006) pm.

P802.16h Working Document structure and purpose clarification

Paul Piggan

NextWave Broadband Inc.

Contribution: IEEE C80216h-06/071

The group decision for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

Comment: 2191

Deferred contribution IEEE C80216h-06/085 was discussed.

Proposed structure to harmonize the CMI and CSI timing in control channel

Wu Xuyong

Huawei

Contribution: IEEE C80216h-06/085

Contribution IEEE C80216h-06_085r1 was considered by the meeting.

Motion (2:58pm): To defer resolution of contributions IEEE C80216h-06/085, and IEEE C80216h-06/091 and their revisions until the next meeting session #46, and to accept-modified changes to contribution IEEE C80216h-06/086 and its revision with specific deletion of 15.1.5.3.1 subclauses a, b, and c.

Proposer: Xuyong Wu
Second: Michael Wang

For : 2
Against: 1

Motion failed.

Motion (3:00pm): MG to accept contribution.

John Sydor objected to accepting 85r1.

Motion withdrawn.

Discussioned deferred until Thursday 28 September 2006 3pm.

Comment: 2128

Deferred contribution IEEE C80216h-06/089 was discussed and further deferred for harmonisation.

~ ~ ~ The meeting adjourned at 3:20pm ~ ~ ~

~ ~ ~ The meeting reconvened at 3:30am ~ ~ ~

Coexistence between 802.11 and 802.16 systems was discussed.

Paul Piggin presented contribution IEEE C80216h-06/074r2.

Comment: 2145

Uncoordinated Coexistence Protocol (UCP)

Paul Piggin, Lei Wang, Ken Stanwood
NextWave Broadband Inc.

Contribution: IEEE C80216h-06/074

The group decision for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

Roger Marks (WG chair) to draft a liaison letter to facilitate P802.11y Task Group (TGy) to meet jointly with the 802.16 WG's License-Exempt (LE) Task Group during the November 2006 IEEE 802 Plenary. (Document IEEE L80216-06/026r1).

Comment: 2128

Deferred contribution C80216h-06_089 was discussed.

Attributes of co-existence zone

Soma Bandyopadhyay
TATA Consultancy Services Limited

Contribution: IEEE C80216h-06/089

The group decision for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

Comment: 2027

Deferred contribution IEEE C80216h-06/086 was discussed.

Consolidated concept on minimal coexistence requirements, including the functional definition of the CX Control Channel

Mariana Goldhamer
Alvarion

Contribution: IEEE C80216h-06/086

The group decision for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

Comment resolution from *Commentary* database IEEE 80216h-06/022r1.

~ ~ ~ The meeting adjourned at 5:34pm ~ ~ ~

Thursday 28 July 2006

Day three: The meeting opened at 8:14am.
Mont Tremblant, Quebec, Canada.

Comment resolution from *Commentary* database IEEE 80216h-06/022r1.

~ ~ ~ The meeting adjourned at 9:57pm ~ ~ ~

~ ~ ~ The meeting reconvened at 10:35am ~ ~ ~

Comment resolution from *Commentary* database IEEE 80216h-06/022r1.

~ ~ ~ The meeting adjourned at 12:02pm ~ ~ ~

~ ~ ~ The meeting reconvened at 1:08am ~ ~ ~

Comment 2162

CMI sub-frame, detection of BSD, SSURF and their demodulation

Soma Bandyopadhyay
TATA Consultancy Services Limited

Contribution: IEEE C80216h-06/095

This contribution contained the addition of text to explain the context for sub clause 6.3.2.3.62.

The group decision for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

Comment: 2163

Deferred contribution IEEE C80216h-06/091 was discussed.

A scheme for the absolute identification and numbering of Coexistence Control Channel Slots

John Sydor, Shanzeng Guo
Communication Research Centre

Contribution: IEEE C80216h-06/091

The group decision for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

Comment: 2161

Deferred contribution IEEE C80216h-06/092 was discussed.

Changes to Working Draft Document for conformance of Same PHY Profile Processes and the CX_CC concept

John sydor, Shanzeng Guo
Communication research Centre

Contribution: IEEE C80216h-06/092

The group decision for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

Comment: 2125

Deferred contribution IEEE C80216h-06/076 was discussed.

Parameters for 802.16h support in different regulatory bands

Mariana Goldhamer
Alvarion

Contribution: IEEE C80216h-06/076

The group decision for this contribution is reflected in *Commentary* database IEEE C802.16h-06/022r2.

~ ~ ~ The meeting adjourned at 2:30pm ~ ~ ~

~ ~ ~ The meeting reconvened at 4:04pm ~ ~ ~

5. Meeting report out

The meeting report (IEEE 802.16h-06/025) for the Working Group closing plenary was discussed.

133 comments were accepted.
10 comments were rejected.
12 comments were superceded.
8 comments were for information.

The following motion was discussed.

Motion (4:20pm): Adopt the document IEEE 802.16h-06/015r1, as modified by the 802.16h Session#44 minutes and database 802.16h-06/022r2, to be the first 802.16h draft and submit it for Working Group Letter Ballot

Proposer: Mariana Goldhamer.
Second: David Grandblaise.

There was no discussion.

For: 5
Against: 0
Abstention: 0

Therefore the motion will be presented at the Working Group closing plenary.

The meeting formulated a list of Action Items and Ad Hoc groups arising from the Session. These Action Items and Ad Hoc groups were compiled in contribution IEEE C80216h-06_096. A total of 16 actions were produced, and 3 ad hoc groups formed.

6. AOB

There was no other business.

7. Close of meeting

Motion (6:17pm): To adjourn.
Proposed: Xuyong Wu.
Second: David Grandblaise.

Carried by unanimous voice vote.

~ ~ ~ The meeting adjourned at 6:17pm ~ ~ ~