

Session #41 802.16mmr Opening Report – 01/09/06

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Venue:

IEEE 802.16 Session #41, New Delhi, India

Base Document:

None

Purpose:

SG Meeting organization

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Session #41 802.16mmr
Opening Report – 01/09/06
3rd Study Group Meeting on Mobile
Multi-hop Relay in IEEE 802.16

Chair: Mitsuo Nohara

Time: 08:00 – 12:00, Tue. 10 – Thu. 12 Jan., 2006

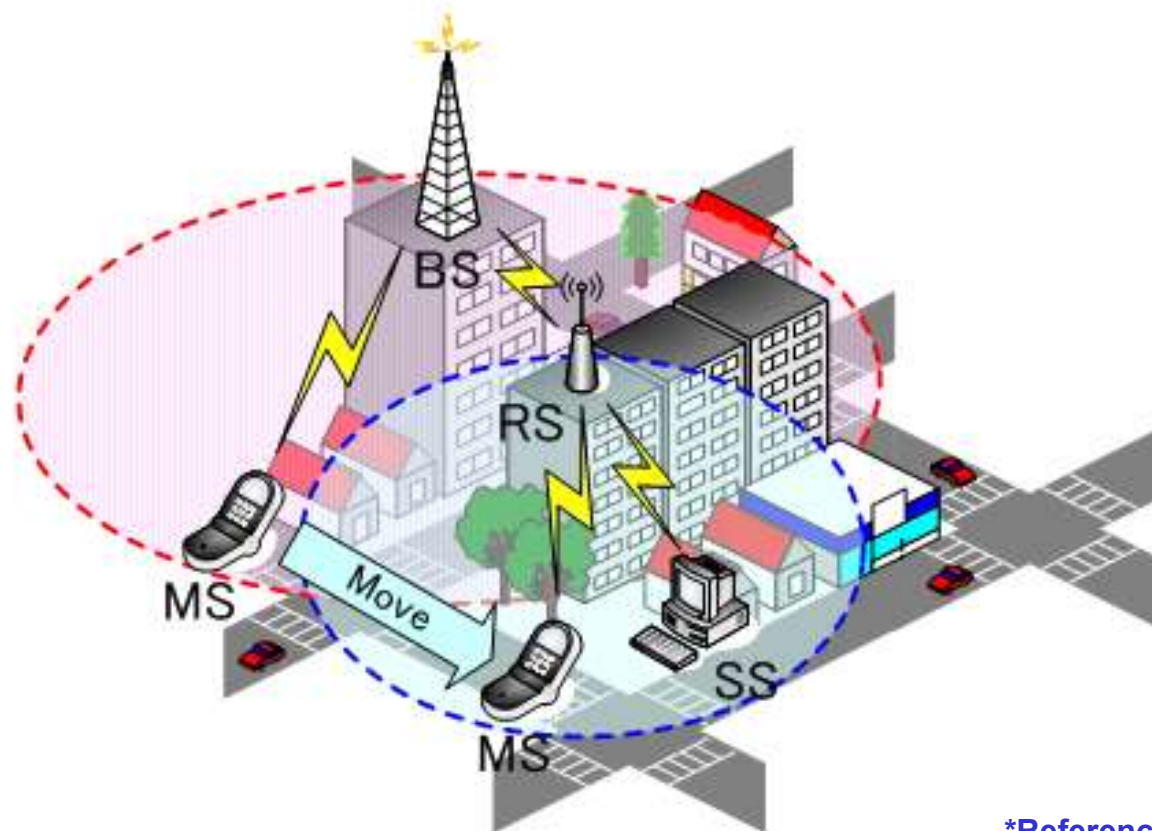
Place: Room A

The Maurya Sheraton Hotel, New Delhi, India

***Modified on 10 Jan. to cover the presentation program detail.**

Scope of Proposed Relay Project

- Develop Proposed Relay mode for fixed / mobile terminal
 - PHY: Enhance normal frame structure
 - MAC: Add new protocols for the Relay networking



Main Features

- **Main features**
 - **Tree structure: one of the end of relayed data path should be at BS**
 - **Efficiently provide Relay connection to SS/MS (with small number of hops)**
 - **Support OFDMA as well as OFDM PHY mode**
 - **Backward compatible to PMP mode**
 - **PMP & Relay modes : share a same band, or use different but adjacent bands**
- **Considered RS types**
 - **Fixed and Nomadic Infra./Client RS, Mobile Infra. RS**

Objectives of this 3rd SG Meeting

- **To make the PAR and 5 Criteria on Mobile Multi-hop Relay**
 - **with contributions provided, referring to the 3rd call for comments and contributions,**
- **To refer and react to the comments from 802.1 to be reported by DJ Johnston joining the WG meeting being held in parallel,**
- **To Prepare for the 802 Tutorial to be held next March by making the draft presentation material, and**
- **To plan future activity and schedule towards the PAR and 5 Criteria Authorization at the next EC in Denver, Mar. '06.**

Agenda

- **Session #40 Vancouver**
 - 2nd SG Meeting Summary**
- **PAR and 5 Criteria Completion**
 - 2.1 Contribution Presentations**
 - **14 Contributions and 1 Baseline, 15 in total, on;**
 - **PAR & 5 Criteria,**
 - **Scope & Scenario, and**
 - **Technical Study.**
 - 2.2 References with the other WG activities**
 - **802.1, 11s and 802.16h**
 - 2.3 Documentation**
- **Meeting Summary**
- **Future Activity and Schedule**

1. Session #40 Vancouver 2nd SG Meeting Summary

Contributions at the 2nd SG Meeting

23 Contributions Submitted, each categorized into:

- **Technical issues relevant to a “PAR and Five Criteria” preparation and other works,**
- **Direction of MMR activities for high level issues such as service scenarios, network topologies, etc. and**
- **Technical Analysis and Design,**

then provided over three-days meeting.

***Presentation Program as shown next:**

Day#1-1 08:00 - 09:40 Tue. 15 Nov., 2005

No.	Ref.	Author st	Affiliation	Title
1*	Cmmr-05_020	Mariana Goldhamer	Alvarion	Advantages of a Coexistence Protocol for Relay Operation
2*	Cmmr-05_040	Kenji Saito	KDDI R&D Labs.	Considerations on Mobile Multi-hop Relay for IEEE802.16
3*	Cmmr-05_032	Masahito Asa	Motorola	Recommendations for the Scope and Purpose of the Mobile Multihop Relay Task Group
4	Cmmr-05_024	Jimin Liu	Aclatel Shanghai Bell	Self-backhaul Relay

Day#1-2 10:00 - 12:00 Tue. 15 Nov., 2005

5	Cmmr-05_026	Deng Shiqiang	Huawei Technologies	Recommendation on Mobility Management of Multi-hop Relay
6	Cmmr-05_030	D. J. Shyy	ITRE	Military Usage Scenario for 802.16 MMR
7	Cmmr-05_031	D. J. Shyy	ITRE	CDMA2000 Network Repeater Deployment Experience.
8	Cmmr-05_033	Shyamal Ramachandran	Motorola	A Case for Multihop Backhaul
9	Cmmr-05_041	I-Kang Fu	National Chiao Tung Univ.	System Performance of Relay-based Cellular Systems in Manhattan-like Scenario

* Each presentation consists of 15-minutes presentation and 5-minutes Discussions.

Day#2-1 08:00 - 09:40 Tue. 15 Nov., 2005

No.	Ref.	1 st Authour	Affiliation	Title
10	Cmmr-05_042	min Rubin	Intel	Cooperative Relaying System
11	Cmmr-05_022	Ozgur Oyman	Intel	Throughput Improvements in Micro-Cellular Multi-Hop Networks
12	Cmmr-05_023	Gang Shen	Alcatel Shanghai Bell	Recommendation on 802.16 MMR with Backward Compatibility
3	Cmmr-05_025	Xiaobing Leng	Alcatel Shanghai Bell	A frame structure for mobile multi-hop relay with different carrier frequencies

Day#2-2 10:00 - 12:00 Tue. 15 Nov., 2005

14	Cmmr-05_027	Fang-Ching Ren	ITRI	Recommendation on PMP Mode Compatible TDD Frame Structure
15	Cmmr-05_028	Kyungjoo Suh	Samsung Electronics	Open Problems in Mobile Multi-hop Relay System
16	Cmmr-05_029	Tzu-Ming Lin	ITRI	Modification for enabling the RS Operations
17	Cmmr-05_038	Aeran Youn	LG Electronics	Decision method of relayed MS in MMR-enabled networking
18	Smmr-05_034	Byoung-Jo Kim	AT&T	Analysis of Simple Infrastructure Multihop Relay Wireless System
19	Cmmr-05_036	Wen Tong	Nortel Networks	MMR Topology Study with 6 Configurations

* Each presentation consists of 15-minutes presentation and 5-minutes Discussions.

Day#3-1 08:00 - 09:40 Thu. 16 Nov., 2005

o.	ef.	st Authour	Affiliation	Title
20	Cmmr-05_035	David Steer	Nortel Networks	MMR PAR and Five Criteria Draft
21	Cmmr-05_037	Yousuf Saifullar	Nokia	Issues and Scope of MMR
22	Cmmr-05_043	Mike Hart	Fujitsu Lab. Europe	Input text to the PAR and Five Criteria
23	Cmmr-05_039	Mitsuo Nohara	KDDI	PAR and Five Criteria for 802.16 Mobile Relay

- Each presentation consists of 15-minutes presentation and 5-minutes Discussions.
- Discussions on PAR and 5 Criteria Preparation to follow.

Day#3-1 10:00 - 12:0 Thu. 16 Nov., 2005

Discussion on PAR and 5 Criteria Preparation

Output of the 2nd SG meeting

- Summarized the 1st SG meeting held in Taipei, Sept. 2005.
- Conducted Three-days Contribution Presentations
 - 23 Contributions
 - 11 Contributions with main focus on the Scope,
 - 7 on Technical, and
 - 5 on PAR.
- Started discussions on the PAR and 5 Criteria Preparation.
- Set future activity plan and schedule towards the PAR and 5 Criteria preparation (to be completed at the #41 Meeting in New Delhi, Jan. '06.)

Note:

- During the last EC meeting, 802.1WG Chair raised his concern about the “relay.” DJ Johnston to join the 802.1WG interim session (to be held tomorrow) and report any comments from the WG.
- Also the SG period extension by March approved.

Motion to SG at its 2nd Meeting

- **Motion : To empower study group chair to prepare new call for contributions and also prepare report for the session.**
 - **Motion : Naftali Chayat, Second : Jaewon Cho**
 - **Unanimous voice consent**
- > PAR & 5 Criteria Discussion Base and the 3rd Call for Comments and Contributions Issued.**

2. PAR and 5 Criteria Completion

2.1 Contributions

3rd Call for Comments and Contributions

Areas of activities:

- **Assess feasibility of Multi-hop Relay for fixed / mobile terminal including PHY/MAC modifications;**
- **Study the impact on PHY with enhancement of normal frame structure and backward compatibility with 802.16 TGe PMP mode;**
- **Study the impact on MAC protocols to be newly added for the relay networking including handover cases;**
- **Study spectral scenario including frequency reuse and interference among the links between Base station (BS) and Relay station (RS), and ones between RS and Mobile/Subscriber station (MS/SS);**
- **Study the security between BS and Mobile Subscriber station (MS) via RS;**

3rd Call for Comments and Contributions

Contribution Provisions:

In preparation for the third SG Meeting, further contributions addressing the above topics are requested. The contributions should provide:

- *Comments on the “Discussion Base on Draft PAR and Five Criteria,” (IEEE 802.16mmr-05/025)*
- *Technical issues relevant to a Tutorial Presentation to be held at the IEEE 802 Plenary of March 2006.*
- *Distinctions from other IEEE 802 standards and projects such as 802.1 on Spanning Tree and Bridge, 802.11s and 802.16h.*

Contribution Presentations

* List of 1st Authors:

V Mitsuo Nohara
S Mitsuo Nohara
T Jaeweon Cho
T I-Kang Fu
T Chie Ming Chou
P Roger Peterson
V Roger Peterson
S Masahito Asa
P Mike Hart
P David Steer
V Jose Costa

S Wen Tong
S Puneet Jain
P Mitsuo Nohara
T Changhoi Koo

P **S** : Day 1 (Tue.), 10-min. Presentation each

T **V** : Day 2(Wed.), 15-min. Presentation each

(15 Presentations in total)

• Each of those 15 Presentations will be categorized into:

P "PAR & 5 Criteria" / **S** Scope, Scenario and System Definition
/ **T** Technical Analysis and Design/ **V** Vocabulary & Tutorial

3rd SG Meeting Presentation Program

No.	Ref.	Author ^{1st}	Affiliation	Title
1	Cmmr-06_001	Mitsuo Nohara	KDDI	Discussion Base for 802.16 Mobile Multi-hop Relay Tutorial draft
2	Cmmr-06_002	Mitsuo Nohara	KDDI	Distinctions from IEEE802.1 projects
3	Cmmr-06_003	Jaeweon Cho	Samsung	On the Throughput Enhancement of Fixed Relay Concept in Manhattan-like Urban Environments
4	Cmmr-06_004	I-Kang Fu	NCTU	Reverse Link Performance of Relay-based Cellular Systems in Manhattan-like Scenario
5	Cmmr-06_005	Chie Ming Chou	ITRI	Handover scenarios for 802.16 MMR
6	Cmmr-06_006	Roger Peterson	Motorola Labs.	Recommendations for the PAR and Five Criteria Mobile Multihop Relay Task Group
7	Cmmr-06_007	Roger Peterson	Motorola Labs.	Definition of terminology used in Mobile Multihop Relay
8	Cmmr-06_008	Masahito Asa	Motorola Japan	Relay Strategy of Broadcast Messages in Mobile Multihop Relay
9	Cmmr-06_009	Mike Hart	Fujitsu Lab. of Europe	Comments on the Discussion Base on Draft PAR & Five Criteria Document
10	Cmmr-06_010	David Steer	Nortel	MMR PAR and Five Criteria draft
11	Cmmr-06_011	Jose Costa	Nortel	Vocabulary of Terms Related to the Mesh/Relay Networks
12	Cmmr-06_012	Wen Tong	Nortel	Consideration of MMR Basic Networking Topology Constraints
13	Cmmr-06_014	Puneet Jain	Intel	Proposed enhancements to IEEE802.16 MMR PAR and Five Criteria
14	mnr-05_025	Mitsuo Nohara	*SG Document	Discussion Base for 802.16 Mobile Multi-hop Relay Study Group Draft PAR and Five Criteria
15	Cmmr-06_013	Changhoi Koo	Samsung T. America	Configuration Scenario for Multi-Hop Relay Network

3rd SG Meeting Presentation Program – Day 1

*Contribution Presentation & Discussion on PAR & 5 Criteria, and Strategies

No.	Ref.	Author	Affiliation	Title
1	mmr-05_025	Mitsuo Nohara	*SG Document	Discussion Base for 802.16 Mobile Multi-hop Relay Study Group Draft PAR and Five Criteria
2	Cmmr-06_006	Roger Peterson	Motorola Labs.	Recommendations for the PAR and Five Criteria Mobile Multihop Relay Task Group
	Cmmr-06_009	Mike Hart	Fujitsu Lab. of Europe	Comments on the Discussion Base on Draft PAR & Five Criteria Document
4	Cmmr-06_010	Gerald Steer	Nortel	MMR PAR and Five Criteria draft
5	Cmmr-06_008	Asahito Asa	Motorola Japan	Relay Strategy of Broadcast Messages in Mobile Multihop Relay
6	Cmmr-06_012	Wen Tong	Nortel	Consideration of MMR Basic Networking Topology Constraints
7	Cmmr-06_014	Puneet Jain	Intel	Proposed enhancements to IEEE802.16 MMR PAR and Five Criteria
	Cmmr-06_002	Mitsuo Nohara	KDDI	Distinctions from IEEE802.1 projects

*Each presentation consists of 10-minutes presentation and 5-minutes discussion.

*Please state if there is any big issue and/or notes.

3rd SG Meeting Presentation Program – Day 2

*Contribution Presentation & Discussion on Technical Analysis, Terminology and Tutorial

No.	Ref.	1 st Authour	Affiliation	Title
1	mmr-06_003	aeweon Cho	Samsung	On the Throughput Enhancement of Fixed Relay Concept in Manhattan-like Urban Environments
2	Cmmr-06_004	I-Kang Fu	NCTU	Reverse Link Performance of Relay-based Cellular Systems in Manhattan-like Scenario
	Cmmr-06_005	Chie Ming Chou	ITRI	Handover scenarios for 802.16 MMR
4	Cmmr-06_013	Changhoi Koo	Samsung T. America	Configuration Scenario for Multi-Hop Relay Network
	mmr-06_007	Roger Peterson	Motorola Labs.	Definition of terminology used in Mobile Multihop Relay
	Cmmr-06_011	Jose Costa	Nortel	Vocabulary of Terms Related to the Mesh/Relay Networks
7	Cmmr-06_001	Mitsuo Nohara	KDDI	Discussion Base for 802.16 Mobile Multi-hop Relay Tutorial draft

*Each presentation consists of 15-minutes presentation and 5-minutes discussion.

*Please state if there is any big issue and/or notes.

2.2 References with the other WG activities

***DJ Johnston to report 802.1WG**

***expecting to have his report by Wed. morning and discuss it on that day.**

2.3 Documentation

***Ad-hoc meeting/Extra SG meeting to be arranged, if necessary**

3. Future Activity and Schedule

Current Schedule

- **PAR & 5 Criteria Preparation towards #42 Plenary**

Year	Month	802.16 session	Actions
2005	July	#38 Plenary	Propose to form SG – Approved
	Sept.	#39 Interim	SG: the 1st meeting
	Nov.	#40 Plenary	SG: the 2nd meeting
2006	Jan.	#41 Interim	SG: the 3rd meeting – Complete a PAR
	Mar.	#42 Plenary	SG: the 4 th meeting 802 EC endorses PAR approval
	May	#43 Interim	TG: the 1st meeting
	July	#44 Plenary	TG: the 2nd meeting
	Sept.	#45 Interim	TG: the 3rd meeting
	Nov.	#46 Plenary	TG: the 4th meeting

To Do List

- **At This Meeting**
 - Completion of PAR & 5 Criteria (Contributions and Discussions)
 - Reactions to 802.1 comments
- **After This Meeting towards Next #42 Meeting**
 - Information Enhancements to the PAR & 5C
- **At the Next #42 Meeting**
 - “PAR & 5 Criteria” for the EC Authorization
 - Tutorial Presentation on MMR-SG
- dot16 “forum” website: <http://dot16.org/forum/>

MMR-SG

08:00 – 12:00, Tue. 10 – Thu. 12, Jan. , 2006
(3 Meeting Slots, plus some more?)

Place: Room A,
The ITC Maurya Sheraton Hotel and Towers,
New Delhi, India

Please Join and see you!

