

**Ad-hoc Meeting on  
Mobile Multi-hop Relay  
Networking in IEEE 802.16**

**Chair: Mitsuo Nohara**

**Time: 08:00 – 12:00, Tuesday, July 19, 2005**

**Place: Pacific A/Grand B**

# Objectives, This time

- **To exchange the views on Mobile Multi-hop Relay Networking**
- **To have open comments and technical discussions**
- **To Form new Study Group**
- **To plan future activity and schedule**

# Agenda

- 1. Presentation on  
Mobile Multi-hop Relay Networking in  
IEEE802.16**
- 2. Open Comments and Technical Discussions  
- Presentations**
- 3. New Study Group Forming**
- 4. Meeting Summary**
- 5. Future Activity and Schedule**

# Mobile Multi-hop Relay Networking in IEEE 802.16

## Keywords from Last Meeting:

- Mesh or Relay ?
- Maximum number of hops ?
- Licensed or LE band ?
- PHY, MAC ?
- Those covered in Ref.

# **Mobile Multi-hop Relay Networking in IEEE 802.16**

**\*Reference Presentation (C80216-005\_013)**

# Tentative Schedule

- Starting new Study Group / Task Group

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	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**
  - Meeting Summary for Closing Plenary
  - Proposal to form New Study Group
    - C80216-05\_013 as Reference, including Schedule
    - Notes to the Reference
    - Supporter List to form New Study Group
    - New Study Group Organization
      - ◆ Mitsuo to Chair
      - ◆ Submission-form confirmed with WG Chair

# New Study Group Proposal

- **We, as listed on the supporter list attached, support the creation of a new study group on mobile multi-hop relay networking, which is:**
  - referring to C802.16-05/013 as its discussion base,
  - with the notes attached to the reference,
  - aiming at preparing a new PAR and 5 criteria,
  - to start from next #39 meeting and
  - to be chaired by Mitsuo Nohara.



# New Study Group Reference and Notes

as of 19 July, 2005

**Reference: C802.16-05/013**

**Notes:**

- **Relay mode may include multiple connectivity,**
- **Spectral Scenario will be studied at new SG,**
- **Interference coexistence and other relating things to be studied working with License-Exempt Task Group,**
- **Need activity watch on 802.1 bridge,**
- **Issues of Interest:**
  - **Hand over,**
  - **Technical Performance, and**
  - **Backward compatibility.**

# New Study Group Supporter List

as of 19 July, 2005

Mitsuo Nohara

Kenji Saito

JaeWeon Cho

JungJe Son

PanYuh Joo

HyeonWoo Lee

Nat Natarajan

Masahito Asa

Jose P. Puthenkulam

Ofer Kelman

Guo Qiang

Geunhwi Lim

Naftali Chayat

KyungJoo Suh

Shyamal Ramachandran

Aik Chindapol

Maximilian Riegel

Aeran Youn

Avinash Joshi

Robin Zheng

Wu Xuyong

Chang-Lung Hsiao

Arther Wang

Matthew Sherman

Youngho Kim

JunHyung Kim

Mike Hart

Sunil Vadgama

Charlie Zhang

Gang Shen

Roland Muenzner

Eckard Bogenfeld

N.K. Shankaranarayanan

Yousuf Saifullah

Chenxi Zhu

Byoung-Jo "J" Kim

Kevin Baum

Roger Peterson

Meng Zhao

Paul Piggin

Hujun Yin

Mark Thomas

David Mc'Ginniss

Jorjeta Jetcheva

Yoko Kurosawa

Kazuki Tani

Bahareh Sadeghi\*

Sumeet Sandhu\*

\*not listed under .16  
attendance list

# To Do List Cont.

- **After This Meeting towards Next #39 Meeting**
  - Feedback Comments Summary
  - Discussions @ dot16.org
  - Proposal Revision as the discussion Base
- **At the Next #39 Meeting**
  - New Study Group Kick-off
  - PAR and 5 Criteria Preparation
- **Reference Addition**
- **New SG Mailing List/Reflector Update**

# Attachments

# **Mobile Multi-hop Relay Networking in IEEE 802.16**

**Mitsuo Nohara, Kenji Saito, Keizo Sugiyama, Hideyuki Shinonaga  
KDDI R&D Laboratories Inc.**

**Jaeweon Cho, Jungje Son, Panyuh Joo, Hyeonwoo Lee  
Samsung Electronics Co., Ltd.**

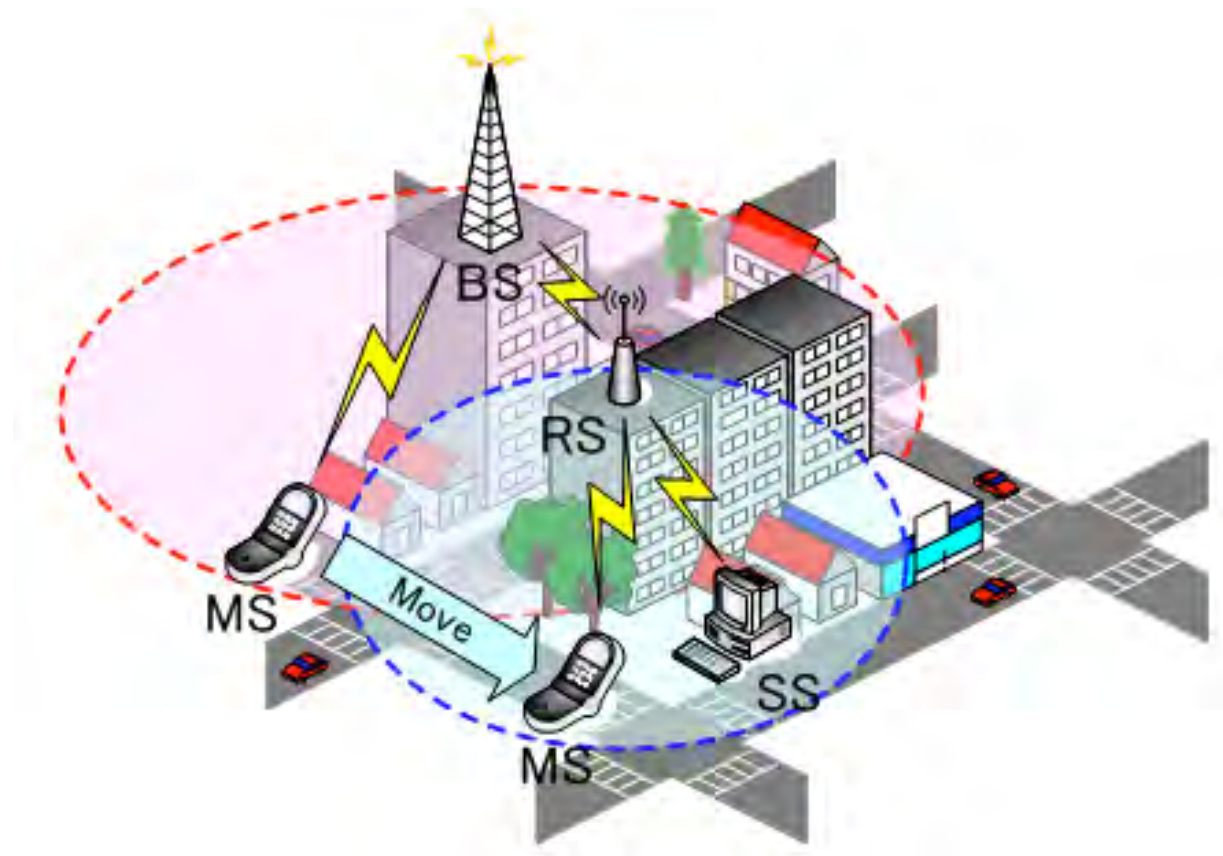
**Nat Natarahan, David T. Chen, Masahito Asa  
Motorola Inc.**

**Jose P. Puthenkulam  
Intel**

**18 July, 2005**

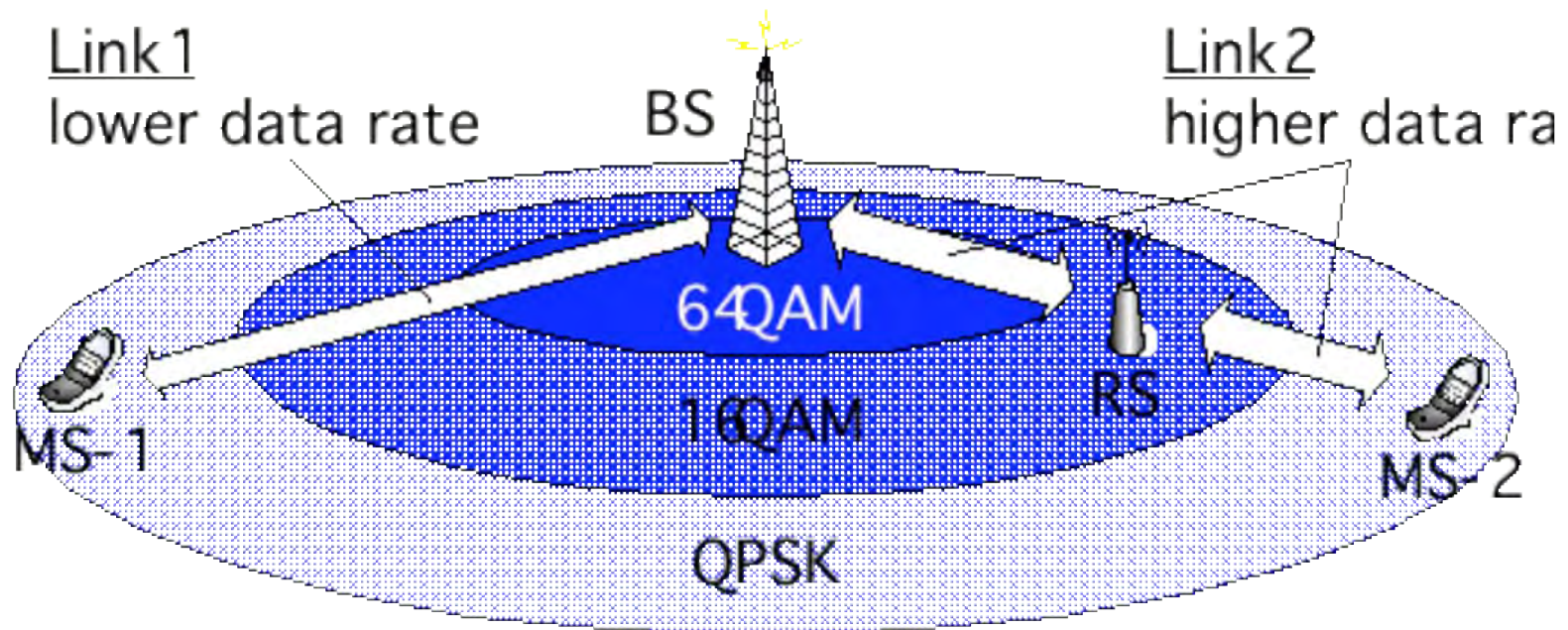
# Scope of Proposed Relay Project

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



# Purpose

- **Coverage extension**
  - Expansion for coverage area
- **Throughput enhancement**
  - Higher throughput over multi-hop paths



# 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 Infra RS, Nomadic Infra/Client RS, Mobile Infra. RS**
- ❖ **dot16 “forum” website: <http://dot16.org/forum/>**