Session #39 802.16 MMR SG Opening Report

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IEEE 802.16 Session #39, Taipei, Taiwan

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Purpose:
SG Meeting organization

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Session #39 802.16 MMR SG
Opening Report – 9/13/05
Study Group Meeting on Mobile Multi-hop Relay in IEEE 802.16

Chair: Mitsuo Nohara
Time: 08:00 – 12:00, Wed., Sept. 14, 2005
Place: Auditorum, The Grand Hotel, Taipei
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

*Reference Presentation (C802.16-005/013)*
Objectives of this 1st SG Meeting

• To exchange views on Mobile Multi-hop Relay
  – with contributions provided, referring to the call for contributions,
• To have open discussions, and
• To plan future activity and schedule towards the PAR and 5 Criteria preparation.
Agenda

1. Session #38 San Francisco Ad-hoc Meeting Summary

2. Contribution Presentations
   • Contribution Presentations
   • Open Discussions
   • Each presentation consists of 10-minutes presentation and 5-minutes Discussions.

Note: As the result of discussion, the meeting time will be extended. (Time: TBD)

3. Future Activity and Schedule
1. Session #38 San Francisco Ad-hoc Meeting Summary
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

*Reference Presentation (C802.16-005/013)
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/

*Reference Presentation (C802.16-005/013)
New Study Group Proposal

- We, as listed on the supporter list attached on page 15, 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 as shown on page 14,
  - aiming at preparing a new PAR and 5 criteria,
  - to start from next #39 meeting and
  - to be chaired by Mitsuo Nohara.

Motion

- To create a new 802.16 WG study group on Mobile Multi-hop Relay.
  Motion Passed: For: 77, Against: 0, Abstain: 1
Notes to Reference

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 21 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
Wen Tong
Mo-han Fong
Bahareh Sadeghi*
Sumeet Sandhu*
*not listed under .16 attendance list

*This list contains the names of participants who showed their interests by signing their names on site/after the meeting and reference authors participating to the meeting. Their names have been confirmed referring to the participant-registration list.
2. Contributions
Call for 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;
Call for Contributions

Contribution Provisions:

• Ideas for usage and application scenario: Network topology and capability of RS,
• Principle requirements on PHY/MAC protocols in IEEE802.16 to provide multi-hop connection,
• Ideas for spectral scenario and security issues, and
• References of the technology such as IEEE802.1 Bridging.
Contribution Presentations

- Kenji Saito, Mitsuo Nohara and Keizo Sugiyama
- Jaeweon Cho, Jungje Son, Panyuh Joo and Hyeonwoo Lee
- Deng Shinquiang and John Lee
- Panos I. Dallas, Ana M. Gallardo and A. Valkanas
- Gamini Senarath, Wen Tong, Peiying Zhu, Mo-Han Fong, Hang Zhang, Jianglei Ma, G.Q. Wang and Dave Paranchych
- Wen Tong, Peiying Zhu, Mo-Han Fong, Gamini Senarath, Hang Zhang, Jianglei Ma, G.Q. Wang and Dave Paranchych
- Amir Rubin
- Yu-Ching Hsu
- Ray-Guang Cheng
- Fang-Ching Ren, Chang-Lung Hsiao, Yu-Ching Hsu and Wern-Ho Sheen
- Shou-Sheu Lin and Wern-Ho Sheen
- I-Kang Fu, Wern-Ho Sheen, Ren-Jr Chen, Chang-Lung Hsiao and Shou-Sheu Lin
- Masahito Asa, Nat Natarajan, Roger Peterson, Shyamal Ramachandran, David Chen
- Shyamal Ramachandran
- Mike Hart
- Each presentation consists of 10-minutes presentation and 5-minutes Discussions.

Note: The total meeting time will be extended. (Time: TBD)
3. Future Activity and Schedule
## Tentative Schedule

- **Starting new Study Group / Task Group**

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

- **At This Meeting**
  - Contributions/Discussions

- **After This Meeting towards Next #40 Meeting**
  - Comments and Discussions @ dot16.org

- **At the Next #40 Meeting**
  - Contributions and Discussions, (to be cont.)
  - PAR Preparation (Scope, Purpose, Reason, Review of other Project, etc.,)
  - SG Mailing List/Reflector Update @dot16.org
MMR-SG

Time: 08:00 – 12:00, Wed., Sept. 14, 2005
Note: One more extra slot to be allocated.
(Time and Place: TBD)
Place: Auditorum

*Reference Presentation (C802.16-005/013)