

## 2.3GHz Portable Internet (WiBro) for Wireless Broadband Access

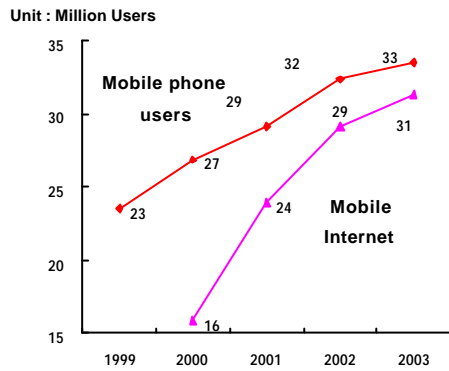
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### Discussion Topics

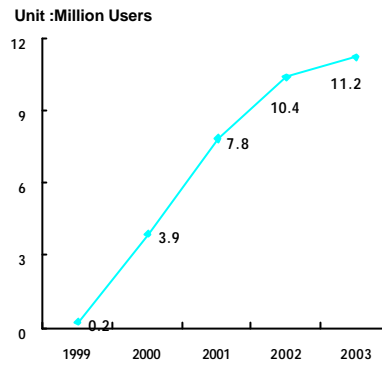
- I. Why Portable Internet (WiBro)?
- II. Portable Internet (WiBro) Service
  1. Service Positioning
  2. Service Concept
  3. Service Features
  4. Customer Needs
  5. Demand Forecast
- III. Service Schedule
- IV. TTA PG302 Activities
- V. Decision of PG302
- VI. Future Plan of PG302
- VII. Summary

## ? Why WiBro? : Subscribers in Korea

Mobile phone/internet users



High speed internet users



Source : Ministry of Information & Communication (Nov, 2003)

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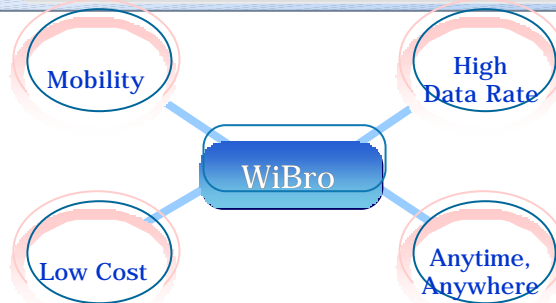
## ? Why WiBro? : Definition

### Definition

Portable Internet Service(WiBro) is to provide a high data rate wireless internet access with PSS(Personal Subscriber Station) under the stationary or mobile environment, anytime and anywhere.

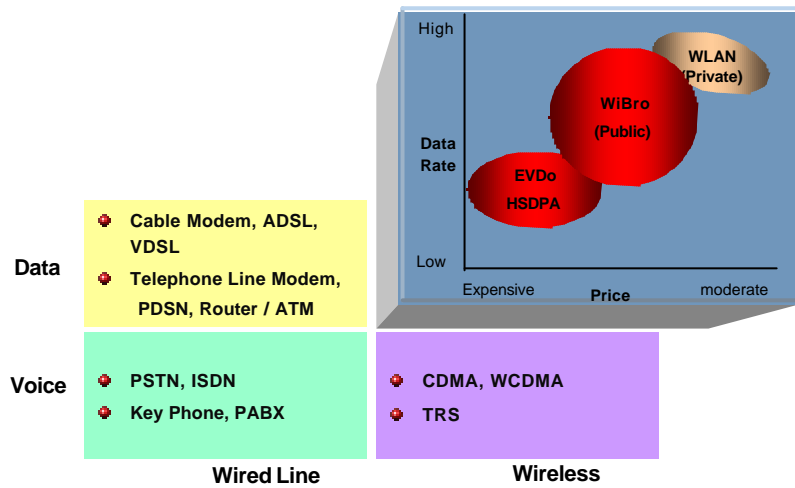
### Reference

- ? Portable Internet? was named as ? WiBro? . (End of April, 2004)
- WiBro : Wireless Broadband



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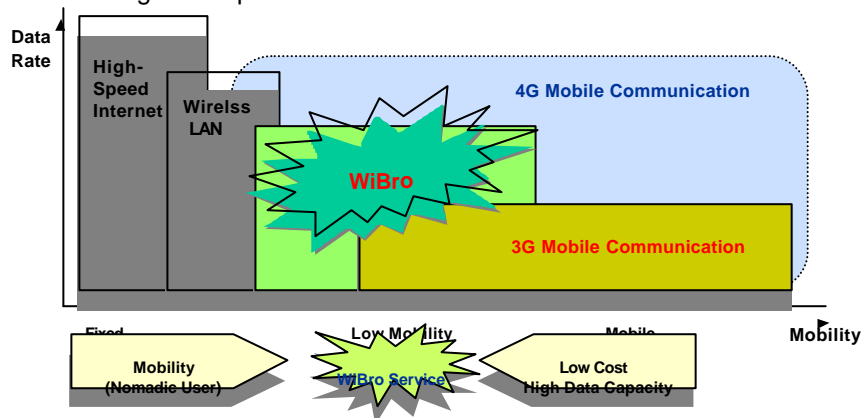
## ? Why WiBro? : Korea market wants WiBro



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## ? WiBro : Service Positioning

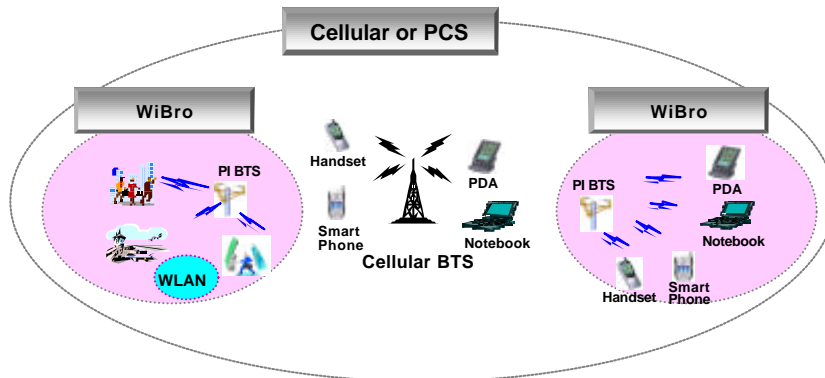
- User Data Rate : > 1Mbps/user
- Low-mobility Service : < 60 Km/h
- Low-Charge : Lump Sum Based Price



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## ? WiBro : Service Concept

- WiBro : Urban, High Data Rate
- Cellular : Nationwide, Low-Mid Data rate
- WLAN : Hotspot, High Data Rate



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## ? WiBro : Service Concept (cont'd)

- WLAN: High-speed Wireless Internet Service (IEEE 802.11 series)
  - Wireless IP service in a local or private area
  - Very high data rate up to 54Mbps
  - But, **limited coverage and poor QoS**
- Cellular: Medium or Low Speed Wireless Internet Services (cdma2000, WCDMA)
  - Public mobile service on Cellular-based platform
  - Higher Infra cost
    - Designed to provide voice and data simultaneously in nationwide area.
  - Lower data rate
    - 144/384 Kbps (cdma2000 1x, WCDMA), 2.4/15Mbps (Ev-DO, HSDPA)
  - But, **too expensive and limited data rate**

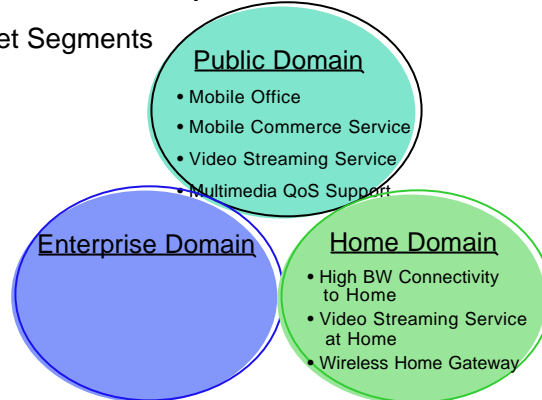
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## ? . WiBro : Service Concept (cont'd)

### • Service Vision

- **Seamless and Ubiquitous Wireless Broadband Access**

### • Market Segments



**Key Design Principle of Air Interface :**

**A flexible framework applicable to various Market Segments**

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## ? . WiBro : Service Features

### Entertainment

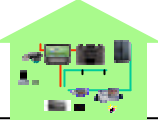
- Large volume VoD, MoD, AoD
- Real-time Streaming Broadcasting
- 3D Network Game
- Multimedia Messaging



### Information

- Web Browsing
- File Downloading
- Interactive News & Info.
- Distance Edu./Med.
- Home Networking

### Home Networking



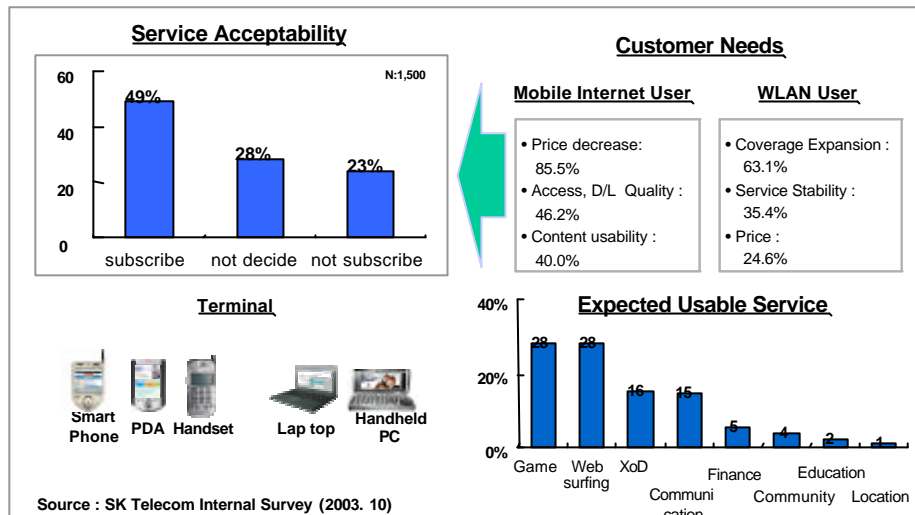
### Commerce & Finance

- m-Commerce
- Mobile Banking, Trading
- Interactive Advertisement
- Finance, Field Agent Service
- Biz Solution, Settlement



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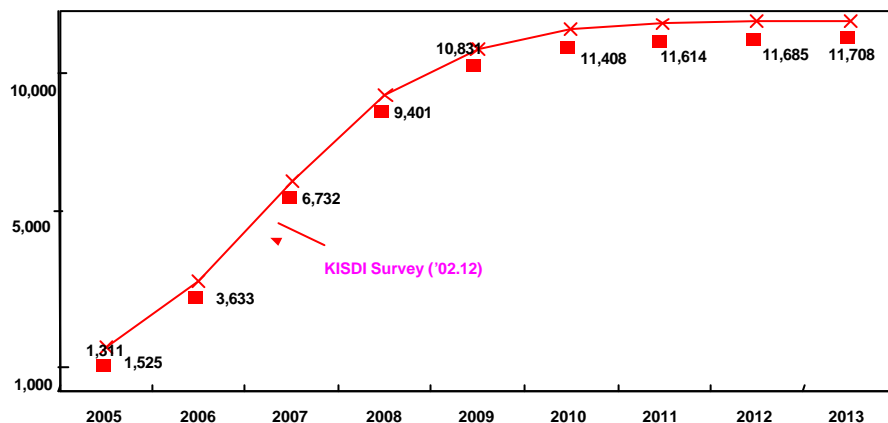
## ? WiBro : Customer Needs



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## ? WiBro : Demand Forecast (South Korea)

The survey on PIS indicates there will be rapid increase in subscriber total to 10.5million in Korea Market by year 2010

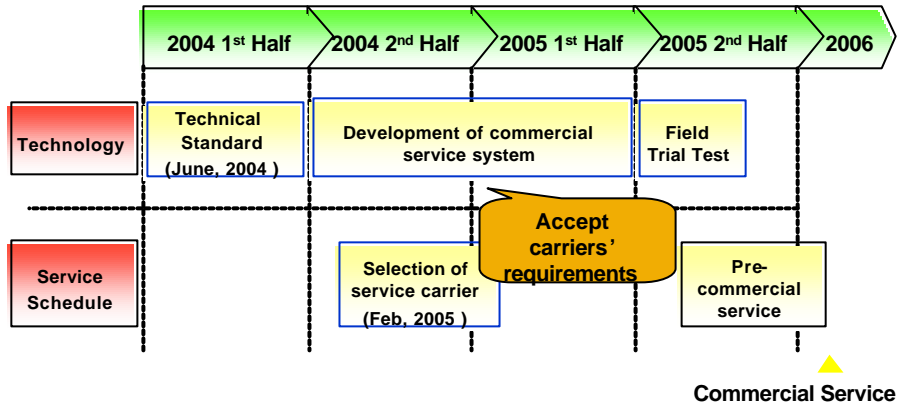


Source : KISDI(Korea information strategy development institute, '02.12)

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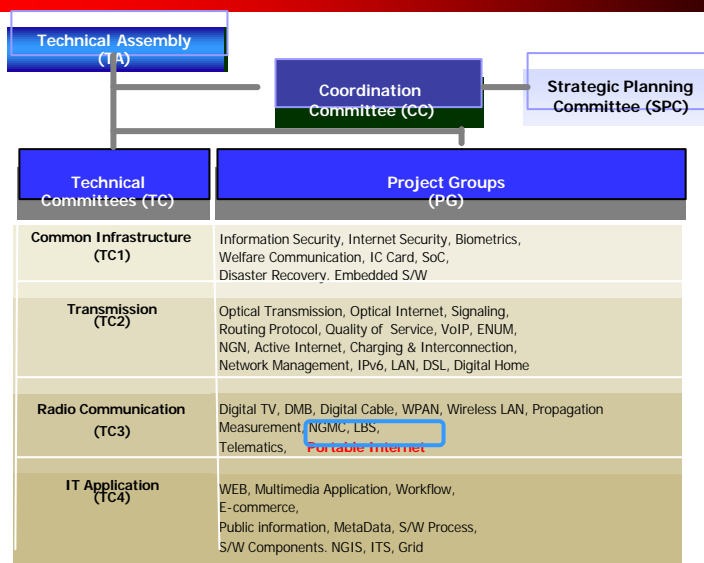
## ? . Service Schedule (expectation)

- The finalization of technical standard: 1<sup>st</sup> half of year 2004
- The selection of service carrier: Feb. of year 2005
- The commercial service launch: 1Q of year 2005



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## IV. Telecommunications Standard Committee, TTA



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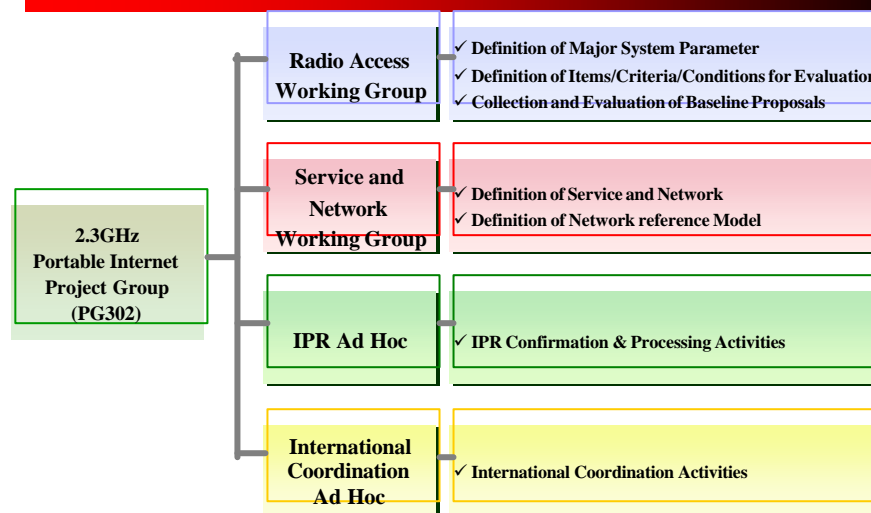
## IV. Establishment of Project Group (PG302)

### Establishment of PG302 for WiBro standardization

- Technical Assembly(TA) of TTA standardization committee approved the establishment of 2.3GHz Portable Internet Project Group(PG302, renamed from PG05) in June, 2003
- The first meeting was held on 30 July, 2003 and The Chairman was elected.
- The second meeting was held on 5 September, 2003 and approved the followings
  - The establishment of 2 Working Groups and 2 Ad Hoc
  - The Goal of PG302 Activities & Timeline is as follows.

Time	Goal (Phase 1 Standardization)
3Q 2003	<ul style="list-style-type: none"> <li>• Definition of Target Requirements                             <ul style="list-style-type: none"> <li>- Minimum Service Requirements</li> <li>- Minimum System Requirements</li> </ul> </li> </ul>
4Q 2003	<ul style="list-style-type: none"> <li>• Preparation of the Draft Standard                             <ul style="list-style-type: none"> <li>- Definition of major system parameters</li> <li>- Definition of items/criteria/conditions for Evaluation</li> <li>- Collection and Evaluation of Baseline Proposals</li> <li>- Selection of Baseline Proposal(s)</li> </ul> </li> <li>• IPR Confirmation and Processing Activities</li> <li>• International Cooperation Activities</li> </ul>
1Q 2004	<ul style="list-style-type: none"> <li>• Completion of Draft Standard</li> </ul>
2Q 2004	<ul style="list-style-type: none"> <li>• Approval and Notification of Standard</li> </ul>

## IV. Committee Structure and ToR of PG302



\* ToR : Terms of Reference

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## V. Decision of PG302

### Major Decision (Phase I Standardization)

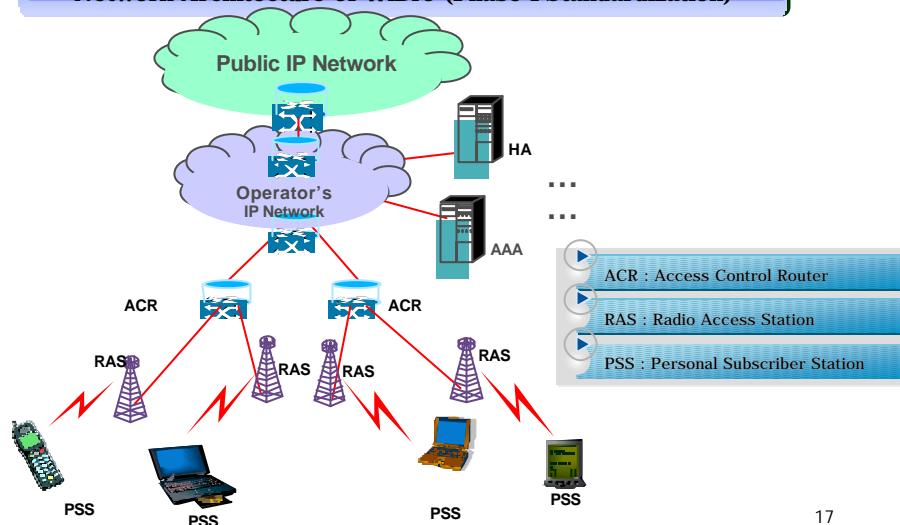
The PG302 Meeting of Jan 31, 2004 approved the Major System Parameters & Radio Access Requirements as follows

Major System Parameters		Radio Access Requirement	
Duplexing	TDD	Frequency Reuse Factor	1
Multiple Access	OFDMA	Mobility	= 60 [Km/h]
Channel BW	10 [MHz]	Service Coverage	= 1 [Km]
		Spectral Efficiency [bps/Hz/cell(sector)]	Max. DL / UL = 6 / 2 Aver. DL / UL = 2 / 1
		Handoff	= 150 [ms]
		Throughput (per user)	Max. DL / UL = 3 / 1 [Mbps] Min. DL / UL = 512 / 128 [Kbps]

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## V. Decision of PG302 (cont'd)

### Network Architecture of WiBro (Phase I Standardization)



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## V. Decision of PG302 (cont'd)

### Progress

#### PG302

- ◆ selected two baselines for WiBro (March, 2004)
- ◆ and then, approved one baseline as Draft between two baseline (April, 2004)
- **The Draft for WiBro in circulation to members of TTA.**
  - ◆ May 3 ~ May 30, 2004 (during 4 weeks)
- ◆ **PG302 selected the Draft as a Draft Standard for WiBro**
  - ◆ June 7, 2004
- ◆ **And, Radio & Broadcasting Technical Committee(TC3) of TTA selected the Draft Standard.**
  - ◆ June 9, 2004
- ◆ **Finally, The Draft Standard was approved as a Standard (phase I) for WiBro in Technical Assembly(TA) of TTA.**
  - ◆ June 25, 2004

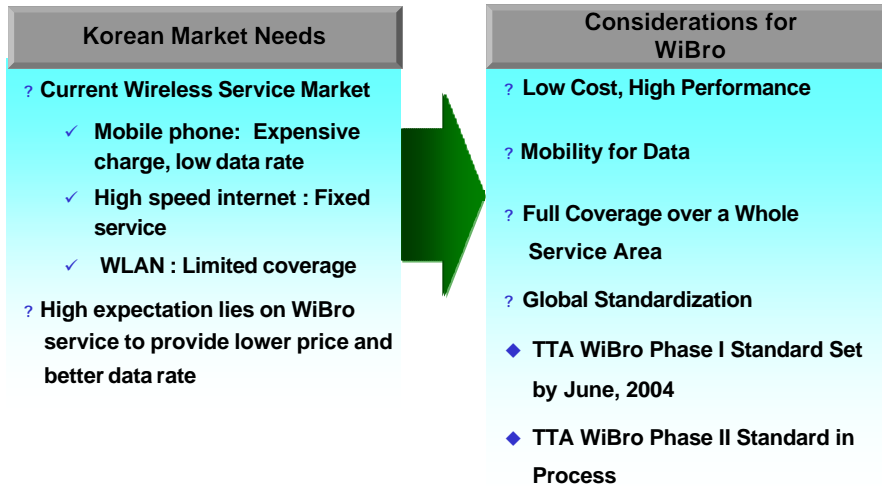
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## VI. Future Plan of PG302 (Phase II)

Phase II Standardization for advanced WiBro started from 3Q 2004.

Time	Goal (Phase II Standardization)
3Q 2004	<ul style="list-style-type: none"> <li>◆ Definition of Service and System Requirements</li> <li>◆ Determination of scope of technologies for improvements of system capacity</li> <li>◆ Harmonization and collaboration with IEEE 802.16</li> <li>◆ Preparation of detailed guideline for IPR Processing</li> </ul>
4Q 2004	<ul style="list-style-type: none"> <li>◆ Design of Evaluation Criteria of technologies for improvement of System Capacity</li> <li>◆ Proposal and Evaluation of technologies for improvement of System Capacity</li> <li>◆ Preparation of Evaluation Methodology for functional improvement for System</li> <li>◆ Harmonization and Collaboration with IEEE 802.16</li> <li>◆ IPR activities (Patent issue of factor technology, Patent Forum etc.)</li> </ul>
1Q 2005	<ul style="list-style-type: none"> <li>◆ Proposal and Evaluation of technologies for improvement of System Capacity</li> <li>◆ Proposal and Evaluation of technologies for improvement of System Function</li> <li>◆ Preparation of the Draft Standard</li> <li>◆ Harmonization and Collaboration with IEEE 802.16</li> <li>◆ IPR activities (Patent issue of factor technology, Patent Forum etc.)</li> </ul>
2Q 2005	<ul style="list-style-type: none"> <li>◆ Completion of Draft Standard</li> <li>◆ Harmonization and Collaboration with IEEE 802.16</li> <li>◆ IPR activities (Patent issue of factor technology, Patent Forum etc.)</li> </ul>

## VII. Summary



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Questions  
Comments  
Information



**Thank you!**



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