

WiMAX Update

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Intel's Mobility Vision

All Communication
Devices Compute

All Computing Devices
Communicate



*Greater
Mobility*



WWAN

WLAN

*Richer
Experience*



Evolution:

Personal Broadband



**Mobile Voice, IP Data &
Broadcast Video wherever you are**

New Solutions: WiMAX

One open standard for broadband connectivity

Licensed & license exempt spectrum

Single global SKU

Stable & predictable IPR

Data Centric Business Model/Distribution

OFDM technology optimized for data with room for growth

WiMAX will be 1st truly global mobile broadband standard

WiMAX Networks Phases

802.16-2004 &
802.16e

Fixed
Outdoor



Backhaul



Access Service

Data Overlay w/ Voice

- Freq up to 5.8 GHz - Lic& UnLic
- Low cost network
- RG focus

Early
802.16e

Metro Zone



Fixed
Indoor

Enterprise
Campus Piconet



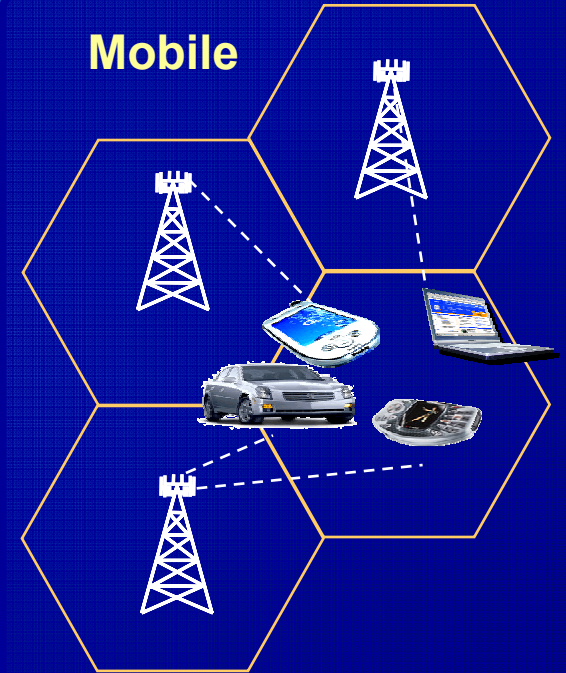
Portable Service

Cell Data Overlay Network

- Freq < 3.5G Licensed
- Low/Mid cost networks
- Notebook focus

802.16e

Mobile



Mobile Service

**Dense Cell Overlay Network
Mobile Triple Play**

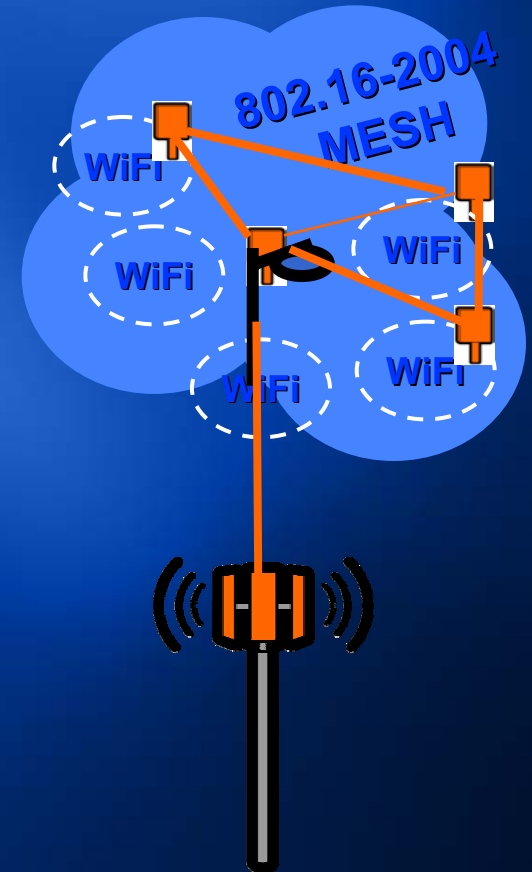
- Freq < 2.5 GHz Licensed
- Mid cost networks
- Handheld & Notebook

Service Provider Business Models

| Network Model | Services | Spectrum & Standards |
|---|---|---|
| Metro & Government Wi-Fi Hot zones | IP Data | 802.16-2004 backhaul Unlicensed 5.8 |
| Fixed last mile only | DSL Fill-in & T1 replacement: IP Data TDM Voice VoIP | 802.16-2004 Licensed 2.5 & 3.5 Unlicensed 5.8 |
| Fixed → Portable | Fixed only services + Portable IP data Portable VoIP Vertical applications | 802.16e Licensed 2.5 & 3.5 <i>802.16d backhaul</i> |
| Portable & Mobile | Fixed/ Portable Services + IP Voice, data & video | 802.16e Licensed 2.5 & 3.5 |

Metro Government & City Wi-Fi

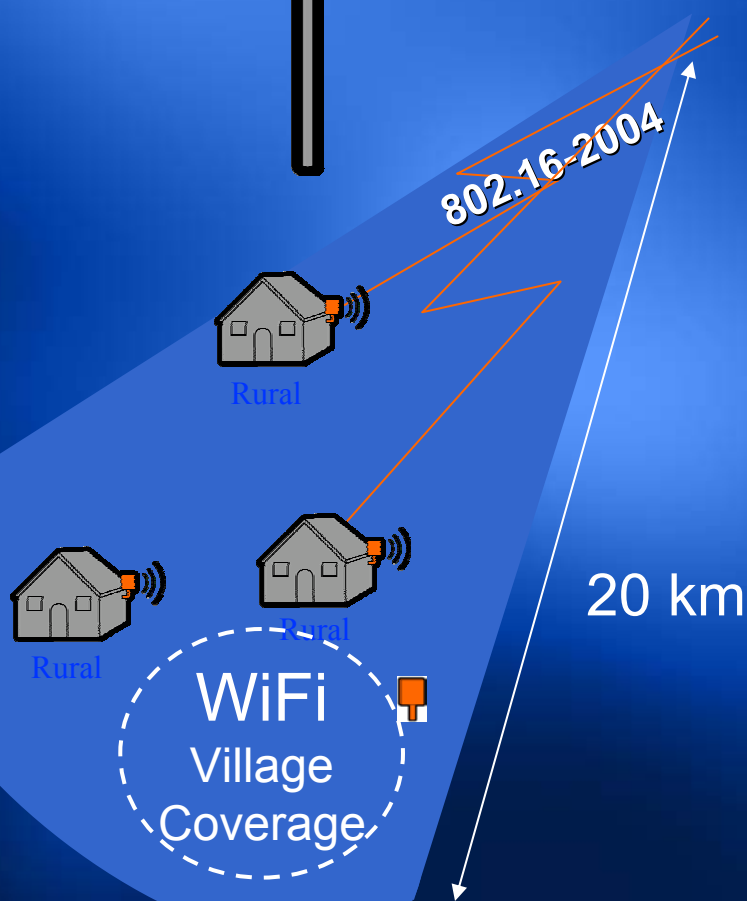
- WiMAX as Backhaul for Wi-Fi Access Points
- Local Government sponsored
- *Free or Low Fee Services*
- Usage Model: Laptop Data
- Example: Taipei, Philadelphia
- Spectrum: *Unlicensed*
- *Low Capacity Network*



Rural Fixed Wireless

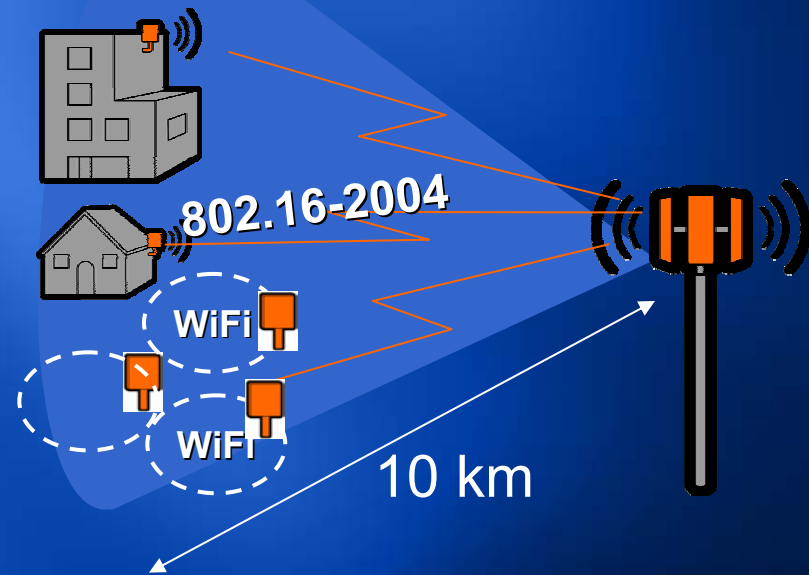


- Unlicensed 5.8 Ghz & Licensed 3.5, 2.5 Ghz Spectrum
- Paging Tower Deployment
- Home Broadband Data & VOIP Services
- Government subsidized
- CPE Costs <\$350



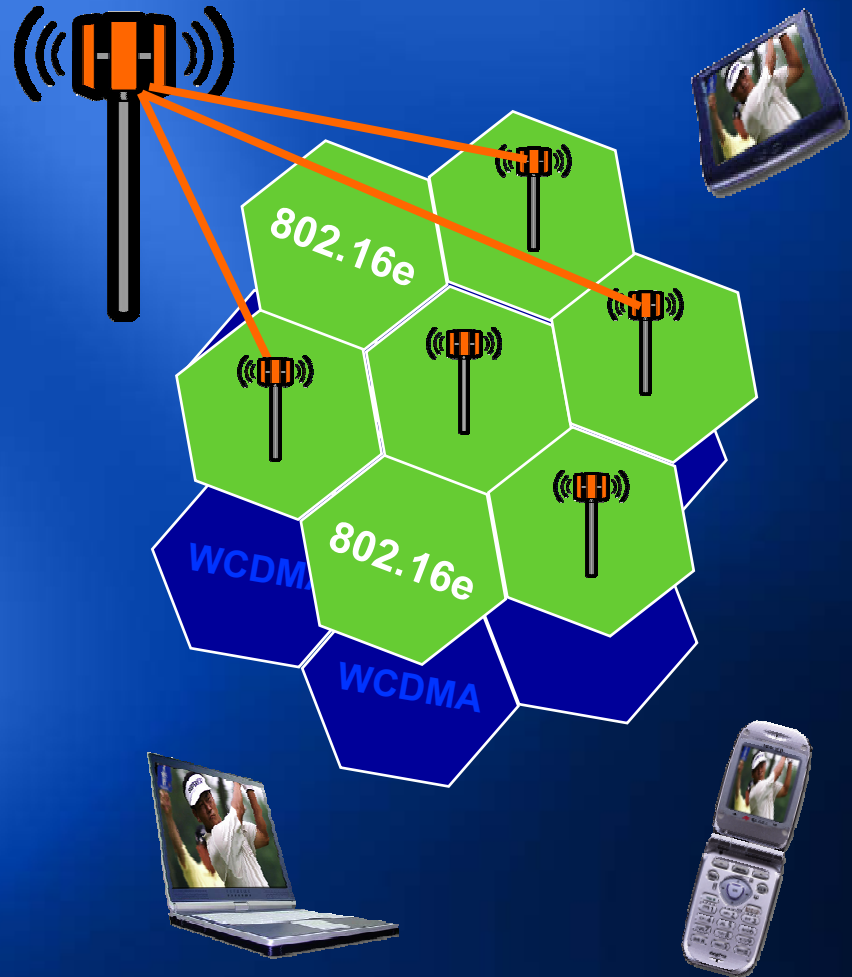
Fixed Urban Deployment, T1 & DSL Replacement

- Licensed 3.5, 2.5 Ghz Spectrum
- Paging Tower Deployment
- Outdoor & Indoor Installation
- Home Broadband Data & VOIP Services
- CPE Costs <\$200 big Enabler



Portable / Mobile Data Overlay

- Data off-load from high-cost voice network
- Spectrum: 2.5/3.5 GHz Licensed
- Usage Model: Laptop Data, Mobile Handset, New Devices



WiMAX Momentum: An Industry Unleashed

WiMAX Forum Members



-  Ecosystem/Applications
-  Service Providers
-  System Vendors
-  Silicon / Component Suppliers

46



1 Year Ago

244



Today

Source: WiMAX Forum

Industry Timeline Expectations

802.16-2004 Solutions

| | |
|--|--------------|
| Standard Complete | DONE |
| Technology/Silicon Samples | DONE |
| System Interoperability testing | Q2'05 |
| Lab Trials | Q4'05 |
| Commercial Trials | Q1'06 |

Portable/Mobile 802.16e Solutions

| | |
|--|--------------|
| Standard Complete | Q2'05 |
| Technology/Silicon Sampling | Q1'06 |
| System Interoperability testing | Q3'06 |
| Lab Trials | Q4'06 |
| Commercial Trials | Q1'07 |

Intel WiMAX Roadmap

'05



Rosedale
based solutions
2H'05

'06



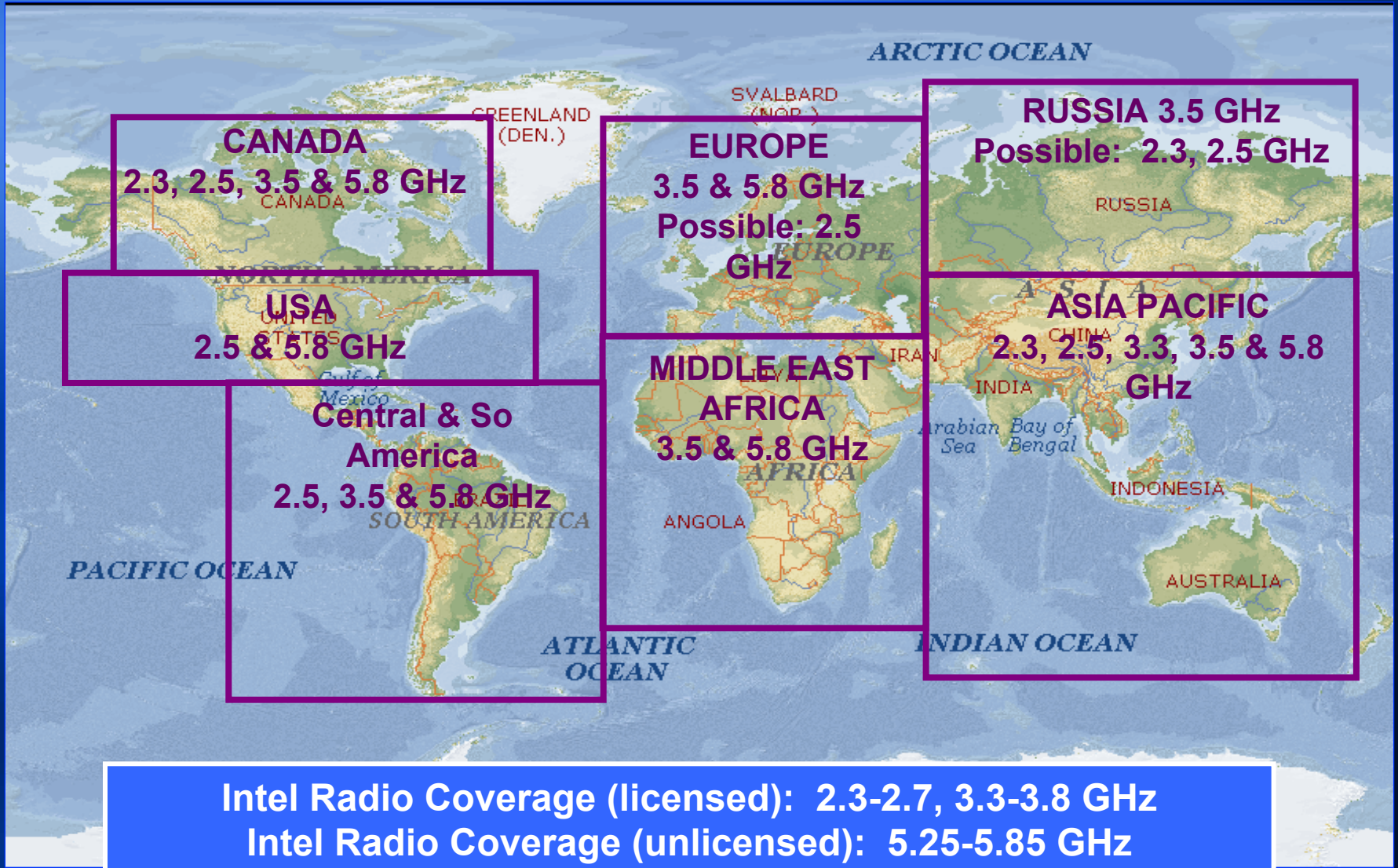
Metro Zones
Market trials

'07



Handset
market trials

Spectrum by Region



Industry Collaboration

Equipment Manufacturers



Service Providers



Carrier motivation Driven by Spectrum/Profile

Cellular Spectrum
(800, 900, 1.8, 1.9GHz)

WiMAX Spectrum
(2.3-2.7, 3.3-3.7 & 5.8GHz)

Fixed business
model

Portable/Mobile
business model

NA

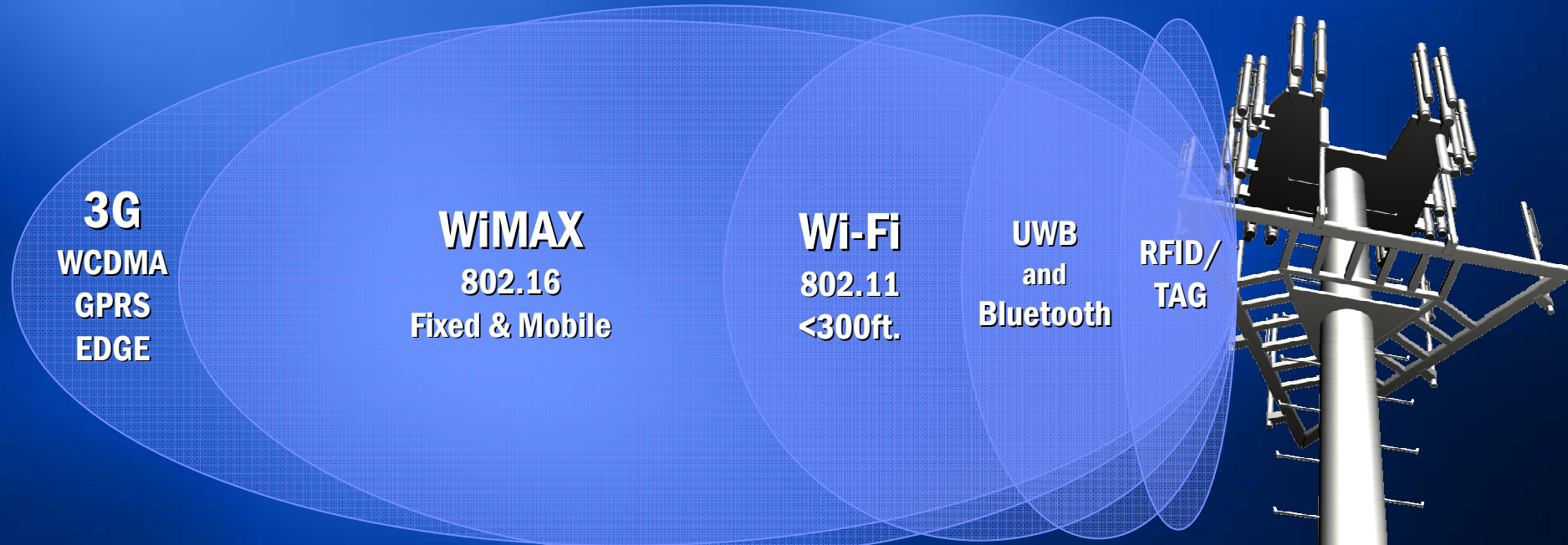
**WiMAX fixed-only
networks
with 802.16-2004**

**Carrier will deploy
HSDPA/EV-DO &
Proprietary BB Wireless**

**WiMAX overlay to
move data traffic off
of voice network**

**WiMAX
Portable/Mobile
Networks with
802.16e**

Broadband Networks will co-exist



The Result:
Best connected solution
for application & place

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Summary: What to Expect this Year

802.16-2004 Fixed networks

- **Market trials of 802.16-2004 Fixed networks**
- **Intel to launch our 802.16-2004 Fixed silicon in 1st half of 2005**
- **Cooperate on testing and trials to ensure conformance and interoperability**

802.16e

- **Lock down the “technical recipe” that everyone uses**
- **WiMAX Forum shift to a more solutions focus with more operator involvement**

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