Enabling Next Generation Mobile Wireless Devices

3G and UWB—The Wireless Future
--A Network Security Challenge

Dr. Robert C. Qiu
Chief Scientist, UWB Wireless Corp.
(Former) President & CEO, Founder
Wiscom Technologies Inc.

Presented at Wireless and Optical Communications Conference (WOCC’2003)
April 26, 2003
3G Mobile Multimedia Devices

Portable Electronics Devices + Cellular Terminal = Mobile Multimedia Devices
Inflection Points – Bandwidth

- Rare Internet use, only in text modes: 9.6 kbps
- First useful speed for graphics: 28.8 kbps
- Web more accessible, full web pages, some file downloads: 56 kbps
- Speed enables large downloads and multimedia: 128 kbps
- Close to office LAN experience; almost full network transparency: 384 kbps
Mobile Devices Market Segmentation

Modules -
Embedded Apps
Telematics / Telemetry

Add-On
Devices

Data Devices
w/ Integral
Wireless

Business / Smart
Phones

Basic Phones

Greater Multi-Media Capability
Larger Displays / Touch-Screens and Keyboards

Multi Wireless Modes & Generally Higher Data Rates

3G & UWB Wireless Corp.
Radio Access Alternatives
(Coverage vs. Bit-rate)

- **Bit-rate**
  - 100 M
  - 10 M
  - 1 M
  - 100 k
  - 10 k

- **Coverage/Mobility**
  - Personal (~20m)
  - Local (>50m)
  - Wide Area (~10km)
  - Coverage/Mobility

- **Network Security Technologies**
  - High
  - Bluetooth
  - UWB
  - WLAN
  - HSDPA (3.5G)

3G & UWB Wireless Corp.
Evolution beyond 3G

Research Beyond 3G

Flexible Spectrum Usage
Ad Hoc Networks
Always Best Connected (ABC)
Virtual Reality (3D)
New Air i/f

3G & UWB Wireless Corp.
Combining Air-Interfaces

Complementing Technologies

WCDMA
EDGE
CDMA2000

Not to Scale
1 Wide Area cell = ~10,000 WLAN cells

3G & UWB Wireless Corp.
What is UWB’s Role in the Future of Broadband

Wireless—alternative to 802.11x

Broadband (>200Mbps) To The Home...

The Challenge: “Broadband Thru The Home”
Thank You!

Dr. Robert C. Qiu
UWB Wireless Corp.
(www.uwbws.com)

Founder, Former President & CEO,
Wiscom Technologies Inc.

4/22/2003