# [What is the difference of MBWA vs 3G mobile service?]

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Venue:

802.16 MBWA SG meeting, 8-12 July, Vancouver

Purpose:

Discuss and Adopt

# What is the difference of MBWA vs 3G mobile service?

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# Introduction

- In the beginning stage of the MBWA, this project is called an IP based mobile data service. Compare to the currently evolving 3G service, it is an CN based cellular mobile voice/data service network.  We have an distinct different in network.
- But in 3GPP, they have already achieved 10Mbps Maximum transmission rate in 5MHz BW. And 3GPP2 have achieve 3Mbps Max Transmission rate in 1.5MHz BW. The bandwidth efficiency is approximately 2bps/Hz.
- There are some prediction in the near future, the target transmission rate of 3G system will be 30Mbps in 5MHz BW. Then  the bandwidth efficiency will be 6bps/Hz .
- How Can we tell the difference of MBWA to 3G++ service in the near future market?

# Background

- Samsung have no presumed system or technology for MBWA.
- But we need to identify exact figure of MBWA for marketing perspective.
- Some service providers are going to pay attention to the future of MBWA group, Samsung have some comparative question for clarify the vagueness of MBWA to 3G++.

# 3G ++ vs MBWA Service (1/5)

- **Deployment/Launching time**
  - Evolution of IMT-2000
    - Around 2003~2006
  - Mobile Broadband Wireless Access
    - Around 2005?
- **Characteristics of revelation**
  - Evolution of IMT-2000
    - Steady and continuous evolution and enhancement of IMT-2000
  - Mobile Broadband Wireless Access
    - More advanced services and applications than enhancements of IMT-2000.
    - **New radio interface** is required?
    - Any evolution of current technology is possible?
      - From WLAN,
      - From WMAN,
      - From others

# 3G ++ vs MBWA Service (2/5)

- **Data Rate**
  - Evolution of IMT-2000
    - ~30Mbps for mobile applications
  - Mobile Broadband Wireless Access
    - ~30Mbps for mobile or pedestrian applications?
    - ~100Mbps for mobile or pedestrian applications?
- **Backward compatibility/Inter-working**
  - Evolution of IMT-2000
    - All the previously deployed 3G service.
  - Mobile Broadband Wireless Access
    - WLAN(802.11a)?
    - BWA(802.16a)?
    - ETC?

# 3G ++ vs MBWA Service (3/5)

- **Mobile Speed**
  - Evolution of IMT-2000
    - Up to 250Km/h but 120Km/h is more appropriate
  - Mobile Broadband Wireless Access
    - More than 250km/h to 500km/h?
    - Up to 250km/h?
    - Up to 100km/h?
    - Up to 10km/h?

# 3G ++ vs MBWA Service (4/5)

- **Advance technique**
  - Evolution of IMT-2000
    - HARQ, Turbo Coding
    - Antenna Diversity
  - MBWA
    - HARQ, Turbo coding, LDPC?
    - Antenna Diversity? or Beamforming?
      - How many antennas in Base Station?
    - ETC..
- **Packet /Circuit based system**
  - Evolution of IMT-2000
    - Packet and/or Circuit.
  - MBWA
    - Packet only?
    - Hybrid Packet and Circuit ?

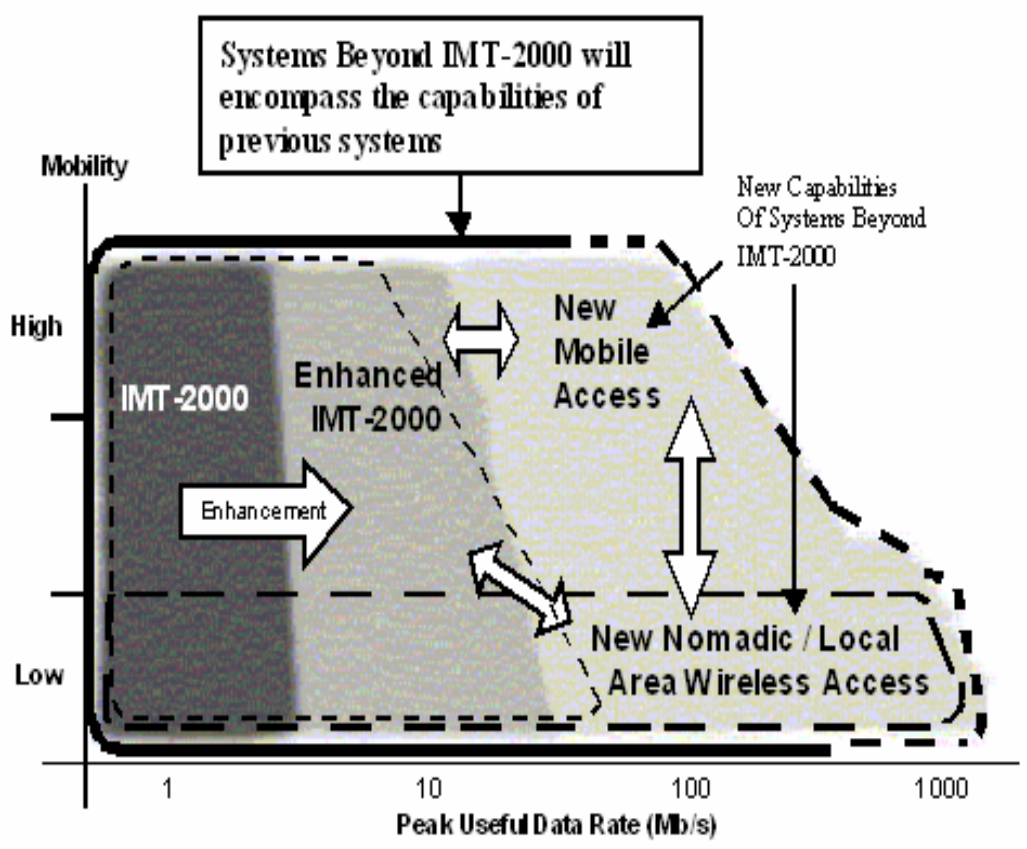
# 3G ++ vs MBWA Service (5/5)

- **Harmonization Global standard**
  - Evolution of IMT-2000
    - 2 major standard (3GPP/3GPP2)
    - There also exist local standard
  - MBWA
    - global harmonization? Or not?

# Summary

- If we want to make MBWA market successful, we should make decision for the system requirement carefully in the beginning stage.
- Target of service of MBWA should be a mutually exclusive set against cellular based service system. In terms of application, data rate, mobility speed, etc…

# Open question?




- **Which part should we aim for…**
  - High data rate WLAN?
  - Pedestrian Mobility WMAN?
  - New High data rate Mobile Access?
- **Samsung want to listen to diverse voice of this group!**