

## Preliminary Draft of MBWA Five Criteria

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#### Base Document:

#### Purpose:

SG Chair's draft to stimulate discussion and facilitate progress toward final version of "Five Criteria" for MBWA

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# **Mobile Broadband Wireless Access Systems “Five Criteria”**

Draft 0.1

April 9, 2002

A decorative graphic in the bottom-left corner of the slide, consisting of three curved lines of varying lengths and three small circular dots, all in a light teal color.

# Broad Market Potential

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- a) **Broad sets of applicability.**
  - b) **Multiple vendors and numerous users.**
  - c) **Balanced costs**
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- **Mobile broadband wireless access, based on IP mobility, unlocks all Internet content to the general public, potential addressable market is all Internet users. Applications include:**
  - **Enterprise Intranets and VLAN Services**
  - **Entertainment & Gaming**
  - **Internet and Location Services**
- **Mobile station and terminal equipment is provided by multiple international telecommunications equipment vendors, deployed by international carriers and made available to the end-user community. Tutorial and Call for Interest sessions were held at the March 802 plenary. The tutorial session was attended by 180 individuals from 110 organizations. The CFI was attended by 55 individuals from 45 organizations expressing support for the project.**
- **This project will achieve cost balance between terminal devices and network infrastructure equipment that is comparable to existing cellular wireless networks and encourage mass deployment of wireless data services.**

# Compatibility

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- a) Conformance with 802 Overview and Architecture
  - b) Conformance with 802.1D (MAC Bridges) and 802.1F (VLAN Bridges)
  - c) Conformance with 802.1F and compatible managed object definitions
  - d) Identification of any variance in conformance
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- The proposed standard will conform with the appropriate IEEE 802 functional requirements.
- Compatibility will be addressed during development of the standard and any variance that may be required will be clearly identified and justified .
- The standard will include the definition of a compliant MIB in support of the PHY and MAC layer capabilities.

# Coexistence

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- The proposed standard is applicable to licensed spectrum and will be compliant with the respective constraints imposed by the spectrum license.

# Distinct Identity

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- a) Substantially different from other IEEE 802 standards.
  - b) One unique solution per problem.
  - c) Easy for the document reader to select the relevant specification.
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- This project will specify an air-interface supporting full vehicular mobility. IEEE 802 presently has no project addressing this capability.
- The project has been socialized with the existing 802 Wireless groups. (To be done at the July meeting).
- The proposed project will specify a unique solution to the physical and MAC layer of the air-interface operating between 450 MHz to 3.5 GHz and utilizing a 1.25 MHz channel. This solution will support both real-time and non-real-time data traffic.
- The specification will be a stand-alone document with clearly defined scope.

# Technical Feasibility

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- a) Demonstrated system feasibility.
  - b) Proven technology, reasonable testing.
  - c) Confidence in reliability.
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- The technical feasibility of such a system has been demonstrated by proprietary systems currently in trial. These systems utilize technological components in wide deployment today, such as modems, radios, antennas and MAC protocols.
- The solution will utilize well understood spread spectrum techniques (such as frequency hopping), radio technologies (such as OFDM) and a cellular architecture. These technologies have been successfully used and tested over the past decades and are finding increased usage in the LAN/MAN environment.
- Commercial deployment of cellular wireless networks in the 450 MHz to 3.5 GHz band demonstrates that carrier grade reliability can be achieved.

# Economic Feasibility

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- a) Known cost factors, reliable data.
  - b) Reasonable cost for performance.
  - c) Consideration of installation costs.
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- Cost factors for wireless services and components are well known and understood. Worldwide deployment of mobile wireless networks and burgeoning demand for mobile services demonstrates the economic viability of mobile networks.
- The solution will offer better cost/performance characteristics than existing solutions since it is based on a pure packet architecture and designed for optimal spectral efficiency.
- Installation and operating costs will be reduced by designing the system so as to allow for one-by-one frequency reuse and automatic configuration capabilities, eliminating the need for frequency planning.