

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	Views on IEEE 802.16 Evolution	
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Abstract	The objective and performance target are discussed his document for the IEEE 802.16 standard evolution	
Purpose	This document highlights our views on the direction of IEEE802.16 standard evolution	
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Views on IEEE 802.16 Evolution

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Background

As the IEEE802.16 REVd development close to the final stage, we believe a set of new high spectral efficiency enabling technologies are required for the IEEE802.16 standard evolution, such as MIMO multi-beam technology. There is a significant new business opportunity using a combined OFDM and MIMO multi-beam technology for very high capacity broadband mobile system. There is a significant addressable market and volume associated with this combination.

Mobile industry needs 30~40 times higher capacity at one tenth of the cost with a longer shelf life than the solution available in today's market. The market calls for the technology discontinuity to enable the emerging wireless broadband multi-media service.

To achieve this objective, we believe that the standard needs to embed MIMO-multi-beam technology as a fundamental baseline requirement.

We also envision that the new standard should demonstrate the superior performance merit and advantages to create a significant competitive differentiation in the marketplace. The technology standardized in 2~3 years should intercept the service requirement that requires 10 times higher capacity than the existing evolution path

Performance Objectives

The typical network deployment with macro-cell and frequency reuse-one channel bandwidth B is considered, the performance of target to achieve this objective is listed in Table 1.

Fixed and Nomadic Applications	DL*	UL
Spectral Efficiency <i>Bit/Sec/Hz/Carrier/Site</i>	40	10
Aggregated Network Throughput <i>Mbps/Carrier/Site</i>	40*B	10*B
Coverage <i>Mbps/Carrier/Site @ 99% tile</i>	B	B

* 9-beam 2x4 MIMO

Table 1 MIMO-multi-beam Performance (simulated)