Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Input on Evaluation Methodology and Key Criteria for P802.16m**
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Re:	Call For Contributions on Evaluation Methodology and Key Criteria for P802.16m – Advanced Air Interface (IEEE 802.16m-07/005r2).
Abstract	This contribution provides input on Evaluation Methodology and System Simulation Criteria to be used in evaluation of the P802.16m Advanced Air Interface amendment.
Purpose	This document is submitted in response to the Call For Contributions on Evaluation Methodology and Key Criteria for P802.16m – Advanced Air Interface, dated 2007-01-18, issued by the 802.16 Working Group.
Notice	
Release	
Patent Policy and Procedures	

Input on Evaluation Methodology

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Abstract

This contribution provides input on Evaluation Methodology and System Simulation Criteria to be used in evaluation of the P802.16m Advanced Air Interface amendment.

System Simulation Criteria and Requirements

Simulations to be developed and undertaken for the purpose of evaluating system and technical proposals for P802.16M should incorporate the following criteria:

Cells

Support up to 19 cells
Hexagonal layout, radius specified
Statistics drawn form center cell or center 7 cells
Cell-to-Cell reuse pattern
Sectorization pattern and cogging

Interference

Interferences from all MS units are computed to each BS
Interferences from all base stations are computed to each MS
The channel matrix is computed for each link

Antennas

Up to 18 antennas at the BS
Up to 2 antennas at the MS
Antennas patterns, pointing angles and gains are inputs
Antenna height and BS and MS are inputs
Polarization

Radio Parameters

Channel BW, FFT Size
Frame Time, Number of UL and DL symbols
Noise Figure, BS, and RS
Power limits
Permutation, (e.g. PUSC, AMC, FUSC, etc)
MCS change thresholds

Area Path Loss Models

Hata Cost 231
Erceg, A, B, C
WI

Log normal shadowing with BS to BS correlation
Vertical versus horizontal polarization corrections to path models
Building penetration loss

Multipath Model

Multiple Scattering Reflectors (3, 4, 5, and 6)
Geometrical Ray Tracing
Complex reflection coefficient at each tap
Variable tap spacing in time
MS and scatters simulated with random velocity vectors
Random angle spread simulated with geometric scattering radii

Output Parameters

Computed input and output SINR for each link (CDF)
Tx power for UL and DL per subcarrier (CDF)
Aggregate capacity of the base station at outage %
Link Rate

Vendor Unique Methods

Array processing methods (AAS, MIMO)
MCS methods
HARQ methods
Channel Estimation Methods
Equalization Methods
Diversity Methods
Power Control Methods
Interference Mitigation Methods
Pilot and Preamble Modulation and Boosting Methods
BW request and Ranging Methods