Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Proposed Evaluation Criteria for the Duplex Schemes, RF Propagation Characteristics and Diversity Techniques Key Characteristics of the 802.16.3 Air Interface Standard**
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Re:	Response to 802.16.3 Invitation to Contribute: Session #9 sent out on July 28th, 2000 (IEEE 802.16.3-00/09)	
Abstract	This document provides a list of proposed evaluation criteria of the Duplex Schemes, RF Propagation Characteristics and Diversity Techniques that the final 802.16.3 Air Interface Standard must address.	
Purpose	For use by the Task Group to be considered as evaluation criteria for the key characteristics.	
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Evaluation Criteria for Duplex Schemes, RF Propagation Characteristics and Diversity Techniques

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Evaluation Criteria:

In addition to the evaluation criteria mentioned in "Evaluation Criteria for Duplex Schemes (Contribution to IEEE802.16.3)" (IEEE 802.16.3c-00/19) submitted on 2000-09-01 by Anader Benyamin-Seeyar, the following evaluation criteria for Duplex Schemes should be included:

Intersystem interference
Compatibility with regulatory requirements and band plans.

The evaluation criteria for RF Propagation characteristics and diversity techniques should be based on the following factors:

RF Channel Model
- Peak and average Data Rate
- QoS/Availability
  - Throughput – Minimum, average, peak rates, capacity
  - Delay – Average at a given loading with specific traffic models
  - Delay jitter
- Parameters of interest for BWA
  - Path loss
  - Effect of scattering onto antenna gain
  - Distribution of K factor (Line-of-sight level)
  - Distribution of delay spread
  - Channel time variations (Doppler)
  - Antenna correlation
- CPE and infrastructure unit complexity
- Friendliness
  - Easy CPE Install
  - Environmental/Regulatory
- Scalability (Multi-Cell)

Transmitter

- Transmitted Power
- Spurious Emissions and Spectrum Mask
- Adjacent Channel Power Ratio (ACPR)
- Adaptive Transmit Power Control Range
- Transmitter Phase Noise
- Transmitter Frequency Stability
- Modulation Accuracy

Receiver

- Sensitivity
- Dynamic Range
- Intermodulation Distortion
- Adjacent-Channel Rejection
- Co-Channel Rejection
- Blocking
- Image Rejection
- Out-of-Band Rejection

Antenna

- Transmit/Receive Polarization
- Gain & Pattern
- Beamwidth
- Sidelobes
- Antenna crosstalk (cross polarization and otherwise)

Applying Evaluation Criteria:

Initially a set of scenarios must be developed incorporating the criteria outlined above by the RF Channel Model. These sets of models will then be used as a baseline to determine an acceptable performance level for the criteria.

These evaluation criteria recognize that in some instances less stringent requirements will be needed for some applications, such as line of sight supercells, which are less demanding, and that there is a legitimate need to trade-off cost and performance. Thus in some cases these evaluation criteria will produce different results for the given situation (for example one set of requirements may be favored in the less stringent Line-of-sight applications, while another set may be favored for the more stringent non-Line-of-Sight applications).