Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
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Re:	This contribution is in the response of call for contribution issued for 802.16j project on April 6th, 2006.
Abstract	This document proposes a set of technical requirements for the consideration of 802.16j TG.
Purpose	The purpose of the document is to set requirements for the Mobile Multi-Hop Relay Specification.
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MMR Technical Requirements

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Introduction

This contribution provides a set of technical requirements in response to the call for contribution issued on April 6th, 2006 (http://ieee802.org/16/relay/docs/80216j-06_001.pdf). The technical requirements outlined in this contribution are non-exhaustive and is expected to merge with the other contributions under the same topic.

Architectural Requirements

1. The 802.16 specification shall support different types of RS based on intended use.

   1.1. It shall support fixed, and nomadic variants of RS.

   1.2. It shall support extending coverage and increasing throughput variants of RS.

   1.3. It shall support client and infrastructure RS. Where, the client RS can be owned and placed by a consumer, and the infrastructure RS can be owned by an operator. The client RS should be comparable to MS in ease of usage and cost.

2. RS shall serve MS as well as SS.

3. RS shall relay traffic generated at MS, SS and BS. It shall not generate data traffic. RS may generate control and management signaling for its proper operation.

4. The 802.16 specification shall define a maximum number of relay hops.

5. The 802.16 specification for RS shall follow existing PMP mode of medium sharing.

6. RS shall be connected to only one BS or RS in the uplink direction.

Management and Configuration Requirements

1. BS shall control and manage RS. RS shall not control and manage BS, SS, or MS.

Functional Requirements

1. RS shall support all the existing features and functions of OFDMA PHY and MAC layers in 802.16e-2005.

2. RS shall be power efficient, especially in mobile and client RS modes, where it may not be connected to a continuous power outlet.

3. RS shall extend coverage or increase throughput without impacting overall system coverage, capacity and throughput.

4. RS shall perform better than existing techniques, e.g. MIMO, and AMC, for increasing throughput.

5. RS shall support the same QoS differentiation in traffic forwarding as defined in 802.16e specification.

Mobility Requirements

1. The 802.16 specification shall support mobility of the RS along with the associated SS/MS. For example, an RS attached to a train or bus moves along with the MS/SS in the bus.

2. RS shall not add latency on the existing mobility procedures between BS and MS without RS.

3. RS shall not have mandatory requirement of supporting optional mobility procedures, e.g. FBSS, and MDHO.

Security Requirements

1. RS shall not add any new security threats in the existing system as defined in 802.16e-2005

2. RS shall not increase in the number of security procedures for MS. For example, there shall only be one authentication procedure between MS and Network, as currently defined. This should not change to two procedures, one with BS and one with RS.