

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >
Title	IEEE 802.16j Technical Requirements
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Re:	This contribution is in the response of call for contribution issued for 802.16j project on July 3 rd , 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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IEEE 802.16j Technical Requirements

Introduction

This contribution provides a set of technical requirements in response to the call for contribution issued on July 3rd, 2006 (http://ieee802.org/16/relay/docs/80216j-06_006.pdf). This is a revised version of IEEE C802.16j-06/016, produced after merging requirements with the other joint requirement contribution. The requirements which we were not able to merge, but we think that they are important for the TG consideration are listed in this version. The technical requirements outlined in this contribution are non-exhaustive and is expected to be modified and merged with the other contributions under the same topic.

Architectural Requirements

1. RS shall be connected to only one BS or RS in the uplink direction at any given time, except during mobility procedure.
2. Specification of RS shall follow existing PMP mode of operation.

Functional Requirements

1. RS shall be power efficient, especially in mobile and client RS modes, where it may not be connected to a continuous power outlet.
2. RS shall perform better than existing techniques, e.g. MIMO, and AMC, for increasing throughput.
3. RS shall support mobile and stationary station's HARQ operation. The specification shall ensure that the data reliability via multi-hop to be the same as the one provided by HARQ via one hop.
4. The specification shall limit the added latency (TBD ms) due to HARQ processing.

Mobility Requirements

1. The 802.16 specification shall support handover 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. The specification shall support location update of the RS along with the associated SS/MS.
3. The specification shall limit the added latency (TBD ms) on the existing signaling procedure between the BS and RS.

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.