Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**	
Title	**Comments on the Proposed Technical Requirements for IEEE 802.16 Relay TG**	
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Re:	Comments on Technical requirements: IEEE 802.16j-06/016 < http://ieee802.org/16/relay/contrib/80216j-06_016.pdf >, the Task Group document on technical requirements, in response to the Call for Comments IEEE 802.16j-06/018 issued on September 8, 2006.	
Abstract	Provides mapping between Technical Requirements and Table of Contents	

Purpose	For technical requirements discussion at IEEE802.16j at IEEE802.16 #45 Task Group Meeting
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Comments on the Proposed Technical Requirements for IEEE 802.16 Relay TG

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Introduction

In the last #44 meeting Technical Requirement Document was released. One of the purposes of the Technical Requirement Document is to drive Table of Content (ToC) of the draft specification. We propose to relate each technical requirement item with relevant section(s) of ToC as preparation for Call for Proposal that will occur during next #46 meeting.
The related section(s) of ToC is inserted in Note column of table of the Technical Requirement.

Proposed ToC section into Technical Requirement

Mandatory functional requirements

Number	Name	Requirements	Subject (MMR-BS/RS)	Notes
M1	Capability management	Capabilities of RS shall be managed by MMR-BS.	MMR-BS (M) RS (M)	6.3.9.16
M2	RS control	The specification shall define a mechanism for MMR-BS to perform topology learning in its own MMR cell as well as to control and manage RSs in the MMR cell.	MMR-BS (M)	6.3.25
M4	PHY frame structure for backward compatibility with legacy 16 mobile station	The specification shall define a backward compatible frame structure that supports relay links while accommodating the legacy access links.	MMR-BS (M) RS (M)	8.4.4.8

Number	Name	Requirements	Subject (MMR-BS/RS)	Notes
M5	RF part	The specification shall define OFDMA RF parameters necessary for the correct operation of the BS-RS link. RF parameters such as frequency band and channel bandwidth, as well as transmitter/receiver requirements including RS-emission and RS-susceptibility, shall be defined/specified for the BS-RS and RS-RS link.	MMR-BS (M) RS (M)	8.4.12-14 1.3
M6	Baseband part	The specification shall define/specify baseband parameters/operation necessary for the correct operation of the BS-RS link. Baseband parameters such as FFT size, symbol CP, and baseband operations such as preamble transmission, synchronization, channel quality measurement shall be defined/specified for BS-RS link and RS-RS link.	MMR-BS (M) RS (M)	Preamble aspect TBD 8.4.6(T.B.D) 8.4.11
M7	Flexible radio resource assignment	The specification shall provide a mechanism to support various forms of radio resource assignment.	MMR-BS (O) RS (TBD)	Sharing channels between access links and relay links, sharing channels between multiple relay links, using different channels for different links, frequency reuse between access links and relay links, etc. 6.3.7.7 8.4.5

Number	Name	Requirements	Subject (MMR-BS/RS)	Notes
M8	Duplexing Mode	The specification shall support either TDD or FDD for relay link	MMR-BS (M) RS (M)	6.3.7 8.4.4
M9	RS network entry	The specification shall define network entry process for RS.	MMR-BS (M) RS (M)	6.3.9.16 8.4.7
M10	MS network entry support	RS shall support network entry process for MS.	MMR-BS (M) RS (M)	6.3.9.16 8.4.7
M11	Scheduling	The specification shall provide signaling to support MAC scheduling of data and control message transmission on relay and access links.	MMR-BS (M) RS (M)	Scheduling may be centralized, distributed, or a hybrid thereof. 6.3.5
M12	Bandwidth request and allocation	MMR-BS shall support the bandwidth request and allocation mechanism for RS.	MMR-BS (M) RS (O)	6.3.6.7
M13	QoS support	The specification shall support QoS as defined in the legacy 16 system for multi-hop.	MMR-BS (M) RS (TBD)	6.3.14.10
M14	Unicast data delivery	The specification shall support unicast data delivery via RS.	MMR-BS (M) RS (M)	T.B.D.
M15	MAC PDU processing	RS shall support MAC PDU processing.	MMR-BS (M) RS (TBD)	6.3.2 6.3.3.8
M16	Control information processing	The specification shall enable RS to process and forward the DL and UL control information.	MMR-BS (M) RS (O) MOB_NBR-ADV is TBD	DL and UL control information includes DL/UL-MAP, DCD/UCD, MOB_NBR-ADV. 6.3.2.3
M17	Connection management	The specification shall support MS connections (i.e., CIDs) for multi-hop.	MMR-BS (M) RS (O)	6.3.1.3
M18	MS handover support	RS shall support MS handover.	MMR-BS (M) RS (M)	6.3.22.4

Number	Name	Requirements	Subject (MMR-BS/RS)	Notes
M19	Relay security	The specification shall define security mechanisms to ensure security between MMR-BS and RS, and between RSs and between RS and MS.	MMR-BS (M) RS (M)	Section 7

Optional functional requirements

Number	Name	Requirements	Subject (MMR-BS/RS)	Notes
O1	Relay path selection	The specification shall define a mechanism to set up and maintain multi-hop paths.	MMR-BS (O) RS (O)	There can be centralized and distributed approaches to determine a relay path. 6.3.25
O2	Multicast/broadcast data delivery	The specification shall support multicast and broadcast data delivery via RS.	MMR-BS (O) RS (O)	6.3.23.3
O3	ARQ support	The specification shall support ARQ of MS via RS.	MMR-BS (O) RS (O)	6.3.4.7
O4	HARQ support	The specification shall support HARQ of MS via RS.	MMR-BS (O) RS (O)	6.3.17.5 8.4.15
O5	Mobile RS handover support	The specification shall support RS with mobility and its subordinate MSs.	MMR-BS (O) RS (O)	6.3.22.4
O6	Handover decision for subordinates stations	The specification shall allow the handover decision originated by a serving RS or MMR-BS on behalf of moving stations.	MMR-BS (O) RS (O)	6.3.22.4

Number	Name	Requirements	Subject (MMR-BS/RS)	Notes
O7	MMR-BS authentication	The specification shall permit RS to authenticate MMR-BS when it joins an MMR network.	MMR-BS (O) RS (O)	section 7
O8	PHY parameters	The specification shall allow an RS to use different PHY parameters on the relay and access links when they operate on the different RF frequency channels..	MMR-BS (O) RS (O)	1.3 (T.B.D.)
O9	Multiple antenna support	The specification shall allow the use of multiple antennae to enhance spectral efficiency of the system or extend the coverage.	MMR-BS (O) RS (O)	This includes MIMO, beamforming, transmit diversity, etc. 6.3.7 8.4.8
O10	CQICH	The specification shall enable RS to allocate a CQICH subchannel to support fast feedback quality report and AMC	MMR-BS (O) RS (O)	6.3.17 – 19
O11	Cooperative relay	The specification shall enable RS to participate in cooperative relay.	MMR-BS (O) RS (O)	6.3.23.3 or New section
O12	Location information	The specification shall support RS to perform location update.	MMR-BS (O) RS (O)	6.3.26
O13	Power saving	The specification shall support sleep/idle mode.	MMR-BS (O) RS (O)	6.3.21.7
O14	Neighbor Detection	The specification shall enable the RS to detect its neighbor stations including the status and quality of radio link to each neighbor.	RS (O)	A neighbour station could be RS or MMR-BS. 6.3.26
O15	Multiple Relay Path	The specifications shall support the creation of more than one multi-hop path between an MMR-BS and MS.	MMR-BS(O) RS (O)	6.3.25

Temporary Table of Contents

Reference

[1] IEEE 802.16j-06/016, Proposed Technical Requirements for IEEE 802.16 Relay TG (Jerry Sydir, et. al.; 2006-09-05)
[2] IEEE 802.16j-06/101, Comments on the TOC 802.16j-06/017r1 (Kerstin Johnsson, et.

al.; 2006-09-19)
[3] IEEE 802.16j-06/017r1, TOC of Task Group Working Document (Mike Hart, Jung Je Son; 2006-08-31)