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Title	UL CQI Reporting in Centralized Scheduling
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Re:	This is in response for IEEE 802.16 Working Group Letter Ballot #28: Announcement, 80216j-07_043.pdf
Abstract	UL access zone CQI reporting is not specified for centralized scheduling.
Purpose	Review and adopt
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UL CINR Reporting in Centralized Scheduling

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NEC

Introduction

In legacy IEEE802.16e, BS can directly measure the uplink CQI for each MS to facilitate the radio resource control and scheduling. However, in multi-hop relay networks, the MR-BS could not measure the UL CQI for the MS/RS connecting to the subordinated RS in centralized scheduling. Some mechanisms are needed to fix this issue.

Proposed Remedy

Comparing centralized scheduling and distributed scheduling, the drawback of centralized scheduling is very obvious, such as higher overhead, lack of CQI information for scheduling and radio resource control. Therefore, we should only allow using centralized scheduling RS in two-hop systems.

MR-BS could send REP-REQ to request subordinated RS to measure and report the UL CQI, thus new TLV is proposed for this possible remedy.

Specification changes

3. Definition

[Modify the definition 3.107]

3.107 centralized scheduling: a mode of operation applicable to multihop relay where an MR-BS determines the resource allocations and generates the corresponding MAPs (or dictates the information used by RSs to generate their MAPs) for all access and relay links in the MR-cell. [Centralized scheduling shall not be used for more than two-hop relay systems.](#)

11.11 REP-REQ management message encodings

[Insert following rows into the third table in subclause 11.11 as indicated]

Name	Type	Length	Value
Vector of Stations	1.13	2N	Basic CIDs of the N reported stations
Type of UL CQI Measurement	1.14	1	Bit 0:1 = Physical CINR Bit 1:1 = Effective CINR Bit 2-5: = Average Alpha in multiples of 1/32 (range [1/32, 16/32]) Bit 6:0 = Report the CINR measurement on Pilot subcarriers Bit 6:1 = Report the CINR measurement on Data subcarriers Bit 7: reserved

[Add one paragraph after the last paragraph of subclause 11.11]

When an RS received an REP-REQ with the TLV of Vector of Stations (type 1.13), it shall report the UL CQI measurement for those stations. The Type of UL CQI measurement shall be specified by the TLV of Type of UL CQI Measurement.

11.12 REP-RSP management message encodings

[Insert following rows into the third table in subclause 11.12 as indicated]

Name	Type	Length	Value
<u>Vector of stations</u>	<u>2.9</u>	<u>2N</u>	<u>Basic CIDs of the N reported stations</u>
<u>UL CINR Report</u>	<u>2.10</u>	<u>N</u>	<u>UL CINR for each of the N RS or MS</u>

[Add one paragraph after the last paragraph of subclause 11.12]

When an RS received an REP-REQ with the TLV of Vector of Stations (type 1.13), it shall response to the MR-BS with and REP-RSP with TLVs of type 2.9 and 2.10.

[Insert new sub clause after 8.4.11.4]

8.4.11.5 UL CINR Reporting

In multi-hop relay system with centralized scheduling, MR-BS may request RS to report the CINR value of the subordinated RS/MSs connecting to the RS by sending a REP-REQ message on RS' basic CID. RS shall send REP-RSP as the response.