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Title	Link Quality Threshold Based Link Measurement in Multi-Hop Relays System
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Re:	A response to a Call for Technical Proposal, http://wirelessman.org/relay/docs/80216j-06_027.pdf
Abstract	Introduce the link quality threshold to construct the link measurement candidate set
Purpose	To reduce the reporting of not useful link quality measurement
Notice	
Release	
Patent Policy and Procedures	

Link Quality Threshold Based Link Measurement in Multi-Hop Relays System

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Nortel

Introduction

Within a cell there may be several RSs and many MSs, in addition to a BS. There may also be RSs and MSs in neighbouring cells. There may be links between the BS and each RS, between the BS and each MS, between each pair of RSs, and between each RS and the MSs. It is desirable for the BS to have knowledge of the quality of these links in order to make optimum use of available resources. Various methods have been proposed for obtaining this link quality information and communicating it to the BS through signalling. However, this signalling is wasteful of resources, which may otherwise be used for user traffic, and should therefore be minimised.

Link quality threshold

We introduce a link quality threshold, *LQT*, such that an RS shall only report to a BS the quality of those links whose quality exceeds this threshold. Furthermore, a RS shall only report to a BS if the link quality of the link between the BS and the RS exceeds this threshold. This threshold shall be configurable and its value may be communicated to an RS by the BS.

For example, a particular MS may be visible to several RSs; however, each RS may only report a link quality for the link between itself and this MS to the BS if the said link quality is greater than the pre-configured link quality threshold, *LQT*. Thus, the RS may receive several signals transmitted on links from one or more MSs and RSs and from these may select links whose quality it may report to a BS. The RS measures the quality of each signal it receives from a MS or RS and compares the quality measured for each signal to a threshold quality for that signal, forming a candidate set of links, *A*, comprising those links whose received signals have a quality above their thresholds.

Furthermore, a particular RS may be visible to several BSs. The RS may only report a link quality for the link between itself and a MS or an RS to a BS if the link quality for the link between itself and this BS is greater than the pre-configured link quality threshold, *LQT*. Thus, the RS may receive several signals transmitted from one or more BSs. The RS measures the quality of each of these signals it receives from a BS and compares the quality measured for each signal to a threshold quality for that signal, and forms a candidate set of links, *B*, comprising those links whose received signals have a quality above their thresholds.

The RS selects those links which are members of the candidate set of links *A*, to MSs or RSs, whose corresponding link to a BS is a member of the candidate set of links *B*, between the RS and that BS, and reports that selected link quality to the corresponding BS.

In this way, RSs do not report the quality of links to BSs if the quality of the link between the RS and the MS or RS is too low or if the quality of the link between the RS and the BS is too low. Resources are therefore conserved for use by user traffic.

Configuration message

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