Path Selection and Reselection for RSs in IEEE 802.16j Multi-hop Relay Network

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Purpose:

. Propose the path reselection procedures for RSs in IEEE 802.16j specification

Path Selection and Re-selection for RSs in IEEE 802.16j Multi-hop Relay Network

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Path Selection & Path Re-selection for RSs

According to [1],a mechanism shall be defined to select, set up and maintain one or more multi-hop paths.

❑ **Path selection for RSs**

❖ When a RS first comes to attach to the MR network, path selection is applied to find the most suitable access station.

❖ Path selection can be performed during the RS initial network entry.

❑ **Path re-selection for RSs**

❖ When the network or an operating RS wants to improve the path and/or network performance, path re-selection can be applied to find the most suitable access station.

❖ Path re-selection could be separated from RS network (re-)entry.

Both are needed for RSs in the MR network

RS-assisted network-controlled V.S. network-assisted RS-controlled

The methods for path selection and reselection for RSs can be divided into two categories:

❑ **RS-assisted network-controlled method [2,4,7,8]**

  ❖ RS makes measurements of the MR-BS and/or other RSs and then reports them to the network.

  ❖ Network (MR-BS) makes decision.

  We focus on this
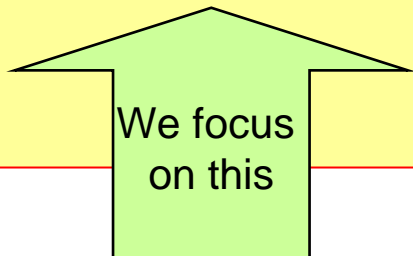
❑ **Network-assisted RS-controlled method [3,6]**

  ❖ Network broadcasts information regarding relay paths to RS.

  ❖ RS makes decision after evaluating the information.

  ❖ Periodic broadcast of path information is needed to support path selection and reselection anytime and this is not efficient.

Proposal

❑ **Both path selection and re-selection are needed for RSs in the MR network.**

  ❖ We propose to add "6.3.25.1 path selection for RSs " and "6.3.25.2 path re-selection for RSs" in Section 6.3.25 "relay path management and routing".

❑ **The procedures of path selection for RSs may refer to Section 6.3.9.16 "support for network entry and initialization in relay mode".**

❑ **The procedure of path re-selection for RSs is proposed to consist of three steps:**

  ❖ MR-BS and/or RSs measurements and reporting.

  ❖ Decision of path reselection and notification.

  ❖ RS network re-entry.

References

- [1]   IEEE 802.16j-06_016r1, "Proposed Technical Requirements Guideline for IEEE 802.16 Relay TG".
- [2]   IEEE C802.16j-06/167, "RS Network Entry, Topology Establishment and Initialization for IEEE 802.16j".
- [3]   IEEE C802.16j-06/278, "Path selection for RS initial network entry".
- [4]   IEEE C802.16j-06/286, "MS / RS network entry and initialization".
- [5]   IEEE C802.16j-06/296r1, "Link Adaptive Multi-hop Path Management for IEEE 802.16j".
- [6]   IEEE C802.16j-06/158, "Routing Announcements for Network Entry Support".