A node entry process for IEEE 802.16j multihop relay networks

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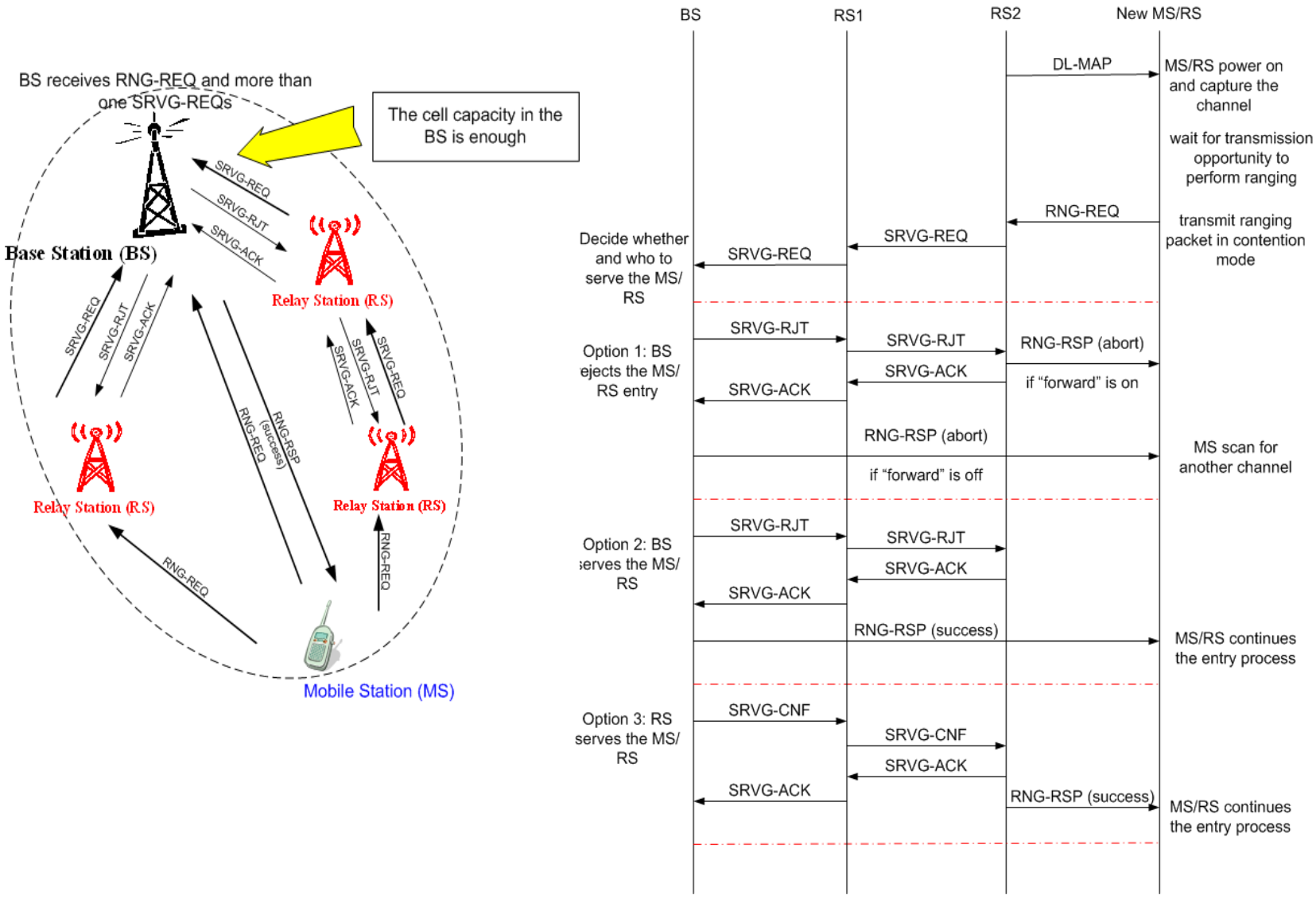
Purpose:
This contribution is about a network entry and node selection process to be considered for Section 6.3.9.16 Network entry and initialization.

Key Features of Our Proposal

- Node entry process for MS and RS entry.
- Consider single RS case (two-hop transmission) and multiple RS case (more than two hops transmission).
- Include range extension and throughput enhancement in the network entry.
- Design target:
  - achieve optimal end-to-end QoS for individual component
  - achieve system level efficiency.

Concepts

- Assumptions:
  - MS and RS has common ranging channel.
  - A set of ranging codes assigned for MS and RS.
- Concepts:
  - A new MS or RS sends ranging request through common ranging channel.
  - During the ranging process, RS measure and compute link and end-to-end statistics, and report to BS.
  - BS makes the decisions on (1) whether to accept the node entry, and (2) which node is the access point of the new node.
  - The decision by the BS depends on the statistics report from RS.



The messages sequence in MS/RS entry in multiple RS case.

Our Contributions

- Scenario design.
- The resource-oriented ranging procedure enables the node to get the optimal end-to-end path.
- Message extensions to enable information exchange between BS and RS during ranging.