Relay Location Report for Neighbor Discovery

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Base Document:

IEEE C802.16j-07/065 http://dot16.org/CSUpload//upload/Relay_db/C80216j-07_065.pdf

Purpose:

Propose the text regarding Relay Location Report for Neighbor Discovery.

Introduction

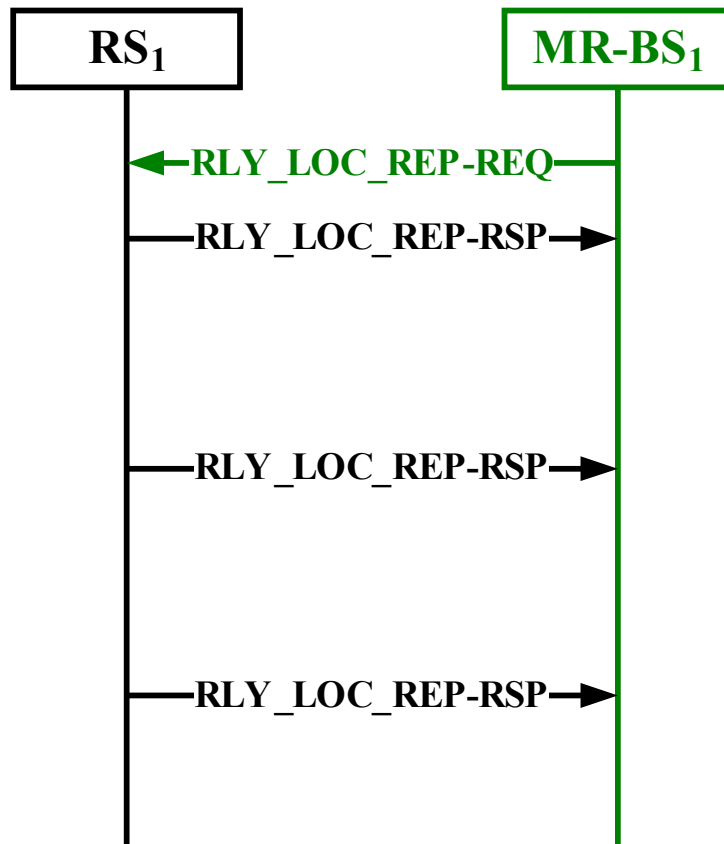- We propose that RS should report its location to facilitate Neighbor Discovery

- With RS location information, the MR-BS could

  - *Notify an RS of the neighbor RSs*

  - *Be notified that an moving RS is entering its coverage area*

Location Report

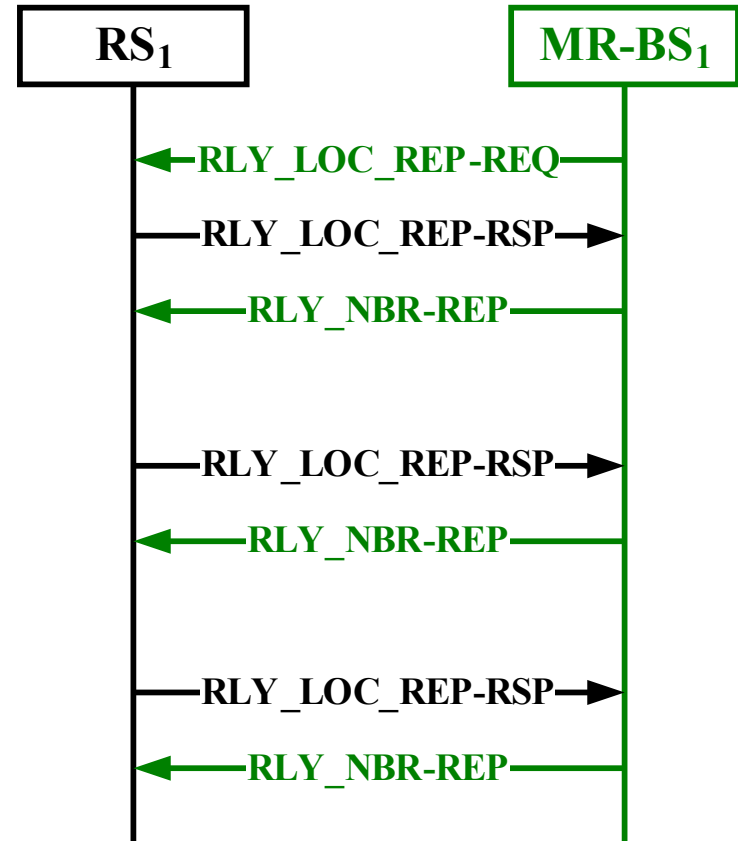- An RS could report its location to MR-BS

- The location report message from RS should include the following information with WGS84 coordination

  - *Mandatory: Position,*

  - *Optional: Predicted Position or Velocity, Acceleration (for high speed RS)*

| **GNSS Measurements** | → | **Navigation (Kalman) Filter** | → | **Position, $x(k)$ Predicted Position, $x(k+1)$ Velocity, $v(k)$ Acceleration $a(k)$** |
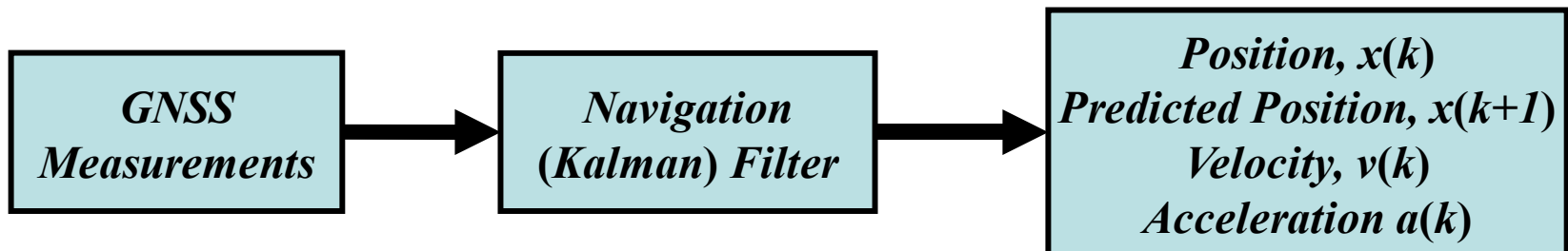
Example of RS Location Report

RS₁	MR-BS₁

←—— **RLY_LOC_REP-REQ** ———

——— RLY_LOC_REP-RSP ———→

——— RLY_LOC_REP-RSP ———→

——— RLY_LOC_REP-RSP ———→

Location Report

RS₁	MR-BS₁

←—— **RLY_LOC_REP-REQ** ———

——— RLY_LOC_REP-RSP ———→

←——— **RLY_NBR-REP** ———

——— RLY_LOC_REP-RSP ———→

←——— **RLY_NBR-REP** ———

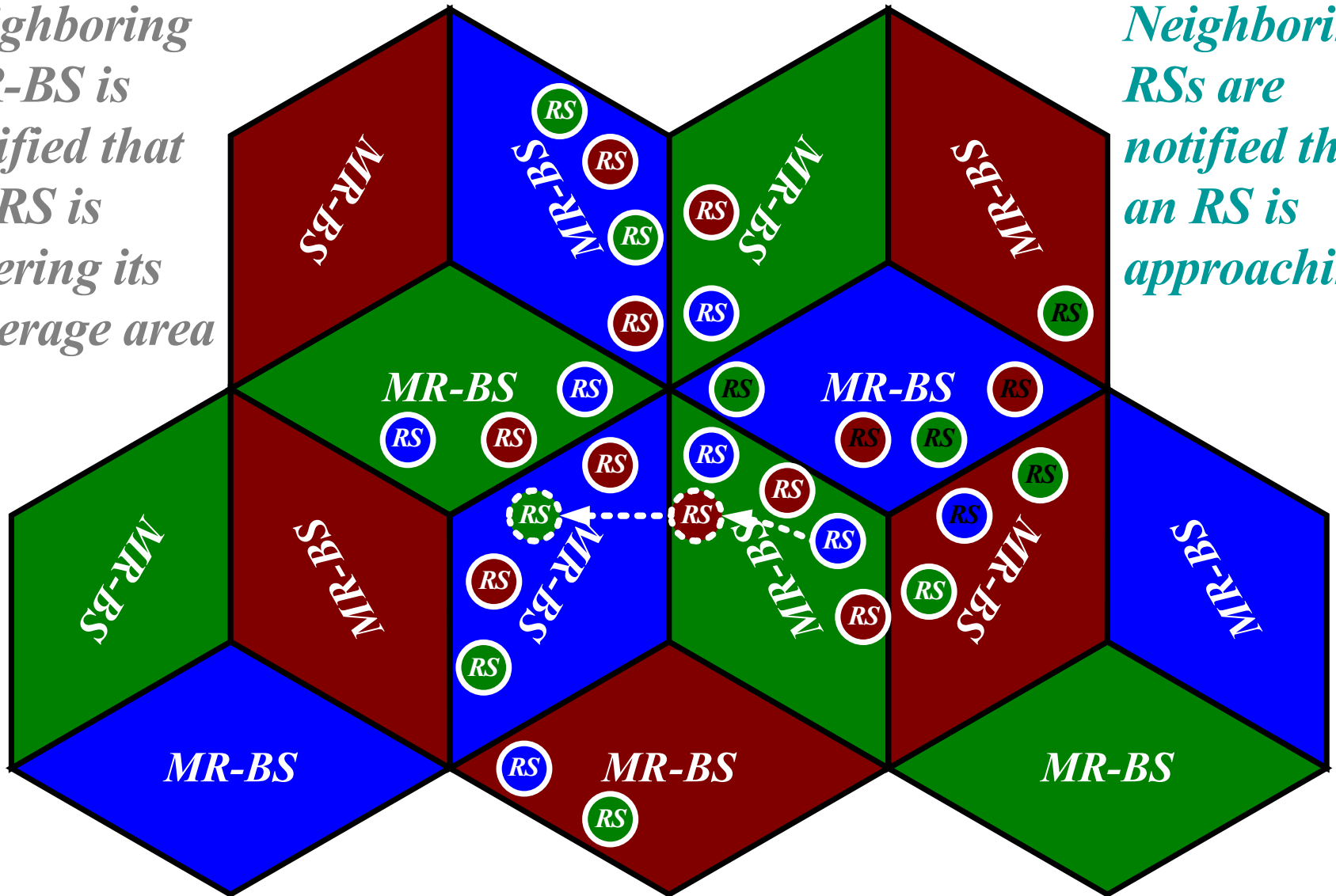——— RLY_LOC_REP-RSP ———→

←——— **RLY_NBR-REP** ———

**Neighbor RSs Notification
via Location Report**

Example of Neighbor Discovery

Neighboring MR-BS is notified that an RS is entering its coverage area

Neighboring RSs are notified that an RS is approaching

Summary

- We propose RLY-LOC-REP-REQ/RSP and RLY-NBR-REP messages to facilitate neighbor discovery in the multi-hop relay system