

MS Network Entry with RS

IEEE 802.16 Presentation Submission Template (Rev. 8.3)

Document Number:

IEEE S802.16j-06/207

Date Submitted: 2006-11-07

Source:

Kanchei (Ken) Loa, Yung-Ting Lee, Yi-Hsueh Tsai,

Heng-Iang Hsu, Chih-Chiang Hsieh, Shiann-Tsong Sheu

Voice: 886-2-2739-9616

Institute for Information Industry

8F., No. 218, Sec. 2, Dunhua S. Rd.,

Taipei City, Taiwan.

Fax: 886-2-2378-2328

E-mail: loa@nmi.iii.org.tw

Venue:

IEEE 802.16 Session #46, Dallas, US

Base Document:

IEEE C802.16j-06/207r1 http://dot16.org/CSUpload//upload/Relay_db/C80216j-06_207r1.pdf

Purpose:

Propose the text regarding MS network entry with RS.

Notice:

This document has been prepared to assist IEEE 802.16. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.

Release:

The contributor grants a free, irrevocable license to the IEEE to incorporate material contained in this contribution, and any modifications thereof, in the creation of an IEEE Standards publication; to copyright in the IEEE's name any IEEE Standards publication even though it may include portions of this contribution; and at the IEEE's sole discretion to permit others to reproduce in whole or in part the resulting IEEE Standards publication. The contributor also acknowledges and accepts that this contribution may be made public by IEEE 802.16.

IEEE 802.16 Patent Policy:

The contributor is familiar with the IEEE 802.16 Patent Policy and Procedures <<http://ieee802.org/16/ipr/patents/policy.html>>, including the statement "IEEE standards may include the known use of patent(s), including patent applications, provided the IEEE receives assurance from the patent holder or applicant with respect to patents essential for compliance with both mandatory and optional portions of the standard." Early disclosure to the Working Group of patent information that might be relevant to the standard is essential to reduce the possibility for delays in the development process and increase the likelihood that the draft publication will be approved for publication. Please notify the Chair <<mailto:chair@wirelessman.org>> as early as possible, in written or electronic form, if patented technology (or technology under patent application) might be incorporated into a draft standard being developed within the IEEE 802.16 Working Group. The Chair will disclose this notification via the IEEE 802.16 web site <<http://ieee802.org/16/ipr/patents/notices>>.

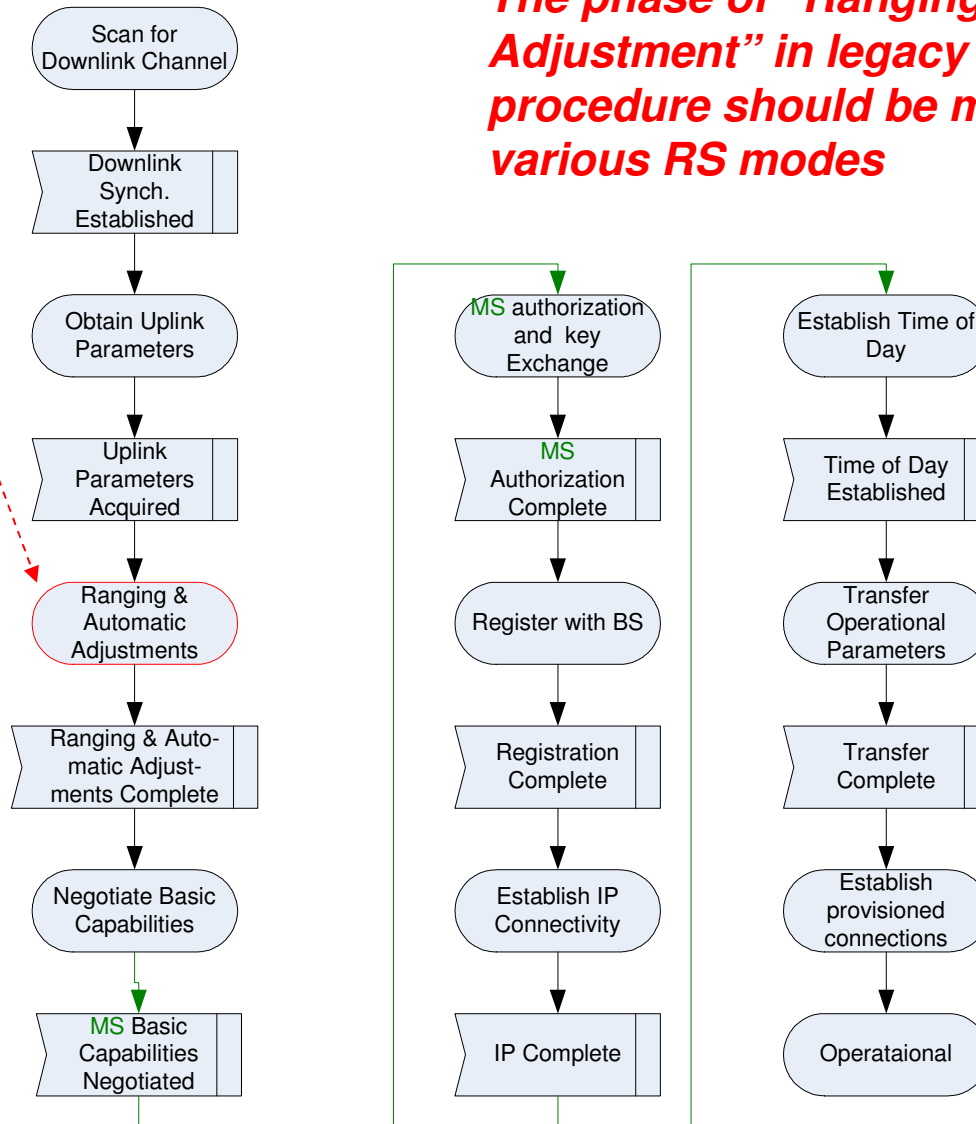
Design Objectives

- Shall support MS to join Multihop Relay network without any modification on MS
- Should support MS to enter and register the Multihop Relay network via various RS modes
- Should be centralized controlled by the MR-BS
- The modifications to legacy Network Entry Procedure should be minimized

Proposed Remedy

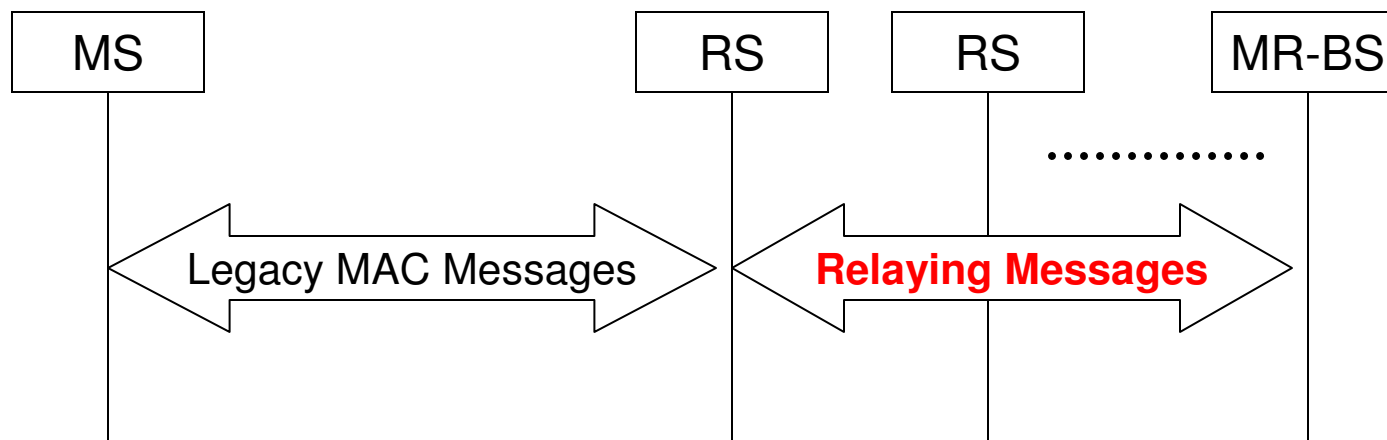
Need modifications for different RS modes

The phase of “Ranging & Automatic Adjustment” in legacy Network Entry procedure should be modified for various RS modes



Proposed Remedy

- Relaying messages are defined to transport the information in the relay path required for completing the Network Entry procedures



Proposed Relaying Messages

Same as C80216j-06_208

| <u>Message name</u> | <u>Message description</u> | <u>Connection</u> |
|---------------------------|---|-----------------------------------|
| <u>RLY_CFG-MAP</u> | <u>MR-BS configure associated RS for RS broadcasting</u> | <u>Broadcast/Multicast /Basic</u> |
| <u>RLY_Transship-CIRC</u> | <u>RS transport RS/MS CDMA initial ranging code to associated MR-BS</u> | <u>Basic</u> |
| <u>RLY_Transship-DATA</u> | <u>RS transport RS/MS data to associated MR-BS</u> | <u>Primary</u> |
| <u>RLY_CIRC-IND</u> | <u>MR-BS notify candidate RS to accept the new coming RS/MS CDMA initial ranging code</u> | <u>Basic</u> |
| <u>RLY_IR-IND</u> | <u>MR-BS notify candidate RS to accept the new coming RS/MS</u> | <u>Basic</u> |

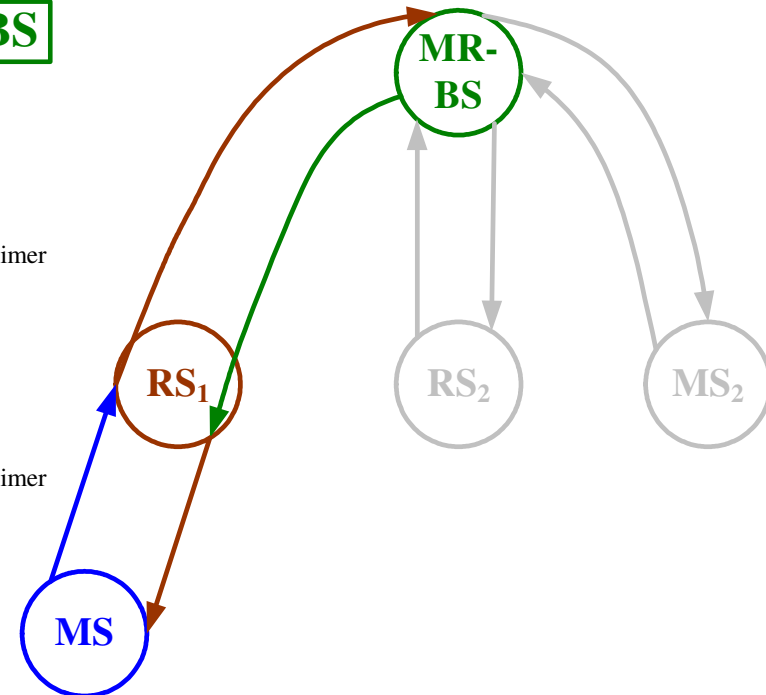
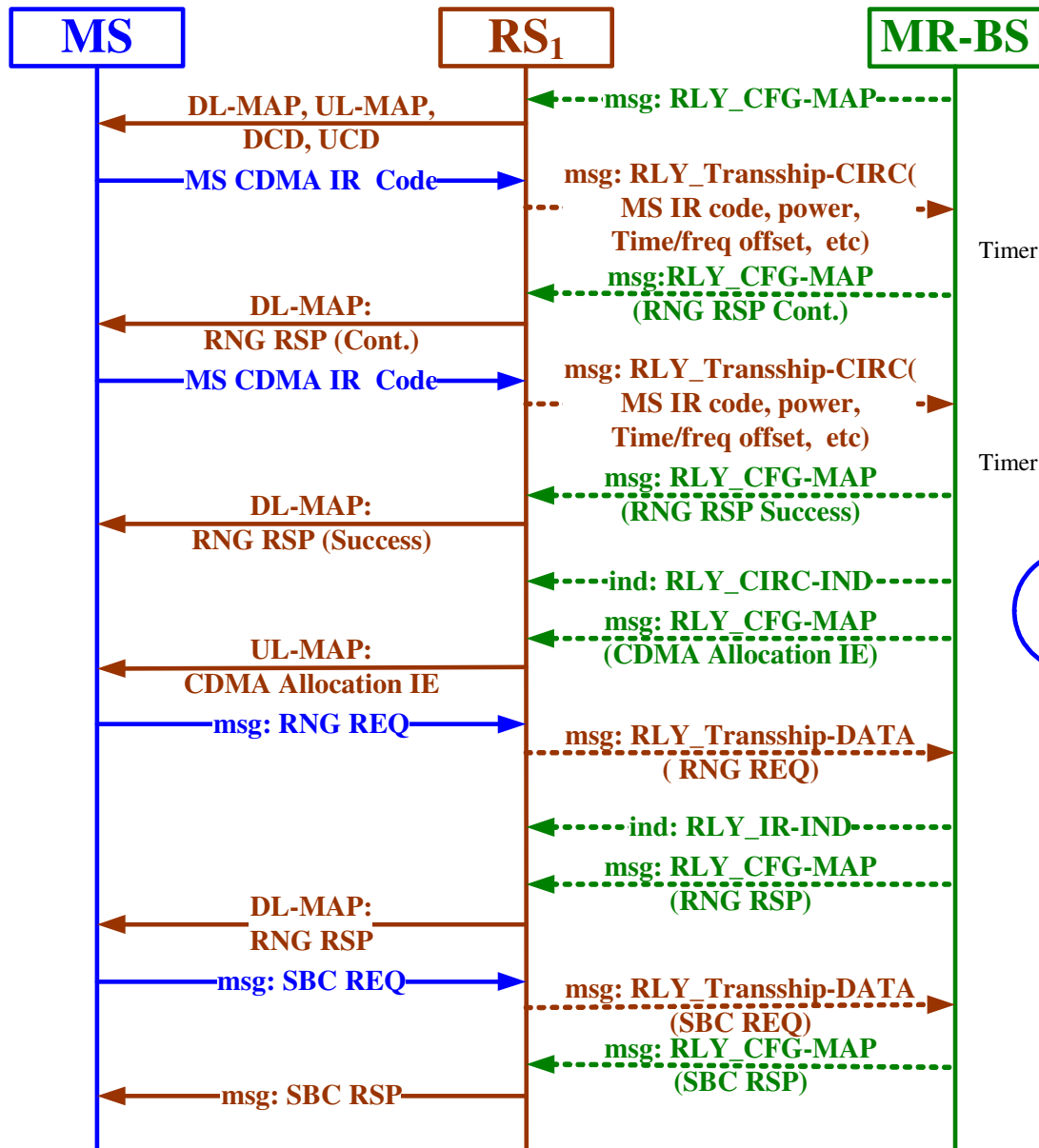
Key Points & Benefits

- Proposed procedures of MS entering a Multihop Relay network via RS are centrally controlled by the MR-BS
- Define five relaying messages in the relay path for completing MS joining a Multihop Relay network
- Only “Ranging & Automatic Adjustments process” need to be modified to allow MS entering a Multihop Relay network via various RS

Backup

MS joining Multihop Relay Network via RS

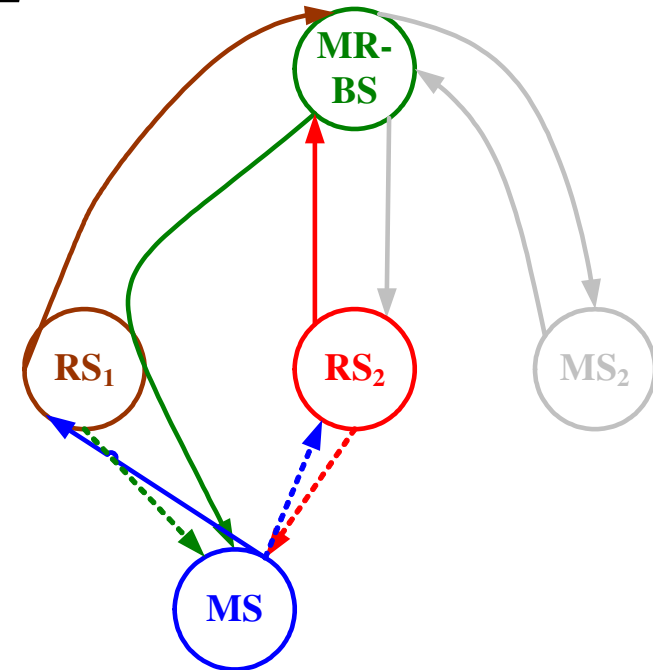
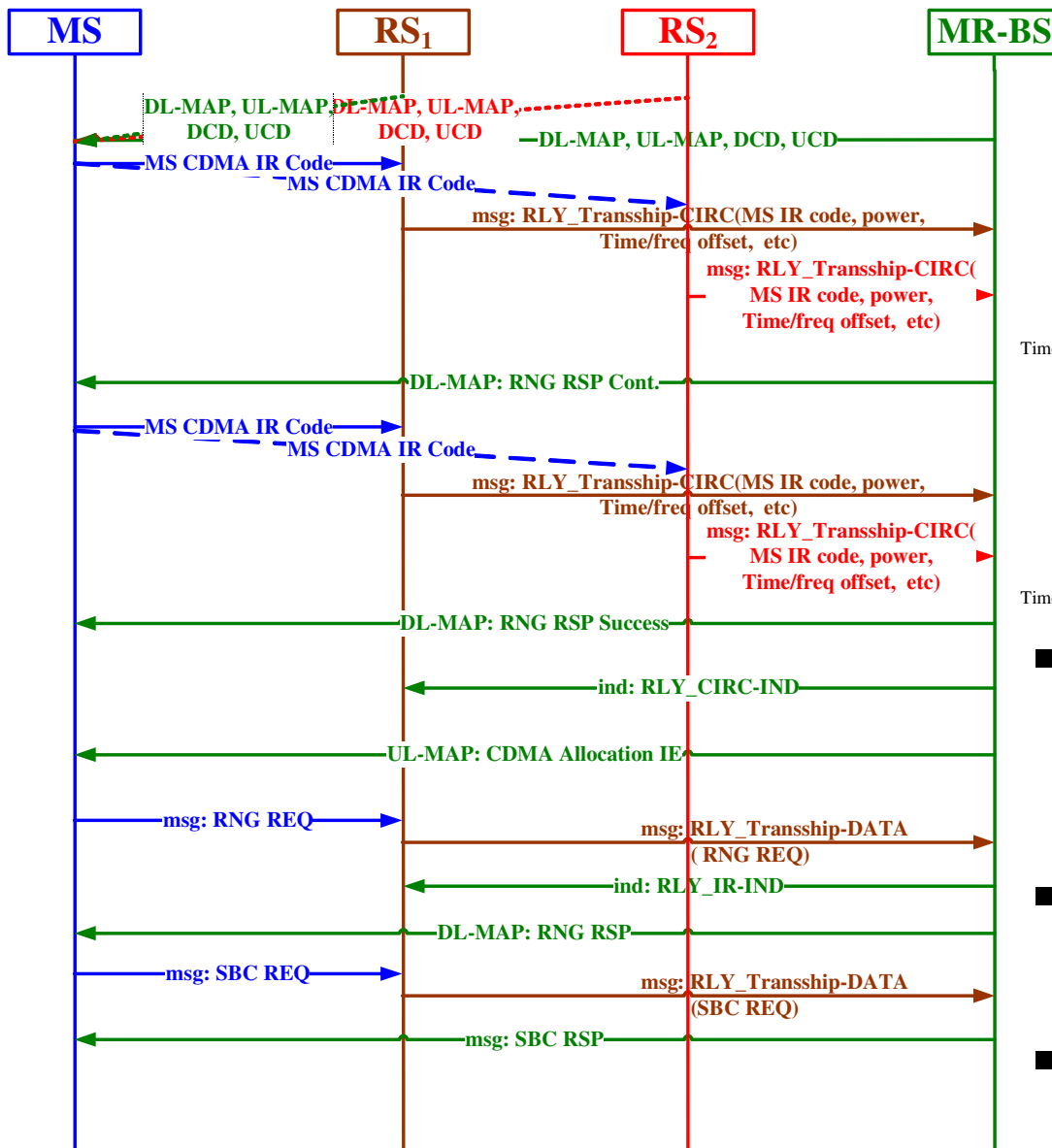
Example 1



- only RS1 can decode messages from the MS and vice versa
- MR-BS assigns the MS to join the network via RS1 negotiation

MS joining Multihop Relay Network via RS

Example 2



- Both RS1 and RS2 can decode messages from the MS and vice versa
- The MS can also decode messages from MR-BS
- MR-BS assigns the MS to join the network via RS1