

In-band Transparent Relay Frame Structure

IEEE 802.16 Presentation Submission Template (Rev. 8.3)

Document Number:

IEEE S802.16j-07/064r1

Date Submitted: 2007-01-16

Source:

Kanchei (Ken) Loa, Yi-Hsueh Tsai, Chih-Chiang Hsieh,
Yung-Ting Lee, Hua-Chiang Yin, Shiann-Tsong Sheu,
Frank C.D. Tsai, Youn-Tai Lee, Heng-Iang Hsu
Institute for Information Industry
8F., No. 218, Sec. 2, Dunhua S. Rd., Taipei City, Taiwan.

Voice: 886-2-2739-9616

Fax: 886-2-2378-2328

E-mail: loa@iii.org.tw

Hang Zhang, Peiying Zhu, Mo-Han Fong, Wen Tong,
David Steer, Gamini Senarath, Derek Yu, Mark Naden, G.Q. Wang
Nortel
3500 Carling Avenue, Ottawa, Ontario K2H 8E9

Voice: +1 613 7631315

E-mail: WenTong@nortel.com, pyzhu@nortel.com

[add co-authors here]

Venue:

IEEE 802.16 Session #47, London, UK

Base Document:

IEEE C802.16j-07/064 http://dot16.org/CSUpload//upload/Relay_db/C80216j-07_064.pdf

Purpose:

Propose the text regarding In-band Transparent Relay Frame Structure.

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>.

Introduction

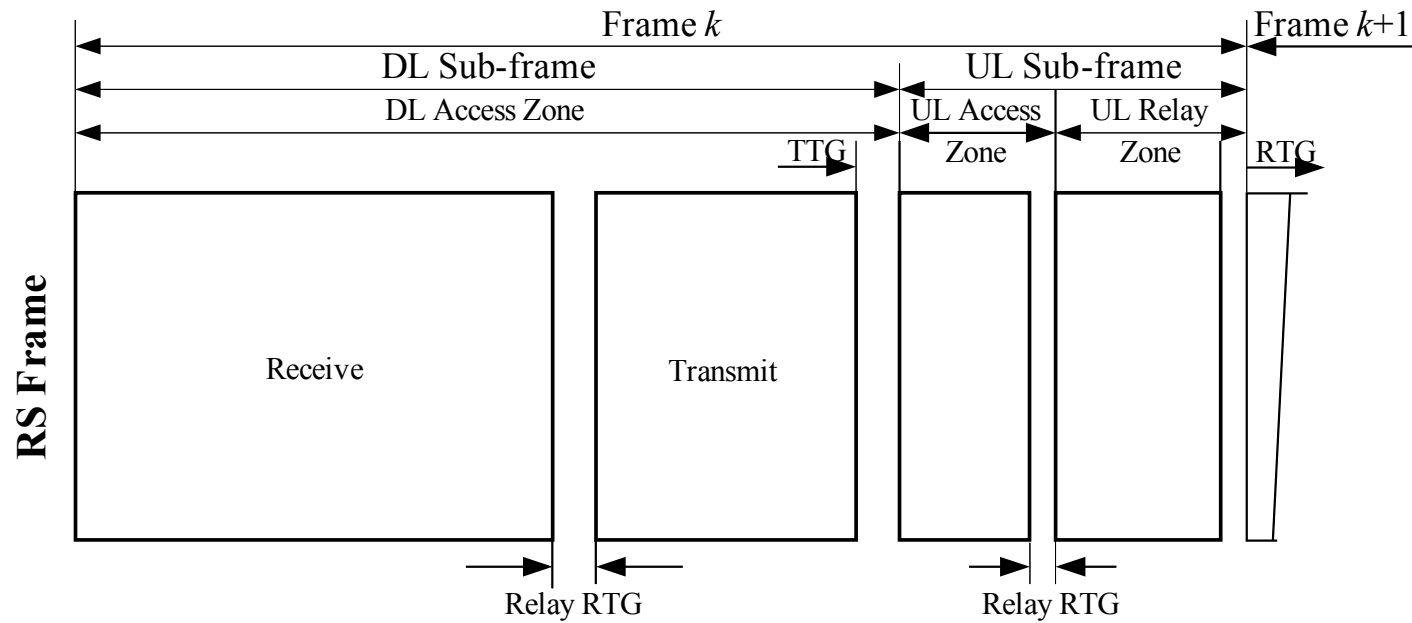
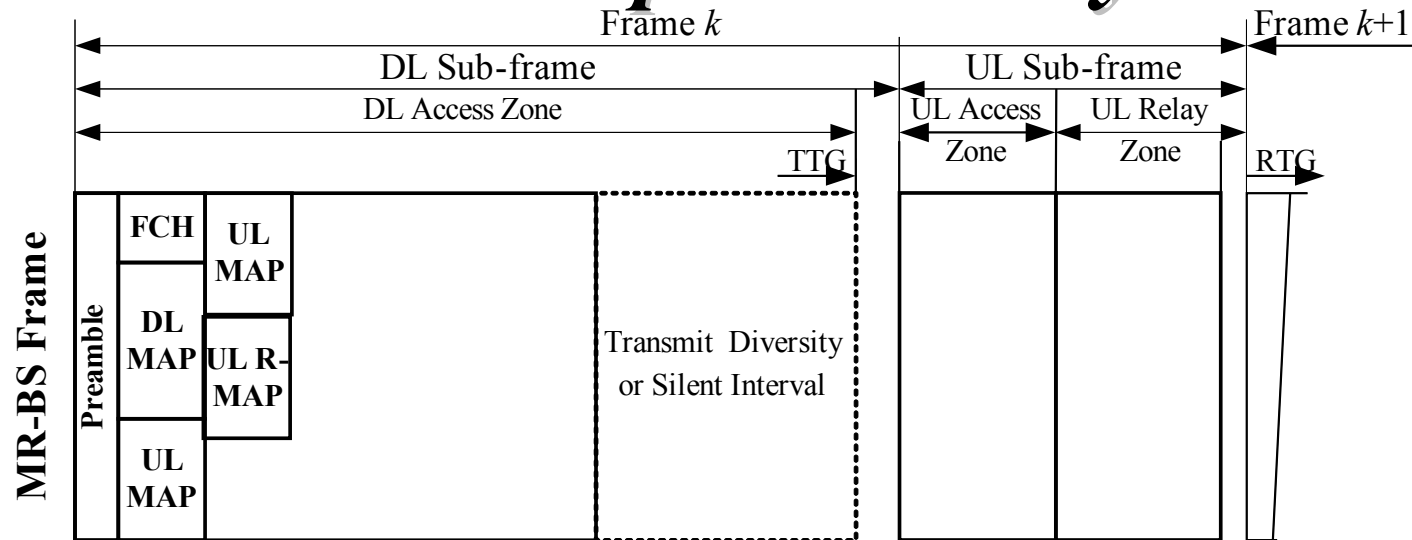
- In-band transparent RS:
 - Not transmit frame-start preamble and MAPs
- Design objectives of frame structure for transparent RS
 - Minimum modification on the MR frame structure approved in Session #46

Proposed Terminology

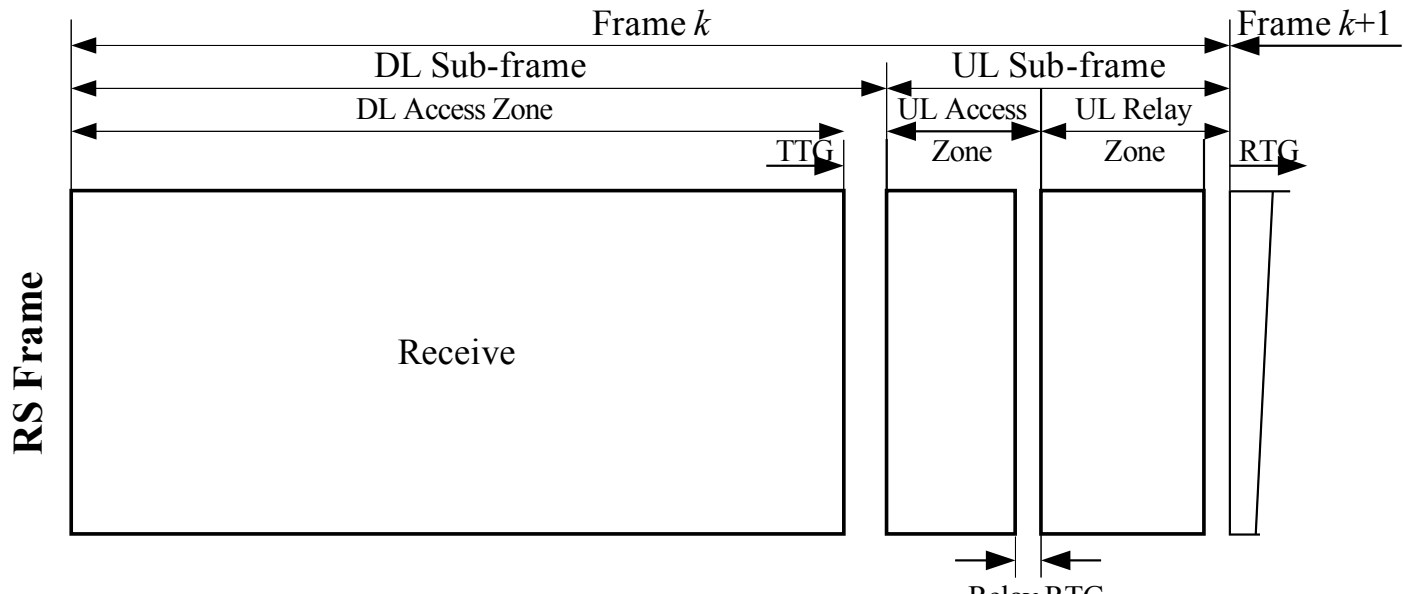
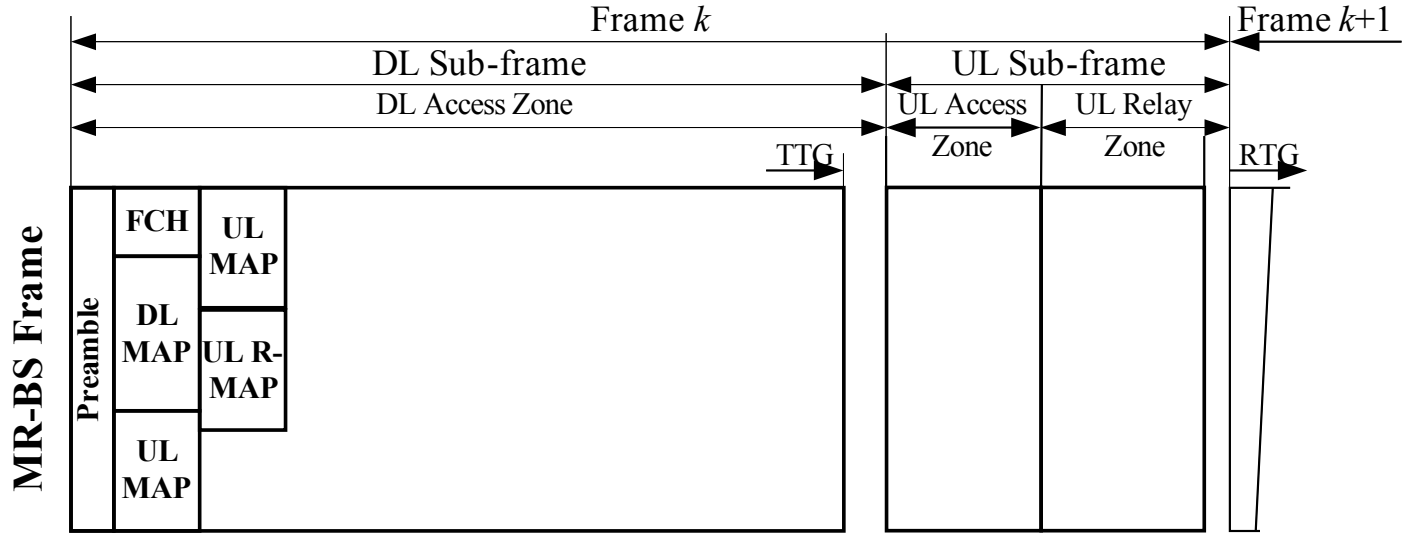
- **DL Access Zone:** A portion of the DL sub-frame in the MR-BS/RS frame used for MR-BS/RS to MS or transparent RS transmissions
- **Cooperative Transmit Diversity/Silent Interval:** An interval of the DL Access Zone used for either MR-BS/RS to RS/MS transmissions by utilizing transmit diversity schemes or providing reduced interference region for RS to RS/MS transmissions within the coverage area of the MR-BS or the RS

Frame Structure Example for DL/UL

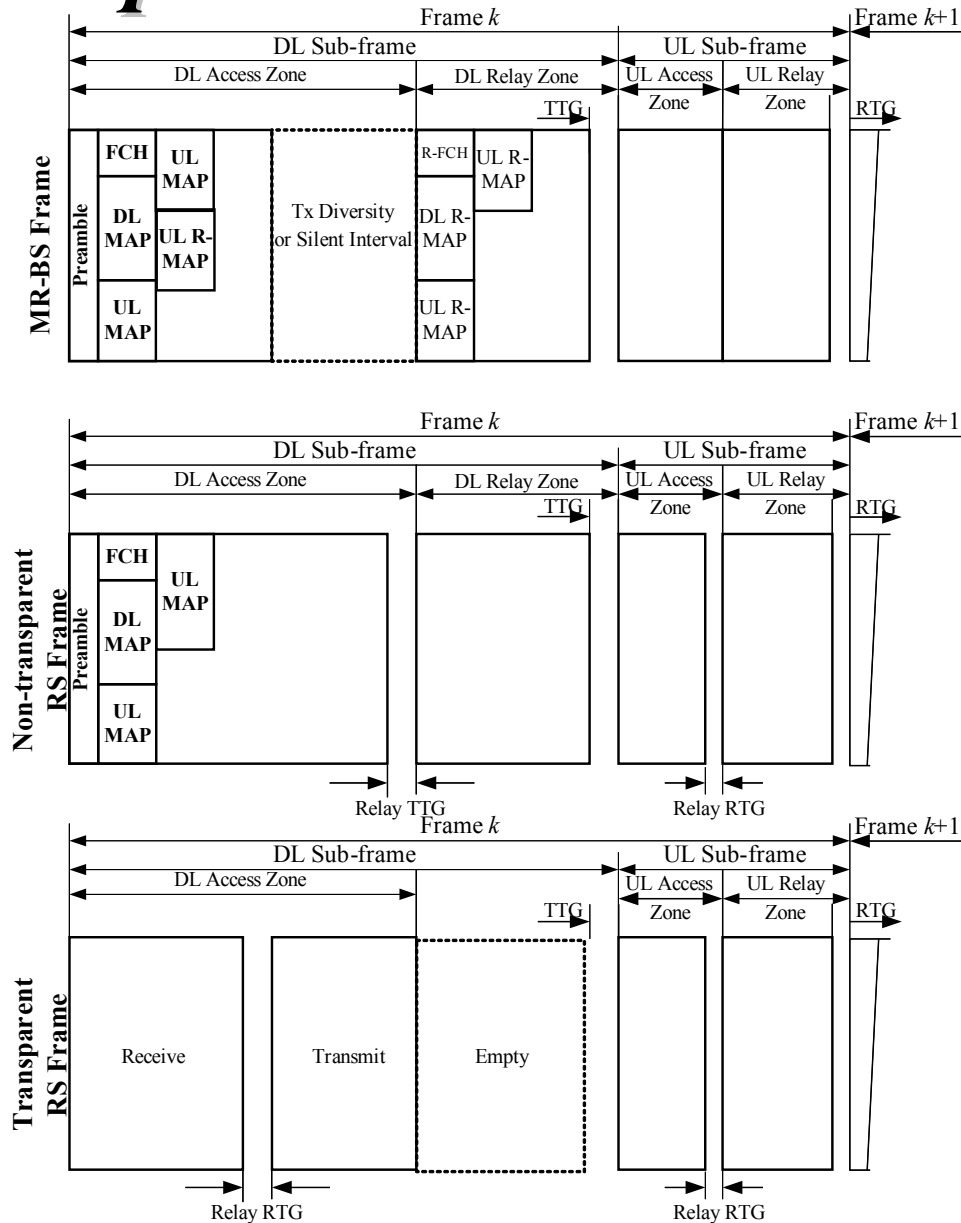
Transparent Relay



Frame Structure Example for Upstream-Only Transparent Relay



Example of Transparent and Non-transparent RSs Coexistence



Summary

- We propose cooperative transmit diversity/
silent interval in DL Access Zone to enable the
transparent RS operation
- An MR-BS could support transparent RS and
non-transparent RS coexistence