

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	Preamble, FCH and MAPs Transmission in Transparent Relay Station	
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Re:	Call for Technical Proposal regarding IEEE Project P802.16j	
Abstract	The document contains technical proposals for IEEE P802.16j that provides a frame structure.	
Purpose	This is a response to Call for Technical Proposals regarding IEEE Project P802.16j.	
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Preamble, FCH and MAPs Transmission in Transparent Relay Station

1. Introduction

The frame structure for a transparent relay mode was defined in P802.16j baseline document[1]. A transparent RS doesn't transmit its own preamble, FCH, and MAPs[2], but it can transmit the same as those of MR-BS. It has advantages of coverage extension, diversity gain, and so on to transmit a preamble, FCH, and MAPs in a transparent RS.

The following assumptions are made:

- No changes are required for a IEEE802.16e-2005 MS operation;
- It enables efficient and flexible relay link operation by extension of IEEE802.16e-2005 frame structure;
- The impact upon the current IEEE802.16e frame structure is minimized
- The relay link delay is minimized;
- Only centralized scheduler is supported for a transparent RS
- Only TDD frame is considered in this contribution

2. Proposed Solution

This proposal suggests that a transparent RS may transmit a preamble, FCH and MAPs that are same with those of MR-BS.

This proposed solution has following advantages:

- Diversity gain can be obtained because MR-BS and RS transmit the same preamble, FCH and MAPs simultaneously.
- In cooperative relay mode, the coincidence of signal power between data burst and control information is able to enhance the channel estimation performance using both preamble and pilots.
- Coverage can be extended because RS transmits a preamble, FCH and MAPs.

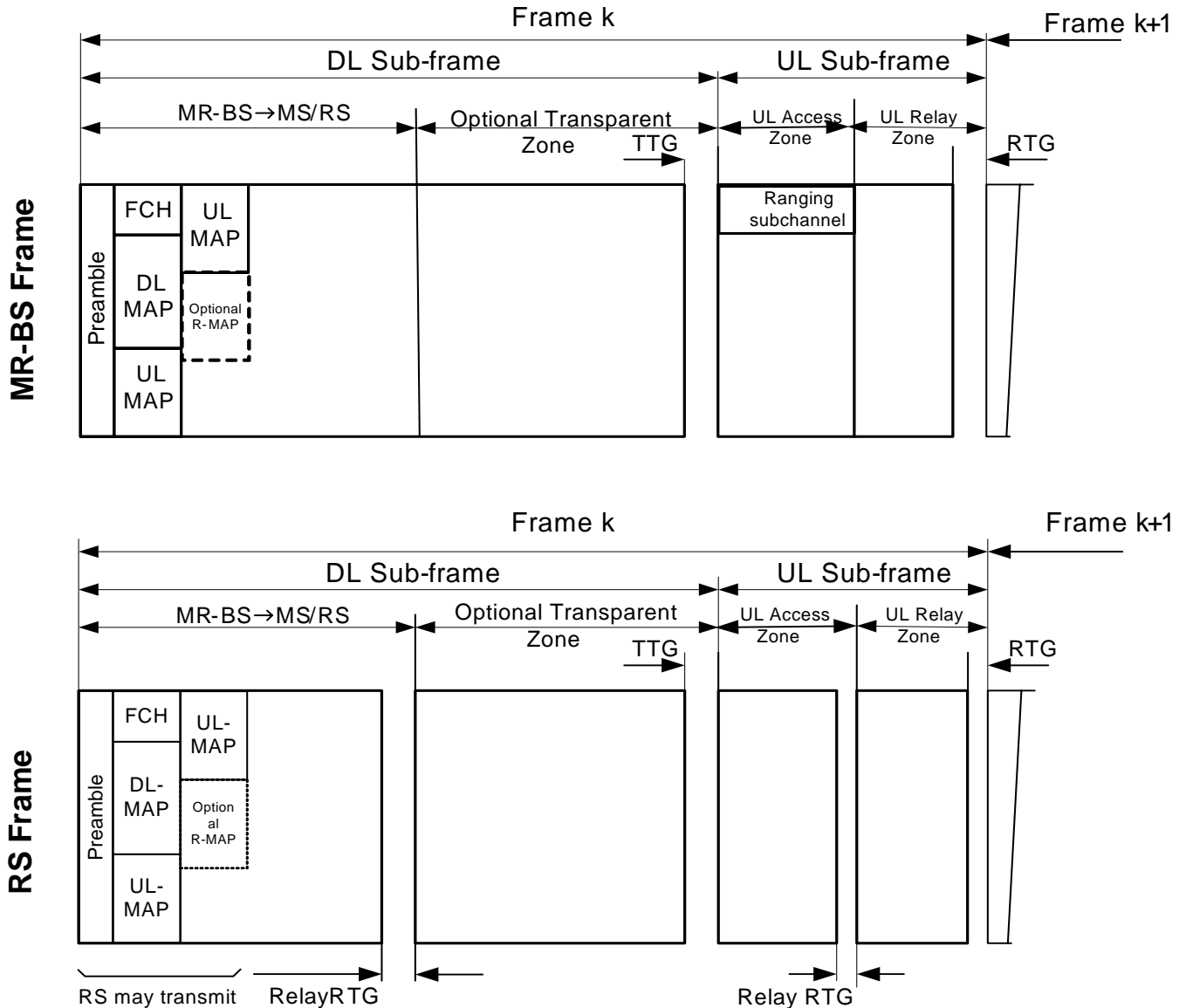


Figure 1. Example of a preamble, FCH, and MAPs transmission in transparent RS

3. Proposed Text

+++++++ start text proposal ++++++

[Replace Figure xxx at section 8.4.4.7.1.1]

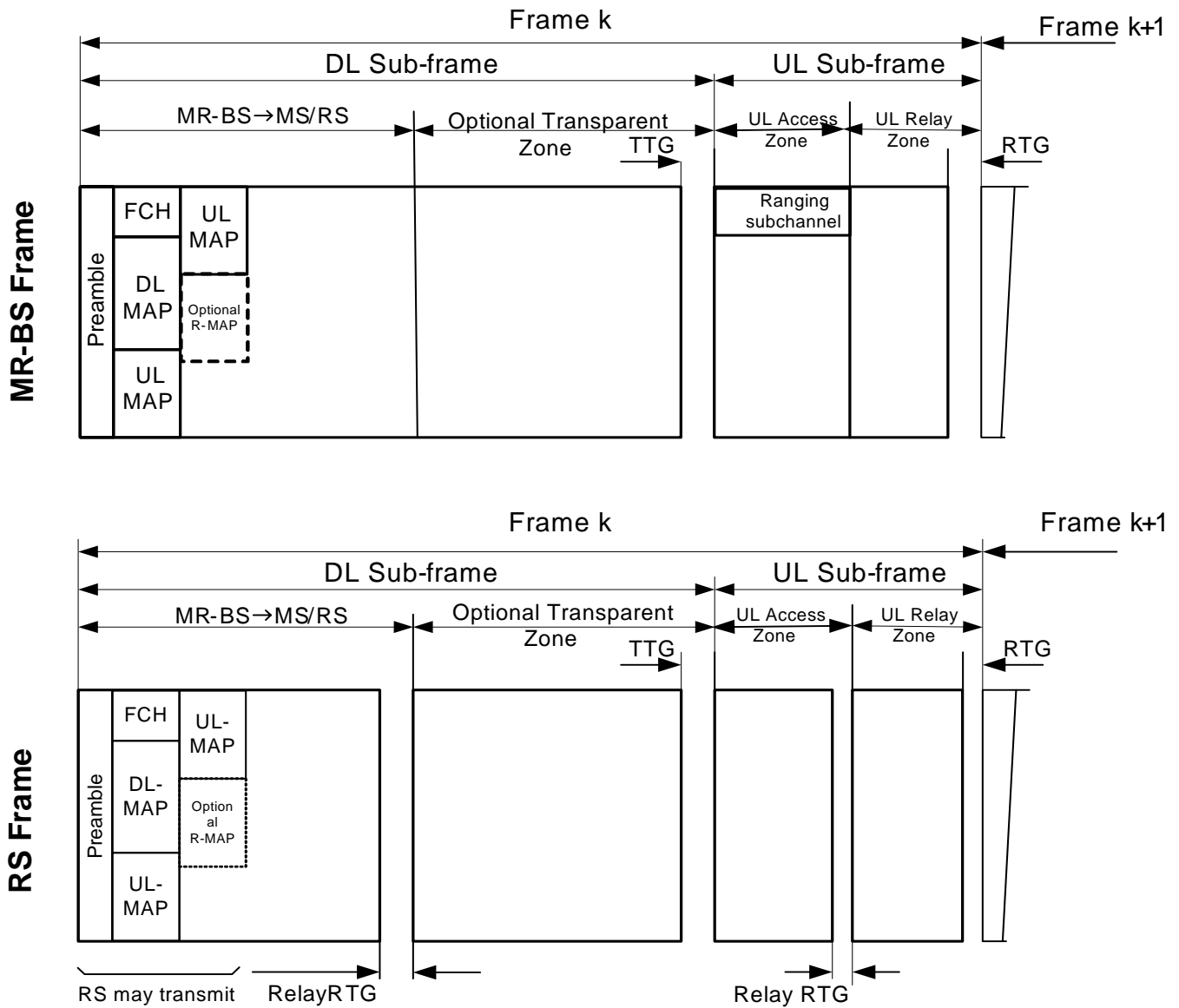


Figure xxx. Example of configuration for a transparent relay frame structure

[Replace the followings at section 8.4.4.7.1.2]

8.4.4.7.1.2 Relay frame structure

From RS view, an example of an RS TDD frame structure is shown in Figure xxx.

For a transparent RS, the preamble and MAP are basically not transmitted at the beginning of the frame. Instead it listens the preamble, MAP or optional R-MAP transmission from MR-BS. But optionally transparent RS ma

y transmit the preamble, FCH and MAPs which are same with those of MR-BS. The detailed allocation for RS can be indicated by MAP or R-MAP. The signaling method shall be negotiated in RS network entry procedure. In each frame, the TTG shall be inserted between the DL sub-frame and the UL sub-frame. The RTG shall be inserted at the end of each frame.

+++++++ end of text proposal ++++++

References

- [1] IEEE P802.16j-06/026r2, "P802.16j Baseline document".
- [2] IEEE C802.16j-06/290, "Definitions, abbreviations and acronyms for P802.16j baseline document".