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Re:	IEEE 802316j-07/007/r2: “Call for Technical Comments and Contributions regarding IEEE Project 802.16j”	
Abstract	The document contains technical proposals for IEEE P802.16j that provides TLV for simultaneous reception and transmission support	
Purpose	Discuss and Accept Text proposal for 802.16j Baseline Document	

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Direct Relaying Support for centralized scheduling

1. Introduction.

The RSs with centralized scheduling such as virtual group has been introduced to support to share preamble, FCH and MAP. When the virtual RS group includes MR-BS, each member RS of the group shall either transmit the same preamble, FCH and MAP as the MR-BS or they all do not transmit any preamble, FCH or MAP. When the virtual RS group doesn't include MR-BS, one of the RSs in virtual group is non-transparent RS and all the others shall either transmit the preamble, FCH and MAP of the said non-transparent RS or they all do not transmit preamble, FCH and MAP. If a member RS of group wants to transmit preamble, FCH and MAP, those information should be received in relay zone of previous frame. This causes a little overhead in radio resource in relay zone of previous frame. In this contribution, we propose a method to reduce the overhead by relaying preamble, FCH and MAP to subordinate terminals directly

2. Direct relaying for preamble, FCH and MAP

Direct Relaying function works like a repeater for preamble and MAP period.

There are many types of IEs in MAP. Some are about burst allocation and others are about control. When RS relay full MAP through relay zone, all those information is delivered to subordinate RS. This scheme is shown in Figure 1.

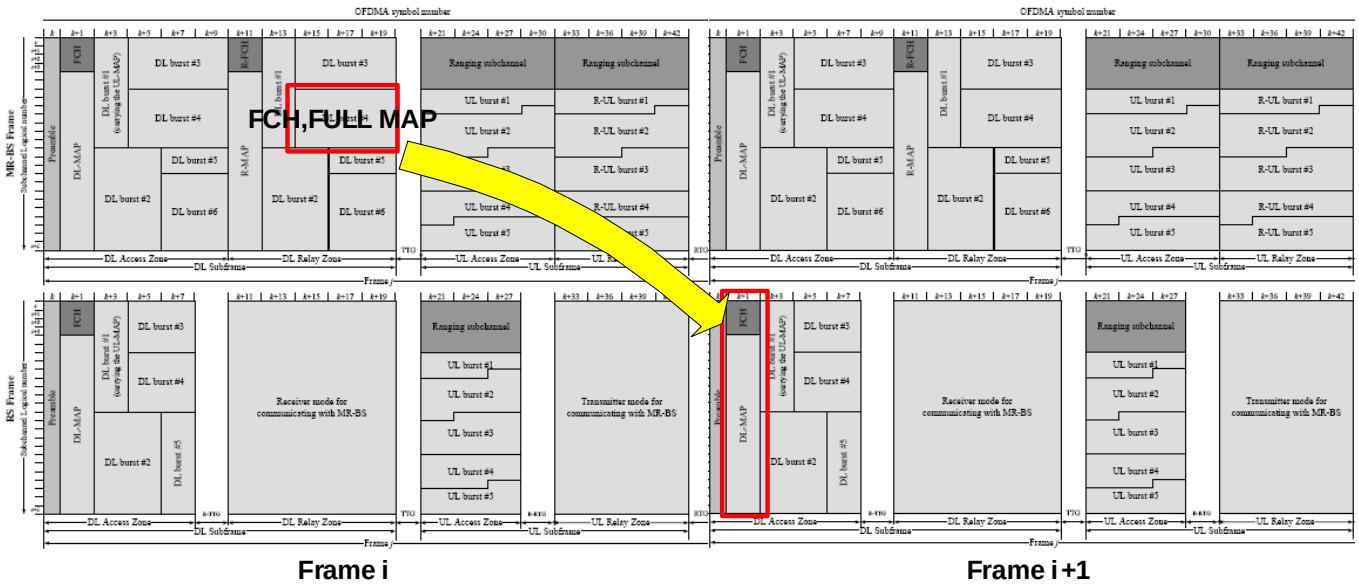

Figure 1 Example of FCH, MAP relaying without Direct Relaying

But RS doesn't need all the information in MAP to function properly. Some information is necessary only for MS. Some information may not necessary for RS. For those information, RS just need to deliver them to subordinate terminal. With Direct Relaying, RS may receive only necessary MAP data. Because member RS repeats the whole preamble, FCH and MAP from MR-BS or super-ordinate RS with Direct Relaying function, subordinate terminal can receive the original preamble, FCH and MAP. Thus we can save some radio resource which could be allocated to relay some MAP information unnecessary for RS without Direct Relaying function.

This scheme is shown in Figure 2.

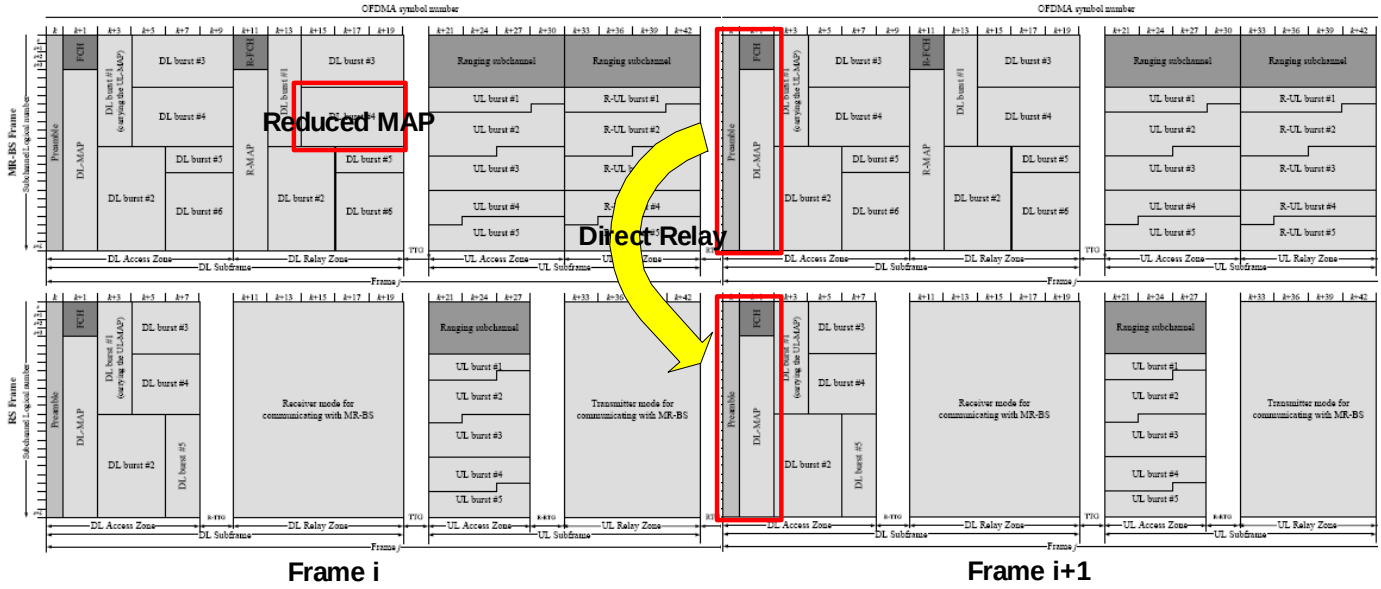

Figure 2 Example of FCH, MAP relaying with Direct Relaying

3. Proposed Text change.

Insert followings at the end of section 6.3.2.3.23

Direct Relaying Mode
- This parameter is sent by RS to indicate its capability of Direct relaying mode.

In Direct Relaying Mode, RS performs repeater function during preamble and MAP period. While RS is repeating preamble ,FCH and MAP, RS may receive the preamble and MAP.

Add followings after the third characteristics in 6.3.9.16.3.1

If a RS member of virtual group is to transmit preamble, FCH and MAP, in Direct Relaying Mode, only burst allocation information of MAP shall be received in previous frame and others IEs are relayed directly by RS.

Insert the followings at section 11.8.3.7.xx

This field indicates the availability of RS for Direct Relaying

Type	Length	Value	Scope
TBA	1	Bit #0: Direct relaying support Bit #1-7 : reserved	SBC-REQ SBC-RSP

During the network entry process, RS sends SBC-REQ with Direct relaying support capability(set bit #0 to 1, if capable) to MR-BS or super-ordinate RS and MR-BS or super-ordinate RS responds with SBC-RSP to notify

whether to use Direct relaying support function or not.

Change Table 496c of section 8.4.5.9.1 as indicated:

Table 496c-R-link specific IE format

Extended DIUC (hexadecimal)	**Usage**
00	RS_UL_DCH assignment IE
01	Map_End_Location_IE
0x0~~1~~2-1F	***Reserved***

Insert section 8.4.5.3.29 as indicated:

8.4.5.9.2 Map_End_Location_IE

This IE is issued by the MR-BS or super-ordinate RS to member RS for Direct Relaying of preamble, FCH and MAP. To relay them directly, RS should know the end point of MAP~~s~~ in unit of OFDMA symbol

Table xxx – Map End Location IE

Syntax	**Size (bits)**	**Notes**
Map_End_Location_IE(){		
Type	5 bits	Map_End_Location_IE=01
Length	4 bits	Length = 0x2
Map End Indication	8 bits	This field indicates the last OFDMA symbol index of MAP of next frame
Reserved	8bits	Shall be set to zero
}		