



(19)  
(12)

(KR)  
(B1)

(45)  
(11)  
(24)

2010 04 16  
10-0953262  
2010 04 08

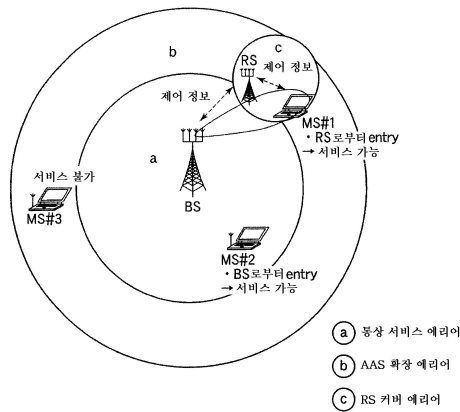
(51)	Int. Cl.		(73)	
	<i>HD4B 7/02</i> (2006.01)	<i>HD4B 7/26</i> (2006.01)		
(21)	10-2007-0080572			4 1-1
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(65)	10-2008-0016466			
(43)	2008 02 21			4 1-1
(30)				
	JP-P-2006-00222939	2006 08 18	(JP)	
(56)				4 1-1
	KR100567469 B1*		(74)	
	KR1020050027896 A*			
	*			

: 14

(54)

(57)

MS#1 BS BS RS MS#2 BS  
 BS RS  
 a  
 b RS c MS#1  
 MS#1  
 MS BS  
 - 2



1

2

1

3

4

5

1

1

1

, 1

, 1

6

5

1

7

8

9

10

1

1

1

, 1

, 1

11

12

13

14

1 , 1 , 1  
1 , 1 , 1

[0001]

[0002]

WMA (Worldwide Interoperability for Microwave Access) , WCDMA  
(SINR ;  
Signal-to-Interference-and-Noise-Ratio) (Adaptive Array  
Antenna)  
(beamforming)  
(nullforming)

[0003]

[0004]

(1) , ( ) , ( )  
SNR( ) , ( )  
(response) , ( )  
(2) , 360 , ( )  
( ) , ( )  
(1), (2) , ( )  
(1), (2) , ( )  
(1), (2)

[0005]

[0006]

WCDMA

[0007] [ 1 ] 11-266228 : 1 , (

[0008]

[0009]

[0010]

[0011]

[0012]

[0013]

[0014]

[0015]

[0016]

[0017]

[0018]

[0019]

[0020]

[0021]

[0022]

2 , BS RS , M\$#2  
 BS , M\$#1 BS RS  
 BS ,  
 a  
 b RS c M\$#1  
 M\$#1

BS , BS M\$ RS  
 M\$ , BS ,  
 RS M\$ ,  
 M\$ BS M\$

[ 1 ]

1 , 1 , 1 (BS), 2 (M\$),  
 3 (RS) , (1) , (10) , RF( ) (11) ,  
 (12) , (13) , (12) , (14) , (16) ,  
 (18) , SW , (18)  
 (13) , (15) , (17) , (19) ,  
 SVØ , (19) , (1) ,  
 SW, SVØ ,  
 (10) , ( ) ,  
 (14) (15)

(M\$) (2) , , (20) , RF( ) (21)  
 , (22) , (23) , (24) , (25) , (26) ,  
 (27) , (28) , (26)  
 (28)  
 (27) ,  
 (25)

(RS) (3) , (30) , RF( ) (31) , (32) ,  
 (33) , (34-1, 34-2) , (35-1, 35-2) , (36-1, 36-2) ,  
 (37-1, 37-2) , (38-1, 38-2) ,  
 (30) ,  
 (1)

(1) SW, SVØ , (14)

(15) , (10) , ( )  
 (2) SW ,  
 (14) , (16) RF (11) , (14)  
 ( ) SVZ (15)  
 (17) RF (11) (15)  
 ( ) SW, SVZ

[0023]

(3) , (32) ,  
 (33) , (38-1, 38-2) , (1)  
 (3)  
 (1) (2)  
 (2) , (1) (3)  
 (1)  
 (3) , (3) (2)  
 (1) , (1)  
 (2)

[0024]

2 , ( BS ) , ( MS#1 MS#3 ) , ( RS  
 ) , BS  
 a , (Adaptive Array System AAS)  
 , AAS b , RS RS c  
 a MS#1 , AAS b MS#2 , RS  
 c MS#3

[0025]

3 , 1 , TDD(Ti me Di vi si on Duplex)  
 2 a MS#2 , RS  
 c MS#1 , (DL; Down Link) (UL; Up Link)  
 DL control , BS RS Zone , (1) (3)  
 RS burst, BS MS Zone , (1) (2) MS#2 burst,  
 MS RS Zone , (2) (3) UL response for RS, MS BS Zone ,  
 (2) MS#2 burst, RS BS Zone , (3) (1)  
 RS burst

[0026]

4 , 3 (BS) , MS#2 , RS , MS#1  
 Tx , Rx , BS, RS,  
 MS#1, MS#2 . BS , SVZ( 1 ) RF (11) (17)  
 (10) , DL ( )  
 ) (DL control) . RS , SVZ RF (31) (32)  
 (34-1) , (36-1) ( ) , ( )  
 (38-1) , (37-1)  
 , SVZ (35-1) RF (31) ,  
 , RS , RS c MS#1 BS (DL  
 control for MS#1). BS , , RS  
 (38-1)

[0027]

MS#1 , RS , RS (UL response for RS). ,  
 MS#1 , RS , RS BS  
 . MS#1 RS , MS#1 (33) ( 1 ) ,  
 BS , MS#1 , RS , BS  
 MS#1

, M\$#1 , a , AAS b RS c  
 , BS , M\$#1 , RS  
 , BS , M\$#1 SVZ  
 (17) (15) , BS , RS , M\$#1 (1  
 RS SW, SVZ  
 4) (15) , BS M\$#1  
 , RS M\$#1

[0028] M\$#1 , BS  
 , RS BS (UL response for BS (M\$#1))  
 RS , BS , RS  
 RS , M\$#1  
 ( ), M\$#1 ( )

[0029] M\$#2 , a , BS , M\$#2 ,  
 SW, SVZ( 1 (16) (17) RF (11) ,  
 , M\$#2

[0030] [ 2]  
 [0031] 5 , 2 , BS a ,  
 AAS b , RS RS c  
 , 2 , BS RS M\$ , 1  
 , M\$#1 RS c , RS  
 BS , BS , RS  
 , BS , RS c  
 M\$#1 , SINR , BS/RS/M\$#1  
 , BS , BS , M\$#1 ,  
 M\$#1 , RS c  
 , BS , M\$

[0032] M\$ ( , GPS ) , BS  
 , BS , M\$  
 , BS , M\$

[0033] 6 , RS c M\$ , M\$  
 1 3 , 1 ,  
 BS/M\$ , RS , 2 , RS  
 BS/RS/M\$, BS/M\$, 3 , 2 RS  
 BS/RS/M\$, RS BS/RS/M\$

[0034] RS , BS BS RS RS M\$#1  
 , BS , 2 3 , RS  
 , BS M\$ ( ) , RS  
 ( ) , RS  
 , BS/RS , RS , RS BS  
 BS , RS ( ) (M\$) , RS  
 , RS , BS M\$  
 , BS M\$  
 , BS , RS c (M\$#1) /  
 , BS/M\$



(BS/M $\mathbb{S}$ ) , RS (BS/RS/M $\mathbb{S}$ ) c (M $\mathbb{S}$ #1) BS , BS/RS

[0035] [ 3]

[0036] 7 , 3 , BS a ,  
 AAS b , RS RS c  
 , 2 , BS RS M $\mathbb{S}$  , 1  
 , RS c M $\mathbb{S}$ #1 , 6 3(BS/RS/M $\mathbb{S}$ )  
 , , / ,  
 RS , RS c AAS b M $\mathbb{S}$ #1 ,  
 1(BS/M $\mathbb{S}$  ( )) , BS  
 BS RS

[0037] , RS , RS M $\mathbb{S}$ #1 ,  
 , BS RS , RS BS ,  
 , BS RS , BS

[0038] [ 4]

[0039] 8 , 4 , a AAS b BS , AAS  
 b RS#1, RS#2 , RS#1, RS#2  
 , RS c M $\mathbb{S}$ #1, M $\mathbb{S}$ #2  
 , BS , RS#1, RS#2 (SDMA ; Spatial  
 Division Multiplex Access) , 1 BS, RS, M $\mathbb{S}$   
 , RS#1, RS#2 , BS

[0040] BS , SDMA , RS#1, RS#2 ,  
 , BS BS RS#1, RS#2  
 RS#1 M $\mathbb{S}$ #1 ,  
 BS/M $\mathbb{S}$ #1 , BS/RS#1/M $\mathbb{S}$ #1  
 RS#2 M $\mathbb{S}$ #2 , (SDM ; Spatial Division  
 Multiplex)

[0041] [ 5]

[0042] 9 , 5 , BS a AAS b , RS#1,  
 RS#2, RS#3 RS c1, c2, c3 , M $\mathbb{S}$ #1, M $\mathbb{S}$ #2 , RS#1, RS#2, RS#3 ,  
 M $\mathbb{S}$ #2 , RS#1 RS c1 , M $\mathbb{S}$ #1 , RS#3 RS  
 c3 , BS/RS#1/RS#2/RS#3/M $\mathbb{S}$ #1 , RS  
 , RS , RS#3 , BS  
 , 1 , RS  
 c3 , AAS-RS BS  
 AAS b , BS RS#3

- [0043] 1 1
- [0044] 2 1
- [0045] 3 1
- [0046] 4 1
- [0047] 5 2

[0048] 6 RS .

[0049] 7 3 .

[0050] 8 4 .

[0051] 9 5

[0052] < >

[0053] 1 : (BS)

[0054] 2 : (MS)

[0055] 3 : (RS)

[0056] 10 :

[0057] 11 : RF( )

[0058] 12 :

[0059] 13 :

[0060] 14 :

[0061] 15 :

[0062] 16 :

[0063] 17 :

[0064] 18 :

[0065] 19 :

[0066] 20 :

[0067] 21 : RF( )

[0068] 22 :

[0069] 23 :

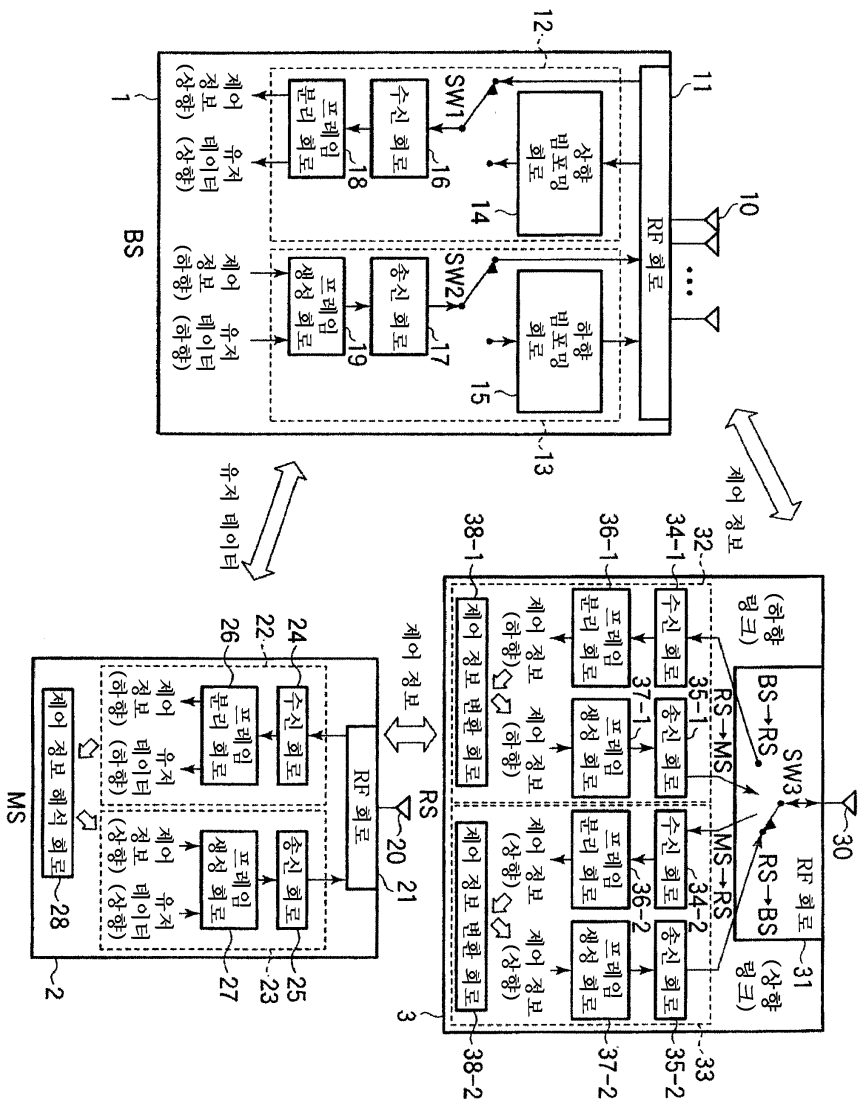
[0070] 30 :

[0071] 31 : RF( )

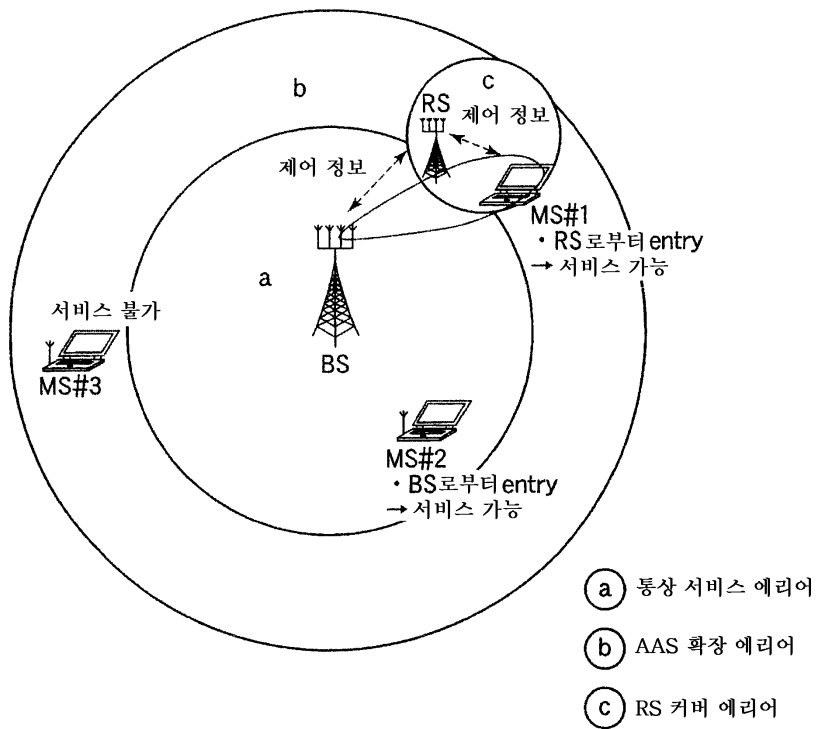
[0072] 32 :

[0073] 33 :

1



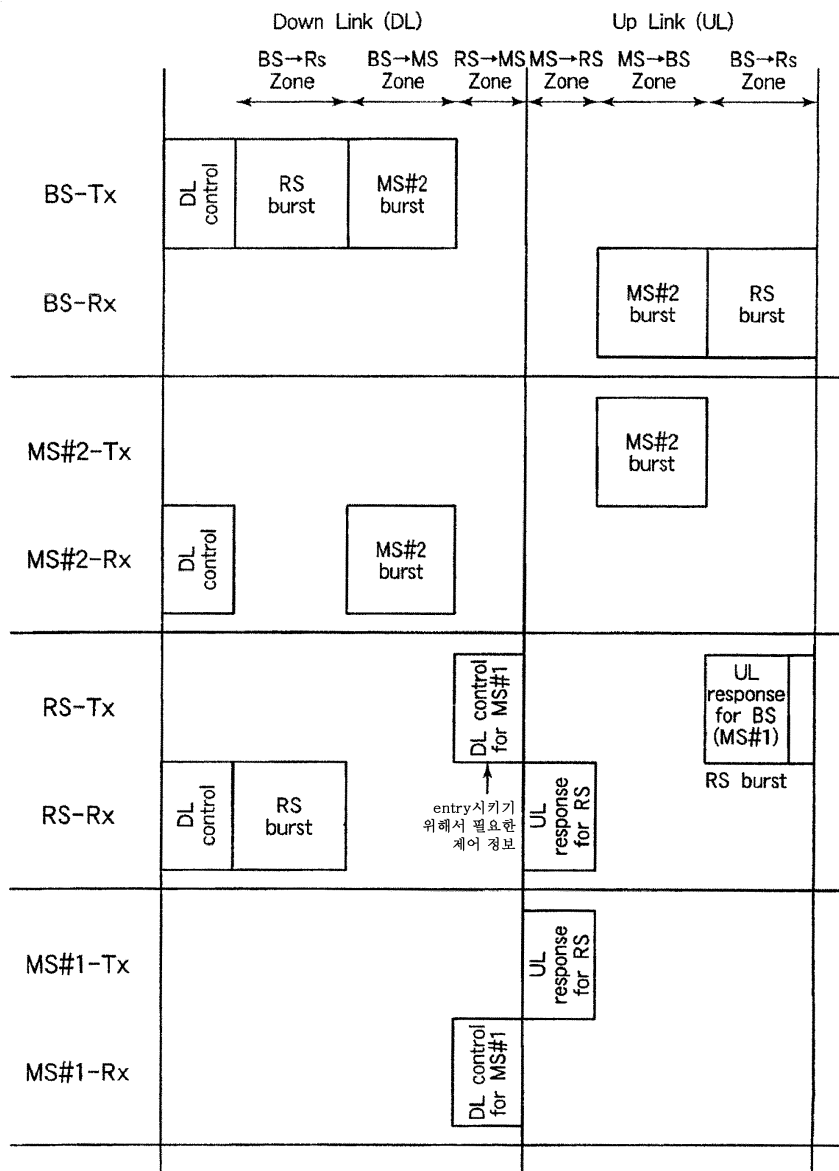
2



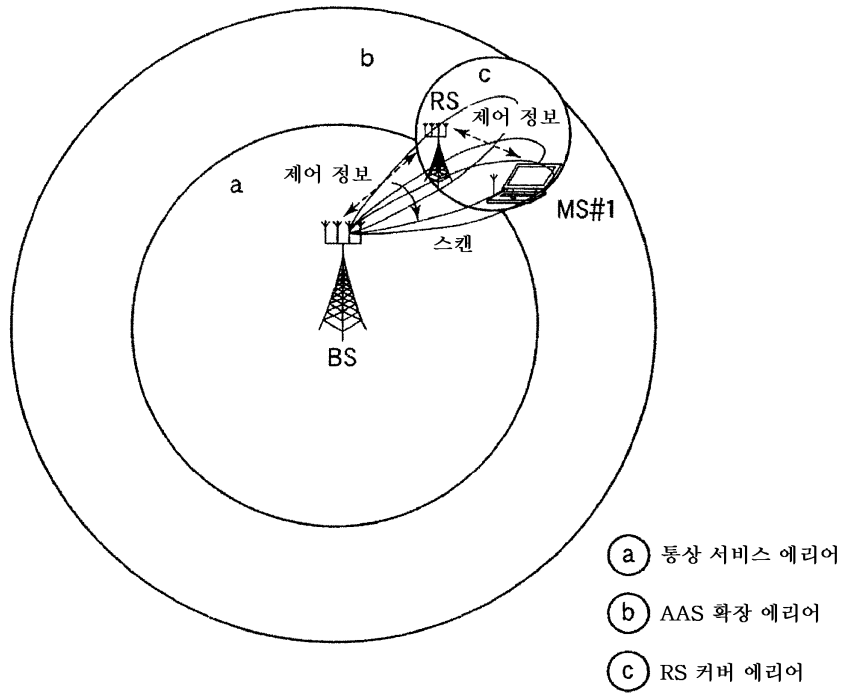
3

	Down Link (DL)			Up Link (UL)		
	BS→RZ Zone	BS→MS Zone	RS→MS Zone	MS→RS Zone	MS→BS Zone	RS→BS Zone
DL control	RS burst	MS#2 burst	DL control for MS#1	UL response for RS	MS#2 burst	RS burst

4



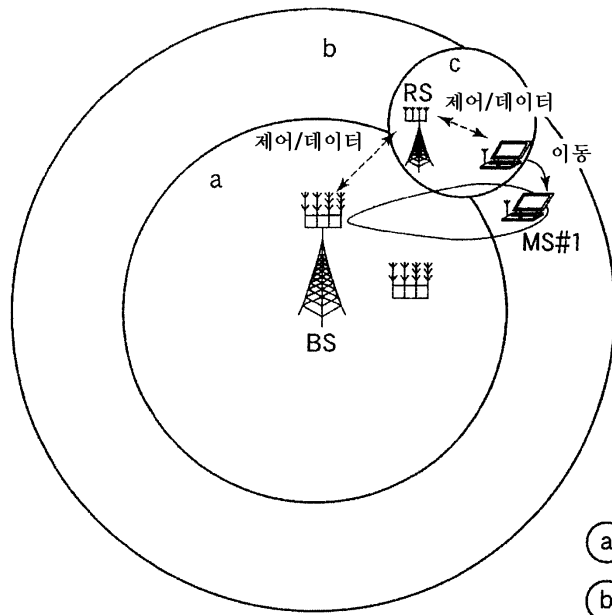
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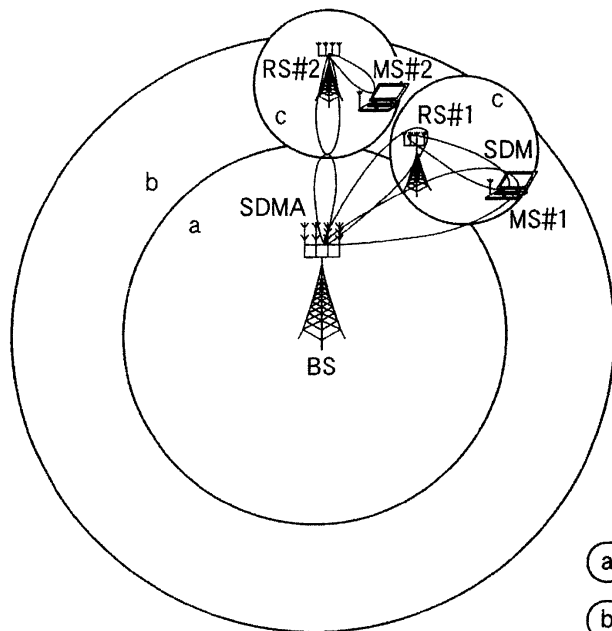
방식	제어 정보	유저 데이터
1	BS/MS (빔 형성)	BS/MS (빔 형성)
2	BS/RS/MS	BS/MS (빔 형성)
3	BS/RS/MS	BS/RS/MS

7



- (a) 통상 서비스 에리어
- (b) AAS 확장 에리어
- (c) RS 커버 에리어

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- (a) 통상 서비스 에리어
- (b) AAS 확장 에리어
- (c) RS 커버 에리어

9

