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(11)  
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2003 01 09

(21) 10 - 2002 - 0035325  
(22) 2002 06 24

(30) 1020010041406 2001 06 29 (KR)

(71) 3 416

(72) 306 302

806 901

103 - 202

3 55 - 61/1

379 - 9 B 201

1 5 202

(74)

:

(54)

가  
가  
가 .

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HSDPA , , , { 2 }

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가

가 (HSDPA: High Speed Downlin

k Packet Access: " HSDPA" .) UMTS(Universal Mobile Telecommunication System)

peed - Downlink Shared Channel, " HS - DSCH" ) (HS - DSCH: High S

HSDPA (AMC: Adaptive Modulation an

d Coding: " AMC" ) , (HARQ: Hybrid Automatic Retransmission Request, "

HARQ" ) (FCS: Fast Cell Sollect, " FCS" )

HSDPA AMC , HARQ FCS

, AMC

AMC (Node B) (UE: User Equipment)

AMC 가 ,

(MCS: Modulation and Coding Scheme, (level) n MCS " MCS" ) , MCS (level) 1 MCS AMC MCS

, HARQ , - (n - channel SAW HARQ: n - channel Stop And Wait Hybrid Automatic Retransmission Request, " n - channel SAW HARQ" )

HARQ (ARQ: Automatic Retransmission Request) 가

2 가 HARQ 가

(Combining) HSDPA - (SAW ARQ: Stop and Wait ARQ, " SAW ARQ" ) n - channel SAW HARQ

SAW ARQ ACK

ACK 가 n - channel SAW HARQ

HARQ ACK 가 (Logical Channel) ,

n 가 , (soft combining)

, FCS

FCS HSDPA 가 , (soft handover r region) HSDPA 가 FCS

(1) HSDPA 가 (" Radio Link" .) (2)

Radio Link 가 (active set) . (2) HSDPA 가 가 HSDPA

(interference) (best cell) 가 가

가 (Best Cell Indicator) 가

가 HS - DSCH

S  
 AMC  
 HSDPA , AMC , HARQ , FC  
 가 . ,  
 가  
 가 MCS  
 n - channel SAW HARQ 가  
 ACK NACK(Negative Acknowledgement) FCS  
 가 가 ,  
 가

HSDPA { 1 }  
 { 1 }

1) HSDPA (indicator): 가 HSDPA

2) MCS : HS - DSCH AMC

3) HS - DSCH (channelization code): HS - DSCH

4) HARQ (processor) : n - channel SAW HARQ , HARQ  
 가

, HARQ n - channel SAW HARQ  
 , n HARQ 가 HARQ  
 가 HARQ 가

5) HARQ : FCS 가 H  
 SDPA  
 (SN: Sequence Number) 가 가  
 가

6) UE Identification: (HS - SCCH: High Speed Shared Control CH  
 annel, " HS - SCCH" ) , HS - SCCH가 HS -  
 SCCH UE identification

{ 1 } HSDPA (up  
 link) (offset) , 가  
 가 가

가  
 { 1} HSDPA HARQ  
 HSDPA HS - DSCH HSDPA HS - DSCH HSDPA  
 HSDPA HSDPA HSDPA 가 HS - DSCH HSDP  
 A HSDPA 가 HSDP  
 가 가  
 가  
 ; 가  
 { 1} HSDPA { 1} (HSDPA: High  
 (RNC: Radio Network Controller) HSDPA { 2} HSDPA  
 { 2}

1) (HS - PDSCH: High Speed - Physical Downlink Shared CHannel, " HS - PDS  
 CH" ) (code) : HS - PDSCH (cell)  
 HS - PDSCH (HS - DSCH: High Speed - Downlink Shared Channel, " HS - DSCH"  
 ) (Physical channel) , HS - PDSCH (scrambling c  
 ode) OVSF(orthogonal variable spreading factor) HSDPA  
 HS - PDSCH 가 , HS - PDSCH

2) (HS - SCCH: High Speed Shared Control CHannel, " HS - SCCH" ) :  
 HS - SCCH HSDPA 가 , HS -  
 SCCH

3) HS - PDSCH (power level) : HS - PDSCH (CPICH:  
 Common Pilot Channel)  
 HS - PDSCH HS - PDSCH  
 HS - PDSCH

HSDPA { 2}  
 ) (HARQ: Hybrid Automatic Retransmission Request, " HARQ"  
 ) (MCS: Modulation and Coding Scheme, " MCS" )  
 , HSDPA HS - PDSCH 가 가 가 가  
 HS - PDSCH 가 가 HS - PDSCH 가  
 가 { 2} 가 { 2}  
 가 , 가 HSDPA HSDPA  
 { 2} 가 HSDPA 가  
 HSDPA  
 2} { 1}  
 { 2}  
 1 , { 2}

1  
 1  
 1 , (101) (101) (102)  
 (101) (101) (102) , { 2}  
 (101) (102) HSDPA (102)  
 , (101) (102) HSDPA  
 (101) (102) HSDPA  
 (101) (102)

NBAP (Node B Application Part message, " NBAP ")  
 NBAP (CELL SETUP REQUEST) (COMMO  
 N CHANNEL SETUP REQUEST) NBAP  
 HSDPA (101) (102)  
 NBAP HSDPA (HSDPA SETUP REQUEST) , HSDPA (HSDPA RECONFIG  
 URATION PREPARE) HSDPA SETUP REQUEST HSDPA  
 HSDPA RECONFIGURATION PREPARE  
 HSDPA HSDPA  
 NBAP , HSDPA SETUP REQUEST , HSDPA RECONFIGUR  
 ATION PREPARE  
 (102) (101) (102)  
 ) (HS - BCCH: High Speed Broadcasting CHannel, " HS - BCCH"  
 { 2} HS - BCCH HSDPA ,  
 CCH (101) (102) (102) HS - B  
 , (102) HSDPA  
 , (101)  
 " "  
 , (101)가 (102) (102) (102)  
 (102) (102) (102)  
 (101) (101) 가 (activation time)  
 (102) (101)  
 HSDPA HSDPA HS - BCCH  
 HSDPA 가 HS - BCCH  
 HS - BCCH  
 (version number)  
 HS - BCCH HSDPA  
 (102) (102)  
 , (102) (102) (101)  
 , (102) (102)  
 (101) (102) 가 가 (1  
 02) (102) (timer) , ,

(SFN: System Frame Number, " SFN" ) (102)  
 SFN (101)  
 1

1

$$SFN \bmod N = M$$

1 SFN mod N = M 가 , N  
 SFN N 가 M . N 4 8  
 16 0 N 256 M  
 0 SFN 16 가 (102) 가 HSDPA  
 2  
 2  
 2 SFN 16 가 (102) N 16, M 0 가 , 2 20  
 1 HSDPA 가 SFN 16 가  
 가 ,  
 가  
 (102) , (103)  
 2 (102) HSDPA SFN=Q (version)  
 103) SFN 16 (202) SFN 32 (frame)  
 (102) HSDPA SFN 31 (102) SFN 32  
 가 HSDPA SFN 32가 HSDPA  
 SDPA HSDAP (102) SFN 32가 H  
 SFN 32가 HSDPA  
 , SFN 16 SFN 31  
 HSDPA (103)  
 HSDPA (102) SFN 32가



, HSDPA HS - BCCH (102)  
 (102) HS - BCCH (102) (BCCH) (TB: T  
 ransport block) 가 .  
 , HSDPA { 2 }  
 HSDPA 가 HSDPA 가  
 3 3  
 3 가 4 가 .  
 (311) (slot)  
 (311) 3 , slot 0(313), slot 1(315), slot 3(317)  
 가  
 HSDPA HS - BCCH  
 가 HSDPA HS - BCCH  
 HSDPA .  
 (101) HSDPA HSDPA ,  
 NBAP (102) HSDPA  
 NBAP NBAP HSDPA NBA  
 P , HSDPA SETUP REQUEST , HSDPA RECONFIGURATION PREPARE  
 HSDPA SETUP REQUEST HSDPA  
 HSDPA RECONFIGURATION PREPARE HSDPA  
 { 2 } NBAP 가 (101) NBAP 가  
 SFN SFN NBAP  
 (102) NBAP (102) HS - B  
 CCH .  
 (101) 가 HSDPA 가 HSDP  
 (DCCH: Dedicated Control CHannel, " DCCH" )  
 { 2 } HSDPA  
 가 HSDPA  
 HS - BCCH 가 HS - BCCH .

가  
 HS - BCCH HS - BCCH  
 HSDPA HSDPA . 4 6  
 4  
 4 , 401 (101) HSDPA  
 402 , HSDPA {  
 2} (101) HS - PDSCH , HS - SCCH , HS - PD  
 SCH { 1}  
 HSDPA  
 (voice) { 2}  
 HS - PDSCH (101) HSDPA  
 HS - PDSCH HS - PDSCH 가 1 가  
 가 가 HSPDA 가 가 HS - PDSCH 가 1 HSDP  
 A (101) HS - PDSC  
 H 가 HS - PDSCH HS - PDSCH  
 가 HS - PDSCH 가 HSDPA  
 가 HS - PDSCH 가  
 HS - PDSCH (101) HSDPA HS - PDSCH  
 HS - PDSCH HS - PDSCH 가  
 402 (101) (102) 403  
 (101) 가  
 NBAP NBAP (101) (102)  
 REQUEST , HSDPA RECONFIGURATION PREPARE HSDPA SETUP  
 (101)가  
 (103)  
 403 (101) NBAP (102) N  
 BAP (101) (102)  
 (102) HSDPA (HSDPA Reconfiguration Response)  
 가 가 (102)  
 HSDPA (101)가  
 (102) (102)  
 (103) (101)가 (102)  
 (103) (101)가

(102) NBAP , (102) (RRC: Radio Resource Control,  
 " RRC" ) (103)

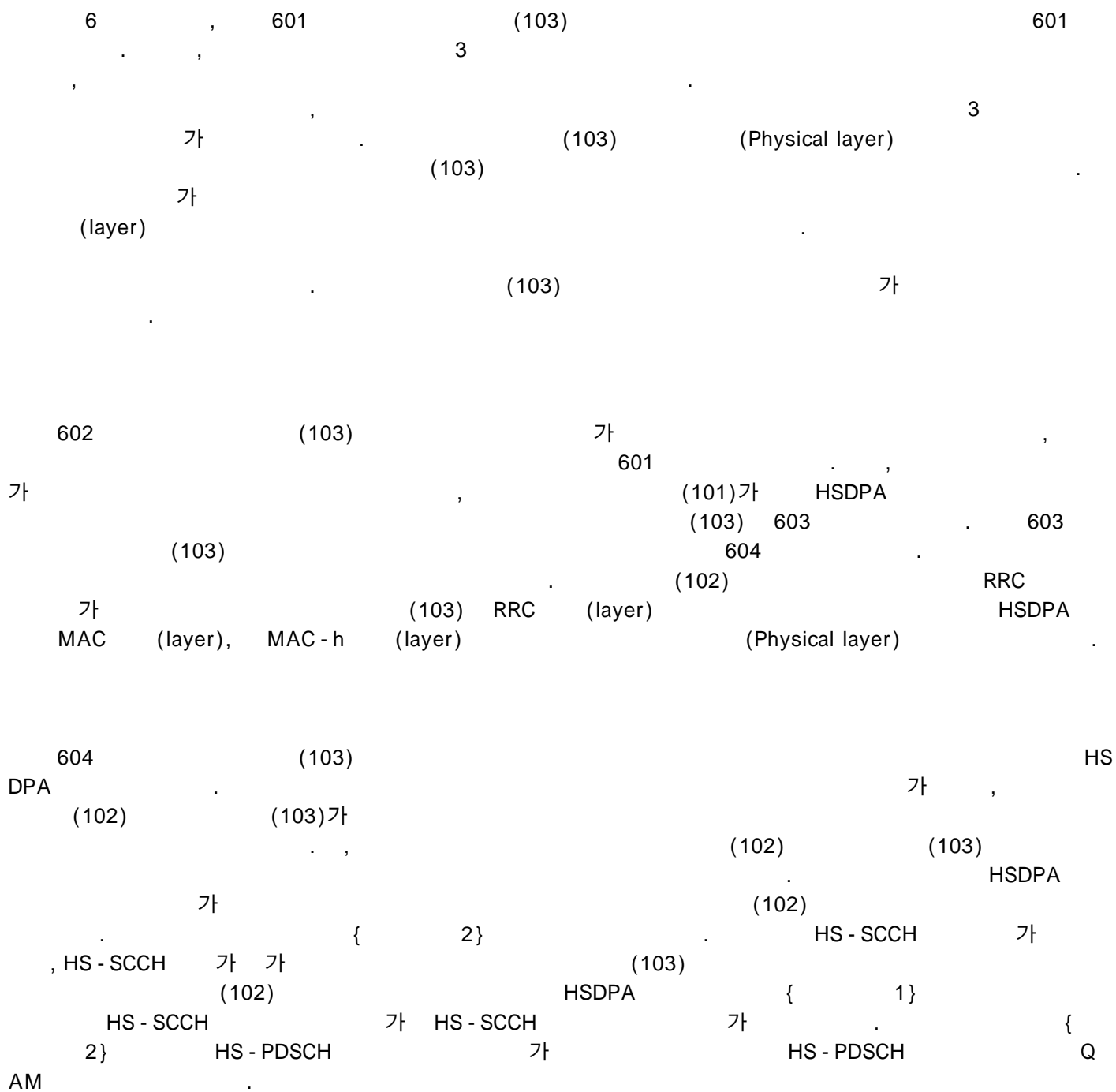
5

5 가 , 501 (102) (101) HSDPA  
 { NBAP 502 HSDPA , HSDPA  
 (101) { 2} HSDPA 가 (103)  
 (102) HSDPA HSDPA  
 가 HSDPA

502 (103) (102) (101) NBAP  
 (102) (101) HSDPA (101) NBAP  
 503 , HSDPA (101) HSDPA Reco  
 (102) (101) HSDPA  
 503 HS - BCCH (102) 501  
 504 HS - BCCH 501  
 NBAP (102) NBAP RRC  
 (102) RRC RRC  
 (System information) 가 RRC  
 (102) (101) RRC  
 RRC (101) (101)가  
 (DCH: Dedicated CHannel) , HS - DSCH , HS - SCCH HS - PDSC  
 H 가 가 가 가

504 (102) 가  
 HSDPA 503  
 (102) 가  
 { 2} HS - PDSCH  
 HS - DSCH HS - PDSCH 가 {  
 1} HS - PDSCH HS - PDSCH HS - PDSCH 가 2  
 HS - DSCH (102) HS - PDSCH HS - PDSCH 가 3  
 HS - PDSCH 가 HS - PDSCH  
 (102) HS - PDSCH , HS - PDSCH  
 (102)

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가 가 .  
가

가

가 . ,

가 .

(57)

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가 ,  
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가 가 .

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가 , 가 , 가 , 가 ,

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가

가

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가

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가

17.

16 ,

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18.

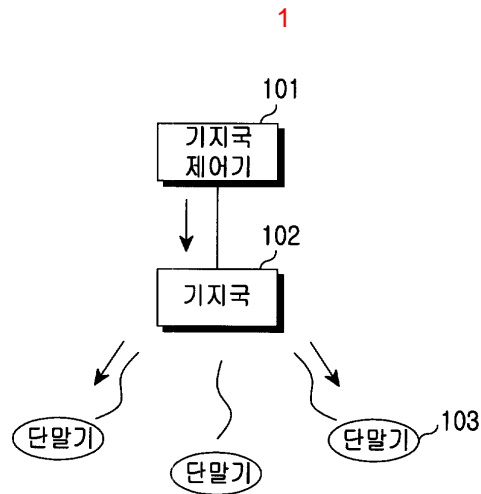
17 ,

19.

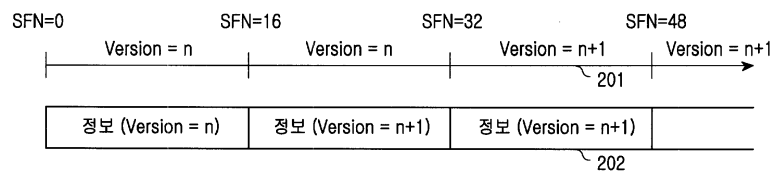
16 ,

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16 ,

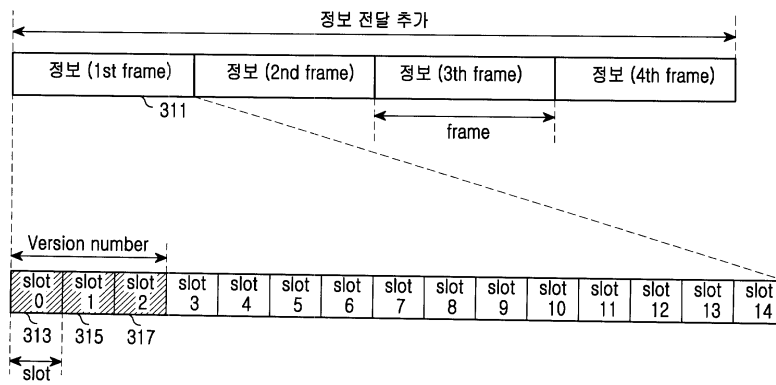


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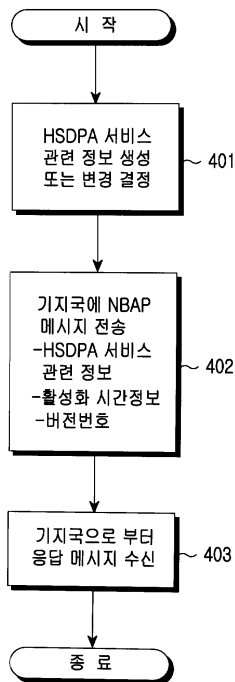




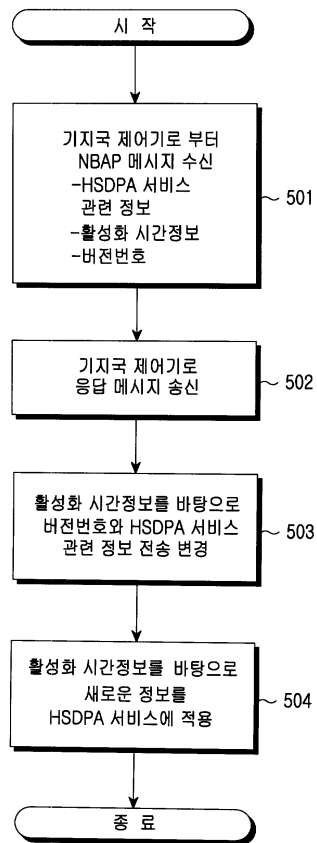
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