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(51) 。 Int. Cl.<sup>7</sup>  
H04B 7/26

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2003-0097559  
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(21) 10-2002-0035179  
(22) 2002 06 22

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(72) 419 1501

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347 702

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IMT - 2000

RRC

MAC

3

1

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2

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RRC

가

가

4

1

2

3

4

MBMS RNTI

- 5 MBMS RNTI
- 6 MBMS
- 7 MBMS RNTI
- 8 MBMS RNTI
- 9 MBMS RNTI

\*\*\* \*\*\*

110 : 120 : UTRAN  
130 :

IMT - 2000

가

(UMTS:Unirersal Mobile Telecommunications System) GSM(GSM: Global Sy  
stem for Mobile) 3 , GSM (Core Network) WCDMA(  
WCDMA: Wideband Code Division Multiple Access)

UMTS 1998 12 ETSI, ARIB/TTC, T1 TTA 3  
(Third Generation Partnership Project; , 3GPP ) , UMTS  
(Specification)

3GPP UMTS  
UMTS 5 (TSG: Technical Specification Group)

TSG (RAN: R  
adio Access Network) (TSG RAN) UMTS WCDMA U  
MTS (Universal Mobile Telecommunication Network Terrestrial Radio Access Network; , UTRAN  
)

1 UMTS (110) UTRAN(120) ( (110) UTRAN(120) )  
130) , UTRAN(120) (121),(122)(RNS: Radio Network Sub-s  
ystems) , (121),(122) (121A),(122A)(RNC: Radio Networ  
k Controller) (Node B) Node B (121A  
),(122A) , (110) (Access Point)  
(110) (110) UTRAN

UTRAN (110) (RAB: Radio Access Beare  
r) (130) (end-to-end) (QoS: Quality of  
service) RAB , RAB (130) QoS , UTRAN(1  
20) RAB QoS . RAB

lu Bearer (120) , lu Bearer (130)  
 , Radio Bearer (110) UTRAN(120) UTRAN(130)

(121A),(122A) (130) MSC(131)(MSC: Mobile Switching Center) MSC(131)  
 GMSC(132)(GMSC: Gateway Mobile Switching Center)  
 (130) SGSN(133)(SGSN: Serving GPRS Support Node) GGSN(134)(GGSN: Gate  
 way GPRS Support Node) 가 SGSN(133) (121A),(122A) GGSN(134)

(121A),(122A) (130) lu lu 가  
 lu-PS , lu-CS 가

AN (RNTI: Radio Network Temporary Identifier) RNTI UTR  
 가 RNTI가 S-RNTI(S-RNTI: Serving RNC RNTI) S-RNTI, D-RNTI, C-RNTI, U-RNTI  
 SRNC(SRNC: Serving RNC) , SRNC UTRAN  
 D-RNTI(D-RNTI: Drift RNTI) 가 DRNC(DRNC:  
 Drift RNC) C-RNTI(C-RNTI: Cell RNTI) CRNC(CRNC: Controlling RNC)  
 , U-RNTI(U-RNTI: UTRAN RNTI) SRNC identity S-RNTI C--RNTI  
 SRNC SRNC

RNTI (U-RNTI Type Indicator) , MAC PDU MAC-c/sh RNTI MAC PDU C-RNTI U-  
 (U-RNTI Type Indicator)

S-CCPCH(S-CCPCH: Secondary Common Control Physical Channel)가  
 FACH(FACH: Forward Access Channel) PCH(PCH: Paging Channel)  
 S-CCPCH U-RNTI  
 H S-CCPCH 가 S-CCPCH U-RNTI modulo K Cell\_FAC  
 FACH 가 S-CCPCH 가 PCH URA\_PCH  
 Cell\_PCH , K S-CCPCH U-RNTI modulo K  
 st Channel) PCH 1 N 가 S-CCPCH BCH(BCH: Broadca  
 , N FACH S-CCPCH 가 S-CCPCH K  
 S-CCPCH S-CCPCH S-CCPCH

, 2 3GPP UTRAN (RAI: Radio Acce  
 ss Interface) (User Plane)  
 (Signaling) 가 (Control Plane) IP  
 가 2 ,  
 (OSI: Open System Interface) 3 L1( 1 ), L2( 2 ), L3( 3 )

, 2 L1 (MAC: Medium Access Control)  
 (Information Transfer Service) ,  
 (Transport Channel) 가

(MAC) (Radio Link Control) MAC (Logical Channel) (Control Channel)

(Traffic Channel) . MAC

MAC-b (Sublayer), MAC-d , MAC-c/sh M

AC-b BCH(BCH: Broadcast Channel) M

AC-c/sh FACH DSCH(DSCH: Downlink Shared Channel)

UTRAN MAC-c/sh CRNC 가

d DCH(DCH: Dedicated Channel) MAC-c/sh . MAC-

N MAC-d SRNC , MAC-d

(RAC: Radio Link Control) (Segmentation and Concatenation)

RLC (SDU: Service Data Unit) RLC 가 가

RLC SDU RLC (PDU: Protocol Data Unit) MAC RLC

RLC SDU RLC PDU RLC 가 . RLC

(BMC: Broadcast/Multicast Control) (Cell Broadcast Message; CB ) (UE) ID, (Serial Number), (conding scheme) 가 BMC CB RLC ID, (Serial CTCH(CTCH: Common Traffic Channel) MAC . CTCH FACH S-CCPCH

(PDCP: Packet Data Convergence Protocol) RLC , IPv4

IPv6 가 , PDCP

(Header Compression) , IETF(IETF: Internet Engineering Task For RFC2507 RFC3095(ROCH: Robust Header Compression)

L3 가 (RRC: Radio Resource Control) , RB

(RB: Radio Bearer) UTRAN 2 , RB가

, RLC (RRC) ,

, 2 RLC PDCP , (Entity)

RLC PDCP 가 가 ,

BMC (CBS: Cell Broadcast Service) (SMS: Short Message Service)

adcast Short Message Service; SMS SMS-CB ) SMS(Point-to-Point Short Message Service ; SMS-PP ) , CBS SMS-CB

CBS

CBS CBS ( 15 )

82 octets , 93 . CBS

(Cell Broadcast Area)

PLMN CBS PLMN

3 Centre)(330) CBS (CBE: Cell Broadcast Entity) (CBC: Cell Broadcast Entity) CBS CBS

(SABP: Service Area Broadcast Protocol) (RNC)(320) lu-BC CBC RNC CBS CBS

CBS / (Broadcast/Multicast Interworking Function; (311),(312) UTRAN(320) BMC (321) BMC ) CBS

BMC UTRAN (Discontinuous Reception; DRX) UTRAN CBS CBS41 가

(MBMS: Multimedia Broadcast/Multicast Service) CBS 가 CBS 가 1230 octet CBS 가

가 Point-to-Multipoint Bearer Service) MBMS 가 MBMS (P

MBMS MBMS 가 가 PLMN 가

(service announcement) (Bearer) (Service Notification)

MBMS 가 가 PLMN 가

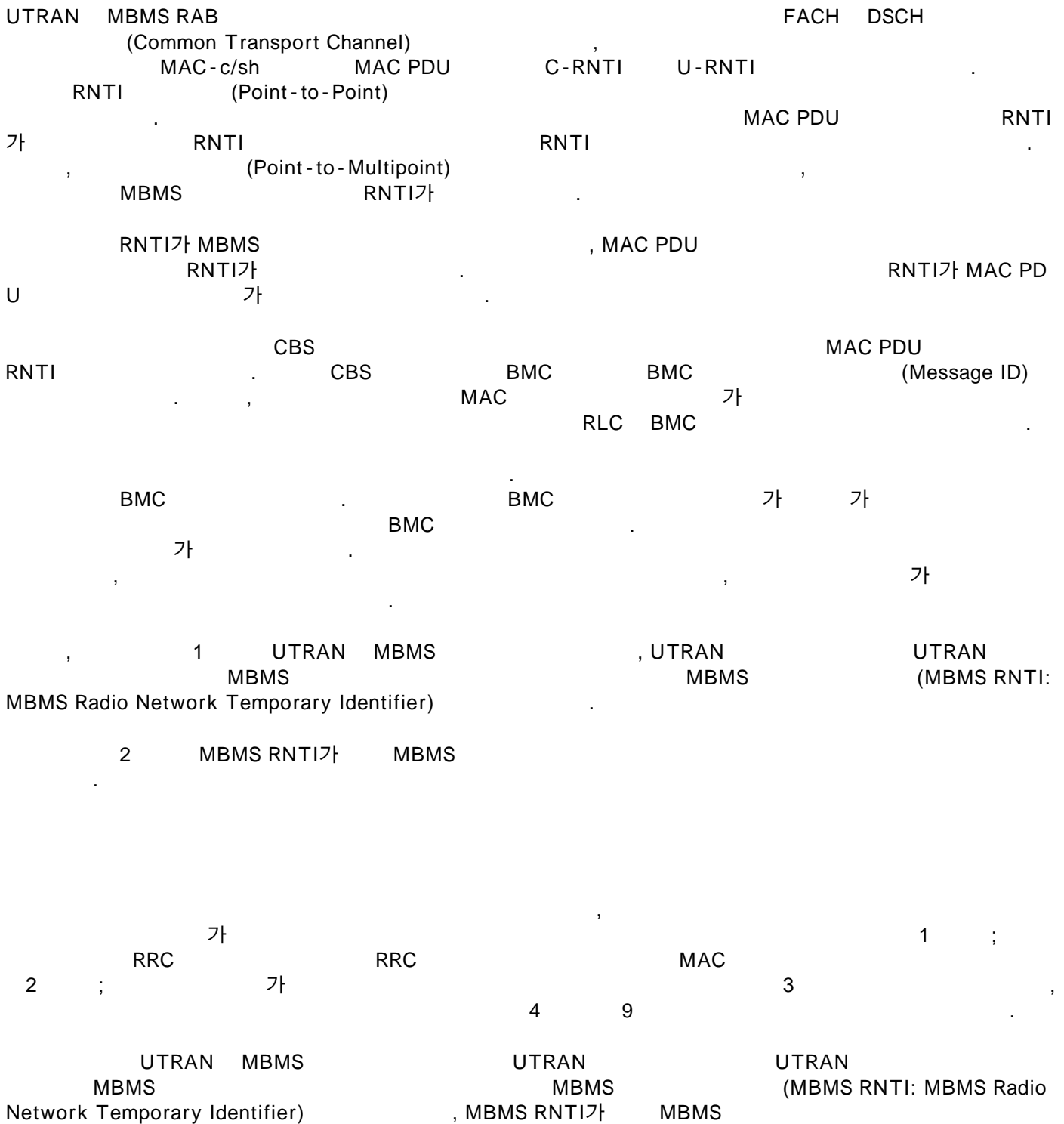
가 (Multicast Subscription Group) 가 (Subscription) 가 가

(Service Provider) (service announcement)

가 가 가 가(Joining)

S (MBMS Multicast Activation) MBMS 가 가 MBM

가 (Service Notification)



, MBMS RNTI / / .

MBMS RNTI MS RNTI가 MAC FACH DSCH MBMS MAC MBMS 가 MBMS 가

MBMS RNTI가 MAC MBMS RNTI가 MAC MBMS 가

MBMS RNTI MBMS 가

MBMS RNTI RNS , MBMS RNTI

MBMS RNTI RNS

MBMS RNTI가 MBMS , MBMS RNTI MBMS

MBMS RNTI MBMS MBMS RAB UTRAN , MBMS RA B UTRAN MBMS RAB MBMS MBMS RNTI CRNC (RAB) MBMS RNTI CRNC가 MBMS RNTI CRNC

MBMS RNTI MBMS MAC UTRAN RRC MBMS RNTI UTRAN RR UTRAN MAC-c/sh RRC MBMS RNTI UTRAN RRC MBMS RNTI RRC RRC UTRAN RRC MBMS RNTI MBMS RNTI MAC-c/sh

UTRAN RRC MBMS RNTI , UTRAN MAC-c/sh MBMS RN TI UTRAN MAC-c/sh MAC PDU MBMS RN MBMS RNTI , MAC PDU RNTI 가 MBMS RNTI 가 RNTI가 가

RRC MBMS RNTI MAC-c/sh MBMS RNTI RRC MBMS RNTI MAC PDU 가 MBMS RNTI 가 MBMS RNTI MAC-c/sh MBMS RNTI MBMS RNTI MBMS RNTI MAC PDU MBMS RNTI MBMS RNTI MAC-c/sh

MBMS RNTI MBMS RNTI RNS MBMS RNTI UTRAN MBMS RAB UTRAN , MBMS RAB UTRAN MBMS RNTI CRNC가 MBMS RNTI CRNC

MBMS RNTI MBMS MAC UTRAN RRC UTRAN RRC RRC MBMS RNTI UTRAN RRC MBMS RNTI RRC MBMS RNTI MAC-c/sh

UTRAN RRC MBMS RNTI , UTRAN MAC-c/sh MBMS RNTI RNTI UTRAN MAC-c/sh MBMS RNTI MBMS RNTI MAC PDU MBMS RNTI 가 RNTI가 가

RRC MBMS RNTI MAC-c/sh MBMS RNTI MBMS RNTI MBMS RNTI MAC PDU MBMS RNTI MBMS RNTI MAC-c/sh

MBMS RNTI MBMS RNTI RNS MBMS RNTI UTRAN MBMS RAB UTRAN , MBMS RAB UTRAN MBMS RNTI CRNC가 MBMS RNTI CRNC

MBMS RNTI MBMS MAC UTRAN RRC UTRAN RRC RRC MBMS RNTI UTRAN RRC MBMS RNTI RRC MBMS RNTI MAC-c/sh

UTRAN RRC MBMS RNTI , UTRAN MAC-c/sh MBMS RNTI RNTI UTRAN MAC-c/sh MAC PDU MBMS RNTI MBMS RNTI MAC PDU MBMS RNTI 가 RNTI가 가

RRC MBMS RNTI MAC-c/sh MBMS RNTI MBMS RNTI MBMS RNTI MAC PDU MBMS RNTI MBMS RNTI MAC-c/sh

TI , MAC-c/sh 가  
 , MAC-c/sh MBMS RNTI 가 MBMS RNTI 가  
 MBMS RNTI MAC PDU MBMS RNTI  
 , MAC-c/sh  
 , MBMS RNTI / /

4 MBMS RNTI MBMS MBMS RAB  
 UTRAN MBMS RNTI

MBMS MBMS RAB , UTRAN RRC MBMS MBMS RNTI MBMS RNTI  
 UTRAN RRC UTRAN MAC-c/sh MBMS UTRA  
 N MAC-c/sh MBMS RNTI

5 MBMS RNTI MBMS RAB MBMS RNTI가  
 , MBMS MBMS RNTI

UTRAN RRC RRC RRC MBMS MBMS RNTI  
 RRC MAC-c/sh MBMS RNTI MAC-c/sh MBMS RNTI  
 RRC RRC UTRAN RRC MBMS RNTI  
 MBMS MBMS

6 MBMS MBMS RNTI 가 MBMS  
 ,

MBMS , UTRAN MAC-c/s MAC PDU 가 MBM  
 S RNTI MBMS RNTI

UTRAN MAC-c/sh MAC-c/sh MAC PDU

-c/sh MAC-c/sh가 MAC PDU 가 MBMS RNTI , MAC  
 MAC PDU MBMS RNTI MBMS RNTI

RNTI , MAC-c/sh MBMS RNTI

7 MBMS RNTI MBMS  
 RNTI UTRAN

UTRAN RRC RRC RRC MBMS MBMS RNTI MAC-c  
 (Request) RRC MAC-c/sh MBMS RNTI UTRAN RRC M  
 /sh MBMS RNTI RRC RRC MBMS MBMS

8 MBMS RNTI MBMS MBMS RAB 가  
 UTRAN MBMS RNTI MBMS RNTI  
 UTRAN 7 8

MBMS MBMS RAB , UTRAN RRC MBMS MBMS RNTI  
 UTRAN RRC UTRAN MAC-c/sh MBMS MBMS RNTI  
 UTRAN MAC-c/sh MBMS RNTI

, MBMS RNTI



MBMS RNTI MBMS UTRAN RRC BCH  
 RRC , , , 가 , MB  
 MS RNTI가 MBMS UTRAN MBMS 가  
 MBMS RNTI MBMS UTRAN MBMS 가  
 ] , MBMS 가 FACH S-CCPCH UTRAN [ 1  
 MBMS

$$S\text{-CCPCH 번호} = MBMS\ RNTI \text{ modulo } K$$

, K MBMS FACH S-CCPCH  
 , S-CCPCH S-CCPCH  
 BCH S-CCPCH S-CCPCH  
 , S-CCPCH [ 1] S-CCPCH  
 S-CCPCH MBMS

9 MBMS RNTI MBMS RNTI 가  
 MBMS  
 UTRAN RRC MBMS UTRAN RRC  
 S-CCPCH , 가  
 AC, RLC, PDCP MBMS UTRAN S-CCPCH가 M

UTRAN RRC BCH RRC  
 가 , , ,

RRC  
 UTRAN MBMS RNTI MBMS RNTI  
 RRC MBMS RNTI가 S-CCPCH  
 S-CCPCH RRC MBMS 가 , , ,

RRC  
 MAC, RLC, PDCP MBMS MBMS  
 S-CCPCH가 MBMS FACH

, MBMS RNTI  
 MBMS RRC MBMS RAB RB , RRC 가 RNC UE  
 , MBMS RNTI RRC , MBMS RRC

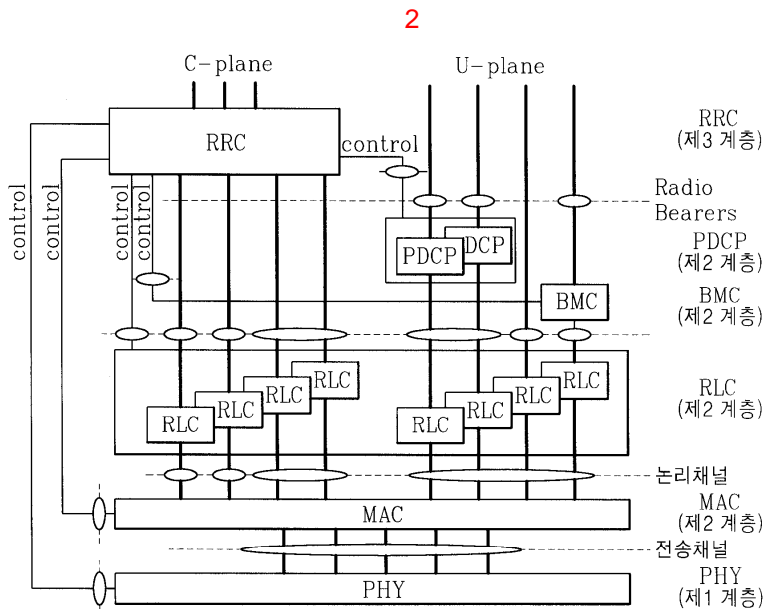
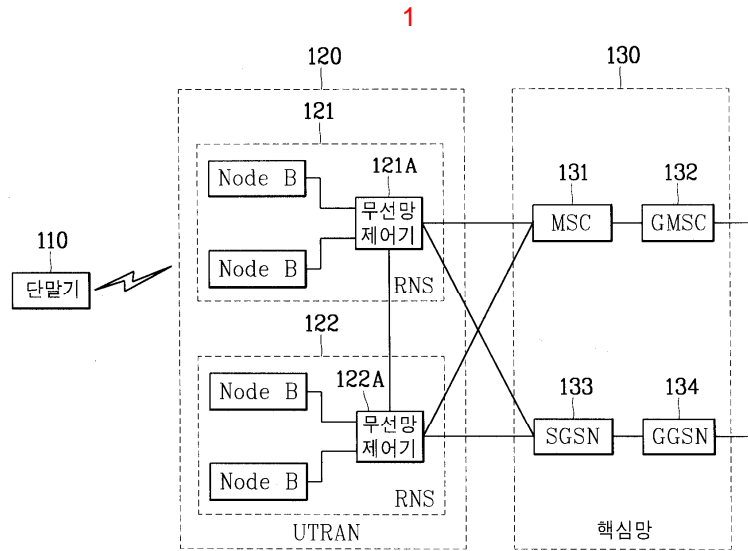
MBMS RNTI가 RRC MBMS  
 ( , MBMS RRC가 UTRAN RRC MBMS ) ,  
 RRC MBMS MBMS RNTI가 MBMS RNTI가 ,  
 UTRAN MBMS UTRAN MBMS , UTRAN MBMS RNTI MBMS  
 , MBMS 가 .  
 , MBMS RNTI (Point-to-Multipoint) 가 , MAC , U  
 MBMS RNTI 가 MBMS RNTI , U  
 TRAN MBMS , U  
 , MBMS RNTI가 , MBMS 가 가  
 .

(57)

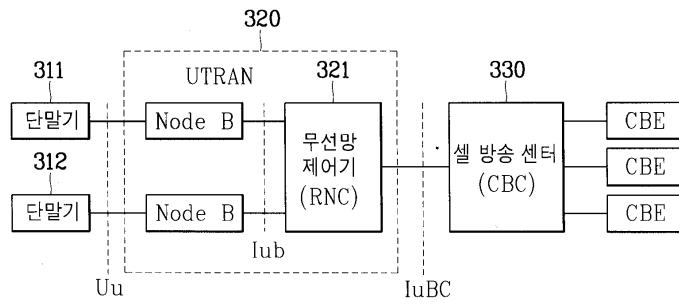
1. RRC 가 RRC MAC 1 ; 2 ; 3
2. 1 , 2 RRC MAC
3. 1 , 2 MAC가 M  
AC PDU
4. 1 , 2 MAC가 MAC PDU
5. 1 , 2 MAC가 MAC PDU MAC PDU  
가 , MAC PDU
6. 5 ,

7. , 2 RRC RRC MBMS RRC 가

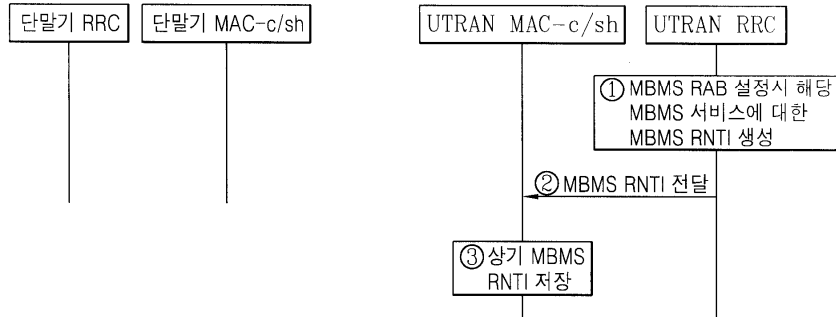
8. , MBMS RAB



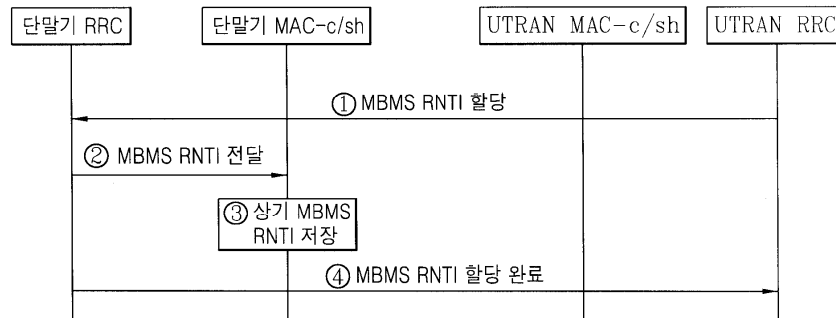
3



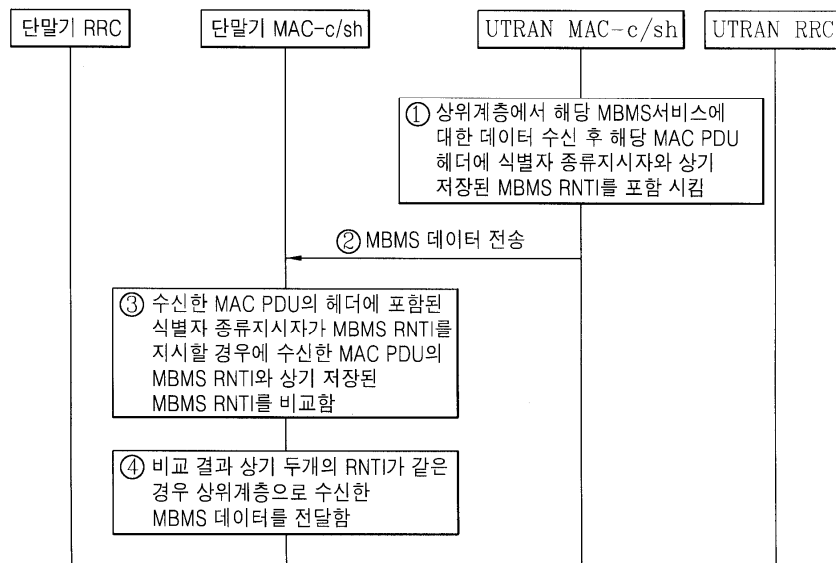
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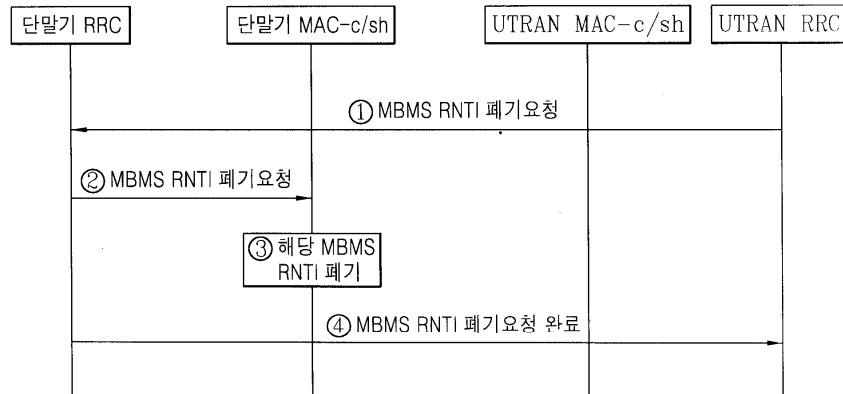
5



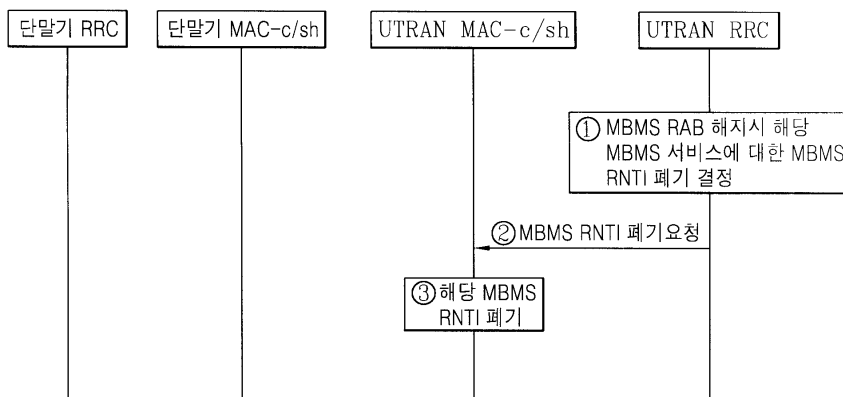
6



7



8



9

