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H04L 12/66

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(24)

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(30)	60/367,945	2002 03 26	(US)
	60/367,946	2002 03 26	(US)
	60/367,948	2002 03 26	(US)
	60/367,949	2002 03 26	(US)
	60/367,950	2002 03 26	(US)
	60/367,975	2002 03 26	(US)
	10/329,098	2002 12 23	(US)

(73) , 19801, , 300, 527

(72) 19422 135

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11050 70

- 11746 305

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(74)

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가 :

(54)	I u - P S	I P	R A N I P	L
A N				

가	LAN(TDD-RLAN)	(RAN IP) UMTS	(mobility)
AAA			
12			
1	3GPP	UMTS	
2	1		
3			
1	2		
4		가 RLAN	UMTS
5	4		
6	RLAN	UMTS	
7	6	UMTS	
8	RLAN	UMTS	, 4 UMTS
9	RLAN	UMTS	, 4 UMTS
10a IP	10b	RLAN	IP v4, 4, 8, 9
11a IP	11b	RLAN	IP v6, 4, 8, 9
12		RLAN	
13		RNC RLAN	
14		RNC RLAN	
15			
	RLAN		

16 15 RLAN .

17 , RLAN (C-Plane)

18 , RLAN (U-Plane)

19, 20, 21 RLAN UE RLAN ISP
 , U- 가 .

22 RLAN UE RLAN ISP
 , C- .

LAN(TDD-RLAN) (CDMA)

dwidth) 가 (ban 가 ,

가 CDMA CDMA (TDD)

CDMA GSM (2.5G) (mobile) (2G)
 . 1998 1 , (ETSI) 가 2 (SMG) (UMTS)
 3 (3GPP)가 1998 12 . 3GPP UMTS 3 , 3

3GPP UTRAN UTRAN (CN) UTRAN UTRAN UTRAN
 , IU(가 3GPP 1 2) UTRAN UTRAN

UTRAN , UU (UE)
 UTRAN 3GPP B 가 , UE 가
 lub UTRAN (RNC) B UTRAN RNC 3GPP
 가 UTRAN , RNC , 1 RNC RNC
 gur

UE UTRAN (Home UTRAN Networks; HN) 가 , UE가
 . Uu , UE .

UMTS (Foreign Network; FN)

3GPP (Authentication), UE HN 가(Authorization) (Accou
 nting) (AAA functions) . UE가 UMTS . UE가 UMTS
 , HN FN UE AAA UE FN
 (HLR) (VLR) (HSS) , HLR UE AAA
 3GPP (ISDN) UTRAN (RT) (PLMN), (PSTN),
 RT (NRT) UTRAN UE HN
 UTRAN UMTS UTRAN 가 UTM U
 MTS UTRAN UE , U
 3GPP (GPRS) (GMSC) RT GPRS (GGS
 N) NRT TDD
 (IP)
 GI CN GSSN GI IP v4 IP v6
 (IETF)
 3GPP UTRAN 3GPP UE (source) RT NRT
 GGSN CN GPRS (SGSN) GMSC lu
 (MSC) HRL , MSC (VLR)
 lu (lu-PS) MSC lu-CS (lu-CS) UTRAN RNC SGS
 N UTRAN RNC
 HLR/HSS (MAP) Gp , AAA CN CS MSC, GMSC , Gr SGSN CN GGSN Gn
 3GPP TDD-CDMA GSM UTRAN
 UE RT NRT 3GPP AAA TDD-CDMA
 AAA
 PP 3GPP (PS) (CS) lu-PS lu-CS , 3G
 lu
 UTRAN IP UTRAN 가 ,
 UTRAN 가 LAN(RLAN)
 U- GPP 3 UMTS UTRAN C-
 , U- (traffic plane) . C- () B Uu
 , RNC , RNC , RNC lu-CS SGSN (back - end)
 lu-PS MSC

UTRAN (earer) 가 (RRC) RRC (b)
 (RLC) (MAC) UMTS 3GPP RRC UE RNC
 / (paging), (hand-over) RNC
 . lub , RRC/RLC/MAC ATM(Asynchronous Transfer Mode)
 (Transport Layer) ATM 5(AAL5)
 (SSCF) (SSCOP) ATM
 AAL5

U- (UE RNC)
 (RLC/MAC ,) (RLC/MAC)
 ATM (AAL2/ATM) ATM 2(AAL2) UMTS

Iu (RANAP) RANAP
 UTRAN RNC SGSN/MSC
 / (SSCF/MTP) RANAP AAL5 SSCF SSCOP
 (SCTP) IP 7(SS7) 가 AAL5/ATM
 , IP ATM RNC가 Iur UTRAN
 3 SSCP (M3UA) SSCP, SCTP IETF가 SS7

UTRAN CN U- RNC MSC Iu-CS
 Data Protocol) AAL5/ATM (GTP) AAL5/ATM UDP/IP(IP User
 , RNC SGSN Iu-PS

UTRAN IP 가

N IP) (TDD-RLAN){ 가 (RA
 } (stand-alone) UMTS

RLAN (UE) , UE /
 RLAN UE TDD-CDMA (transceiver)
 RLAN RAN IP (RIP GW)가
 GPRS) RAN IP GGSN(

RLAN MA) , Uu UE TDD CDMA(W-CD
 RLAN

RAN IP RLAN SGSN
 3GPP 가 (RNC) RNC IP R
 LAN RNC 가 , RNC IP 가 ,

RLAN CN UE AAA UE
 . RLAN RLAN TDD-CDMA
 IP . RLAN GPRS 가 , CN AAA RAN

UE, RLAN, UE RLAN AAA, GPRS, 1 2 UE, 1 2 UE, 1 2 UE, GPRS, 1 2 UE, RLAN AAA UE, 1 2 UE, 1 2 UE, 가 RLAN AAA GPRS, RS, 가 AAA, CN UE AAA, RAN IP GP, AAA 2 UE, CN AAA GPRS CN, UE, 2 UE, 가 RLAN, 가, 가, 2 UE, 2 UE가 RLAN, 가, GPRS, 2 UE, 가 RLAN GPRS, GPRS, 2 UE, U- C- RLAN, U- C- RAN IP U- U- C- IP, C- 가, SGSN 가, RAN IP, 가, (PCM), 가, RLAN, U- C- (RNC가 RLAN), IP, RLAN, RAN IP (Iu-PS, RNC, RNC, IP, 가, UE, TDD, CDMA(W-CDMA), RAN IP, RNC, Uu, SGSN, GGSN, PCM, RLAN IP, RLAN, RLAN, (ISP), UE, UE가, ISP, RLAN, PCM, RLAN RAN IP, AMR, G.729

RLAN U- C- RNC
 , RLAN IP 가 ,
 , UE UE AAA CN
 AAA UE CN , GI GGSN ,
 RLAN TDD-CDMA , RAN IP 가 RLAN RLAN
 RLAN SGSN RLAN RAN IP
 RLAN CN , RAN IP AAA CN
 RAN IP lu / (Radius/Diameter) MAP lu-CS ,
 N AAA CN C
 RAN IP , GI GI IP v4 IP v6 GGSN
 ,
 4 , RLAN 가 RLAN UMTS 5
 , 3GPP , B , RNC B
 RNC 3GPP UTRAN 가 RNC B
 RLAN UTRAN , RLAN (RLAN
) RLAN RAN IP , lu 4 5 ,
 TS 가 RAN IP 가 6 , RLAN IP
 N , 7 , RLAN AAA , RLAN C
 UMTS RLAN 가 RLAN I
 P 8 9 , UMTS CN AAA
 RAN IP , 8 , /
 MAP , RLAN IP , 3GPP CN HSS/HLR AAA , 9
 , RLAN IP Gr , CN HSS/HLR MAP
 RAN IP GI RLAN 가 UE , UMTS
 , AAA GI IP IP v4 IP v6 RLAN RLAN IP
 IETF IP v4 IP v6 IP

10 RLAN 1 UE RLAN 2 UE
 IP IP v4가 RAN IP GI
 , 1 UE , RLAN RAN IP
 2 UE , 2 UE ,
 1 UE CN , CN C
 CN (轉送) , 2 UE CN HLR 1 UE IP (FA; Forwarding Address)

1 UE가 " " , CN 1 UE IP
 RAN IP 1 UE가 1 UE가 RLAN , IP 1 UE

10b , IP v4가 (reverse path tunneling) GI
 RLAN 1 UE IP CN
 , 2 UE .

IP RLAN IP v6 GI 1 UE 2 UE IP
 IP v6 GI 11a (redirection) 11b RLAN CN
 1 UE , 2 UE 1 UE CN CN

12 B RLAN UE RLAN 3GPP UE Uu ,
 C- U- lu-PS 가 RNC RAN IP IP RNC

ATM SS7 UMTS , MTP3/SSCF/SSCOP SCCP(SS7
)가 ATM SSCP가 IP , IP M
 M3UA/SCTP 3UA/SCTP ATM SS7(SS7-over-ATM) MTP3/SSCF/SSCOP
 (pico;) , ATS IETF() 가

RLAN RNC 가 RNC , IP RNC
 B UR B RLAN 가가

RLAN B UE , RLAN B RLAN RLAN
 UE가 RLAN 3GPP가 , IP - IP v4 v6
 RAN IP 가

13 RLAN RNC lur
 C-RNS(Control Radio Network Subsystems) S-RNS(Serving Radio Network Subsys
 tems) GMM), (SM) (SMS) - RAN IP SGSN - GPRS (GGSN
 SGSN , SGSN GGSN
 GGSN IP GI SGNS GGSN SGNS
 , CN SGNS GGSN Gn/Gp , Gn/Gp

, RAN IP , SGSN CN
 , AAA . 8 9
 , Gr /

u-PS RLAN RNC , SGSN SGSN I
 IP , RNC가 ,
 15 , IP RLAN ,
 16 RLAN , U- C- RNC .
 , 가 15 16 .

RLAN B U- IP IP
 RLAN B , IP 가 lub
 C- U- C- , IP
 , IP

C- lur .
 RIP GW , 가 . 가가 ,
 RLAN C- U- , IP
 , C- U- (mesh) .

PCM , IP , 가 U- C-
 I) C- , IP , MGCP(Megaco; Media Gateway Control Protoco
 U- . Megaco ,
 C-

17 18 , RLAN B, RNC(U- C-) RAN IP , UE
 Uu C- U-

RLAN PCM IP , RAN IP
 PCM ISP . PCM
 PCM

(CODEC; Coder/Decoder) (vocoder)가
 가 AMR G.729 . 19 21 RLAN U- ISP
 UE . AMR 19 , G.729 가 21 . IP
 , IP

UE가 ISP , RNC RAN IP
 가 . 20 U- , UE AMR ISP
 G.729 . RAN IP (RIP GW) AMR/G.729
 GW . 20 B AMR
 G.729 , RLAN U- , RIP
 IP , U- U- C-

22 , IP TCP/UDP SIP(Session Initiated Protocol) H.323 ()
 H.323/SIP) C-
 U-

2G	Second Generation	2
2.5G	Second Generation Revision	2
3GPP	Third Generation Partnership Project	3
AAA functions	Authentication, Authorization and Accounting functions	/ 가/
AAL2	ATM Adaptation Layer Type 2	ATM 2
AAL5	ATM Adaptation Layer Type 5	ATM 5
AMR	A type of voice data compression	
ATM	Asynchronous Transfer Mode	
CDMA	Code Division Multiple Access	
CN	Core Network	
CODECs	Coder/Decoders	/ ()
C-RNSs	Control Radio Network Subsystems	
CS	Circuit Switched	
ETSI	European Telecommunications Standard Institute	
ETSI-SMG	ETSI - Special Mobile Group	ETSI -
FA	Forwarding Address	
FN	Foreign Network	
G.729	A type of voice data compression	

GGSN	Gateway GPRS Support Node	GPRS
GMM	GPRS Mobility Management	GPRS
GMSC	Gateway Mobile Switching Center	
GPRS	General Packet Radio Service	
GSM	Global System for Mobile Telecommunications	
GTP	GPRS Tunneling Protocol	GPRS
GW	Gateway	
H.323/SIP	H.323 Format for a Session Initiated Protocol	H.323
HLR	Home Location Register	
HN	Home Network	
HSS	Home Service Server	
IP	Internet Protocol	
ISDN	Intergrated Services Digital Network	
ISP	Internet Service Provider	
Iu-CS	Iu sub Interface for Circuit Switched service	Iu
Iu-PS	Iu sub Interface for Packet Switched service	Iu
IWU	Inter Working Unit	

M3UA	Message Transfer Part Level 3 SCCP SS7 Adaptation Layer	3 SSCP SS7
MAC	Medium Access Control	
MAP	Mobile Application Part	
MSC	Mobile Switching Center	
NRT	Non-Real Time	
PCM	Pulse Code Modulation	
PLMN	Public Land Mobile Network	
PS	Packet Switched	
PSTN	Public Switch Telephone Network	
RANAP	Radio Access Network Application Part	
RAN IP	Radio Access Network Internet Protocol	
RIP GW	RAN IP Gateway	RAN IP
RLAN	Radio Local Area Network	LAN
RLC	Radio Link Control	
RNC	Radio Network Controller	
RRC	Radio Resource Control	
RT	Real Time	
SCCP/MTP	Signaling Connection Control Part, Message Transfer Part	/
SGSN	Serving GPRS Support Node	GPRS
SCTP	Stream Control Transmission Protocol	
SM	Session Management	
SMS	Short Message Service	
S-RNS	Serving Radio Network Subsystems	
SS7	Signaling System 7	7
SSCF	Service Specific Coordination Function	
SSCOP	Service Specific Connection Oriented Protocol	

TDD	Time Division Duplex	
UDP/IP	User Data Protocol for the Internet Protocol	IP
UE	User Equipment	
UMTS	Universal Mobile Telecommunications System	
UTRAN	UMTS Terrestrial Radio Access Network	UMTS
VLR	Visitor Location Register	

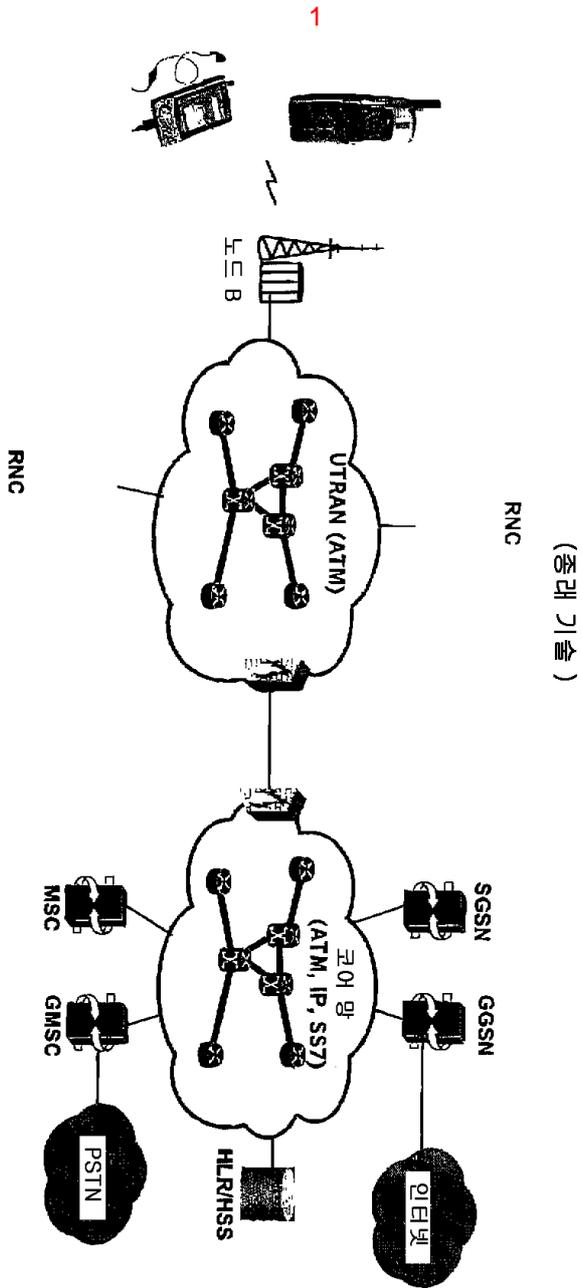
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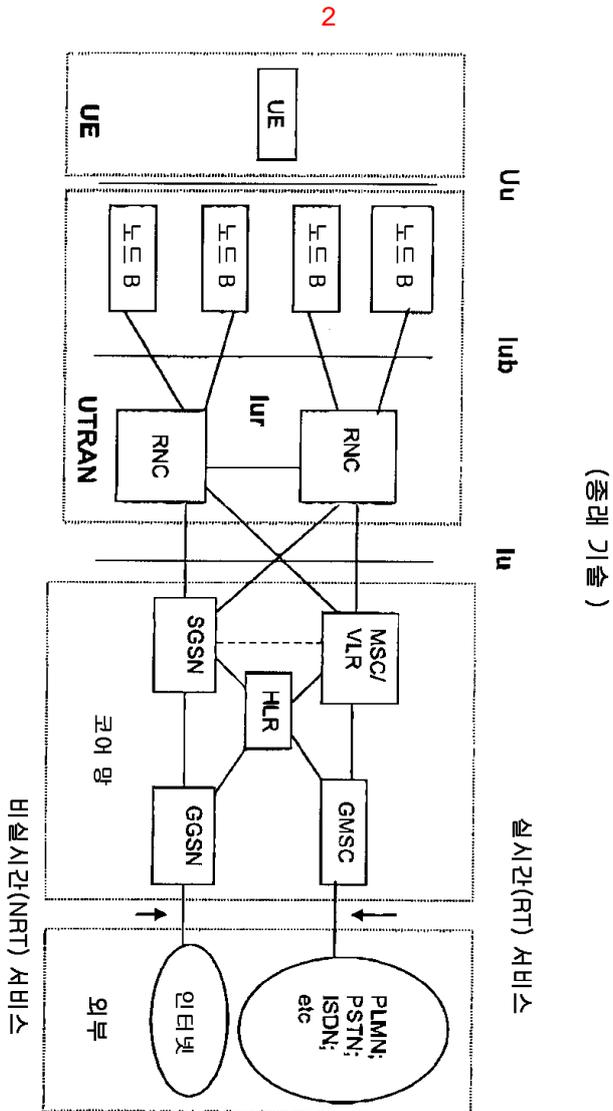
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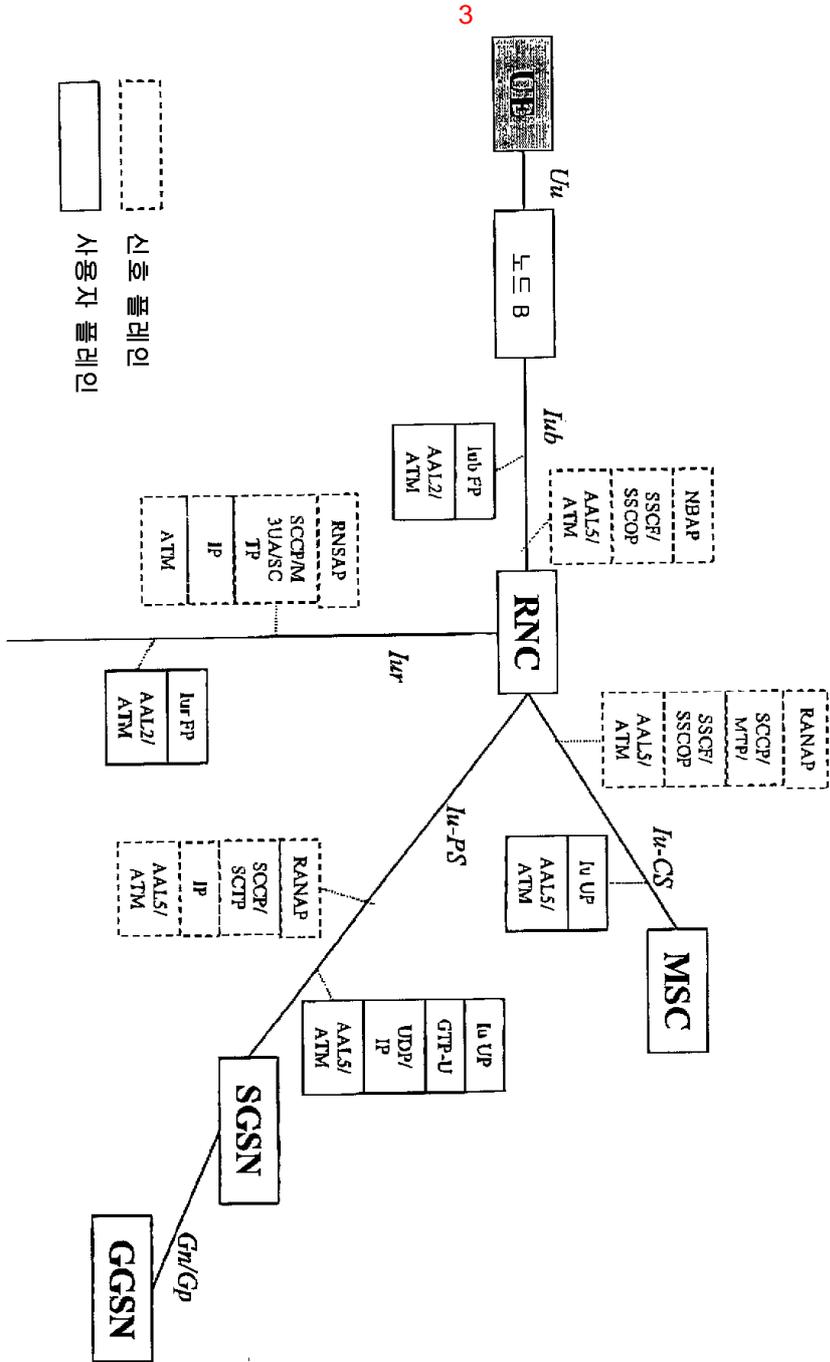
(UE) UE /

LAN(RLAN)



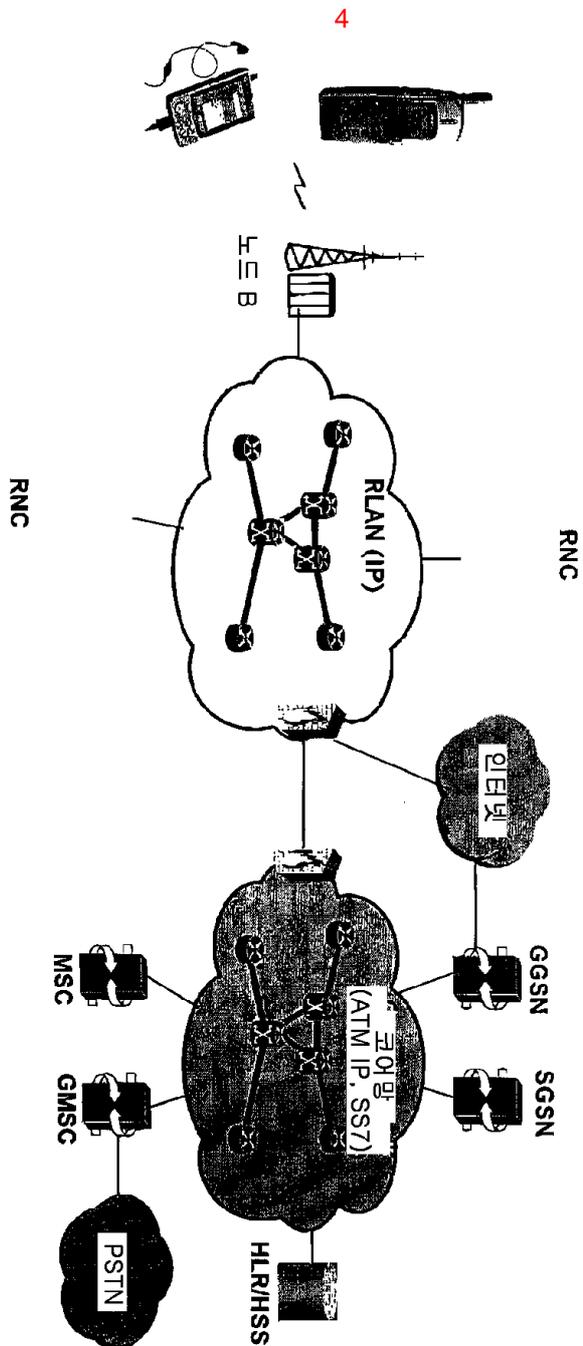


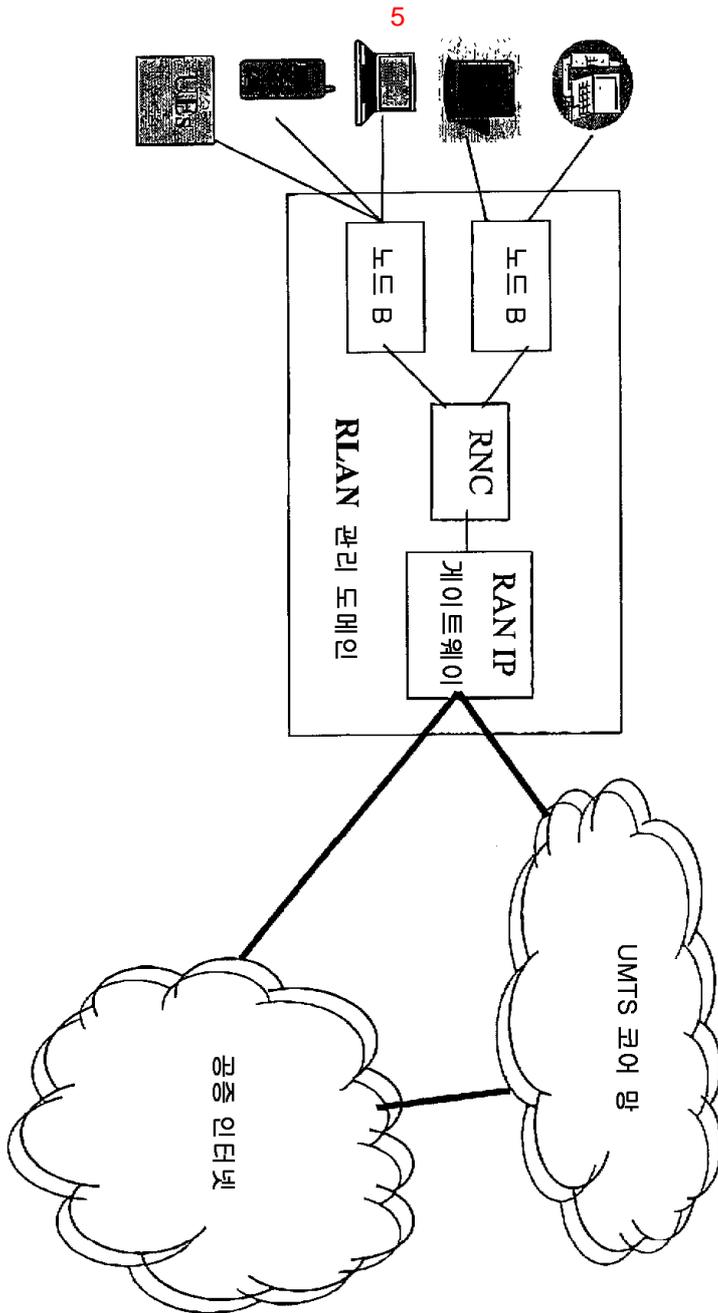


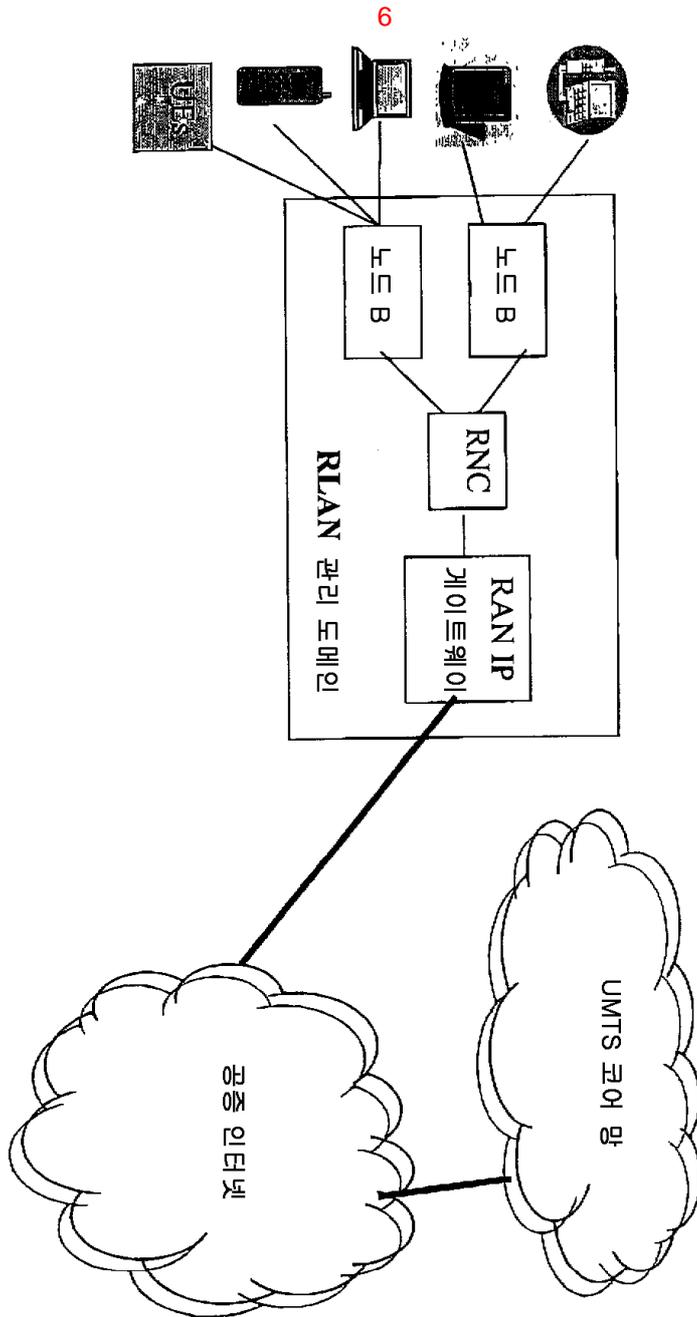


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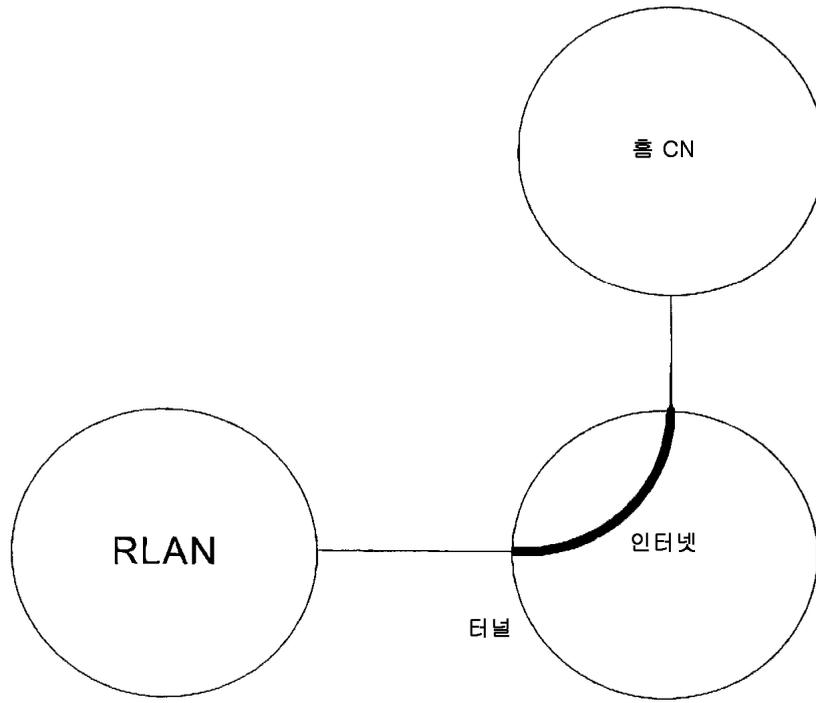
신호 플레인
 사용자 플레인



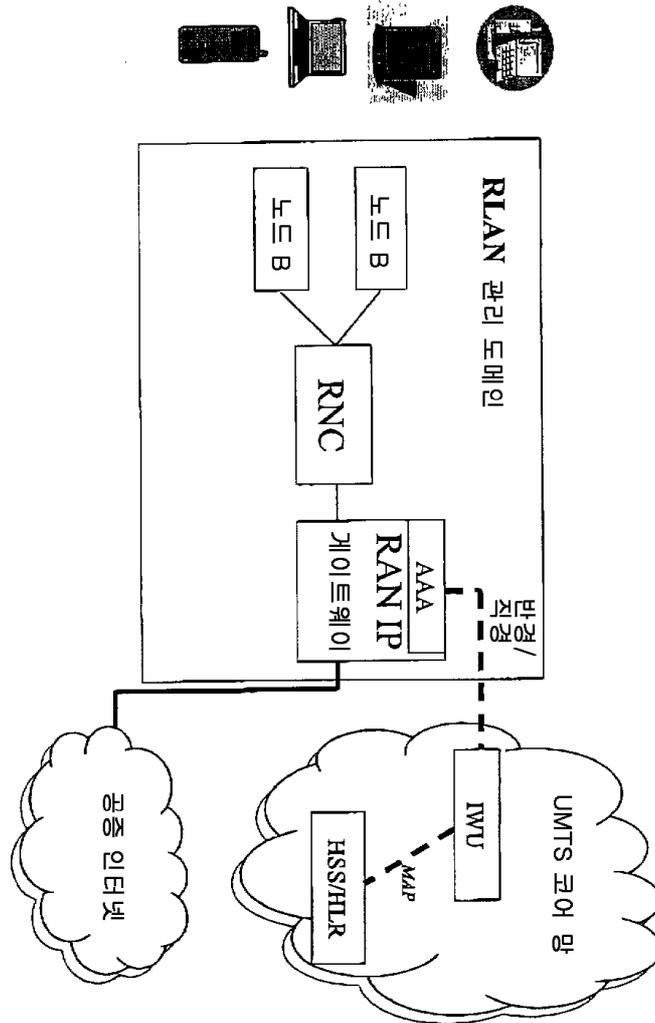




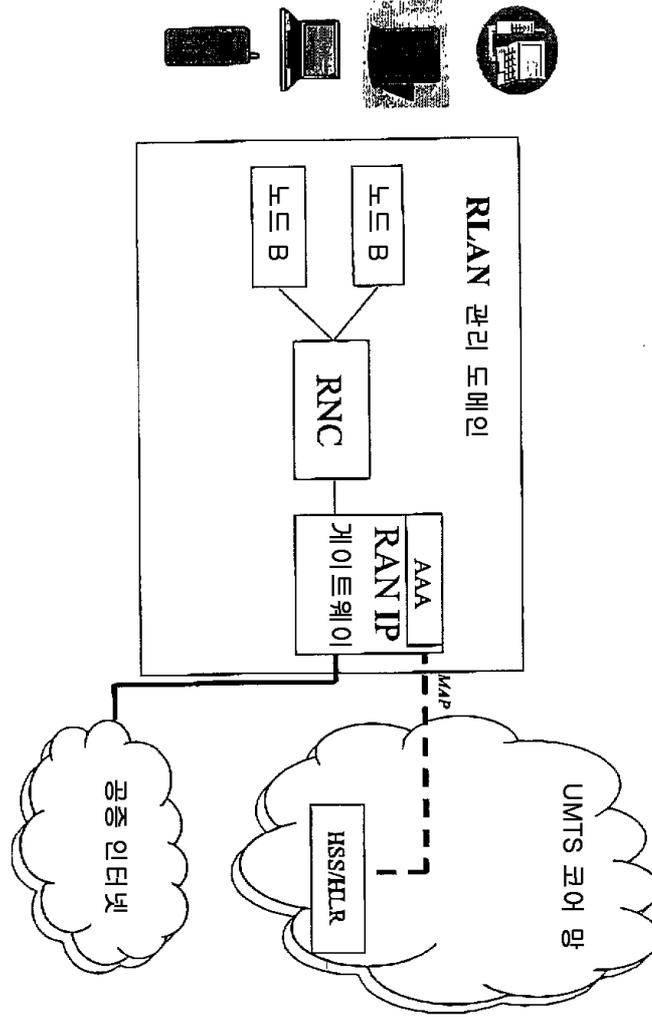
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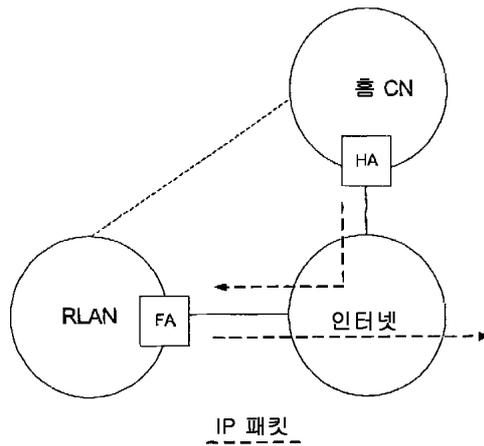
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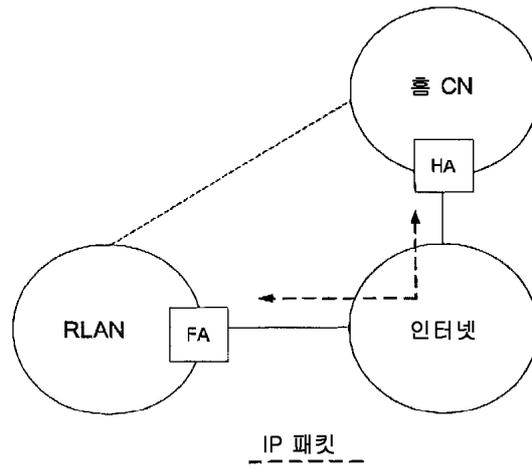
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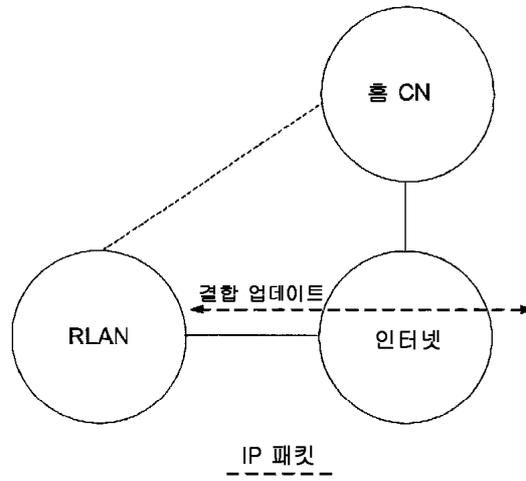
10a



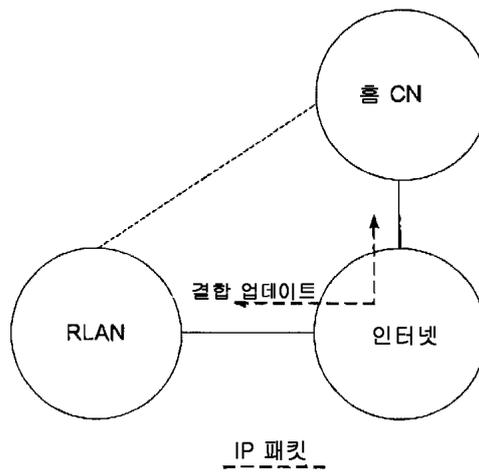
10b



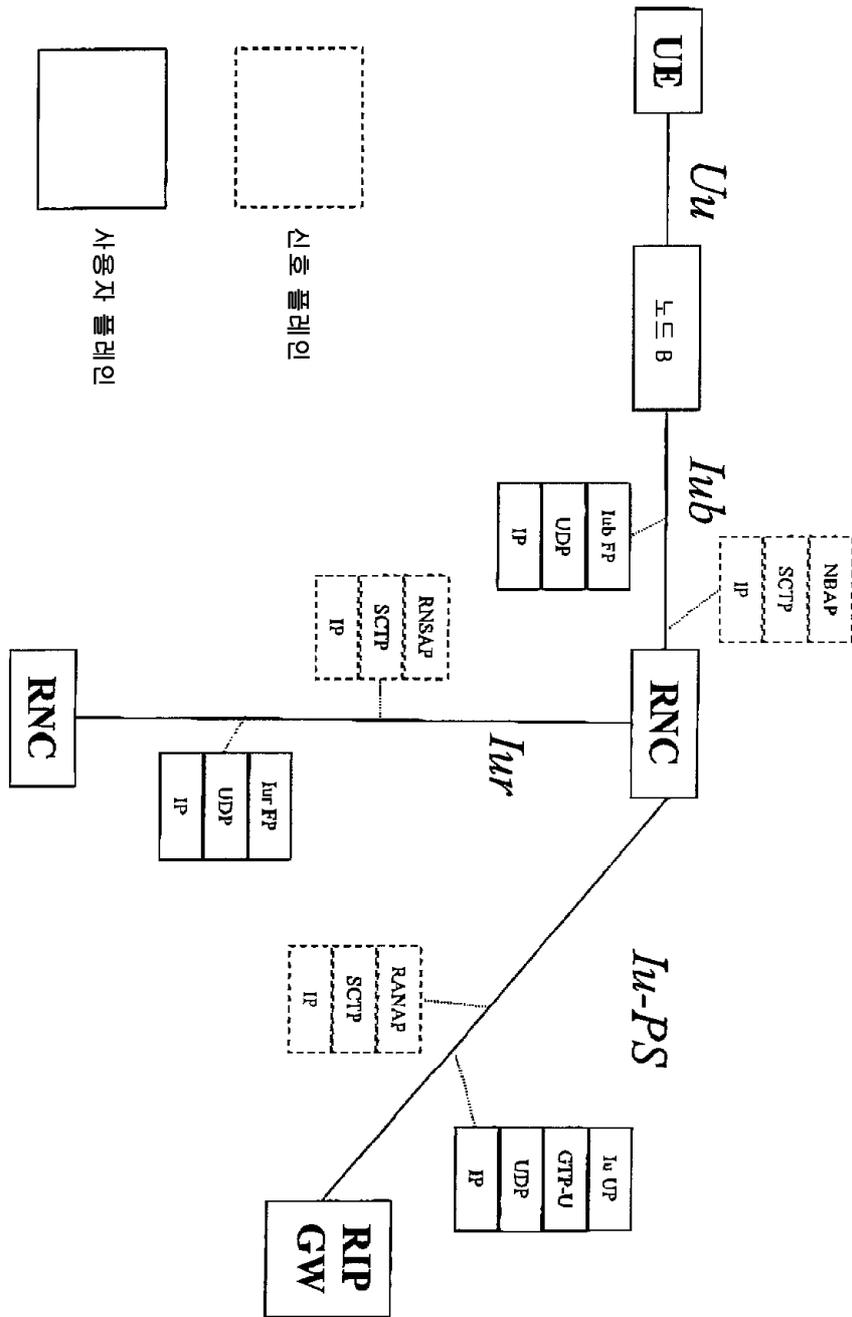
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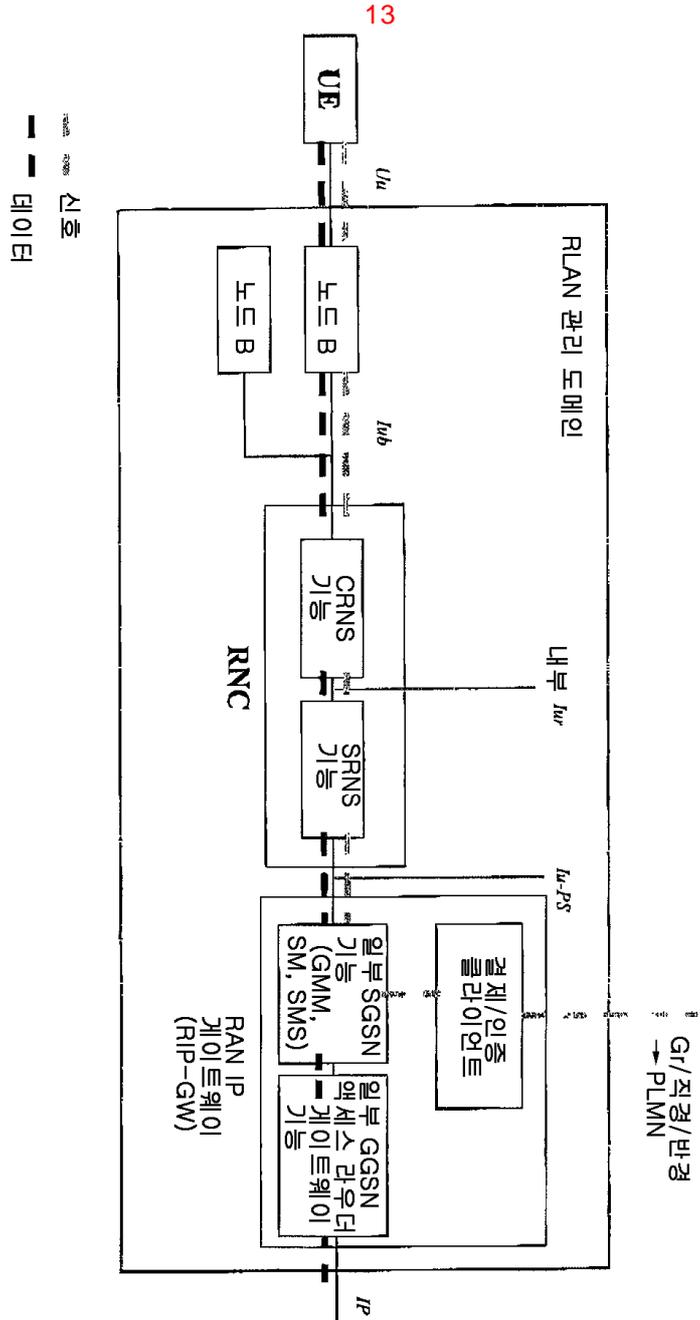


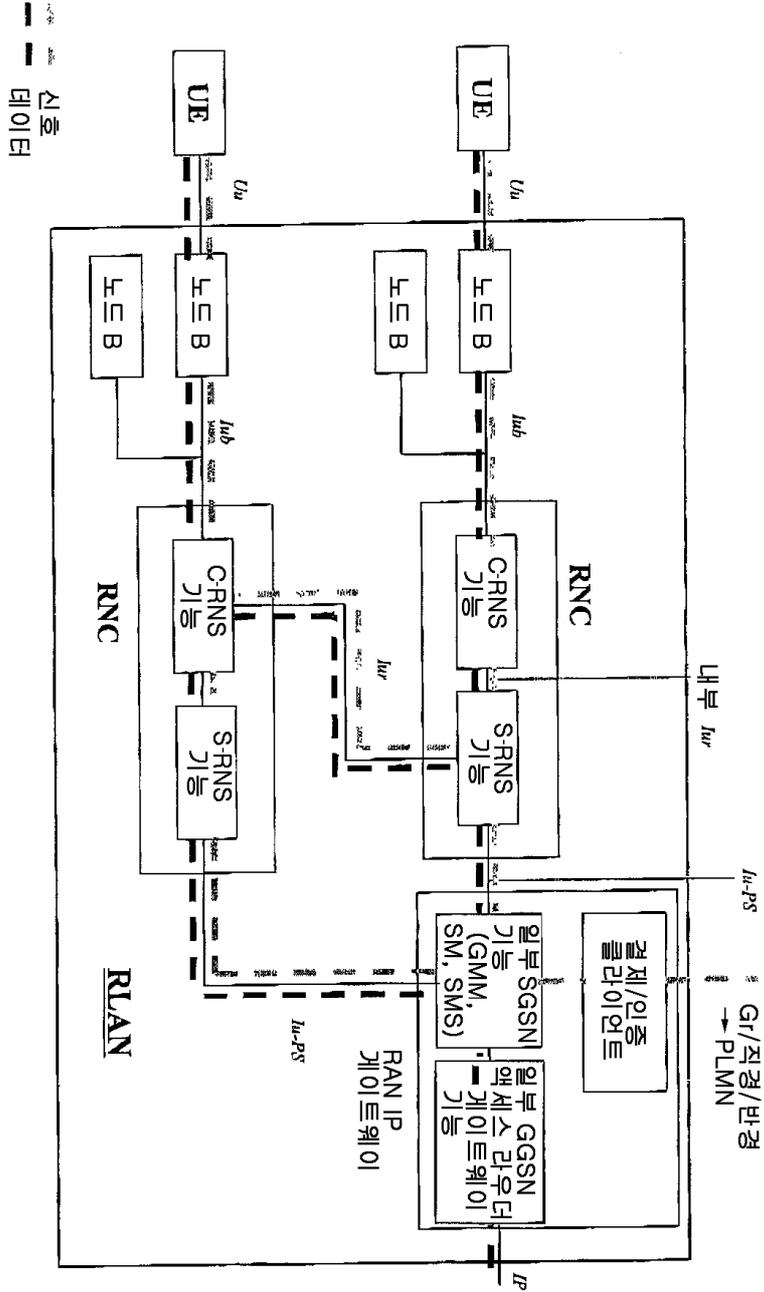
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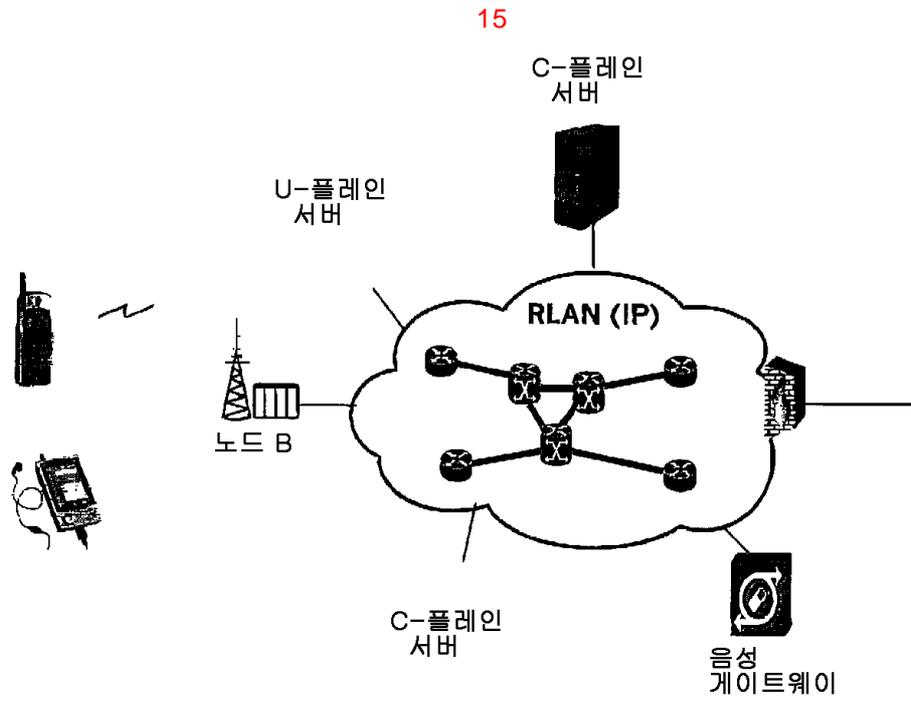


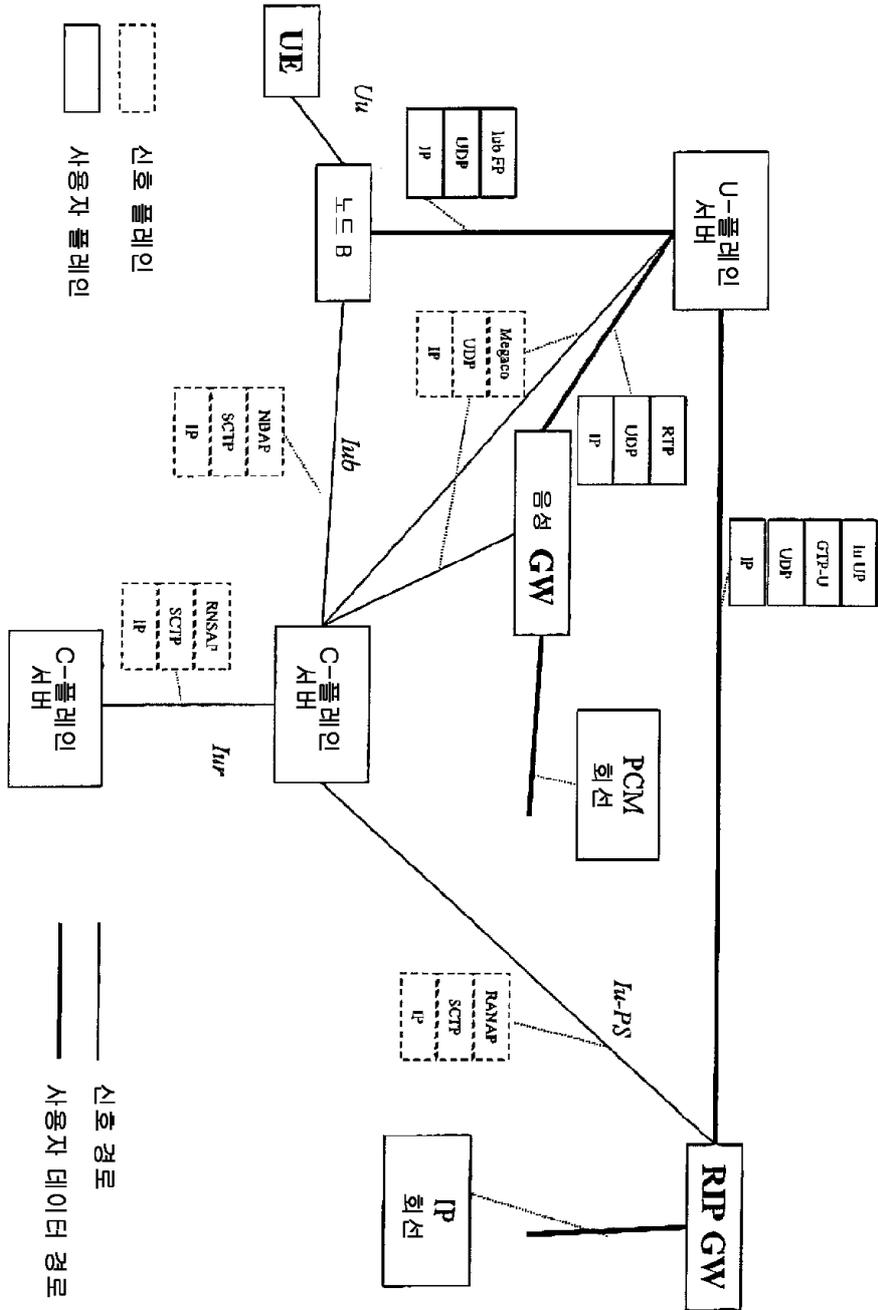
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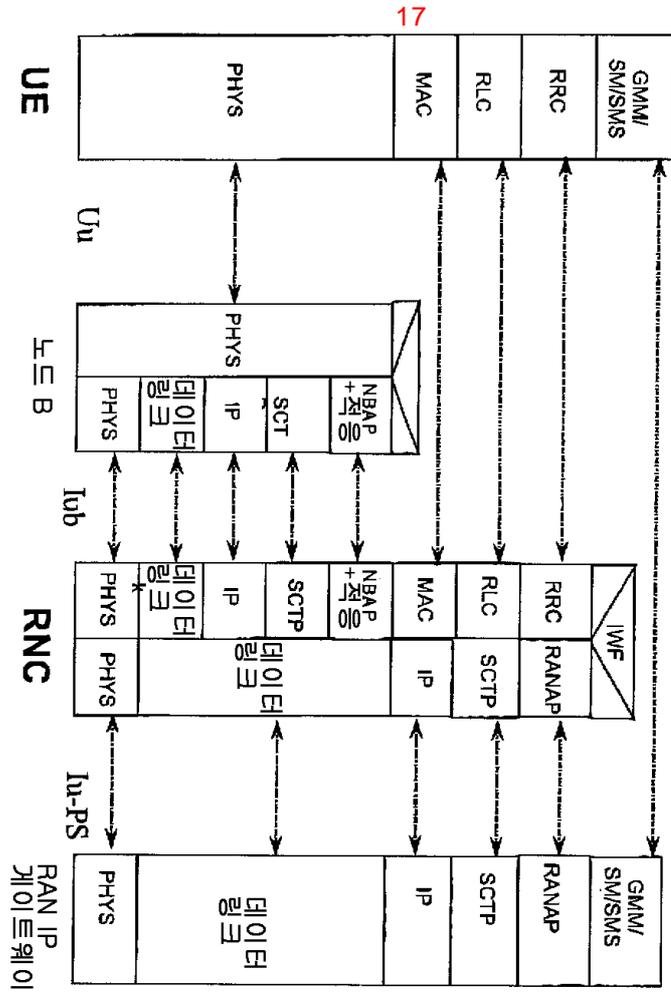




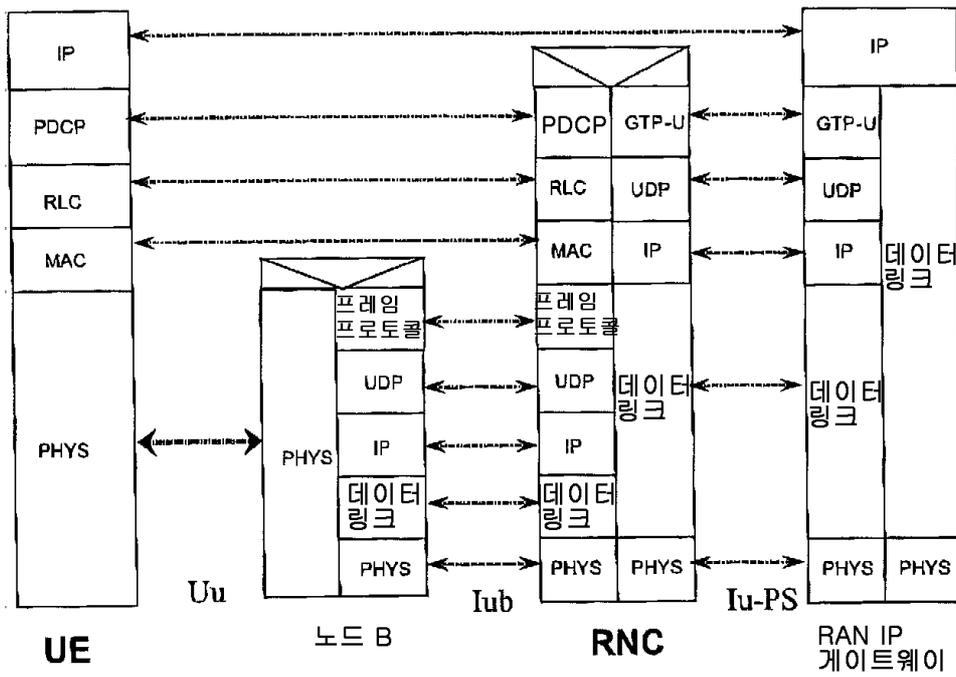




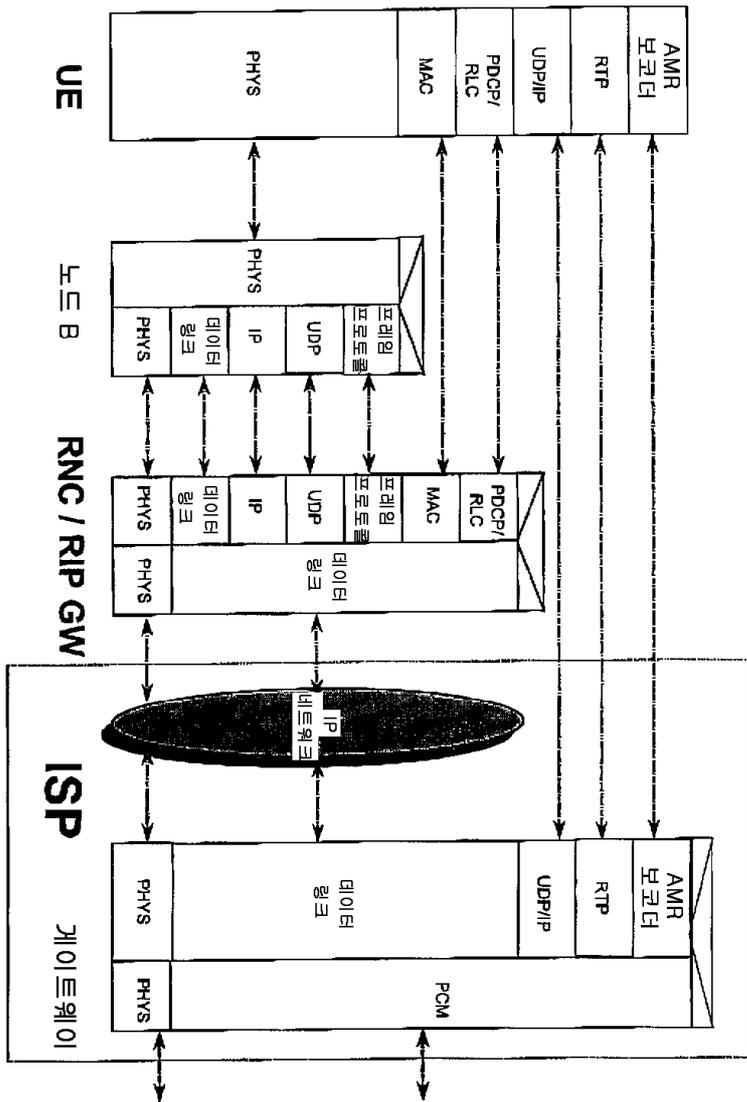




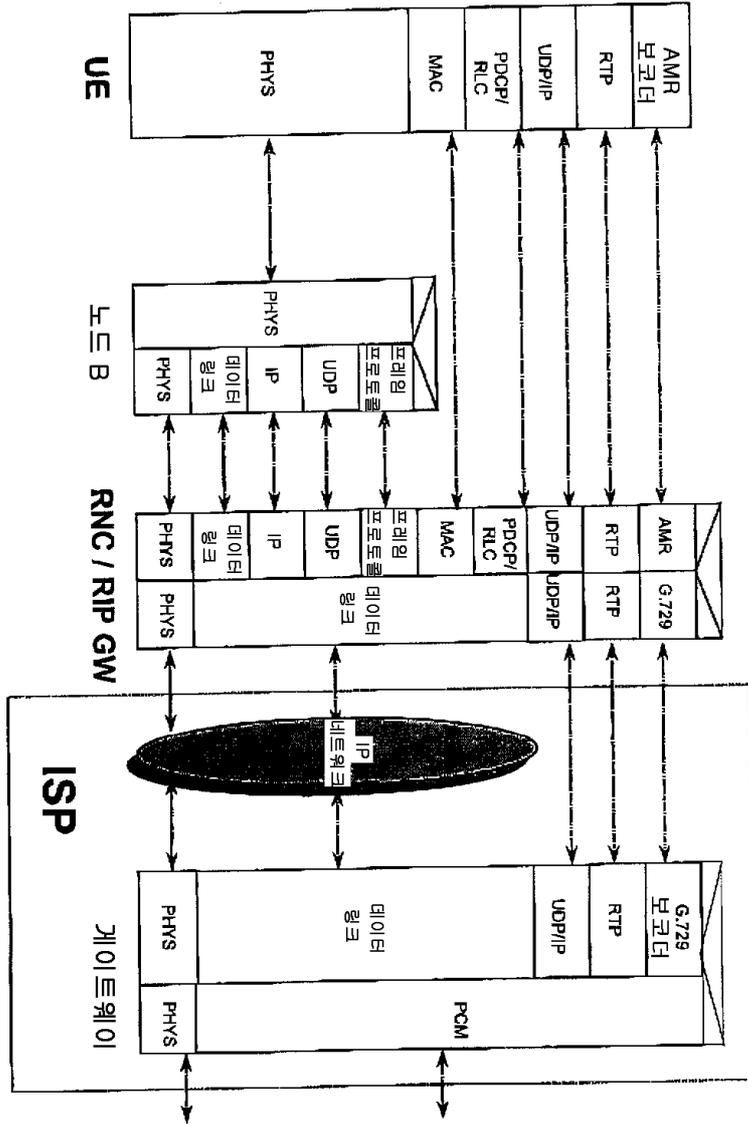
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U-플레인 프로토콜 스택



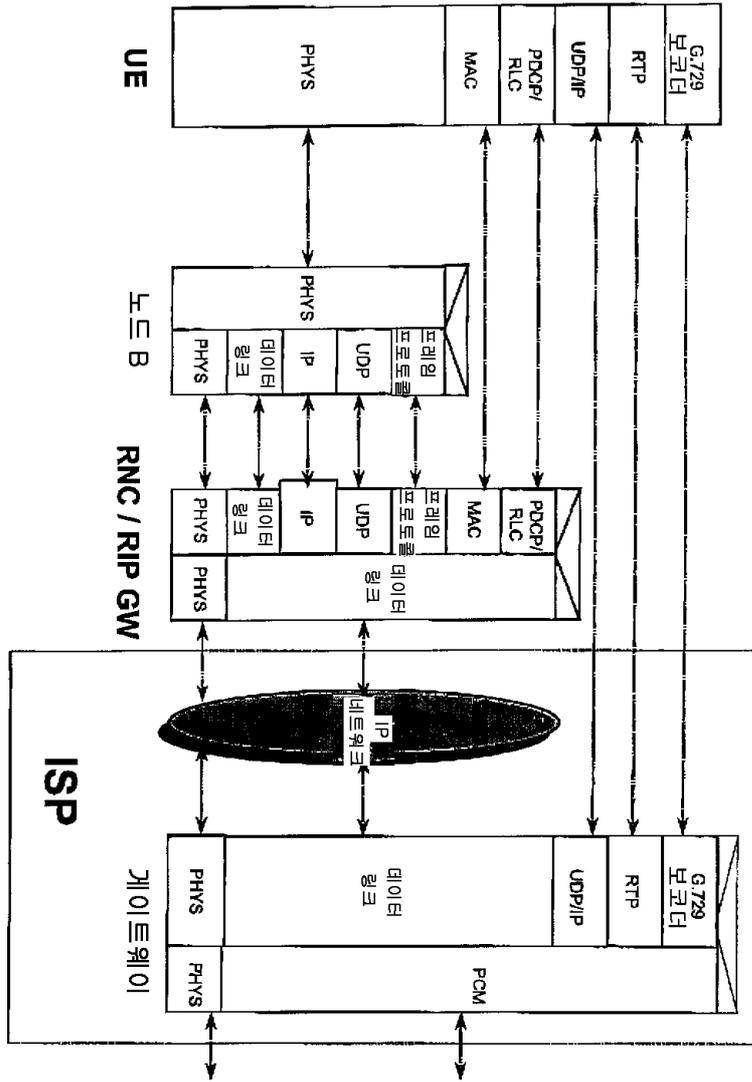
U-플레인 구조 (응성)



U-플레인 구조 (응용)



21



U-플레인 구조 (음성)

C-플레인 구조 (응용)

