

(19) (KR)
 (12) (A)

(51). Int. Cl.⁷

H04L 12/28

H04L 12/56

H04L 12/66

H04J 15/00

(11)

10-2004-0111609

(43)

2004 12 31

(21) 10-2004-7018325

(22) 2004 11 12

2004 11 12

(86) PCT/US2003/015122

(87)

WO 2003/098857

(86) 2003 05 14

(87)

2003 11 27

(30) 10/144,878 2002 05 14 (US)

(71) 92648 46

(72), 08540 42

, 08852 2101

, 08807 1003

(74)

(54) I P

) , (GPRS) (14) , , , (16₁ - 16m
 erving GPRS Service Nodes)(24₁ - 24m) (12₁ - 12n) , SGSNs(S
 IP IP , , , , , , ,
 , , , , , , ,
 (32)

IP

가
가

(Universal Mobile Telephone System; UMTS)
(specification) 3d
UMTS 3GPP TS 23.101 V4.0.0
(3GPP) GSM(Global Standard for Mobile)
(2001-04)

UMTS , GPRS(General Packet Radio Service)
(core) .

(RNC)
(Serving GPRS Service Nodes; SGSN)

Gateway GPRS Service Node, (GGSN)
GGSN) 가 IP 가 IP
가 IP , GGSN , GGSN , GGSN

The diagram illustrates a mobile network architecture. At the top, 'UMTS' is connected to a 'GGSN' (Gateway GPRS Support Node) via an 'IP' (Internet Protocol) connection. Below this, '(Public Land Mobile Network; PLMN)' is shown, which is connected to both a 'GPRS' (General Packet Radio Service) and an 'UMTS' network. The 'GPRS' network is connected to a 'GSM' (Global System for Mobile Communications) network via an 'IP' connection. The 'UMTS' network is connected to a 'GSM/GPRS' network via an 'IP' connection. The 'GPRS' and 'UMTS' networks are also connected directly to each other.

```

graph LR
    SGSN[SGSN] --- IP[IP]
    IP --- GPRS[GPRS]

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The diagram illustrates the GPRS network architecture. It consists of three main layers arranged horizontally from left to right: the SGSN (SGSN) layer, the IP layer, and the GPRS layer. The SGSN layer is represented by a box labeled "SGSN". An arrow points from the SGSN layer to the IP layer, which is represented by a box labeled "IP". Another arrow points from the IP layer to the GPRS layer, which is represented by a box labeled "GPRS".

, IP 가

가

1 GPRS

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1 (12₁, 12₂, ..., 12_n, n))
 GPRS(General Radio Packet Service) (10) . 1 (10)
 , , , , , (PLMN)

1 (10)가 PLMN
가 PLMN(14₁ 14₂) . PLMN(14₁) . PLMN
가 PLMN(14₁) .

1 PLMN(14_1)
24_m), IP
PLMN ,
SGSN(24_1)
(16_1)
SGSN
SGSN (16_1, ..., 16_m) SGSN(24_1 -
SGSN ,
SGSN 2 3
(16_1, 16_m)

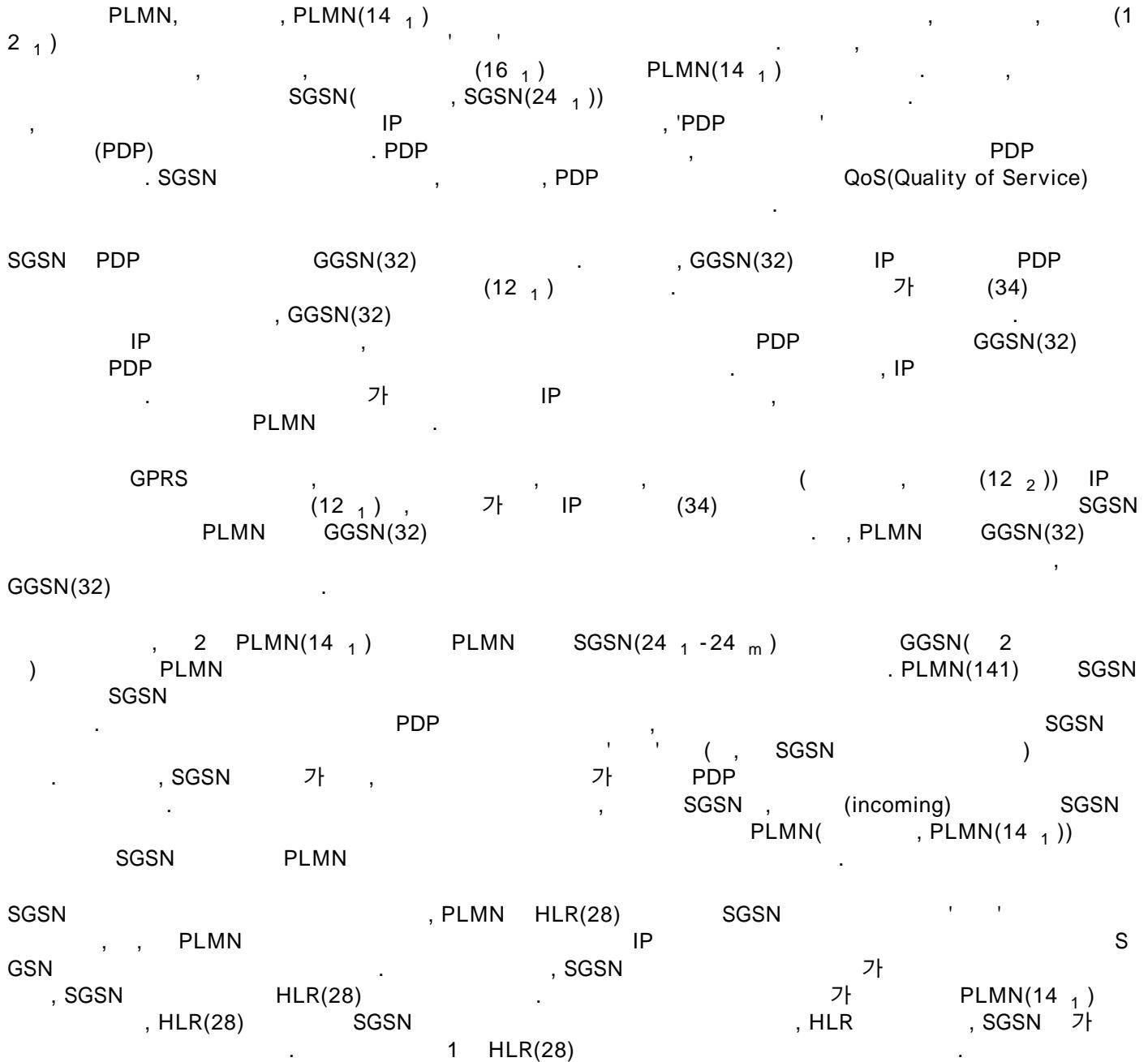
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graph LR
    SGSN[SGSN(24_1 - 24_m)] --- PLMN[PLMN]
    PLMN --- HLR[HLR(28)]
    HLR --- IP[IP]
    SGSN --- HLR
    SGSN --- IP

```

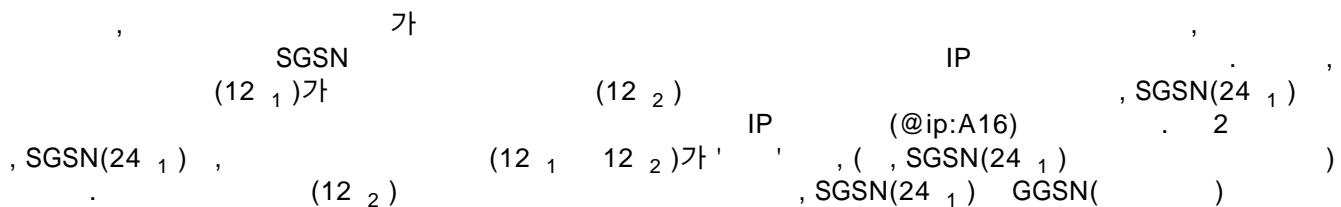
The diagram illustrates the network architecture. At the top left is the SGSN (24₁ - 24_m). An arrow points from the SGSN to the PLMN (Public Land Mobile Network). From the PLMN, another arrow points to the HLR (28). From the HLR, an arrow points to the IP network. Additionally, there are two direct connections: one from the SGSN to the HLR, and another from the SGSN to the IP network.

PLMN(14) (30)	PLMN BG(30)	PLMN	PLMN	(border gateway; BG) (33)	PLMN	PLMN	1
N (34),	,	,	,	.	,	PLMN	PLM IP
	GGSN(32)		,	IP	, ,	GGSN(32)	2
	PLMN						



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	IP	SGSN
12.1	A10	24.1
12.2	A16	24.1
12.3	A20	24.2
12.4	A3	24.3



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GPRS(General Packet radio Service)

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ket Radio Service)

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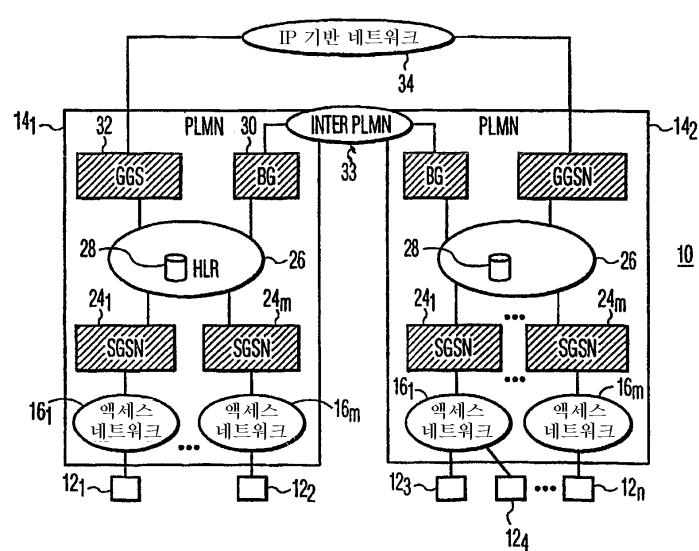
15

IP

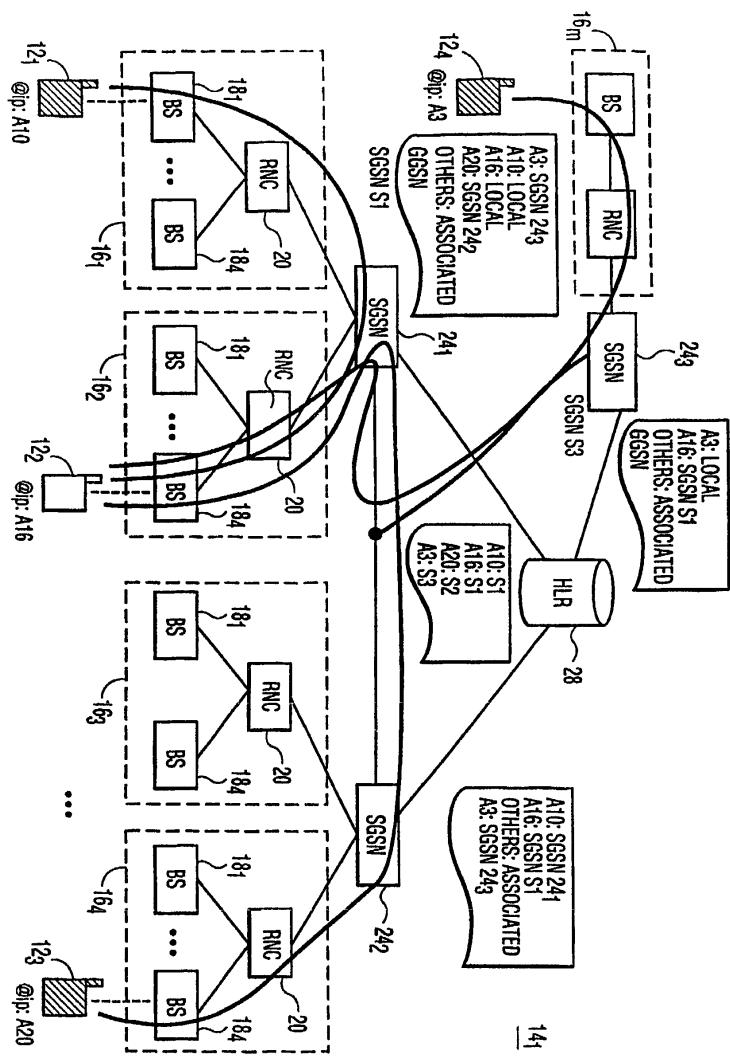
가

IP

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