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2002 - 0077949
2002 10 18

(21) 10 - 2001 - 0017623
(22) 2001 04 03

(71) 3 416

(72) 547 - 11 302

(74)
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(54)

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GSM

9

GSM, USF,

1 GPRS GPRS ,

2 ,

3 RLC/MAC ,

4 USF 가 ,

5 6 USF_GRANULARITY 가 ,

7 GSM ,

8 / (Uplink and Downlink State Flag : UDSF)

9 .

가

가 가

가

packet data protocol) , (circuit - switched protocol) (p
 GSM, CDMA, DAMPS . 가 가 가 .

GSM

GSM (circuit - switched data service) ,
 (circuit - switched data communication)
 (packet - switched data communication)
 GPRS(General Packet Radio Services)가 GSM , GPRS IP 가
 (virtual circuit - switched communication) 가 GPRS X.25 connection - orient
 ed protocol IP connectionless protocol 가 . GSM ,
 (time slot) 가
 (network side),

(packet data protocol) . GPRS " multi -
 가 , .
 slot operation" 가 .
 1 GPRS GPRS . 1 GPRS

X.25 (122) IP (124) GGSN(Gateway G
 PRS service node)(120) GPRS . GGSN (11
 8) SGSN(Serving GPRS Support Node)(116) . SGSN(116) GPRS
 . SGSN(116) GPRS (dedicated transmission)
 BSS(110) . HLR(114) GPRS (register) GPRS 가
 . 가 SGSN(116) MSC(112) ,

2 . 2 .

GPRS LLC(logical link control) , LLC
 (information field) , (frame header : FH) , (frame check sequence : FCS)
 . LLC RLC(radio link control) . RLC
 (block header : BH) , (information field) , (block check sequence
 : BCS) . (air interface) 가
 . , RLC (physical layer) .

GPRS RLC/MAC layer (medium access modes) (dynamic allocation),

(extended dynamic allocation), (Fixed allocation)

PDCH(packet data physical channel) USF(Uplink State Flag)

PDCH 4 USF PDCH PDCH

(packet data physical channel) USF PDCH PDCH

USF (half d

uplex mode) PACKET DOWNLIN

K ASSIGNMENT MAC_MODE

" (downlink)" " "

" (Uplink)" " "

RLC block header (uplink) (medium access method) USF 가

3 RLC/MAC USF 3 mobile user

8 (2³) USF state USF (information bit) (uplink)

USF USF가

USF 가

4 USF 가 4

, USF = R1 MS1(mobile station 1) 4 burst 가

, USF = R2 MS2(mobile station 2)가 4 burst 가

USF = F PRACH(Packet Random Access Channel)

EST packet idle mode , PACKET CHANNEL REQU

가

PDCH (PACKET UPLINK ASSIGNMENT) TBF P

DCH USF (PACKET UPLINK

ASSIGNMENT) TBF Starting Time

PDCH GPRS (uplink contention resolution)

가 0 (PACKET UPLINK ASSIGNMENT) USF_GRANULARITY()

USF , 1

(check) (PACKET UPLINK AC

K/NACK)

5 6 5 6 USF_GRANULARITY 가

5 USF_GRANULARITY 가 0 , 6 USF_GRANULARI

TY 가 1 USF . USF GRANULARITY 가 0
 가 1 USF 4 . USF GRANULARITY
 , USF GRANULARITY = 1 가 USF GRANULARITY = 0 , USF

5 6 GSM/GPRS 05.02

가 가

packet transfer mode packet idle mode
 , PCCCH , PCCCH PACKET
 PAGING REQUEST 가 가 PACKET PAGING REQUEST ()
 가 GSM 04.60 PACKET PAGING RESPONSE
 dedicated mode

7

7 GSM

가 packet idle mode

가 5 6 USF 가
 , USP 가

packet paging request 가 PBCCH pac
 packet paging response packet idle mode dedicated mode가

가

가

() packet transfer mode packet idle mode
 PACKET PAGING REQUEST dedicated mode

(Radio Resource : RR)

TBF

가

GSM

가

GSM

GSM

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가

가

UDSF

(dynamic allocation medium access)

가

8

(Uplink and Downlink State Flag : UDSF)

8

UDSF가

6

USF_GRANULARITY = 1

4

Downlink state Flag

3

2

3

1

, 1

가

1

, 2

4

가

2

2

4

가

3

3

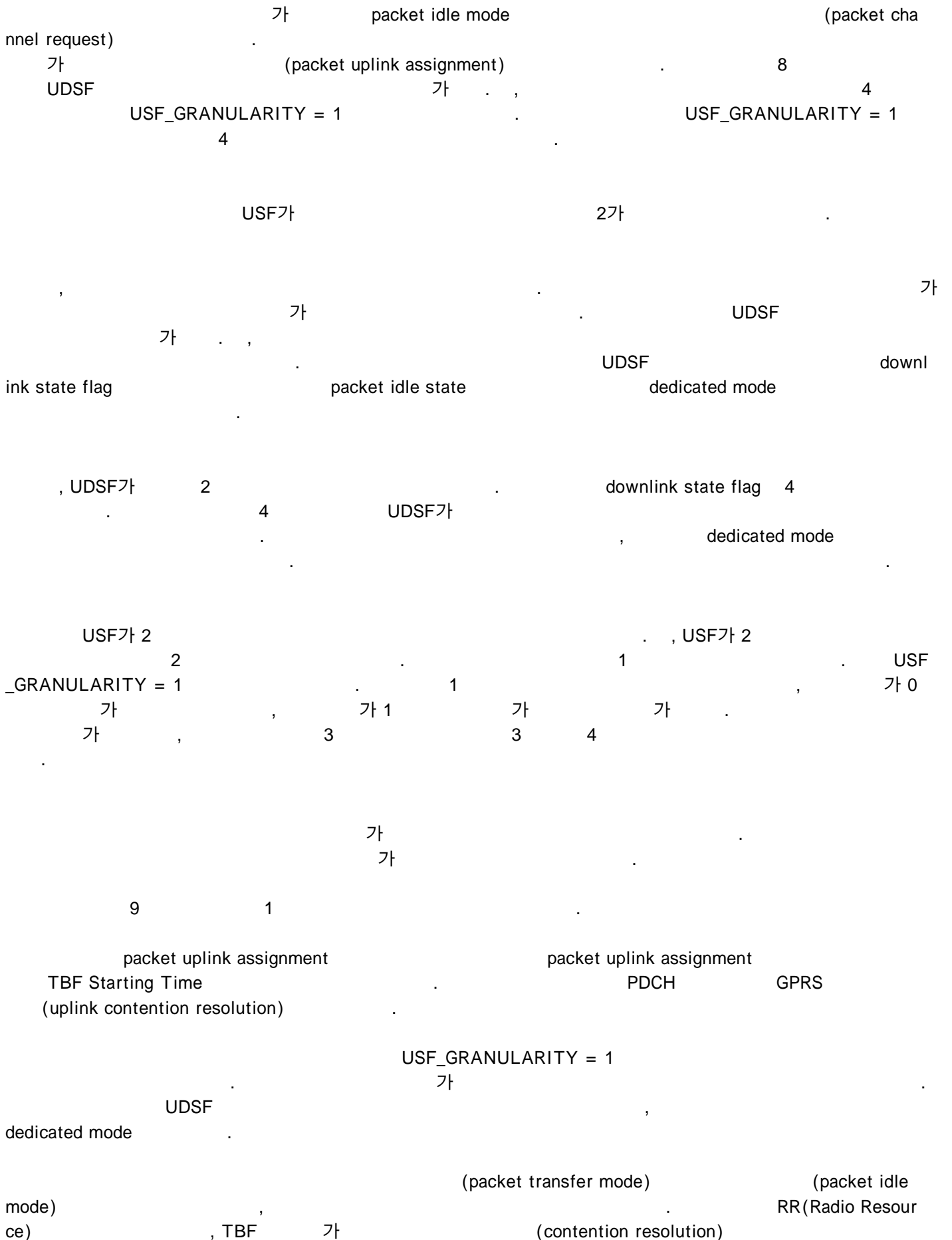
3

2^3

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8

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가 가

GSM

(57)

1.

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2.

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가 가

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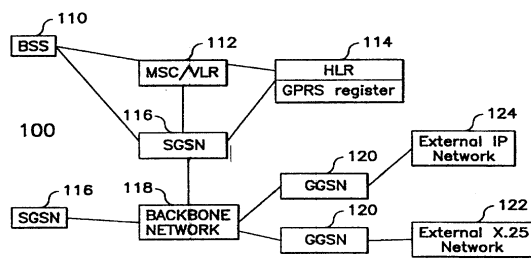
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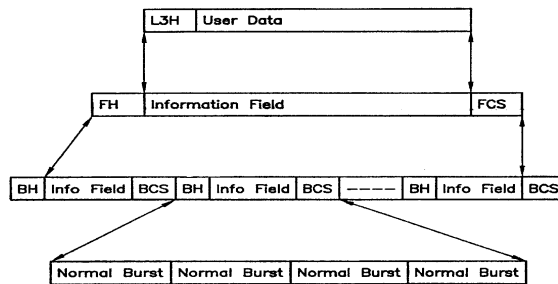
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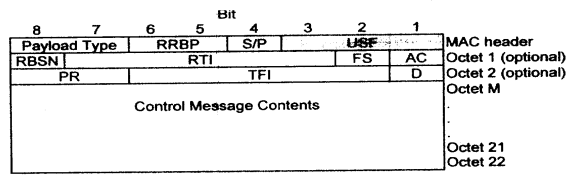
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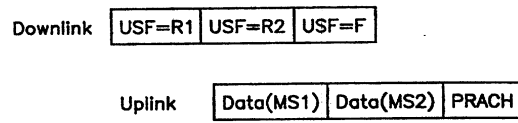
2



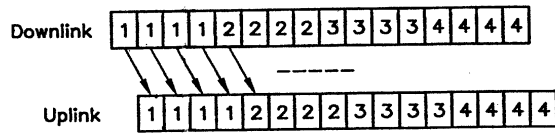
3



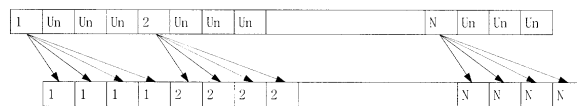
4



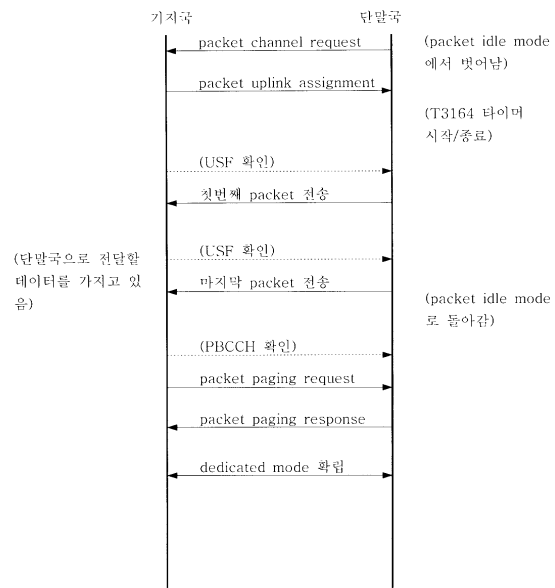
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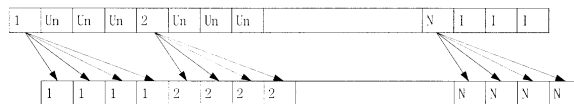
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