

IMT- 2000

(ITU- R 39- 5, 77- 3)

:

:

1. : IMT - 2000
2. : 1999. 1. 1 - 12. 31
3. :
4. 가.

		1	2	3	4	5	6	7	8	9	10	11	12		
○ ITU - - ITU - ITU - - - ○ IMT-2000 가 - 가 - - - IMT-2000 - , - IMT-2000															

.

1) 3GPP 3GPP2 가

,

- o 3GPP2 (1.25- 27,)
- o 3GPP PCG 1, 2 (2.28- 3,5, ; 7.5- 7.6,)
- o 3GPP OP (5.27- 28 , 7.6- 7,)
- o 3GPP2 OP/SC (5. 25- 26, , 9.16- 17)
- o 3GPP TSGs 3GPP2 TSGs
- o ITU- SDO (9.2)

2)

- o ITU , 3GPP/3GPP2 , OHG
-
- o

3)

- o ITU- R TG8/1 16 (1), 17 (2), 18 (2)
- o RAST 1 , GSC5/RAST8 1
- o ASTAP- 2000 1 , 2 3 1
- o 3GPP/3GPP2
- o UMTS Forum 17 1
- o ITU- R SG8 1
- o CPM 1

4)

- o
- o 3GPP 3GPP2
- o
- o

5) ,

6) ITU UMTS Forum

7) 가

o : '99. 6.1 - 6.30

o : ,

o : "IMT - 2000
"

8) 가 APT, CPM TG8/1

9)

10)

o UMTS Forum, FCC, ITU

5.

1) ITU ETSI, ,

2) ITU-R TG8/1 ITU
, 가

3)
,

4) 3GPP 가
, (OHG)

5) 가

6) 가

6.

- o IMT - 2000

- o

- o IMT - 2000

가

- o

가

- o IMT - 2000

7.

1		.....
2	IMT - 2000	.....
3	IMT - 2000	
	
1		.....
2		.....
3	IMT - 2000	..
4		.....
5		...
4	IMT - 2000	가.....
1		.....
2	가	.....
5		가.....
1		.....
2		.....
3		.....
6		.....

1

IMT - 2000 가
가
W A R C - 92 , 1994
IMT - 2000 (2GHz) . 1999
IMT - 2000 I T U - R T G 8 / 1 ,
 ,
 , IMT - 2000
가 가
가 .

IMT - 2000
가 ,
IMT - 2000 , 가 ,
IMT - 2000 가 가
가 ,
 .

1999 IMT - 2000
 .
○ IMT - 2000
○ IMT - 2000
○ 가
○ IMT - 2000

2 IMT - 2000

, ,
 가가 2001 2002
 IMT - 2000 가 IMT - 2000
 , 가,
 . IMT - 2000
 IMT - 2000 .
 IMT - 2000
 (ERC : Europe Radio- Communications Committee)가 97 7 IMT - 2000
 () FDD 2x60MHz TDD 35MHz 155
 MHz . WARC- 92(World Administrative Radio Conference)
 IMT - 2000 170MHz TDD Unpaired Band
 DECT 15MHz , TDD 35MHz
 FDD FDD
 .
 ITU IMT - 2000 95
 PCS , 1, 2
 3 , IMT - 2000 .
 3 IMT - 2000
 2001
 가 IMT - 2000 .
 FDD 2 × 20MHz , 1920MHz (1885 1920MHz)
 10.9MHz PHS
 . 2 × 60MHz Paired
 Band Unpaired Band 2010 2025MHz
 FWA(Fixed Wireless Access)
 .
 IMT - 2000 ,
 가가 2000

2001
 ,
 가가 2002

IMT - 2000

2.1

< 2- 1> , IMT - 2000

			가
	- PCS - PCS 가 IMT - 2000 가	- :97 - IMT - 2000 가	- 4 5
	- - 3 - 99 가 - 2001	- 1 FDD 20MHz - FWA	- 3
	- - 2002	- : FDD 15MHz, TDD 5MHz	- 가 2 , DCS 1 2
	- 가 - 1 - 2000 2 가 - 2002	- 3 FDD:10MHz TDD:5MHz - 1 FDD:15MHz - 1 FDD:15MHz, TDD:5MHz	- 5 - 5
	- 가 () - 2000 가 - 2002 1	- FDD 15MHz, TDD 5MHz	- 4 · 1 · 3

			가
	- 가 () - 99 가 - 2001	- 10 15MHz	- 4 6 · 4 · 1 2
			- 4 -
	- 가 - 2000 - 2002	- FDD 15MHz, TDD 5MHz	- 3 4 · 3
	-		- 4
	- 가		- 3 5 - 4
	- 2000 가	- FDD 15MHz	- 4 - 5
	- 99 3 가 - 2002	- FDD 15MHz, TDD 5MHz	- 4 · 3 · 1 (41)

3 IMT - 2000

ITU 2000 5 WRC- 2000 IMT - 2000 가
 , ITU

IMT - 2000
 IMT - 2000

ITU- R 1998
 ,
 가
 IMT - 2000

1

ITU- R TG8/1

1996 , 1998. 5
 ITU- R Rec. M.1390 "Methodology for The Calculation of IMT- 2000
 Terrestrial Spectrum Requirements" ITU- R Rec. M.1391 "Methodology
 for The Calculation of IMT- 2000 Satellite Spectrum Requirements"

12가

(가

Group size QoS
 가)

. ITU-R TG8/1 IMT - 2000
 12 1999. 3
 ITU-R Rep. M.IMT.SPEC
 . 12
 .
 ITU-R
 (Rec. M.1390) . 12
 ITU-R (Rep. IMT.SPEC) 가
 . 가
 가
 .
 12가 가 ,
 (, ,)
 TTA (가 , 가 ,)
 .
 .
 IMT - 2000 (2010
) 624MHz(3), 638MHz(4), 699MHz(5
) 가 가
 .
 IMT - 2000
 .
 ITU (UMTS Forum)
 .
 가 ,
 가
 .
 IMT - 2000 (1885 2025, 2110 2200
 MHz) 가 170MHz (Paired band:

120MHz, Unpaired band: 50MHz).

Paired band 120MHz
, Unpaired band Paired band 120MHz
Unpaired band 20 30MHz 가

.
8가
7

.
8 (: 3 6 , Paired Band
4 Unpaired band 4)
6 IMT - 2000

3 5
3 5 가 6
6

6
60% Congestion
Unpaired band 3 4

.
Paired band 15
MHz Unpaired band 5MHz

.
2

IMT - 2000
,

,
가 . , ,
.

IMT - 2000
IMT - 2000 가 Delphi Survey

. , - , - , ,
 , 2 .
 IMT - 2000 ,
 , ,
 .
 IMT - 2000
 .
 .
 ITU ,
 . ITU
 (In- building, - , -) 가 ,
 . ITU
 . In- building
 가 11 , - -
 15 19 .
 가 IMT - 2000 ,
 .
 2
 (10%) 2 가
 , ITU .
 1) 2
 2) IMT - 2000
 2 3) 가
 3
 IMT - 2000 .
 IMT - 2000
 .
 IMT - 2000
 2 () .

3 IMT - 2000

ITU-R M.1039
 12가 가 . 가 가
 (, , , ,
 가 ,) 가
 (, , Group size, QoS, ,
) 가 가
 가 .

1.

가.

TTA

1998 5

< 3- 1>

	가 (/km2)	
		ITU
In- buiding	156,311	140,000
-	110,050	100,000
-	4,950	3,000

(Cell Area)

ITU가

- In- buiding : 0.005 km2 (: 80m)
- - : 0.312 km2 (: 600m)
- - : 0.866 km2 (: 1 km)

(2010)

가

(99. 8. 4)

.

< 3- 2>

	(%)	
		ITU
	75	73
	39	40
	14	13
	17	15
	19	15
	22	25

(BHCA)

가 가

(99.

8. 4)

(:)

< 3- 3>

	In building		-		-	
		ITU		ITU		ITU
	2.53	3	0.94	0.8	0.66	0.4
	0.58	0.6	0.9	0.3	0.31	0.2
	0.22	0.2	0.21	0.2	0.12	0.02
	0.5	0.5	0.36	0.4	0.11	0.008
	0.27	0.15	0.11	0.06	0.06	0.008
	0.24	0.14	0.11	0.07	0.07	0.011

(Call Duration)

가 가

< 3- 4>

.

(Activity Factor)

.

.

,

ITU가

.

,

.

< 3- 4> (:)

	In building		-		-	
		ITU		ITU		ITU
	153	180	120	120	104	120
	3	3	3	3	3	3
	144	156	138	156	135	156
	2529	3000	2137	3000	2233	3000
	2603	3000	2165	3000	2227	3000
	161	120	142	120	156	120

< 3- 5>

	In building		-		-	
	0.5	0.5	0.5	0.5	0.5	0.5
	1	1	1	1	1	1
	1	1	1	1	1	1
	0.00285	0.015	0.00285	0.015	0.00285	0.015
	0.00285	0.015	0.00285	0.015	0.00285	0.015
	1	1	1	1	1	1

. Group Size

Group size

가

.

가

redirection

가

, ITU가

"Group Size

= 7"

.

. QoS function

QoS Blocking

1%

.

1/2

가

1%가

가

.

IMT - 2000

. ITU가

,

.

- Circuit traffic : Erlang B 1%
- Packet traffic : Erlang C 1%

. (Net System Capability)
 IMT - 2000 Capability ITU가
 . Capability
 Capability ITU가
 가 2 .
 - : 100 kbps/MHz/cell
 - : 150 kbps/MHz/cell

. (Service Channel Bit Rate)
 가 , ITU
 ITU
 < 3- 6> (: kbps)

	In building		-		-	
	16	16	16	16	16	16
	14	14	14	14	14	14
	64	64	64	64	64	64
	64	384	64	384	64	384
	128	2000	128	2000	128	2000
	128	128	128	128	128	128

. 가 (Alpha Factor)
 가 가
 가
 . ITU 1 가
 . TTA 5
 3 PC
 가
 TTA 0.938

. (Beta Factor)
 가
 가 , 가
 ,
 ITU
 .
 - 가 : 1.04
 -
 1.19 (3 가)
 1.38(6 가)
 1.07(2 가)
 - Modularity : 1.019
 가 가
 ITU
 가 가 , 가
 . 11) 가
 가 TTA
 ,
 < 3-7>

	3	4	5
ITU	1.44	1.63	1.75
TTA	1.32	1.49	1.66
()	1.34	1.37	1.50
()	1.39	1.49	1.56
()	1.21	1.26	1.35

2.

IMT - 2000

. TTA 98
 가 ,
 . 99
 ,
 1) , 2)
 , 3)
 3 . TTA
 가
 . 98 99 IMT - 2000
 가 .
 IMT - 2000

< 3- 8> IMT - 2000

		ITU	TTA	()	()	()
(MHz)	3	492	479	624	449	1208
	4	558	540	638	482	1259
	5	600	601	699	505	1353

()
 IMT - 2000 ITU 20% 가 가
 ,
 가
 가
 가 2005 가
 .
 ()

()

,

, , IMT - 2000

,

IMT - 2000

IMT - 2000

() 가 ,

4

1.

IMT - 2000 가 가 ,

.

가

IMT - 2000

2005

,

가

.

2

3

가

.

2

3

가

, 3

가

2

가 2005

90% 가

가

가

60% 가

가 . Unpaired
Band 가 가

가 Paired
band Paired band Unpaired band
가 < 3-9>, < 3-10>

< 3-9> Paired band

	Paired /	
1	2 x 20MHz	3
2	2 x 15MHz	4
3	2 x 10MHz	3
	2 x 15MHz	2
		5

< 3-10> Paired band Unpaired band

	Paired /	Unpaired /	
4	2 x 20MHz	10MHz	3
5	2 x 15MHz	5MHz	4
6	2 x 10MHz	5MHz	3
	2 x 15MHz	5MHz	2
			5

() .

2.

ITU IMT - 2000 170MHz .

가 . 가 120MHz

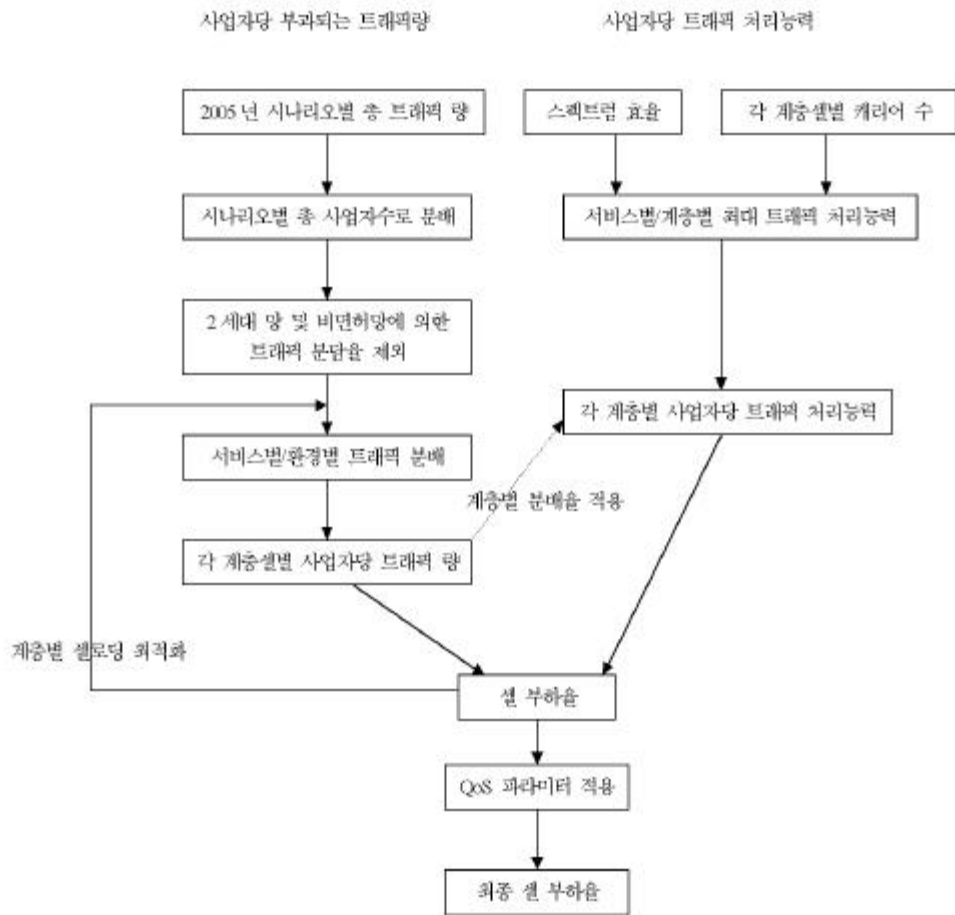
(FDD) 가 Paired band , 50MHz

(TDD) 가 Unpaired band .

Paired band

Paired band Unpaired band

.
.



< 3- 1>



< 3- 2> IMT - 2000

Paired band

< 3- 11> Paired band

1	3	77%	40%	79%	40%	61%	11%	
2	4	106%	54%	106%	54%	45%	8%	
3	5	-	-	88%	45%	35%	39%	
		106%	54%	106%	54%	45%	8%	

Paired band 1,2,3
3
가 가

Paired band Unpaired band

< 3- 12> Paired Unpaired band

4	3	51%	26%	55%	28%	35%	39%	
5	4	58%	30%	59%	30%	53%	59%	
6	5	73%	37%	73%	37%	37%	41%	
		56%	29%	57%	29%	51%	57%	

Unpaired band가 Unpaired
band
Paired band
6

가 가

, Unpaired band 3

1 가

가 2 3 가 가 . Paired

band 3 4 3 4

가 가 , 6

가 가 .

50 60%

가 가

60%

band 60% . Unpaired

1

80%

가 . 2 3

100%

. Unpaired band

6

70%

, IMT - 2000

가 , 4

1, 4, 5 6 2

가 3 2, 3 2

6 3 . 2

3 3

IMT - 2000

3

4

, Unpaired band

가

가

Unpaired band

가

Unpaired band

IMT - 2000

2 3

가

WARC- 92

IMT - 2000

Unpaired band

50MHz가

가

15MHz

DECT

PHS

, FDD

TDD

20MHz

Unpaired

가

가

IMT - 2000

230MHz

가

TDD

FDD

가

unpaired

TDD

LAN

, TDD

, Unpaired

TDD

Paired

band

15MHz

Unpaired band

5MHz

, Unpaired

가

.

4 IMT - 2000 가

2000 5 WRC- 2000 IMT - 2000 가
, 99 11 WRC (CPM)

1

ITU 1992 WARC- 92 IMT - 2000 230MHz
. 1992 가 가
가 IMT - 2000
.
WRC- 97 WRC IMT - 2000
가 .
ITU- R TG8/1
, 2010 가
가 가 160MHz
134MHz가 .
가
IMT - 2000 가
WRC- 2000 .
(APT, CEPT, CITE L) (,
, ,) ,
IMT - 2000 가 2000. 5 WRC- 2000
.
가
 ,
, IMT - 2000 WARC- 92

(Initial band), WRC- 2000가

(Additional global band), (Regional/subregional band)가

.

2가

1. ITU (CPM)

가. IMT - 2000 가

< 4- 1> IMT - 2000 가

(MHz)	CPM
	가
470- 806	- , (698 746 MHz 746 764/776 794MHz) 10 15
	- 10MHz × 2
806- 960	- IMT - 2000가가 ,
	- (, IMT - 2000)가
	- CPM IMT - 2000가 ,
	IMT - 2000가
	- IMT - 2000가

(MHz)	CPM	
	가	
1429- 1501	-	2 (PDC)가 가 DAB 가 IMT - 2000
	-	IMT - 2000 가
	-	PDC IMT - 2000 IMT - 2000 (WRC- 2000)
	-	
1710- 1885	-	IMT - 2000 가 DCS- 1800 IMT - 2000 가 , 가 , IMT - 2000 가
	-	PCS IMT - 2000 가 PCS 가
2290- 2300	-	가
	-	가 IMT - 2000
	-	가 , 가 가
	-	IMT - 2000
2300- 2400	-	가 가 ,
	-	가 가
2520- 2670	-	가 가 가 가 FWA, DAB, 가 , IMT - 2000 가 ITU - R WP8F DAB IMT - 2000 가 가 , CPM 2535 2640MHz 95MHz 가 ENG/OB 가 ,
	-	가 가 IMT - 2000
2290- 2300	-	가 가 IMT - 2000
	-	가 , 가 가

(MHz)	CPM	
	가	
2300- 2400	-	IMT - 2000
	-	가 ,
2520- 2670	-	가 가 가
	-	, 가 FWA, DAB,
	-	가 ,
	-	IMT - 2000
	-	가
	-	ITU-R WP8F
2700- 2900	-	DAB IMT - 2000 가
	-	, CPM 2535 2640MHz 95MHz
	-	가
	-	ENG/OB 가
2900- 3400	-	가 IMT - 2000
	-	IMT - 2000
	-	가 가
2300- 2400	-	가
	-	IMT - 2000
	-	, 3GHz
	-	, IMT - 2000

2.

CEPT () 가 160MHz가 ,
 $2 \times 121\text{MHz}$ 가 .

CEPT 가 , 2520
 2670MHz 가 (Global) . 가
 2.7 2.9GHz . 2 Refarming

. IMT - 2000 HAPS 가

CITEL() '99.12
 ABU(Asia-Pacific Broadcasting Union)
 2003 Study Group IMT- 2000
 가 407 806, 806 960, 1429 1501, 252
 0 2670MHz 2500- 2520/2670- 2690MHz Study
 Group
 ICAO(International Civil Aviation Organization) 2700 3400MHz
 IMT- 2000 가
 WARC- 92 IMT- 2000
 IMT- 2000 ITU
 PCS
 IMT- 2000 , 가
 ITU
 (TG8/1, CPM) 1710 1755/1850 1885MHz Global band
 , 1755 1850
 MHz Regional band
 2520 2670MHz Regional
 2700 2900MHz 2900 3100MHz , /
 IMT- 2000
 IMT- 2000 가
 RR S5.388 IMT- 2000
 IMT- 2000 /
 , WRC- 2000
 가 S5.388

(WARC- 92) 가 212
(Resolution) (Recommendation)

·

·

IMT - 2000 가 3GHz

가 3GHz

가 CPM 2535

2630MHz IMT - 2000

1429 1501MHz

, 470 960MHz TV

· 2520 2670MHz

· Global

·

IMT - 2000

3GHz 3260 3300/3400 3460MHz

IMT - 2000

·

806 906/1710 1885/3000 3400MHz IMT - 2000

·

407 960/1429 1501/2520 2670MHz BS/BSS

, IMT - 2000

·

PCS 가 IMT - 2000

, 1710 1885MHz IMT - 2000

·

1850 1885MHz PCS

·

3.

IMT - 2000 가 2000 5

가

IMT - 2000 가

가

ITU 가
 가
 가 ,
 APT WRC- 2000 CPM
 ITU 160MHz 가
 가 WRC- 2000
 5 10 가 , CPM
 가 , 가
 Refarming IMT - 2000
 가
 800MHz , , 가
 , 가 Global band Regional
 band IMT - 2000
 IMT - 2000 가
 IMT - 2000
 PCS (1.7/1.8GHz)
 DCS - 1800 ,
 IMT - 2000 가
 , , , IMT - 2000 가
 Global ,
 2520 2670MHz
 , 2535

2630MHz 가

Global

.

WARC- 92

DAB

DAB 1

, CATV

가

IMT - 2000 가

. ITU- R WP8F

CATV

,

IMT - 2000 가

가

가

.

5 가

IMT - 2000 CDMA , IMT - 2000
PCS 1.25MHz
5MHz 가 가 가
.
가 .
, , ,
,
.
가 ,
.
가, IMT - 2000 < 3- 2>
IMT - 2000 IMT - 2000
2001 IMT - 2000
.
ITU- R PDNR(Preliminary Draft New Recommendation)
IMT .UNWANTED 가
, PCS 가
IMT - 2000
가 .
IMT - 2000
가
ITU,
, IMT - 2000
.

1

1. ITU

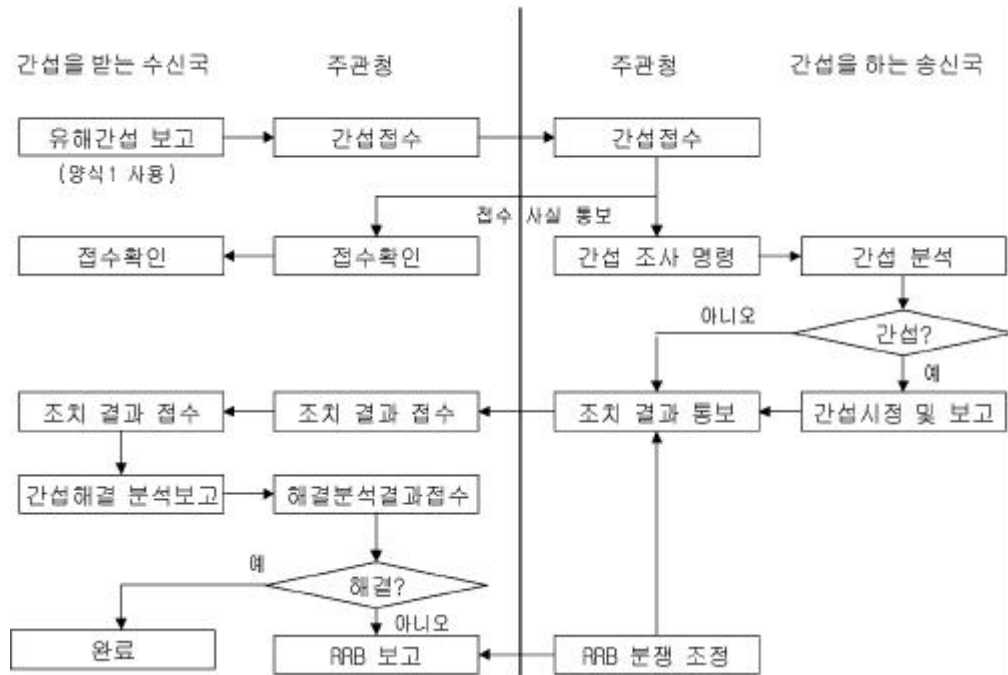
ITU (RR : Radio Regulation)
가 , S3
, S4

.
S3 S4.2 가
(Table of Frequency Allocation)
, S4.5

.
S8.5
, S4

S15
. ,
. ,
,

.
< 5- 1> .
ITU ITU- R SM.1049- 1
(border area)



< 5- 1>

(coordination zone)

(allotted frequencies), (shared frequencies),

(coordinated frequencies),

,

.

.

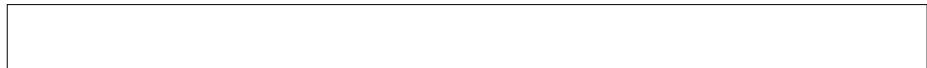
-
-
-
-
-
-
-
-

, ,

(Vienna Agreement)

.

14 가 , , 29.7MHz 960MHz , 1350MHz 2690MHz . (preferential frequencies), , .



, 45 /120 /180 가 .

2.

FCC(Federal Communications Commission :) NTIA(National Telecommunications and Information Administration) , NSMA (National Spectrum Managers Association)

. FCC NTIA

, . CFR(Code of Federal Regulations) 47 . NTIA FCC

NTIA

MA , PCS, ,

FCC

가

가

< 5-2>

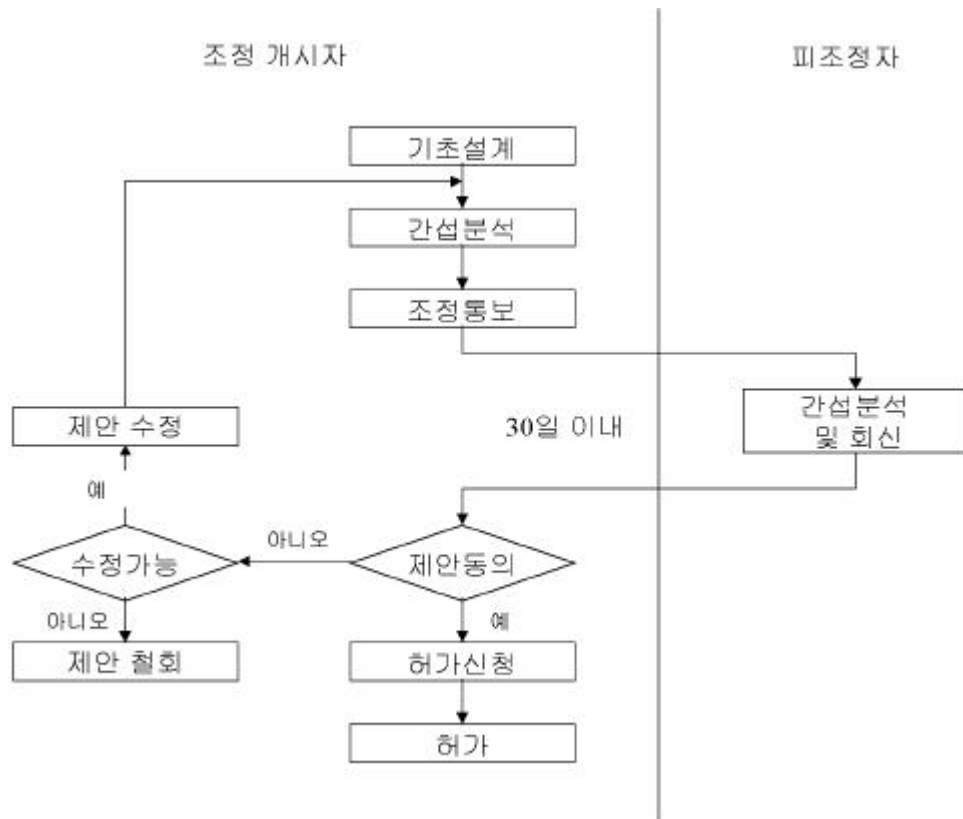
:

FCC

가

FCC

NSMA



< 5- 2>

3. CEPT/ERC

CEPT T/R 20- 08E(GSM
) , T/R 25- 08(29.7 960MHz
)

. T/R 20- 08E

.
, 가가
가 15km ,
3m 가 19 dBV/m

가

, T/R 25- 08

○ (MHz)

○

○

○

○

○

○

azimuth

○

○

○

○

CEPT T/R 25- 08 29.7 960MHz

가

(preferential frequency),
 (frequency requiring coordination),
 (freq. used on the basis of geographical network plan),
 (frequency for planned radiocommunication networks),
 (shared frequency) . < 5- 1>
 10m
 (location) 50%, 10%
 .
 < 5- 1>

(MHz)	(V/m)
29.7- 47	0dB
47- 108	6dB
108- 380	12dB
380- 400	18dB
400- 606	20dB
606- 960	26dB

2

가

가

/

(IMT - 2000)

가

1) :

☐ ☐ ☐ ☐ ☐ ☐ ☐

2) :

[illegible]

가

가

가

IMT - 2000

3

1.

가

, DS- CDMA

DS- CDMA

IS- 95

PCS

IMT - 2000

가

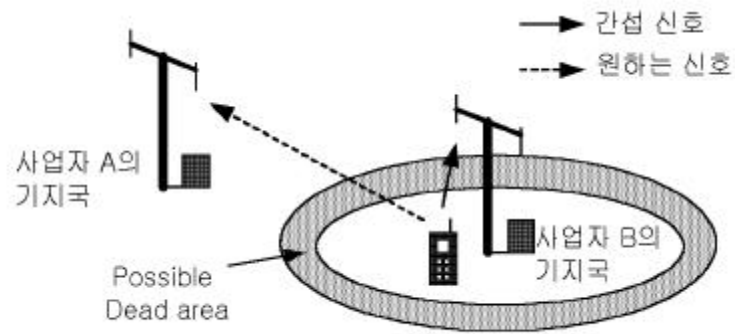
< 5- 3>

가

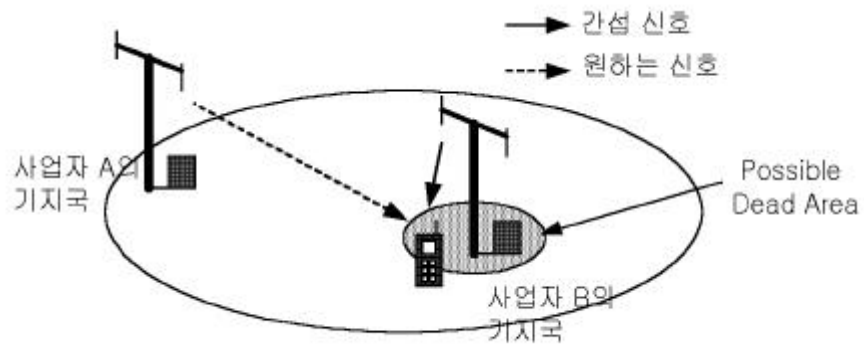
가 , 가 ,
가 가 가 .
A
가 B 가
B 가
B .
A
가 B 가 ,
A
B 가 B 가
A .
가 ,
가
가 .

. < 5- 4>
f .

D < 5- 5>



(a)

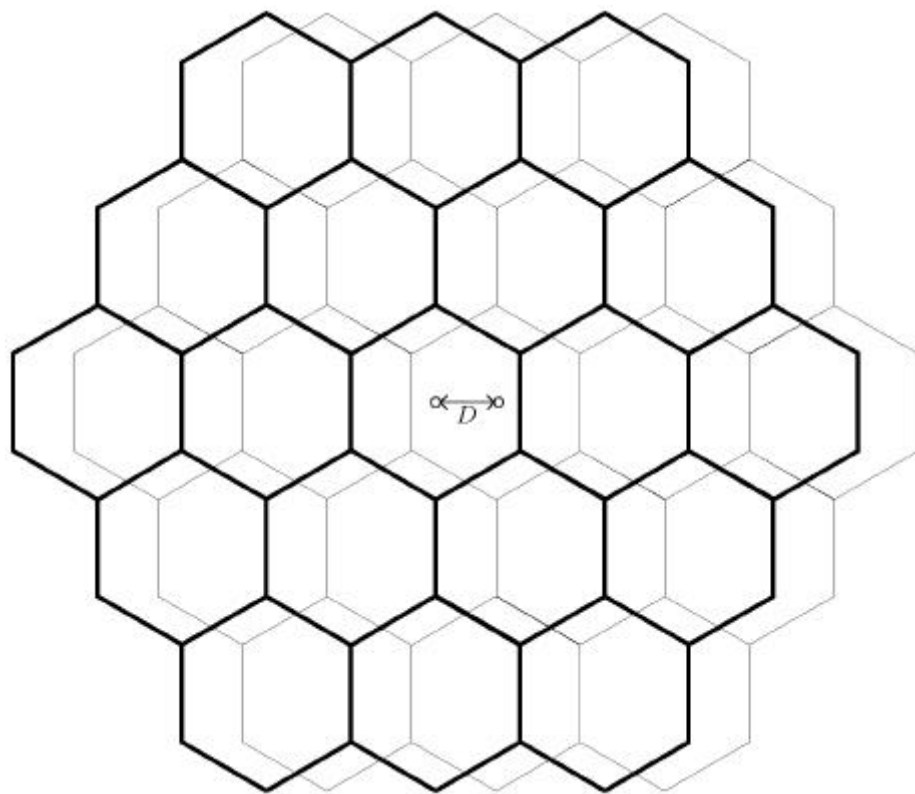


(b)

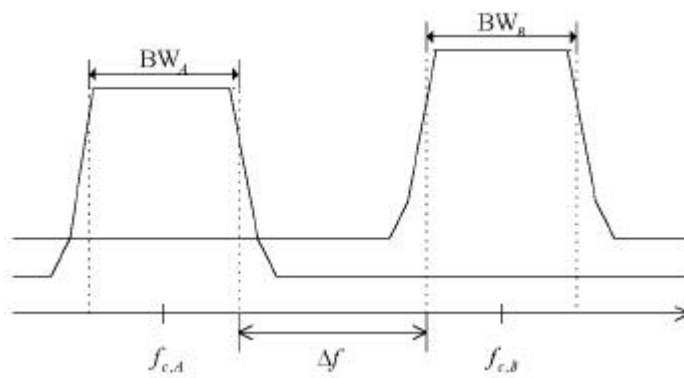
< 5-3>

2.

(intermodulation) , (out-of-band emission) , (receiver blocking), . , . , .



< 5-4>



< 5-5>

DS-CDMA

가 , 가

가 .

가

.

,

,

.

.

Monte- Carlo

. Monte- Carlo

,

.

,

가

.

Monte- Carlo

,

가

.

가

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가

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가

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C/I

C/I

가

.

3. Monte Carlo

가.

DS- CDMA

, SINR (1)

$$SINR = \frac{S}{I_N + I_{SC} + I_{OC} + I_{OF}} \tag{1}$$

S IN

, ISC, IOC, IOF, ,

DS- CDMA

Walsh

$$\begin{matrix} \text{SO,R} \\ \text{SO,l} \end{matrix}, 1 \tag{2}$$

1

$$\beta_l = \frac{S_{O,l}}{S_{O,R}}, \alpha = \frac{S}{S_{O,R}} \tag{2}$$

, 1 1 ,

$$1 \text{ SO,R} \tag{3}$$

$$I_{SCJ} = \sum_{k \neq l} S_{O,k} = S_{O,R} \sum_{k \neq l} \beta_k = S_{O,R} (1 - \beta_l) \tag{3}$$

. i Si,T , j

$$\tag{4}$$

$$I_{OC,J} = \sum L_{j,i} S_{i,T} \tag{4}$$

, Lj,i j i

i Si,T

$$, j \tag{5}$$

$$I_{OF,j} = \rho_F \sum L_{j,i} S_{i,T} \tag{5}$$

$$, \rho_F .L_{j,i} \quad j \quad i$$

,

.

$$\begin{matrix} N & & \text{가} & & , & & \text{가} \\ \text{가} & & , & & \end{matrix} \tag{6}$$

.

$$I_{SC} = \nu(N-1)S \tag{6}$$

$$, \nu , S$$

.

$$\tag{7}$$

$$I_{OC} = \left(\frac{1}{F_e} - 1 \right) \nu NS \tag{7}$$

$$, Fe \quad CDMA$$

$$\tag{6} \tag{7} \tag{8}$$

.

$$I_{OF} = \rho_R \left(\nu' N' S' + \left(\frac{1}{F_e'} - 1 \right) \nu' N' S' \right) = \rho_R \frac{\nu' N' S'}{F_e'} \tag{8}$$

$$, \nu', N', S', F_e' \quad \rho_R$$

,

,

$$, \quad CDMA , ,$$

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$$\tag{5-6} \quad \text{Monte- Carlo}$$

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$$RF ,$$

$$SINR, , , ,$$

$$, , , ,$$

.

tier

DS- CDMA

2 tier

가

가

가

가

가

가

가

SINR

SINR

SINR

SINR

SINR

4. 가

가 ,

가

가



< 5- 6>

, LACI , LACI

가

(9)

$$L_{ACI} = \frac{N_{max,SO} - N_{max,MO}}{N_{max,SO}} \tag{9}$$

(9) Nmax,SO 가 95% , Nmax,MO 가 95%

LBW 가 (10)

$$L_{BW} = \frac{\Delta f}{BW} \tag{10}$$

, BW , f .
 1.25MHz ,
 1.25MHz 0MHz가 LBW 0% 가 .
 0.1MHz LBW 8% 가 .
 LT LACI LBW (11)

$$L_T = 1 - (1 - L_{ACI})(1 - L_{BW}) \tag{11}$$

6

‘99 IMT - 2000 .

IMT - 2000 ,

IMT - 2000 , IMT - 2000

가 , IMT - 2000

가 .

2005 2010 IMT - 2000 ,

IMT - 2000 가

ITU, , ‘98

TTA .

. Paired band Unpaired band, , 6

, .

Paired band 15MHz Unpaired band 5MHz . Unpaired band

가

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IMT - 2000 가 (470- 806, 806- 960, 1429,1501, 1710- 1885, 2290- 2300, 2300- 2400, 2520- 2670, 2700- 2900, 2900- 3400MHz) ITU, 가

.

IMT - 2000 가

WRC- 2000 , 가

.

IMT - 2000 가

IMT - 2000

가

, ITU ,

,
 ,
 , ITU-R
 (ITU-R PDNR IMT.UNWANTED) IMT-2000 unwanted
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