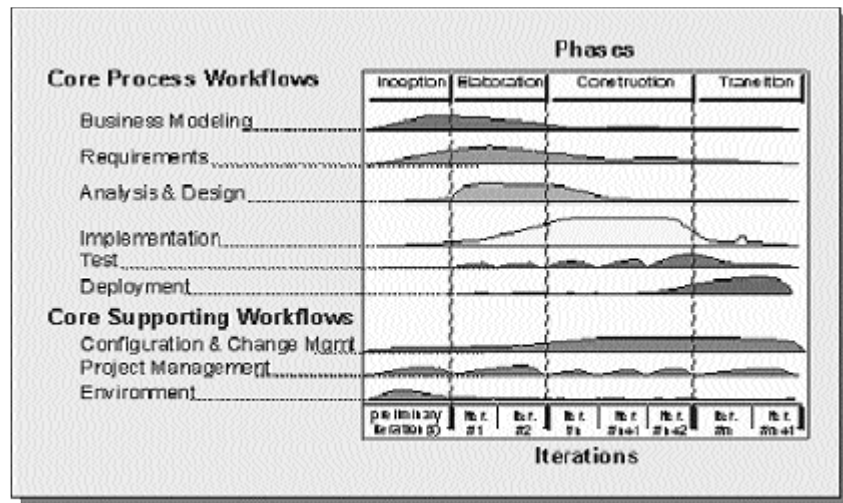


< 5-5-1-02 > Rational Unified Process



. Rational Unified Process

(1) RUP Waterfall

가
가 3.

Rational RUP (Inception, Elaboration, Construction, Transition) (Iteration)

가

(2) Rational Unified Process RUP 9 (Work flows)가 9 6

가

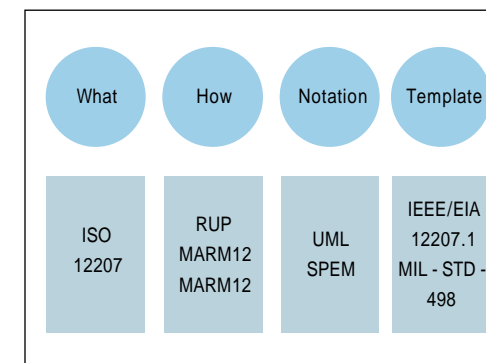
가

가

ISO/IEC

12207, MIL - STD - 498, RUP, MaRMI II, MaRMI III

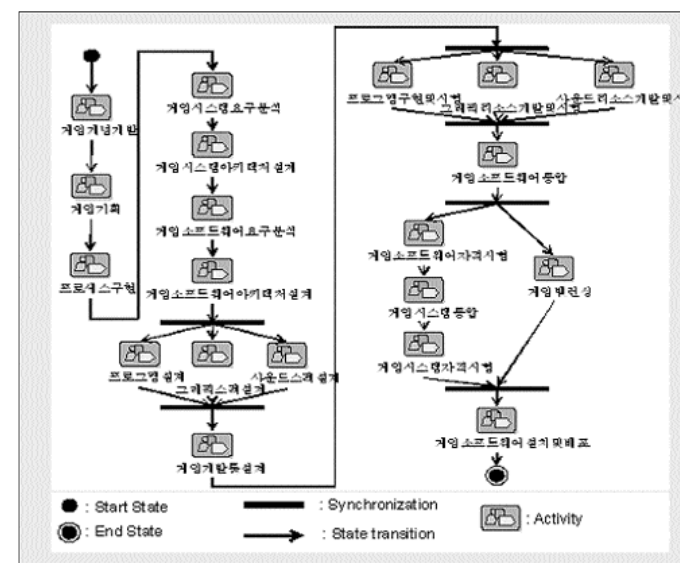
< 5-5-1-03 >

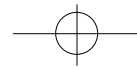


4.

가.

< 5-5-1-04 >





5

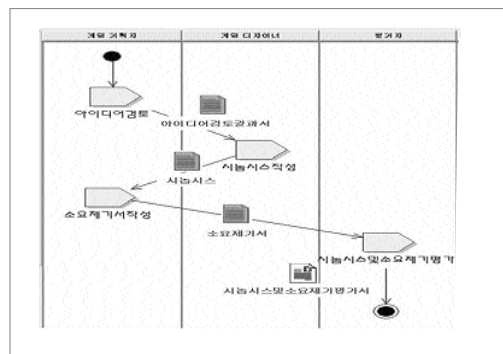
20 89

()

(1)

(가)

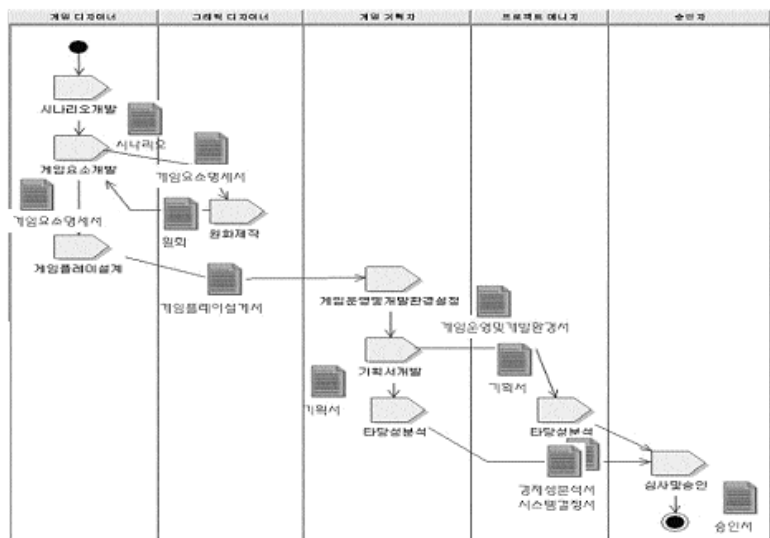
< 5-5-1-05 >



()

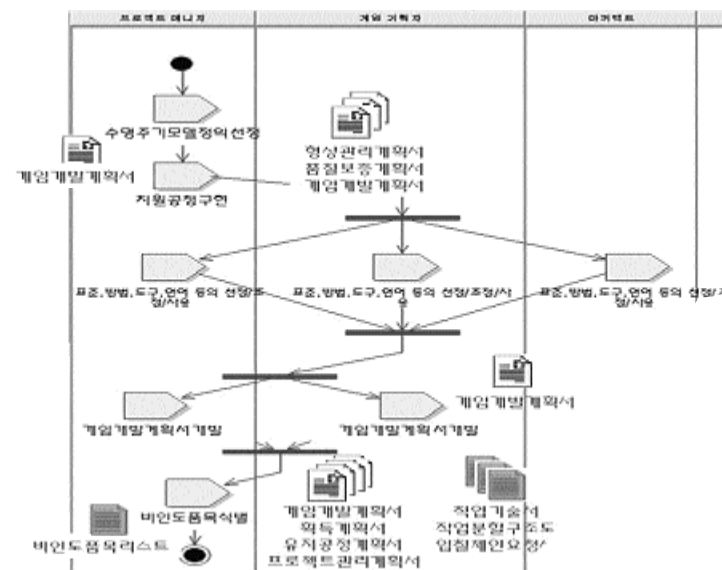
()

< 5-5-1-06 >

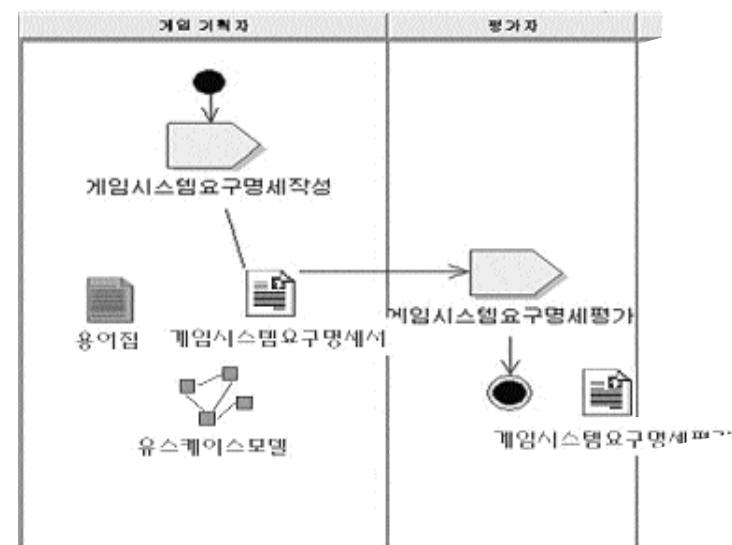


가

< 5-5-1-07 >



< 5-5-1-08 >

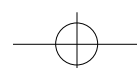


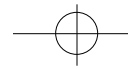
()

가

가

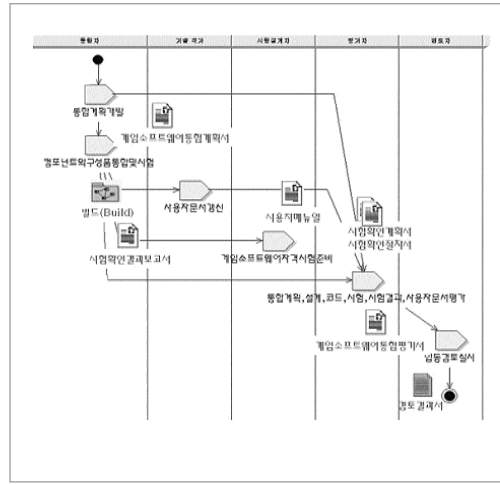
5



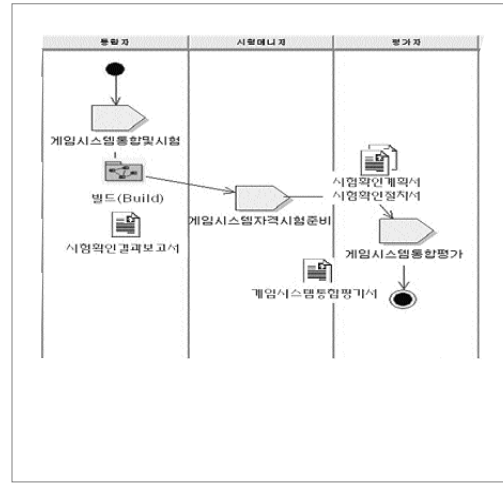


5

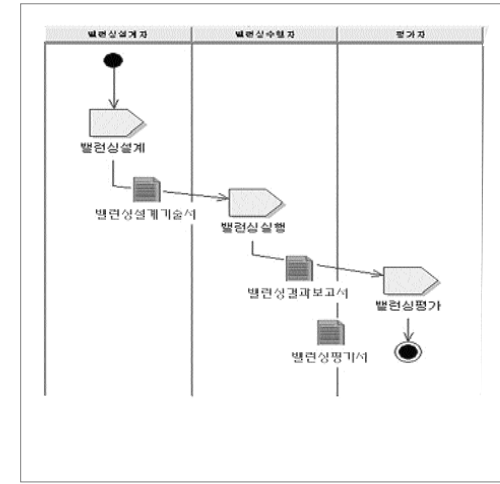
< 5-5-1-19 >



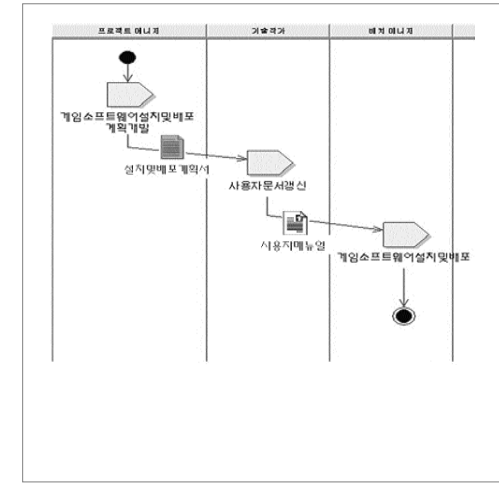
< 5-5-1-21 >



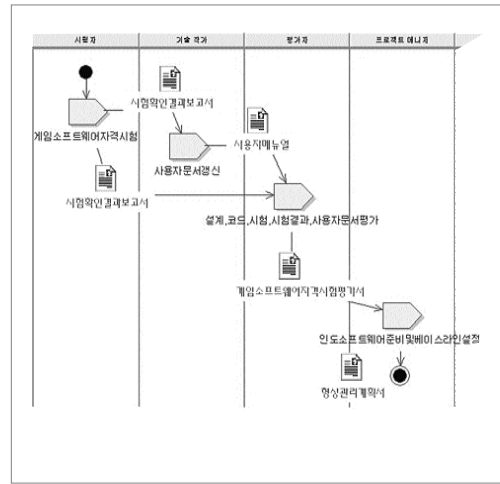
< 5-5-1-23 >



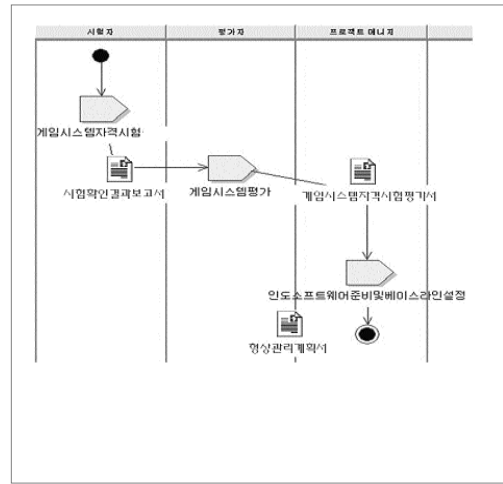
< 5-5-1-24 >



< 5-5-1-20 >



< 5-5-1-22 >



(2)

() 가 , 50

6 , 가

가

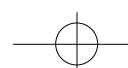
()

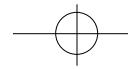
ISO/IEC 12207, MIL -STD -498, MaRMI II, MaRMI III 가



()

()



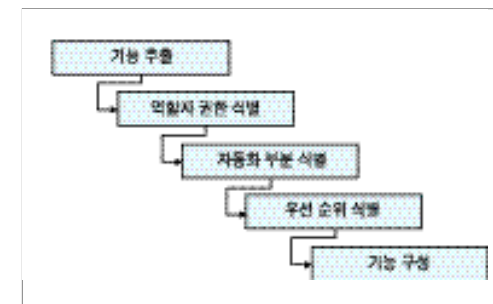


5

() 가
 (GDSS, Game Develop-ment Support System) CASE Tool
 가 GDSS
 가
 가
 1. GDSS
 GDSS CASE Tool
 () GUI
 GDSS 가
 (가) GDSS
 GDSS GUI(Graphic User Interface)
 GDL(Game Design Language)
 가 가

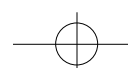
()
 가
 . GDSS 가
 2. GDSS
 ISO/IEC-12207
 RUP(Rational Unified Process)
 GDSS
 5
 GDSS
 GDSS
 50
 가
 GDSS
 Excel 가
 ()
 (가)

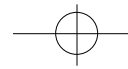
< 5-5-2-02 > GDSS



GDSS
 GDSS
 가

5





5

()
GDSS 가

8
8

가
가
가
가
DSS Admin

Tod

()

< 5-5-2-01>

	가
DB	
	가

GDSS

< 5-5-2-02> GDSS

	01	02	03	04	05	06	07	08
GP00								
GD00	가							
RD00								
GS00	가	가						
AR00								
PR00			AI					
MA00								
SU00		QA						

가1:1

< 5-5-2-03> GDSS

권한분류	게임 디자이너	스토리 작가	게임 음소 제작자	게임 플레이 제작자	게임 스크립트 제작자	게임 레벨 디자이너
김병현	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
김동환	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
김용식	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
이승훈	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
박찬호	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
서희	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

()

< 5-5-2-04> GDSS



5

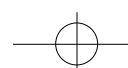
()
GDSS

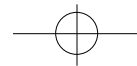
3. GDSS

GDSS GMT(Game Management Tool), GDT(Game Development Tool), GTT(Game Test Tool) 3 가

GDSS GMT(Game Management Tool) GDT(Game Development Tool), GTT(Game Test Tool) 3 가

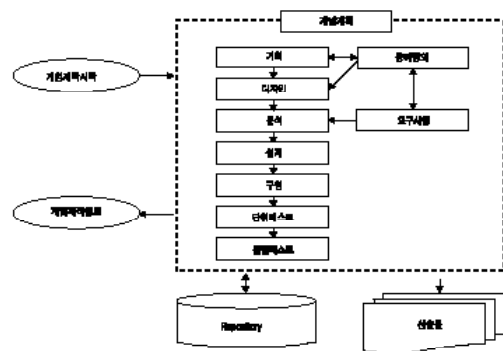
(가) GMT(Game Management Tool) GMT





5

< 5-5-2-06> GDSS



UML
OOAD(Object Oriented
Analysis and Design)
Modeling Tool Visual
GDL

. GDL
GDL

가

GUI

GDL

GDSS

가

. GDL
GDL

Repository

, Repository
GDSS

4. GDL

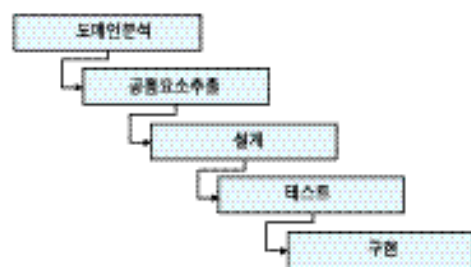
가. GDL

GDL(Game Design Language) GDSS

GDL

가 GUI Visual

< 5-5-2-07>GDL



UML

GDSS

< 5-5-2-06>

모		
가		
가		
가		
가		
가		
가		
가		
가		

GDL

(1)
GDL

가
GDL

()

3가

. GDL

3가

가

가

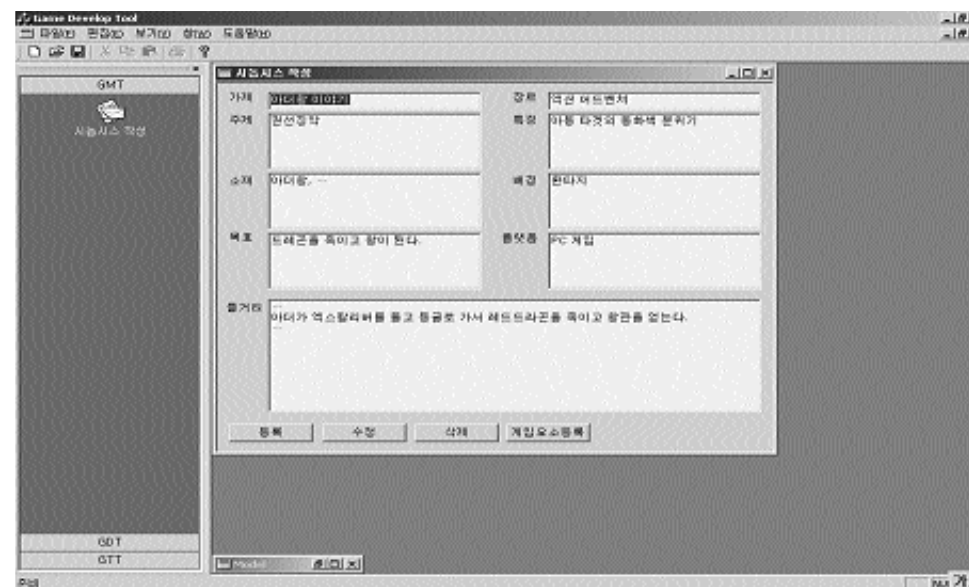
가

(2)

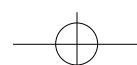
GDL

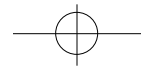
가

< 5-5-2-08>



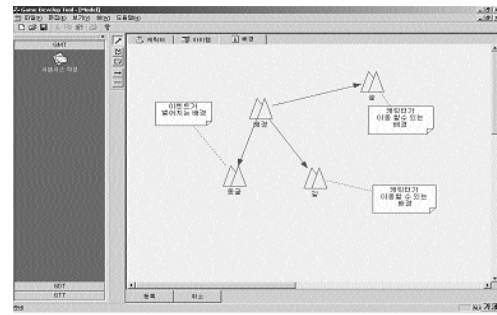
5



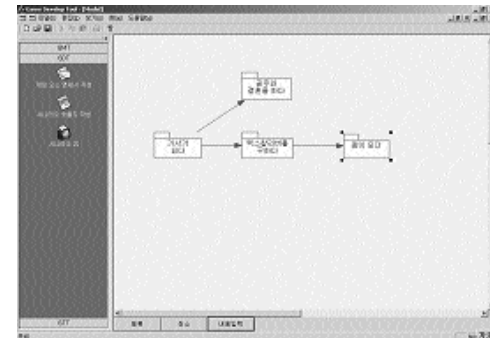


5

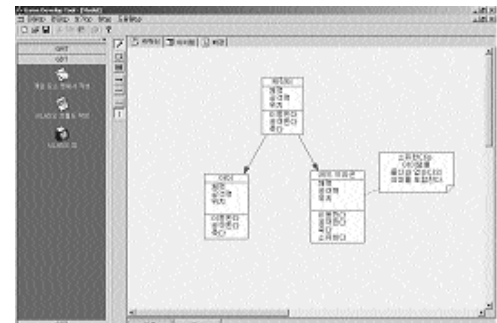
< 5-5-2-09> ()



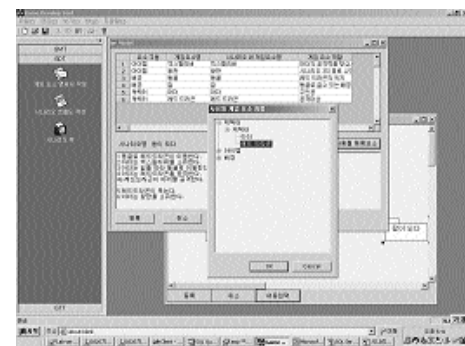
< 5-5-2-12>



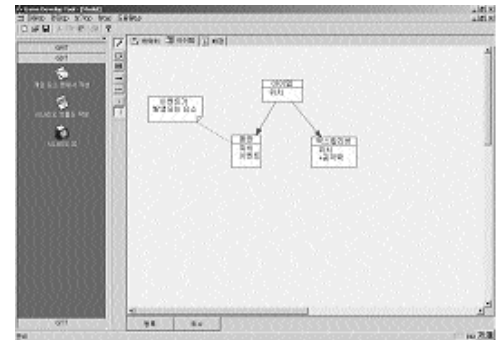
< 5-5-2-10> ()



< 5-5-2-13>

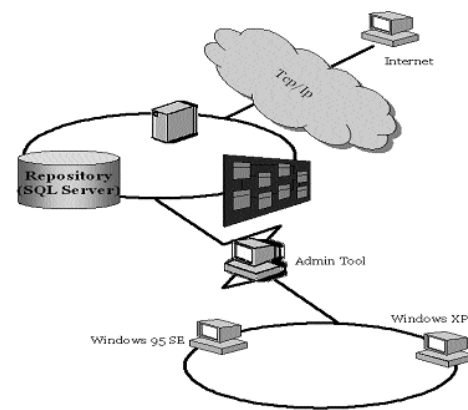


< 5-5-2-11> ()



가

< 5-5-2-14> GDSS



가

가

가

5. GDSS

GDSS /
Repository
SQL Server

Admin Tool

가 , GDSS

3

3D

가

(, , , , ,)
가 3D

(Natural Environment)

(Multiple Views)

가 3D

가 3D
" 3D

(: Air, Land, Sea, Space)

(: 2-D, 3-D, Map, Sonar)

가 3D ,
가

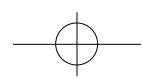
(Heterogeneous Systems)

1.

" SEDRIS(Synthetic Environment Data Representation & Interchange Specification)"

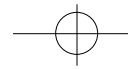
()

SEDRIS



5

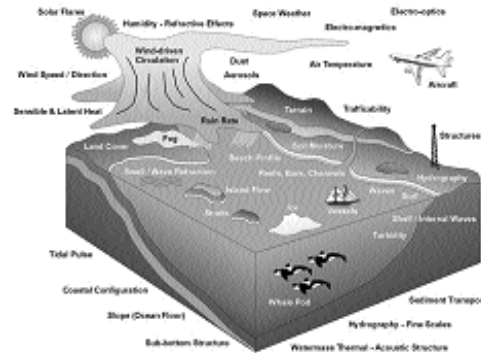




5

< 5-5-3-01> 가

API

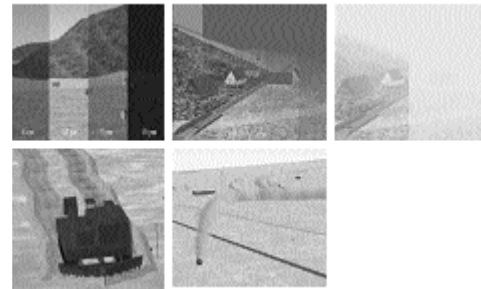


2. SEDRIS

< 5-5-3-01> SEDRIS

	(, , , ,) 3D (, , ,) UML
	가
	가 , , , ,
API	, , , ,
	“ STF Software ”
	“ API ” 2

< 5-5-3-02>



SEDRIS (DRM),
가 (EDCS), (SRM),
API, (STF) 5
() SEDRIS
SEDRIS

< 5-5-3-02> SEDRIS

Geometry	3D Polygons, Patches, Lines, Points
Features Type Objects	Areal, Linear, Point Features
Topology	, , , ,
Attributes	, , , , ,
Relationships	, , , ,
Organizational Schemes	

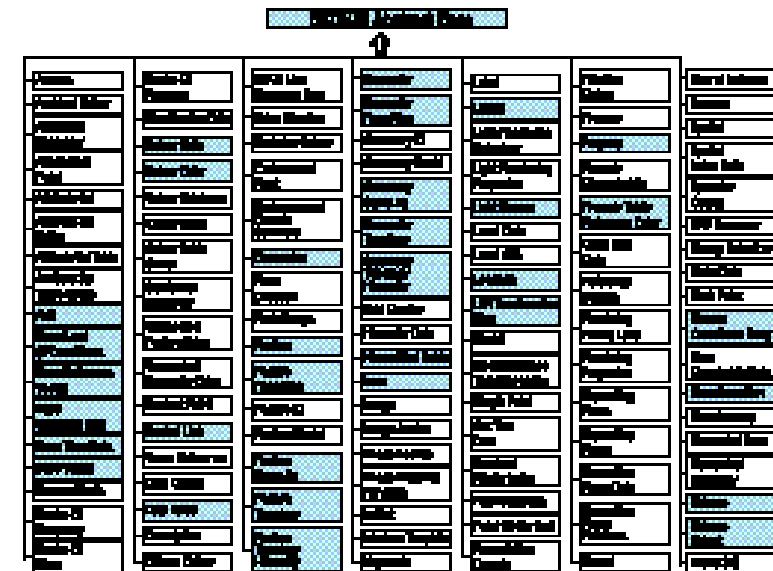
< 5-5-3-03> 24

1	Transmittal & Environment Roots	2	Model
3	Geometry	4	Aggregate Geometry
5	Primitive Geometry	6	Data Table
7	Geometry Model Instance	8	Feature & Aggregates
9	Base Data Classes	10	Libraries / Label
11	Topology Hierarchy	12	Feature Topology
13	Geometry Topology	14	Color Tables
15	Location	16	Expressions
17	Control Links	18	Hierarchical Tables
19	Attribute Sets	20	Time & Metadata
21	Light	22	Image & Sound
23	Volumes	24	Universal Superclass

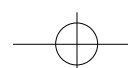
< 5-5-3-04> 4가

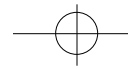
(Classifications)	, , , , ,	Language)	327
(Attributes)	가가 (, ,)	SEDRIS	
(Enumerants)	가 가	가 ,	24
(Units of Measure)	() , , ,	24	
	3D	가가	4 가
	UML(Unified Modeling		

< 5-5-3-03> UML



5





< 5-5-3-04>

Category	EC	EA	EE	EJ	EB	EQ	ED	ER
Label	X	X	X	X	X	X	X	X
Definition	X	X	X	X	X	X	X	X
Related Concepts	X	X	X					
Code	X	X	X	X	X	X	X	X
EA Label			X					
Symbol				X	X			
Value Type		X						
Unitid		EU Label		EU Label		EU Label		
Operational Schema								X
Group	EQ Label	ER Label						
Reference Type	X	X	X				X	X
Reference	X	X	X	X			X	X

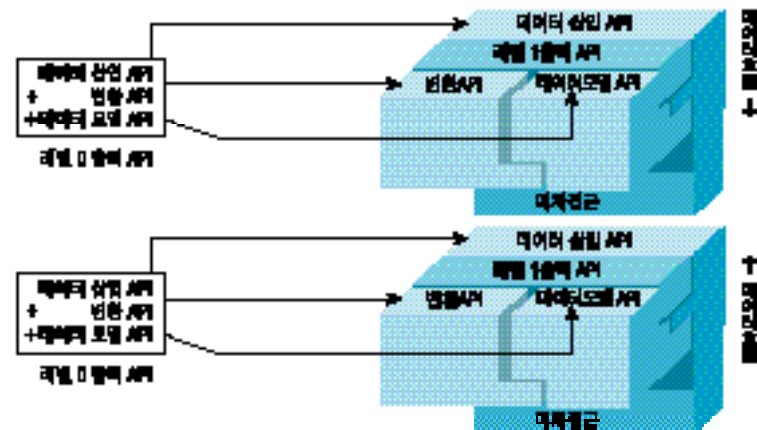
* All EUs Meritarily referenced with EDC 31: see separate table
 ** All EUs Meritarily referenced by labels in EDC 31 or EDC 30/32/37: see separate table

47가 . Software ”
 9 “ API ” 2
 가 가
 API 1023 327

(DRM) :

“ STF 338 , 101

< 5-5-3-05> API



(EDCS) :

166 , 61 ,
 (SRM) : 가가
 231 , 94
 API :
 Level 0 -254 , 70 . 3D
 Level 1 - 34 , 1 (STF)

3. 3D

, STF 3D
 STF

가 , () API

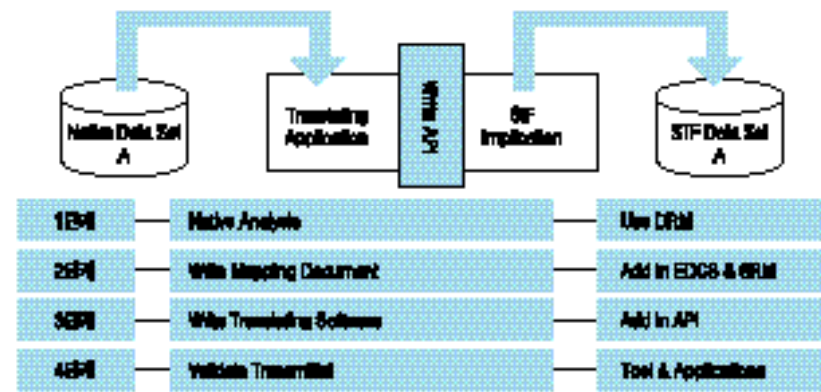
가 ()

가 , 3D 3D

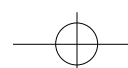
SEDRIS

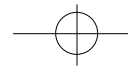
3D

< 5-5-3-06> 3D STF

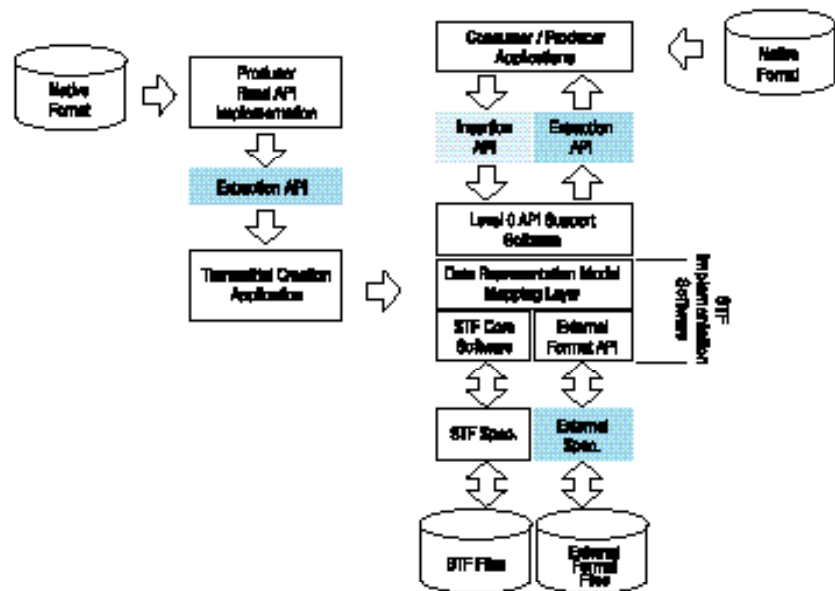


DRM—Data Representation Model; EDCS—Environmental Data Coding Specification; SRM—Social Representation Model





< 5-5-3-07> 3D

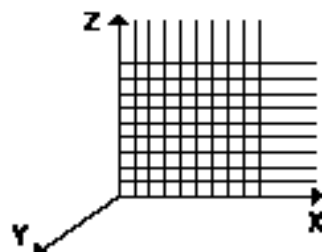


4. 3D Studio Max

3D Studio Max LSR
 SEDRIS
 3D Studio Max
 LSR
 3D Studio Max 가
 (unt) LSR
 3D Studio Max
 Polygon MASTER_SCALE (scale
 factor)
 Mesh Materials SEDRIS

< 5-5-3-08> LSR

가.
 3D Studio Max
 LSR(Local Space Rectangular)
 가 . Y
 , Z LSR
 가 LSR



3D Studio Max
 "World" "Object"
 가 . Looking
 Glass Studio Thief : The Dark
 Project level "Lord Bafford
 Manor"

3D Studio Max
 , "World"

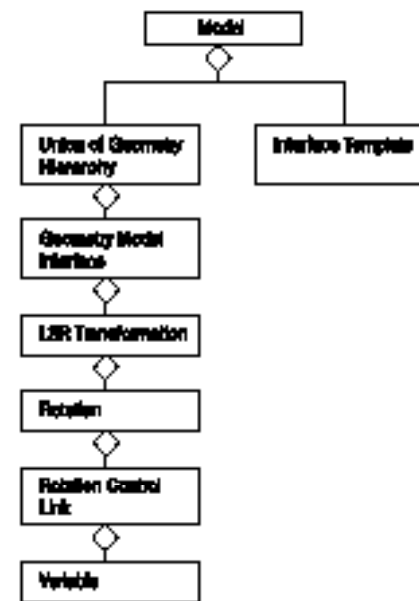
3D Studio Max "3D Scene"
 가 SEDRIS
 (DRM)
 <Environment Root> "World"

<Model>
 .
 <Model> <Geometry Model Instance>
 (

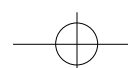
<Environment Root>
 .
 <Model>

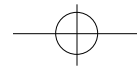
<Model>
 ,
 <Geometry Model Instance>
 . Looking
 <Rotation>
 . <Variable>
 <Model>
 <Rotation>

< 5-5-3-09> <Model>



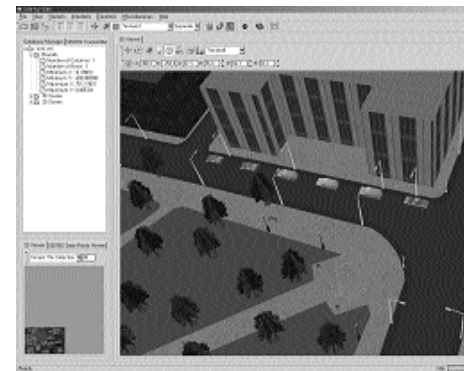
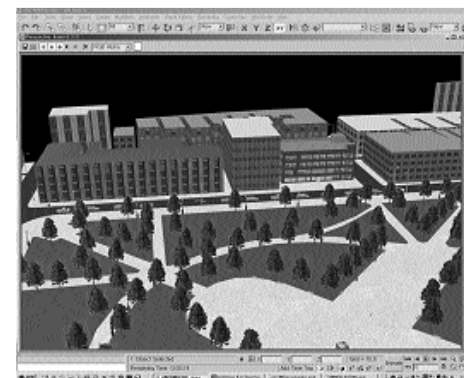
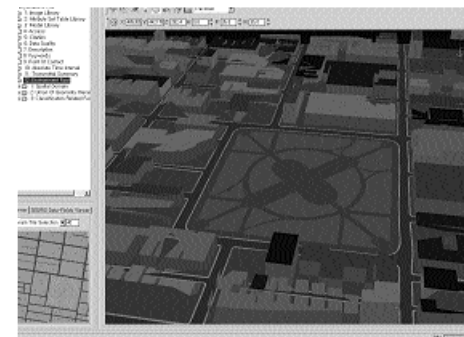
3D Studio Max Polygonal
 Surfaces, Patch Surfaces NURBS
 Surfaces
 Polygonal Mesh
 3D Studio Max 4
 Polygonal Mesh Mesh





3D Studio Max Mesh Surface 3D Studio Max
 SEDRIS (DRM) <Polygon> "Material"
 .<Polygon> 3 3D Studio Max
 Polygon 3D Material SEDRIS EDCS
 Studio Max 3D Studio Max Surface Material
 Surface (DRM) <Attribute
 3D Studio Max Mesh Face 1 3 Set>
 <Vertex With Component Indices>
 <Polygon>
 <Vertex With Component
 Indices> location_index
 texture_coordinate_index
 3D Scene Mesh 3D
 Named Object
 Mesh
 3D Studio Max Mesh
 Mesh
 Mesh
 Mesh
 Mesh SEDRIS
 Mesh 3D Studio Max
 Mesh 3D Studio Max
 Mesh SEDRIS
 <Union Of Primitive Geometry>
 Mesh Mesh Face SEDRIS
 <Union Of Primitive Geometry>
 <Polygon With Component Indices> SEDRIS <Image Library>
 <Location Table> <Image>
 Material <Image Mapping Function>
 <Texture Coordinate Table> <Image>
 . Materials 3D Studio Max Face

< 5-5-3-10> 가



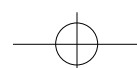
. 가

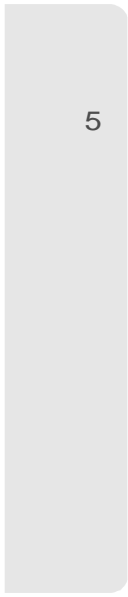
SEDRIS
SEDRIS
ISO/IEC JTC1/SC24

가

가
가

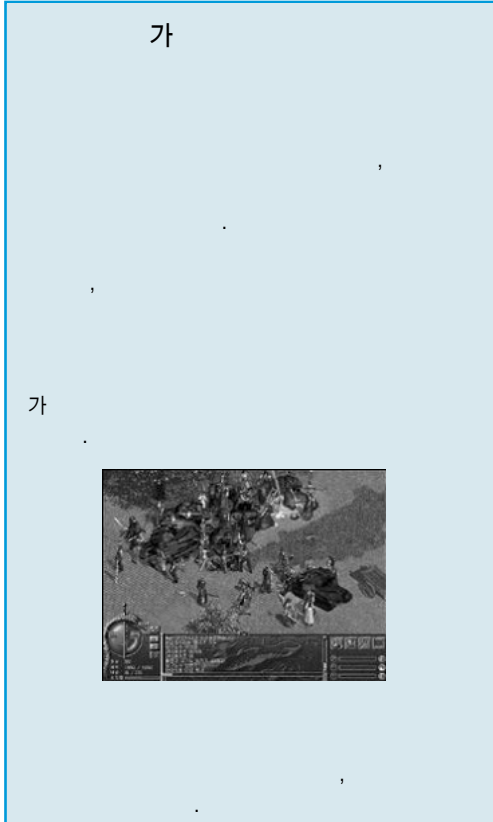
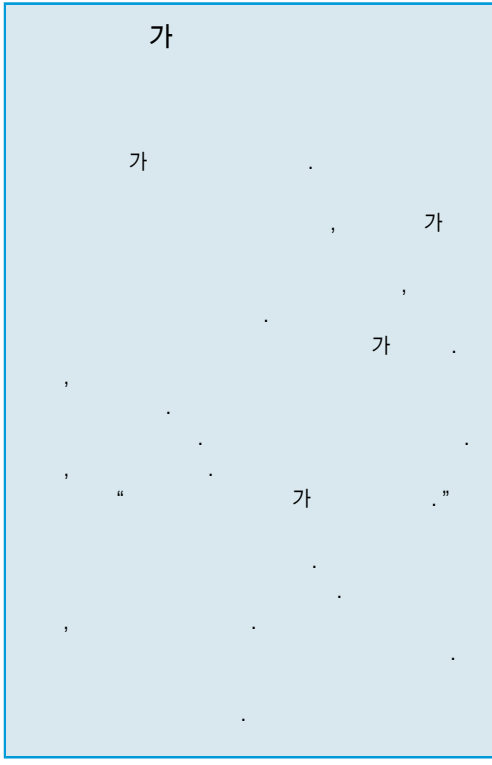
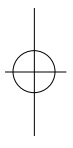
SEDRIS



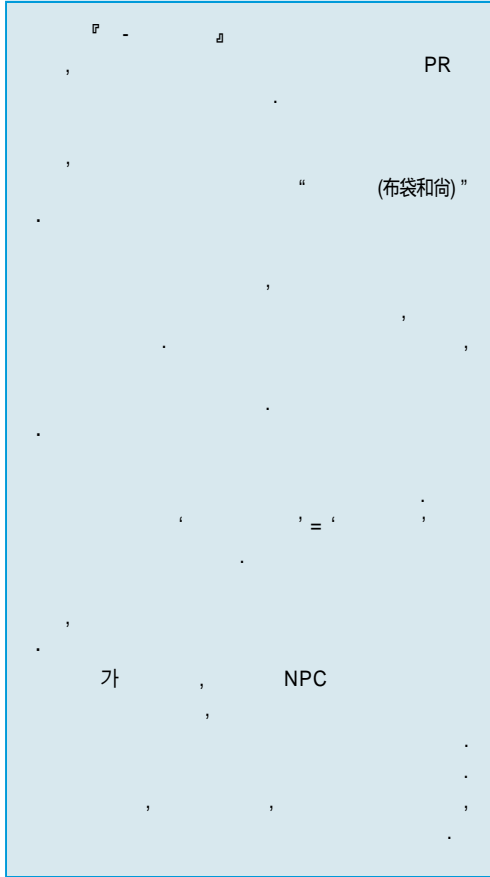


5

가 , 가 ‘ ’ ‘가
 , , .
 가 . +
 A 1:1 .
 , 가 ,
 , 가
 가
 ‘ ’ 가
 ‘ ’
 . A

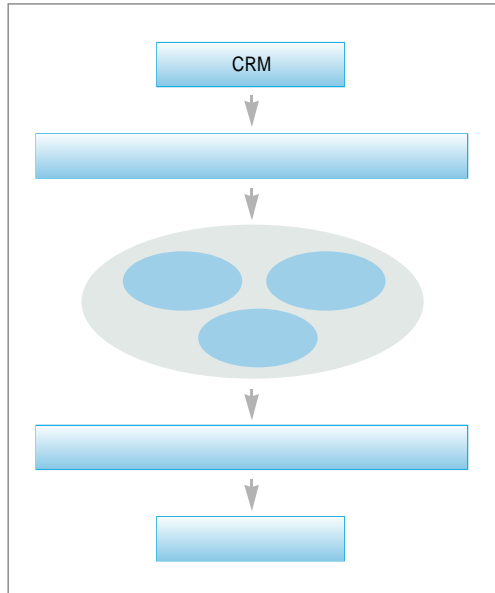


5



가

< 5-5-4-05 > CRM



5. CRM

CRM

. CRM

A CRM

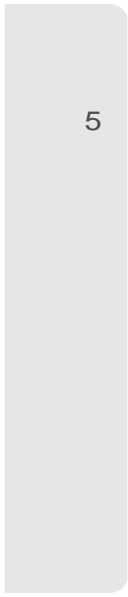
가

가. :
?

A

20%가

가

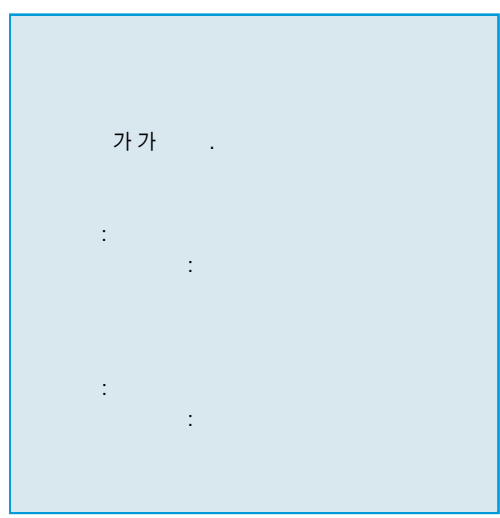
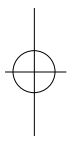


5

(2)

가

가



가

:

:

:

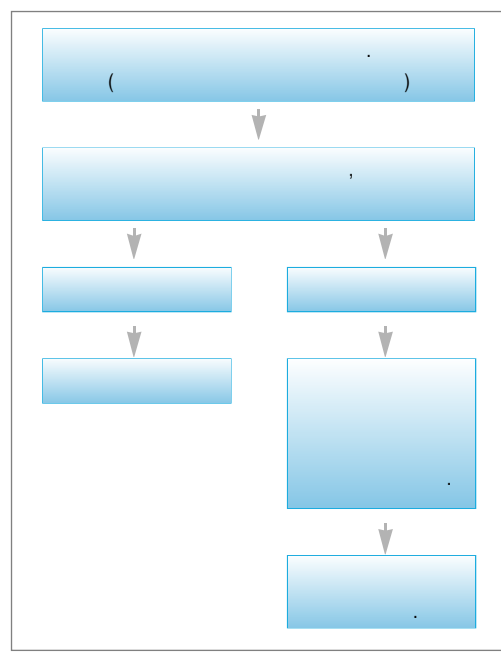
:

가

(CRM)

6.

< 5-5-4-07 >



(3)

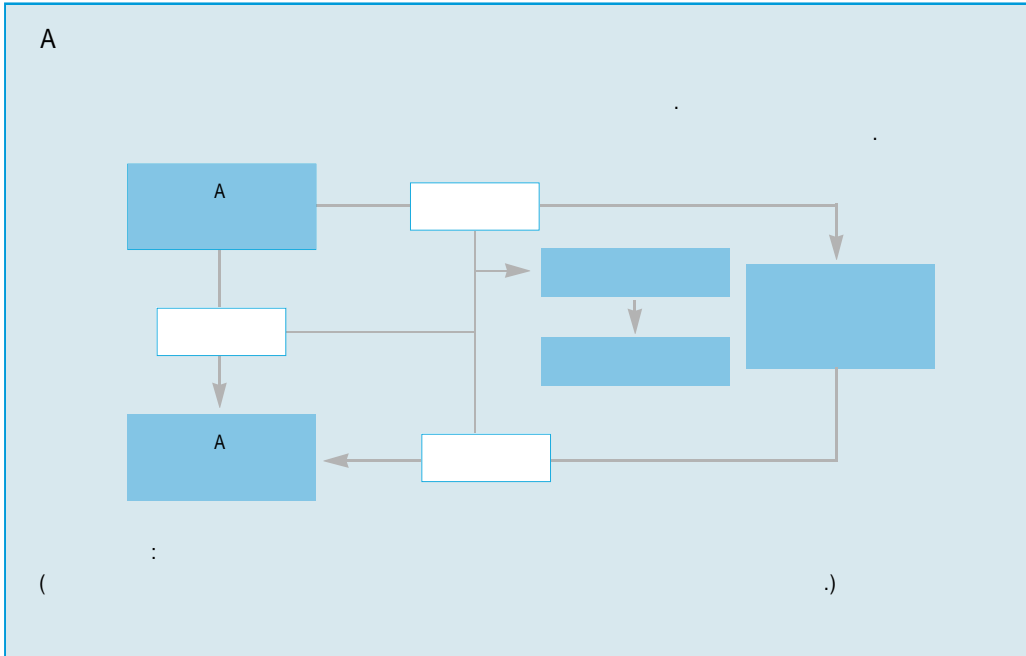
가

가

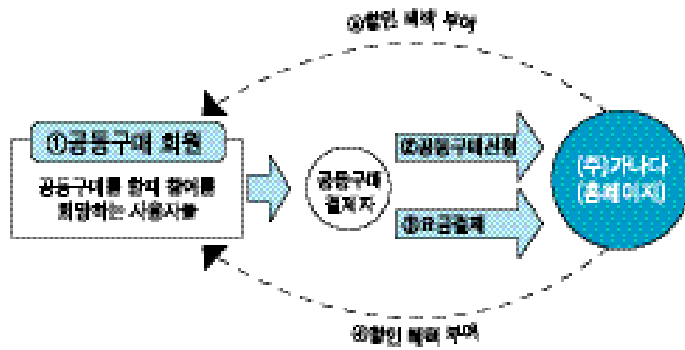
가

5

< 5-5-4-08 >



< 5-5-4-09 >A



6.

가

가

A

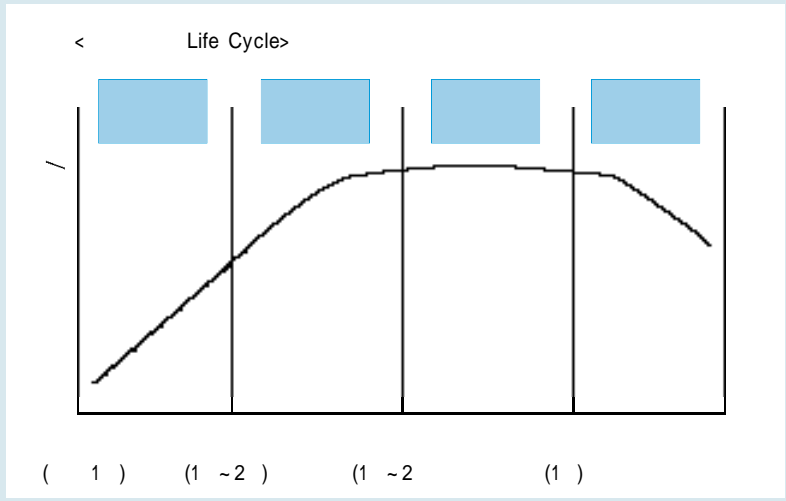
5

< 5-5-4-10 >

Life cycle

1)

⋮
⋮
⋮
⋮



Life Cycle

가

2)

Life Cycle

Life Cycle

가.

⋮ , CRM
⋮ , CRM
⋮ (PC)
⋮ : CRM
⋮ (PC)

3)

Life Cycle

가

가

Life Cycle

Life Cycle

가

가

5

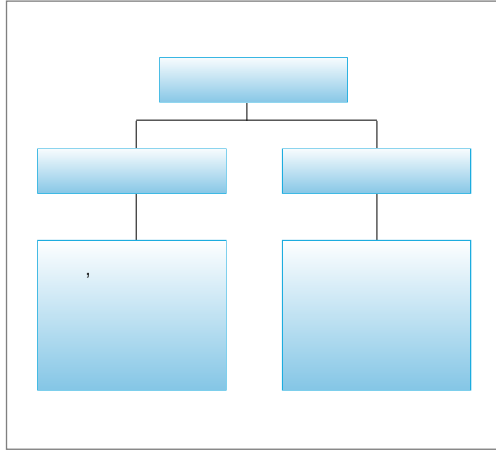
A

- (1)
- (가)
- ()
- ()
- ()

(2)

(가)

< 5-5-4-11 >



가,

가

가

가

가

가

가

()

가

가

()

가

가

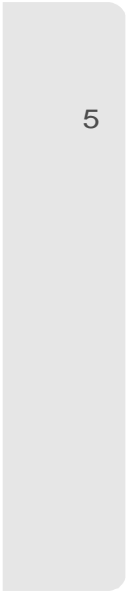
3-4

가

()

가

가



5

1. (JAMMA VIDEO STANDARD)

가.

(6) : 1

(7) : , RGB

(8) DC : 가

(9) :

(1) : CRT

(10) I/O : () Control

(2) :

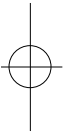
(11) :

(3) : CRT 가 , RGB

(12) JAMMA :

(4) : composite , 가

(5) RGB : , ,



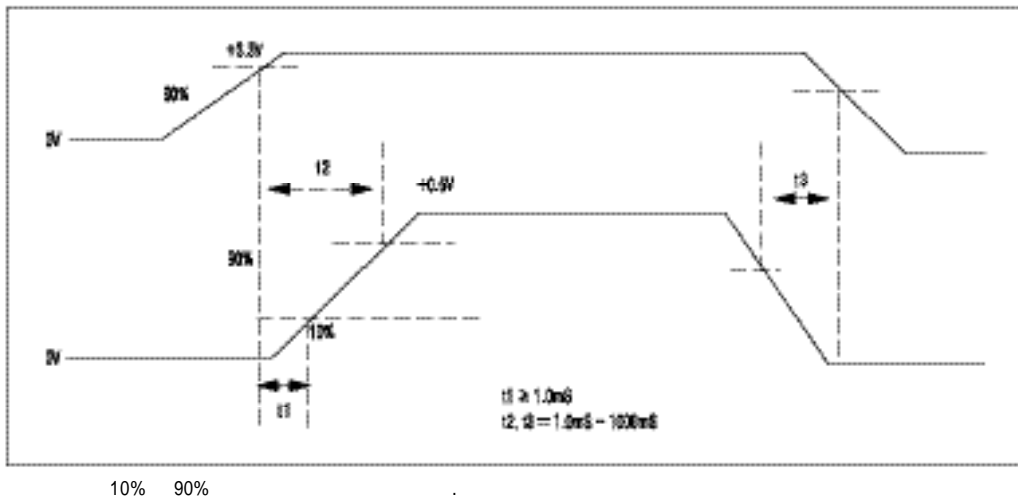
5

< 5-5-5-01> DC

			Ripple	가
+ 5.0 V	± 5 %	10A	80mVp - p	0A
+ 3.3 V	± 5 %	12A	80mVp - p	0A
+ 12 V	± 10 %	2A	120mVp - p	0A

()

< 5-5-5-02> +5.0V, +3.3V ON/OFF



(2) DC , (3) :
ripple, 가

(1) : I/O
I/O
0 ± 6 dB (0.5~2Vrms , ,
1.41~5.66V-p), 2 k

(2) (1) I/O :
I/O EIA-RS485

(가) : ()
2)
() : 2 “ I/O

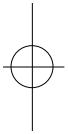
5

(#4-40U) 15 D-SUB , (#4-40U) () : RCA (R, L) 1 2 , () I/O : I/O USB (A) , I/O USB (B) () : I/O

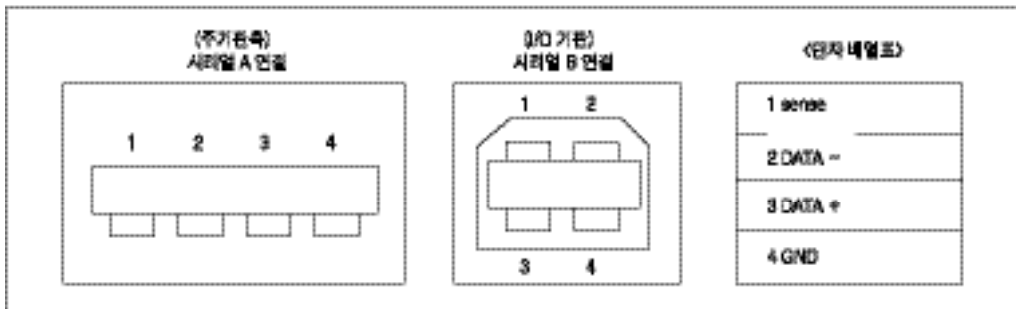
(2) GND : GND , DC GND (1 - 5 , 6 , 7 , 8 , 2 - 4 , 5 , 6) , GND (5 , 6 , 7 , 8 , 10) , GND, I/O GND (4) DC

< 5-5-5-02>

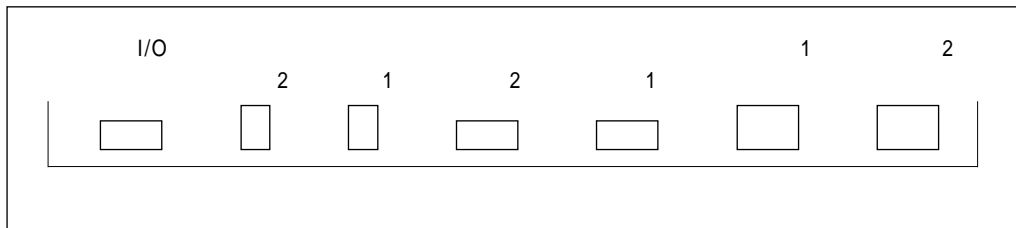
(mm)	
	390
	450
	150



< 5-5-5-05> I/O

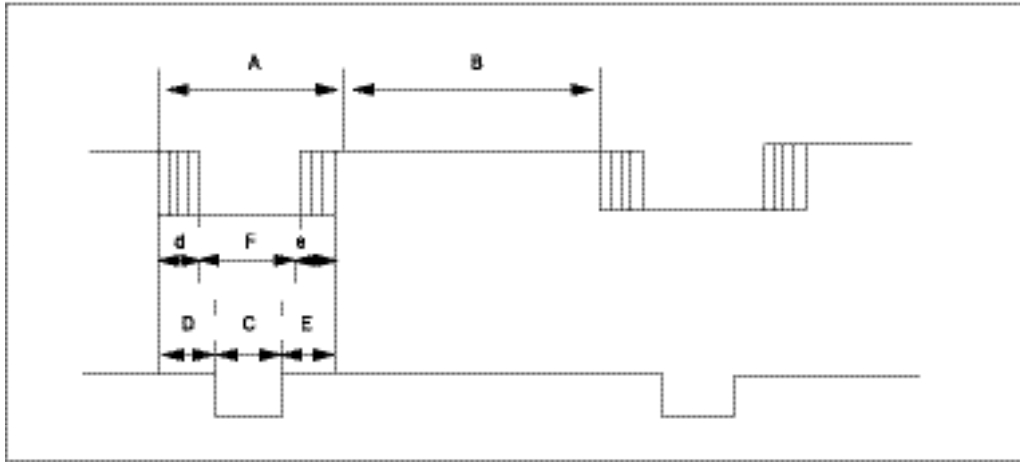


< 5-5-5-06> I/O

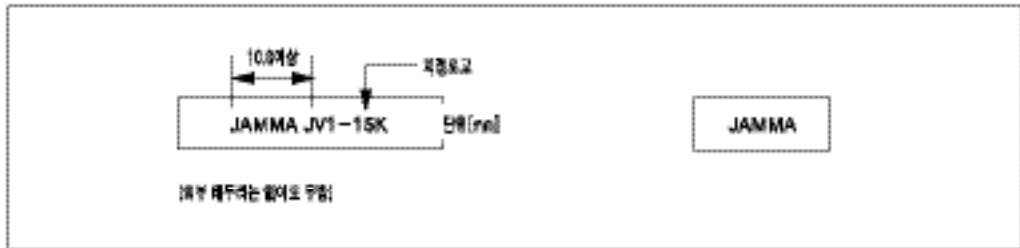


5

< 5-5-5-07>



< 5-5-5-08>



< 5-5-5-09>

“ ”

JAMMA VIDEO STANDARD
[STEP 1]

MAIN BD
xxx Co.
I/O
. COIN : 1 ~ 4
. S/W Data

	bit7	bit6	bit5	bit4	bit3	bit2	bit1	bit0
byte1	TEST	TILT						
byte2	1P start	1P service	1P up	1P down	1P left	1P right	1P push1	1P push2

I/O BD
yyy Co.

5

< 5-5-5-06>

STEP1 (1999)

	15K	24K	31K
	f H=15.70 ±0.50 Khz f V=60.0 ±5.0Hz	f H=24.83 ±0.50 Khz f V=60.0 ±5.0Hz	f H=31.50 ±0.50 Khz f V=60.0 ±1.0Hz
(A)	11.90 ~ 15.93 μ s 23 ~ 50 H	8.00 ~ 11.60 μ s 26 ~ 59H	5.60 ~ 7.95 μ s 43 ~ 68H
(B)	43.86 ~ 51.6 μ s 199 ~ 252H	28.40 ~ 32.28 μ s 354 ~ 400H	23.76 ~ 25.98 μ s 457 ~ 480H
(B/A)	2.0 ~ 4.34	2.97 ~ 4.1	3.01 ~ 4.59
(C)	6.5 ~ 2.0 μ s 6±4H	3.5 ~ 1.0 μ s 4±2H	3.5 ~ 0.5 μ s 3±1H
(E)	3.8 ~ 8.5 μ s 16 ~ 35H	2.3 ~ 5.4 μ s 23 ~ 34H	1.5 ~ 3.6 μ s 31 ~ 40H
(E/D)	1 ~ 4.28 ~ 4	1 ~ 4 1 ~ 4	1.11 ~ 5.38 2 ~ 4
(E - D)	Max19H	Max17H	Max26H
(F)	10.0 μ s	7.5 μ s	5.5 μ s
border (d/e)	0.9 ~ 1.25	0.9 ~ 1.1	0.9 ~ 1.1

STEP 2 (2000)

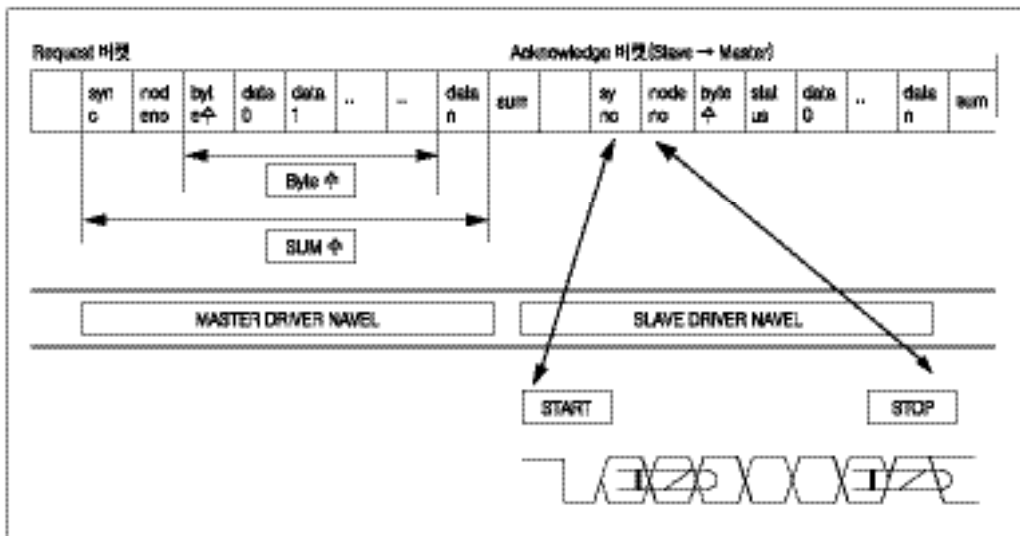
	15K	24K	31K
	f H=15.75 ±0.25 Khz f V=60.0 ±1.5Hz	f H=24.83 ±0.40 Khz f V=60.0 ±2.5Hz	f H=31.50 ±0.50 Khz f V=60.0 ±1.0Hz
(A)	12.50 ~ 16.20 μ s 23 ~ 43 H	8.00 ~ 9.50 μ s 36 ~ 59H	6.30 ~ 7.94 μ s 45 ~ 68H
(B)	47.40 ~ 50.99 μ s 220 ~ 240H	30.78 ~ 32.28 μ s 354 ~ 384H	23.70 ~ 25.45 μ s 457 ~ 480H
(B/A)	2.9 ~ 4.1	32 ~ 4.1	3.1 ~ 4.1
(C)	5.0 ~ 1.52 μ s 3+3H - 1H	4.0 ~ 1.0 μ s 4±2H	3.5 ~ 0.5 μ s 3±1H
(E)	4.7 ~ 8.4 μ s 16 ~ 24H	2.3 ~ 4.8 μ s 26 ~ 34H	1.5 ~ 3.6 μ s 33 ~ 40H
(E/D)	1.38 ~ 4 2 ~ 4	2 ~ 4 2 ~ 4	1.76 ~ 4 2 ~ 4
(E - D)	Max12H	Max15H	Max22H
(F)	10.0 μ s	7.5 μ s	5.5 μ s
border (d/e)	0.9 ~ 1.1	0.9 ~ 1.1	0.9 ~ 1.1

: F()

5

() Sync 가
 Sync 가
 (1) (가) 115.2Kbps , 8Bit , 1Start Bit, 1Stop Bit, Non - Parity .
 Ver 1.0 . ()
 () 1 (31) SUM Sync (~) SUM
 Slave 가 . 2 가
 () SUM
 () 0 255 . Slave 255
 Slave 가
 () . (가)
 Slave Request Acknowledge 1 () SUM
 1 .
 () 가
 () Sync , , 가 High-Impedance
 Status(Acknowledge), 가 가 . (SUM 가 가 .)
 () Slave 가 () Sync . Sync
 Sync .

< 5-5-5-14 >

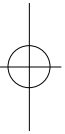
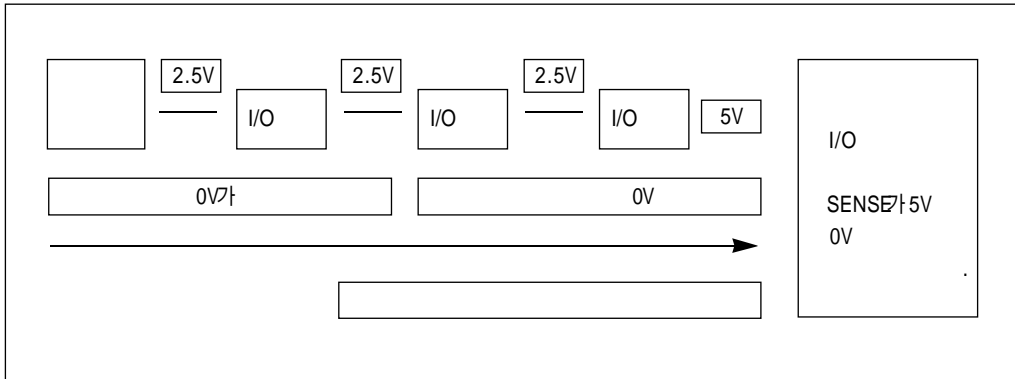


5

< 5-5-5-08\>

	Reset	2s		>2S
Slave	Slave Reset	1s		<1S
Acknowledge	Acknowledge ()	1ms	(N)*200 μs	<200*Nμs
Acknowledge	Acknowledge	500μs		<500 μs

< 5-5-5-16>



I/O sense가 5V 0V
 I/O()가
 SW SCISI DIP I/O()가
 VIDEO 가 JAMMA (1 set I/O
 sense 0V)
 sense () 1ms sense
 I/O 0V I/O
 I/O 2
 0 () sense 0V가
 (3) 31
 (1)
 I/O (. (reset
 reset) sense 2.5V()
) () sense fp request
 (가) sense I/O sampling
 2.5V 가 5V PULL UP slave acknowledge
 5V가 가ON transceiver
 () 2 reset
 1 sense 0

5

< 5-5-5-17> COMMAND (REV)

	REQUEST DATA	ACKNOWLEDGE DATA
REV	11	01(REPORT),REVISION
Byte0	11	01
Byte1	-	(13) REVISION

< 5-5-5-18> COMMAND (JV - REV)

	REQUEST DATA	ACKNOWLEDGE DATA
REV	12	01(REPORT),REVISION
Byte0	12	01
Byte1	-	(30) REVISION

< 5-5-5-19> COMMAND (REV)

	REQUEST DATA	ACKNOWLEDGE DATA
REV	13	01(REPORT), VERSION
Byte0	13	01 REPORT
Byte1	-	(10) REVISION

< 5-5-5-20> COMMAND ()

	REQUEST DATA	ACKNOWLEDGE DATA
REV	14	01(REPORT),Function Code,...00
Byte0	14	01
Byte1	-	(01) SW
Byte2	-	(02) SW
Byte3	-	(08) SW
Byte4	-	(00) SW
...	-	...
Byte N	-	00

< 5-5-5-21> FUNCTION CODE

	CODE (HEX)	P1	P2	P3	FUNCTION
	00	-	-	-	FUNCTION
SW	01	PLAYER	BUTTON	0	IP SW P1 P2 SW (1L6B + START, SERVICE SW 12)
	02	SLOT	0	0	
	03	CHANNEL	BIT(1)	0	
	04	CHANNEL	0	0	
KEY CODE	05	0	0	0	
POSITION	06	XBIT	YBIT	CHANNEL	X Y P3 XY
SW	07	SW UPPER	SW LOWER	0	2BYTE
	10	SLOT	0	0	
MEDAL HOPPER	11	CHANNEL	0	0	MEDAL Hopper
	12	SLOT	0	0	(255)
	13	CHANNEL	0	0	
	14	CHARACTER	LINE	CODE(2)	(가) ()P3
BACK UP	15	0	0	0	BACK UP

5

< 5-5-5-25> S/W

	BIT7	BIT6	BIT5	BIT4	BIT3	BIT2	BIT1	BIT0
Byte 1	TEST	TILT1	TILT1	TILT1				
Byte 2	1P START	1P SERVICE	1P UP	1P DOWN	1P LEFT	1P RIGHT	1P PUSH1	1P PUSH2
Byte 3	1P PUSH3	1P PUSH4	1P PUSH5	1P PUSH6	1P PUSH7	1P PUSH8	.	.
....
Byte N	2P START	2P SERVICE	2P UP	2P DOWN	2P LEFT	2P RIGHT	2P PUSH1	2P PUSH2
Byte N+1	2P PUSH3	2P PUSH4	2P PUSH5	2P PUSH6	2P PUSH7	2P PUSH8	.	.

< 5-5-5-26> JOY STICK (1 P/L JOY STICK)

Byte2	1P START	1P SERVICE	1P/L UP	1P/L DOWN	1P/L LEFT	1P/L RIGHT	1P/R UP	1P/R DOWN
Byte3	1P/R LEFT	1P/R RIGHT	1P PUSH1	1P PUSH2	1P PUSH3	1P PUSH4	.	.

< 5-5-5-27>

	BIT7	BIT6	BIT5	BIT4	BIT3	BIT2	BIT1	BIT0
Byte1	TEST	TILT1	TILT2	TILT3				
Byte2	START	SERVICE	A	B	C	D	E	F
Byte3	G	H	I	J	K	L	M	N
Byte4		REACH		BET			BIG	SMALL
Byte5	TAKE SCORE	LAST CHANCE						

< 5-5-5-28> COMMAND ()

	REQUEST DATA		ACKNOWLEDGE DATA	
	21, SLOT		01(REPORT),DATA, DATA,.....	
Byte0	21		01	
Byte1	(02)	SLOT	00	
Byte2			(02)	
...	-		-	...
Byte N	-		(00)	PLAYER, SW

STICK 가 . COMMAND SLOT 가 .
 3. JOY STICK 2BYTE . 15BIT
 . 14BIT ,
 4. PUSH JOY STICK , 14BIT .
 . (16383) DATA SLOT*2 가
 CONCRETE - PANEL SW . FREE PAY
 COMMAND .
 BIT . SLOT
 .
 SW 0 . SW .
 . COMMAND.
 [27] 16 가
 I/O 0 .

5

< 5-5-5-34> COMMAND ()

REQUEST DATA		ACKNOWLEDGE DATA	
24		01(Report), Key - Code	
Byte 0	24	01	Report
Byte 1	-	Channel	(31) Key

< 5-5-5-35> COMMAND ()

REQUEST DATA		ACKNOWLEDGE DATA	
25, Channel		01(Report) Position(X, Upper), Position(X, Lower) Position(Y, Upper), Position(Y, Lower)	
Byte0	25	01	Report
Byte1	(01)	Channel	(00) X
Byte2	-	(00)	X
Byte3	-	(00)	Y
Byte4	-	(00)	Y

< 5-5-5-36> COMMAND (S/W)

REQUEST DATA		ACKNOWLEDGE DATA	
26, Byte		01(Report) , Data , Data	
Byte 0	26	01	Report
Byte 1	(02)	SW	(02) SW(SW1-8 , MSB)
...		...	
Byte N	-	(00)	

< 5-5-5-37> COMMAND (PAY OUT)

REQUEST DATA		ACKNOWLEDGE DATA	
2E		01(Report), Status, Remain(Upper), Remain(Middle), Remain(Lower)	
Byte 0	2E	01	Report
Byte 1	(02)	SW	00 SW(SW1-8 , MSB)
Byte 2	-	00	(8Bit)
Byte 3	-	01	(8Bit)
Byte 4	-	23	(8Bit)

.(CN 1) 1-127 127 SW COMMAND. 1 BYTE
 BIT7 SW 1
 Touch Panel, Position HOPPER
 HOPPER 가 . 24BIT BYTE
 X , 가 Y BYTE . STATUS BIT
 (0.0) 16 . CHANNEL11
 FFFF . CHANNEL BIT 1 ,
 XY 1 .(1) SUM

5

< 5-5-5-42> COMMAND (1)

	REQUEST DATA	ACKNOWLEDGE DATA
1	32, Byte, Data, Data01(Report)	
Byte0	32	01 Report
Byte1	(03)	-
Byte2	(18)	-
...	...	-
ByteN	(4A)	-

< 5-5-5-43> COMMAND (2)

	REQUEST DATA	ACKNOWLEDGE DATA
2	37,Byte, Data	01(Report)
Byte0	37	01 Report
Byte1	(03) Byte	-
Byte2	(18)	-

< 5-5-5-44> COMMAND (3)

	REQUEST DATA	ACKNOWLEDGE DATA
3	38, Byte, Data, Data	01(Report)
Byte0	38	01 Report
Byte1	(03) Bit	-
Byte2	(00)	-

< 5-5-5-45> COMMAND ()

	REQUEST DATA	ACKNOWLEDGE DATA
	33, Data, Data, Data..	01(Report)
Byte0	37	01 Report
Byte1	(03)	-
Byte2	(18) 1CHANNEL(8BIT)	-
Byte3	(01) 1CHANNEL(8BIT)	-
...	...	-
ByteN	(4A) CHANNEL(8BIT)	-

BIT COMMAND. 18BIT
 BIT ASCII
 COMMAND BIT 1 SHIFT JIS
 (SLOT1) 가 COIN
 0 OFF(), 1 가 .가 16
 ON 2 BIT
 COMMAND. SLOT COMMAND
 16 가 HOPPER
 BIT 0 HOPPER 가 (8).
 BYTE (DECREMENT) 16
 7 LED LCD