Fig. 1

Concept Enabling Computerization of "Determination Work"

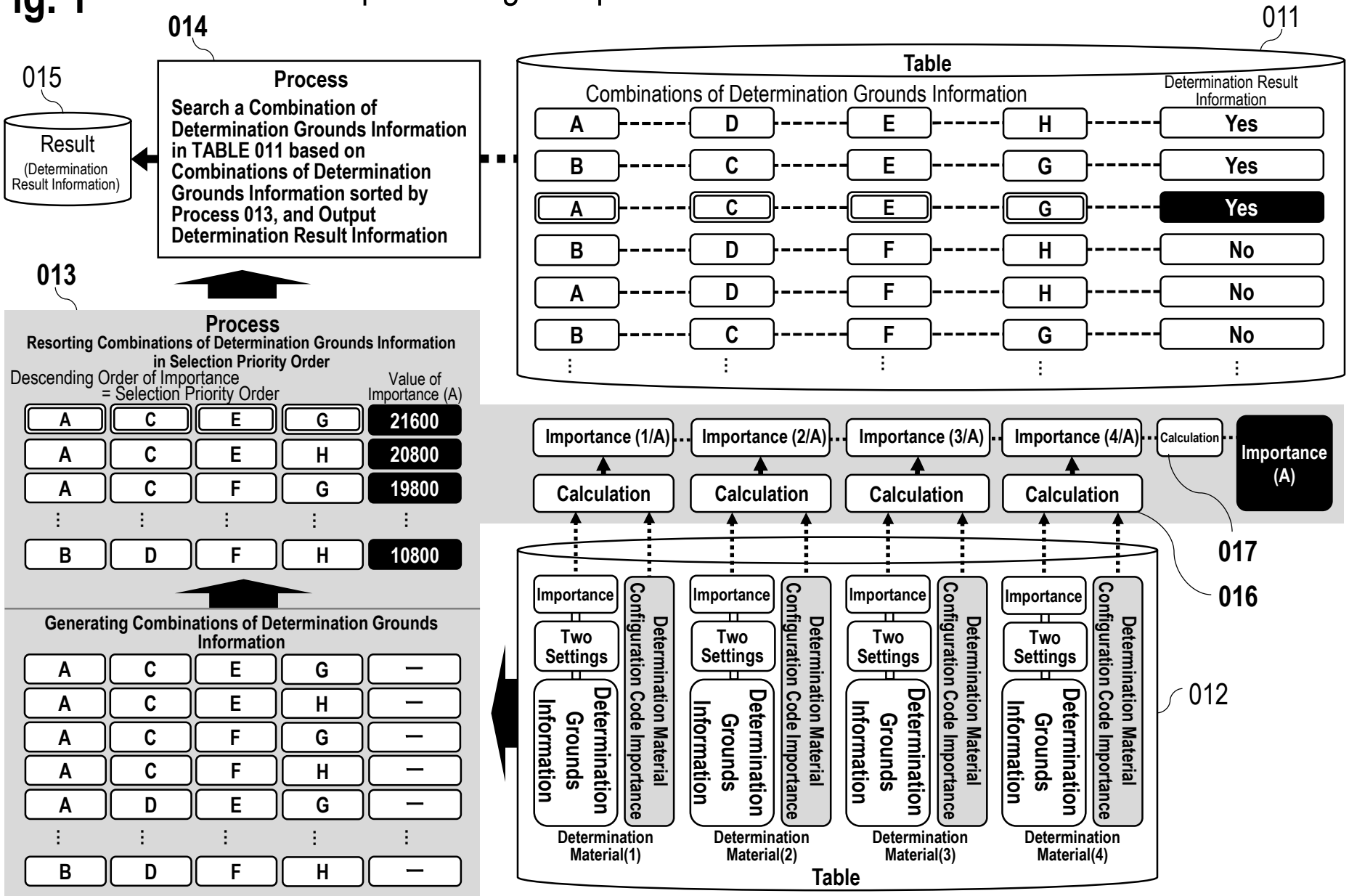

Fig. 2

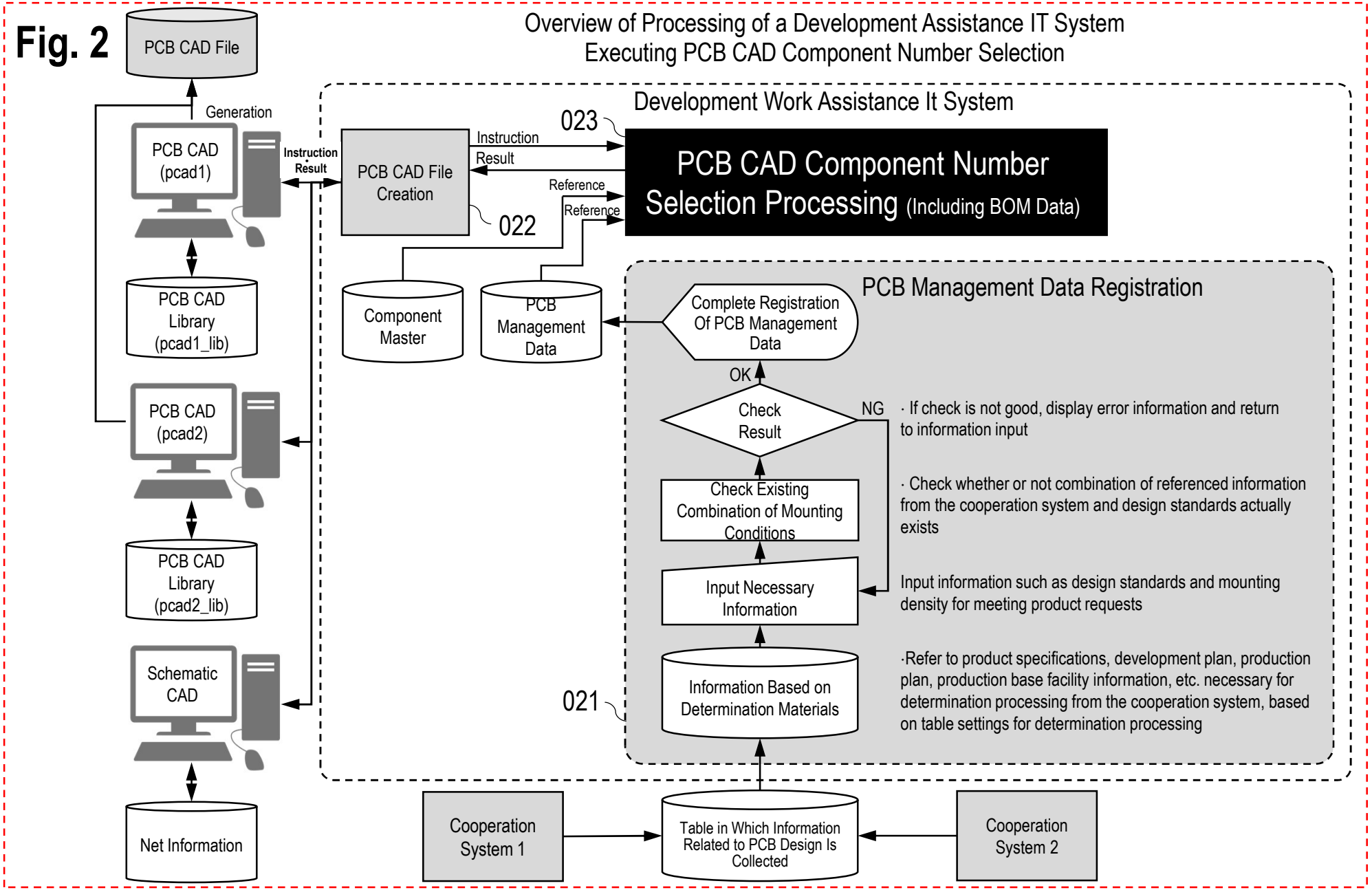
Overview of Processing of a Development Assistance IT System
Executing PCB CAD Component Number Selection
PCB CAD File
Generation
PCB CAD
(pcad1)
PCB CAD
Library
(pcad1_lib)
PCB CAD
(pcad2)
PCB CAD
Library
(pcad2_lib)
Schematic
CAD
Net Information
Instruction
Result
Development Work Assistance It System
PCB CAD File
Creation
023
Instruction
Result
Reference
Reference
022
PCB CAD Component Number
Selection Processing (Including BOM Data)
Component
Master
PCB
Management
Data
PCB Management Data Registration
Complete Registration
Of PCB Management
Data
OK
Check
Result
NG
· If check is not good, display error information and return to information input
Check Existing
Combination of Mounting
Conditions
· Check whether or not combination of referenced information from the cooperation system and design standards actually exists
Input Necessary
Information
Input information such as design standards and mounting density for meeting product requests
Information Based on
Determination Materials
021
·Refer to product specifications, development plan, production plan, production base facility information, etc. necessary for determination processing from the cooperation system, based on table settings for determination processing
Cooperation
System 1
Table in Which Information
Related to PCB Design Is
Collected
Cooperation
System 2

Fig. 3

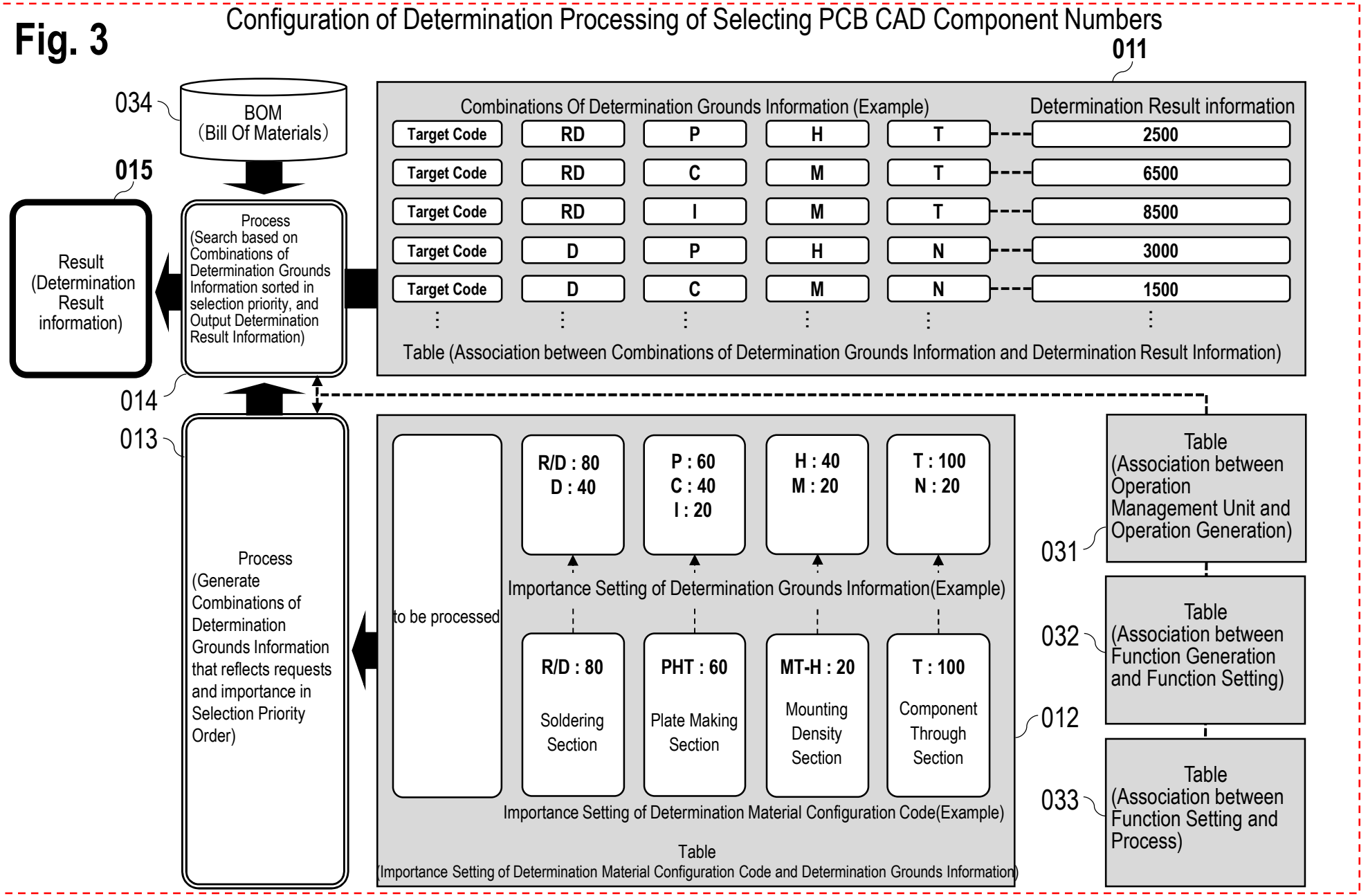
Configuration of Determination Processing of Selecting PCB CAD Component Numbers
011
034
BOM
(Bill Of Materials)
015
Result
(Determination Result information)
Process
(Search based on Combinations of Determination Grounds Information sorted in selection priority, and Output Determination Result Information)
Combinations Of Determination Grounds Information (Example)
Determination Result information
Target Code RD P H T 2500
Target Code RD C M T 6500
Target Code RD I M T 8500
Target Code D P H N 3000
Target Code D C M N 1500
Table (Association between Combinations of Determination Grounds Information and Determination Result Information)
014
013
Process
(Generate Combinations of Determination Grounds Information that reflects requests and importance in Selection Priority Order)
to be processed
R/D : 80
D : 40
P : 60
C : 40
I : 20
H : 40
M : 20
T : 100
N : 20
Importance Setting of Determination Grounds Information(Example)
R/D : 80
Soldering Section
PHT : 60
Plate Making Section
MT-H : 20
Mounting Density Section
T : 100
Component Through Section
Importance Setting of Determination Material Configuration Code(Example)
012
Table
(Importance Setting of Determination Material Configuration Code and Determination Grounds Information)
031
Table
(Association between Operation Management Unit and Operation Generation)
032
Table
(Association between Function Generation and Function Setting)
033
Table
(Association between Function Setting and Process)

Fig. 4 A Work Environment and Determination Materials for PCB to be Designed in an Embodiment

Division Code	wd
Department Code	e_des1
PCB CAD Component Number Selection Function Code	macsel
PCB CAD system ID to be used	pcad1

041 042

Determination Material	Determination Material Configuration Code	Comments
Soldering Section	R/D (Reflow / DIP)	· Method of Components Mounting by Reflow Soldering on A side of PCB and by DIP Soldering on B side thereof
Plate Making Section	PHT (Photographic Process)	· Form the Pattern on PCB and Solder Mask with high accuracy by Method of Forming Etching Resist and Solder Mask by Dry Film or Liquid Resist Coating, Exposure and Developing
Mounting Density Section	MT-H (Mounting Density - High)	· PCB Design Standard aiming at increasing number of components mounted per unit PCB area by minimizing components spacing as much as possible. This High-Density Mounting Standard can be used only when Constraints such as PCB Material, Size, and Mounting Machine Performance at Production Site, etc. are Satisfied.
Component Through Section	T (Component Though Is Usable)	· Expected to Prevent Solder Bridges during DIP by Reducing the Size of Land and Ensure the Peel Strength, when Lead Components are Mounted on Copper Through-Hole PCB

Fig. 5 Table 031 (Association between Operation Management Unit and Operation Generation)

051 Division Code	052 Department Code	053 Update Section	054 Operation Generation	Comments
wd	e_des1	0	edes_001	· Setting at the Start of Operation
wd	e_des1	1	edes_002	· Introducing High-Density Mounting Standard and Mounting Area Check Function of PCB CAD · Pre-introduction Test on pcad2 · Test Introduction of PCB Mounting Check Function · Test Introduction of File Output Decision Processing · Test Introduction of Capturing 3D Components in PCB CAD File and Interference Check Function
wd	e_des2	0	edes_001	· Setting at the Start of Operation
wd	e_des3	0	edes_001	· Setting at the Start of Operation
wd	e_des3	1	edes_003	· Test Introduction of Selection Processing and PCB CAD Check by Adding Data for Angle Check to PCB CAD Component that Require Attention to DIP Direction
wd	e_des4	0	edes_001	· Setting at the Start of Operation
wd	me_des1	0	mdes_001	· Setting at the Start of Operation
wd	me_des1	1	mdes_002	· Change Settings for Using New Functions of 3D-CAD
wd	e_manage	0	mana_001	· Setting at the Start of Operation
wd	e_manage	1	mana_002	· Setting for Operation Improvement Test due to Renewal of A site Production Facility
wd	e_manage	2	mana_003	· Setting for New Function Introduction Test of PCB CAD2
⋮	⋮	⋮	⋮	⋮

Fig. 6 Table 032 (Association between Function Generation and Function Setting)

054 Operation Generation	061 Function Code	062 Function Generation	063 Setting Switching Section	064 Setting Contents	Comments of Function	065 Function Setting Overall Code	Comments of Setting Contents
edes_001	bomcre	0	def	Standard	Creation of BOM from Schematic	bomcre01s	· Setting at the Start of Operation
edes_001	bomcre	0	sel	Cost Focused	Creation of BOM from Schematic	bomcre01c	· Setting at the Start of Operation
edes_001	macsel	0	–	–	PCB CAD Component Number Selection from BOM	macsel001	· Setting at the Start of Operation
edes_001	ppsel	0	–	–	Physical Property Data Selection for Structure Analysis	ppsel001	· Setting at the Start of Operation
edes_001	tfasel	0	–	–	File Selection Applicable for Thermal Fluid Analysis	tfasel001	· Setting at the Start of Operation
edes_002	bomcre	0	–	–	Creation of BOM from Schematic	bomcre01	· Setting at the Start of Operation
edes_002	bomcre	1	–	–	Creation of BOM from Schematic	bomcre02	[Minor change to maintain operation generation] Modification of Determination Grounds Information and its Importance Setting Corresponding to Supplier & Cost Change
edes_002	macsel	0	–	–	PCB CAD Component Number Selection from BOM	macsel002	· Additional Setting of Determination Grounds Information for Selecting PCB CAD components with Mounting Check Areas Corresponding to High-Density Mounting Standards and PCB CAD Mounting Area Check Function · Pre-introduction Test on pcad2
edes_002	mtchk	0	–	–	PCB Mounting Check	mtchk001	· Introduction Test (Note) There is a Check Using PCB CAD Component Number, and the Check Setting is Linked with Function "macsel" by Function Setting Overall Code (mtchk001).
edes_002	outchk	0	–	–	File Output Determination	outchk001	· Introduction Test
edes_002	3dinp	0	–	–	Capturing 3D-CAD components and Interference Check	3dinp001	· Introduction Test
edes_002	ppsel	0	–	–	Physical Property Data Selection for Structure Analysis	ppsel001	· Setting at the Start of Operation
edes_002	tfasel	0	–	–	File Selection Applicable for Thermal Fluid Analysis	tfasel001	· Setting at the Start of Operation
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

Fig. 7

Table 033 (Association between Function Setting and Process)

065 Function Setting Overall Code	071 Process Code	072 Process Setting	073 Process Setting	074 Process Setting	Comments to be Processed	Comments of Setting Status
macsel001	jcsettbl	dbsvr1	TABLE012	jcset01	Table for Setting Determination Material Configuration Code Importance and Determination Grounds Information Importance	· Determination Material Settings at the Start of Operation
	jritbl	dbsvr1	TABLE011	–	Association Table between Combinations of Determination Grounds Information and Determination Result Information	· Setting at the Start of Operation
	pcadlib	pcad1	pcad1_lib	–	PCB CAD1 Library	· Library Used at the Start of Operation
	pcadbin	pcad1	pcad1_set01.exe		PCB CAD1 System Setting	· Initial Function Settings at the Start of Operation
macsel002	**jcsettbl**	dbsvr1	TABLE012	jcset02	Table for Setting Determination Material Configuration Code Importance and Determination Grounds Information Importance	· Addition of Determination Grounds Information for PCB CAD Component Selection that Meet High-Density Design Standards
	jritbl	dbsvr1	TABLE011	–	Association Table between Combinations of Determination Grounds Information and Determination Result Information	· Additional Settings for Each Registration of PCB CAD Components
	pcadlib	pcad1	pcad1_lib	–	PCB CAD1 Library	· Library used at the Start of Operation
	pcadlib	pcad2	pcad2_lib	–	PCB CAD2 Library	· Library for Pre-Introduction Test on pcad2
	pcadbin	pcad1	pcad1_set02.exe	------0---	Server for PCB CAD1	· Setting Processing of High-Density Mounting Area Check Function
	pcadbin	pcad2	pcad2_set01.exe	–	Server for PCB CAD2	· Initial Function Settings for Pre-Introduction Test on pcad2
	dataref	dbsvr3	refdata	(s) Operation Generation 054	Reference Information of Cooperation IT System	· Change to Refer Information from Cooperation IT System
⋮	⋮	⋮	⋮	⋮	⋮	⋮

Fig. 8 Table 012 (Importance Setting of Determination Material Configuration Code and Determination Grounds Information)

074 Process Setting	041 Determination Material	042 Determination Material Configuration Code	081 Configuration Code Importance	082 Determination Grounds Information	083 Determination Grounds Information Importance	084 Temporary Selection Flag	Description of Setting Intent	085 Message
jcset02	Soldering Section	—/D	80	D	80	0	Preferentially Use Component Dedicated for DIP(D) in DIP Specification	
jcset02	Soldering Section	—/D	80	RD	40	0	Use Component for Reflow/DIP (RD) in case of No Component Dedicated for DIP	
jcset02	Soldering Section	—/D	80	H	20	0	Use Component for by-Hand(H) in case of Neither Component Dedicated for DIP (D) Nor Reflow/DIP (RD)	
jcset02	Soldering Section	R/D	80	RD	80	0	Preferentially Use Component for Reflow/DIP (RD) in Reflow/DIP (RD) Specification	
jcset02	Soldering Section	R/D	80	D	40	0	Use Component Dedicated for DIP(D) in case of No Component for Reflow/DIP (RD) *Lead Components are registered for DIP(D) and by-Hand (H). Description is on the Premise that No (H) Setting Against R/D in This Embodiment.	
jcset02	Soldering Section	R/R	80	RR	80	0	Cannot be Used Component Except for Reflow	
jcset02	Plate Making Section	PHT	60	P	60	0	Preferentially Use Component Dedicated for Photographic Process (P) in Photographic Process (PHT) Specification	
jcset02	Plate Making Section	PHT	60	C	40	0	Use Component both for Photographic Process and Printing Process (C) in case of No Component for Printing Process(I)	
jcset02	Plate Making Section	PHT	60	I	20	1	Temporarily Use Component Dedicated for Printing Process(I) in case of Neither Component Dedicated for Photographic Process (P) Nor both for Photographic Process and Printing Process (C), And Replace Component After Normal Registration (Note) Out of Processing for the Information with Temporary Flag is Set When Normal Output or Checking	Temporary Select PCB CAD Component for Printing Process Replace the Component to Component Dedicated for Photographic Process or Both for Photographic Process and Printing Process After Registering Any One of Them
jcset02	Plate Making Section	PRT	60	I	60	0	Preferentially Use Component for Printing Process(I) in Printing Process (PRT) Specification	
jcset02	Plate Making Section	PRT	60	C	40	0	Use Component both for Photographic Process and Printing Process (C) in case of No Component Dedicated for Printing Process(I)	
jcset02	Mounting Density Section	MT-H	40	H	40	0	Use Component for High-Density Placement Specification (H) in case of High-Density Mounting Specification	
jcset02	Mounting Density Section	MT-H	40	M	20	0	Use Component for Standard Density Placement Specification (M) in case of No Component for High-Density Placement Specification (H)	
jcset02	Mounting Density Section	MT-M	40	M	40	0	Use Component for Standard Density Placement Specification (M) in case of Standard Mounting Density Specification	
jcset02	Mounting Density Section	MT-M	40	L	20	0	Use Component for Low-Density Placement Specification (L) in case of No Component for Standard Density Placement Specification (M)	
jcset02	Mounting Density Section	MT-L	40	L	40	0	Use Component for Low-Density Placement Specification (L) in case of Low-Density Mounting Specification	
jcset02	Component Through Section	T	100	T	100	0	Use Component for Component Through Specification (T) and Mount by Process of Hand mounting and DIP Soldering in case of Component Through Specification	
jcset02	Component Through Section	T	100	N	20	0	Use Component for Non-Through Specification (N) in case it is not Component Through Specification	
jcset02	Component Through Section	N	100	N	100	0	Cannot be used Component Except for Non-Through Specification (N) in case of PCB for Non-Through Specification	

Fig. 9

A List of Combinations of Determination Grounds Information

Combination Number	091 Soldering Section (R/D) Determination Grounds Information	092 Plate Making Section (PHT) Determination Grounds Information	093 Mounting Density Section (MT-H) Determination Grounds Information	094 Component Through Section (T) Determination Grounds Information
1	RD	P	H	T
2	RD	P	H	N
3	RD	P	M	T
4	RD	P	M	N
5	RD	C	H	T
6	RD	C	H	N
7	RD	C	M	T
8	RD	C	M	N
9	RD	I	H	T
10	RD	I	H	N
11	RD	I	M	T
12	RD	I	M	N
13	D	P	H	T
14	D	P	H	N
15	D	P	M	T
16	D	P	M	N
17	D	C	H	T
18	D	C	H	N
19	D	C	M	T
20	D	C	M	N
21	D	I	H	T
22	D	I	H	N
23	D	I	M	T
24	D	I	M	N

Fig. 10 A List of Combinations of Determination Grounds Information in Overall Importance Order

101 Selection Priority Order	091 Soldering Section			092 Plate Making Section			093 Mounting Density Section			094 Component Through Section			102 ((Sum) of Overall Importance (Product))
	Determination Material Configuration Code (R/D)		Configuration Code Importance:80	Determination Material Configuration Code (PHT)		Configuration Code Importance:60	Determination Material Configuration Code (MT-H)		Configuration Code Importance:40	Determination Material Configuration Code (T)		Configuration Code Importance:100	
	Determination Grounds Information	Determination Grounds Information Importance	Configuration Level Importance (Product)	Determination Grounds Information	Determination Grounds Information Importance	Configuration Level Importance (Product)	Determination Grounds Information	Determination Grounds Information Importance	Configuration Level Importance (Product)	Determination Grounds Information	Determination Grounds Information Importance	Configuration Level Importance (Product)	
1	RD	80	6400	P	60	3600	H	40	1600	T	100	10000	**21600**
2	RD	80	6400	P	60	3600	M	20	800	T	100	10000	**20800**
3	RD	80	6400	C	40	2400	H	40	1600	T	100	10000	**20400**
4	RD	80	6400	C	40	2400	M	20	800	T	100	10000	**19600**
5	RD	80	6400	I	20	1200	H	40	1600	T	100	10000	**19200**
6	RD	80	6400	I	20	1200	M	20	800	T	100	10000	**18400**
7	D	40	3200	P	60	3600	H	40	1600	T	100	10000	**18400**
8	D	40	3200	P	60	3600	M	20	800	T	100	10000	**17600**
9	D	40	3200	C	40	2400	H	40	1600	T	100	10000	**17200**
10	D	40	3200	C	40	2400	M	20	800	T	100	10000	**16400**
11	D	40	3200	I	20	1200	H	40	1600	T	100	10000	**16000**
12	D	40	3200	I	20	1200	M	20	800	T	100	10000	**15200**
13	RD	80	6400	P	60	3600	H	40	1600	N	20	2000	**13600**
14	RD	80	6400	P	60	3600	M	20	800	N	20	2000	**12800**
15	RD	80	6400	C	40	2400	H	40	1600	N	20	2000	**12400**
16	RD	80	6400	C	40	2400	M	20	800	N	20	2000	**11600**
17	RD	80	6400	I	20	1200	H	40	1600	N	20	2000	**11200**
18	RD	80	6400	I	20	1200	M	20	800	N	20	2000	**10400**
19	D	40	3200	P	60	3600	H	40	1600	N	20	2000	**10400**
20	D	40	3200	P	60	3600	M	20	800	N	20	2000	**9600**
21	D	40	3200	C	40	2400	H	40	1600	N	20	2000	**9200**
22	D	40	3200	C	40	2400	M	20	800	N	20	2000	**8400**
23	D	40	3200	I	20	1200	H	40	1600	N	20	2000	**8000**
24	D	40	3200	I	20	1200	M	20	800	N	20	2000	**7200**

Fig. 11

Component Master with Codes that Aggregate Component Shapes

111 Component Number	112 Packing Style	Maintenance Status	Machine Section	Size	Tape Width	113 Constant	114 Rating	Attributes	115 Target Code
R02-1111-05	M	5	CM	1005	8	1.0k	1/10	...	SMS1005
R02-3333-05	M	5	CM	1005	8	1.6k	1/10	...	SMS1005
R02-5555-05	M	4	CM	1005	8	2.7k	1/10	...	SMS1005
R02-7777-05	B	5	H	90-20	-	100k	1	...	LHA9020
R02-9999-05	M	5	AX	90-20	52	68k	1	...	LMA9020
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

Description of Maintenance Status

Maintenance Status	Contents
0	Unregistered
1	Under Registration
2	Correction Required (for Changes in Design Standards, Operation, etc.)
3	Under Correction(for Dealing with Troubles, Changes in Specification or Technical Standards, etc.)
4	Temporarily Registered(for Testing, Early File Generation, Early Placement Confirmation, etc.)
5	Registration Completed

Fig. 12 Table 011 (Association between Combinations of Determination Grounds Information and Determination Result Information)
- - Displayed Only SMS1005 of Surface Mount Component - -

115	091	092	093	094	121	122	123	124	125
Target Code	Soldering Section	Plate Making Section	Mounting Density Section	Component Through Section	Process Section	Maintenance Status	Item Requiring Correction	PCB CAD Component Number (Determination Result Information)	Message
	Determination Grounds Information (R/D)	Determination Grounds Information (PHT)	Determination Grounds Information (MT-H)	Determination Grounds Information (T)					
SMS1005	RD	I	M	N	1	4	0000001---	1000	· Check Function Could Not be Set Because of Not Enough Data Necessary for Mounting Area Check. Update PCB CAD Components in File and Confirm that Mounting Area Check Can be Used after Maintenance of PCB CAD Components is Completed.
SMS1005	RR	P	H	N	1	4	0100010---	2000	Netlist Can be Captured, but Since Land Specification is not Unfixed, Perform Replacement Process After Completion of Maintenance of PCB CAD Component
SMS1005	RD	I	L	N	0	3	1101000---	3000	· Under Correction with Dealing a Trouble
SMS1005	RD	P	H	N	1	5	0000000---	4000	
SMS1005	RD	C	M	N	1	5	0000000---	5000	
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

Description of Process Section and Maintenance Status

Process Section	Contents
0	Out of Processing
1	To be Processed

Maintenance Status	Contents
0	Unregistered
1	Under Registration
2	Correction Required (for Changes in Design Standards, Operation, etc.)
3	Under Correction(for Dealing with Troubles, Changes in Specification or Technical Standards, etc.)
4	Temporarily Registered(for Testing, Early File Generation, Early Placement Confirmation, etc.)
5	Registration Completed

Fig. 13

PCB CAD Component Number output for SMS1005

115	101	091	092	093	094	121	122	123	124	125
Target Code	Selection Priority Order	Soldering Section Determination Grounds Information (R/D)	Plate Making Section Determination Grounds Information (PHT)	Mounting Density Section Determination Grounds Information (MT-H)	Component Through Section Determination Grounds Information (T)	Process Section	Maintenance Status	Item Requiring Correction	PCB CAD Component Number	Message
SMS1005	13	RD	P	H	N	1	5	0000000…	4000	
SMS1005	16	RD	C	M	N	1	5	0000000…	5000	
SMS1005	18	RD	I	M	N	1	4	0000001…	1000	· Check Function Could Not be Set Because of Not Enough Data Necessary for Mounting Area Check. Update PCB CAD Components in File and Confirm that Mounting Area Check Can be Used after Maintenance of PCB CAD Components is Completed
SMS1005	—	RD	I	L	N	0	3	1101000…	3000	· Under Correction with Dealing a Trouble
SMS1005	—	RR	P	H	N	1	4	0100010…	2000	· Netlist Can be Captured, but Since Land Specification is not Unfixed, Perform Replacement Process After Completion of Maintenance of PCB CAD Component

Description of Process Section and Maintenance Status

Process Section	Contents
0	Out of Processing
1	To be Processed

Maintenance Status	Contents
0	Unregistered
1	Under Registration
2	Correction Required (for Changes in Design Standards, Operation, etc.)
3	Under Correction(for Dealing with Troubles, Changes in Specification or Technical Standards, etc.)
4	Temporarily Registered(for Testing, Early File Generation, Early Placement Confirmation, etc.)
5	Registration Completed

Fig. 14

Table 011 (Association between Combinations of Determination Grounds Information and Determination Result information)

- - Displayed Only Lead Components - -

115	091	092	093	094	121	122	123	124	125
Target Code	Soldering Section	Plate Making Section	Mounting Density Section	Component Through Section	Process Section	Maintenance Status	Item Requiring Correction	PCB CAD Component Number (Determination Result Information)	Message
	Determination Grounds Information (R/D)	Determination Grounds Information (PHT)	Determination Grounds Information (MT-H)	Determination Grounds Information (T)					
LHA9020	D	P	M	T	1	4	0011010…	2000	· Netlist Can be Captured, but Since Land Specification is not Unfixed, Perform Replacement Process After Completion of Maintenance of PCB CAD Component
LHA9020	H	I	L	N	1	5	0000000…	6000	
LHA9020	D	C	M	T	1	4	1010000…	4000	·Check Mounting Results in a Prototype Check Meeting of PCB CAD Components responding to New Design Standards Hole Size and Report the Result to Library Staff.
LMA9020	D	I	L	N	1	5	0000000…	1000	
LMA9020	D	P	H	N	1	5	0100000…	3000	
LMA9020	D	I	M	N	1	5	0000000…	5000	
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

Description of Process Section and Maintenance Status

Process Section	Contents
0	Out of Processing
1	To be Processed

Maintenance Status	Contents
0	Unregistered
1	Under Registration
2	Correction Required (for Changes in Design Standards, Operation, etc.)
3	Under Correction(for Dealing with Troubles, Changes in Specification or Technical Standards, etc.)
4	Temporarily Registered(for Testing, Early File Generation, Early Placement Confirmation, etc.)
5	Registration Completed

Fig. 15

PCB CAD Component Number Output for LMA9020 and LHA9020

115	101	091	092	093	094	121	122	123	124	125
Target Code	Selection Priority Order	Soldering Section Determination Grounds Information (R/D)	Plate Making Section Determination Grounds Information (PHT)	Mounting Density Section Determination Grounds Information (MT-H)	Component Through Section Determination Grounds Information (T)	Process Section	Maintenance Status	Item Requiring Correction	PCB CAD Component Number	Message
LHA9020	8	D	P	M	T	1	4	0011010…	2000	· Netlist Can be Captured, but Since Land Specification is not Unfixed, Perform Replacement Process After Completion of Maintenance of PCB CAD Component
LHA9020	10	D	C	M	T	1	4	1010000…	4000	· PCB CAD Component Responding to New Standards Hole Size. Check Mounting Status in Prototype and Report the Result to Library Staff.
LHA9020	—	H	I	L	N	1	5	0000000…	6000	
LMA9020	19	D	P	H	N	1	5	0100000…	3000	
LMA9020	24	D	I	M	N	1	5	0000000…	5000	
LMA9020	—	D	I	L	N	1	5	0000000…	1000	

Description of Process Section and Maintenance Status

Process Section	Contents
0	Out of Processing
1	To be Processed

Maintenance Status	Contents
0	Unregistered
1	Under Registration
2	Correction Required (for Changes in Design Standards, Operation, etc.)
3	Under Correction(for Dealing with Troubles, Changes in Specification or Technical Standards, etc.)
4	Temporarily Registered(for Testing, Early File Generation, Early Placement Confirmation, etc.)
5	Registration Completed

Fig. 16

A Setting Change Version of Determination Grounds Information Importance of Fig. 8

Process Setting (074)	Determination Material (041)	Determination Material Configuration Code (042)	Configuration Code Importance (081)	Determination Grounds Information (082)	Determination Grounds Information Importance (083)	Temporary Selection Flag (084)	Description of Setting Intent	Message (085)
jcset02	Soldering Section	-/D	80	D	80	0	Preferentially Use Component Dedicated for DIP(D) in DIP Specification	
jcset02	Soldering Section	-/D	80	RD	40	0	Use Component for Reflow/DIP (RD) in case of No Component Dedicated for DIP	
jcset02	Soldering Section	-/D	80	H	20	0	Use Component for by-Hand (H) in case of Neither Component Dedicated for DIP (D) Nor Reflow/DIP (RD)	
jcset02	Soldering Section	R/D	80	RD	80	0	Preferentially Use Component for Reflow/DIP (RD) in Reflow/DIP (RD) Specification	
jcset02	Soldering Section	R/D	80	D	70	0	Use Component Dedicated for DIP(D) in case of No Component Dedicated for Reflow/DIP (RD) *Lead Components are registered for DIP(D) and by-Hand (H). Description is on the Premise that No by-Hand (H) Component Against Reflow/DIP (RD) Specification in This Embodiment.	
jcset02	Soldering Section	R/R	80	RR	80	0	Cannot be Used Component Except for Reflow (R)	
jcset02	Plate Making Section	PHT	60	P	60	0	Preferentially Use Component for Photographic Process (P) for Plate Making Section (PHT)	
jcset02	Plate Making Section	PHT	60	C	40	0	Use Component Both for Photographic Process and Printing Process(C) in case of No Component for Photographic Process (P)	
jcset02	Plate Making Section	PHT	60	I	20	1	Use Component Dedicated for Printing Process(I) in case of Neither Component Dedicated for Photographic Process (P) Nor both for photolithography and printing method (C) (Note) Out of Processing for the Information with Temporary Flag is Set When Normal Output or Checking	Temporary Select PCB CAD Component for Printing Process Replace the Component to Component Dedicated for Photographic Process or Both for Photographic Process and Printing Process After Registering Any One of Them
jcset02	Plate Making Section	PRT	60	I	60	0	Preferentially Use Component for Printing Process(I) for Printing Process (PRT) Specification	
jcset02	Plate Making Section	PRT	60	C	40	0	Use Component both for Photographic Process and Printing Process (C) in case of No Component for Printing Process(I)	
jcset02	Mounting Density Section	MT-H	40	H	80	0	Use Component for High-Density Placement Specification (H) in case of High-Density Mounting Specification	
jcset02	Mounting Density Section	MT-H	40	M	10	0	Use Component for Standard Density Placement Specification (M) in case of No Component for High-Density Placement Specification	
jcset02	Mounting Density Section	MT-M	40	M	80	0	Use Component for Standard Density Placement Specification (M) in case of Standard Mounting Density Specification	
jcset02	Mounting Density Section	MT-M	40	L	10	0	Use Component for Low Density Placement Specification (L) in case of No Component for Standard Density Placement Specification	
jcset02	Mounting Density Section	MT-L	40	L	80	0	Use Component for Low Density Placement Specification (L) in case of Low Density Mounting Specification	
jcset02	Component Through Section	T	100	T	100	0	Use Component for Component Through Specification (T) and Mount by Process of Hand mounting and DIP Soldering in case of Component Through Specification	
jcset02	Component Through Section	T	100	N	20	0	Use Component for Non-Through Specification (N) in case of No Component for Component Through Specification	
jcset02	Component Through Section	N	100	N	100	0	Cannot be used Component Except for Non-Through Specification (N) in case of PCB without Through Holes	

Fig. 17 Comparison of Differences between Combinations of Determination Grounds Information Before and After Setting Change

101	091				092			093				094			102
Selection Priority Order	Soldering Section				Plate Making Section			Mounting Density Section				Component Through Section			(Sum) of Overall Importance (Product)
	Determination Material Configuration Code (R/D)			Configuration Code Importance:80	Determination Material Configuration Code (PHT)		Configuration Code Importance:60	Determination Material Configuration Code (MT-H)			Configuration Code Importance:40	Determination Material Configuration Code (T)		Configuration Code Importance:100	
	Determination Grounds Information / Determination Grounds Information Importance			Configuration Level Importance (Product)	Determination Grounds Information / Determination Grounds Information Importance		Configuration Level Importance (Product)	Determination Grounds Information / Determination Grounds Information Importance			Configuration Level Importance (Product)	Determination Grounds Information / Determination Grounds Information Importance		Configuration Level Importance (Product)	
1	RD	RD	80	6400	P	60	3600	H	H	80	3200	T	100	10000	**23200**
②	RD	**D**	70	5600	P	60	3600	M	**H**	80	3200	T	100	10000	**22400**
3	RD	RD	80	6400	C	40	2400	H	H	80	3200	T	100	10000	**22000**
4	RD	**D**	70	5600	C	40	2400	M	**H**	80	3200	T	100	10000	**21200**
5	RD	RD	80	6400	I	20	1200	H	H	80	3200	T	100	10000	**20800**
⑥	RD	RD	80	6400	**P**	60	3600	M	M	10	400	T	100	10000	**20400**
7	D	D	70	5600	I	20	1200	H	H	80	3200	T	100	10000	**20000**
8	D	D	70	5600	P	60	3600	M	M	10	400	T	100	10000	**19600**
9	D	RD	80	6400	C	40	2400	H	M	10	400	T	100	10000	**19200**
10	D	D	70	5600	C	40	2400	M	M	10	400	T	100	10000	**18400**
11	D	RD	80	6400	I	20	1200	H	M	10	400	T	100	10000	**18000**
12	D	D	70	5600	I	20	1200	M	M	10	400	T	100	10000	**17200**
13	RD	RD	80	6400	P	60	3600	H	H	80	3200	N	20	2000	**15200**
14	RD	D	70	5600	P	60	3600	M	H	80	3200	N	20	2000	**14400**
15	RD	D	80	6400	C	40	2400	H	H	80	3200	N	20	2000	**14000**
16	RD	RD	70	5600	C	40	2400	M	H	80	3200	N	20	2000	**13200**
17	RD	RD	80	6400	I	20	1200	H	H	80	3200	N	20	2000	**12800**
18	RD	RD	80	6400	P	60	3600	M	M	10	400	N	20	2000	**12400**
19	D	D	70	5600	I	20	1200	H	H	80	3200	N	20	2000	**12000**
20	D	D	70	5600	P	60	3600	M	M	10	400	N	20	2000	**11600**
21	D	RD	80	6400	C	40	2400	H	M	10	400	N	20	2000	**11200**
22	D	D	70	5600	C	40	2400	M	M	10	400	N	20	2000	**10400**
23	D	RD	80	6400	I	20	1200	H	M	10	400	N	20	2000	**10000**
24	D	D	70	5600	I	20	1200	M	M	10	400	N	20	2000	**9200**