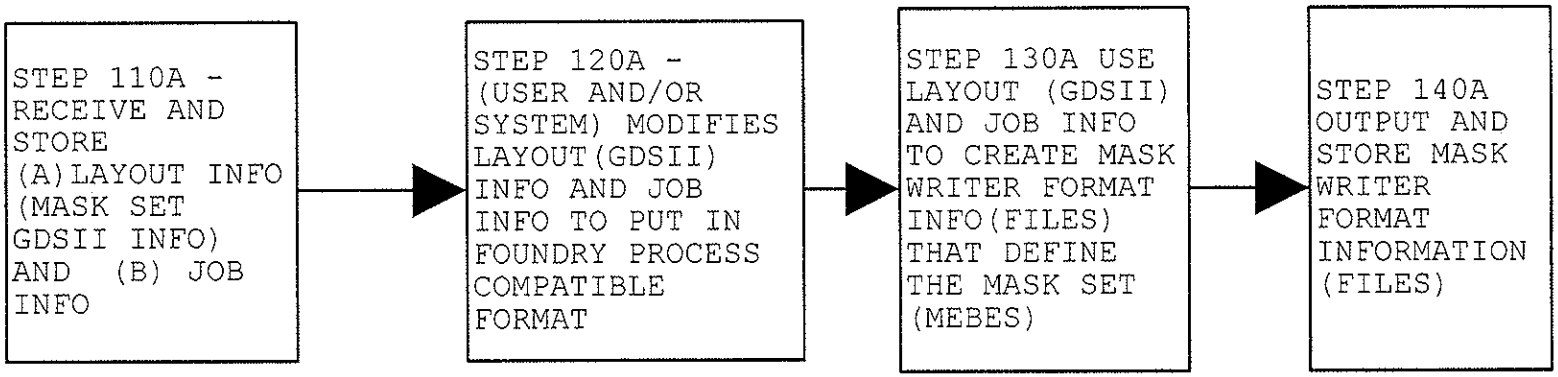

STEP 110A - RECEIVE AND STORE (A)LAYOUT INFO (MASK SET GDSII INFO) AND (B) JOB INFO
STEP 120A - (USER AND/OR SYSTEM) MODIFIES LAYOUT(GDSII) INFO AND JOB INFO TO PUT IN FOUNDRY PROCESS COMPATIBLE FORMAT
STEP 130A USE LAYOUT (GDSII) AND JOB INFO TO CREATE MASK WRITER FORMAT INFO(FILES) THAT DEFINE THE MASK SET (MEBES)
STEP 140A OUTPUT AND STORE MASK WRITER FORMAT INFORMATION (FILES)

FIGURE 1

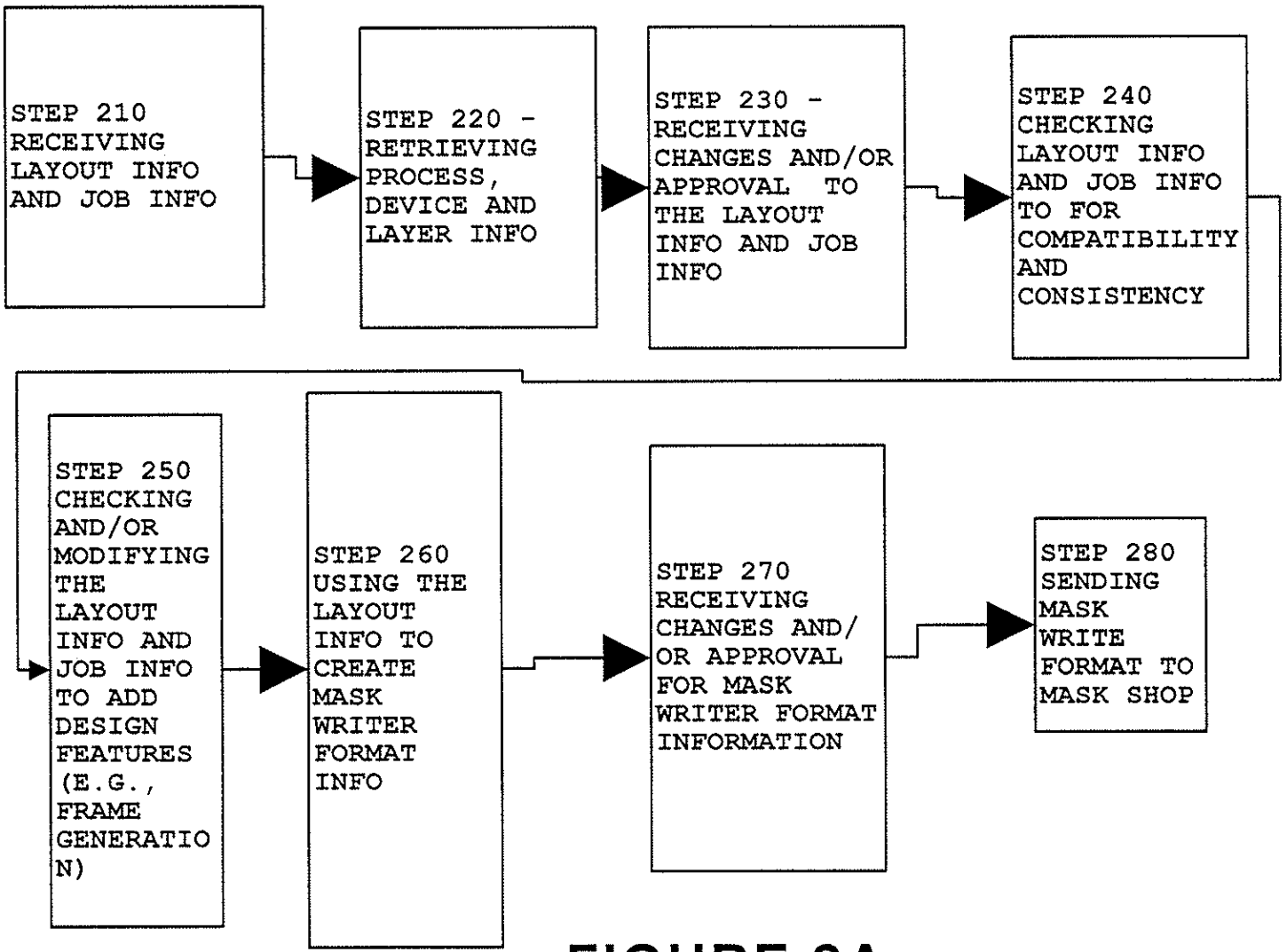

STEP 210 RECEIVING LAYOUT INFO AND JOB INFO
STEP 220 - RETRIEVING PROCESS, DEVICE AND LAYER INFO
STEP 230 - RECEIVING CHANGES AND/OR APPROVAL TO THE LAYOUT INFO AND JOB INFO
STEP 240 CHECKING LAYOUT INFO AND JOB INFO TO FOR COMPATIBILITY AND CONSISTENCY
STEP 250 CHECKING AND/OR MODIFYING THE LAYOUT INFO AND JOB INFO TO ADD DESIGN FEATURES (E.G., FRAME GENERATION)
STEP 260 USING THE LAYOUT INFO TO CREATE MASK WRITER FORMAT INFO
STEP 270 RECEIVING CHANGES AND/OR APPROVAL FOR MASK WRITER FORMAT INFORMATION
STEP 280 SENDING MASK WRITE FORMAT TO MASK SHOP

FIGURE 2A

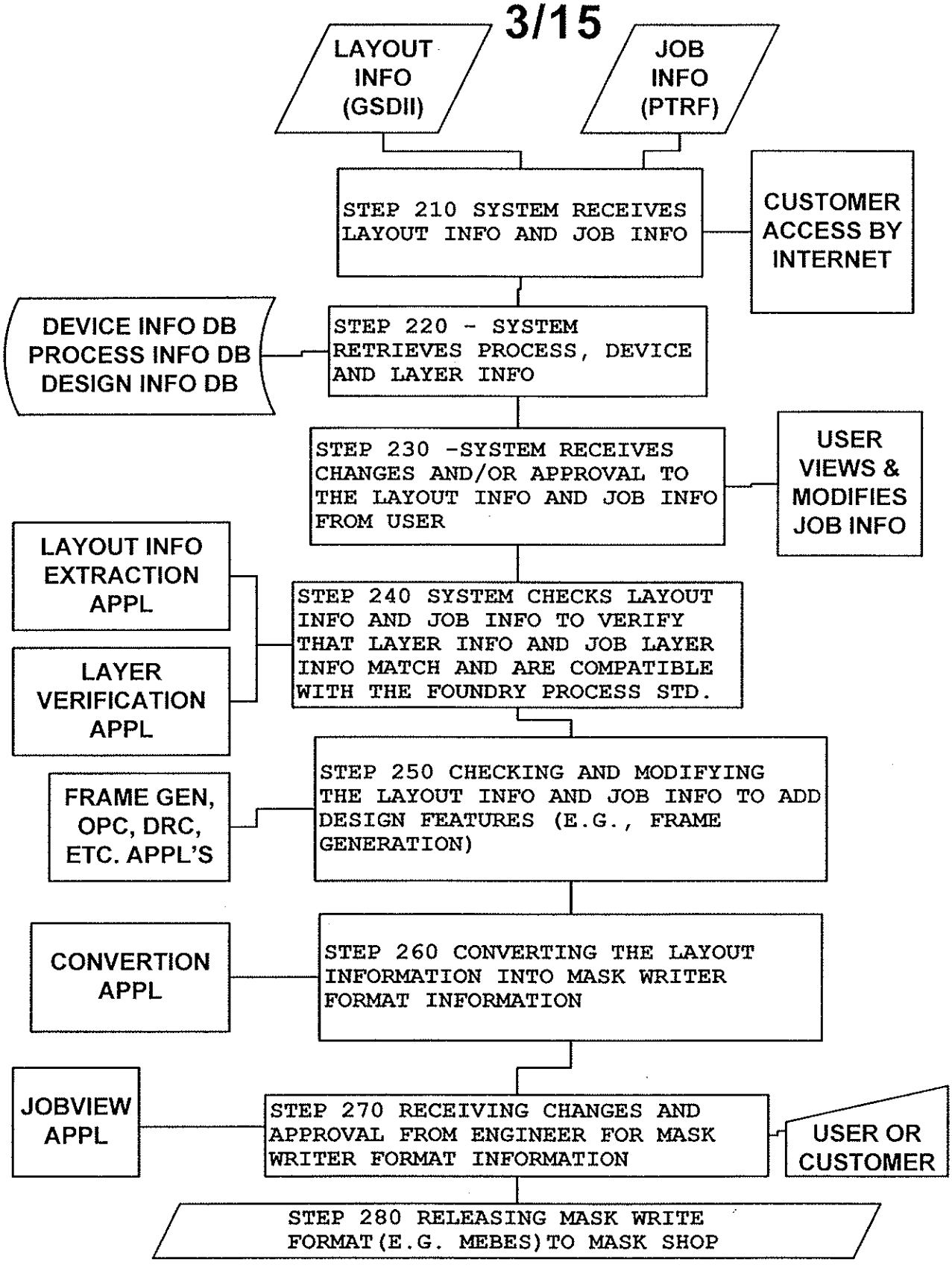

LAYOUT INFO (GSDII)
JOB INFO (PTRF)
STEP 210 SYSTEM RECEIVES LAYOUT INFO AND JOB INFO
CUSTOMER ACCESS BY INTERNET
DEVICE INFO DB
PROCESS INFO DB
DESIGN INFO DB
STEP 220 - SYSTEM RETRIEVES PROCESS, DEVICE AND LAYER INFO
STEP 230 -SYSTEM RECEIVES CHANGES AND/OR APPROVAL TO THE LAYOUT INFO AND JOB INFO FROM USER
USER VIEWS & MODIFIES JOB INFO
LAYOUT INFO EXTRACTION APPL
LAYER VERIFICATION APPL
STEP 240 SYSTEM CHECKS LAYOUT INFO AND JOB INFO TO VERIFY THAT LAYER INFO AND JOB LAYER INFO MATCH AND ARE COMPATIBLE WITH THE FOUNDRY PROCESS STD.
FRAME GEN, OPC, DRC, ETC. APPL'S
STEP 250 CHECKING AND MODIFYING THE LAYOUT INFO AND JOB INFO TO ADD DESIGN FEATURES (E.G., FRAME GENERATION)
CONVERTION APPL
STEP 260 CONVERTING THE LAYOUT INFORMATION INTO MASK WRITER FORMAT INFORMATION
JOBVIEW APPL
STEP 270 RECEIVING CHANGES AND APPROVAL FROM ENGINEER FOR MASK WRITER FORMAT INFORMATION
USER OR CUSTOMER
STEP 280 RELEASING MASK WRITE FORMAT(E.G. MEBES)TO MASK SHOP

FIGURE 2B

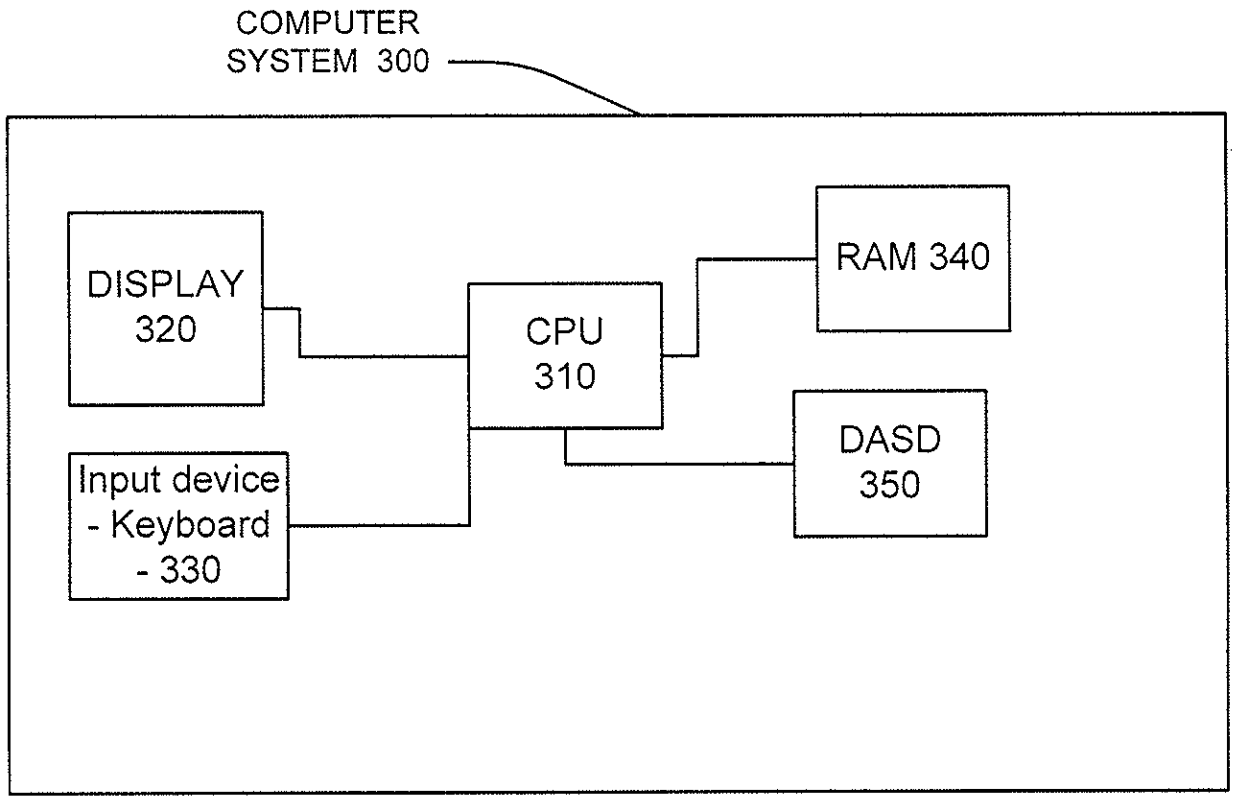

COMPUTER
SYSTEM 300
DISPLAY
320
CPU
310
RAM 340
DASD
350
Input device
- Keyboard
- 330

FIGURE 3

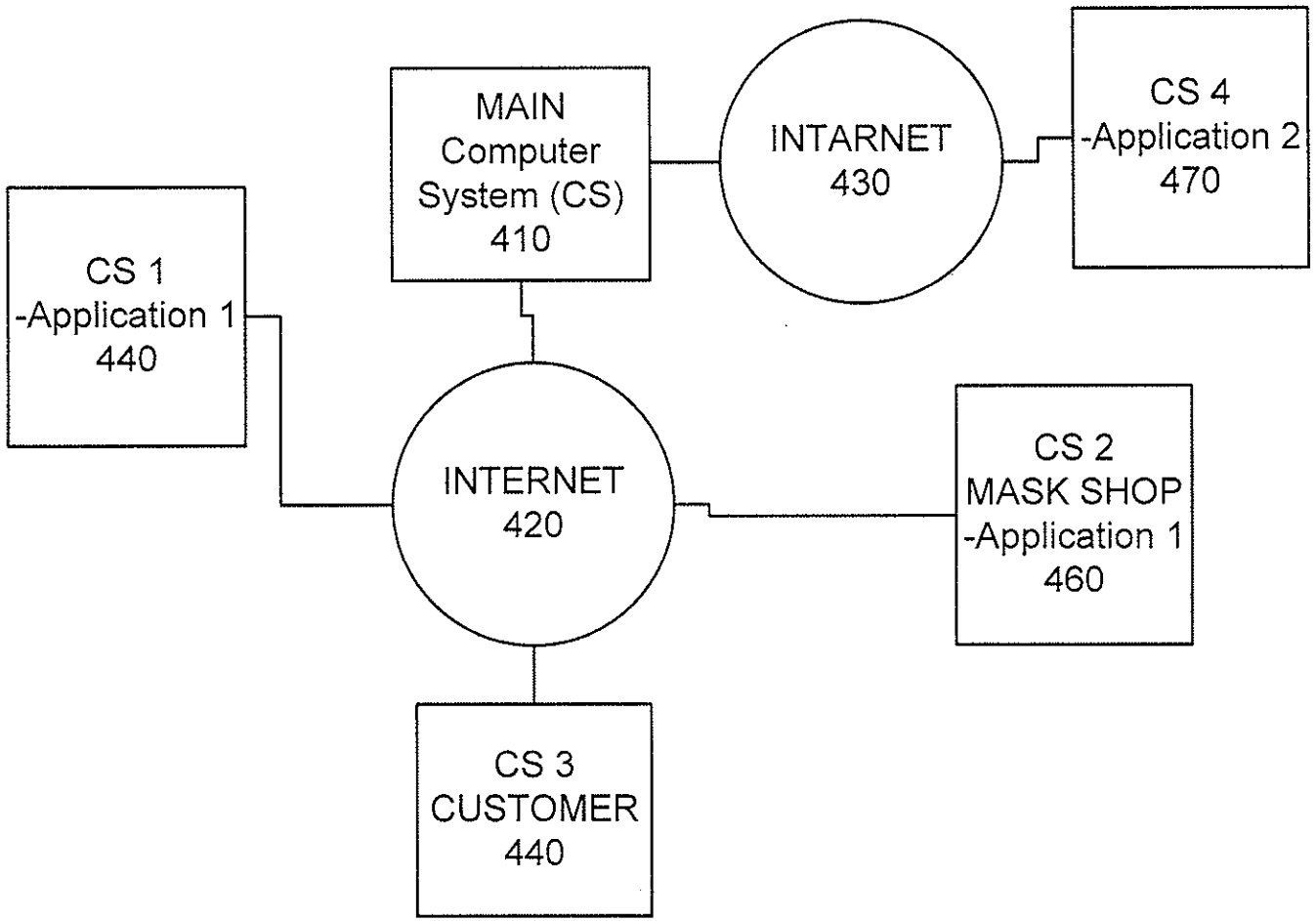

MAIN
Computer
System (CS)
410
INTARNET
430
CS 4
-Application 2
470
CS 1
-Application 1
440
INTERNET
420
CS 2
MASK SHOP
-Application 1
460
CS 3
CUSTOMER
440

FIGURE 4

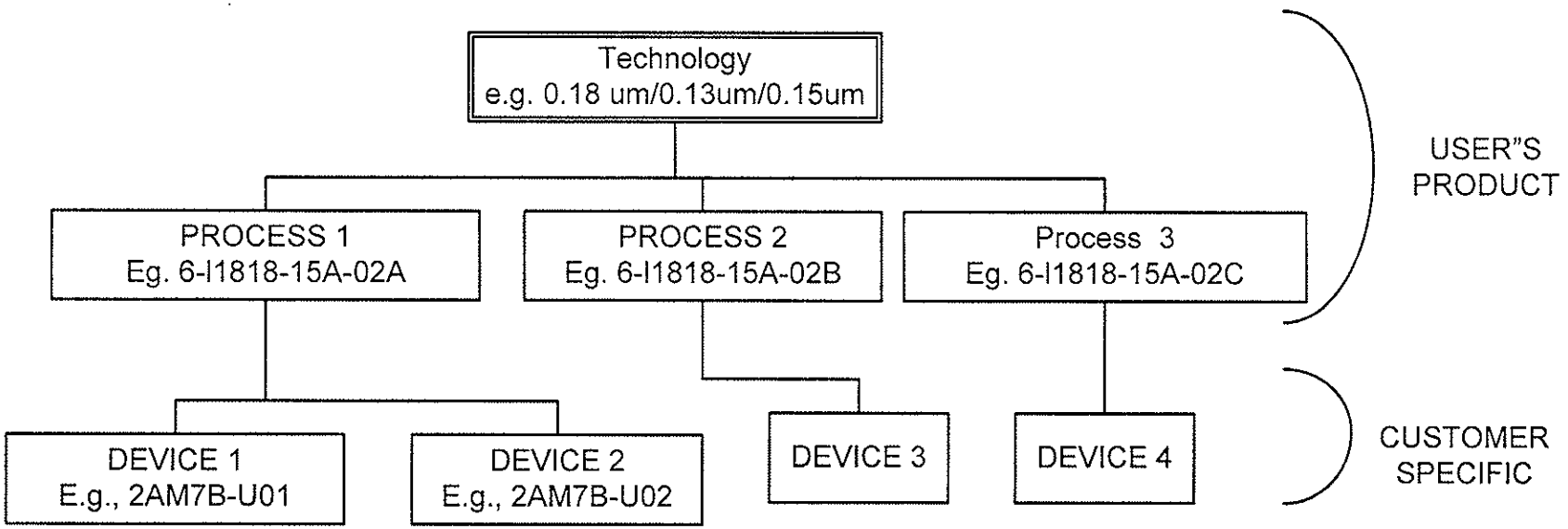

Technology
e.g. 0.18 um/0.13um/0.15um
PROCESS 1
Eg. 6-I1818-15A-02A
PROCESS 2
Eg. 6-I1818-15A-02B
Process 3
Eg. 6-I1818-15A-02C
USER"S
PRODUCT
DEVICE 1
E.g., 2AM7B-U01
DEVICE 2
E.g., 2AM7B-U02
DEVICE 3
DEVICE 4
CUSTOMER
SPECIFIC

FIGURE 5

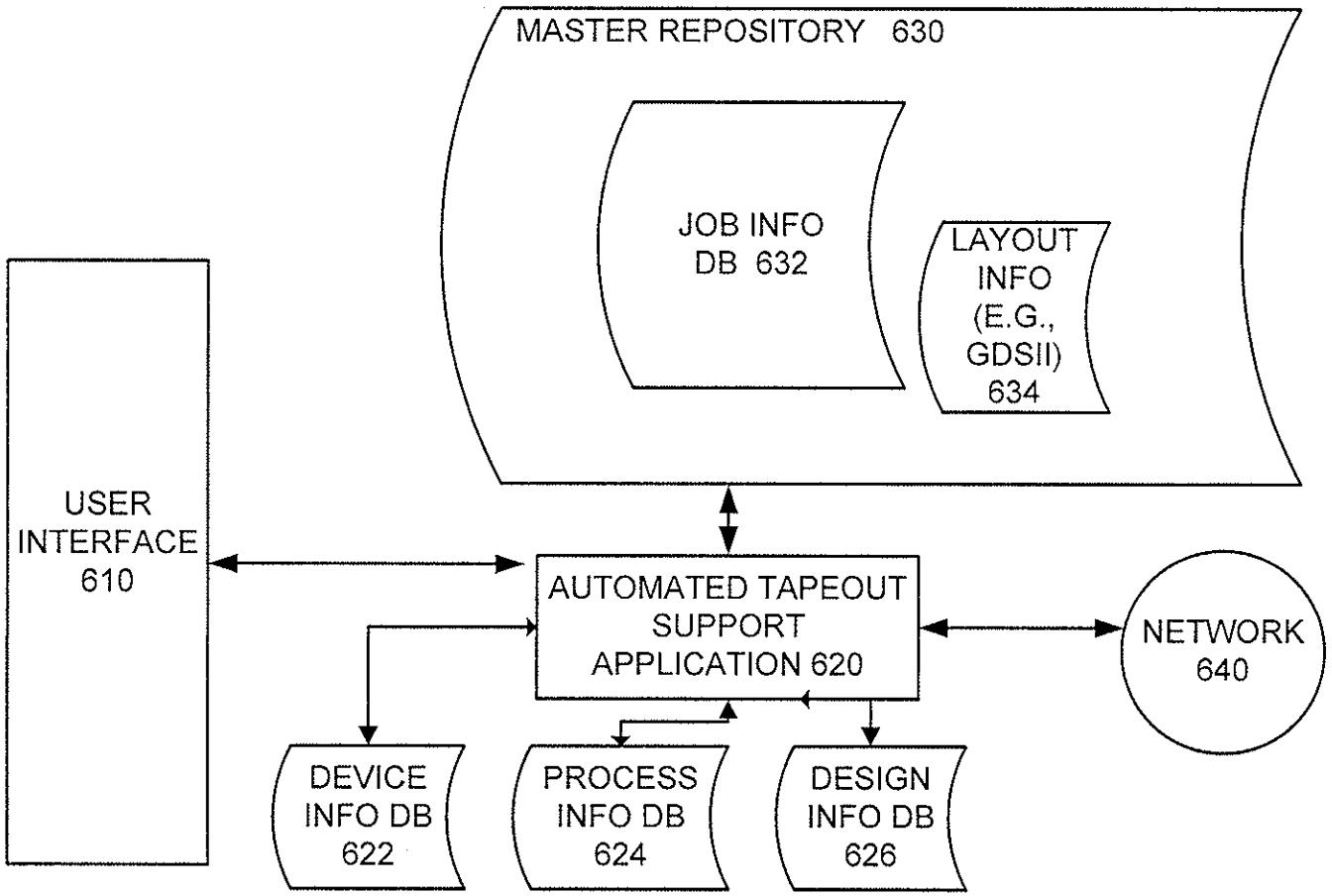

MASTER REPOSITORY 630
JOB INFO DB 632
LAYOUT INFO (E.G., GDSII) 634
USER INTERFACE 610
AUTOMATED TAPEOUT SUPPORT APPLICATION 620
NETWORK 640
DEVICE INFO DB 622
PROCESS INFO DB 624
DESIGN INFO DB 626

FIGURE 6

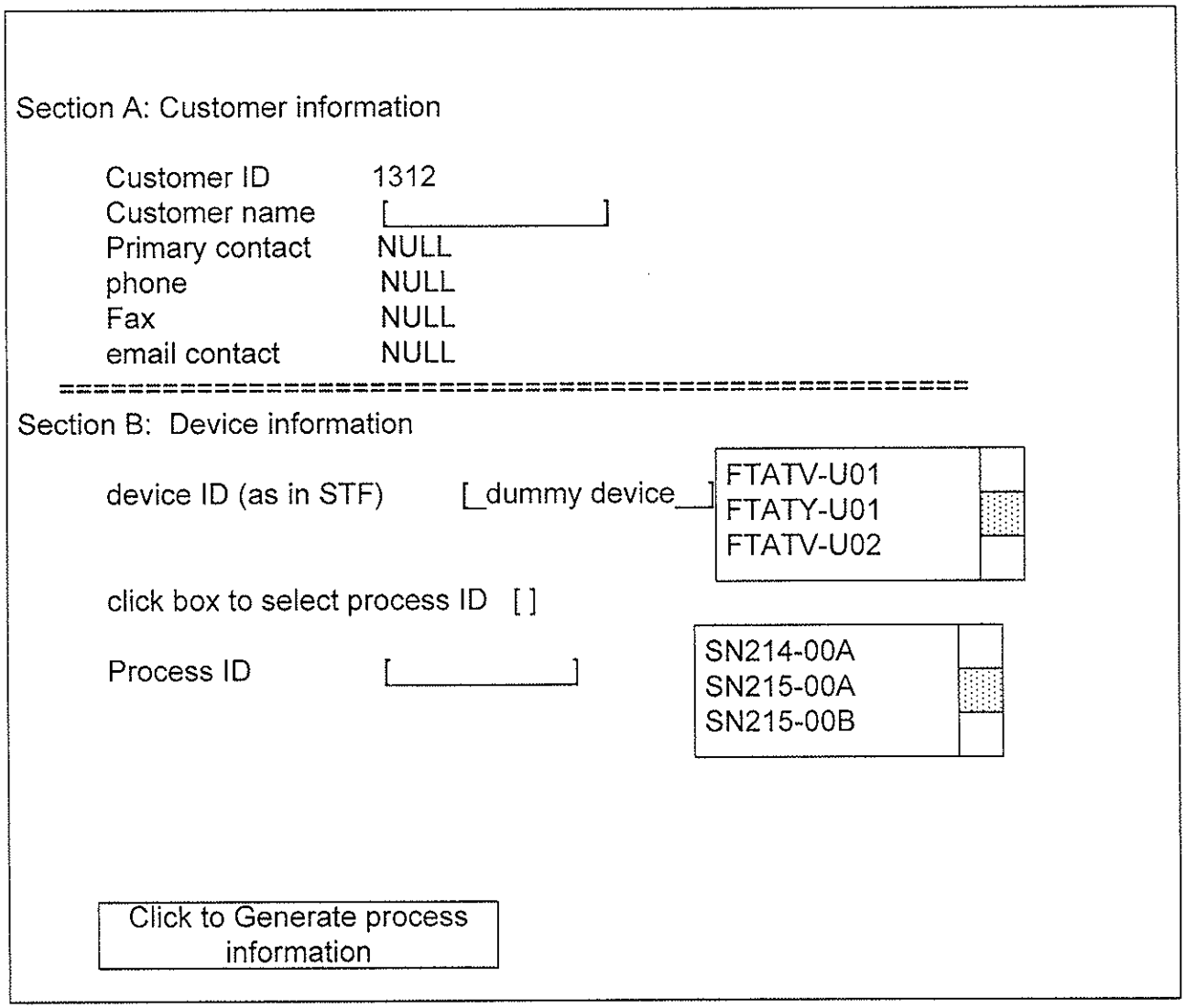

Section A: Customer information
Customer ID 1312
Customer name [_____]
Primary contact NULL
phone NULL
Fax NULL
email contact NULL
Section B: Device information
device ID (as in STF) [_dummy device__]
FTATV-U01
FTATY-U01
FTATV-U02
click box to select process ID [ ]
Process ID [_____]
SN214-00A
SN215-00A
SN215-00B
Click to Generate process information

FIGURE 7A

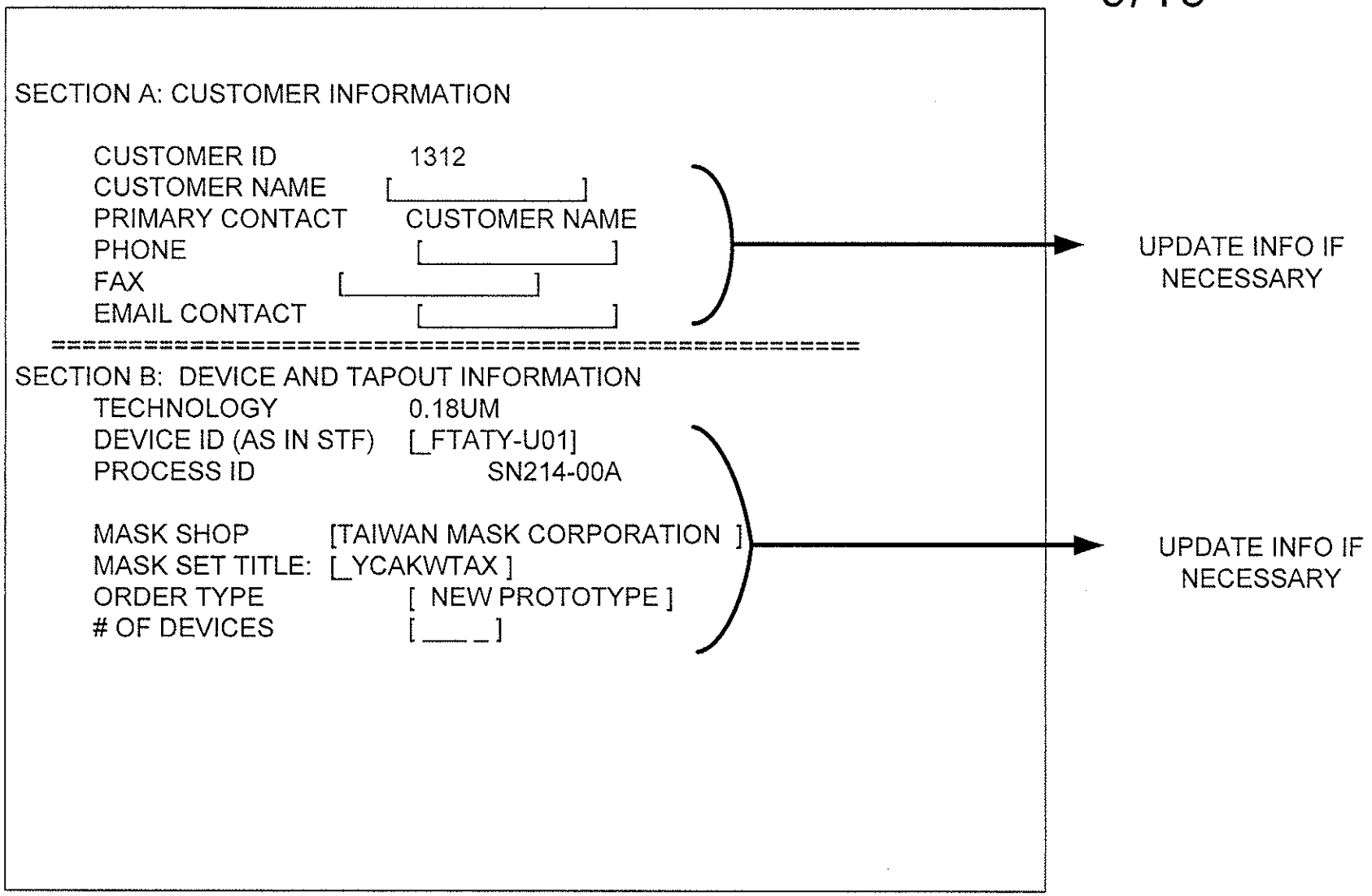

SECTION A: CUSTOMER INFORMATION
CUSTOMER ID 1312
CUSTOMER NAME [_____]
PRIMARY CONTACT CUSTOMER NAME
PHONE [_____]
FAX [_____]
EMAIL CONTACT [_____]
UPDATE INFO IF NECESSARY
SECTION B: DEVICE AND TAPOUT INFORMATION
TECHNOLOGY 0.18UM
DEVICE ID (AS IN STF) [_FTATY-U01]
PROCESS ID SN214-00A
MASK SHOP [TAIWAN MASK CORPORATION ]
MASK SET TITLE: [_YCAKWTAX ]
ORDER TYPE [ NEW PROTOTYPE ]
# OF DEVICES [ ___ _ ]
UPDATE INFO IF NECESSARY

FIGURE 7B

SCRIBE LINE DROP IN

1) CLICK HER TO DOWNLOAD THE TEMPLATE FOR SCRIBE LINE STRUCTURE
2) FILL-IN THE DOCUMENT AND SAVE IN YOUR LOCAL HARD DRIVE
3) ATTACHES THE SAME DOCUMENT THROUGH THE LINK "ADD/ REMOVE ATTACHMENTS" (AFTER SAVING CURRENT FORM)

CUSTOMER PO NUMBER P012345
SUBMISSION REASON: NEW PROTOTYPE
CUSTOMER FLOOR PLAN [ ] YES [ * ] NO
POLYMIDE: [ ] YES [ * ] NO
CUSTOMER TO JOBVIEW? [ ] YES [ * ] NO
JOBVIEW GRATING BY CUSTOMER? [ ] YES [ * ] NO
SPICE MODEL SPECIFICATION [SM-TX-0412 ] REV: [1A ]
DESIGN RULE SPECIFICATION
USED [Y1-093-DR01 REV: [1L ]
ET AL. SPEC USED [NO] REV: [N/A ]
LIBRARY USED: [ ] YES [ * ] NO
[ ] ADVANT! [ ] STD CELL
[ ] ARTISAN [ ] STD CELL
[ ] VIRAGE [ ] MEMORIES
[ ] OTHER IPS [ _____ ]
TAPEOUT FORMAT: GDSII
BACKGRIND THICKNESS" [19 MILS ]

FIGURE 7C

## Section C:Design Rule Check Information

HELP Customer Information Device and Tapeout Information DRC Information Frame Information GDSII Database Information

**First Tapeout to Chartered:** (•) Yes ( ) No

(•) Path 1 ( ) Path 2

(•) Chartered Runs DRC ( ) Customer Runs DRC (Please Attach DRC Report)

** Path1 : Run DRC and close DR violations review prior to release for mask making.*

** Path2 : Run DRC and close DR violations review in RTP plan.*

## Section D:Frame Information

HELP Customer Information Device and Tapeout Information DRC Information Frame Information GDSII Database Information

**Do you want Guard Ring to be added:** (•) Yes ( ) No

**Chartered Default Guard Ring Spacing is 10µm. Special Requirement on Guard Ring Spacing?** (•) Yes ( ) No

**Space to Guard Ring(in microns):** 10

**Chartered Default Assembly Die size increment is 10µm. Please specify if otherwise** (•) Yes ( ) No

**Special Requirements for Assembly Die Size**

| | | | |
|---|---|---|---|
| **Assembly Die Size increment:** | 5.0 | | |
| **X value(in microns):** | 0.0 | **Y value(in microns):** | 0.0 |

FIGURE 7D

## Section E:GDSII Database Information

HELP Customer Information Device and Tapeout Information DRC Information Frame Information GDSII Database Information

### Header Information

| | |
|---|---|
| **Top Cell Name:** | DUMMYTOPCELL |
| **Anti Clockwise Orientation:** | ○ 0 Degree ◉ 90 Degrees ○ 180 Degrees ○ 270 Degrees |
| **Database Scale:** | ◉ 1X ○ 2X ○ 4X ○ 5X |
| **E-Beam Shrink to:** | 100.0 % |

### FTP Information

| | |
|---|---|
| **Site:** | ftp2 |
| **Directory:** | /DEMO1/GDS_FTP |
| **File Name:** | gdsfilename1.gz |
| **File Size(in bytes):** | 1288429 |
| **Final File Size(in bytes):** | 7225344 |

### Window Co-ordinates (in microns)

| | | | |
|---|---|---|---|
| **Lower left hand X coordinate:** | -2913.0 | **Lower left hand Y coordinate:** | -4060.5 |
| **Upper right hand X coordinate:** | 2913.0 | **Upper right hand Y coordinate:** | 4060.5 |

FIGURE 7E

Layer Information

HELP

| Sel. | Mask Layer No. | PTRF Layer Name | OPC/PSM | Sizing per Side | Digitized Area Polarity | Rev. | ROM Code | Cust. GDSII# | Data Type | Cust. DB Grid Size | Logical Operation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ☑ | 10 | COMP | OPC | 0.00 | Dark | AZ | | NIL | 30,31,32 | 0.0050 | Chartered Std. |
| ☑ | 05 | N-WELL | NONE | 0.00 | Clear | AZ | | NIL | 0 | 0.01 | Usr_Layer1 OR Usr_Layer2 |
| ☑ | 15 | P-FIELD | NONE | 0.00 | Dark | AZ | | NIL | 0 | 0.01 | Chartered Std. |
| ☑ | 59 | Predope | NONE | 0.00 | Dark | AZ | | NIL | 0 | 0.01 | ((((POLY2 AND P+) AND ((COMP AND N- |
| ☑ | 60 | POLY2 | OPC | 0.00 | Dark | AZ | | NIL | 0 | 0.0 | Chartered Std. |
| ☑ | 61 | ThinNgat | NONE | 0.00 | Clear | AZ | | NIL | 0 | 0.0 | Chartered Std. |

FIGURE 7F

| | | FRAME DIMENSION AND SIZING TABLE (Revision 1B) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Process: SL112-DC1-S*-A (FEOL in SMP), 6ENC1302-A (Single Damascene in CSP) and SLP-013um-002 (Contact in CSP) | | | | | | | | | | | | |
| Process: SL11*-D00-S*-A (FEOL in SMP), 6ENC1302-A (Single Damascene in CSP) and SLP-013um-002 (Contact in CSP) | | | | | | | | | | | | |
| Process: SL110-D00-S*-A (FEOL 3.3V/1.2V in SMP),SL110-DC1-S*-A (FEOL 2.5V/1.2V in SMP) | | | | | | | | | | | | |
| Process: SLP-013UM-008 (BEOL Dual Damascene 1LM in CSP), SLP-013UM-009 (BEOL Dual damascene 3LM in CSP), SLP-013UM-010 (BEOL Dual Damasce | | | | | | | | | | | | |
| MASK # | LAYER NAME | CD CELL TYPE | PITCH | DRAWN CD SPACE | DRAWN CD WIDTH | SIZING PER SIDE | CD CELL SIZE | SCRIBE LINE | FRAME STRUCTURE POLARITY | PELLICLE TYPE | OPC/PSM | Machine/MAG CODE |
| 10 | COMP | LINE | 0.36 | 0.21 | 0.15 | 0.00 | 0.15 | SPACE | CLEAR | K-248 | OPC, PSM | M: Nikon 4X Scanner |
| 11 | AD | SPACE | 1.12 | 0.72 | 0.40 | 0.00 | 0.40 | CHROME | DARK | K-248 | NA | M: Nikon 4X Scanner |
| 6 | DNwell | SPACE | 1.24 | 0.62 | 0.62 | 0.00 | 0.62 | CHROME | DARK | K-248 | NA | M: Nikon 4X Scanner |
| 4 | DPwell | SPACE | 1.24 | 0.62 | 0.62 | 0.00 | 0.62 | CHROME | DARK | K-248 | NA | M: Nikon 4X Scanner |
| 5 | NWELL | SPACE | 1.24 | 0.62 | 0.62 | 0.00 | 0.62 | CHROME | DARK | K-248 | NA | M: Nikon 4X Scanner |
| 15 | P-FIELD | SPACE | 1.24 | 0.62 | 0.62 | 0.00 | 0.62 | CHROME | CLEAR | K-248 | NA | M: Nikon 4X Scanner |
| 28 | Pvt Imp | SPACE | 0.62 | 0.31 | 0.31 | 0.00 | 0.31 | CHROME | DARK | K-248 | NA | M: Nikon 4X Scanner |
| 29 | Nvt Imp | SPACE | 0.62 | 0.31 | 0.31 | 0.00 | 0.31 | CHROME | DARK | K-248 | NA | M: Nikon 4X Scanner |
| 64 | TP | SPACE | 0.62 | 0.31 | 0.31 | 0.00 | 0.31 | CHROME | DARK | K-248 | NA | M: Nikon 4X Scanner |
| 61 | TN | SPACE | 0.62 | 0.31 | 0.31 | 0.00 | 0.31 | CHROME | DARK | K-248 | NA | M: Nikon 4X Scanner |
| 62 | HV_N | SPACE | 0.62 | 0.31 | 0.31 | 0.00 | 0.31 | CHROME | DARK | K-248 | NA | M: Nikon 4X Scanner |
| 6C | N-Ptlu imp | SPACE | 0.62 | 0.31 | 0.31 | 0.00 | 0.31 | CHROME | CLEAR | K-248 | NA | M: Nikon 4X Scanner |
| 58 | Low Vtpn | SPACE | 0.62 | 0.31 | 0.31 | 0.00 | 0.31 | CHROME | DARK | K-248 | NA | M: Nikon 4X Scanner |
| 54 | Low Vtnn | SPACE | 0.62 | 0.31 | 0.31 | 0.00 | 0.31 | CHROME | DARK | K-248 | NA | M: Nikon 4X Scanner |
| 7D | PISCAP | SPACE | 0.80 | 0.40 | 0.40 | 0.00 | 0.40 | CHROME | DARK | K-248 | NA | M: Nikon 4X Scanner |
| 38 | DV | LINE | 1.55 | 0.86 | 0.69 | 0.00 | 0.69 | SPACE | CLEAR | K-248 | NA | M: Nikon 4X Scanner |
| 63 | Resistor | SPACE | 0.80 | 0.40 | 0.40 | 0.00 | 0.40 | CHROME | DARK | K-248 | NA | M: Nikon 4X Scanner |
| 59 | PD | SPACE | 0.62 | 0.31 | 0.31 | 0.00 | 0.31 | SPACE | DARK | K-248 | NA | M: Nikon 4X Scanner |
| 60 | POLY 2 | LINE | 0.31 | 0.18 | 0.13 | -0.005 | 0.12 | SPACE | CLEAR | K-248 | OPC, PSM | M: Nikon 4X Scanner |

FIGURE 8A

# Frame Table

**Spec No.** CX-006-FT260

**Bias Table** SP-YI-09301-BT002.1F

**Process Name**
6-L1818-12A-1833ZZ-0
00-01A

**Technology** 0.18um Logic 8K For 2 Metal Process

**Revision** 1B

6-L1818-12A-1833ZZ-0
00-01B

**Revision Date** 12-Oct-01

**Request No** FC010918C,FC011012A

| Cell Type | Cell Name | Size | Title |
|---|---|---|---|
| PME | pmca0121xe_03 | 2990um X 90um | |
| AVERN | avna0231x_07 | 2916um X 40um | |
| CDCELL | cdca0821x_01_opc1 | 1120um X 34um | |
| BARINBAR | bara0161x_07 | 4680um x 36um | |
| SCROT | srca0261x_04 | 30um X 112um | |
| MULTI | mmka0021x_03 | 290um X 46um | AA Mark 20P-4F |
| MULTI | mmka0031x_03 | 290um X 46um | AA Mark 20P-4F D |
| CANON | pama0011x98_02 | 76um X 76um | |
| ETSLM | etsa002_lo97_02h1_hdp | 74um X 1050um | ETS A002 LO97 02 |

FIGURE 8B