MESA HELP

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SYSTEM OVERVIEW

MESA – Manufacturing Execution System Application, Sold by Camstar Inc., an IBM Partner.

MESA is an integrated relational database system for discrete part manufacturing (a computerized record-keeping system). A relational database system is a database in which the data is perceived by the user as tables (and nothing but tables).

The software is installed on our AS400 computer located in the Gleason building at RIT. It is connected by Ethernet LAN to networked file servers and PCs on the RIT campus. Supporting PowerPoint documents are stored on network drive `\kgcoe-file\morbo-jdrive\` in the Mesadoc folder. Each PC that is used with MESA also has NWA Quality Analyst 5.1 installed which is used to create and view statistical process control (SPC) charts. The data files, header files and run files for NWA are stored on the network drive morbo-jdrive in the QA folder. Each PC is automatically connected to the network drive when rebooted.
MESA - TERMINOLOGY

AS/400 – the IBM computer that is used for the MESA software.
Ethernet – Local area network.
Exit F3 – quit out of function.
Cancel F12 – go back to previous screen.
User ID – individual identification code = RIT computer account name.
Operator – lowest level of security…least amount of access to MESA.
Integrated Relational Database – data base in which everything is a table with predefined fields (columns)
Resource – tool, supplies or people
Work Center – physical location of a tool
Operation – something that is done in a tool
Department – group of work centers and/or tools
Plant – manufacturing location. Like Motorola MOS-11 in Austin, TX.
Resource Type – Tool or Operator
Resource Sub Type – type of tool or skill level of operator
Resource ID – individual tool name.
Unit of Measure – basic unit of the product we are making. i.e. wafers
User Defined Units of Measure – other units like micrometers, angstrom, etc.
Start Code – product or engineering run eg PROD, ENG
Scrap Code - why a lot was scrapped, eg. PHOTO, METL,
Bonus Code - why extra wafers were added.
Yield Loss Code – why wafers were scrapped, eg. BWOP, BWEQ
Hold Code - why a lot is put on hold, eg SPEC, TIME
Operation – something that is done to the wafers like RCA clean.
Process – list of steps each with associated operation, instructions, parameters and documents.
Specification – links instruction, parameters, documents for each step in a process.
Product – defined by maskset and stepper job
Product Class – analog, digital, MEMs etc.
Mask ID – specific identification for a mask.
Mask Level Name – mask level name is generic for a process. Like CMOS there level names like well, active, channel stop, etc.
Mask Set – specific group of masks
Document – text or graphical information
Step – what a process is made up of
Instruction Group - instructions
Parameter Group – specifics about the data to be collected
Report – pre defined query that is printed
Listing – printed to printer
Inquiry – printed to screen
Query – generic extraction of data from the data base
Transaction – do something to wafers, lot or group of lots
**ADDING STUDENTS TO EMPLOYEE TABLE**

1. Sign-on to MESA as an engineer with plant RIT, User ID ENGINEER and password WAFER
2. Select Files and Tables (2)
3. Select Files and Tables Maintenance (1)
4. Select Table Data Master Maintenance (6)
5. Action 1=create, 2=change, 4=delete.
   Table Name = EMPLOYEE
   Code = ritusername or use F4 for change and delete
6. Code Description is the students full name
   Display Sequence =0.0
   Authorize Override = N
   Display Name = nickname or first name
7. Enter
PRINT OUT OF EXISTING PROCESSES

A common request from faculty concerning MESA is how to print out the step-by-step instructions for a particular process.

1. Sign-on to MESA as a faculty with plant RIT, User ID FACULTY and password__________.
2. Select Files and Tables (2)
3. Select Files and Tables Listing (3)
4. Select Process Master Listing (3) shortcut (PCMSRPT)
5. Select the process name using F4 prompt function. Enter on both the "From" and "To" line (example: From: CMOS, To: CMOS Revision PW-1), then press enter.
   Change instruction detail and parameter detail from N to Y. Then press Enter
6. Select N for batch processing and select 2 to change report description and print text. Enter returns to print screen.
7. Press enter again and the document will print in the printer next to Sara’s desk.
1. Sign-on to MESA as a faculty with plant RIT, User ID FACULTY and password__________.
2. Select WIP-tracking Menu (1)
3. Select Lot Status Report Menu (3)
4. Select Lot History Report (10)
5. Press F11 and select Y for instructions and Move-out parameter data. Enter.
6. Select N for batch processing and select 2 to change report description and print text. Set output option to 1, 2 or 3. Enter return to print. The printer is the networked laser printer in the MicroE Office.
MESA YIELD LOSS CODES

ALGN- alignment problem
ASH- can not ash resist
BCOT- bad resist coating
BWEQ- broken wafer by equipment
BWOP- broken wafer by operator
CD- critical dimension problem
ENG- wafer removed by engineering
FURN- furnace problem
IMPD- implant damage to resist from high current
IMPL- implant wrong side of wafer
MADH-metal adhesion problem
PADH- photoresist adhesion problem
RIE- improper Reactive Ion Etch (over etch)
SINT-sinter error (above 575 °C)
SPEC - Data out of spec
TIME - Did not have time to finish move
RELEASE A LOT FROM HOLD

To release a lot that is on hold.

1. Sign-on to MESA as a faculty with plant RIT, User ID FACULTY and password__________.
2. Select WIP-tracking Menu (1)
3. Select Transaction Processing Menu (1)
4. Select Transaction Processing Menu #2 (31)
5. Select Release shortcut (RELS)
6. Enter Employee Name: ______________
   Lot Number: ______________
   Operation: _________

Comments:________________________________________________________________________
TRANSACTION REVERSAL

To undo a move-in or a move-out.

1. Sign-on to MESA as a faculty with plant RIT, User ID FACULTY and password__________.
2. Select WIP-tracking Menu (1)
3. Select Transaction Processing Menu (1)
4. Page down Select Transaction Menu #3 (32)
5. Select Transaction Reversal (8) shortcut (TREV)
6. Enter Employee Name: ____________
   Lot Number: ____________
CORRECTING DATA PREVIOUSLY STORED IN MESA

To change data stored in MESA.

1. Sign-on to MESA as a faculty with plant RIT, User ID FACULTY and password__________.
2. Select Quality Data Collection Menu (3)
3. Select Quality Data Menu (2)
4. Select QDC Maintenance (2) shortcut (QDCFMNT)
5. Enter Lot Number:_____________ Operation: ____________
   Process Step: _______________
Then Page Down to advance to Move-Out data collection.
6. Change values (2 in front of value to be changed) and Update (F17)
STARTING NEW LOT FOR EXISTING PRODUCT/PROCESS

These instructions tell how to START a new lot.
1. Sign-on to MESA as a faculty with plant RIT, User ID FACULTY and password__________.
2. Select WIP-tracking Menu (1)
3. Select Transaction Processing Menu (1)
4. Select START shortcut (START)
5. Enter Employee Name ___________
   Lot Number ___________
Use F for Factory Lots and L for class Lots and YYMMDD
ex: L020123 for a lot start on January 23, 2002 for a class product
Use F4 and select existing product
Process Step ___1_______
Operation ___ID01_____
Due Date/Time _MM/DD/YY HH:MM:SS_
Press Enter
Enter Customer Name ___________
Press Enter
Press Enter
SHIPPING A LOT

When a lot is completed the last move-out is really a SHIP transaction. These instructions tell how to do the SHIP transaction.

1. Sign-on to MESA as a faculty with plant RIT, User ID FACULTY and password__________.
2. Select WIP-tracking Menu (1)
3. Select Transaction Processing Menu (1)
4. Select Shipment (7) shortcut (SHIP)
5. Enter Employee Name __________
   Lot Number __________
   From Operation __________
   Quantity Out __________
   Ship to Code __________
   Run Time __________
DISPLAY CONTROL CHARTS / UPDATE SPC QUERY

1. Be sure to load QEMM Quarterdeck Expanded Memory Manager during reboot.
2. Be sure that the PC organizer is running. If it is running then Alt0 should do nothing. If Alt0 take you to DOS prompt then PC organizer is not running. Type STARTPCS.
3. From the MESA Custom Menu select SPC QUERY.
4. Select the parameter of interest
5. Select CONTROL CHARTS
6. Select the parameter of interest
VIEW SPC QUERY
CREATING AND DISPLAYING TEXT AND GRAPHIC DOCUMENTS

To create text and graphic documents that can be viewed from inside MESA.

Create a MESA Document ID. (DMMSMNT)
  F3 to get to MESA Main Menu
  Select Files/Tables Menu
  Files/Table Maintenance
  Document Master Maintenance
  Give the document a unique ID (use the F4 prompt to see other document ID's). Give a description. Give Folder J:/MESADOC/.
  Give creator name = your last name. If you are updating an existing file you may only need to change creator name.
Attach the document now on the J: drive with a specific MESA instruction.

Select Files/Tables Menu
Files/Tables Maintenance
Process Master Maintenance - change, process name (use F4), enter, enter
Maintain Instruction (type MI in front of step of interest), enter.

Select 2 to change an instruction.
Insert or change the document ID
F10 to view the document
Save F17 (or F8 if you don't want to make changes)
F3, etc., etc., etc.,
SETTING NEW CALENDAR (EACH NEW YEAR)

These instructions tell how to set up the new calendar year.
1. Sign-on to MESA with plant RIT, User ID ENGINEER and password__________.
2. Select Systems functions Menu (18)
3. Select calendar maintenance Menu (5)
4. Select Maintain Work Calendar (1) Initialize 3 year calendar
   Work Center leave Blank
   Year to update 20XX
   enter, then set all days to work days
5. Select Maintain Calendar/Shift file (3)
   (F6) Initialize Calendar Year
   Set 01/01/XX as first day of the year
   also as first day of the quarter
   also as first day of the week
   enter
REBOOT AS400 COMPUTER

Sometimes it is necessary to reboot the AS400 to establish communications with the various PC’s and Workstations in the Lab. The error is CWBC01003 - winsock error, function returned 10060 HOST400

Access the AS400 in the closet near ISE office (see Trent White, TAWHelp@rit.edu)

Turn on the monitor and sign on to AS400
Username: must be system administrator
Password: **********

Press F4
At the command prompt type pwrdwnsys
and select *IMMED
Select Restart Yes, wait time 30 seconds, IPLA, Panel
Press enter and wait 10-20 minutes
RECOVER FROM MSG-2061 ERROR

Deleting and Recreating your Public Data Queues

To ensure all invalid records are removed from the data queues, the most effective solution is to create new data queues. Sign on to the AS/400 with profile QPGMR to ensure proper authority to perform this function. The following commands assume that your database is called MESADADB. If this is not the case, substitute the correct database name in the commands.

Note: In all cases ‘vm’ refers to the MESA version/modification (e.g., 20 for version 2 modification 0).

1) Sign on to the AS/400 using QPGMR profile.
2) End the Real Time Production Monitor (required ONLY if you have the RTPM Module):
   AS/400 Command
   ADDLIBLE MESA20A (for the duration of this function)
   MESA Command
   RTPMSTP
3) Sign off from MESA and check to ensure all users are signed off:
   AS/400 Command
   WRKOBJLCK OBJ (MESADDB/LTPSL100) OBJTYPE(*FILE)
4) End the MESA subsystems:
   AS/400 Command
   ENDSBS MESA *IMMED
   ENDSBS MESATP *IMMED
   ENDSBS MESACP *IMMED
   ENDSBS MESASP *IMMED

Use QSECOFR username MESA20A

Skip third command
RECOVER FROM MSG-2061 ERROR

Where XXXX is DATA

Set as shown

Skip third one
PROCESS RECOVERY FROM INCORRECT EXIT

Prior to logging onto the AS/400 try clicking on communications Then select configure and workstation ID…type in the ID Shown in the message at the bottom of the screen. Then try to maintain the process.

If that does not work sign on to the AS/400 as security officer, 3 General Systems Tasks, 8 Device Operations, 1 Work with Device Status, and make the device ID shown available
Another approach for recovery from incorrect exit during process maintenance is as follows

1. Sign-on to AS400 as security officer, User ID _____________ and password_________.
2. On a command line type CLRPFM (press F4)
3. Physical file ……LTPPH800
   Library…………..MESADБ
   ENTER
4. Repeat 3. for LTPPO800
5. Exit
To re-enable the account from the console. Log in as QSECOFR then run: CHGUSRPRF STUDENT STATUS(*ENABLED), "You can use the CHGUSRPRF command to enable a profile that has been disabled. You must have *SECADM special authority and *OBJMGT and *USE authority to the profile to change its status. The topic "Enabling a User Profile" on page 104 of the reference below shows an example of an adopted authority program to allow a system operator to enable a profile." -pg 62 (84) "You can always sign on with the QSECOFR (security officer) profile at the console, even if the status of QSECOFR is *DISABLED. If the QSECOFR user profile becomes disabled, sign on as QSECOFR at the console and type CHGUSRPRF QSECOFR STATUS(*ENABLED)." -pg 104 (126)

REFERENCES

1. Camstar Systems Inc, 900 E. Hamilton Ave, Suite 400, Campbell, CA 95008, RL Phone 408 559-5709