

Review R400 Picture Editor Enhancements

L908

LCN

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Acronyms

APM.....	Advanced Process Manager
CB	Basic Controller
CL.....	Control Language
DDB.....	Display Database
EC	Enhanced Controller
MC.....	Multifunction Controller
PE	Picture Editor
PM.....	Process Manager
TFE.....	Text File Editor
UCN.....	Universal Control Network
US	Universal Station

References

Publication Title	Publication Number	Binder Title	Binder Number
<i>Picture Editor Reference Manual</i>	SW09-450	Implementation/Engineering Operations-2	TDC 2032-2
<i>Actors Manual</i>	SW09-455	Implementation/Engineering Operations-2	TDC 2032-2

Introduction

Module Overview

About this module

The purpose of this course module is to describe the R400 enhancements that affect graphics building, including the following:

- Comments in picture building
- Multiple pages for targets, variants, and conditions
- Copy of text file into Picture Editor port
- New actors
- New commands
- Improved commands
- New application subpictures
- Find Names inclusion of DDB references

Objectives

Given reference documentation and an operating TDC 3000^X system, use the Picture Editor to do the following:

- Document an entire picture by using the Define Comment command.
- Document a target, variant, or condition by using comments in a port.
- Print selected objects in a schematic.
- Copy a text file into a Picture Editor port.
- List the R400 application subpictures.
- Use Find Names to search for DDB references.

Sample test items

This course module's Criterion Test includes demonstrating the following tasks to your course manager:

- Document a picture by using the Define Comment command.
 - Document a target, variant, or condition by using comments in a port.
 - Print a selected target in a schematic.
 - Copy a text file into a Picture Editor port.
 - Use Find Names to search for DDB references.
-

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Module Overview, Continued

ATTENTION

ATTENTION—The Picture Editor enhancements introduced with R420 and R430 software are discussed in other course modules or manuals:

<u>R420/R430 Enhancement</u>	<u>Course Module/Manual</u>
Multiple Compile	- PE Reference Manual
Multiple Print	- Debug Custom Displays /PE Reference Manual
TR_CLINE Actor	- Build Custom Trends /Actors Manual
\$KEYCHG/\$KEYRST Actors	- Actors Manual
ACKSTAT Improvements	- Update Custom Displays /PE Reference Manual
\$DT_ENTY System DDB	- Build Generic Custom Displays /Actors Manual

R400 Picture Editor Enhancements

Comments

Description

The Picture Editor comments feature gives the developer/editor of a picture the capability to document the design and features of the picture directly with the picture.

Two types of comments are allowed:

- General comments entry - one or more pages of notes concerning the entire picture or a subpicture.
 - Use the new Define Comment command (DEF COM).
- Comments in all ports - individual Targets, Conditions, and Variants. Multiple pages per port allow the user to insert comments as needed.
 - Use braces ({ }) as delimiters for comments within a port.

Comments do not affect the size of the object code.

Rules

The following rules apply to comments for Targets, Conditions, and Variants.

- Cannot nest comments.
 - Cannot span pages.
 - Cannot be placed between variables (point.parameter) or keywords (IF, THEN, ELSE).
-

ATTENTION

ATTENTION—When a subpicture is added to a display, its comment is copied too, but you can't see it; you can see only the main picture's comment.

To see a subpicture comment, read the subpicture into the Picture Editor and use the Define Comment command.

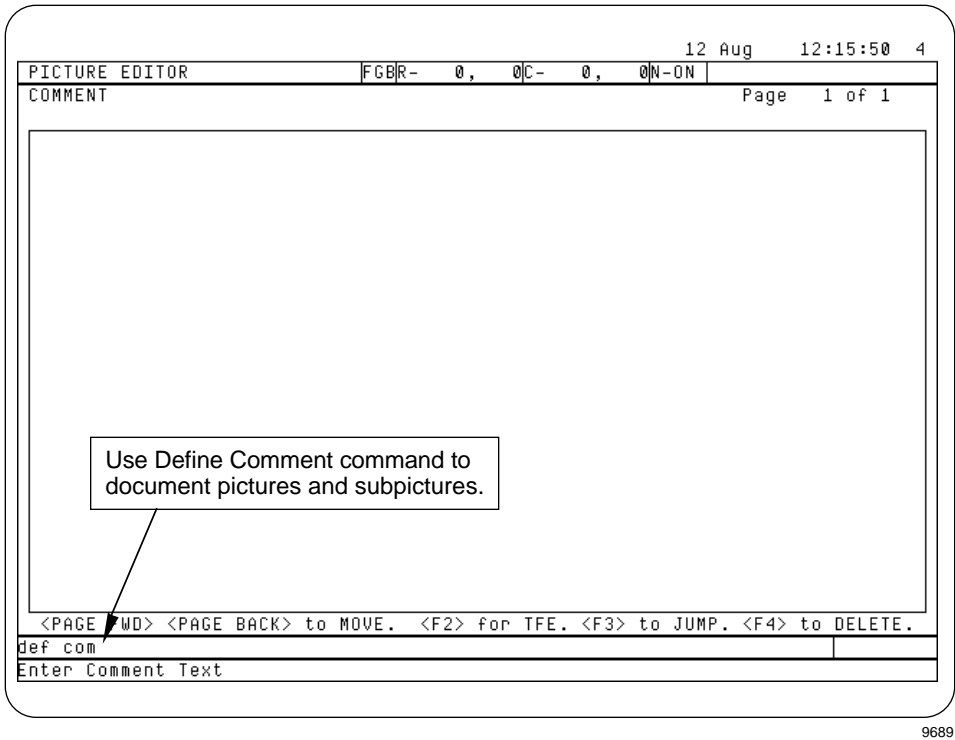
Continued on next page

General comment

Figure 1 shows the entry port for commenting an entire picture or subpicture.

Braces are not needed when the DEF COM command is used to enter a general comment; the user simply starts typing into the port or uses the F2 command to transport a file from the Text File Editor. The F2 function is discussed later.

Figure 1 Picture or Subpicture Comment—DEF COM



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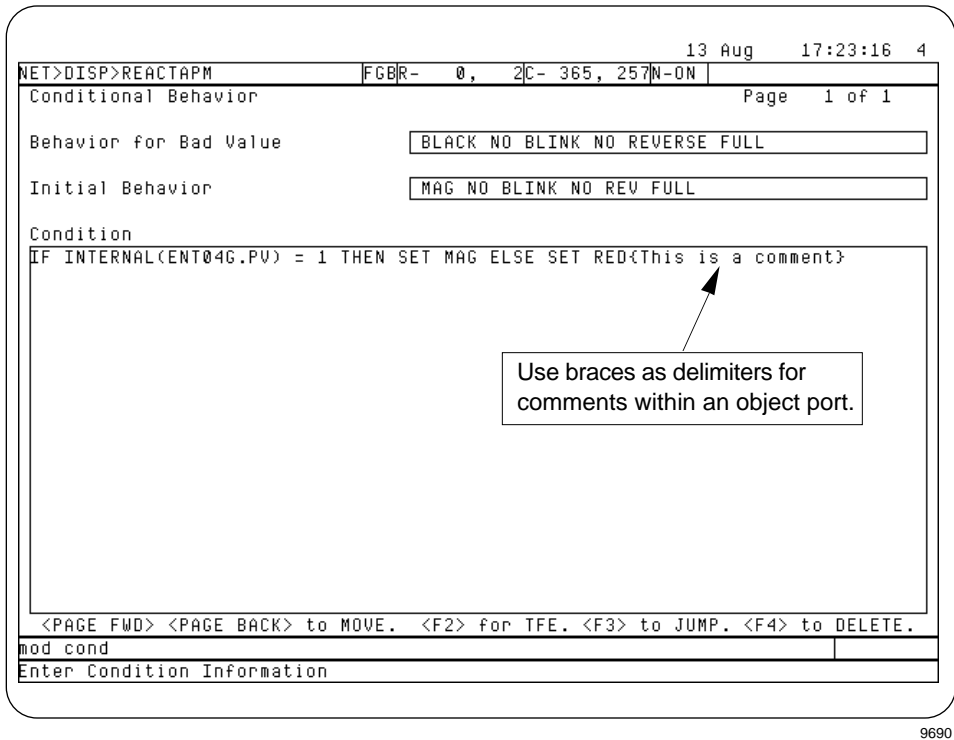
Continued on next page

Comments, Continued

Comments for Target, Condition, Variant

Figure 2 shows a comment within an entry port, in this case a condition entry port.

Figure 2 Comments for Targets, Variants, and Conditions



Helpful hint

For debugging purposes, certain actions within an object can be “commented out” to checkout the rest of the picture.

Continued on next page

Comments, Continued

Other functions

Figure 3 defines functions appearing at the bottom of the general comment entry port and the entry ports for Targets, Variant, and Conditions.

Figure 3 F2, F3, F4 Functions

12 Aug 12:25:14 4

NET>TEST> FGBR- 0, 0C- 0, 0N-ON

Current Position : Page 1 of 2

Enter Page to Jump to :

Display resulting from F3 command.

12 Aug 12:15:50 4

PICTURE EDITOR FGBR- 0, 0C- 0, 0N-ON

COMMENT Page 1 of 1

<PAGE FWD> <PAGE BACK> to MOVE. <F2> for TFE. <F3> to JUMP. <F4> to DELETE.

Enter Comment Text

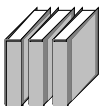
Functions:

- F2 - Invokes Text File Editor
- F3 - JUMPs to an Entered Page Number
- F4 - DELETE - Deletes Current Page, Other Than Page 1
- [PAGE FWD] and [PAGE BACK] Moves Through Pages

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CAUTION

CAUTION—Be careful with the DELETE (F4) command; there is no “undo” command!



REFERENCE—Function F2 is described in the next section of this course module. Refer to section 3.3.3 in the *Picture Editor Reference Manual* for more information on the DEFINE COMMENT command.

Text File in Port (F2)

Description

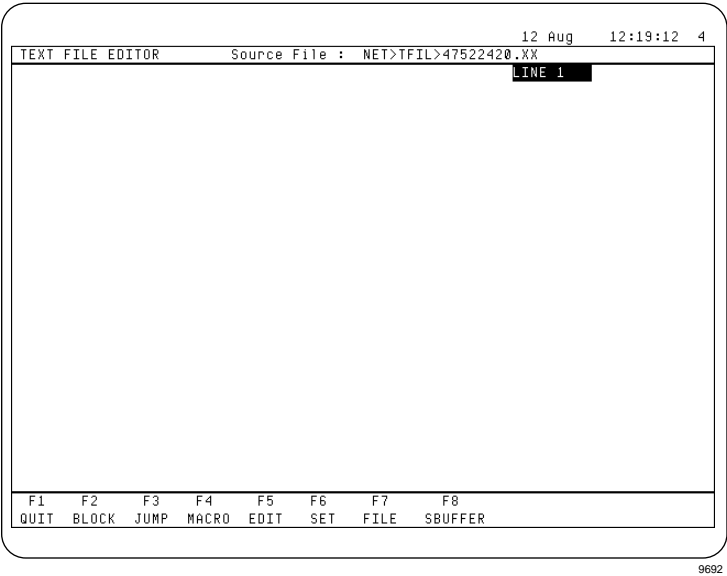
The F2 function accesses the Text File Editor from the general comment port or the Target, Variant, and Condition ports.

Use the F2 function to create and edit text to be entered into a Picture Editor port, or use it to transfer a previously built text file into a Picture Editor port. The F2 function allows you to build a “template” (such as a generic Target template, for example), then transfer it to a Picture Editor port.

Procedure

The procedure to use the F2 function is described in Table 1.

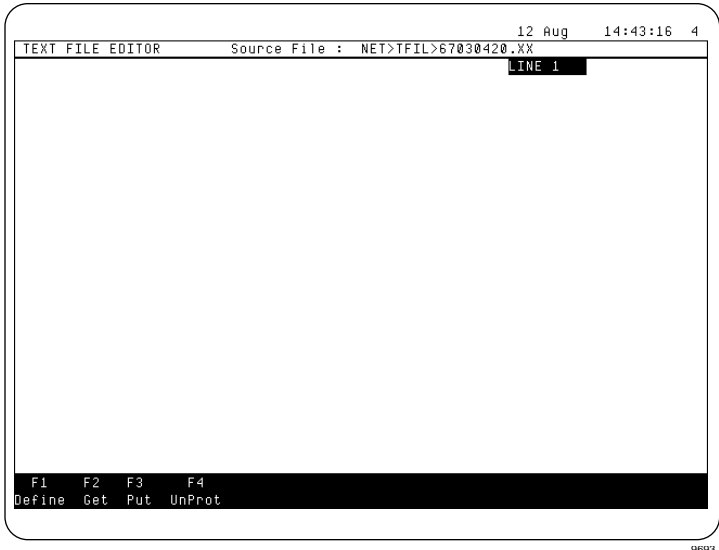
Table 1 F2 Procedure

Step	Action
1	<p>Do one of the following:</p> <ul style="list-style-type: none">• Use the DEFine COMment command to open a comment port for the picture or subpicture.• Use the ADD or MODify command to open a port for a Target, Variant, or Condition. <p>Result: An entry port appears (see Figure 3).</p>
2	<p>Press [CTL] [F2].</p> <p>Result: The Text File Editor is invoked, and a temporary file is opened in the temporary file directory. If text existed in the port, that text is displayed.</p> <div></div> <p>NOTE: The location of the temporary file directory is specified in the US's pathname display. The default path is NET>TFIL. If the <i>default</i> path is used, the directory TFIL must be created.</p>

Continued on next page

Text File in Port (F2), Continued

Table 1 F2 Procedure, *continued*

Step	Action						
3	<table><tr><th>If...</th><th>Then...</th></tr><tr><td>You want to get a previously created text file,</td><td>Continue with Step 4.</td></tr><tr><td>You want to enter text now,</td><td>Type-in the text and skip to Step 8.</td></tr></table>	If...	Then...	You want to get a previously created text file,	Continue with Step 4.	You want to enter text now,	Type-in the text and skip to Step 8.
If...	Then...						
You want to get a previously created text file,	Continue with Step 4.						
You want to enter text now,	Type-in the text and skip to Step 8.						
4	<p>Press [CTL] [F7] to display the FILE commands.</p> <p>Result: New file commands appear at bottom of screen.</p> <div></div>						
5	<p>Press [CTL] [F1] to DEFINE the file.</p> <p>Result: An entry port appears.</p>						
6	<p>Type-in and enter the pathname of the desired text file.</p> <p>Example: NET>TEST>TEST.XX</p> <p>Result: Command is accepted.</p>						
7	<p>Press [CTL] [F2] to GET the file.</p> <p>Result: File is read into Text File Editor and appears on the screen.</p>						
8	<p>Press [CTL] [F1] to QUIT the Text File Editor.</p> <p>Press [CTL] [F2] to EXIT the Text File Editor.</p> <p>Result: Message “Reestablishing Picture Editor” appears, then Picture Editor port appears with text file in port.</p>						

Actors

Description

Table 2 describes the new actors added to the R400 Picture Editor.

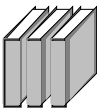
Table 2 New Actors

Actor	Description
BACK_OV	Invokes overlay to run in background/lower priority mode (designed for internetwork parameters).
DSP_FILE	Displays a named text file on the screen.
PRT_FILE	Outputs a named text file to a named printer.
EXTR_ENT	Extracts the entity name from a name that includes a network ID. (FE\FIC1000)
EXTR_ID	Extracts the network ID.
R_DUR	Reads duration data entered through an input port.
S_DUR	Stores duration data in the display database.
SS_DUR	Stores duration data in the system database.
REM_MOVE	Moves the cursor on a remote station (e.g., upper tier)
REM_STR	Sends a string of characters to a remote station.

Display file

Use this actor to bring various types of text files to the operator's screen, including the following:

- Reports written to a file by way of a virtual printer
- Operating procedures and help
- CL listings
- Equipment lists
- Results of Documentation Tool queries



REFERENCE—The new actors are described in the Picture Editor *Actors Manual*.

Commands

Description

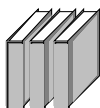
Table 3 describes the *new* R400 Picture Editor commands
Table 4 describes the R400 *enhancements* to existing commands.

Table 3 New Commands

Command	Description	Format
SELECT STRING	Selects main picture and subpicture objects that contain the specified text string in a port or in the text. Wild-card characters are allowed. Coordinates may be specified. A special message appears to indicate a string occurrence in comment ports, initial/final targets, help and associated display names.	SEL STR "XYZ"
LOAD EQUIPMENT LIST	Loads DDB locations defined in an Equipment List object file.	LDQ nnnn
UNLOADEQ	Deletes the names Equipment List object file.	ULDQ nnnn

Table 4 Enhanced Commands

Command	Description	Format
PRINT	Prints to a printer <i>or</i> a named file. Format is more concise. Variables are alphabetized. Menu appears to select object(s) to be printed if object is not specified in command. Options are available: APP—append to file (otherwise overwrite) SEL—print only items selected on the display SY—print data on variables	P \$Pn or P (file pathname)
MODIFY SUBPICTURE	If the subpicture has no user-visible parameters, the following message appears instead of parameter declarations: SUBPICTURE NNN AT X Y NO PARAMETERS TO THIS SUBPICTURE	M S
SYSTEM ID	Used to prefix all system variables in a schematic with a network identifier corresponding to the network on which the points reside.	SYS_ID nn



REFERENCE—The *Picture Editor Reference Manual* contains details about PE commands.

PRINT Option

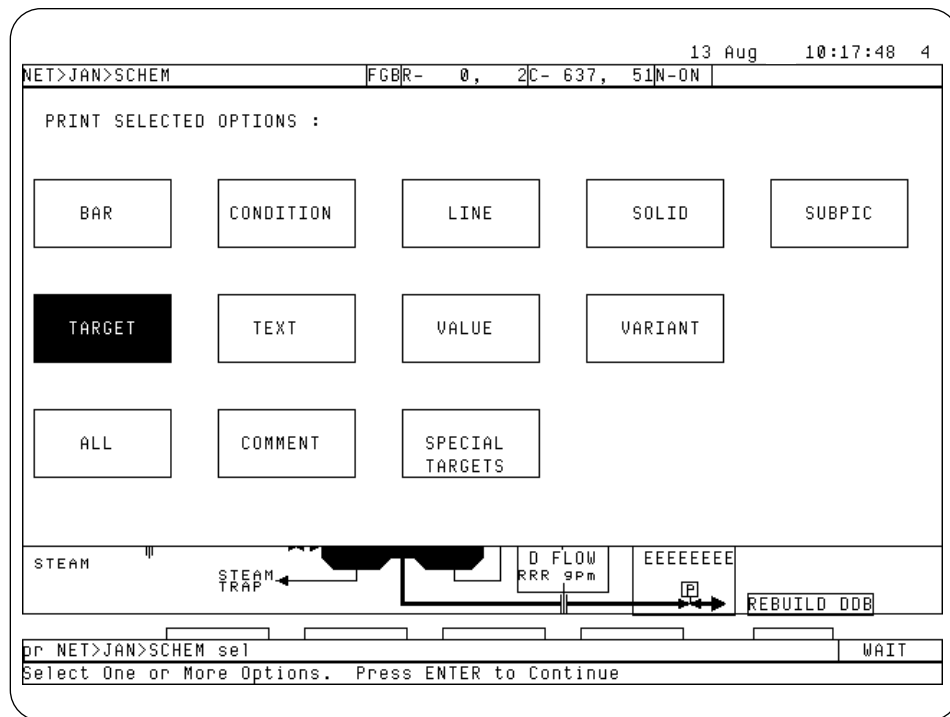
Description

If the SEL option is included in the Print command, a menu appears to select the objects that are to be printed (see Figure 4):

```
P NET>TEST>TEST SEL
```

The .DX suffix is assigned to the file.

Figure 4 Print Options



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Continued on next page

PRINT Option, Continued

Example

Figure 5 is an example of the new print output in which the TARGET option is selected for print.

Figure 5 Print Example

```
SCHEM.DX
08/13/92      10:15:31

Print of Picture      NET>DISP>REACTAPM      August 13, 1992
10:04

TARGET
  BEGIN
  TARGET ACTION : CHGZONE(G_ENT(ENT18G),0)
  DIMENSIONS
  BEGIN
  LOWER LEFT (X, Y) : ( 344.00, 64.00)
  UPPER RIGHT (X, Y) : ( 407.00, 159.00)
  END
  END

TARGET
  BEGIN
  TARGET ACTION : GROUP(ADD_I(G_INT(INT19G),4)0)
  DIMENSIONS
  BEGIN
  LOWER LEFT (X, Y) : ( 528.00, 272.00)
  UPPER RIGHT (X, Y) : ( 538.00, 303.00)
  END
  END

TARGET
  BEGIN
  TARGET ACTION : SCHEM("SETNKXXX")
  DIMENSIONS
  BEGIN
  LOWER LEFT (X, Y) : ( 528.00, 240.00)
  UPPER RIGHT (X, Y) : ( 639.00, 271.00)
  END
  END

TARGET
  BEGIN
  TARGET ACTION : MODGROUP(G_INT(INT18G))
  DIMENSIONS
```

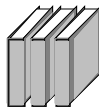
Application Subpictures

Description

Table 5 describes the Application Subpictures that are added to the R400 Picture Editor.

Table 5 Application Subpictures

Application Subpicture	Description
RING	Variable radius circle with the origin at its center.
RADAR	Chart with 3-10 axis (fixed angle between axis)
RADAR1	Chart with 3-45 axis (variable angle between axis)
LGRAPH	Single broken line graph (10 segments per line)
LGRAPHn	Broken line graph with 1-8 lines (20 segments per line).



REFERENCE—Appendix G of the *Picture Editor Reference Manual* describes the Application Subpictures in more detail.

Find Names

Description

The Find Names function of the Command Processor now includes a search for Display Database (DDB) references. This allows the user to create a list of data references for a picture:

- Local DDB variables used
- Global DDB variables used
- System (LCN) variables accessed

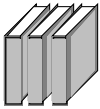
Used together with comments in pictures, the Find Names DDB function can be used to help all developers and users:

- Understand the pictures
 - Document the pictures
 - Manage DDB resources
 - Manage DDB cross referencing
-

Types of DDBs

Local and Global display databases can be searched by the Find Names function:

- LOCAL - Variables that exist in the schematic only. They are deleted when the schematic is terminated.
 - GLOBAL - Variables that exist as long as the node is operational.
 - CUSTOMER GLOBAL - Defined by the customer, using the Picture Editor LOAD command.
 - HONEYWELL GLOBAL - Defined in the optional application software packages.
 - SYSTEM GLOBAL - Defined in the base software of the LCN.
-



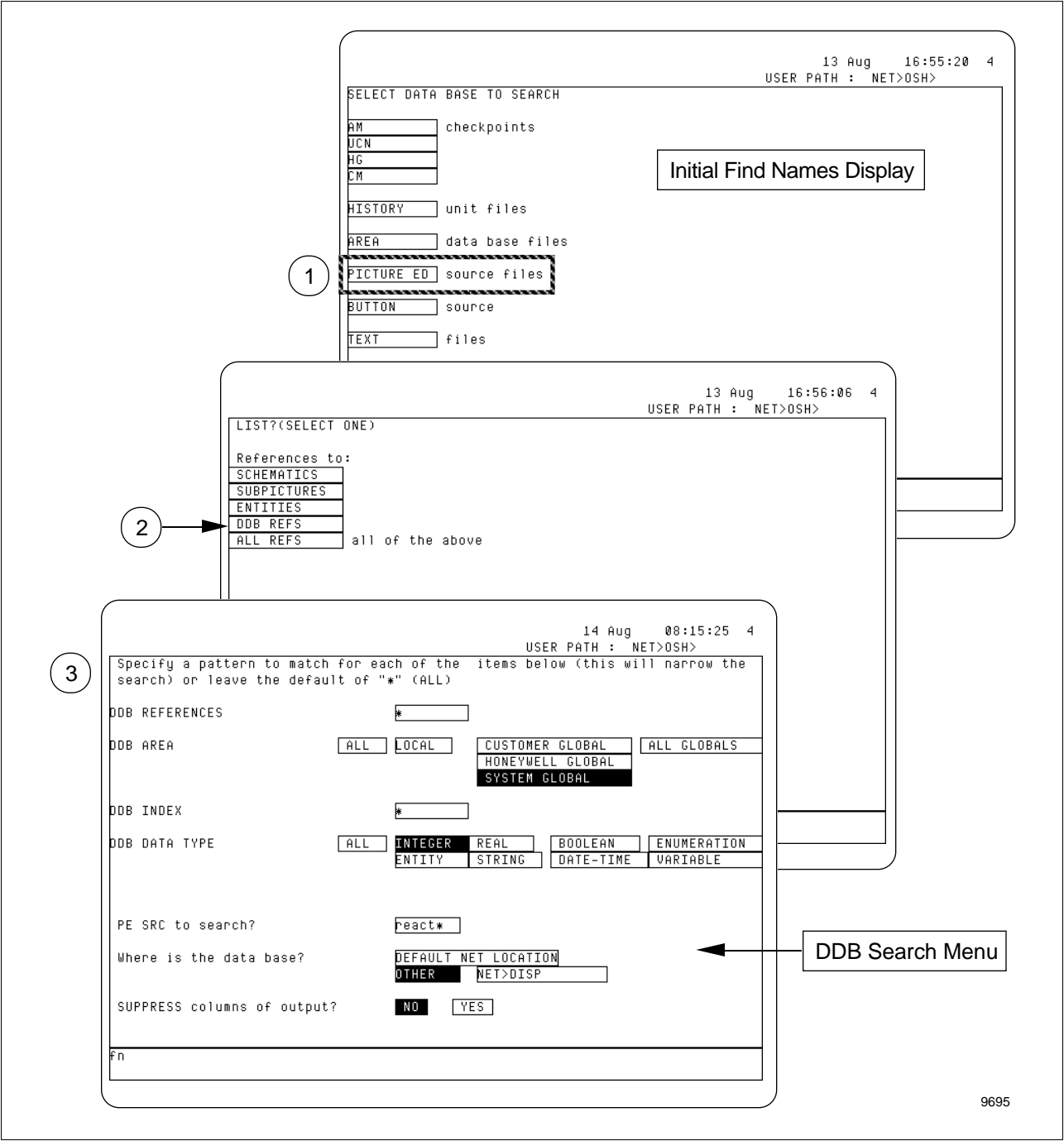
REFERENCE—DDB variables are described in Appendix A of the Picture Editor *Actors Manual*, binder TDC 2032-2.

Continued on next page

Find Names, Continued

DDB Search Menu Figure 6 illustrates the target selections to access the DDB Search Menu.

Figure 6 Procedure to Access DDB Search Menu



Continued on next page

Find Names, Continued

Entries

The targets and entry ports on the DDB Search Menu are described in Table 6.

Table 6 DDB Search Menu Entries

Entry	Description
DDB REFERENCES*	To narrow the search, specify a DDB variable name (may be standard name or a user-defined name). Wild cards may be used. Examples: INT01G, MYVAR
DDB AREA	Specify the type of DDB to search: ALL LOCAL CUSTOMER_GLOBAL HONEYWELL_GLOBAL SYSTEM_GLOBAL ALL GLOBALS
DDB INDEX*	To narrow the search, specify an index number or range of index numbers to search for. Legal index numbers for each type of variable are listed in Figure A-1 of Picture Editor <i>Actors Manual</i> .
DDB DATA TYPE	Specify the type of variable to search for: ALL INTEGER REAL BOOLEAN ENUMERATION ENTITY STRING DATE_TIME VARIABLE
PE SRC to search?*	To narrow the search, specify the name of the Picture Editor source file (s) to be searched. Wild cards may be used.
Where is the data base?	The default user path is used unless OTHER is selected, in which case an entry port appears for entry of a pathname. For example, a directory on removeable media may be specified.
SUPPRESS columns of output?	This selection is not currently implemented on R400. When implemented, it will allow the user to eliminate columns of data from the search results. The columns of data are shown in Figure 7.
* To narrow the search, specify a pattern to match, or leave the default "*" (ALL). Wild cards may be used (see Find Names Help display for info).	

Continued on next page

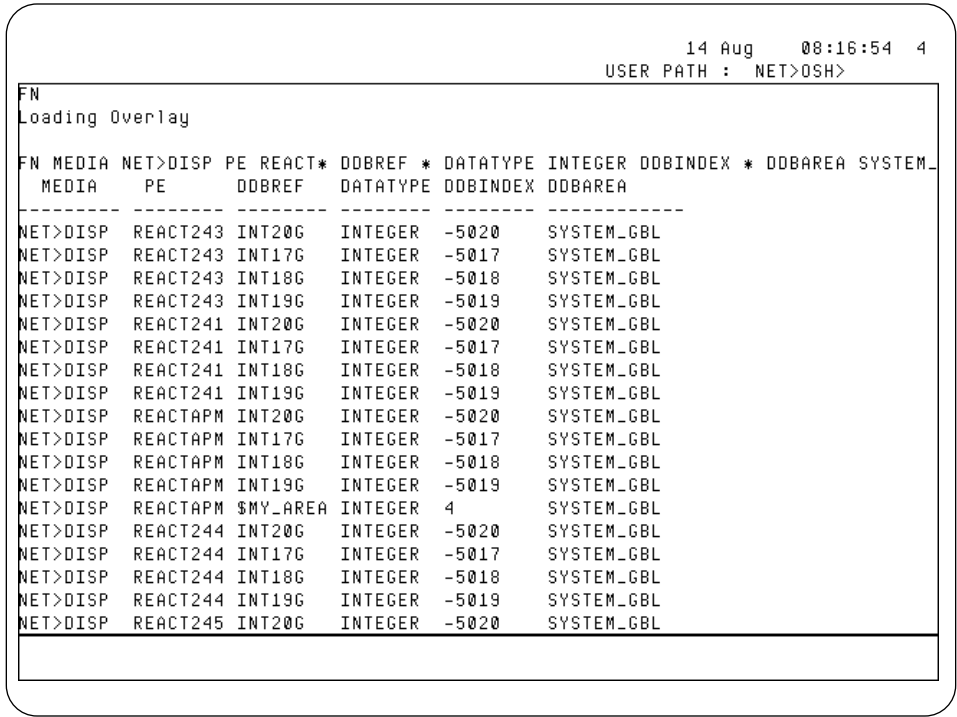
Find Names, Continued

DDB search results

Figure 7 shows the results of the DDB search menu illustrated in Figure 6.

The DDB search found the list of System Global integers that are accessed by all schematics in directory DISP whose source file name begins with the letters REACT.

Figure 7 Find Names — DDB Search Results



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The columns of data included in the DDB search results are described below:

Column	Example Data	Description
MEDIA	NET>DISP	Media location of Picture Editor source file.
PE	REACT243	Filename of Picture Editor source file.
DDB REF	INT20G	Name of DDB variable. For example, global integer 20.
DDBINDEX	-5020	Index number of DDB variable
DDB AREA	SYSTEM_GLOBAL	Type of DDB that was searched.

Lab Exercise

Introduction

Description

In this lab exercise, you will

- Document an entire picture by using the Define Comment command.
- Document a target, variant, or condition by using comments within a port.
- Copy a text file into a Picture Editor port.
- Create a target to display a text file.
- Print selected objects in a schematic.
- Use Find Names to search for DDB references.

Instructions

Use your assigned US.

Obtain a cartridge disk from your course manager.

Use Define Comment Command

Copy source

Copy the source of your assigned process schematic into your student directory.

```
CP NET>PSRC> (schematic name) NET>S###>=
```

Enter the schematic name listed below for your assigned process device!

Assigned Process Device	Schematic Name
APM	REACTAPM.DS
PM	REACTXXX.DS
MC	REACTMC.DS
EC	HEATRXXX.DS
CB	FEEDHXXX.DS

Unprotect source

Unprotect your schematic source file.

```
UNPT NET>S###> (schematic name) .DS
```

Enter the schematic name used in the previous Copy command.

Rename source

Rename your schematic source file.

```
RN NET>S###>(schematic name) (space) DFILE###
```

Access PE

To access the Picture Editor, type-in and enter PE.

Read source

Read your schematic into the Picture Editor:

```
R NET>S###>DFILE###
```

Continued on next page

Use Define Comment Command, Continued

Define comment

Type-in and enter the DEFINE COMMENT command:

DEF COM

When the comment port opens, type-in and enter a comment of your choice (no braces are required).

Modify comment

Enter the DEF COM command again.

At this time you can modify your comment, if desired.

Enter Comments for Objects

Select object

Now let's look at comments for a specific object on a schematic.

Select one of the target objects on your schematic. When selected, the object should appear flashing white.

For example

UCN students: Select one of the inlet valves.

Hiway students: Select the setpoint of the temperature controller.

Modify object

Enter the modify target command:

MOD TAR

Press [ENTER] to enter the selected target and display the target's entry port.

Enter object comment

Type-in (BUT DO NOT ENTER!) a comment of your choice in the target port (use braces):

Example: {This is a comment}

Remember that comments cannot occur between IF, THEN, ELSE keywords.

Enter Port Text Using TFE

Use Text Editor to create port text

Use the Text File Editor (TFE) to enter additional comments:

1. Press [CTL] [F2].

Results: A temporary file is opened in the TFE.

Notice the **Temporary File directory** name in the upper-right corner.

2. Type-in additional comments - remember to use braces. (You could also type-in additional target action if you had the necessary database information.)

Return to Picture Editor

To re-establish the Picture Editor: Press [CTL] [F1] then [CTL] [F2].

The Picture Editor returns with the text transferred into the port.

Press [ENTER] to enter the target specifications.

Save your picture

Write your modified schematic to your student directory:

```
W NET>S###>DFILE###
```

Check path for Temporary Files

Press [ESC] to escape to the Command Processor.

Enter SP to call up the US pathnames.

Notice the pathname for the **Temporary File directory** is specified in the lower right corner.

(On R400, this directory is used by the Picture Editor, the Documentation Tool, and the List command of the Command Processor.)

Transfer Text File To Port

Create text file

Create a file in the Text File Editor (TFE):
Type in ED NET>S###>COMMENT .XX.
Press [ENTER]

Type in a text of your choice (with braces).

When you are finished, press [CTL] [F1] then [CTL] [F2] to QUIT and EXIT the TFE.

Select target object

Press [CTL] [HELP] to return to the Picture Editor.

Select a target object again, then enter the MODify TARget command to display the target entry port.

Delete target text

Use the space bar key to delete your current comments in the target entry port.

Get prebuilt text file

Now, use the following procedure to transfer your text file into the target port:

1. Press [CTL] [F2].
Results: A temporary file is opened in the TFE.
 2. Press [CTL] [F7] to display the FILE commands.
 3. Press [CTL] [F1] to DEFINE the file.
 4. Type-in and enter the pathname of your text file:
NET>S###>COMMENT .XX
Press [ENTER].
 5. Press [CTL] [F2] to GET the file.
 6. QUIT and EXIT the TFE.
Results: The file appears in the target port.
 7. Press [ENTER] to enter the target specifications.
-

Questions?

If you have any questions about entering text into Picture Editor ports, ask your course manager for assistance.

Use Display File Actor

Start new picture

Enter the NEW command to start a new picture.

In this picture you will build targets that display and print a text file.

Add target 1

Add a target to the picture:

ADD TAR

Select and enter the target's coordinates.

Enter BOX as the target type.

Enter the following action into the target port:

DSP_FILE ("NET>S###>COMMENT.XX")

Add text 1

Add text to describe the target.

ADD TEXT

Move the cursor to the location for the text, type-in the text, then press [ENTER].

EXAMPLE: Select here to display this file COMMENT.XX

Add target 2

Add another BOX type target with the following action:

DSP_FILE(R_STR(1,10,21,"ENTER FILENAME",TRUE,0))

The following parameters are specified in the expression above:

x coordinate = 1

y coordinate = 10

port length = 21

prompt = ENTER FILENAME

absolute coordinate = true

region = 0

Add text 2

Add text to describe the target.

EXAMPLE: Select here to display a filename entry port.

Continued on next page

Use Display File Actor, Continued

Add target 3

Add another target with the following action:

```
PRT_FILE ( "NET>S###>COMMENT.XX" , nn )
```

(nn is the number of your station's assigned printer)

Add text 3

Add text to describe the target.

EXAMPLE: Select here to print the file COMMENT.XX

Compile

Compile your picture using the name TARG###.

```
COM NET>S###>TARG###
```

Escape to Command Processor

Escape to the Command Processor: Press [ESC].

Copy picture

Copy your picture into directory PICT, which is configured in your Area pathname catalog as a directory for schematics.

```
CP NET>S###>TARG###.DO NET>PICT>=
```

Call up picture

Call up your picture and try out the targets.

```
[ SCHEM ] TARG### [ ENTER ]
```

Questions?

If you have any questions about the DSP_FILE or PRT_FILE actors, refer to the Picture Editor *Actors Manual* or ask your course manager for assistance.

Print Schematic Description

Return to PE

Return to the Picture Editor and read your schematic into the Picture Editor.

```
R NET>S###>DFILE###
```

Select picture

Select the entire picture.

Enter PRINT command

Enter the Print command and print the only the picture's target descriptions to a file named DFILE.

```
P NET>S###>DFILE SEL TARGET
```

Check file

Escape to the Command Processor and print or edit the file DFILE.DX.

Questions?

Feel free to experiment with the Print command. If you have any questions, ask your course manager for assistance.

Search DDB References

Perform Data Out

From the Command Processor, enter the Data Out command to your station's assigned printer so that the Find Names output will print to your printer.

DO \$Pn

Display Find Names menu

From the Command Processor, access the Find Names function:

FN

Call up DDB search menu

Select the targets to call up the Picture Editor DDB search menu (refer to Figure 6 if necessary).

Enter data for search

Type-in the following data into the DDB Search Menu to search your schematic source file for DDB references to global system integers.

Entry	Description
DDB REFERENCES	* (ALL)
DDB AREA	SYSTEM_GLOBAL
DDB INDEX	* (ALL)
DDB DATA TYPE	INTEGER
PE SRC to search?*	DFILE###
Where is the data base?	OTHER NET>S###
SUPPRESS columns of output?	Not implemented.

Execute search

Press [ENTER] to start the search. Remove the printout from your printer.

Questions?

If you have any questions about the DDB search mechanism, ask your course manager for assistance.

Last Step

Delete displays

Delete the object files of the pictures you built in this lab exercise.

```
DEL NET>PICT>DFILE###.DO
```

```
DEL NET>PICT>TARG###.DO
```

END OF LAB

Directions



DIRECTIONS—This is the end of the study material for this module. Discuss questions concerning the study material or the lab activities with a colleague or a course manager

If you are satisfied that you have achieved the objectives of this module, continue with the next section, the criterion test.

Student Proficiency Evaluation

Criterion Test

Instructions

Demonstrate the following tasks to your course manager.

Test item #1

Document a picture by using the Define Comment command.

Test item #2

Document a target, variant, or condition by using comments within a port.

Test item #3

Print a selected target in a schematic.

Test item #4

Copy a text file into a Picture Editor port.

Test item #5

Use Find Names to search for DDB references.

Self-Evaluation

Test item #1 — answer

Document a picture by using the Define Comment command.
Enter DEF COM command.
Enter comment that documents the picture.

Test item #2 — answer

Document a target, variant, or condition by using comments within a port.
Add object or select existing object then modify object.
Enter comments along with other object text. The comments must have braces { } delimiting the comment.

Test item #3 — answer

Print a selected target in a schematic.
Select object.
Enter print command:
P \$Pn SEL TARGET or P (pathname) SEL TARGET

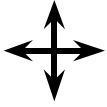
Test item #4 — answer

Copy a text file into a Picture Editor port.
Refer to Table 1 in this course module.

Test item #5 — answer

Use Find Names to search for DDB references.
Enter FN command in Command Processor.
Select Picture Editor, then DDB targets to access DDB search menu.
Enter items to search or leave them defaulted to ALL.

Directions



DIRECTIONS—This is the end of this module.

Use your course map to

- Get your course manager to sign off this module.

If you have a question

- Ask your course manager.

When you are ready, continue to the next section.
