Introduction

Basics

Introduction

This presentation will provide an overview of the following features of SDF II:

- Main Menu (Slides 3 to 5)
- Defining a Target System (Slide 6)
- Specify Libraries (Slide 7)
- Panel Editor (Slides 8 to 26)
- List Objects Dialog (Slides 27 to 29)
- Generation of Panels (Slides 30 to 34)
- Import (Slides 25 to 38)

Main Menu - 1

```
 Exit  Help
--------------------------------------------------------------------------------
                        SELECT AN SDF II FUNCTION
Option ===>

1   PANEL EDITOR              Create or edit a panel
2   PANEL GROUP EDITOR        Create or edit a panel group
3   PARTITION SET EDITOR      Create or edit a partition set
4   AID TABLE EDITOR          Create or edit an AID table
5   CONTROL TABLE EDITOR      Create or edit a control table
6   GENERATE                  Generate control block source and data structure
7   LIST OBJECTS              List objects in the library
8   SPECIFY LIBRARIES         Access libraries
9   UTILITIES                 Print, Import, Convert, Construct,
                              Extract, and Modify Objects
10  PROFILE                   Modify editing defaults
11  SDF II PROTOTYPE          Define and run a prototype
13  PRINT REFERENCE           Print the online reference
R   REFERENCE                 Obtain SDF II online reference
X   EXIT                      Terminate SDF II dialog

Use PFSHOW ON/OFF to show/hide program function key assignment
```

Main Menu - 2

Option 1, 2 and 3 are the editors used for the target system CICS/BMS.

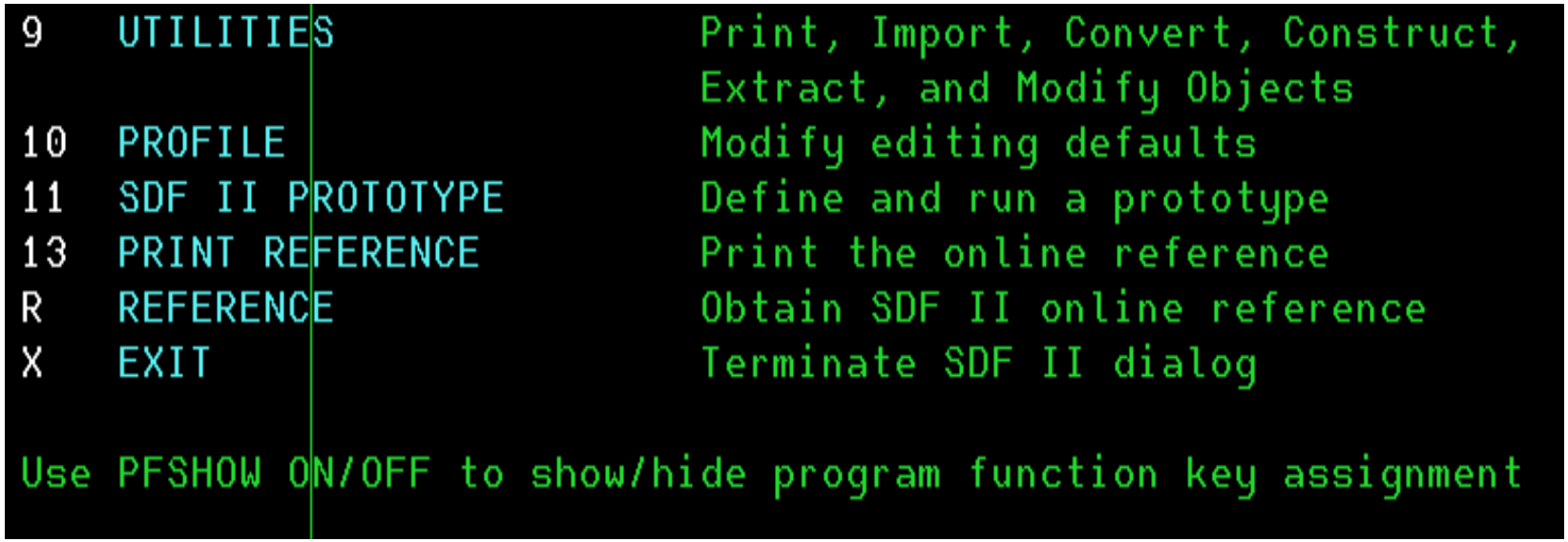
Option 4 and 5 are mainly used for target system MFS.

Option 6 is used to create (generate) the BMS source and data structure from the SDF II object.

Option 7 is a list of selected SDF II objects were all commands such as edit or generate can be directly issued against the object (map).

Option 8 is a list of up to 9 SDF II object libraries. Access to the libraries can be controlled via a user exit.

Main Menu - 3



Option 9 contains the utilities such as importing, converting to another target system and printing of SDF II objects.

Option 10 allows customization of SDF II windows and setting of SDF II defaults.

Option 11 allows for prototyping of SDF II panels (also allows for basic application logic by using REXX execs).

Option 13 prints a reference manual (or only certain chapters)

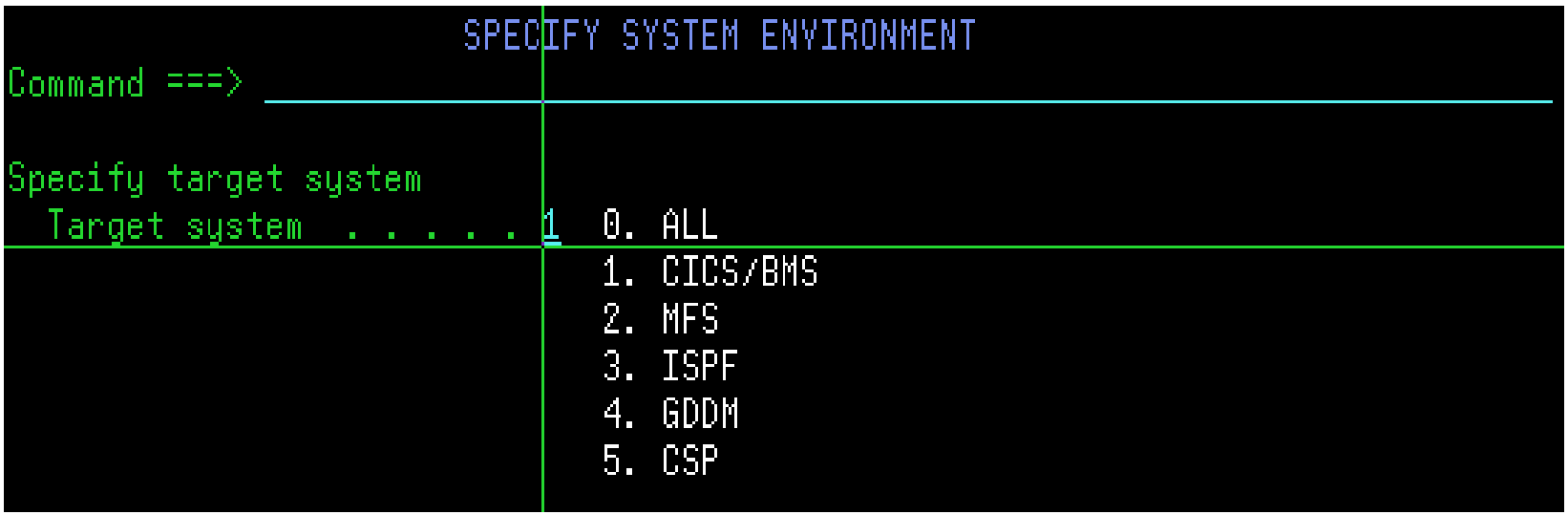
Option R is the online reference.

Defining a Target System

As SDF II supports multiple target systems, the first thing you need to do is to set the target system to let SDF II know which defaults values to apply. This presentation will be based on the target system CICS/BMS.

Enter 10.1 on the command line of the SELECT AN SDF II FUNCTION panel (Main Menu) to display the SPECIFY SYSTEM ENVIRONMENT panel.

Type a 1 in the Target System field to indicate to SDF II that the definition of objects is for CICS/BMS then press PF4 (RETURN) to return to the main menu.



Specify Libraries

On the specify Libraries panel you associate up to 9 libraries for SDF II objects with the given identifiers. You can also specify a short description of each library and a password if the library is password protected. Each library can be a set of partitioned datasets, an SCLM controlled library or an externally controlled library. If you use a set of partitioned data sets, you do not specify the last qualifier (DGIPNL, DGIGRP, DGIPST, DGITBL or DGIOCT). SDF II will append the appropriate suffix depending on the object type. The following example uses library-ID 1 to store the panel. This means, that SDF II will store the ENI panel in a PDS called 'userid.SD4.DGIPNL'.

Panel Editor - Identify Panel Dialog

When you start the panel editor, you need to specify the name of the panel you are defining or updating and the library into which the new panel is to be stored or from which the existing panel is to be retrieved. For a new panel you must either specify the device type if you want to create it from scratch or an existing skeleton panel with its associated library. In the following example a new panel named ENI which is to reside in library number 1 is created from scratch for the device type 3279-3B.

```
                              IDENTIFY PANEL
Option ===> 2

  blank  Edit existing panel
      1  Create new panel from skeleton
      2  Create new panel from scratch for CICS/BMS

Identify the panel
  Name . . . . . . . . . . ENI
  Library  . . . . . . . . 1

To create a new panel from skeleton, specify the skeleton
  Name . . . . . . . . . . ________
  Library  . . . . . . . . _

To create a new panel from scratch, specify the device type
  Device type  . . . . . . 3279-3B
```

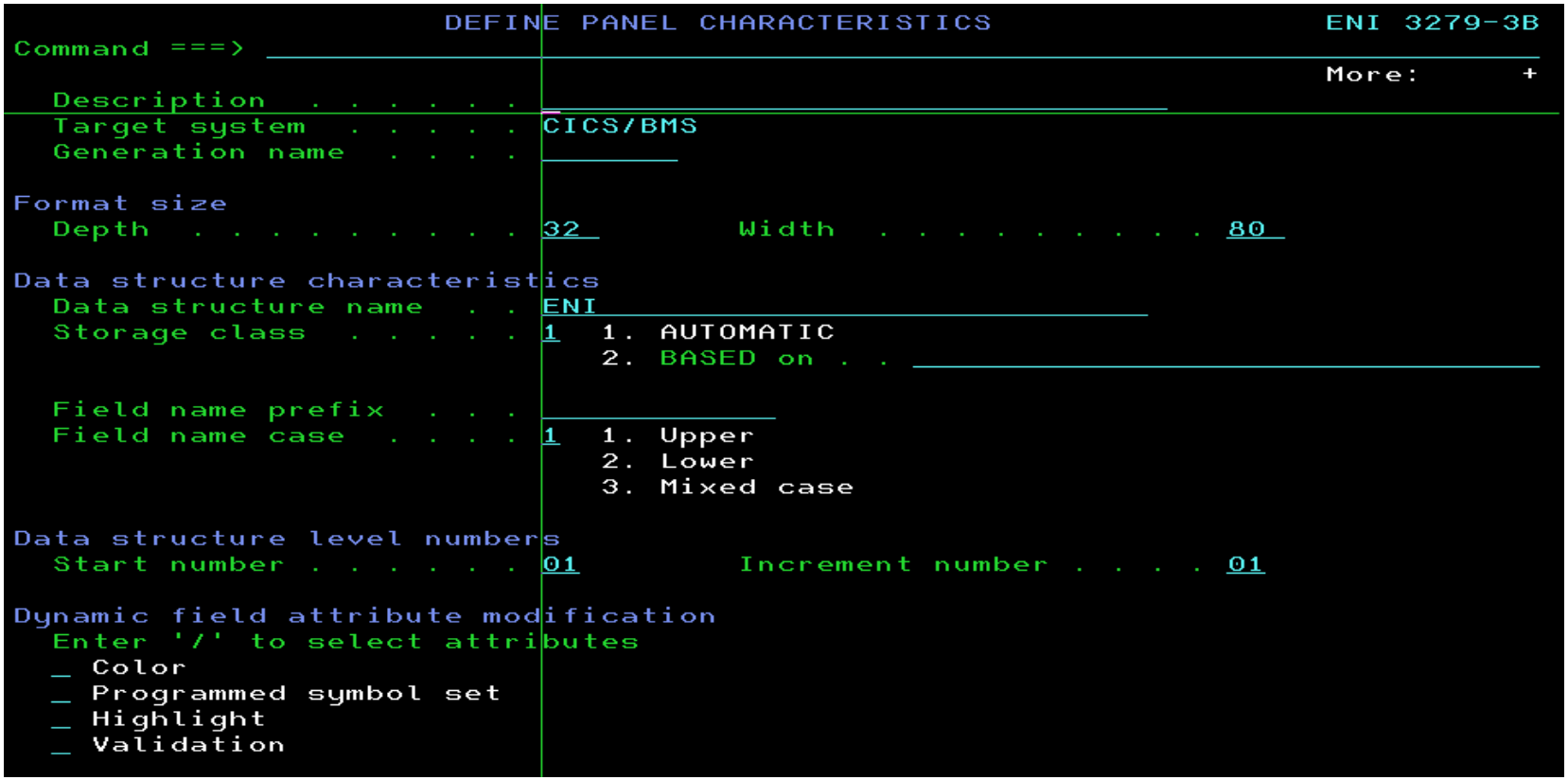
Panel Editor - Select a Panel Editor Dialog

The *Select a Panel Editor Dialog* is displayed and the message **New object created** appears on the top line. FIELD EDITING is marked with an (*) because this selection is not available for CICS/BMS. Enter 1 to display the *Define panel characteristics* panel.

```
                        SELECT A PANEL EDITOR DIALOG        E New object created
Option ===> _____________________________________________________________________

1    CHARACTERISTICS          Define panel characteristics

2    FORMAT                   Define the format of the panel

3    FIELDS                   Define the fields for the format

4    ATTRIBUTES               Define the attributes for the format

5    STRUCTURE                Define the data structure of the panel

6    SYSTEM                   Define target system dependent information

7    TEST                     Show panel in execution time format

8    INSTANCES                Define the panel instances

*    FIELD EDITING            Define field editing and verification rules
```

Panel Editor - Define Panel Characteristics 1

If you do not use the Define Panel Characteristics dialog, the default characteristics as displayed below, are used:

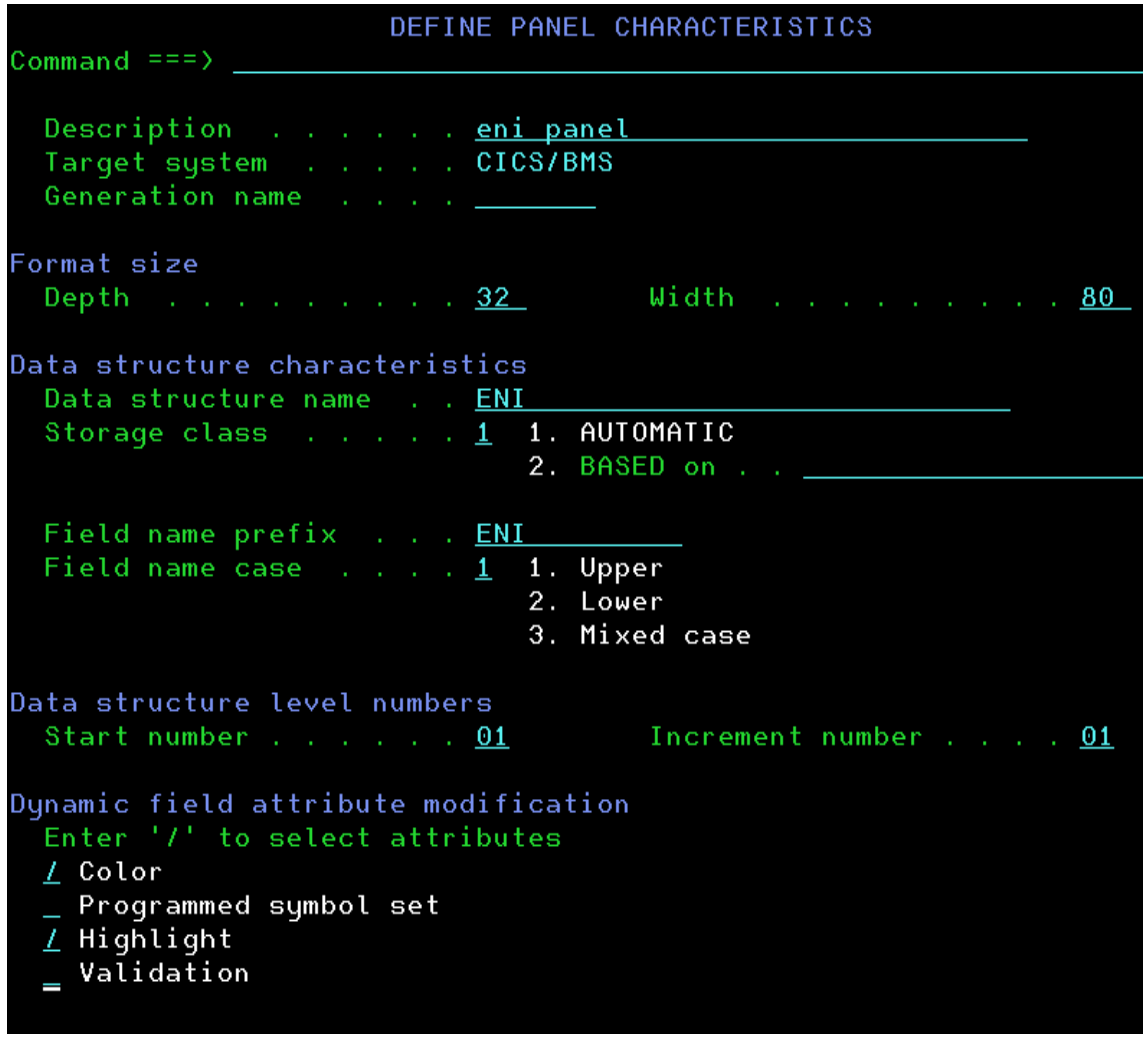


The following slide shows some common modifications to the panel characteristics.

Panel Editor - Define Panel Characteristics 2

- Enter a **Description** of the panel to help you identify the object on an SDF II object list.
- The **Field name prefix** is used as the first part of all field names in the data structure.
- In the **Dynamic field attribute modification** fields you define the attributes that can be dynamically modified by the application program (here **Color** and **Highlight**).

e.g. because colour was selected, the programmer can design the program to change the colour of any field in which the user enters incorrect data.



Panel Editor – Format 1

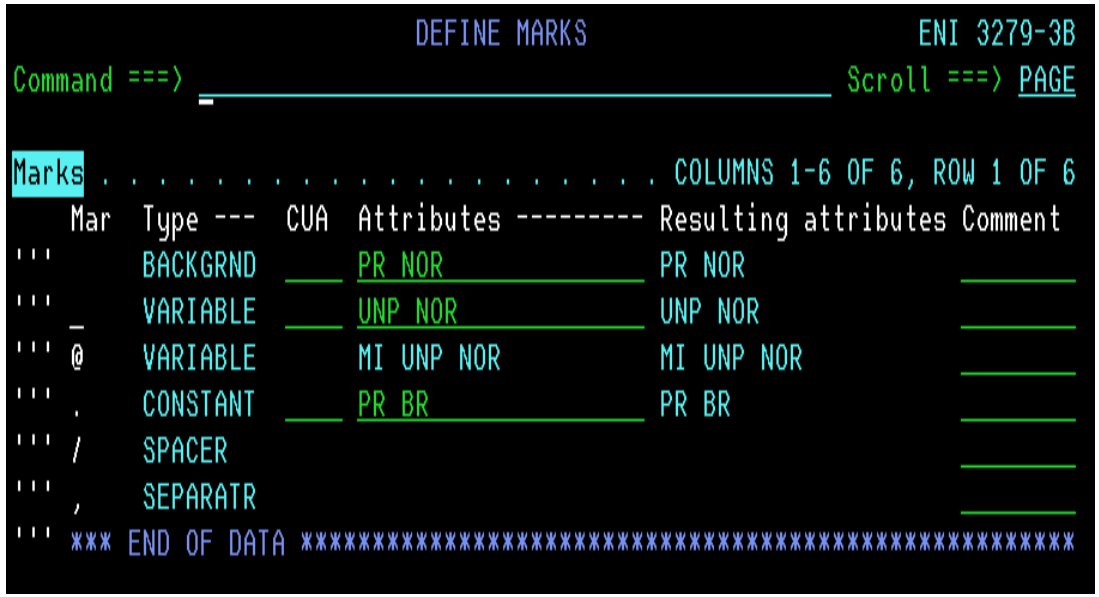
Enter **2** on the command line to display the *Define Format* panel. The text and field layout of the panel is defined in the Format dialog of the panel editor. A format can consist of any of the following elements:

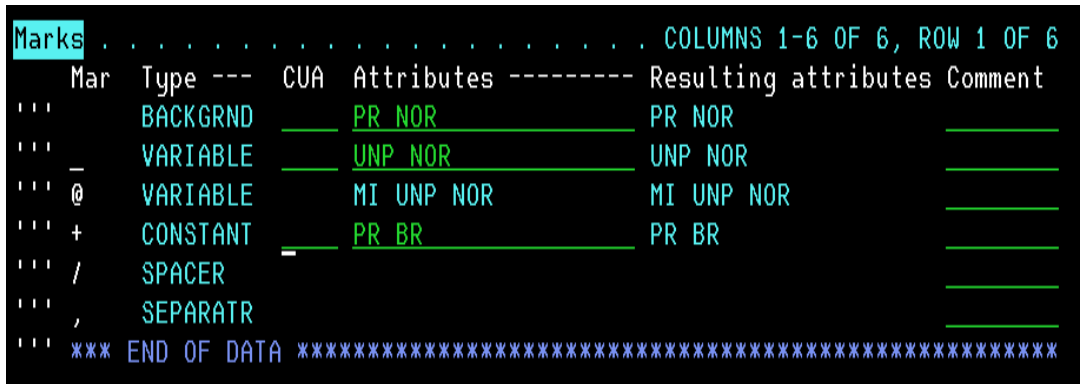
- **Background text** Text that you want to appear all the time and is not part of any field. It takes the default set of attributes.
- **Constant fields** Fields that contain constant text and that have attributes different from background text.
- **Variable fields** Input and output fields in which data can be changed by the program or the user.
- **Include panel** An SDF II object, such as standard header or trailer.
- **Repeat formats** A block of format that is repeated down the panel.

Panel Editor – Format 2: Define Marks

Enter **MARKS** on the command line of the Format Window to display the define *Marks panel*. Marks are used to define the type (variable, constant etc.) and BMS attributes of a panel field. All defined marks characters are displayed in the header line of the format window. The default set of marks on the right is provided for new panels.

To allow the use of the period character (.) which is currently used as a constant mark in the ENI panel, you have to change it to a different character by typing the new character over the period(.). Here it is changed to a plus (+) character. So from now on the + is used to mark constants.





Panel Editor – Format 3

To define the ENI panel do the following:

First type the line command **col** over the 001 and 017 line numbers to display a horizontal scale and press Enter.

Now type in the text on the right hand side to define the ENI panel.

Use the SEPARATR (**,**) mark to separate tokens. e.g. to define a 8 character constant field type **+,8** (or +++++++ where (+) is the CONSTANT mark) and to define a variable named **item** with the length of **8**, type **_,8,item** (where (_) is the VARIABLE mark).

Use the SPACER (/) mark to justify text. Use it on the left hand side of text to be right-justified and on both sides to be centered.

Panel Editor – Format 4

After pressing Enter, the Format of the ENI panel looks like this:

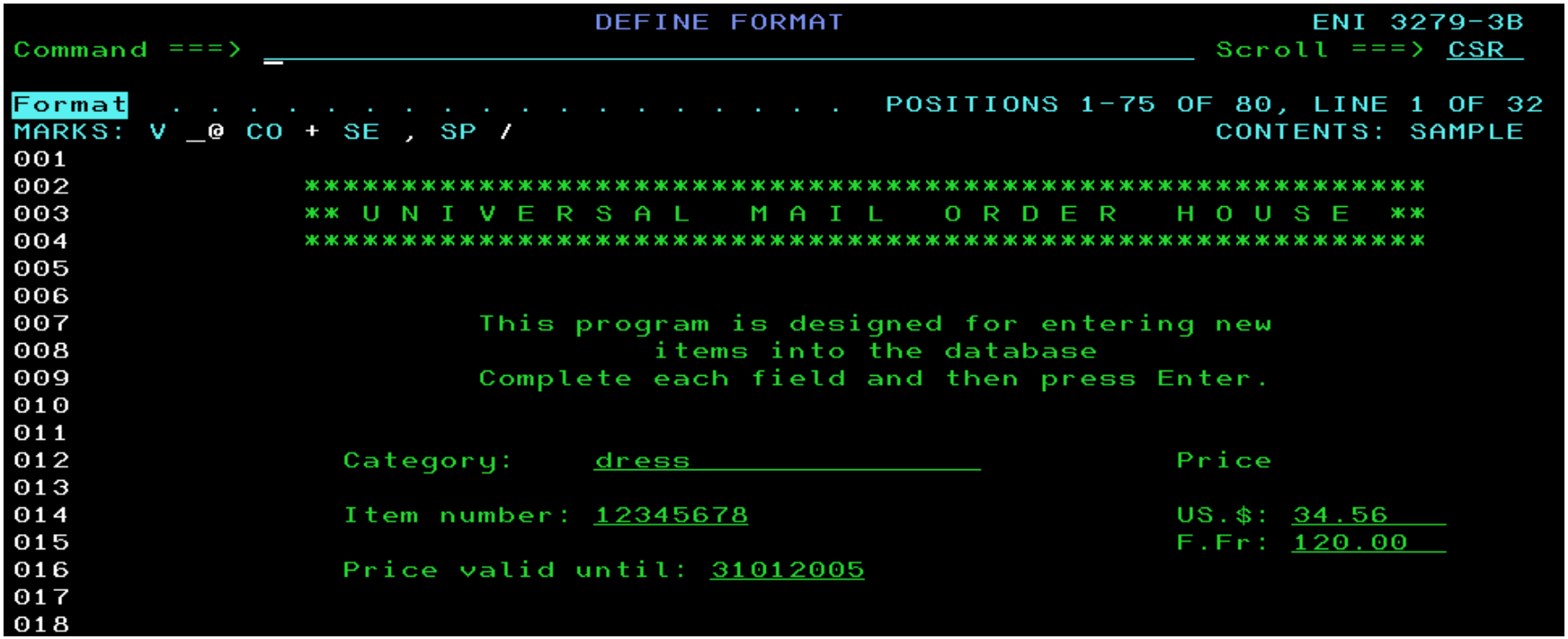
```
                                DEFINE FORMAT                          ENI 3279-3B
Command ===> ____________________________________________________ Scroll ===> CSR

Format . . . . . . . . . . . . . . . . . . . . POSITIONS 1-75 OF 80, LINE 1 OF 32
MARKS: V _@ CO + SE , SP /                                  CONTENTS: FORMAT
''' <---:----1----:----2----:----3----:----4----:----5----:----6----:----7----:
001
002             ************************************************************
003             ** U N I V E R S A L   M A I L   O R D E R   H O U S E **
004             ************************************************************
005
006
007                       This program is designed for entering new
008                              items into the database.
009                       Complete each field and then press Enter.
010
011
012                   Category:    ____________________      Price
013
014                   Item number: ________                  US.$: ________
015                                                         E.Fr: ________
016                   Price valid until: ________
''' <---:----1----:----2----:----3----:----4----:----5----:----6----:----7----:
017
```

Panel Editor – Format: Initial and Sample

The initial or sample values for the variable fields can be defined by entering either the **Initial** or **SAMple** command in the command line of the Format window.

Initial Values, these are the values used in the DFHMDF BMS macros for the INITIAL operand.

Sample Values, these are the values used by the TEST command, the printing facility or Prototyping. The sample window together with some sample values is displayed below.



Panel Editor - Define Fields 1

The Define Fields dialog consists of two independently scrollable windows:

Define Fields

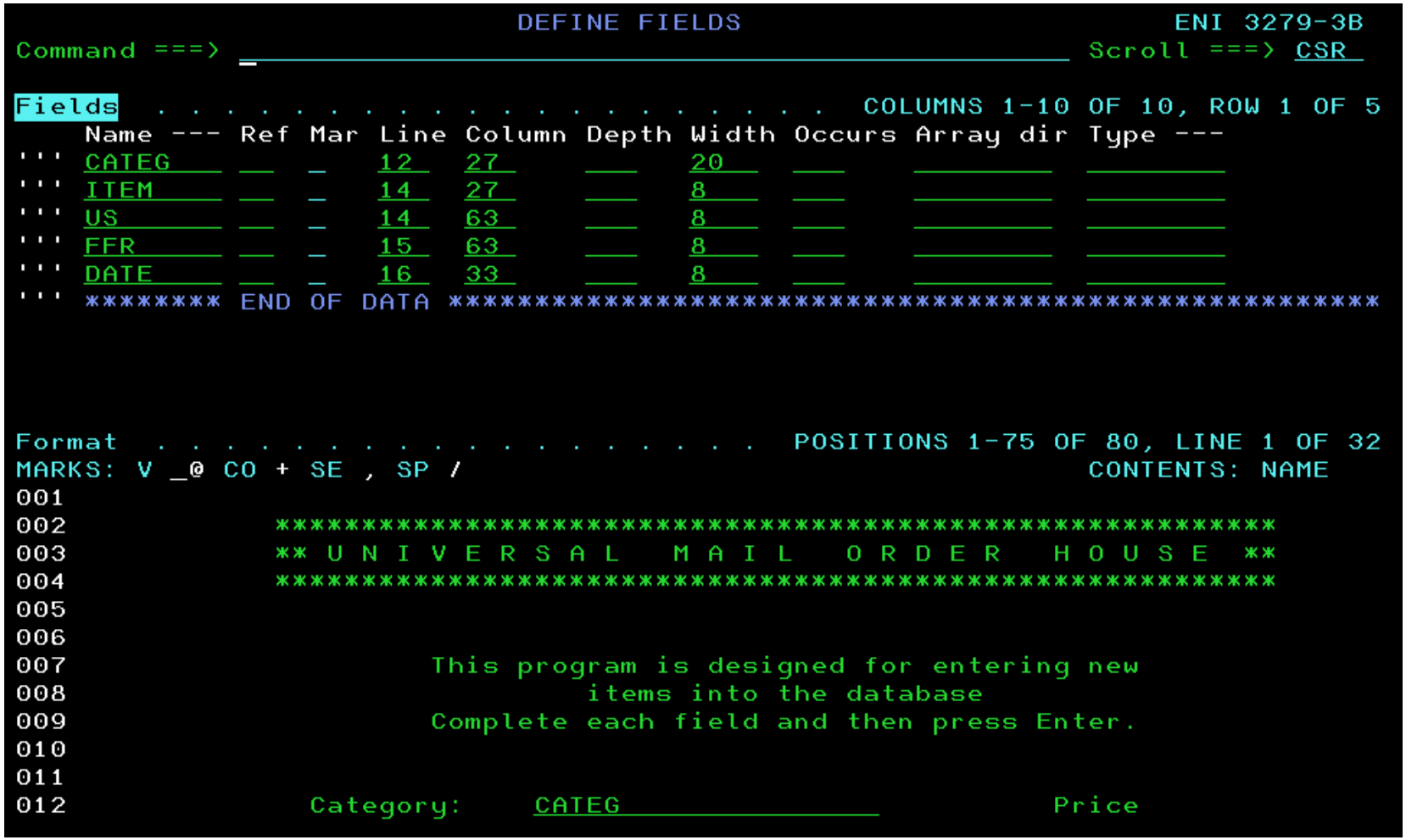
It can be used to change the name, position or size of format elements (variables) or insert and delete format elements.

Format

The same window as option 2 of the panel editor. All changes made in the Define Fields window, are also reflected here.

Changes to the map can either be made in the Format dialog or the Define Fields dialog, whichever is preferred.

Panel Editor - Define Fields 2



Panel Editor - Define Attributes 1

The Define Attributes dialog can be used to change field attributes and define attribute descriptors. The attributes can also be changed in the Format dialog by entering the command **FI**eldattr **ON**. When importing BMS source, SDF II will allocate field attributes based on field attributes in the BMS source. No attribute descriptors are defined for new panels, the attributes are the same as the mark attributes:

```
                              DEFINE ATTRIBUTES                    ENI 3279-3B
Command ===> _____________________________________________ Scroll ===> PAGE

Attribute descriptors . . . . . . . . . . . . . . . . COLUMNS 1-5 OF 5, ROW 0 OF 0
    Des  CUA  Attributes --------- Resulting attributes Comment ---------------
''' *** TOP OF DATA ***************************************************************
''' *** END OF DATA ***************************************************************




Format . . . . . . . . . . . . . . . . . . . . POSITIONS 1-75 OF 80, LINE 13 OF 32
MARKS: V _@ CO + SE , SP /                                  CONTENTS: INITIAL
013                                    _
014                Item number: _________                US.$: _________
                                _________                    _________
015                                                      F.Fr: _________
                                                             _________
016                Price valid until: _________
                                      _________
017
```

Panel Editor - Define Attributes 2

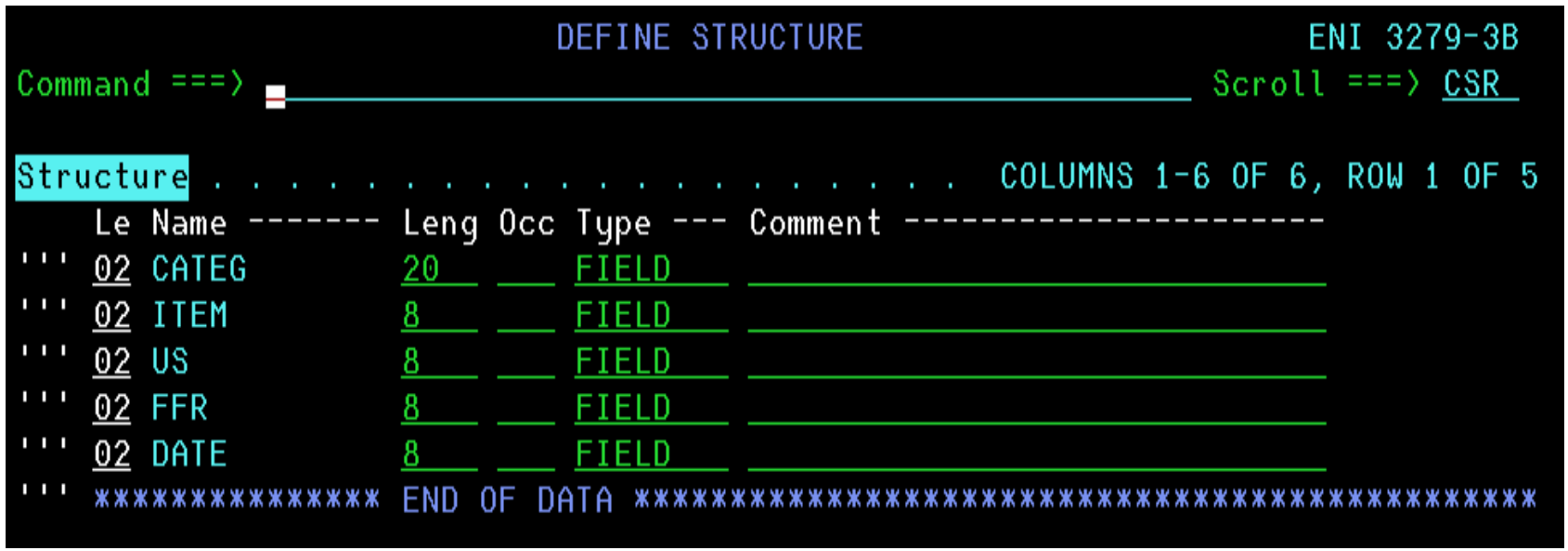
If you would like to change the attributes of field date from the default UNP NOR (set by the variable mark _) to **PR**otected **BR**ight **RED** you can define an attribute descriptor (here **a**) and assign it to the field **DATE** in the attribute line.

```
                              DEFINE ATTRIBUTES                          ENI 3279-3B
Command ===> _____________________________________________________ Scroll ===> PAGE

Attribute descriptors . . . . . . . . . . . . . . . . COLUMNS 1-5 OF 5, ROW 1 OF 1
    Des  CUA  Attributes --------- Resulting attributes Comment ---------------
''' a    ____ PR BR RED___________ PR BR RED            _____________________________
''' *** END OF DATA ***************************************************************
```

```
Format . . . . . . . . . . . . . . . . . . . . POSITIONS 1-75 OF 80, LINE 13 OF 32
MARKS: V _@ CO + SE , SP /                                  CONTENTS: INITIAL
013                              _

014                 Item number: _________                  US.$: _________
                                 _________                       _________
015                                                          F.Fr: _________
                                                                   _________
016                 Price valid until: _________
                                       a________
017
```

Panel Editor – Define Structure

This dialog can be used to define and edit the data structure that will be used by the application program. The structure is independent of the programming language used in the application program. SDF II uses this structure when it generates the data structure for a particular language. Variable fields can be divided into subfields and fields can be combined into minor structures. The display can be customized by entering the command VIEW in the command line.



Panel Editor – Define Structure: Defining Subfields 1

Now you define subfields for the day, month and year that make up the date field of the ENI panel to enable the application using the ENI panel to transmit data to or receive data from each subfield separately. First enter the i3 line command to insert three blank lines.

```
                              DEFINE STRUCTURE                    ENI 3279-3B
Command ===> _____________________________________________ Scroll ===> CSR

Structure . . . . . . . . . . . . . . . . . . . . COLUMNS 1-6 OF 6, ROW 1 OF 5
     Le Name ------- Leng Occ Type --- Comment ---------------------
''' 02 CATEG         20   ___ FIELD    ____________________________________
''' 02 ITEM          8    ___ FIELD    ____________________________________
''' 02 US            8    ___ FIELD    ____________________________________
''' 02 FFR           8    ___ FIELD    ____________________________________
i3_ 02 DATE          8    ___ FIELD    ____________________________________
''' ***************** END OF DATA ***************************************
```

Now enter the dd, mm and yyyy fieldnames together with a level number higher than 02 (here 05) and the length of the fields and change the type of date to group to create the subfields of the date field.

```
''' 02 FFR           8    ___ FIELD    ____________________________________
''' 02 DATE          8    ___ group_   ____________________________________
''' 05 DD            2    ___ _______  ____________________________________
''' 05 MM            2    ___ _______  ____________________________________
''' 05 YYY           4    ___ _______  ____________________________________
''' ***************** END OF DATA ***************************************
```

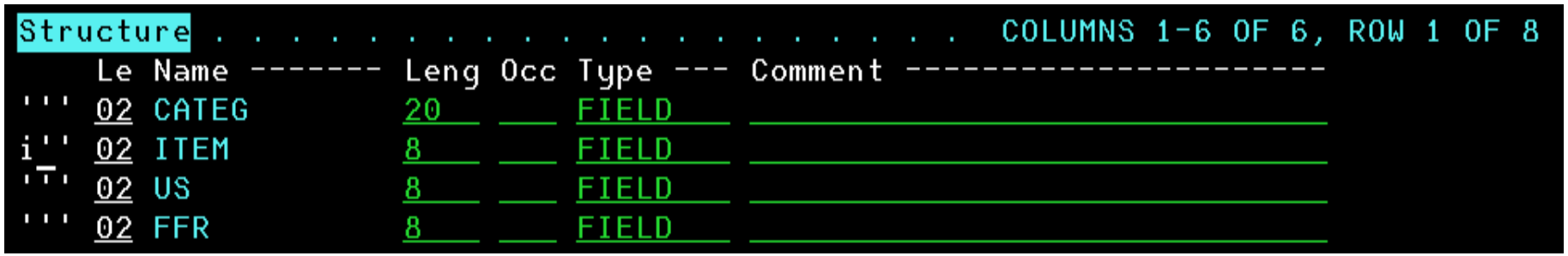
Panel Editor – Define Structure: Defining Subfields 2

After pressing the Enter key, SDF II names the level 05 field type as SUBFIELD, because it recognizes that they are at a deeper level than the 02 level of the DATE field.

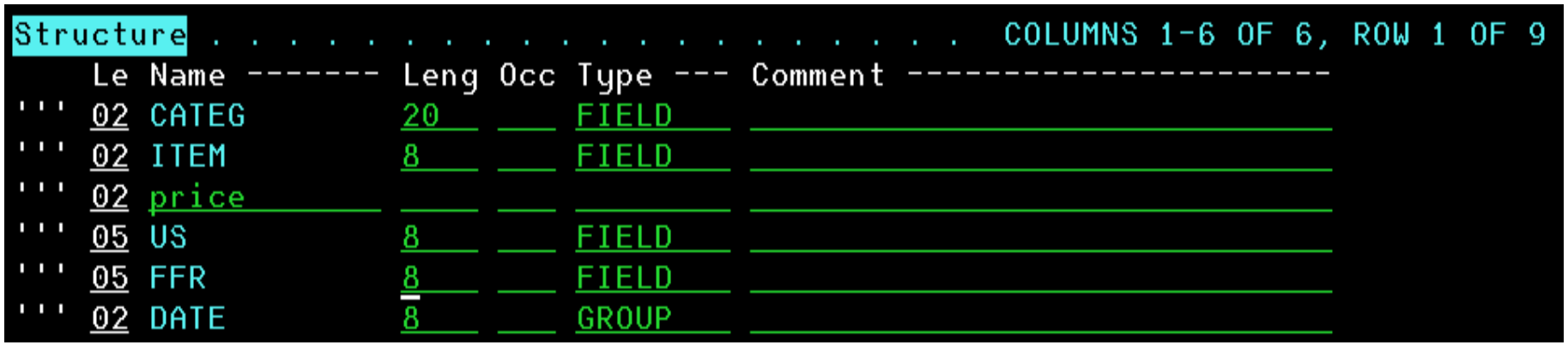
```
                              DEFINE STRUCTURE                          ENI 3279-3B
Command ===>                                                    Scroll ===> CSR

Structure . . . . . . . . . . . . . . . . . . . . . . . . . . COLUMNS 1-6 OF 6, ROW 1 OF 8
    Le Name ------- Leng Occ Type --- Comment --------------------
''' 02 CATEG        20       FIELD
''' 02 ITEM         8        FIELD
''' 02 US           8        FIELD
''' 02 FFR          8        FIELD
''' 02 DATE         8        GROUP
''' 05 DD           2        SUBFIELD
''' 05 MM           2        SUBFIELD
''' 05 YYY          4        SUBFIELD
''' ********** END OF DATA **********************************************
```

Panel Editor – Define Structure: Defining a Minor Structure 1

Now you combine the US and FFR fields into a minor structure to enable the application program to move data to and from the US and FFR fields in one operation. To do this, first enter the line command **i** in front of ITEM to insert a line in which to define the minor structure.



Then enter the minor structure name **price** together with the level number **02** in the inserted line and change the level numbers of the fields US and FFR to **05**.



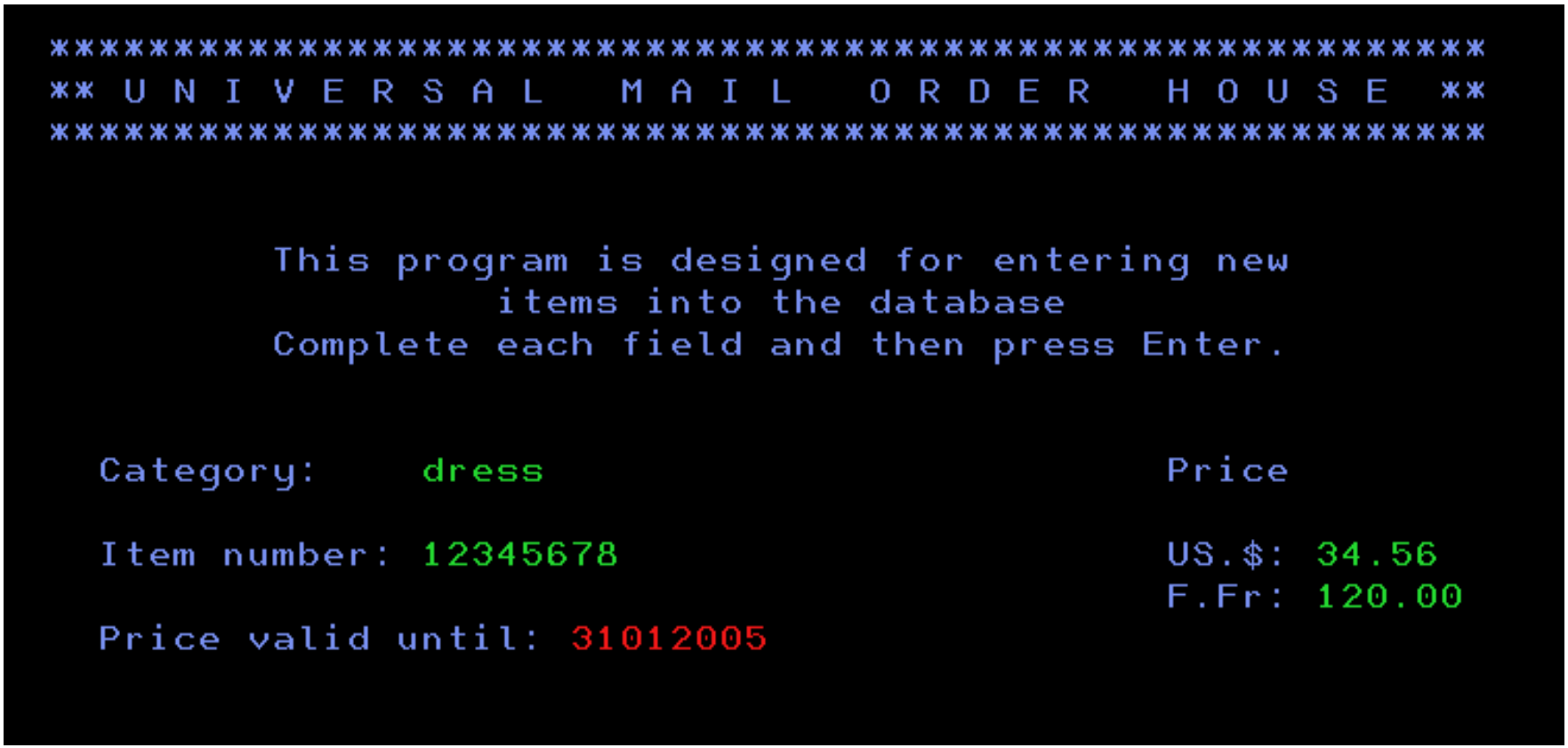
Panel Editor – Define Structure: Defining a Minor Structure 2

The minor structure has the name PRICE and the same level number (02) as the other fields. The US and FFR fields are redefined at a deeper level than the PRICE minor structure. When you press the Enter key, SDF II displays the type of the field (TYPE) for the PRICE field as a minor structure (MINOR). The *Define Structure* dialog panel now looks like this:

```
                              DEFINE STRUCTURE                          ENI 3279-3B
Command ===>                                                    Scroll ===> CSR

Structure . . . . . . . . . . . . . . . . . . . . .  COLUMNS 1-6 OF 6, ROW 1 OF 9
    Le Name ------- Leng Occ Type --- Comment ---------------------
''' 02 CATEG        20   ___ FIELD    ____________________________
''' 02 ITEM         8    ___ FIELD    ____________________________
''' 02 PRICE        ____ ___ MINOR    ____________________________
''' 05 US           8    ___ FIELD    ____________________________
''' 05 FFR          8    ___ FIELD    ____________________________
''' 02 DATE         8    ___ GROUP    ____________________________
''' 05 DD           2    ___ SUBFIELD ____________________________
''' 05 MM           2    ___ SUBFIELD ____________________________
''' 05 YYY          4    ___ SUBFIELD ____________________________
''' ********************* END OF DATA ********************************************
```

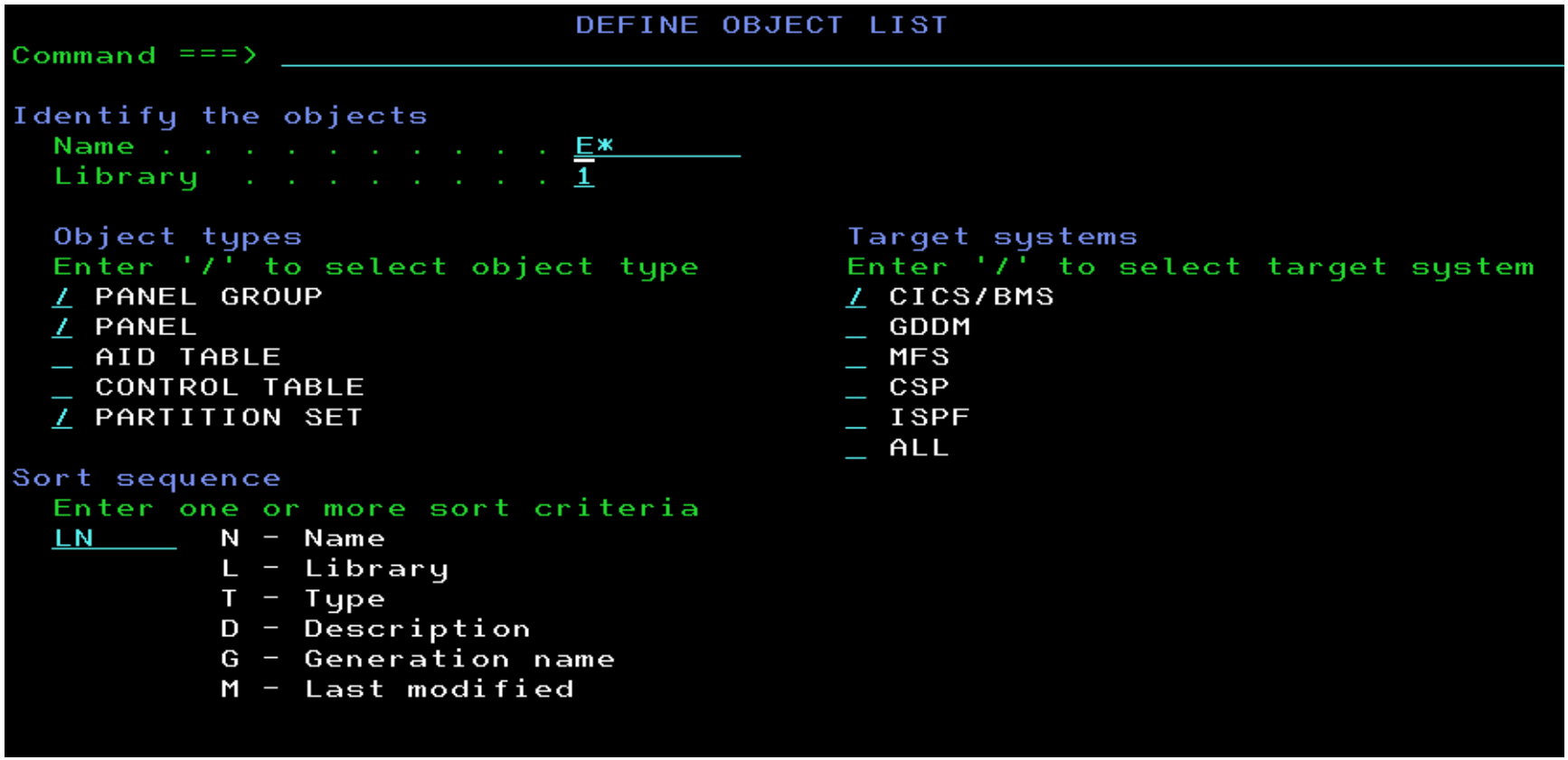
Panel Editor - Test

The TEST Option (which can also be entered as line command in any of the editor dialogs) is used to display the panel in the form it will be when the application uses it. It will also display any defined sample values.



List Objects - 1

With the List Objects dialog (Option 7 from the Main Menu), you can display a list of SDF II objects and perform operations in them, such as editing, renaming and printing. When the dialog is selected, the Define Object List panel is displayed first to define which objects are to appear in the list and in which order the list is sorted. Here only objects starting with an E from library 1 will be displayed.



List Objects - 2

As we currently have only one object called ENI in library 1, the list consists of only 1 object:

The list objects panel has the following columns. It can be customized with the command View.

Name	object name
Li	library identifier (set with option 8 on the main menu)
Ty	object type (such as P for panel, G for group)
Operands	operands for the line commands
Syst	target system of the objects (such as CICS, MFS)
Description	description of the object
Last modified	date and time when the object was last modified

List Objects - Line Commands

The following line commands can be issued in front of an object in the *List Object* list.

set top line	/
test an object	T
repeat previous command	=
generate an object	G
print an object	P
rename an object	R
delete an object	D
convert an object	CV
copy an object	C
edit an object	E

When E is issued against an object, SDF II will automatically invoke the correct Editor.

Generation of Data Structure and BMS Macros - 1

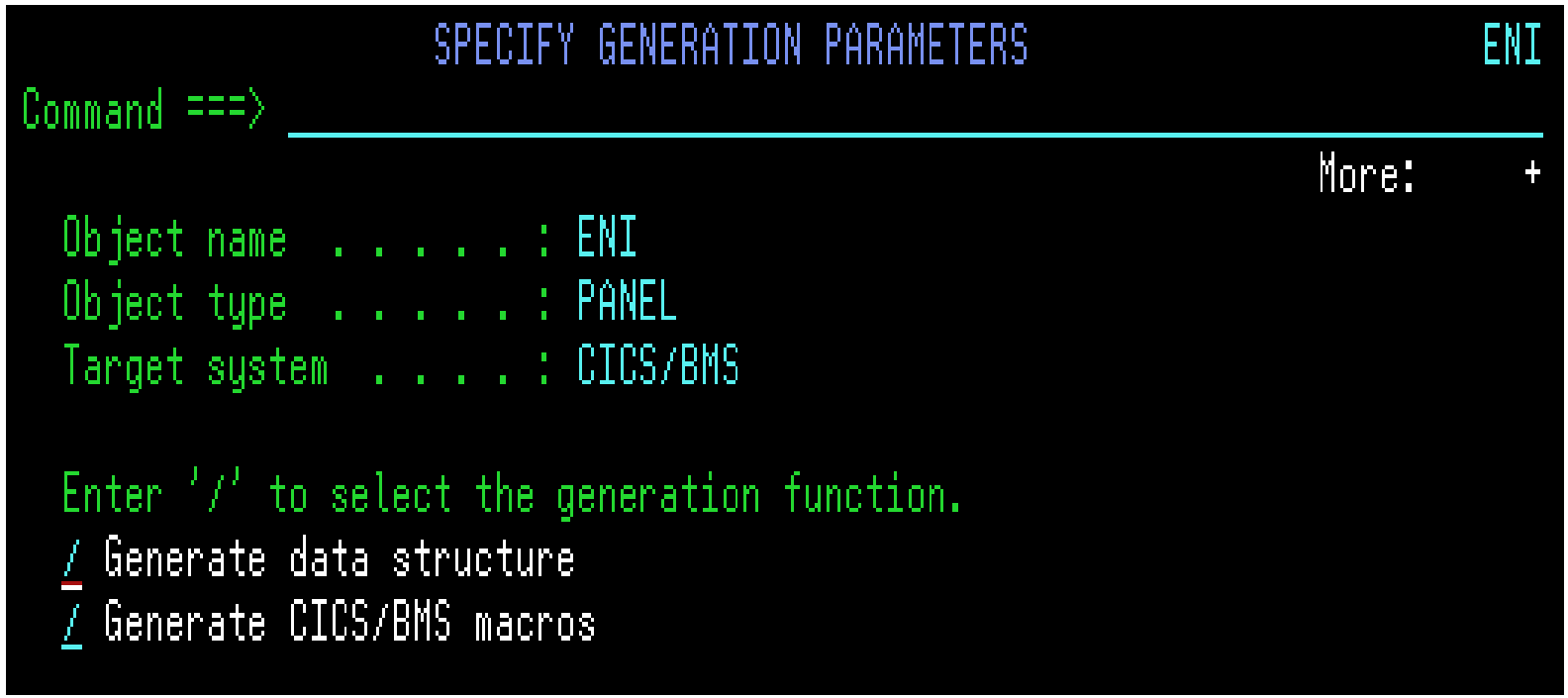
Within SDF II all objects (maps, map sets, partition sets etc) are stored in an internal representation. To use them in the target system they have to be generated first, either by selecting option 6 from the main menu or by entering the line command **g**(enerate) in front of the object in the List Objects dialog.

```
                              LIST OBJECTS
Command ===> ____________________________________________________ Scroll ===> PAGE

Objects . . . . . . . . . . . . . . . . . . . . . . . . COLUMNS 1-7 OF 7, ROW 1 OF 1
    Name --- Li Ty Operands   Syst Description -------------------- Last modifi
g'' ENI      1  P  _________ CICS eni panel                        2004/11/20




''' _______ _  _  ____________________    <=== Work here on another object

Search argument: Name=E*  Type=GPS  Library=1  System=B
Sort sequence  : LN
```

Generation of Data Structure and BMS Macros - 2

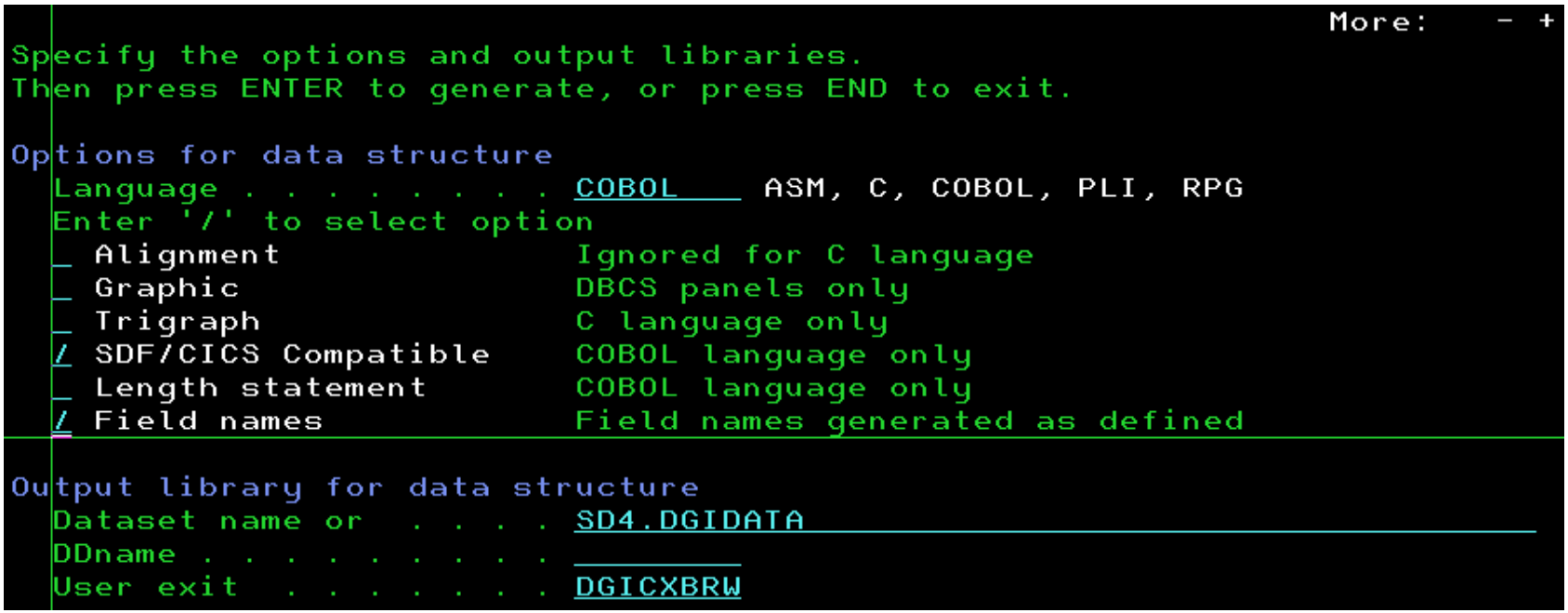
The Specify Generation Parameters entry panel lets you specify:

1. which generation function to run (data structure, BMS macros or both)



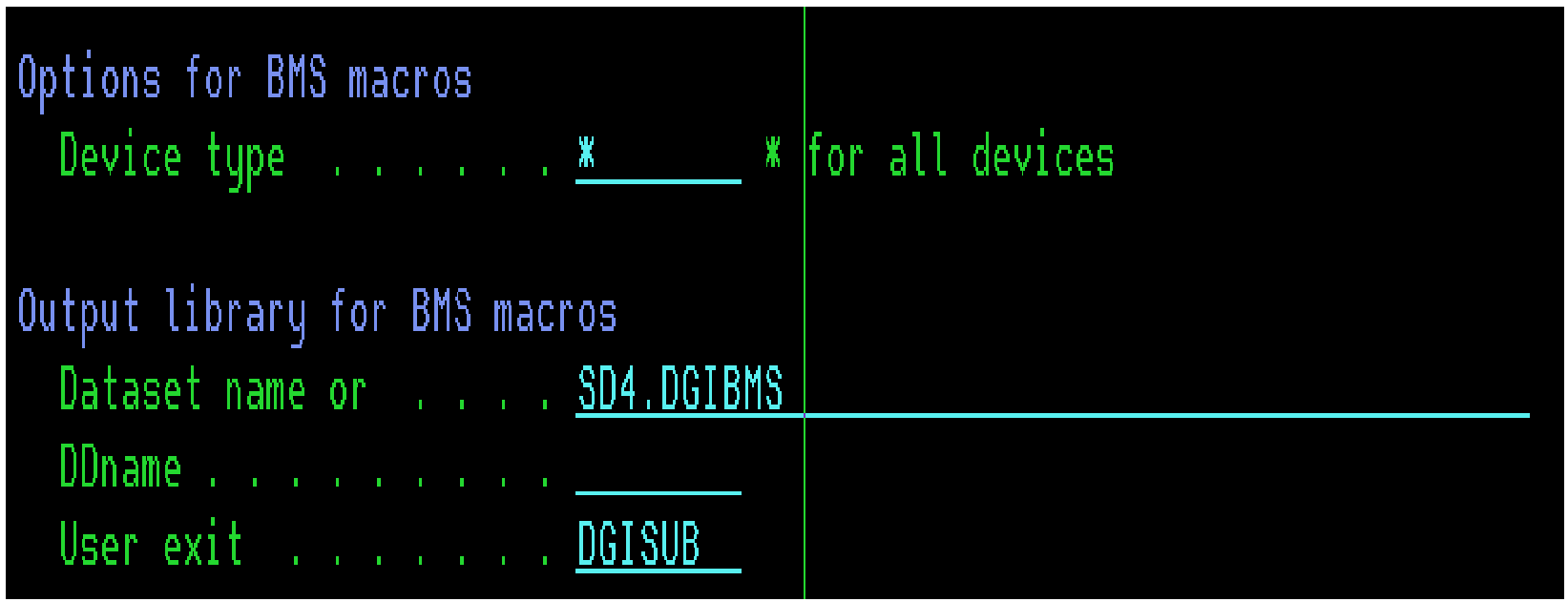
Generation of Data Structure and BMS Macros - 3: Data Structure

2. Which programming language to generate the data structure for.
3. Options for the generation of the data structure, e.g. to generate the field names as defined in the panel editor and not to substitute them with DFHnnnn names.
4. The output dataset for the data structure.
5. A user exit which is invoked after successful generation of the data structure (DGICXBRW is a sample exit to browse the generated structure).



Generation of Data Structure and BMS Macros - 4: BMS macros

6. Which device type to generate the BMS macros for (the map has to be defined for this device type with option 8 (Instances) of the panel editor).
7. The output dataset for the BMS macros.
8. A user exit which is invoked after successful generation of the BMS macros (DGISUB is a sample exit to submit a batch job to assemble and linkedit the generated macro control block to create the physical CICS map).



Generation of Data Structure and BMS Macros - 5

After the generation a popup panel with the generation messages is displayed. In this instance, the messages indicate, that the data structure generation was successful and that the data structure is stored in:

Output library: SD4.DGIDATA member: ENI

The CICS/BMS map set was created for device type 3279-3B and stored in

Output library: SD4.DGIBMS member: ENI3

The suffix 3 is added to the member name, because it is the BMS terminal code for device 3279-3B.

```
                        LIST GENERATION MESSAGES                        ENI
Command ===> ____________________________________________ Scroll ===> PAGE

     0 Errors detected
  Enter '/' to select action
  _ Print messages                  Will be performed on Exit

Messages . . . . . . . . . . . . . . . . . . . . . . COLUMNS 1-2 OF 2, ROW 1 OF 8
    Message#   Message ----------------------------------------------------
'''             Object name: ENI  type: PANEL  library: 1
'''             Data Structure
'''             Output library: SD4.DGIDATA member: ENI
''' DGICM038    Generation of data structure(s) completed
'''             CICS/BMS map set for device type 3279-3B
''' DGICM021    PANEL ENI retrieved from library 1
'''             Output library: SD4.DGIBMS member: ENI3
''' DGICM034    Generation of BMS macros completed
''' END OF DATA ************************************************************
```

SDF II Import Utility - 1

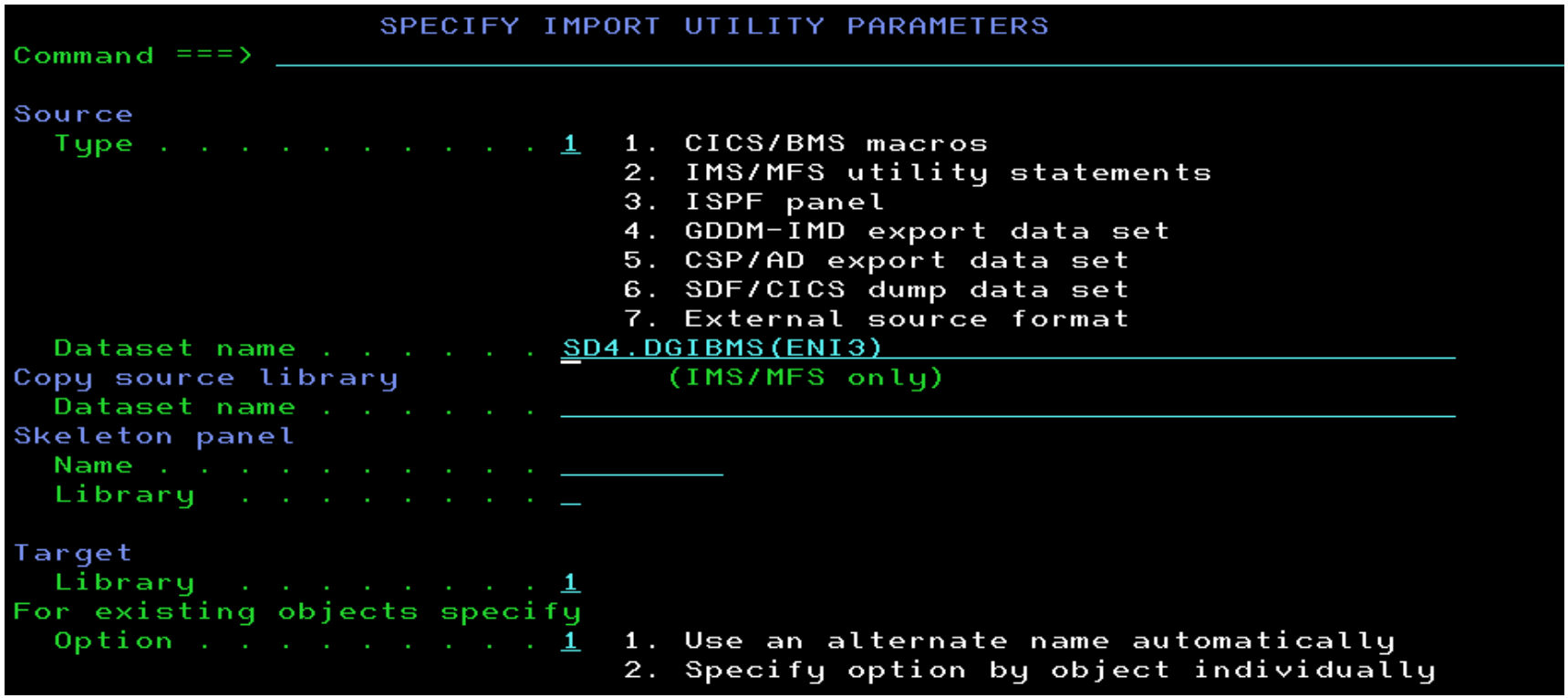
You can enter this utility from the Select a Utility panel (Option 9 from the Main Menu). The following input sources can be imported:

- Maps, map sets and partition sets defined with CICS/BMS macros.
- Formats, messages and partition definition blocks defined with MFS control statements.
- Panels defined with ISPF panel syntax.
- Maps, map groups and AID tables defined and exported with GDDM/IMD.
- Maps and map groups defined and exported with CSP/AD and ALFUTIL.
- Maps, map sets and partition sets defined with SDF/CICS and unloaded to a SDF/CICS dump data set.
- Maps and map groups represented in standard or extended external source format.

In the following import example, the BMS/MACRO source of the ENI panel generated by SDF II will be imported back into SDF II.

SDF II Import Utility - 2

When you select the import utility you will see the *Specify Import Utility Parameters* window. Here you must specify the input that is to be imported and the library where the imported object is to be stored. The member name on the input source can be a specific member or the wildcard character * (to import all/several members of a dataset). The target library has to be one of the 9 libraries specified in the Specify Libraries dialog (option 8 of the Main Menu).

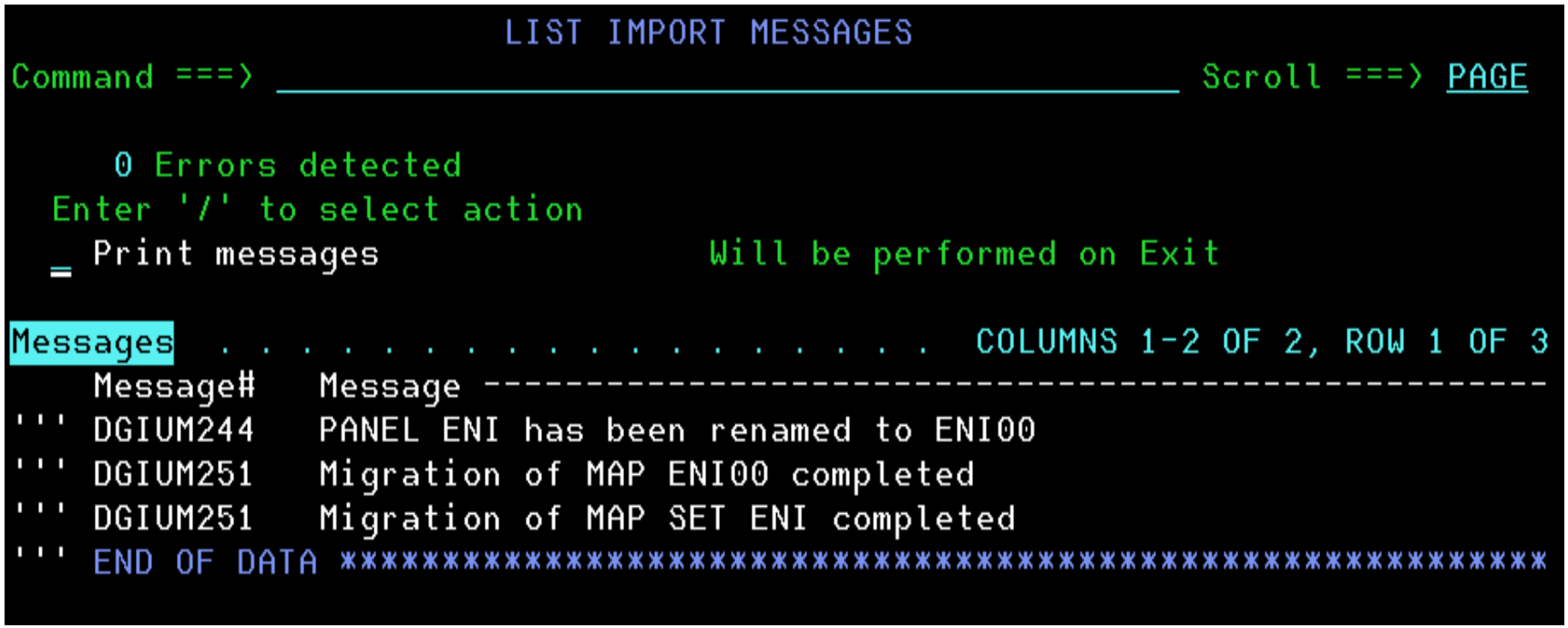


SDF II Import Utility - Messages

After the Import is finished, the Import Messages panel is displayed. In this instance, the import completed successfully and SDF II stored the imported object in the specified target library (1).

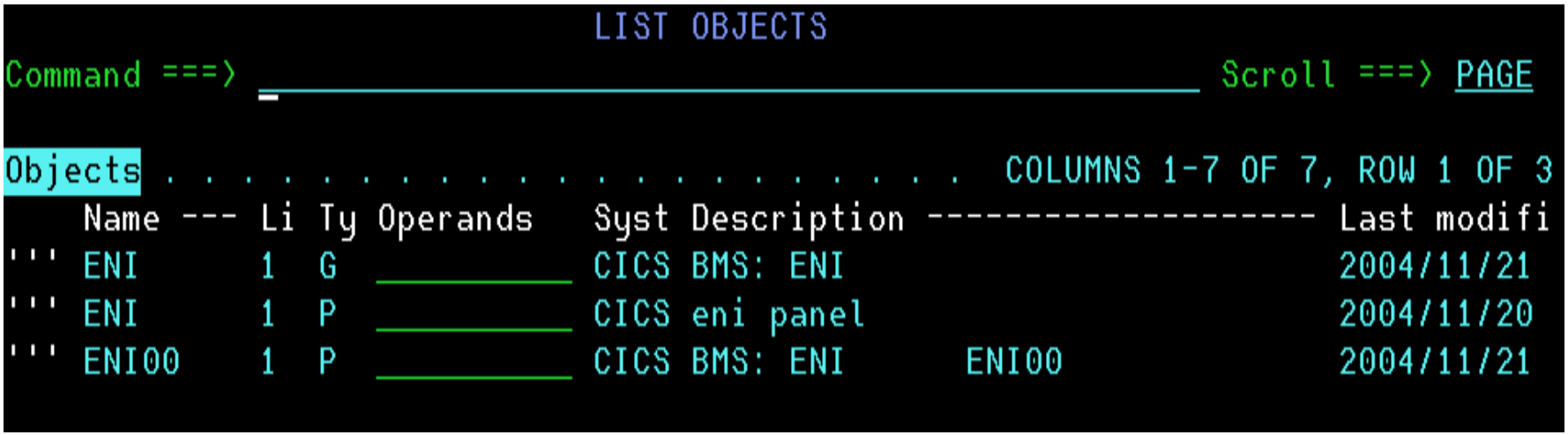
Because we have selected option *1. Use an alternate name automatically* if an object already exists in the target library, SDF II renamed the imported ENI panel into ENI00.

SDF II always creates the MAP and MAP SET for each imported BMS macro.



List Object after Import

If you select the List Object dialog again with the same selection criteria as before, after the import of the ENI CICS/BMS macros, the list will look as follows:



- The first entry in the list is the ENI panel group which was created by the import facility.
- The second entry is the original ENI panel.
- The third entry is the imported ENI panel for which SDF II chose an alternate name. The last two characters of the original name are replaced (or added on if the name is not longer than 6 characters) by a unique suffix in the range of 00 to ZZ. If you'd import the ENI panel again, the name would be ENI01 and the name of the panel group (mapset) ENI00.