VisualAge Pacbase 2.5

MICROFOCUS OLSD
REFERENCE MANUAL

DDOPC000021A

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1. INTRODUCTION

1.1. PURPOSE OF THE MANUAL

PURPOSE OF THE MANUAL

The MICROFOCUS ON-LINE SYSTEMS DEVELOPMENT Reference Manual only provides specific information on the description and generation of dialogues which will operate in COBOL MICROFOCUS, under MS/DOS, OS/2, or UNIX.

The basic rules and general characteristics of dialogue man- agement are fully described in the ON-LINE SYSTEMS DEVELOP- MENT (OLSD) Reference Manual.

1.2. MICROFOCUS OPTION : INTRODUCTION

MICROFOCUS OPTION: INTRODUCTION

ARCHITECTURE OF TRANSACTIONS

The architecture of applications generated in COBOL MICROFOCUS requires specifically written transactions.

Programs written to be generated with variants of this transactional language must be adapted.

CHARACTERISTICS OF MICROFOCUS DIALOGUES

A MICROFOCUS Dialogue is made up of a "Monitor" program and the screens called by this Monitor.

The Monitor is generated from the Dialogue Definition screen.

1.3. CONVERSATION MANAGEMENT

CONVERSATION MANAGEMENT

A sub-program can be called and executed using a COBOL "CALL" statement following the standard rules of sub-program calls.

A specific program, called the Monitor, must be used to link the programs.

THE MONITOR

Program calls are managed by a Monitor Program, which must be generated for each transaction.

1.4. SCREEN MANAGEMENT WITH DOS AND OS/2

SCREEN MANAGEMENT WITH DOS AND OS/2

Screens must be formatted by the generated programs. In order not to overload the programs with too many screen management COBOL instructions, a sub-program for message reception and display is called by every generated screen.

The standard sub-program (ZAR980.CBL for MS/DOS and OS/2) and the SCRSAISI.CBL routine used by this sub-program are provided at installation.

Refer to the PACBASE Operations Manual, Chapter "Installation", Subchapter "Complement: OLSD multi-screen variant".

This sub-program may be renamed. Its name can be parameter- ized on the General Documentation (-G) screen.

All these sub-programs must be compiled (in .GNT or .EXE format for MS/DOS, and .DLL format for OS/2) using the following required compilation options:

.ASSIGN "EXTERNAL"
.SEQUENTIAL "LINE"
.NOIBMCOMP

ZAR980 SUB-PROGRAM

This sub-program executes:

- The simulation of a synchronous screen:

. full page entry (tabulation, cursor management),

. message transmission using keys (<ENTER>, PF keys).

- Color management, and in particular that of the screen's background.

EMULATED FUNCTIONS

Transmission:

MNEMONIC	DESCRIPTION	KEY
ENTER	TRANSMIT equivalent	Ctrl-CR
CLEAR	Clear screen	Alt-F10
PA1	Not used	Alt-F01
PA2	- - -	Alt-F02
PA3	- - -	Alt-F03
PF1...PF10	PF keys	F01...F10
PF11...PF20		Shift-F01...F10
PF21...PF24		Ctrl-F01...F04

Tabulation:

MNEMONIC	DESCRIPTION	KEY
TAB	Forward tabulation	TAB
BACKTAB	Backward tabulation	Updt-TAB
NEWLINE	Return to the next line	ENTER / RETURN

Positioning:

MNEMONIC	DESCRIPTION	KEY
HOME	Positioning on the first input field	HOME or Ctrl-PGup
END	Positioning on the last input field	END or Ctrl-PGdn
BEG-FLD	Positioning on the first character of the field	Ctrl- <--
END-FLD	Positioning on the last character of the field	Ctrl- -->

Scrolling:

MNEMONIC	DESCRIPTION	KEY
UP	Scrolling up	^ !
DOWN	Scrolling down	! v
LEFT	Scrolling left	<--
RIGHT	Scrolling right	-->

Action

MNEMONIC	DESCRIPTION	KEY
BACKSPACE	Deletion of the preceding character and one-position cursor backspace	BACKSPACE <----
INS	Character insertion	INSERT
DEL	Deletion of one character	DELETE
ERASE-EOF	Erase end-of-field	Ctrl-END
ERASE-INPUT	Erase all input fields	Ctrl-HOME
RECOVER	Redisplays the screen as it was at the initial transaction	ESCAPE

COLOR MANAGEMENT

Default values for color management, as well as certain key- board characteristics, can be modified by using a parameter file whose logical name is FPARAM. This sequential file will be read at the beginning of the transaction and default values will be replaced with those found in the file.

A different parameter file may be created for each dialogue.

The structure of this file is as follows:

Pos.	Length	Description	Values
1	2	Dialogue code	
3	1	Screen type : Monochrome	'M' (default)
		Color	'C'
		Monochrome gradation	'G'
4	1	Color scr. backgr. White(*)	'W' (default)
5	1	Brush color : Black(*)	'N' (default
6	1	Backgr. color 25th line : White(*)	'W' (default)
7	1	Brush color 25th line	'W' (Default)
		Black(*)	'N' (Default)
8	1	Clear screen at the	(Default)
		(Faster display if Yes screen not cleared, fixed fields are not re-displayed)	'Y' or 'O'

(*) Color values: White = 'W', Black = 'N', Yellow = 'Y',
Green = 'G', Turquoise = 'T',
Blue = 'B', Red = 'R', Pink = 'P'.

Pos.	Length	Description	Values
9	1	Automatic carriage return at the end of field: Yes No	'Y' or 'O' (Default) 'N'
10	1	Automatic carriage return at the end of the last input field : No Yes	'N' (Default) 'Y' or 'O'
11	1	In insertion mode, the last character of a field may be lost if it is not a blank : No Yes	'N' (Default) 'Y' or 'O'
12	1	Display color of the fields whose presentation attribute is "underlined": Red (*)	'R' (Default)
13	1	Use of ASCII for character input : up to 'FF' value up to '7F' value	'Y' (Default) 'N'
14	67	Not used	

(*) Color values: White = 'W', Black = 'N', Yellow ='Y', Green = 'G', Turquoise = 'T', Blue = 'B', Red = 'R', Pink = 'P'.

1.5. SCREEN MANAGEMENT WITH UNIX

SCREEN MANAGEMENT WITH UNIX

The sub-program ZAR980 is delivered in 'C'-language which must be compiled and linked either with the application's COBOL programs or with runtime MICROFOCUS COBOL/2 programs. The screens must be formatted by the generated programs.

This sub-program uses the Unix library, 'curses'. The source code is also available in a debug version permitting the use of the MICROFOCUS ANIMATOR. In this case, the sub-program uses the screen management routines and keyboard supplied by MICROFOCUS, and does not use the functions of the 'curses' library.

The sub-program takes care of:

- the simulation of a synchronous screen
- the management of intensity and presentation attributes.

The intensity attributes (normal, bright, dark, reverse video) can be configured by the user with a configuration file called FPARAM. This configuration includes the description of attributes for protected fields, input fields, for underlined and blinking fields, and for the current field.

Keyboard management includes recovery of the return codes by the curses 'getch' function (or the 'cobgetch' function in the debug version). The interpretation of these codes depends on the control sequence parameters in the FPARAM configuration file.

The FPARAM configuration file consists of three parts:

- a parameter list to configure the display.
- a parameter list configuring the behavior of certain functions linked to cursor management or to the display.
- a correspondence between the keyboard and specific functions of the application (the function keys for example).

The FPARAM file is structured as follows:

```
Colors      <display parameters>
Params      <function parameters>
<key 1>     <function 1>
<key 2>     <function 2>
.......     ............
<key n>     <function n>
```

Eleven display parameters are available:

- two color parameters (character color and background color).

- nine parameters for attributes of intensity and presentation.

The two colors available are 'W' (white) and 'B' (black). The first color behind the keyword 'Colors' is the character color, and the second is the background color.

Four values are available for the attributes:

- N normal intensity

- D dark (no display)

- B bright

- R reverse video

The nine attribute parameters are in order:

- protected fields, normal intensity
- protected fields, bright
- input fields, normal intensity
- input fields, bright
- current field
- underlined fields, normal intensity
- underlined fields, bright
- blinking fields, normal intensity
- blinking fields, bright

Each parameter can have only one of the four values.

Example:

Colors WBNBNBBDNDN

The five boolean parameters for the configuration ('Y' for yes and 'N' for no) are the following:

- the first parameter is not used
- the second parameter permits the advancement of the cursor to the following field when the end of field is reached
- the third parameter returns the cursor to the first field when the user passes the last field on the screen
- the fourth parameter erases the characters inserted at the end of the current field in insertion mode

Example: Params YYYNY

The last part of the FPARAM file describes the correspondence between the keyboard and the applicable DIALOGUE functions.

All the 'control keys' (ctrl_A to ctrl_Z) are available.

The DIALOGUE functions that are available are the following:

```
 - Enter     : transmit
 - Clear     : erase screen
 - PF1...PF24: functions 01 to 24
 - Tab       : tab to next field
 - BackTab   : tab to previous field
 - NL        : new line
 - Home      : position cursor on first field
 - End       : position cursor on last field
 - Beginf    : position cursor at beginning of current field
 - Endf      : position cursor at end of current field
 - Curs-U    : position cursor on preceding line
 - Curs-D    : position cursor on next line
 - Curs-L    : position cursor on preceding character
 - Curs-R    : position cursor on next character
 - BSpace    : erase character preceding the cursor
 - Insert    : toggle insertion mode
 - Delete    : erase current character
 - DelEOF    : erase characters from cursor to end of field
 - DelINP    : erase all characters of the field
 - Recover   : refresh screen without transmitting input
```

Certain control keys, based on their ASCII value, have default functions:

```
 - ctrl_H    : Bspace
 - ctrl_I    : Tab
 - ctrl_J    : NL
 - ctrl_M    : Enter
```

Other control keys, such as ctrl_C (often provoking an interruption) and ctrl_Z must be used with caution so as to not interfere with the FPARAM description. These control keys can be changed with the utility 'stty' if needed.

Example:

ctrl_A Clear
ctrl_B BackTab
ctrl_O PF6

TERMINAL CONFIGURATION

ZAR980 for Unix uses the 'curses' library of terminal management. This 'curses' library uses a Unix database (TERMCAP or TERMINFO) containing the description of different types of terminals.

The user application (using ZAR980) recognizes the type of terminal on which it is executed through the TERM variable of the calling Shell environment. In order to make this variable accessible from the application, it must have been exported ('export' in Bourne Shell or 'set env' in C-Shell).

It is necessary that the physical characteristics of the terminal correspond to its description in the TERMINFO or TERMCAP Unix base, in order to effectively take into account the different functionalities of ZAR980 (moving of the cursor, function keys or various attributes).

1.6. IMPLEMENTATION OF A CONVERSATION

IMPLEMENTATION OF A CONVERSATION

To implement a conversation, the user must execute the fol- lowing MICROFOCUS operations:

COBOL SOURCE COMPILATION

If files are used, enter the command: '$SET ASSIGN "EXTERNAL"'.

LINK-EDIT

In MS/DOS, this operation creates an executable module .EXE. Since memory is limited to 640 Kb, the size of the programs is limited. To go beyond the 640 Kb limit, the user must use the product, XM, from MICROFOCUS which allows programs to be compiled in the .GNT format and which can not be link-edited.

In OS/2, the monitor must be link-edited in the .EXE format and the screens in the .DLL format.

2. PRESENTATION OF THE EXAMPLE

2.1. INTRODUCTION

BRIEF DESCRIPTION OF THIS MANUAL'S CONTENTS

This manual presents a Screen described in and generated by the OLSD function. It is a complement to the ON-LINE SYSTEMS DEVELOPMENT (OLSD) Reference Manual, which is common to all on-line monitors.

This manual first shows the coding and then the organization of the generated programs.

The structure of a generated program is also detailed and commented upon so as to help users insert their own specific procedures that may be needed in the Screen.

It illustrates the following:

. The coding of Data Names,
. Descriptions of segments, screen, work areas, and communication areas,
. A complete lexicon of variables, indexes and fields used by the automatic functions,
. A description of the automatic functions, including their generation conditions. (Refer to Chapter "GENERATED PROGRAM: PROCEDURE DIVISION".)

NOTE: The Screen example described in this manual does not illustrate all generation possibilities provided by the OLSD function: segment accesses, cross-references between segments, access conditions, etc.

This manual does NOT contain an exhaustive presentation of the specific information on the use of the OLSD function.

REMINDERS ON THE OLSD FUNCTION

Based on the Screen descriptions, the OLSD function ensures the following:

- The automatic generation of the Screen map description from layout-type information. (Adaptation to the hardware and on-line monitor is based on an option specified at the Screen level.)

- The automatic generation of the Screen data processing from process-type information:

. Screen Call of Elements (-CE) -> Screen data processing

. Screen Call of Segments (-CS) -> External data processing

. Dialogue Complement (-O) and Dialogue and Screen General Documentation (-G) -> Generation Options

. Structured Code (-P) -> Specific processing

All processing is generated in a program structured in "Reception" and "Display", thus ensuring the complete processing of the Screen data.

The program is generated in COBOL. Adaptation to the hardware and the on-line Monitor is based on the options specified at the Screen level.

REMINDERS ON THE OLSD FUNCTION - Cont'd

It may be necessary to use complementary description lines in order to generate on-line programs:

. Screen General Documentation (-G),
. Screen Call of Macro-Structures (-CP),
. Beginning Insertions (-B),
. Screen Work Areas (-W).

SCREEN GENERAL DOCUMENTATION

The General Documentation (-G) lines of the screen or dialogue can be used to override the value of some generated constants. For more details, refer to Chapter "DESCRIPTION OF A TRANSACTION", Subchapter "SCREEN GENERAL DOCUMENTATION (-G)" in the OLSD Reference Manual.

WORK AREAS

On Work Areas (-W) screens, 'AA' is a reserved value for the CODE FOR COBOL PLACEMENT; it is used internally by the OLSD function.

The automatically generated lines are identified in the COBOL code by the '*AAnnn' character string from columns 72 to 80. They can be overridden on the Work Areas (-W) screen on 'AAnnn'-numbered lines.

2.2. THE 'DO' DIALOGUE

```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION                *PDLB.NDOC.APC.168!
! ON-LINE DIALOGUE DEFINITION........: DO                                      !
!                                                                              !
! DIALOGUE NAME......................: DOCUMENTATION MANAGER                   !
!                                                                              !
! SCREEN SIZE (LINES, COLUMNS) ......:   24       080                          !
! LABEL TYPE, TABS, INITIALIZATION...:   L        01       _                   !
! HELP CHARACTER SCREEN, DATA ELEMENT:   10       11                           !
!                                                                              !
!                                      LABELS   DISPLAY  INPUT  ER.MESS.  ER.FL!
! INTENSITY ATTRIBUTE ...............:   N        N        N        N        N !
! PRESENTATION ATTRIBUTE ............:   N        N        N        N        N !
! COLOR ATTRIBUTE ...................:   W        W        W        W        W !
!                                                                              !
! TYPE OF COBOL AND MAP TO GENERATE..:   3   0     PC MICROFOCUS MS/DOS        !
! CONTROL CARD OPTIONS FRONT & BACK..:            (PROGRAM)               (MAP)!
! EXTERNAL NAMES ....................:            (PROGRAM)               (MAP)!
! TRANSACTION CODE...................:                                         !
!                                                                              !
!                                                                              !
! EXPLICIT KEYWORDS..: DOC                                                     !
! SESSION NUMBER.....: 0010        LIBRARY......: APC    LOCK....:             !
!                                                                              !
! O: C1 CH: Odo                          ACTION:                               !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                     MICROFOCUS APPLICATION              *PDLB.NDOC.APC.168!
! DIALOGUE COMPLEMENT....:  DO DOCUMENTATION MANAGER                            !
!                                                                               !
!                                                                               !
! COMMON AREA-DATA STRUCTURE CODE.......: CA                                    !
!                                                                               !
! ERROR MESSAGE FILE CHARACTERISTICS                                            !
!                       ORGANIZATION....: V                                     !
!                       EXTERNAL NAME...: EMTEST                                !
!                                                                               !
! FIRST SCREEN CODE OF THE DIALOGUE.....: 0060                                  !
!                                                                               !
! COMPLEMENTARY COMMON AREA LENGTH......:  700                                   !
!                                                                               !
! CODE OF PSB OR SUB-SCHEMA.............:                                       !
!                                                                               !
!                                                                               !
! OPTIONS : OCF F10                                                             !
!                                                                               !
!                                                                               !
!                                                                               !
! SESSION NUMBER     : 0163  LIBRARY      : APC                                 !
!                                                                               !
! O: C1 CH: Odo O                       ACTION:                                 !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION                *PDLB.NDOC.APC.168!
! ON-LINE SCREEN GENERAL DOC.     DO     DOCUMENTATION MANAGER                 !
!                                                                              !
! A LIN : T COMMENT                                                        LIB !
! . 200 : U DO12 THIS ITEM IS NOT AVAILABLE.                               *ACC!
! . 220 : U CD30 TECHNICAL PROBLEM  CALL E.D.P. DEPT. (CODE DO-UTI-CD30)   *ACC!
! . 240 : U CURS INVALID SELECTED LINE                                     *ACC!
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
! *** END ***                                                                  !
! O: C1 CH: Odo G                                                              !
--------------------------------------------------------------------------------
```

2.3. THE 'DO0030' ON-LINE SCREEN

```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION                *PDLB.NDOC.APC.168!
! ON-LINE SCREEN DEFINITION..........: DO0030                                  !
!                                                                              !
! SCREEN NAME........................: ***  ORDER INPUT SCREEN  ***            !
!                                                                              !
! SCREEN SIZE (LINES, COLUMNS) ......:   24       080                          !
! LABEL TYPE, TABS, INITIALIZATION...:   L        01     * -                   !
! HELP CHARACTER SCREEN, DATA ELEMENT:   10       11                           !
!                                                                              !
!                                      LABELS   DISPLAY  INPUT  ER.MESS.  ER.FL!
! INTENSITY ATTRIBUTE ...............: * B        N        N        N        N !
! PRESENTATION ATTRIBUTE ............:   N        N        N        N        N !
! COLOR ATTRIBUTE ...................:   W        W        W        W        W !
!                                                                              !
! TYPE OF COBOL AND MAP TO GENERATE..:   3   0     PC MICROFOCUS MS/DOS        !
! CONTROL CARD OPTIONS FRONT & BACK..:            (PROGRAM)               (MAP)!
! EXTERNAL NAMES ....................:            (PROGRAM)               (MAP)!
! TRANSACTION CODE...................:                                         !
!                                                                              !
!                                                                              !
! EXPLICIT KEYWORDS..:                                                         !
! SESSION NUMBER.....: 0045        LIBRARY......: ACC    LOCK....:             !
!                                                                              !
! O: C1 CH: Odo0030                     ACTION:                                !
--------------------------------------------------------------------------------
```

```
 --------------------------------------------------------------------------------
 !                      MICROFOCUS APPLICATION                *PDLB.NDOC.APC.168!
 ! ON-LINE SCREEN GENERAL DOC.     DO0030 ***  ORDER INPUT SCREEN  ***          !
 !                                                                              !
 ! A LIN : T COMMENT                                                      LIB  !
 ! . 020 : C      THIS SCREEN ALLOWS THE ENTRY OF AN ORDER FOR            *ACC!
 ! . 030 : C      DOCUMENTATION PLACED BY A REFERENCED CLIENT.            *ACC!
 ! . 050 : C      FROM THIS SCREEN, YOU MAY ACCESS ANY OTHER SCREEN OF    *ACC!
 ! . 055 : C      THE DIALOG BY ENTERING THE CORRESPONDING CHOICE FIELD   *ACC!
 ! . 060 : C      VALUE. THE DIFFERENT VALUES ARE DISPLAYED IN THE        *ACC!
 ! . 070 : C      BOTTOM PART OF ALL THE DIALOG'S SCREENS.                *ACC!
 ! . 120 : S CD05                                                         *ACC!
 ! . 122 : U F  8 TECHNICAL PROBLEM  CALL E.D.P. DEPT.(CODE 030-CD05 F8)  *ACC!
 ! . 124 : U F  9 TECHNICAL PROBLEM  CALL E.D.P. DEPT.(CODE 030-CD05 F9)  *ACC!
 ! . 130 : U G  9 TECHNICAL PROBLEM  CALL E.D.P. DEPT.(CODE 030-CD05 G9)  *ACC!
 ! . 150 : S CD10 R                                                       *ACC!
 ! . 152 : U F  8 INCORRECT UPDATE REQUEST.                               *ACC!
 ! . 154 : U F  9 INCORRECT REQUEST FOR CREATION.                         *ACC!
 ! . 160 : U G  9 END OF DISPLAY FOR THIS ORDER.                          *ACC!
 ! . 180 : S ME00 Z                                                       *ACC!
 ! . 190 : U G  9 TECHNICAL PROBLEM  CALL E.D.P. DEPT.(CODE 030-ME00 G9)  *ACC!
 ! . 200 : S FO10 R                                                       *ACC!
 ! . 210 : U F  9 MANUAL DOES NOT BELONG TO DOCUMENTANTION.               *ACC!
 !                                                                              !
 ! O: C1 CH: Odo0030 G                                                          !
 --------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION                *PDLB.NDOC.APC.168!
! ON-LINE SCREEN GENERAL DOC.     DO0030 ***  ORDER INPUT SCREEN  ***          !
!                                                                              !
! A LIN : T COMMENT                                                        LIB !
! . 350 : F CODMVT                                                         *ACC!
! . 360 : C      AN ACTION CODE MUST BE ENTERED.                           *ACC!
! . 400 : F FOURNI                                                         *ACC!
! . 402 : C      THE FIELD 'ITEM' IS ENTERED WITH THE 3-CHARACTER CODE     *ACC!
! . 403 : C      OF THE MANUAL. IT IS NOT POSSIBLE TO ENTER                *ACC!
! . 404 : C      REQUESTS CONCERNING THE BINDERS.                          *ACC!
! . 430 : U    A THIS PROCEDURE DOES NOT PERMIT THE ORDER OF BINDERS.      *ACC!
! . 450 : F MATE                                                           *ACC!
! . 451 : T    0 DOCUM DD                                                  *ACC!
! . 453 : U    5 THIS TYPE OF HARDWARE IS NOT SUPPORTED.                   *ACC!
! . 500 : F QTMAC                                                          *ACC!
! . 510 : C      THE 'QUANTITY ORDERED' FIELD MUST BE ENTERED WITH THE     *ACC!
! . 520 : C      NUMBER OF COPIES NEEDED FOR THE SPECIFIED MANUAL.         *ACC!
! . 530 : C      ACCORDING TO STOCK AVAILABILITY, THE SYSTEM FILLS IN      *ACC!
! . 540 : C      THE 'QUANTITY DELIVERED' AND, IF NEEDED, THE 'QUANTITY    *ACC!
! . 541 : C      OUTSTANDING'.                                             *ACC!
! . 600 : F INFOR                                                          *ACC!
! . 610 : C      THE 'REMARKS' COLUMN ALLOWS TO ENTER SPECIFICS            *ACC!
! . 625 : C      CONCERNING THE LEAD TIMES OF OUTSTANDING ORDERS.          *ACC!
! O: C1 CH:                                                                    !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION                *PDLB.NDOC.APC.168!
! SCREEN CALL OF ELEM... DO0030 ***  ORDER INPUT SCREEN  ***                   !
!                                                                              !
! A LIN : D.ELEM . PHYSICAL ATTRIBUTES   . VALIDATION UPDATE .  DISPLAY        !
!       :        . P LN COL N L C HR VR  .  P V U UPD TARGET .  S SOURCE     LV!
! .............................................................................!
! . 050 : DOAP30 . A 01 001 S            .                   .                 !
! . 080 : DOAP04 . A 01 001 S            .                   .                 !
! . 100 : DO0030 . A 01 025 T            .                   .                 !
! . 110 : NUCOM  . A 03 004 P U          .                   .    CA00         !
! . 120 : MATE   .      003 V U          .  R     CD05       .    CD05         !
! . 122 :        .                       .      V SPECIAL    .                 !
! . 125 : RELEA  .      012 V U          .  R     CD05       .    CD05         !
! . 130 : NUCLIE .   01 004 O U          .                   .                 !
! . 140 : RAISOC .      003 P F          .                   .    CA00         !
! . 145 : RUE    .   01 009 V F          .                   .                 !
! . 150 : VILLE  .      003 F F          .                   .    CD05         !
! . 155 :        .                       .        CD05COPOS  .    CD05COPOS    !
! . 160 : COPOS  .      002 V F N        .  R   P 93CP       .    WP30         !
! . 200 : REFCLI .   01 004 V U N        .        CD05       .    CD05         !
! . 210 : DATE   .      003 V U N        .  R     CD05       .    CD05         !
! . 220 : CORRES .   01 005 V U N        .  P     CD05       .    CD05         !
!                                                                              !
! O: C1 CH: Odo0030 CE                                                         !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION                *PDLB.NDOC.APC.168!
! SCREEN CALL OF ELEM... DO0030 ***  ORDER INPUT SCREEN  ***                   !
!                                                                              !
! A LIN : D.ELEM . PHYSICAL ATTRIBUTES   . VALIDATION UPDATE .  DISPLAY        !
!       :        . P LN COL N L C HR VR   .  P V U UPD TARGET .  S SOURCE     LV!
! .............................................................................!
! . 230 : REMIS  .      003 V U N        .        CD05       .    CD05         !
! . 300 : LINE   . A 10 001 R 1   01 09  .                   .                 !
! . 305 : CODMVT .      003 V   Y        .    I              .                 !
! . 310 : FOURNI .      003 V            .  R T   CD00       .    CD00         !
! . 320 : QTMAC  .      003 V            .  R X   CD10       .    CD10         !
! . 325 :        .                       .      + FO10QTMAM  .                 !
! . 330 : QTMAL  .      002 F            .                   .    CD10         !
! . 335 : QTMAR  .      002 F            .                   .                 !
! . 340 : INFOR  .      001 V            .  P X   CD10       .    CD10         !
! . 350 : END    .      004 Z            .                   .                 !
! . 400 :        . A 20 002 L            .                   .                 !
! . 405 : EDIT   .      001 V F          .    I   CD20       .                 !
! . 415 : DOAP31 . A 20 001 S            .                   .                 !
! . 500 : DOAP02 . A 22 001 S            .                   .                 !
!       :        .                       .                   .                 !
!       :        .                       .                   .                 !
!                                                                              !
! O: C1 CH:                                                                    !
--------------------------------------------------------------------------------
```

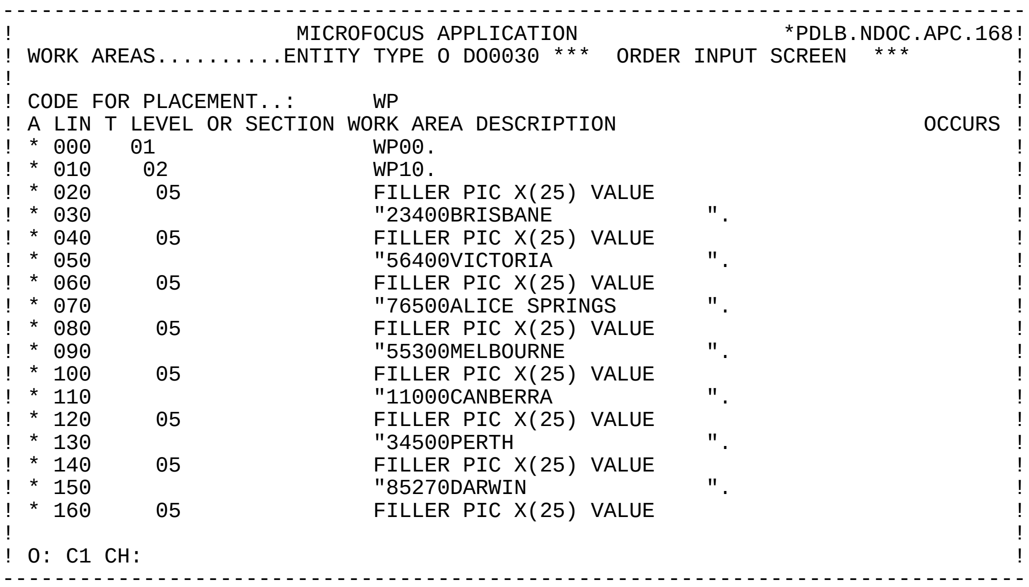
```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION                *PDLB.NDOC.APC.168!
! SCREEN CALL OF ELEM... DO0030 ***  ORDER INPUT SCREEN  ***                    !
!                                                                               !
! A LIN : D.ELEM . PHYSICAL ATTRIBUTES         . LABEL                          !
!       :        . P LN COL N L HR VR IN PR CO . T LITERALS                     !
! ..............................................................................!
! . 050 : DOAP30 . A 01 001 S                  .                                !
! . 080 : DOAP04 . A 01 001 S                  .                                !
! . 100 : DO0030 . A 01 025 T                  .                                !
! . 110 : NUCOM  . A 03 004 P U                .                                !
! . 120 : MATE   .      003 V U                .                                !
! . 122 :        .                             .                                !
! . 125 : RELEA  .      012 V U                .                                !
! . 130 : NUCLIE .   01 004 O U                .                                !
! . 140 : RAISOC .      003 P F                .                                !
! . 145 : RUE    .   01 009 V F                . P 84, OLD TOWNLINE ROAD        !
! . 150 : VILLE  .      003 F F                .                                !
! . 155 :        .                             .                                !
! . 160 : COPOS  .      002 V F                .                                !
! . 200 : REFCLI .   01 004 V U                .                                !
! . 210 : DATE   .      003 V U                . I ..__..                       !
! . 220 : CORRES .   01 005 V U                .                                !
!                                                                               !
! O: C2 CH:                                                                     !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION                *PDLB.NDOC.APC.168!
! SCREEN CALL OF ELEM... DO0030 ***  ORDER INPUT SCREEN  ***                   !
!                                                                              !
! A LIN : D.ELEM . PHYSICAL ATTRIBUTES         . LABEL                         !
!       :        . P LN COL N L HR VR IN PR CO . T LITERALS                    !
! .............................................................................!
! . 230 : REMIS  .      003 V U                .                               !
! . 300 : LINE   . A 10 001 R 1 01 09          .                               !
! . 305 : CODMVT .      003 V                  .                               !
! . 310 : FOURNI .      003 V                  .                               !
! . 320 : QTMAC  .      003 V                  .                               !
! . 325 :        .                             .                               !
! . 330 : QTMAL  .      002 F          B       .                               !
! . 335 : QTMAR  .      002 F                  .                               !
! . 340 : INFOR  .      001 V                  .                               !
! . 350 : END    .      004 Z                  .                               !
! . 400 :        . A 20 002 L                  .   PRINTING OF FORM  :/        !
! . 405 : EDIT   .      001 V F                .                               !
! . 415 : DOAP31 . A 20 001 S                  .                               !
! . 500 : DOAP02 . A 22 001 S                  .                               !
!       :        .                             .                               !
!       :        .                             .                               !
!                                                                              !
! O: C2 CH:                                                                    !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION                *PDLB.NDOC.APC.168!
! ON-LINE SCREEN CALL OF SEGM. DO0030 ***  ORDER INPUT SCREEN  ***             !
! ...CA00...CD05...WP30..*CD00..*CD10..*FO10..£CD20............................!
! A SEGM      :   USE PREC ACCESS KEY     ACCESS      D EXTERNAL LIB. S    :LIBR!
! C CODE C LN : G R D SEGM SOURCE         KEY    B O T NAME     SEGM N LV :    !
!   CD05   00 :   M A      SPACES         KEYCD    V   DOCD00   CD05   12 :0021!
!   CD05   02 :            "B"            COCARA                          :0021!
!   CD05   04 :            CA00-NUCOM     NUCOM                           :0021!
!   CD10 R 00 :   T        "C"            KEYCD    V   DOCD00   CD10      :0021!
!   CD10 R 02 :            CA00-NUCOM     NUCOM                           :0021!
!   CD10 R 04 :            0030-FOURNI    FOURNI                          :0021!
!   CD10 R 06 :     A      SPACES         KEYCD                           :0021!
!   CD10 R 08 :            "C"            COCARA C                        :0021!
!   CD10 R 10 :            CA00-NUCOM     NUCOM  C                        :0021!
!   FO10 R 00 :   M N CD10 0030-FOURNI    CLEFO    V 1 DOFO00   FO10      :0021!
!   FO10 R 02 :            CA00-LANGU     LANGU                           :0021!
!   FO10 R 04 :            0030-RELEA     RELEA                           :0021!
!   FO10 R 06 :            0030-MATE      MATE                            :0021!
!   CD20 Z 00 :   X N      SPACES         KEYCD    V   DOCD00   CD20      :0021!
!   CD20 Z 02 :            "E"            COCARA                          :0021!
!   CD20 Z 04 :            CA00-NUCOM     NUCOM                           :0021!
! . ME00 Z 00 :   N A      CA00-CLEME     CLEME    V   DOME00   ME00      :*DCC!
!                                                                              !
! O: C1 CH: Odo0030 CS                                                         !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                     MICROFOCUS APPLICATION                *PDLB.NDOC.APC.168!
! ON-LINE SCREEN CALL OF P.M.S.......:     DO0030 ***  ORDER INPUT SCREEN  *** !
!                                                                              !
! A   MACRO  LN C : COMMENTS OR PARAMETER VALUES                      D E      !
! .   AADOCP      : WP/                                                        !
! .   BBDEBR      :                                                            !
! .   BBINIT      :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                                                                              !
! O: C1 CH: Odo0030 CP                                                         !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION                *PDLB.NDOC.APC.168!
! WORK AREAS..........ENTITY TYPE O DO0030 ***  ORDER INPUT SCREEN  ***        !
!                                                                              !
! CODE FOR PLACEMENT..:      BB                                                !
! A LIN T LEVEL OR SECTION WORK AREA DESCRIPTION                        OCCURS !
! . 200 I 01               WW10-QTMAR                                          !
! . 201                    VALUE ZERO.                                         !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
! O: C1 CH: Odo0030 W                                                          !
--------------------------------------------------------------------------------
```



```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION                *PDLB.NDOC.APC.168!
! WORK AREAS..........ENTITY TYPE O DO0030 ***  ORDER INPUT SCREEN  ***        !
!                                                                              !
! CODE FOR PLACEMENT..:      WP                                                !
! A LIN T LEVEL OR SECTION WORK AREA DESCRIPTION                        OCCURS !
! * 000   01                 WP00.                                             !
! * 010    02                WP10.                                             !
! * 020     05               FILLER PIC X(25) VALUE                            !
! * 030                      "23400BRISBANE            ".                      !
! * 040     05               FILLER PIC X(25) VALUE                            !
! * 050                      "56400VICTORIA            ".                      !
! * 060     05               FILLER PIC X(25) VALUE                            !
! * 070                      "76500ALICE SPRINGS       ".                      !
! * 080     05               FILLER PIC X(25) VALUE                            !
! * 090                      "55300MELBOURNE           ".                      !
! * 100     05               FILLER PIC X(25) VALUE                            !
! * 110                      "11000CANBERRA            ".                      !
! * 120     05               FILLER PIC X(25) VALUE                            !
! * 130                      "34500PERTH               ".                      !
! * 140     05               FILLER PIC X(25) VALUE                            !
! * 150                      "85270DARWIN              ".                      !
! * 160     05               FILLER PIC X(25) VALUE                            !
!                                                                              !
! O: C1 CH:                                                                    !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION               *PDLB.NDOC.APC.168!
! WORK AREAS..........ENTITY TYPE O DO0030 ***  ORDER INPUT SCREEN  ***          !
!                                                                               !
! CODE FOR PLACEMENT..:      WP                                                 !
! A LIN T LEVEL OR SECTION WORK AREA DESCRIPTION                        OCCURS !
! * 170                      "94000HOBART              ".                       !
! * 180     05               FILLER PIC X(25) VALUE                             !
! * 190                      "89300SYDNEY              ".                       !
! * 300    02                WP20 REDEFINES WP10 OCCURS 9.                    9 !
! * 320 E   05               WP20-COPOS .                                       !
! * 340 E   05               WP20-VILLE .                                       !
! * 400    02                WP30.                                              !
! * 410 I   05               WP30-COPOS .                                       !
! * 500    02                WP40.                                              !
! * 510 E   05               WP40-VILLE.                                        !
! * 520 E   05               WP40-VILLEL.                                       !
!                                                                               !
!                                                                               !
!                                                                               !
!                                                                               !
!                                                                               !
!                                                                               !
!                                                                               !
! O: C1 CH:                                                                     !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!   XXXXXXXX - 0808      ***  ORDER INPUT SCREEN  ***       XXXXXXXXXX 14:45:36!
!                                                                              !
!   ORDER NUMBER: 02345   SYSTEM: MICROFOCUS          RELEASE: 2.0             !
!   CUST.    BEST     D.P. MANAGEMENT                                          !
!        84, OLD TOWNLINE ROAD                      CINCINNATI            48016!
!   CUST. REF.: LP-KCP  ORDER NUMBER: 05179      ORDER DATE: ..__..            !
!    COORDINATOR: MR. RAY GUN                 DISCOUNT RATE:    12.25          !
!                                                                              !
!  A   ITEM     ORDERED   DELIV.   OUTST. REMARKS                              !
!  C   DLG       3         1        2     REST TO BE DELIVERED : 09/08/93      !
!  .   ...      ..        ..       ..     ...................................  !
!  .   ...      ..        ..       ..     ...................................  !
!  .   ...      ..        ..       ..     ...................................  !
!  .   ...      ..        ..       ..     ...................................  !
!  .   ...      ..        ..       ..     ...................................  !
!  .   ...      ..        ..       ..     ...................................  !
!  .   ...      ..        ..       ..     ...................................  !
!  .   ...      ..        ..       ..     ...................................  !
!                                                                              !
! PRINTING OF FORM  : O            UPD : PF07, ORDERS (NEXT) : PF08,           !
! MENU : PF01, CUSTOMER LIST : PF02, CUST. HIST : PF03, ORDER LIST : PF04,     !
! END : PF12 SCREEN DOC : PF10,  DATA EL. DOC : PF11,                          !
! PLEASE CHECK YOUR MAILBOX, THANK YOU.                                        !
! XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX     !
--------------------------------------------------------------------------------
```

```
           O DO0030 FUNCTION: 02
ASFLIN OPE OPERANDS                         LVTY CONDITION
*CP    N   INIT. NUMBER OF LOADED ITEMS     10BL
*CP100 M   IWP20M IWP20L
------ --- -------------------------------- ---- --------------------
           O DO0030 FUNCTION: 08
ASFLIN OPE OPERANDS                         LVTY CONDITION
*BB    N   NO UPDATE ==> END OF RECEIVE     10IT OPER NOT = "M"
*BB100 GFT
------ --- -------------------------------- ---- --------------------
           O DO0030 FUNCTION: 15
ASFLIN OPE OPERANDS                         LVTY CONDITION
.AA    N   INITIALIZATION CATM (HEADING)    10IT CATX = SPACE
.AA100 M   "M" CATM                           AN OPER = "M"
------ --- -------------------------------- ---- --------------------
           O DO0030 FUNCTION: 20
ASFLIN OPE OPERANDS                         LVTY CONDITION
.BB    N   ITEM NOT AVAILABLE               10*A FOURNI
.BB100 ERR A FOURNI                         99IT I-0030-FOURNI = "CLA"
.BB110 GF                                     AN CATM NOT = SPACE
------ --- -------------------------------- ---- --------------------
           O DO0030 FUNCTION: 25
ASFLIN OPE OPERANDS                         LVTY CONDITION
.BB    N   ACCESS TO FO10                   12*P CD10
.BB100 M   "1" CD10-CF
------ --- -------------------------------- ---- --------------------
           O DO0030 FUNCTION: 28
ASFLIN OPE OPERANDS                         LVTY CONDITION
.BH    N   STOCK UPD.: ORDER DELETION/UPD   10IT (CATM = "A" OR "M")
.BH100 A   CD10-QTMAL FO10-QTMAS              AN CATX = "R"
.BH120                                        AN CAT-ER = SPACES
------ --- -------------------------------- ---- --------------------
           O DO0030 FUNCTION: 30
ASFLIN OPE OPERANDS                         LVTY CONDITION
.BD    N   QUANTITY PROCESSING              10*P R
------ --- -------------------------------- ---- --------------------
.BF    N   CALC. DELIV. QUANT.   STOCK UPD. 12IT CATM = "C" OR "M"
.BF100 M   I-0030-QTMAC  CD10-QTMAL         99IT FO10-QTMAS NOT <
.BF110                                           I-0030-QTMAC
.BF120 M   FO10-QTMAS    CD10-QTMAL         99EL
.BF130 S   CD10-QTMAL    FO10-QTMAS         99BL
.BF140 M   CD10-QTMAL    O-0030-QTMAL
------ --- -------------------------------- ---- --------------------
           O DO0030 FUNCTION: 64
ASFLIN OPE OPERANDS                         LVTY CONDITION
*DA    N   PREPARATION DISPLAY DATE/HOUR    10IT CATX = " "
*DA 40 AD6
*DA 80 AD  IM DATOR DAT8C
*DA120 TIM                                  99BL
*DA160 TIF TIMCOG TIMDAY
------ --- -------------------------------- ---- --------------------
           O DO0030 FUNCTION: 65
ASFLIN OPE OPERANDS                         LVTY CONDITION
.BB    N   REMAINS TO BE DELIVERED          10*P R
.BB100 C   WW10-QTMAR =                     99IT CD10-QTMAL NOT = ZERO
.BB110     CD10-QTMAC - CD10-QTMAL
.BB120 M   WW10-QTMAR   O-0030-QTMAR
------ --- -------------------------------- ---- --------------------
           O DO0030 FUNCTION: 93
ASFLIN OPE OPERANDS                         LVTY CONDITION
*CP    N   ZIP CODE VALIDATION              10BL
*CP100 SCH WP20-COPOS WP30-COPOS
*CP200 M   "5" DEL-ER                       99IT IWP20R > IWP20L
*CP220 GT  10
------ --- -------------------------------- ---- --------------------
```

3. GENERATED MONITOR EXAMPLE

3.1. DATA DIVISION

DATA DIVISION

The Monitor is generated from the dialogue Definition Screen. It ensures the proper linking of screens and programs within an application.

In addition to the fields that are usually generated, the WORKING-STORAGE SECTION of this program includes:

'PACBASE-CONSTANTS'
PRCGI: External name of the sub-routine that receives and formats messages (Default Value: ZAR980; this name can be modified on the dialogue General Documentation (-G) screen).

'COMMON-AREA'
This level includes the conversation field defined by the user.

'COMMUNICATION-MONITOR'
This level contains the fields allowing the monitor to communicate with the dialogue screens.

S-WWSS-OPER Equivalent to the OPER field. The values received by the monitor are as follows:

'O': Screen branching

'E': End of conversation

'X': Input-output error on a file or on the terminal.

S-WWSS-PROGE External name of the screen program to be called.

S-WWSS-XFILE In the event of an input/output error, this field memorizes the file name.

S-WWSS-XFUNCT In the event of an input/output error, this field memorizes the transaction executed on the file (READ, WRITE, START, etc.).

S-WWSS-STATUS File status in the event of an input/output error.

. The CMES-COMMUNICATION level: This is a communication field with the message reception and formatting sub-program. It contains:

CMES-YCRE This field is filled by value 'A' for terminal and keyboard initialization using the parameter file.

CMES-DIALOG Dialogue code.

. The D-SERR and D-STAT levels: General purpose fields used to display the file input/output errors.

```
IDENTIFICATION DIVISION.
PROGRAM-ID. DO.                                                  DO
AUTHOR.     DOCUMENTATION MANAGEMENT.                            DO
DATE-COMPILED. 04/14/93.                                         DO
ENVIRONMENT DIVISION.                                            DO
CONFIGURATION SECTION.                                           DO
SOURCE-COMPUTER. PC-MICROFOCUS.                                  DO
OBJECT-COMPUTER. PC-MICROFOCUS.                                  DO
DATA DIVISION.                                                   DO
WORKING-STORAGE SECTION.                                         DO
01   WSS-BEGIN.                                                  DO
     05 FILLER PICTURE X(7) VALUE "WORKING".                     DO
     05 IK     PICTURE X.                                        DO
     05 BLANC  PICTURE X VALUE SPACE.                            DO
     05 PROGC  PICTURE X(8).                                     DO
01   PACBASE-CONSTANTS.                                          DO
     05 SESSI  PICTURE X(5) VALUE "0327 ".                       DO
     05 LIBRA  PICTURE X(3) VALUE "APC".                         DO
     05 DATGN  PICTURE X(8) VALUE "04/14/93".                    DO
     05 PROGR  PICTURE X(6) VALUE "DO    ".                      DO
     05 PROGE  PICTURE X(8) VALUE "DO      ".                    DO
     05 TIMGN  PICTURE X(8) VALUE "15:15:11".                    DO
     05 USERCO PICTURE X(8) VALUE "PDKG    ".                    DO
     05 PRCGI  PICTURE X(8) VALUE "ZAR980".                      DO
01      COMMON-AREA.                                             *AA000
     02 K-PROGR  PICTURE X(6).                                   *AA000
     02            CA00.                                         *AA001
       10          CA00-CLECD.                                   *AA001
        15         CA00-NUCOM  PICTURE 9(5).                     *AA001
       10          CA00-CLECL1.                                  *AA001
        15         CA00-NUCLIE PICTURE 9(8).                     *AA001
       10          CA00-ME00.                                    *AA001
        15         CA00-CLEME.                                   *AA001
         20        CA00-COPERS PICTURE X(5).                     *AA001
         20        CA00-NUMORD PICTURE XX.                       *AA001
        15         CA00-MESSA  PICTURE X(75).                    *AA001
       10          CA00-PREM   PICTURE X.                        *AA001
       10          CA00-LANGU  PICTURE X.                        *AA001
       10          CA00-RAISOC PICTURE X(50).                    *AA001
     02  K-SDOC PICTURE X.                                       *AA002
     02  FILLER PICTURE X(38).                                   *AA002
     02  FILLER      PICTURE X(0700).                            *AA002
01           COMMUNICATION-MONITOR.                              *AA010
     02    S-WWSS.                                               *AA010
       10    S-WWSS-OPER   PICTURE X.                            *AA010
       10    S-WWSS-PROGE  PICTURE X(8).                         *AA010
       10    S-WWSS-XFILE  PICTURE X(8).                         *AA010
       10    S-WWSS-XFUNCT PICTURE X(8).                         *AA010
       10    S-WWSS-STATUS PICTURE XX.                           *AA010
01      CMES-COMMUNICATION.                                      *AA060
  05    FILLER        PICTURE X(10001).                          *AA060
  05    CMES-YCRE     PICTURE X.                                 *AA060
  05    CMES-DIALOG   PICTURE XX.                                *AA060
  05    FILLER        PICTURE X(9).                              *AA060
  05    CMES-STATUS.                                             *AA060
    10  CMES-RETCOD   PICTURE 99.                                *AA060
  05    FILLER        PICTURE X(102).                            *AA060
01      D-SERR.                                                  *AA155
    02  D-SERR-LINE1.                                            *AA155
     05 FILLER  PICTURE X(17) VALUE "ERROR IN PROGRAM ".         *AA155
     05 D-SERR-PROGE PICTURE X(8).                               *AA155
     05 FILLER       PICTURE X(6) VALUE " FILE ".                *AA155
     05 D-SERR-XFILE PICTURE X(8) VALUE SPACE.                   *AA155
     05 FILLER       PICTURE X(11) VALUE "FUNCTION : ".          *AA155
     05 D-SERR-XFUNCT PICTURE X(8) VALUE SPACE.                  *AA155
     05 FILLER     PICTURE X(15) VALUE " FILE STATUS : ".        *AA155
     05 D-SERR-STATUS PICTURE X(7)  VALUE SPACE.                 *AA155
01      D-STAT.                                                  *AA155
 05     D-STAT-FILST.                                            *AA155
  10    D-STAT-CHAR1    PICTURE X.                               *AA155
  10    D-STAT-CHAR2    PICTURE X.                               *AA155
 05     D-STAT-BIN REDEFINES D-STAT-FILST PIC 9(4) COMP.         *AA155
 05     D-STAT-DISPL.                                            *AA155
  10    D-STAT-DIS1     PICTURE X.                               *AA155
  10    FILLER          PICTURE X VALUE SPACE.                   *AA155
  10    D-STAT-DIS4     PICTURE 9999.                            *AA155
01    PACBASE-INDEXES COMPUTATIONAL SYNC.                        *AA200
```

```
05 K01           PICTURE S9(4).                             *AA200
05        TALLI PICTURE S9(4) VALUE ZERO.                   *AA200
05    5-CA00-LTH  PICTURE S9(4) VALUE +0147.                *AA200
```

3.2. PROCEDURE DIVISION

PROCEDURE DIVISION

The structure of the PROCEDURE DIVISION in the Monitor program is as follows:

F01 Initialization of the field containing the name of next program to be executed with the name of the first dialogue screen; call of the message formatting sub-program in order to initialize the terminal and keyboard parameters.

F28 Activation of the next program to be executed using a 'CALL' instruction.

F2910 Program stop at the end of the transaction.

F81ER Error message display for a file input/output error.

```
PROCEDURE DIVISION.                                                  *99999
           *************************************                     DO
           *                                   *                     DO
           *  INITIALIZATIONS                  *                     DO
           *                                   *                     DO
           *************************************                     DO
F01.                                                                 DO
       MOVE "DO0060  " TO S-WWSS-PROGE.                              DO
       MOVE "A"        TO CMES-YCRE.                                 DO
       MOVE "DO"       TO CMES-DIALOG.                               DO
       CALL PRCGI USING CMES-COMMUNICATION.                          DO
       MOVE ZERO TO K-SDOC.                                          DO
F01-FN.      EXIT.                                                   DO
F28.         EXIT.                                                   DO
F28AA.                                                               DO
       MOVE  "A"  TO  S-WWSS-OPER.                                   DO
F28AA-FN.    EXIT.                                                   DO
F2899.                                                               DO
       MOVE S-WWSS-PROGE TO PROGC.                                   DO
       CALL S-WWSS-PROGE USING                                       DO
       COMMON-AREA COMMUNICATION-MONITOR.                            DO
       CANCEL PROGC.                                                 DO
F2899-FN.    EXIT.                                                   DO
F28-FN.      EXIT.                                                   DO
F29.                                                                 DO
       IF S-WWSS-OPER = "X" GO TO F81ER.                             DO
F2910.     IF S-WWSS-OPER = "E"                                      DO
       GOBACK.                                                       DO
F2910-FN.    EXIT.                                                   DO
F2920.     GO TO F28.                                                DO
F2920-FN.    EXIT.                                                   DO
F29-FN.      EXIT.                                                   DO
F81ER.                                                               DO
       MOVE S-WWSS-PROGE TO D-SERR-PROGE.                            DO
       MOVE S-WWSS-XFILE TO D-SERR-XFILE.                            DO
       MOVE S-WWSS-XFUNCT TO D-SERR-XFUNCT.                          DO
       MOVE S-WWSS-STATUS TO D-SERR-STATUS D-STAT-FILST.             DO
       IF D-STAT-CHAR1 = "9" MOVE D-STAT-CHAR1 TO D-STAT-DIS1        DO
       MOVE LOW-VALUE TO D-STAT-CHAR1                                DO
       MOVE D-STAT-BIN TO D-STAT-DIS4                                DO
       MOVE D-STAT-DISPL TO D-SERR-STATUS.                           DO
       DISPLAY D-SERR-LINE1.                                         DO
       GOBACK.                                                       DO
F81ER-FN.    EXIT.                                                   DO
```

4. GENERATED PROGRAM EXAMPLE

4.1. BEGINNING OF PROGRAM

BEGINNING OF PROGRAM

The user cannot modify the IDENTIFICATION DIVISION of the generated program.

The ENVIRONMENT DIVISION is automatically adapted to the variant requested for the program.

In the FILE-CONTROL section:

. A SELECT clause is generated for each file called with ORGANIZATION 'V' on the Screen Call of Segments (-CS) screen.

. A SELECT clause is generated for the Error Message file if it is declared with ORGANIZATION 'V' on the Dialogue Complement (-O) screen.

. A SELECT clause is generated for the file which stores the screen before a branch to HELP documentation provided that Screen and Field Help Call characters have been specified in the Dialogue Definition. The clause is not generated if the NOSAV option is activated in the Dialogue Complement (-O) screen. (Default filename: 'HE').

```
IDENTIFICATION DIVISION.
PROGRAM-ID. DO0030.                                              DO0030
AUTHOR.     ***  ORDER INPUT SCREEN  ***.                        DO0030
DATE-COMPILED. 04/14/93.                                         DO0030
ENVIRONMENT DIVISION.                                            DO0030
CONFIGURATION SECTION.                                           DO0030
SOURCE-COMPUTER. PC-MICROFOCUS.                                  DO0030
OBJECT-COMPUTER. PC-MICROFOCUS.                                  DO0030
SPECIAL-NAMES.                                                   DO0030
     DECIMAL-POINT IS COMMA.                                     DO0030
INPUT-OUTPUT SECTION.                                            DO0030
FILE-CONTROL.                                                    DO0030
     SELECT    CD-FILE                                           DO0030
     ASSIGN  TO  EXTERNAL   DOCD00                               DO0030
     ORGANIZATION INDEXED                                        DO0030
     ACCESS IS DYNAMIC                                           DO0030
     RECORD KEY IS CD00-KEYCD                                    DO0030
     LOCK MODE IS MANUAL WITH LOCK ON RECORDS                    DO0030
     FILE STATUS 1-CD00-STATUS.                                  DO0030
     SELECT    EM-FILE                                           DO0030
     ASSIGN  TO     EMTEST                                       DO0030
     ORGANIZATION INDEXED                                        DO0030
     ACCESS IS DYNAMIC                                           DO0030
     RECORD KEY IS EM00-EMKEY                                    DO0030
     LOCK MODE IS MANUAL WITH LOCK ON RECORDS                    DO0030
     FILE STATUS 1-EM00-STATUS.                                  DO0030
     SELECT    FO-FILE                                           DO0030
     ASSIGN  TO  EXTERNAL   DOFO00                               DO0030
     ORGANIZATION INDEXED                                        DO0030
     ACCESS IS DYNAMIC                                           DO0030
     RECORD KEY IS FO10-CLEFO                                    DO0030
     LOCK MODE IS MANUAL WITH LOCK ON RECORDS                    DO0030
     FILE STATUS 1-FO00-STATUS.                                  DO0030
     SELECT HE-FILE    ASSIGN TO SAVESCR                         DO0030
     ORGANIZATION INDEXED                                        DO0030
     ACCESS IS DYNAMIC                                           DO0030
     RECORD KEY IS HE00-XTERM                                    DO0030
     LOCK MODE IS MANUAL WITH LOCK ON RECORDS                    DO0030
     FILE STATUS 1-HE00-STATUS.                                  DO0030
     SELECT    ME-FILE                                           DO0030
     ASSIGN  TO  EXTERNAL   DOME00                               DO0030
     ORGANIZATION INDEXED                                        DO0030
     ACCESS IS DYNAMIC                                           DO0030
     RECORD KEY IS ME00-CLEME                                    DO0030
     LOCK MODE IS MANUAL WITH LOCK ON RECORDS                    DO0030
     FILE STATUS 1-ME00-STATUS.                                  DO0030
```

4.2. DESCRIPTION OF SEGMENTS

SEGMENT DESCRIPTION

This part of the program is generated when at least one segment is used on the screen in 'V' organization.

The segment DESCRIPTION TYPE is defined by the user on the Screen Call of Segments (-CS) screen. The types of calls are:

. Complete segment (Common part and specific part in redefinition);

. Specific part only;

. Complete segment with variable length (common part and specific part in redefinition without FILLER).

Back-up file for the HELP Function

When documentation is requested (HELP Function), a file stores the input fields before branching to the HELP documentation screen. Its length must be 1930 characters; the size of the longest screen being 1920 characters.

The structure of this file is as follows:

```
01            HE00.
       05     HE00-XTERM            PICTURE X(10).
       05     HE00-SCREEN           PICTURE X(1920).
```

'HE' is the default filename, 'SAVESCR' is the default external name.

The user may modify these names using the General Documentation (-G) lines of the screen (see Subchapter "DIALOGUE GENERAL DOCUMENTATION" in the ON-LINE SYSTEMS DEVELOPMENT Reference Manual).

```
DATA DIVISION.                                                   DO0030
FILE SECTION.                                                    DO0030
FD           CD-FILE.                                            DO0030
01                 CD00.                                         DO0030
       10          CD00-KEYCD.                                   DO0030
        15         CD00-COCARA PICTURE X.                        DO0030
        15         CD00-NUCOM  PICTURE 9(5).                     DO0030
        15         CD00-FOURNI PICTURE X(3).                     DO0030
       10          CD00-SUITE.                                   DO0030
        15         FILLER      PICTURE X(00157).                 DO0030
01                 CD05.                                         DO0030
       10          FILLER      PICTURE X(00009).                 DO0030
       10          CD05-NUCLIE PICTURE 9(8).                     DO0030
       10          CD05-DATE   PICTURE X(6).                     DO0030
       10          CD05-RELEA  PICTURE X(3).                     DO0030
       10          CD05-REFCLI PICTURE X(30).                    DO0030
       10          CD05-RUE    PICTURE X(40).                    DO0030
       10          CD05-COPOS  PICTURE X(5).                     DO0030
       10          CD05-VILLE  PICTURE X(20).                    DO0030
       10          CD05-CORRES PICTURE X(25).                    DO0030
       10          CD05-REMIS  PICTURE S9(4)V99.                 DO0030
       10          CD05-MATE   PICTURE X(8).                     DO0030
       10          CD05-LANGU  PICTURE X.                        DO0030
       10          CD05-FILLER PICTURE X(5).                     DO0030
01                 CD10.                                         DO0030
       10          FILLER      PICTURE X(00009).                 DO0030
       10          CD10-QTMAC  PICTURE 99.                       DO0030
       10          CD10-QTMAL  PICTURE 99.                       DO0030
       10          CD10-INFOR  PICTURE X(35).                    DO0030
       10          CD10-ADFOU  PICTURE X(100).                   DO0030
       10          FILLER      PICTURE X(00018).                 DO0030
01                 CD20.                                         DO0030
       10          FILLER      PICTURE X(00009).                 DO0030
       10          CD20-EDIT   PICTURE X.                        DO0030
       10          FILLER      PICTURE X(00156).                 DO0030
FD           EM-FILE.                                            DO0030
01                 EM00.                                         DO0030
      05           EM00-EMKEY.                                   DO0030
       10          EM00-LIBRA  PICTURE X(3).                     DO0030
       10          EM00-ENTYP  PICTURE X.                        DO0030
       10          EM00-XEMKY.                                   DO0030
        15         EM00-PROGR  PICTURE X(6).                     DO0030
        15         EM00-ERCOD.                                   DO0030
         20        EM00-ERCOD9 PICTURE 9(3).                     DO0030
        15         EM00-ERTYP  PICTURE X.                        DO0030
       10          EM00-LINUM  PICTURE 9(3).                     DO0030
      05           EM00-ERLVL  PICTURE X.                        DO0030
      05           EM00-ERMSG  PICTURE X(66).                    DO0030
      05           FILLER      PICTURE X(6).                     DO0030
FD           FO-FILE.                                            DO0030
01                 FO10.                                         DO0030
       10          FO10-CLEFO.                                   DO0030
        15         FO10-FOURNI PICTURE X(3).                     DO0030
        15         FO10-MATE   PICTURE X(8).                     DO0030
        15         FO10-RELEA  PICTURE X(3).                     DO0030
        15         FO10-LANGU  PICTURE X.                        DO0030
       10          FO10-QTMAS  PICTURE S9(4)                     DO0030
                        COMPUTATIONAL-4.                         DO0030
       10          FO10-QTMAM  PICTURE 9(4).                     DO0030
       10          FO10-LIBFO  PICTURE X(20).                    DO0030
       10          FO10-DATE   PICTURE X(6).                     DO0030
       10          FO10-HEURE  PICTURE X(8).                     DO0030
       10          FO10-FILLER PICTURE XX.                       DO0030
FD           HE-FILE.                                            DO0030
01               HE00.                                           DO0030
    05           HE00-XTERM  PICTURE X(10).                      DO0030
    05           HE00-SCREEN PICTURE X(1920).                    DO0030
FD           ME-FILE.                                            DO0030
01                 ME00.                                         DO0030
       10          ME00-CLEME.                                   DO0030
        15         ME00-COPERS PICTURE X(5).                     DO0030
        15         ME00-NUMORD PICTURE XX.                       DO0030
       10          ME00-MESSA  PICTURE X(75).                    DO0030
```

4.3. BEGINNING OF WORKING-STORAGE

BEGINNING OF WORKING-STORAGE

The 'WSS-BEGIN' level is generated at the beginning of the WORKING-STORAGE SECTION for all programs.

It contains all the variables and keys necessary for automatic processing.

IK Error indicator for file accesses.

'0' No error.
'1' Error.

OPER Operation code.

'A' Display.
'M' Update.
'S' Screen continuation.
'E' End.
'P' Previous display.
'O' Transfer to another screen.

OPERD Operation code for deferred branching.

Transferred to OPER in F40.

'O' Deferred call of another screen.

OPER and OPERD: If they correspond to a Data Element defined as an Operation Code on the Screen Call of Elements (-CE) screen (value 'O' in the VALIDATION CONDITIONS/SET VARIABLES field), they are processed in the F0520 function. If not, they are processed in the F20 function.

CATX Code of the category being executed.

'0' Beginning of reception or display.
' ' Screen-top.
'R' Repetitive.
'Z' Screen-bottom.

CATM Transaction code.

'C' Creation.
'M' Modification.

'A' Deletion.
'X' Implicit update.

ICATR Indicator for current category being processed.

(Repetitive category only)

SCR-ER Screen error indicator.

'1' no error.
'4' error.

FT End of repetitive category indicator.

'0' Lines to display.
'1' No more lines to display.

ICF Input Configuration.

'1' Screen in input.
'0' No screen in input.

OCF Output Configuration.

'1' Screen in output.
'0' No screen in output.

CAT-ER Ongoing error indicator for current category.

' ' No error.
'E' Error.

I-PFKEY Stores the function key.

INA Number of Data Elements in the screen-top category.

INR INA + Number of Data Elements in the repetitive category.

INZ INR + Number of Data Elements in the screen-bottom category.

IRR Number of repetitions in the repetitive category.

INT Number of input fields.

IER Number of error messages on the screen.

DEL-ER Memorizes Data Element error (work variable).

The 'CONSTANTS' level is also generated for all programs. It contains:

. The compilation date of the on-line generator (PACE30 and PACE80), as well as the date of the related skeleton (these appear as comment lines),

. Information on the program and work areas generated according to the procedures executed in the program:

SESSI	Session number of the generated program.
LIBRA	Code of the library.
DATGN	Generated program date.
PROGR	System program code.
PROGE	COBOL program-id.
TIMGN	Generated program time.
USERCO	User code.
COBASE	Database code.

If a request for HELP documentation is entered on the Screen Definition screen, the following fields are generated:

PRDOC: External name of the 'HELP SCREEN' program.

5-scrn-PROGE: Field containing the name of called program.
This field is filled during a screen branching operation ('scrn' = the last four characters of the screen code).

The PRCGI field includes the external name of the message reception and formatting program.

DATCE This field includes the CENTUR field (containing the value of the current century) and a blank date area (DATOR) in which the user can store the processing date in a year-month-day format (DATOA-DATOM-DATOJ).

Note: if the year is less than '61', the CENTUR field is automatically set to '20'.

DAT6 Fields for date formatting (MMDDYY or DDMMYY) and
DAT7 printing (for example DD/MM/YY).
DAT8 These fields are generated if a date processing operator is used in the '-P' lines of the program or if a variable data element ('V') has a date format.

DATSEP This field contains the separator used for dates. The default value ('/') can be modified by via Procedural Code (-P) lines.

DATSET This field contains the separator used for the Gregorian date.

The default value ('-') can be modified via Procedural Code (-P) lines.

DATCTY Field for century loading.

DAT6C Field for non-formatted date with century.

DAT7C Field for non-formatted date with century.

DAT8C Field for formatted date with century (DD/MM/CCYY).

DAT8G Field for the Gregorian type of date -- with century also -- (CCYY-MM-DD).

TIMCO Field for time loading.

TIMDAY Field for time formatting (HH:MM:SS).

The 'CONFIGURATIONS' level contains one variable 'ddss-CF' ('ddss' = Segment code in the generated program) for each Segment accessed in the program, which allows for conditioned access to each Segment in the procedure.

The 'STATUS-AREA' level contains the '1-dd00-STATUS' fields, which correspond to the FILE-STATUS defined in each file's SELECT clause.

```
WORKING-STORAGE SECTION.                                         DO0030
01   WSS-BEGIN.                                                  DO0030
     05 FILLER PICTURE X(7) VALUE "WORKING".                     DO0030
     05 IK     PICTURE X.                                        DO0030
     05 BLANC  PICTURE X VALUE SPACE.                            DO0030
     05 OPER   PICTURE X.                                        DO0030
     05 OPERD  PICTURE X VALUE SPACE.                            DO0030
     05 CATX   PICTURE X.                                        DO0030
     05 CATM   PICTURE X.                                        DO0030
     05 ICATR  PICTURE 99.                                       DO0030
     05 SCR-ER PICTURE X.                                        DO0030
     05 FT     PICTURE X.                                        DO0030
     05 ICF    PICTURE X.                                        DO0030
     05 OCF    PICTURE X.                                        DO0030
     05 CAT-ER PICTURE X.                                        DO0030
   05   CURPOS.                                                  DO0030
    10  CPOSL         PICTURE 99.                                DO0030
    10  CPOSC         PICTURE 999.                               DO0030
     05 INA    PICTURE 999 VALUE 008.                            DO0030
     05 INR    PICTURE 999 VALUE 012.                            DO0030
     05 INZ    PICTURE 999 VALUE 013.                            DO0030
     05 IRR     PICTURE 99 VALUE 09.                             DO0030
     05 INT    PICTURE 999 VALUE 045.                            DO0030
     05 IER     PICTURE 99 VALUE 01.                             DO0030
     05 DEL-ER  PICTURE X.                                       DO0030
01   PACBASE-CONSTANTS.                                          DO0030
 OLSD DATES PACE30 : /02/93                                      DO0030
            PACE80 : 05/03/93   PAC7SG : 930225                  DO0030
     05 SESSI  PICTURE X(5) VALUE "0327 ".                       DO0030
     05 LIBRA  PICTURE X(3) VALUE "APC".                         DO0030
     05 DATGN  PICTURE X(8) VALUE "04/14/93".                    DO0030
     05 PROGR  PICTURE X(6) VALUE "DO0030".                      DO0030
     05 PROGE  PICTURE X(8) VALUE "DO0030  ".                    DO0030
     05 TIMGN  PICTURE X(8) VALUE "14:05:56".                    DO0030
     05 USERCO PICTURE X(8) VALUE "PDKG    ".                    DO0030
     05 PRDOC  PICTURE X(8) VALUE "DOP050".                      DO0030
     05 PRCGI  PICTURE X(8) VALUE "ZAR980".                      DO0030
     05      5-0030-PROGE  PICTURE X(8).                         DO0030
01  DATCE.                                                       DO0030
  05  CENTUR   PICTURE XX VALUE "19".                            DO0030
     05 DATOR.                                                   DO0030
     10 DATOA  PICTURE XX.                                       DO0030
     10 DATOM  PICTURE XX.                                       DO0030
     10 DATOJ  PICTURE XX.                                       DO0030
01  DAT6.                                                        DO0030
     10 DAT61.                                                   DO0030
     15 DAT619 PICTURE 99.                                       DO0030
     10 DAT62.                                                   DO0030
     15 DAT629 PICTURE 99.                                       DO0030
     10 DAT63  PICTURE XX.                                       DO0030
01  DAT7.                                                        DO0030
     10 DAT71  PICTURE XX.                                       DO0030
     10 DAT72  PICTURE XX.                                       DO0030
     10 DAT73  PICTURE XX.                                       DO0030
01  DAT8.                                                        DO0030
     10 DAT81  PICTURE XX.                                       DO0030
     10 DAT8S1 PICTURE X.                                        DO0030
     10 DAT82  PICTURE XX.                                       DO0030
     10 DAT8S2 PICTURE X.                                        DO0030
     10 DAT83  PICTURE XX.                                       DO0030
01  DATSEP     PICTURE X VALUE "/".                              DO0030
01  DATSET     PICTURE X VALUE "-".                              DO0030
01  DATCTY.                                                      DO0030
  05  DATCTY9  PICTURE 99.                                       DO0030
01  DAT6C.                                                       DO0030
  10  DAT61C   PICTURE XX.                                       DO0030
  10  DAT62C   PICTURE XX.                                       DO0030
  10  DAT63C   PICTURE XX.                                       DO0030
  10  DAT64C   PICTURE XX.                                       DO0030
01  DAT7C.                                                       DO0030
  10  DAT71C   PICTURE XX.                                       DO0030
  10  DAT72C   PICTURE XX.                                       DO0030
  10  DAT73C   PICTURE XX.                                       DO0030
  10  DAT74C   PICTURE XX.                                       DO0030
01  DAT8C.                                                       DO0030
  10  DAT81C   PICTURE XX.                                       DO0030
  10  DAT8S1C  PICTURE X    VALUE "/".                           DO0030
  10  DAT82C   PICTURE XX.                                       DO0030
  10  DAT8S2C  PICTURE X    VALUE "/".                           DO0030
  10  DAT83C   PICTURE XX.                                       DO0030
  10  DAT84C   PICTURE XX.                                       DO0030
01  DAT8G.                                                       DO0030
  10  DAT81G   PICTURE XX.                                       DO0030
  10  DAT82G   PICTURE XX.                                       DO0030
  10  DAT8S1G  PICTURE X    VALUE "-".                           DO0030
  10  DAT83G   PICTURE XX.                                       DO0030
  10  DAT8S2G  PICTURE X    VALUE "-".                           DO0030
  10  DAT84G   PICTURE XX.                                       DO0030
01  TIMCO.                                                       DO0030
 02  TIMCOG.                                                     DO0030
   05  TIMCOH  PICTURE XX.                                       DO0030
   05  TIMCOM  PICTURE XX.                                       DO0030
   05  TIMCOS  PICTURE XX.                                       DO0030
  02 TIMCOC    PICTURE XX.                                       DO0030
01  TIMDAY.                                                      DO0030
   05  TIMHOU  PICTURE XX.                                       DO0030
   05  TIMS1   PICTURE X    VALUE ":".                           DO0030
   05  TIMMIN  PICTURE XX.                                       DO0030
   05  TIMS2   PICTURE X    VALUE ":".                           DO0030
   05  TIMSEC  PICTURE XX.                                       DO0030
01    CONFIGURATIONS.                                            DO0030
     05      CD05-CF      PICTURE X.                             DO0030
     05      CD10-CF      PICTURE X.                             DO0030
     05      CD20-CF      PICTURE X.                             DO0030
     05      FO10-CF      PICTURE X.                             DO0030
     05      ME00-CF      PICTURE X.                             DO0030
01     STATUS-AREA.                                              DO0030
     05    1-CD00-STATUS PICTURE XX VALUE ZERO.                  DO0030
     05    1-EM00-STATUS PICTURE XX VALUE ZERO.                  DO0030
     05    1-FO00-STATUS PICTURE XX VALUE ZERO.                  DO0030
     05    1-HE00-STATUS PICTURE XX VALUE ZERO.                  DO0030
     05    1-ME00-STATUS PICTURE XX VALUE ZERO.                  DO0030
```

4.4. SCREEN DESCRIPTION

SCREEN DESCRIPTION

The '0030-MESSO' level is an input-output field of the logical message, which is transferred to the formatting sub-program. It contains one line per field.

The 'AT-0030-MESSO' table is a logical description of each message field, which is transferred to the sub-program. For each field, it indicates:

-its line-column position,

-its length,

-its nature (' ': variable field, 'F': protected field,
'L': literal,),

-its intensity, presentation and color attributes.

The 'INPUT-0030' level is an input field of the message and is redefined by the INPUT-SCREEN-FIELDS field, which groups together the fields with NATURE = 'V' and 'F'.

The 'OUTPUT-0030' level is an output field of the message and is redefined by the OUTPUT-SCREEN-FIELDS field, which groups together the fields with NATURE = 'V', 'F' and 'P'.

```
 01        0030-MESSO.                                     *AA040
    02     0030-MESSI.                                     *AA040
      05   S01004  PICTURE X(008).                         *AA040
      05   S01013  PICTURE X(001).                         *AA040
      05   S01015  PICTURE X(005).                         *AA040
      05   S01025  PICTURE X(030).                         *AA040
      05   S01060  PICTURE X(010).                         *AA040
      05   S01071  PICTURE X(008).                         *AA040
      05   S03004  PICTURE X(013).                         *AA040
      05   S03018  PICTURE X(005).                         *AA040
      05   S03026  PICTURE X(007).                         *AA040
      05   S03034  PICTURE X(008).                         *AA040
      05   S03054  PICTURE X(008).                         *AA040
      05   S03063  PICTURE X(003).                         *AA040
      05   S04004  PICTURE X(005).                         *AA040
      05   S04013  PICTURE X(050).                         *AA040
      05   S05009  PICTURE X(040).                         *AA040
      05   S05052  PICTURE X(020).                         *AA040
      05   S05074  PICTURE X(005).                         *AA040
      05   S06004  PICTURE X(011).                         *AA040
      05   S06016  PICTURE X(030).                         *AA040
      05   S06049  PICTURE X(011).                         *AA040
      05   S06061  PICTURE X(006).                         *AA040
      05   S07005  PICTURE X(012).                         *AA040
      05   S07018  PICTURE X(025).                         *AA040
      05   S07046  PICTURE X(014).                         *AA040
      05   S07061  PICTURE X(008).                         *AA040
      05   S09003  PICTURE X(001).                         *AA040
      05   S09007  PICTURE X(006).                         *AA040
      05   S09016  PICTURE X(008).                         *AA040
      05   S09026  PICTURE X(007).                         *AA040
      05   S09035  PICTURE X(006).                         *AA040
      05   S09042  PICTURE X(035).                         *AA040
      05   S10003  PICTURE X(001).                         *AA040
      05   S10007  PICTURE X(003).                         *AA040
      05   S10016  PICTURE X(002).                         *AA040
      05   S10026  PICTURE X(002).                         *AA040
      05   S10035  PICTURE X(002).                         *AA040
      05   S10042  PICTURE X(035).                         *AA040
      05   S11003  PICTURE X(001).                         *AA040
      05   S11007  PICTURE X(003).                         *AA040
      05   S11016  PICTURE X(002).                         *AA040
      05   S11026  PICTURE X(002).                         *AA040
      05   S11035  PICTURE X(002).                         *AA040
      05   S11042  PICTURE X(035).                         *AA040
      05   S12003  PICTURE X(001).                         *AA040
      05   S12007  PICTURE X(003).                         *AA040
      05   S12016  PICTURE X(002).                         *AA040
      05   S12026  PICTURE X(002).                         *AA040
      05   S12035  PICTURE X(002).                         *AA040
      05   S12042  PICTURE X(035).                         *AA040
      05   S13003  PICTURE X(001).                         *AA040
      05   S13007  PICTURE X(003).                         *AA040
      05   S13016  PICTURE X(002).                         *AA040
      05   S13026  PICTURE X(002).                         *AA040
      05   S13035  PICTURE X(002).                         *AA040
      05   S13042  PICTURE X(035).                         *AA040
      05   S14003  PICTURE X(001).                         *AA040
      05   S14007  PICTURE X(003).                         *AA040
      05   S14016  PICTURE X(002).                         *AA040
      05   S14026  PICTURE X(002).                         *AA040
      05   S14035  PICTURE X(002).                         *AA040
      05   S14042  PICTURE X(035).                         *AA040
      05   S15003  PICTURE X(001).                         *AA040
      05   S15007  PICTURE X(003).                         *AA040
      05   S15016  PICTURE X(002).                         *AA040
      05   S15026  PICTURE X(002).                         *AA040
      05   S15035  PICTURE X(002).                         *AA040
      05   S15042  PICTURE X(035).                         *AA040
      05   S16003  PICTURE X(001).                         *AA040
      05   S16007  PICTURE X(003).                         *AA040
      05   S16016  PICTURE X(002).                         *AA040
      05   S16026  PICTURE X(002).                         *AA040
      05   S16035  PICTURE X(002).                         *AA040
      05   S16042  PICTURE X(035).                         *AA040
      05   S17003  PICTURE X(001).                         *AA040
      05   S17007  PICTURE X(003).                         *AA040
```

```
     05    S17016  PICTURE X(002).                               *AA040
     05    S17026  PICTURE X(002).                               *AA040
     05    S17035  PICTURE X(002).                               *AA040
     05    S17042  PICTURE X(035).                               *AA040
     05    S18003  PICTURE X(001).                               *AA040
     05    S18007  PICTURE X(003).                               *AA040
     05    S18016  PICTURE X(002).                               *AA040
     05    S18026  PICTURE X(002).                               *AA040
     05    S18035  PICTURE X(002).                               *AA040
     05    S18042  PICTURE X(035).                               *AA040
     05    S20002  PICTURE X(019).                               *AA040
     05    S20022  PICTURE X(001).                               *AA040
     05    S20035  PICTURE X(011).                               *AA040
     05    S20047  PICTURE X(021).                               *AA040
     05    S21002  PICTURE X(028).                               *AA040
     05    S21031  PICTURE X(030).                               *AA040
     05    S21062  PICTURE X(012).                               *AA040
     05    S22002  PICTURE X(010).                               *AA040
     05    S22013  PICTURE X(019).                               *AA040
     05    S22033  PICTURE X(020).                               *AA040
     05    S23002  PICTURE X(075).                               *AA040
     05    S24002  PICTURE X(072).                               *AA040
01      AT-0030-MESSO.                                           *AA041
      05 AT-S01004  PICTURE X(12) VALUE "01004008FNNW".          *AA041
      05 AT-R000101-PROGE  REDEFINES AT-S01004 PICTURE X(12).    *AA041
      05 AT-S01013  PICTURE X(12) VALUE "01013001LNNW".          *AA041
      05 AT-S01015  PICTURE X(12) VALUE "01015005FNNW".          *AA041
      05 AT-R000101-SESSI  REDEFINES AT-S01015 PICTURE X(12).    *AA041
      05 AT-S01025  PICTURE X(12) VALUE "01025030LBNW".          *AA041
      05 AT-S01060  PICTURE X(12) VALUE "01060010FNNW".          *AA041
      05 AT-R000101-DATEM  REDEFINES AT-S01060 PICTURE X(12).    *AA041
      05 AT-S01071  PICTURE X(12) VALUE "01071008FNNW".          *AA041
      05 AT-R000101-HEURE  REDEFINES AT-S01071 PICTURE X(12).    *AA041
      05 AT-S03004  PICTURE X(12) VALUE "03004013LBNW".          *AA041
      05 AT-L000101-NUCOM  REDEFINES AT-S03004 PICTURE X(12).    *AA041
      05 AT-S03018  PICTURE X(12) VALUE "03018005FNNW".          *AA041
      05 AT-R000101-NUCOM  REDEFINES AT-S03018 PICTURE X(12).    *AA041
      05 AT-S03026  PICTURE X(12) VALUE "03026007LBNW".          *AA041
      05 AT-L000101-MATE   REDEFINES AT-S03026 PICTURE X(12).    *AA041
      05 AT-S03034  PICTURE X(12) VALUE "03034008 NNW".          *AA041
      05 AT-R000101-MATE   REDEFINES AT-S03034 PICTURE X(12).    *AA041
      05 AT-S03054  PICTURE X(12) VALUE "03054008LBNW".          *AA041
      05 AT-L000101-RELEA  REDEFINES AT-S03054 PICTURE X(12).    *AA041
      05 AT-S03063  PICTURE X(12) VALUE "03063003 NNW".          *AA041
      05 AT-R000101-RELEA  REDEFINES AT-S03063 PICTURE X(12).    *AA041
      05 AT-S04004  PICTURE X(12) VALUE "04004005LBNW".          *AA041
      05 AT-L000101-NUCLIE REDEFINES AT-S04004 PICTURE X(12).    *AA041
      05 AT-S04013  PICTURE X(12) VALUE "04013050FNNW".          *AA041
      05 AT-R000101-RAISOC REDEFINES AT-S04013 PICTURE X(12).    *AA041
      05 AT-S05009  PICTURE X(12) VALUE "05009040 NNW".          *AA041
      05 AT-R000101-RUE    REDEFINES AT-S05009 PICTURE X(12).    *AA041
      05 AT-S05052  PICTURE X(12) VALUE "05052020FNNW".          *AA041
      05 AT-R000101-VILLE  REDEFINES AT-S05052 PICTURE X(12).    *AA041
      05 AT-S05074  PICTURE X(12) VALUE "05074005 NNW".          *AA041
      05 AT-R000101-COPOS  REDEFINES AT-S05074 PICTURE X(12).    *AA041
      05 AT-S06004  PICTURE X(12) VALUE "06004011LBNW".          *AA041
      05 AT-L000101-REFCLI REDEFINES AT-S06004 PICTURE X(12).    *AA041
      05 AT-S06016  PICTURE X(12) VALUE "06016030 NNW".          *AA041
      05 AT-R000101-REFCLI REDEFINES AT-S06016 PICTURE X(12).    *AA041
      05 AT-S06049  PICTURE X(12) VALUE "06049011LBNW".          *AA041
      05 AT-L000101-DATE   REDEFINES AT-S06049 PICTURE X(12).    *AA041
      05 AT-S06061  PICTURE X(12) VALUE "06061006 NNW".          *AA041
      05 AT-R000101-DATE   REDEFINES AT-S06061 PICTURE X(12).    *AA041
      05 AT-S07005  PICTURE X(12) VALUE "07005012LBNW".          *AA041
      05 AT-L000101-CORRES REDEFINES AT-S07005 PICTURE X(12).    *AA041
      05 AT-S07018  PICTURE X(12) VALUE "07018025 NNW".          *AA041
      05 AT-R000101-CORRES REDEFINES AT-S07018 PICTURE X(12).    *AA041
      05 AT-S07046  PICTURE X(12) VALUE "07046014LBNW".          *AA041
      05 AT-L000101-REMIS  REDEFINES AT-S07046 PICTURE X(12).    *AA041
      05 AT-S07061  PICTURE X(12) VALUE "07061008 NNW".          *AA041
      05 AT-R000101-REMIS  REDEFINES AT-S07061 PICTURE X(12).    *AA041
      05 AT-S09003  PICTURE X(12) VALUE "09003001LBNW".          *AA041
      05 AT-L010101-CODMVT REDEFINES AT-S09003 PICTURE X(12).    *AA041
      05 AT-S09007  PICTURE X(12) VALUE "09007006LBNW".          *AA041
      05 AT-L010101-FOURNI REDEFINES AT-S09007 PICTURE X(12).    *AA041
      05 AT-S09016  PICTURE X(12) VALUE "09016008LBNW".          *AA041
      05 AT-L010101-QTMAC  REDEFINES AT-S09016 PICTURE X(12).    *AA041
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05 AT-S09026  PICTURE X(12) VALUE "09026007LBNW".           *AA041
05 AT-L010101-QTMAL  REDEFINES AT-S09026 PICTURE X(12).    *AA041
05 AT-S09035  PICTURE X(12) VALUE "09035006LBNW".           *AA041
05 AT-L010101-QTMAR  REDEFINES AT-S09035 PICTURE X(12).    *AA041
05 AT-S09042  PICTURE X(12) VALUE "09042035LBNW".           *AA041
05 AT-L010101-INFOR  REDEFINES AT-S09042 PICTURE X(12).    *AA041
05 AT-S10003  PICTURE X(12) VALUE "10003001 NNW".           *AA041
05 AT-R010101-CODMVT REDEFINES AT-S10003 PICTURE X(12).    *AA041
05 AT-S10007  PICTURE X(12) VALUE "10007003 NNW".           *AA041
05 AT-R010101-FOURNI REDEFINES AT-S10007 PICTURE X(12).    *AA041
05 AT-S10016  PICTURE X(12) VALUE "10016002 NNW".           *AA041
05 AT-R010101-QTMAC  REDEFINES AT-S10016 PICTURE X(12).    *AA041
05 AT-S10026  PICTURE X(12) VALUE "10026002FBNW".           *AA041
05 AT-R010101-QTMAL  REDEFINES AT-S10026 PICTURE X(12).    *AA041
05 AT-S10035  PICTURE X(12) VALUE "10035002FNNW".           *AA041
05 AT-R010101-QTMAR  REDEFINES AT-S10035 PICTURE X(12).    *AA041
05 AT-S10042  PICTURE X(12) VALUE "10042035 NNW".           *AA041
05 AT-R010101-INFOR  REDEFINES AT-S10042 PICTURE X(12).    *AA041
05 AT-S11003  PICTURE X(12) VALUE "11003001 NNW".           *AA041
05 AT-R020101-CODMVT REDEFINES AT-S11003 PICTURE X(12).    *AA041
05 AT-S11007  PICTURE X(12) VALUE "11007003 NNW".           *AA041
05 AT-R020101-FOURNI REDEFINES AT-S11007 PICTURE X(12).    *AA041
05 AT-S11016  PICTURE X(12) VALUE "11016002 NNW".           *AA041
05 AT-R020101-QTMAC  REDEFINES AT-S11016 PICTURE X(12).    *AA041
05 AT-S11026  PICTURE X(12) VALUE "11026002FBNW".           *AA041
05 AT-R020101-QTMAL  REDEFINES AT-S11026 PICTURE X(12).    *AA041
05 AT-S11035  PICTURE X(12) VALUE "11035002FNNW".           *AA041
05 AT-R020101-QTMAR  REDEFINES AT-S11035 PICTURE X(12).    *AA041
05 AT-S11042  PICTURE X(12) VALUE "11042035 NNW".           *AA041
05 AT-R020101-INFOR  REDEFINES AT-S11042 PICTURE X(12).    *AA041
05 AT-S12003  PICTURE X(12) VALUE "12003001 NNW".           *AA041
05 AT-R030101-CODMVT REDEFINES AT-S12003 PICTURE X(12).    *AA041
05 AT-S12007  PICTURE X(12) VALUE "12007003 NNW".           *AA041
05 AT-R030101-FOURNI REDEFINES AT-S12007 PICTURE X(12).    *AA041
05 AT-S12016  PICTURE X(12) VALUE "12016002 NNW".           *AA041
05 AT-R030101-QTMAC  REDEFINES AT-S12016 PICTURE X(12).    *AA041
05 AT-S12026  PICTURE X(12) VALUE "12026002FBNW".           *AA041
05 AT-R030101-QTMAL  REDEFINES AT-S12026 PICTURE X(12).    *AA041
05 AT-S12035  PICTURE X(12) VALUE "12035002FNNW".           *AA041
05 AT-R030101-QTMAR  REDEFINES AT-S12035 PICTURE X(12).    *AA041
05 AT-S12042  PICTURE X(12) VALUE "12042035 NNW".           *AA041
05 AT-R030101-INFOR  REDEFINES AT-S12042 PICTURE X(12).    *AA041
05 AT-S13003  PICTURE X(12) VALUE "13003001 NNW".           *AA041
05 AT-R040101-CODMVT REDEFINES AT-S13003 PICTURE X(12).    *AA041
05 AT-S13007  PICTURE X(12) VALUE "13007003 NNW".           *AA041
05 AT-R040101-FOURNI REDEFINES AT-S13007 PICTURE X(12).    *AA041
05 AT-S13016  PICTURE X(12) VALUE "13016002 NNW".           *AA041
05 AT-R040101-QTMAC  REDEFINES AT-S13016 PICTURE X(12).    *AA041
05 AT-S13026  PICTURE X(12) VALUE "13026002FBNW".           *AA041
05 AT-R040101-QTMAL  REDEFINES AT-S13026 PICTURE X(12).    *AA041
05 AT-S13035  PICTURE X(12) VALUE "13035002FNNW".           *AA041
05 AT-R040101-QTMAR  REDEFINES AT-S13035 PICTURE X(12).    *AA041
05 AT-S13042  PICTURE X(12) VALUE "13042035 NNW".           *AA041
05 AT-R040101-INFOR  REDEFINES AT-S13042 PICTURE X(12).    *AA041
05 AT-S14003  PICTURE X(12) VALUE "14003001 NNW".           *AA041
05 AT-R050101-CODMVT REDEFINES AT-S14003 PICTURE X(12).    *AA041
05 AT-S14007  PICTURE X(12) VALUE "14007003 NNW".           *AA041
05 AT-R050101-FOURNI REDEFINES AT-S14007 PICTURE X(12).    *AA041
05 AT-S14016  PICTURE X(12) VALUE "14016002 NNW".           *AA041
05 AT-R050101-QTMAC  REDEFINES AT-S14016 PICTURE X(12).    *AA041
05 AT-S14026  PICTURE X(12) VALUE "14026002FBNW".           *AA041
05 AT-R050101-QTMAL  REDEFINES AT-S14026 PICTURE X(12).    *AA041
05 AT-S14035  PICTURE X(12) VALUE "14035002FNNW".           *AA041
05 AT-R050101-QTMAR  REDEFINES AT-S14035 PICTURE X(12).    *AA041
05 AT-S14042  PICTURE X(12) VALUE "14042035 NNW".           *AA041
05 AT-R050101-INFOR  REDEFINES AT-S14042 PICTURE X(12).    *AA041
05 AT-S15003  PICTURE X(12) VALUE "15003001 NNW".           *AA041
05 AT-R060101-CODMVT REDEFINES AT-S15003 PICTURE X(12).    *AA041
05 AT-S15007  PICTURE X(12) VALUE "15007003 NNW".           *AA041
05 AT-R060101-FOURNI REDEFINES AT-S15007 PICTURE X(12).    *AA041
05 AT-S15016  PICTURE X(12) VALUE "15016002 NNW".           *AA041
05 AT-R060101-QTMAC  REDEFINES AT-S15016 PICTURE X(12).    *AA041
05 AT-S15026  PICTURE X(12) VALUE "15026002FBNW".           *AA041
05 AT-R060101-QTMAL  REDEFINES AT-S15026 PICTURE X(12).    *AA041
05 AT-S15035  PICTURE X(12) VALUE "15035002FNNW".           *AA041
05 AT-R060101-QTMAR  REDEFINES AT-S15035 PICTURE X(12).    *AA041
05 AT-S15042  PICTURE X(12) VALUE "15042035 NNW".           *AA041
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      05 AT-R060101-INFOR  REDEFINES AT-S15042 PICTURE X(12).    *AA041
      05 AT-S16003  PICTURE X(12) VALUE "16003001 NNW".          *AA041
      05 AT-R070101-CODMVT REDEFINES AT-S16003 PICTURE X(12).    *AA041
      05 AT-S16007  PICTURE X(12) VALUE "16007003 NNW".          *AA041
      05 AT-R070101-FOURNI REDEFINES AT-S16007 PICTURE X(12).    *AA041
      05 AT-S16016  PICTURE X(12) VALUE "16016002 NNW".          *AA041
      05 AT-R070101-QTMAC  REDEFINES AT-S16016 PICTURE X(12).    *AA041
      05 AT-S16026  PICTURE X(12) VALUE "16026002FBNW".          *AA041
      05 AT-R070101-QTMAL  REDEFINES AT-S16026 PICTURE X(12).    *AA041
      05 AT-S16035  PICTURE X(12) VALUE "16035002FNNW".          *AA041
      05 AT-R070101-QTMAR  REDEFINES AT-S16035 PICTURE X(12).    *AA041
      05 AT-S16042  PICTURE X(12) VALUE "16042035 NNW".          *AA041
      05 AT-R070101-INFOR  REDEFINES AT-S16042 PICTURE X(12).    *AA041
      05 AT-S17003  PICTURE X(12) VALUE "17003001 NNW".          *AA041
      05 AT-R080101-CODMVT REDEFINES AT-S17003 PICTURE X(12).    *AA041
      05 AT-S17007  PICTURE X(12) VALUE "17007003 NNW".          *AA041
      05 AT-R080101-FOURNI REDEFINES AT-S17007 PICTURE X(12).    *AA041
      05 AT-S17016  PICTURE X(12) VALUE "17016002 NNW".          *AA041
      05 AT-R080101-QTMAC  REDEFINES AT-S17016 PICTURE X(12).    *AA041
      05 AT-S17026  PICTURE X(12) VALUE "17026002FBNW".          *AA041
      05 AT-R080101-QTMAL  REDEFINES AT-S17026 PICTURE X(12).    *AA041
      05 AT-S17035  PICTURE X(12) VALUE "17035002FNNW".          *AA041
      05 AT-R080101-QTMAR  REDEFINES AT-S17035 PICTURE X(12).    *AA041
      05 AT-S17042  PICTURE X(12) VALUE "17042035 NNW".          *AA041
      05 AT-R080101-INFOR  REDEFINES AT-S17042 PICTURE X(12).    *AA041
      05 AT-S18003  PICTURE X(12) VALUE "18003001 NNW".          *AA041
      05 AT-R090101-CODMVT REDEFINES AT-S18003 PICTURE X(12).    *AA041
      05 AT-S18007  PICTURE X(12) VALUE "18007003 NNW".          *AA041
      05 AT-R090101-FOURNI REDEFINES AT-S18007 PICTURE X(12).    *AA041
      05 AT-S18016  PICTURE X(12) VALUE "18016002 NNW".          *AA041
      05 AT-R090101-QTMAC  REDEFINES AT-S18016 PICTURE X(12).    *AA041
      05 AT-S18026  PICTURE X(12) VALUE "18026002FBNW".          *AA041
      05 AT-R090101-QTMAL  REDEFINES AT-S18026 PICTURE X(12).    *AA041
      05 AT-S18035  PICTURE X(12) VALUE "18035002FNNW".          *AA041
      05 AT-R090101-QTMAR  REDEFINES AT-S18035 PICTURE X(12).    *AA041
      05 AT-S18042  PICTURE X(12) VALUE "18042035 NNW".          *AA041
      05 AT-R090101-INFOR  REDEFINES AT-S18042 PICTURE X(12).    *AA041
      05 AT-S20002  PICTURE X(12) VALUE "20002019LBNW".          *AA041
      05 AT-S20022  PICTURE X(12) VALUE "20022001 NNW".          *AA041
      05 AT-R000101-EDIT   REDEFINES AT-S20022 PICTURE X(12).    *AA041
      05 AT-S20035  PICTURE X(12) VALUE "20035011LNNW".          *AA041
      05 AT-S20047  PICTURE X(12) VALUE "20047021LNNW".          *AA041
      05 AT-S21002  PICTURE X(12) VALUE "21002028LNNW".          *AA041
      05 AT-S21031  PICTURE X(12) VALUE "21031030LNNW".          *AA041
      05 AT-S21062  PICTURE X(12) VALUE "21062012LNNW".          *AA041
      05 AT-S22002  PICTURE X(12) VALUE "22002010LNNW".          *AA041
      05 AT-S22013  PICTURE X(12) VALUE "22013019LNNW".          *AA041
      05 AT-S22033  PICTURE X(12) VALUE "22033020LNNW".          *AA041
      05 AT-S23002  PICTURE X(12) VALUE "23002075FBNW".          *AA041
      05 AT-R000101-MESSA  REDEFINES AT-S23002 PICTURE X(12).    *AA041
      05 AT-S24002  PICTURE X(12) VALUE "24002072FNNW".          *AA041
      05 AT-R000101-ERMSG  REDEFINES AT-S24002 PICTURE X(12).    *AA041
01      AT-0030-MESSA   REDEFINES   AT-0030-MESSO.               *AA041
     05 AT-0030-LIGNE   OCCURS 097.                              *AA041
     10 AT-0030-YPCUR   PICTURE 9(5).                            *AA041
     10 AT-0030-LENGTH  PICTURE 999.                             *AA041
     10 AT-0030-ATTRN   PICTURE X.                               *AA041
     10 AT-0030-ATTRI   PICTURE X.                               *AA041
     10 AT-0030-ATTRP   PICTURE X.                               *AA041
     10 AT-0030-ATTRC   PICTURE X.                               *AA041
01        INPUT-0030.                                            *AA042
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     05    R03063  PICTURE X(3).                                 *AA042
     05    R05009  PICTURE X(40).                                *AA042
     05    R05052  PICTURE X(20).                                *AA042
     05    R05074  PICTURE X(5).                                 *AA042
     05    R06016  PICTURE X(30).                                *AA042
     05    R06061  PICTURE X(6).                                 *AA042
     05    R07018  PICTURE X(25).                                *AA042
     05    R07061  PICTURE X(8).                                 *AA042
     05    R10003  PICTURE X(1).                                 *AA042
     05    R10007  PICTURE X(3).                                 *AA042
     05    R10016  PICTURE X(2).                                 *AA042
     05    R10026  PICTURE X(2).                                 *AA042
     05    R10035  PICTURE X(2).                                 *AA042
     05    R10042  PICTURE X(35).                                *AA042
     05    R11003  PICTURE X(1).                                 *AA042
     05    R11007  PICTURE X(3).                                 *AA042
     05    R11016  PICTURE X(2).                                 *AA042
     05    R11026  PICTURE X(2).                                 *AA042
     05    R11035  PICTURE X(2).                                 *AA042
     05    R11042  PICTURE X(35).                                *AA042
     05    R12003  PICTURE X(1).                                 *AA042
     05    R12007  PICTURE X(3).                                 *AA042
     05    R12016  PICTURE X(2).                                 *AA042
     05    R12026  PICTURE X(2).                                 *AA042
     05    R12035  PICTURE X(2).                                 *AA042
     05    R12042  PICTURE X(35).                                *AA042
     05    R13003  PICTURE X(1).                                 *AA042
     05    R13007  PICTURE X(3).                                 *AA042
     05    R13016  PICTURE X(2).                                 *AA042
     05    R13026  PICTURE X(2).                                 *AA042
     05    R13035  PICTURE X(2).                                 *AA042
     05    R13042  PICTURE X(35).                                *AA042
     05    R14003  PICTURE X(1).                                 *AA042
     05    R14007  PICTURE X(3).                                 *AA042
     05    R14016  PICTURE X(2).                                 *AA042
     05    R14026  PICTURE X(2).                                 *AA042
     05    R14035  PICTURE X(2).                                 *AA042
     05    R14042  PICTURE X(35).                                *AA042
     05    R15003  PICTURE X(1).                                 *AA042
     05    R15007  PICTURE X(3).                                 *AA042
     05    R15016  PICTURE X(2).                                 *AA042
     05    R15026  PICTURE X(2).                                 *AA042
     05    R15035  PICTURE X(2).                                 *AA042
     05    R15042  PICTURE X(35).                                *AA042
     05    R16003  PICTURE X(1).                                 *AA042
     05    R16007  PICTURE X(3).                                 *AA042
     05    R16016  PICTURE X(2).                                 *AA042
     05    R16026  PICTURE X(2).                                 *AA042
     05    R16035  PICTURE X(2).                                 *AA042
     05    R16042  PICTURE X(35).                                *AA042
     05    R17003  PICTURE X(1).                                 *AA042
     05    R17007  PICTURE X(3).                                 *AA042
     05    R17016  PICTURE X(2).                                 *AA042
     05    R17026  PICTURE X(2).                                 *AA042
     05    R17035  PICTURE X(2).                                 *AA042
     05    R17042  PICTURE X(35).                                *AA042
     05    R18003  PICTURE X(1).                                 *AA042
     05    R18007  PICTURE X(3).                                 *AA042
     05    R18016  PICTURE X(2).                                 *AA042
     05    R18026  PICTURE X(2).                                 *AA042
     05    R18035  PICTURE X(2).                                 *AA042
     05    R18042  PICTURE X(35).                                *AA042
     05    R20022  PICTURE X(1).                                 *AA042
01           INPUT-SCREEN-FIELDS  REDEFINES  INPUT-0030.         *AA045
     02      I-0030.                                             *AA045
     05      I-0030-MATE   PICTURE X(8).                         *AA045
     05      I-0030-RELEA  PICTURE X(3).                         *AA045
     05      I-0030-RUE    PICTURE X(40).                        *AA045
     05      I-0030-VILLE  PICTURE X(20).                        *AA045
     05      I-0030-COPOS  PICTURE X(5).                         *AA045
     05      I-0030-REFCLI PICTURE X(30).                        *AA045
     05      I-0030-DATE   PICTURE X(6).                         *AA045
     05      I-0030-CORRES PICTURE X(25).                        *AA045
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     10      I-0030-REMIS  PICTURE S9(4)V99.                     *AA045
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     05      I-0030-EDIT   PICTURE X.                            *AA045
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     05    T01004  PICTURE X(8).                                 *AA049
     05    T01015  PICTURE X(5).                                 *AA049
     05    T01060  PICTURE X(10).                                *AA049
     05    T01071  PICTURE X(8).                                 *AA049
     05    T03018  PICTURE X(5).                                 *AA049
     05    T03034  PICTURE X(8).                                 *AA049
     05    T03063  PICTURE X(3).                                 *AA049
     05    T04013  PICTURE X(50).                                *AA049
     05    T05009  PICTURE X(40).                                *AA049
     05    T05052  PICTURE X(20).                                *AA049
     05    T05074  PICTURE X(5).                                 *AA049
     05    T06016  PICTURE X(30).                                *AA049
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        05    T06061  PICTURE X(6).                             *AA049
        05    T07018  PICTURE X(25).                            *AA049
        05    T07061  PICTURE X(8).                             *AA049
        05    T10003  PICTURE X(1).                             *AA049
        05    T10007  PICTURE X(3).                             *AA049
        05    T10016  PICTURE X(2).                             *AA049
        05    T10026  PICTURE X(2).                             *AA049
        05    T10035  PICTURE X(2).                             *AA049
        05    T10042  PICTURE X(35).                            *AA049
        05    T11003  PICTURE X(1).                             *AA049
        05    T11007  PICTURE X(3).                             *AA049
        05    T11016  PICTURE X(2).                             *AA049
        05    T11026  PICTURE X(2).                             *AA049
        05    T11035  PICTURE X(2).                             *AA049
        05    T11042  PICTURE X(35).                            *AA049
        05    T12003  PICTURE X(1).                             *AA049
        05    T12007  PICTURE X(3).                             *AA049
        05    T12016  PICTURE X(2).                             *AA049
        05    T12026  PICTURE X(2).                             *AA049
        05    T12035  PICTURE X(2).                             *AA049
        05    T12042  PICTURE X(35).                            *AA049
        05    T13003  PICTURE X(1).                             *AA049
        05    T13007  PICTURE X(3).                             *AA049
        05    T13016  PICTURE X(2).                             *AA049
        05    T13026  PICTURE X(2).                             *AA049
        05    T13035  PICTURE X(2).                             *AA049
        05    T13042  PICTURE X(35).                            *AA049
        05    T14003  PICTURE X(1).                             *AA049
        05    T14007  PICTURE X(3).                             *AA049
        05    T14016  PICTURE X(2).                             *AA049
        05    T14026  PICTURE X(2).                             *AA049
        05    T14035  PICTURE X(2).                             *AA049
        05    T14042  PICTURE X(35).                            *AA049
        05    T15003  PICTURE X(1).                             *AA049
        05    T15007  PICTURE X(3).                             *AA049
        05    T15016  PICTURE X(2).                             *AA049
        05    T15026  PICTURE X(2).                             *AA049
        05    T15035  PICTURE X(2).                             *AA049
        05    T15042  PICTURE X(35).                            *AA049
        05    T16003  PICTURE X(1).                             *AA049
        05    T16007  PICTURE X(3).                             *AA049
        05    T16016  PICTURE X(2).                             *AA049
        05    T16026  PICTURE X(2).                             *AA049
        05    T16035  PICTURE X(2).                             *AA049
        05    T16042  PICTURE X(35).                            *AA049
        05    T17003  PICTURE X(1).                             *AA049
        05    T17007  PICTURE X(3).                             *AA049
        05    T17016  PICTURE X(2).                             *AA049
        05    T17026  PICTURE X(2).                             *AA049
        05    T17035  PICTURE X(2).                             *AA049
        05    T17042  PICTURE X(35).                            *AA049
        05    T18003  PICTURE X(1).                             *AA049
        05    T18007  PICTURE X(3).                             *AA049
        05    T18016  PICTURE X(2).                             *AA049
        05    T18026  PICTURE X(2).                             *AA049
        05    T18035  PICTURE X(2).                             *AA049
        05    T18042  PICTURE X(35).                            *AA049
        05    T20022  PICTURE X(1).                             *AA049
        05    T23002  PICTURE X(75).                            *AA049
        05    T24002  PICTURE X(72).                            *AA049
   01           OUTPUT-SCREEN-FIELDS REDEFINES OUTPUT-0030.     *AA050
        02      O-0030.                                         *AA050
        05      O-0030-PROGE  PICTURE X(8).                     *AA050
        05      O-0030-SESSI  PICTURE X(5).                     *AA050
        05      O-0030-DATEM  PICTURE X(10).                    *AA050
        05      O-0030-HEURE  PICTURE X(8).                     *AA050
        05      O-0030-NUCOM  PICTURE 9(5).                     *AA050
        05      O-0030-MATE   PICTURE X(8).                     *AA050
        05      O-0030-RELEA  PICTURE X(3).                     *AA050
        05      O-0030-RAISOC PICTURE X(50).                    *AA050
        05      O-0030-RUE    PICTURE X(40).                    *AA050
        05      O-0030-VILLE  PICTURE X(20).                    *AA050
        05      O-0030-COPOS  PICTURE X(5).                     *AA050
        05      O-0030-REFCLI PICTURE X(30).                    *AA050
        05      O-0030-DATE   PICTURE X(6).                     *AA050
        05      O-0030-CORRES PICTURE X(25).                    *AA050
        05      F-0030-REMIS.                                   *AA050
        10      O-0030-REMIS  PICTURE -(04)9,9(02).                *AA050
        05      P-0030-LINE   OCCURS 9.                            *AA050
        10      FILLER        PICTURE X(45).                       *AA050
        05      O-0030-EDIT   PICTURE X.                           *AA050
        05      O-0030-MESSA  PICTURE X(75).                       *AA050
        05      O-0030-ERMS.                                       *AA050
        10      FILLER OCCURS 1.                                   *AA050
        15      O-0030-ERMSG  PICTURE X(72).                       *AA050
   01           REPEAT-LINE.                                       *AA050
        02      I-0030-LINE.                                       *AA050
        05      I-0030-CODMVT PICTURE X.                           *AA050
        05      I-0030-FOURNI PICTURE X(3).                        *AA050
        05      E-0030-QTMAC.                                      *AA050
        10      I-0030-QTMAC  PICTURE 99.                          *AA050
        05      I-0030-QTMAL  PICTURE 99.                          *AA050
        05      I-0030-QTMAR  PICTURE 99.                          *AA050
        05      I-0030-INFOR  PICTURE X(35).                       *AA050
        02      O-0030-LINE.                                       *AA050
        05      O-0030-CODMVT PICTURE X.                           *AA050
        05      O-0030-FOURNI PICTURE X(3).                        *AA050
        05      F-0030-QTMAC.                                      *AA050
        10      O-0030-QTMAC  PICTURE Z(01)9.                      *AA050
        05      O-0030-QTMAL  PICTURE 99.                          *AA050
        05      O-0030-QTMAR  PICTURE 99.                          *AA050
        05      O-0030-INFOR  PICTURE X(35).                       *AA050
```

4.5. DESCRIPTION OF VALIDATION AREAS

DESCRIPTION OF VALIDATION AREAS

The validation processing part of the program is always generated in the WORKING-STORAGE SECTION. It includes all the work areas necessary for the generated validation processing.

NUMERIC FIELDS OF THE SCREEN

The 'NUMERIC-FIELDS' level is generated when the screen includes at least one variable Data Element.

Field '9-scrn-delco' (scrn = last 4 characters of the screen code) is generated for each numeric Data Element. It contains the breakdown of the Data Element's VALUE in 'seedd' where:

s = ' ' non-signed Data Element.

'+' signed Data Element.

ee = number of digits in the integer part of the Data Element.

dd = number of digits in the decimal part of the Data Element.

COMMUNICATION AREA

The 'CMES-COMMUNICATION' level is a communication area with the sub-program. It contains:

```
  .CMES-YR00   : Logical message.

  .CMES-Y000   : Description table of logical fields.

  .CMES-NBZVAR : '0' : No variable field in the message.
                 '1' : At least one variable field.

  .CMES-YCRE   : Operation type :
                 'X' : Sending of the message in case of er-
                       ror.
                 'E' : Sending of the message without error.

  .CMES-YPCUR  : Cursor line-column position.
```

.CMES-NUMFLD : Field number in the AT-0001-MESSO table.

.CMES-FMES : '0' : First screen display.

'1' : This is not the first screen display.

.CMES-STATUS : Return code of the transactions executed in the sub-program (not used).

.I-PFKEY : PFKEY value.

VALIDATION VARIABLES

The 'VALIDATION-TABLE-FIELDS' level is generated if there is at least one variable data element (NATURE = 'V') used on the screen.

DE-ERR : memorizes the presence and/or status of each Data Element of the screen.

A position in this table (coded ER-scrn-delco) is associated with each Data Element of the screen. This is generated at the '05' level ('scrn' = last four characters of the screen code).

Depending on the stages of validation, this position can be set to the following values:

.0 Data Element absent.
.1 Data Element present.
.2 Invalid absence of data element.
.4 Erroneous class.
.5 Invalid content.

This table of error positions is structured according to the categories defined on the screen and the group data element in the following manner:

A group level for the Data Elements from the beginning of the screen is systematically generated in the form of:

ER-nn-BEGIN.

For a repetitive Data Element defining a repetitive area of the screen (data element on the screen with NATURE = 'R'), the generation of the error positions is as follows:

```
.03 ES-scrn-LINE  OCCURS 9.
.05 FILLER  PICTURE X(0004).
```

In this example:

LINE is the code of the Data Element with NATURE = 'R' (see above),
9 is the number of repetitions,
0004 is the number of Data Elements in the repetitive category.

After the table of errors, there is an area which will contain the error positions of the Data Elements from the repetitive category. This area is used to position the errors for each of these data elements, with each occurrence.

```
.02  ER-nn-LINE.

.05  ER-nn-CODMVT  PICTURE X.

.05  ER-nn-FOURNI  PICTURE X.
etc.
```

For a repetitive Data Element whose NATURE is other than 'R', the generation in the table of error positions does not provide the description of the sample item, but does provide the following:

```
.05 FILLER OCCURS 2.

.10 ER-nn-LREF1  PICTURE X.
```

A group level for the Data Elements from the screen-bottom category is generated using a Data Element whose NATURE = 'Z', which contains the error positions of Data Elements belonging to that category:

```
.03 ER-nn-END.

.05 ER-nn-EDIT  PICTURE X.
etc.
```

TT-DAT

The 'TT-DAT' level is generated if a variable Data Element (NATURE = 'V') contains a 'date' format. It is used in sub-function F8120-M for date formatting purposes.

LEAP-YEAR

The 'LEAP-YEAR' level is generated if a variable Data Element (NATURE = 'V') contains a 'date' format (always generated with CICS). It is used in F81-ER to determine whether or not the year is a leap year.

USERS-ERROR

The 'USERS-ERROR' level is always generated, and it contains:

XEMKY: Table position used to build the key, including:

'XPROGR' Name of the program or dialogue,
'XERCD' Error number and type of error,

T-XEMKY: Table of errors, corresponding to the number of error messages on the screen (default value = 1).

INDEXES

The 'INDEXES' level is always generated. It includes:

K01, K02, K03, K04
Indexes for automatic numeric class.

K50R, K50L, K50M
Indexes associated with the table of user errors (the value assigned to K50M directly relates to the number of vertical repetitions of Data Element 'ERMSG' in the screen description).

5-dd00-LTH
Length of longest Segment of the Data Structure (common part + specific part; 'dd' = code of the Data Structure).

5-ddss-LTH
Length of the Segment without the common part (not generated for the common part, 'dd00'; 'ddss' = code of the Segment).

5-ddss-LTHV
Length of the Data Structure Segment including the common part (not generated for the common part, 'dd00'; 'ddss' = code of the Segment).

LTH Calculation area used during access to files with a Table or VSAM ORGANIZATION.

KEYLTH
Calculation area of the key used during access to files with a VSAM ORGANIZATION.

5-scrn-LENGTH
Area containing the length of the communication area (scrn = last four char. of screen code).

NUMERIC-VALIDATION-FIELDS

The 'NUMERIC-VALIDATION-FIELDS' level is generated if there is at least one variable numeric field on the screen. It contains the work areas necessary for analyzing and formatting numeric Data Elements on the screen (refer to subchapter "F81 : CALLED VALIDATION FUNCTIONS").

```
01           NUMERIC-FIELDS.                                     *AA050
     05      9-0030-REMIS  PICTURE X(5) VALUE "+0402".           *AA050
     05      9-0030-QTMAC  PICTURE X(5) VALUE " 0200".           *AA050
01      CMES-COMMUNICATION.                                      *AA060
  05    CMES-YR00     PICTURE X(4000).                           *AA060
  05    CMES-YO00     PICTURE X(6000).                           *AA060
  05    CMES-NBZVAR   PICTURE X.                                 *AA060
  05    CMES-YCRE     PICTURE X.                                 *AA060
  05    CMES-DIALOG   PICTURE XX.                                *AA060
  05    CMES-YPCUR    PICTURE 9(5).                              *AA060
  05    CMES-NUMFLD   PICTURE 999.                               *AA060
  05    CMES-FMES     PICTURE X.                                 *AA060
  05    CMES-STATUS.                                             *AA060
    10  CMES-RETCOD   PICTURE 99.                                *AA060
  05    I-PFKEY       PICTURE XX.                                *AA060
  05    FILLER        PICTURE X(100).                            *AA060
01           VALIDATION-TABLE-FIELDS.                            *AA150
     02      DE-ERR.                                             *AA150
     05       DE-ER        PICTURE X                             *AA150
                    OCCURS 045.                                  *AA150
     02      DE-E   REDEFINES DE-ERR.                            *AA150
     03     ER-0030-BEGIN.                                       *AA150
     05           ER-0030-MATE   PICTURE X.                      *AA150
     05           ER-0030-RELEA  PICTURE X.                      *AA150
     05           ER-0030-RUE    PICTURE X.                      *AA150
     05           ER-0030-COPOS  PICTURE X.                      *AA150
     05           ER-0030-REFCLI PICTURE X.                      *AA150
     05           ER-0030-DATE   PICTURE X.                      *AA150
     05           ER-0030-CORRES PICTURE X.                      *AA150
     05           ER-0030-REMIS  PICTURE X.                      *AA150
     03       PS-30-LINE   OCCURS 9.                             *AA150
     05      FILLER        PICTURE X(0004).                      *AA150
     03     ER-0030-END.                                         *AA150
     05           ER-0030-EDIT   PICTURE X.                      *AA150
     02     ER-0030-LINE.                                        *AA150
     05           ER-0030-CODMVT PICTURE X.                      *AA150
     05           ER-0030-FOURNI PICTURE X.                      *AA150
     05           ER-0030-QTMAC  PICTURE X.                      *AA150
     05           ER-0030-INFOR  PICTURE X.                      *AA150
01   TT-DAT.                                                     *AA200
     05 T-DAT      PICTURE X OCCURS 5.                           *AA200
01   LEAP-YEAR.                                                  *AA200
     05 LEAP-FLAG  PICTURE X.                                    *AA200
     05 LEAP-REM   PICTURE 99.                                   *AA200
01   USERS-ERROR.                                                *AA200
     05 XEMKY.                                                   *AA200
        10 XPROGR   PICTURE X(6).                                *AA200
        10 XERCD    PICTURE X(4).                                *AA200
     05 T-XEMKY     OCCURS       01.                             *AA200
        10 T-XPROGR PICTURE X(6).                                *AA200
        10 T-XERCD  PICTURE X(4).                                *AA200
01    PACBASE-INDEXES COMPUTATIONAL SYNC.                        *AA200
     05  TALLI      PICTURE S9(4) VALUE ZERO.                    *AA200
     05 K01         PICTURE S9(4).                               *AA200
     05 K02         PICTURE S9(4).                               *AA200
     05 K03         PICTURE S9(4).                               *AA200
     05 K04         PICTURE S9(4).                               *AA200
     05 K50R        PICTURE S9(4) VALUE ZERO.                    *AA200
     05 K50L        PICTURE S9(4) VALUE ZERO.                    *AA200
     05 K50M        PICTURE S9(4)                                *AA200
                    VALUE       +01.                             *AA200
     05 IWP20L      PICTURE S9(4) VALUE  ZERO.                   *AA200
     05 IWP20R      PICTURE S9(4) VALUE  ZERO.                   *AA200
     05 IWP20M      PICTURE S9(4) VALUE +0009.                   *AA200
     05    5-CD00-LTH  PICTURE S9(4) VALUE +0166.                *AA200
     05    5-CD05-LTH  PICTURE S9(4) VALUE +0157.                *AA200
     05    5-CD10-LTH  PICTURE S9(4) VALUE +0139.                *AA200
     05    5-CD20-LTH  PICTURE S9(4) VALUE +0001.                *AA200
     05    5-FO10-LTH  PICTURE S9(4) VALUE +0057.                *AA200
     05    5-ME00-LTH  PICTURE S9(4) VALUE +0082.                *AA200
     05    5-CA00-LTH  PICTURE S9(4) VALUE +0147.                *AA200
     05    5-CD05-LTHV PICTURE S9(4) VALUE +0166.                *AA200
     05    5-CD10-LTHV PICTURE S9(4) VALUE +0148.                *AA200
     05    5-CD20-LTHV PICTURE S9(4) VALUE +0010.                *AA200
     05    5-FO10-LTHV PICTURE S9(4) VALUE +0057.                *AA200
     05    LTH         PICTURE S9(4) VALUE ZERO.                 *AA200
     05      5-0030-LENGTH PICTURE S9(4)                         *AA200
```

```
                         VALUE      +0853.                      *AA200
    01   NUMERIC-VALIDATION-FIELDS.                             *AA200
         05 ZONUM1.                                             *AA200
            10 C1       PICTURE X OCCURS 27.                    *AA200
         05 ZONUM2.                                             *AA200
            10 C2       OCCURS 18.                              *AA200
            15 C29      PICTURE S9.                             *AA200
         05 ZONUM9      REDEFINES ZONUM2 PICTURE 9(18).         *AA200
         05 NUMPIC.                                             *AA200
            10 SIGNE    PICTURE X.                              *AA200
            10 NBCHA    PICTURE 99.                             *AA200
            10 NBCHP    PICTURE 99.                             *AA200
         05 C9          PICTURE S9.                             *AA200
         05 C91         PICTURE X.                              *AA200
         05 TPOINT      PICTURE X.                              *AA200
         05 ZONUM3.                                             *AA200
            10 C3       PICTURE X OCCURS 18.                    *AA200
         05 ZONUM4      REDEFINES ZONUM3 PICTURE 9(18).         *AA200
         05 ZONUM5      PICTURE S99   VALUE -10.                *AA200
         05 ZONUM6      REDEFINES ZONUM5.                       *AA200
            10 FILLER   PICTURE X.                              *AA200
            10 C4       PICTURE X.                              *AA200
```

4.6. TABLE-OF-ATTRIBUTES AND SEGMENT VARIABLES

TABLE-OF-ATTRIBUTES AND SEGMENT VARIABLES

The 'TABLE-OF-ATTRIBUTES' level is generated if the screen includes at least one variable Data Element (NATURE = 'V').

The DE-ATT table is the image of DE-ERR repeated four times. It is used to store the attributes of the Data Elements on the screen.

It is used to set the error attributes (which have been defined at the screen level) for a Data Element in error (for the management of this table refer to Subchapter "ERROR PROCESSING (F70)", Chapter "GENERATED PROGRAM: PROCEDURE DIVISION").

The coding for each Data Element is formatted as follows:

```
   .A-scrn-MATE   (A) for non-repetitive Data Elements

   .B-scrn-LINE   (B) for the Data Elements defining a
                      repetitive category (Nature 'R').
```

NOTE: 'scrn' = the last four characters of the screen code.

The table positions correspond to the attributes:

A = 1 Intensity attribute.
A = 2 Presentation attribute.
A = 3 Color attribute.
A = 4 Cursor positioned on the Data Element.

After the Table-of-Attributes, there is an area detailing the attributes of the Data Elements of the repetitive category. This area is used to position the attributes of each occurrence of these Data Elements.

.02 A-0030-LINE OCCURS 4.
.05 A-0030-CODMVT PICTURE X.
.05 A-0030-FOURNI PICTURE X.
etc.

The 'AT-SV' level is generated if there is at least one in- put field in the screen. It indicates the actual rank of the Data Element in the screen. This rank is used as an index to search AT-0001-MESSO.

The 'STOP-FIELDS' level is generated if a display control break has been defined for at least one Data Element of the repetitive category (display control break 'C' for a Data Element of a Segment used on the screen):

```
.02  C-0030
.05  C-0030-COCARA   PICTURE X.
.05  C-0030-NUCOM    PICTURE 9(5).
```

These areas are used to store the value of a Data Element which must remain constant in the display.

The 'FIRST-ON-SEGMENT' level is generated when at least one Segment that is not preceded by an access to another Segment, is used on display in the repetitive category.

In this case, a variable is generated for each Segment, indicating the first access to the Segment (key to be loaded in order to read the Segment on display).

Example:

```
05  CD10-FST   PICTURE X.

   .'1' First on the Segment,
   .'0' Next read of the Segment.
```

```
01           TABLE-OF-ATTRIBUTES.                                *AA250
     02      DE-ATT.                                             *AA250
     03      DE-ATT1          OCCURS 4.                          *AA250
     05      DE-AT   PICTURE X                                   *AA250
                    OCCURS 045.                                  *AA250
     02      DE-A    REDEFINES DE-ATT.                           *AA250
     03      DE-ATT2          OCCURS 4.                          *AA250
     04      A-0030-BEGIN.                                       *AA250
     05      A-0030-MATE   PICTURE X.                            *AA250
     05      A-0030-RELEA  PICTURE X.                            *AA250
     05      A-0030-RUE    PICTURE X.                            *AA250
     05      A-0030-COPOS  PICTURE X.                            *AA250
     05      A-0030-REFCLI PICTURE X.                            *AA250
     05      A-0030-DATE   PICTURE X.                            *AA250
     05      A-0030-CORRES PICTURE X.                            *AA250
     05      A-0030-REMIS  PICTURE X.                            *AA250
     04      B-0030-LINE   OCCURS 9.                             *AA250
     05      FILLER        PICTURE X(0004).                      *AA250
     04      A-0030-END.                                         *AA250
     05      A-0030-EDIT   PICTURE X.                            *AA250
     02      A-0030-LINE       OCCURS 4.                         *AA250
     05      A-0030-CODMVT PICTURE X.                            *AA250
     05      A-0030-FOURNI PICTURE X.                            *AA250
     05      A-0030-QTMAC  PICTURE X.                            *AA250
     05      A-0030-INFOR  PICTURE X.                            *AA250
01      AT-SV.                                                   *AA260
      10   FILLER PICTURE X(6) VALUE "010NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "012NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "015NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "017NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "019NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "021NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "023NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "025NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "032NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "033NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "034NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "037NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "038NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "039NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "040NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "043NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "044NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "045NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "046NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "049NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "050NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "051NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "052NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "055NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "056NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "057NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "058NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "061NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "062NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "063NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "064NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "067NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "068NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "069NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "070NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "073NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "074NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "075NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "076NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "079NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "080NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "081NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "082NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "085NNW".                   *AA260
      10   FILLER PICTURE X(6) VALUE "087NNW".                   *AA260
01      TABLE-SV-AT REDEFINES AT-SV.                             *AA265
     02 LIGNE-SV-AT OCCURS 045.                                  *AA265
     05 SV-AT     PICTURE 999.                                   *AA265
     05 SV-ATTRI  PICTURE X.                                     *AA265
     05 SV-ATTRP  PICTURE X.                                     *AA265
     05 SV-ATTRC  PICTURE X.                                     *AA265
```

```
01           STOP-FIELDS.                                       *AA300
    02       C-0030.                                            *AA300
      05     C-0030-COCARA     PICTURE X.                       *AA300
      05     C-0030-NUCOM      PICTURE 9(5).                    *AA300
01    FIRST-ON-SEGMENT.                                         *AA301
     05      CD10-FST    PICTURE X.                             *AA301
01               WW10-QTMAR                                     *BB200
                         PICTURE 99                             *BB200
                 VALUE ZERO.                                    *BB201
01                 WP00.                                        *WP000
 02                WP10.                                        *WP010
  05               FILLER PIC X(25) VALUE                       *WP020
                   "23400BRISBANE            ".                 *WP030
  05               FILLER PIC X(25) VALUE                       *WP040
                   "56400VICTORIA            ".                 *WP050
  05               FILLER PIC X(25) VALUE                       *WP060
                   "76500ALICE SPRINGS       ".                 *WP070
  05               FILLER PIC X(25) VALUE                       *WP080
                   "55300MELBOURNE           ".                 *WP090
  05               FILLER PIC X(25) VALUE                       *WP100
                   "11000CANBERRA            ".                 *WP110
  05               FILLER PIC X(25) VALUE                       *WP120
                   "34500PERTH               ".                 *WP130
  05               FILLER PIC X(25) VALUE                       *WP140
                   "85270DARWIN              ".                 *WP150
  05               FILLER PIC X(25) VALUE                       *WP160
                   "94000HOBART              ".                 *WP170
  05               FILLER PIC X(25) VALUE                       *WP180
                   "89300SYDNEY              ".                 *WP190
 02                WP20 REDEFINES WP10 OCCURS 9.                *WP300
  05               WP20-COPOS                                   *WP320
                         PICTURE X(5).                          *WP320
  05               WP20-VILLE                                   *WP340
                         PICTURE X(20).                         *WP340
 02                WP30.                                        *WP400
  05               WP30-COPOS                                   *WP410
                         PICTURE X(5).                          *WP410
 02                WP40.                                        *WP500
  05               WP40-VILLE                                   *WP510
                         PICTURE X(20).                         *WP510
  05               WP40-VILLEL                                  *WP520
                         PICTURE X(20).                         *WP520
```

4.7. COMMUNICATION AREA

COMMUNICATION AREA

As well as the screen COMMON-AREA, the LINKAGE-SECTION also contains the COMMUNICATION-MONITOR area, which includes the fields necessary for communication between the monitor and the screens (see Chapter "GENERATED MONITOR EXAMPLE", Subchapter "DATA DIVISION").

```
LINKAGE SECTION.                                                 *00000
01      COMMON-AREA.                                             *00000
     02     K-S0030-PROGR PICTURE X(6).                          *00000
     02            CA00.                                         *00001
       10          CA00-CLECD.                                   *00001
        15         CA00-NUCOM  PICTURE 9(5).                     *00001
       10          CA00-CLECL1.                                  *00001
        15         CA00-NUCLIE PICTURE 9(8).                     *00001
       10          CA00-ME00.                                    *00001
        15         CA00-CLEME.                                   *00001
         20        CA00-COPERS PICTURE X(5).                     *00001
         20        CA00-NUMORD PICTURE XX.                       *00001
        15         CA00-MESSA  PICTURE X(75).                    *00001
       10          CA00-PREM   PICTURE X.                        *00001
       10          CA00-LANGU  PICTURE X.                        *00001
       10          CA00-RAISOC PICTURE X(50).                    *00001
     02     K-S0030-DOC   PICTURE X.                             *00002
     02     K-S0030-PROGE PICTURE X(8).                          *00002
     02     K-S0030-CPOSL PICTURE S9(4) COMPUTATIONAL.           *00002
     02     K-S0030-LIBRA PICTURE XXX.                           *00002
     02     K-S0030-PROHE PICTURE X(8).                          *00002
     02     K-S0030-ERCOD.                                       *00002
       05   K-S0030-ERCOD9 PICTURE 999.                          *00002
     02     K-S0030-ERTYP PICTURE X.                             *00002
     02     K-S0030-LINUM PICTURE 999.                           *00002
     02     K-S0030-XTERM PICTURE X(10).                         *00002
     02      K-0030.                                             *00002
     03     K-A0030-DEBUT.                                       *00002
      05        K-ACD05-KEYCD  PICTURE X(00009).                 *00002
     03     K-R0030-LINE   OCCURS 2.                             *00002
      05        K-RCD10-KEYCD  PICTURE X(00009).                 *00002
     03     K-Z0030-END.                                         *00002
      05        K-ZME00-CLEME  PICTURE X(7).                     *00002
     02      FILLER        PICTURE X(0666).                      *00002
01           COMMUNICATION-MONITOR.                              *00010
     02    S-WWSS.                                               *00010
       10    S-WWSS-OPER   PICTURE X.                            *00010
       10    S-WWSS-PROGE  PICTURE X(8).                         *00010
       10    S-WWSS-XFILE  PICTURE X(8).                         *00010
       10    S-WWSS-XFUNCT PICTURE X(8).                         *00010
       10    S-WWSS-STATUS PICTURE XX.                           *00010
```

5. GENERATED PROGRAM: PROCEDURE DIVISION

5.1. STRUCTURE OF THE PROCEDURE DIVISION

STRUCTURE OF THE PROCEDURE DIVISION

```
F0A       DECLARATIVES
F01       INITIALIZATION
F0101     OPEN files
F0105     Initialization of the attributes
F0110     Initialization
F0112     First screen : retrieval of the terminal code

-------------------------------------------------------

F05       RECEPTION     (ICF = '1')
F0501     Read screen
F0510     Receive message
F0512     Set up HELP documentation
F0520     Set and Test OPER
F10       CATEGORY PROCESSING LOOP          <--------
F15       VALIDATION OF TRANSACTION CODE            !
F20       DATA ELEMENT VALIDATION                   !
F25       SEGMENT ACCESS FOR VALIDATION             !
F30       DATA ELEMENT TRANSFER                     !
F35       SEGMENT ACCESS FOR UPDATE                 !
F3999-ITER-FN. Go To F10.  ----------------------------
F3999-ITER-FT. Exit.

F40       END OF RECEPTION
F4010     Display of new screen
F4020     Set Keys for scrolling
F4030     End of transaction
F4040     Transfer to another screen

END-OF-RECEPTION.   (F45-FN)

-------------------------------------------------------

F50       DISPLAY PREPARATION  (OCF = '1')

F5010     Initialization

F55       CATEGORY PROCESSING LOOP         <---------
F60       SEGMENT ACCESS FOR DISPLAY                !
F65       DATA ELEMENT TRANSFER                     !
F6999-ITER-FN. Go To F55.  ----------------------------
F6999-ITER-FT. Exit.

F70       ERROR PROCESSING
F7020     Positioning of attributes
```

```
END-OF-DISPLAY.   (F78-FN)

-------------------------------------------------------

F8Z        DISPLAY AND END OF PROGRAM

F8Z05      Memorization of the screen
F8Z10      Sub-program call for display
F8Z20      End of processing. Return to the beginning
           of the iteration (F0105)

------   Called functions   ---------------------------

F80        PHYSICAL ACCESS TO FILES
F81ER      Abnormal end routine
F81FI      CLOSE files
F81UT      Error memorization
F8105      Filling in of literals
F8110      Numeric class validation
F8115      Initialization of the variable fields
F8120      Date format validation
F8130      Help function procedure
F8145      Filling in of the logical message fields
F8155      Transfer of messages in the reception fields
```

5.2. DECLARATIVES (F0A)

F0A : DECLARATIVES

The F0A function contains an F0Axx sub-function for each xx-file in the FILE-SECTION.

Each F0Axx sub-function manages the return codes of the corresponding file access.

```
PROCEDURE DIVISION USING COMMON-AREA                             *99999
                         COMMUNICATION-MONITOR.                  *99999
DECLARATIVES.                                                    DO0030
SECCD SECTION.                                                   DO0030
      USE AFTER ERROR PROCEDURE ON CD-FILE.                      DO0030
F0ACD.                                                           DO0030
      MOVE 1-CD00-STATUS TO S-WWSS-STATUS.                       DO0030
      MOVE "DOCD00  " TO S-WWSS-XFILE                            DO0030
        IF 1-CD00-STATUS NOT = "9A"                              DO0030
       AND 1-CD00-STATUS NOT = "9D"                              DO0030
      MOVE "1" TO IK.                                            DO0030
F0ACD-FN.    EXIT.                                               DO0030
SECEM SECTION.                                                   DO0030
      USE AFTER ERROR PROCEDURE ON EM-FILE.                      DO0030
F0AEM.                                                           DO0030
      MOVE 1-EM00-STATUS TO S-WWSS-STATUS.                       DO0030
       MOVE "EMTEST  " TO S-WWSS-XFILE                           DO0030
        IF 1-EM00-STATUS NOT = "9A"                              DO0030
       AND 1-EM00-STATUS NOT = "9D"                              DO0030
       MOVE "1" TO IK.                                           DO0030
F0AEM-FN.    EXIT.                                               DO0030
SECFO SECTION.                                                   DO0030
      USE AFTER ERROR PROCEDURE ON FO-FILE.                      DO0030
F0AFO.                                                           DO0030
      MOVE 1-FO00-STATUS TO S-WWSS-STATUS.                       DO0030
      MOVE "DOFO00  " TO S-WWSS-XFILE                            DO0030
        IF 1-FO00-STATUS NOT = "9A"                              DO0030
       AND 1-FO00-STATUS NOT = "9D"                              DO0030
      MOVE "1" TO IK.                                            DO0030
F0AFO-FN.    EXIT.                                               DO0030
SECHE SECTION.                                                   DO0030
      USE AFTER ERROR PROCEDURE ON HE-FILE.                      DO0030
F0AHE.                                                           DO0030
      MOVE 1-HE00-STATUS TO S-WWSS-STATUS.                       DO0030
       MOVE "SAVESCR " TO S-WWSS-XFILE                           DO0030
        IF 1-HE00-STATUS NOT = "9A"                              DO0030
       AND 1-HE00-STATUS NOT = "9D"                              DO0030
       MOVE "1" TO IK.                                           DO0030
F0AHE-FN.    EXIT.                                               DO0030
SECME SECTION.                                                   DO0030
      USE AFTER ERROR PROCEDURE ON ME-FILE.                      DO0030
F0AME.                                                           DO0030
      MOVE 1-ME00-STATUS TO S-WWSS-STATUS.                       DO0030
      MOVE "DOME00  " TO S-WWSS-XFILE                            DO0030
        IF 1-ME00-STATUS NOT = "9A"                              DO0030
       AND 1-ME00-STATUS NOT = "9D"                              DO0030
      MOVE "1" TO IK.                                            DO0030
F0AME-FN.    EXIT.                                               DO0030
END DECLARATIVES.                                                DO0030
MAIN SECTION.                                                    DO0030
F0A99-FN.    EXIT.                                               DO0030
F0A-FN.      EXIT.                                               DO0030
```

5.3. INITIALIZATION (F01)

F01 : INITIALIZATIONS

Function F01 is always generated.

F0101 includes the file OPEN.

F0105 re-initializes the attributes of the logical message table to their initial values.

F0110 initializes the work areas.

It sets the procedure to be executed if there is an error.

It ensures the branching to the physical display function after consultation of the HELP documentation (if a documentation call has been entered on the Screen Definition screen).

It indicates the cursor position for the first display.

F0112 is generated only for the first screen of the Dialogue, and fills in the terminal code.

```
           *************************************                 DO0030
           *                                   *                 DO0030
           *  INITIALIZATIONS                  *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F01.         EXIT.                                               DO0030
F0101.                                                           DO0030
       MOVE "OPEN    " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
       OPEN I-O          CD-FILE.                                DO0030
       IF IK = "1" GO TO F81ER.                                  DO0030
       OPEN INPUT        EM-FILE.                                DO0030
       IF IK = "1" GO TO F81ER.                                  DO0030
       OPEN I-O          FO-FILE.                                DO0030
       IF IK = "1" GO TO F81ER.                                  DO0030
       OPEN I-O  HE-FILE.                                        DO0030
       IF IK = "1" GO TO F81ER.                                  DO0030
       OPEN INPUT        ME-FILE.                                DO0030
       IF IK = "1" GO TO F81ER.                                  DO0030
F0101-FN.    EXIT.                                               DO0030
F0105.                                                           DO0030
       MOVE ZERO TO K01.                                         DO0030
F0105-B.  ADD 1 TO K01.                                          DO0030
       MOVE SV-AT (K01) TO K02.                                  DO0030
       MOVE SV-ATTRI (K01) TO AT-0030-ATTRI (K02)                DO0030
       MOVE SV-ATTRP (K01) TO AT-0030-ATTRP (K02)                DO0030
       MOVE SV-ATTRC (K01) TO AT-0030-ATTRC (K02).               DO0030
       IF K01 < INT    GO TO F0105-B.                            DO0030
F0105-FN.    EXIT.                                               DO0030
F0110.                                                           DO0030
       ACCEPT TIMCO FROM TIME.                                   DO0030
       ACCEPT  DATOR FROM DATE.                                  DO0030
       MOVE ZERO TO CATX FT K50L.                                DO0030
       MOVE "1" TO ICF OCF SCR-ER.                               DO0030
       MOVE ZERO TO VALIDATION-TABLE-FIELDS.                     DO0030
       MOVE SPACE TO CATM OPER OPERD CAT-ER.                     DO0030
       MOVE SPACE TO TABLE-OF-ATTRIBUTES.                        DO0030
       MOVE ZERO TO CONFIGURATIONS.                              DO0030
       IF  PROGR   NOT =      K-S0030-PROGR                      DO0030
                      MOVE    ZERO  TO  ICF.                     DO0030
       IF ICF = ZERO                                             DO0030
       OR   K-S0030-DOC = "2"                                    DO0030
       OR   K-S0030-DOC = "3"                                    DO0030
       MOVE SPACE TO CMES-COMMUNICATION                          DO0030
       MOVE LOW-VALUE TO  O-0030                                 DO0030
       PERFORM F8115 THRU F8115-FN                               DO0030
       MOVE "1" TO CMES-FMES.                                    DO0030
       MOVE K-S0030-XTERM  TO HE00-XTERM.                        DO0030
         IF K-S0030-DOC = "2"  OR   K-S0030-DOC = "3"            DO0030
       MOVE "1" TO K-S0030-DOC     GO TO F8Z05.                  DO0030
       MOVE "X" TO DE-AT (4, 009).                               DO0030
       MOVE SPACE      TO            O-0030-ERMSG (01).          DO0030
F0110-FN.    EXIT.                                               DO0030
F0160.                                                           DO0030
       IF ICF = ZERO MOVE "A" TO OPER                            DO0030
       GO TO F3999-ITER-FT.                                      DO0030
F0160-FN.    EXIT.                                               DO0030
F01-FN.      EXIT.                                               DO0030
             +-----------------------------------+               P000
 LEVEL 10    I INIT. NUMBER OF LOADED ITEMS      I               P000
             +-----------------------------------+               P000
F02CP.                                                           P000
    MOVE        IWP20M TO IWP20L.                                P100
F02CP-FN.    EXIT.                                               P000
```

5.4. RECEPTION (F05)

F05 : RECEPTION

The RECEPTION (F05) function contains the conditions for all the procedures which concern the 'RECEPTION' part of the program: from F05 to END-OF-RECEPTION (F45-FN).

In general, all the automatic functions in this part of the program are generated if at least one variable Data Element (NATURE = 'V') is defined on the screen.

F0510 includes the reception of the screen on program entry and transfers it to the INPUT-SCREEN-FIELDS; and, for Data Elements whose NATURE = 'V', transfers it to the OUTPUT-SCREEN-FIELDS.

If an initialization character is entered on the Screen Definition screen, this character is set to blank (except when a branch to a HELP documentation screen is executed).

F0512 is generated if a HELP documentation call is entered on the Screen Definition screen. It ensures the initialization of the fields necessary for branching to the documentation screen.

F0520 is generated if a variable Data Element from the screen or a special PFKEY Data Element is defined as an Operation Code on the Screen Call of Elements (-CE).

The internal Operation Code 'OPER' is positioned based on the values of:

- the screen Data Element defined as an Operation Code (value specified with TYPE OF LINE = 'O' on the Data Element Description (-D) screen);

- the special PFKEY Data Element (value entered on the Screen Call of Elements (-CE)).

If an error occurs on the Operation Code value, the subsequent 'RECEPTION' procedures are not executed.

```
           *************************************                 DO0030
           *                                   *                 DO0030
           *  RECEPTION                        *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F05.   IF ICF = ZERO GO TO END-OF-RECEPTION.                     DO0030
F0510.                                                           DO0030
       MOVE CMES-YPCUR TO CURPOS.                                DO0030
       MOVE CMES-YR00 TO 0030-MESSO.                             DO0030
       PERFORM F8155 THRU F8155-FN.                              DO0030
       MOVE "A" TO OPER  MOVE SPACE TO OPERD.                    DO0030
          IF I-PFKEY NOT = "11"                                  DO0030
                       AND I-PFKEY NOT = "10"                    DO0030
       INSPECT I-0030 REPLACING ALL "-" BY SPACE.                DO0030
F0510-FN.    EXIT.                                               DO0030
F0512.     IF    I-PFKEY = "11"  OR  I-PFKEY = "10"              DO0030
           NEXT SENTENCE ELSE GO TO F0512-FN.                    DO0030
       MOVE "2"   TO K-S0030-DOC                                 DO0030
       MOVE ZERO  TO K-S0030-CPOSL  K-S0030-LINUM                DO0030
       MOVE PROGE TO K-S0030-PROGE                               DO0030
       MOVE LIBRA TO K-S0030-LIBRA.                              DO0030
           IF    I-PFKEY = "11"                                  DO0030
       MOVE "3"  TO  K-S0030-DOC                                 DO0030
       MOVE CPOSL TO K-S0030-CPOSL                               DO0030
       MOVE CPOSC TO K-S0030-LINUM.                              DO0030
       MOVE K-S0030-XTERM  TO HE00-XTERM                         DO0030
       PERFORM F80-HELP-R  THRU F80-FN                           DO0030
       MOVE HE00-SCREEN  TO  O-0030                              DO0030
       PERFORM F8130       THRU F8130-FN                         DO0030
       MOVE  O-0030    TO     HE00-SCREEN                        DO0030
       PERFORM F80-HELP-RW THRU F80-FN                           DO0030
       MOVE PRDOC TO  5-0030-PROGE  K-S0030-PROHE                DO0030
       MOVE "O" TO OPER  GO TO F4040.                            DO0030
F0512-FN.    EXIT.                                               DO0030
           *************************************                 DO0030
           *                                   *                 DO0030
           *  VALIDATION OF OPERATION CODE     *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F0520.                                                           DO0030
          IF      I-PFKEY      = "01"                            DO0030
           MOVE    "DO0000  "   TO   5-0030-PROGE                DO0030
       MOVE  "O"  TO  OPER       GO TO F40-A.                    DO0030
          IF      I-PFKEY      = "02"                            DO0030
           MOVE    "DO0010  "   TO   5-0030-PROGE                DO0030
       MOVE  "O"  TO  OPER       GO TO F40-A.                    DO0030
          IF      I-PFKEY      = "03"                            DO0030
           MOVE    "DO0020  "   TO   5-0030-PROGE                DO0030
       MOVE  "O"  TO  OPER       GO TO F40-A.                    DO0030
          IF      I-PFKEY      = "04"                            DO0030
           MOVE    "DO0040  "   TO   5-0030-PROGE                DO0030
       MOVE  "O"  TO  OPER       GO TO F40-A.                    DO0030
          IF      I-PFKEY      = "05"                            DO0030
           MOVE    "DO0050  "   TO   5-0030-PROGE                DO0030
       MOVE  "O"  TO  OPER       GO TO F40-A.                    DO0030
          IF      I-PFKEY      = "12"                            DO0030
           MOVE    "DO0070  "   TO   5-0030-PROGE                DO0030
       MOVE  "O"  TO  OPER       GO TO F40-A.                    DO0030
          IF      I-PFKEY      = "00"                            DO0030
       MOVE  "E"  TO  OPER       GO TO F40-A.                    DO0030
          IF      I-PFKEY      = "07"                            DO0030
       MOVE "M" TO OPER GO TO F0520-900.                         DO0030
          IF      I-PFKEY      = "08"                            DO0030
       MOVE "S" TO OPER GO TO F0520-900.                         DO0030
F0520-900.                                                       DO0030
       IF OPER NOT = "A" AND OPER NOT = "M" AND OPER NOT = "O"   DO0030
       GO TO F3999-ITER-FT.                                      DO0030
F0520-FN.    EXIT.                                               DO0030
F05-FN.      EXIT.                                               DO0030
             +-----------------------------------+               P000
 LEVEL 10    I NO UPDATE ==> END OF RECEIVE      I               P000
             +-----------------------------------+               P000
F08BB.    IF    OPER NOT = "M"                                   P000
          NEXT SENTENCE ELSE GO TO     F08BB-FN.                 P000
    GO TO F3999-ITER-FT.                                         P100
F08BB-FN.    EXIT.                                               P000
```

5.5. CATEGORY PROCESSING LOOP (F10)

F10 : CATEGORY POSITIONING

The CATEGORY POSITIONING function positions the category to be processed in 'RECEPTION' using the CATX indicator which may be set to one of the following values:

'0' Beginning of RECEPTION
' ' Screen-top category
'R' Repetitive category
'Z' Screen-bottom category

Procedures are generated according to the categories defined on the Screen Call of Elements ('-CE') screen.

If no category has been defined, the screen is considered to be a screen-top category.

For the repetitive category, this function includes the interaction between the line of the category to be processed and the input screen description field used to access each of the data elements on the line.

This function also includes the initialization and incrementation of the ICATR index, which manages the repetitive category.

If an error is detected (CAT-ER = 'E') once the processing of a category is complete (F15 to F3999-ITER-FI), SCR-ER is set and validation processing on the subsequent categories is not executed.

```
           *************************************                 DO0030
           *                                   *                 DO0030
           *  CATEGORY PROCESSING LOOP         *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F10.         EXIT.                                               DO0030
F1010.     MOVE SPACE TO CATM.                                   DO0030
       IF CATX = "R"                                             DO0030
       MOVE  O-0030-LINE            TO                           DO0030
             P-0030-LINE    (ICATR)                              DO0030
       MOVE  A-0030-LINE   (1)      TO                           DO0030
             B-0030-LINE   (1, ICATR)                            DO0030
       MOVE  A-0030-LINE   (2)      TO                           DO0030
             B-0030-LINE   (2, ICATR)                            DO0030
       MOVE  A-0030-LINE   (4)      TO                           DO0030
             B-0030-LINE   (4, ICATR)                            DO0030
       MOVE  I-0030-LINE            TO                           DO0030
             J-0030-LINE    (ICATR)                              DO0030
       MOVE      ER-0030-LINE       TO                           DO0030
                   PS-30-LINE    (ICATR).                        DO0030
      IF CAT-ER = "E" MOVE "4" TO SCR-ER GO TO F3999-ITER-FT.    DO0030
       MOVE SPACE TO CAT-ER.                                     DO0030
       IF CATX = "0" MOVE " " TO CATX GO TO F1010-FN.            DO0030
       IF CATX = " " MOVE "R" TO CATX MOVE ZERO TO ICATR.        DO0030
       IF CATX = "R" AND ICATR < IRR  ADD  1 TO ICATR            DO0030
       MOVE        PS-30-LINE   (ICATR) TO                       DO0030
                 ER-0030-LINE                                    DO0030
       MOVE  B-0030-LINE   (4, ICATR) TO                         DO0030
             A-0030-LINE   (4)                                   DO0030
       MOVE  P-0030-LINE    (ICATR) TO                           DO0030
             O-0030-LINE                                         DO0030
       MOVE  J-0030-LINE    (ICATR) TO                           DO0030
             I-0030-LINE    GO TO F1010-FN.                      DO0030
       IF CATX = "R" MOVE "Z" TO CATX GO TO F1010-FN.            DO0030
F1010-A.   GO TO F3999-ITER-FT.                                  DO0030
F1010-FN.    EXIT.                                               DO0030
F10-FN.      EXIT.                                               DO0030
```

5.6. VALIDATION OF TRANSACTION CODE (F15)

F15 : TRANSACTION CODE POSITIONING

The VALIDATION OF TRANSACTION CODE (F15) function is generated if at least one Data Element is defined as a Transaction Code in a category on the Screen Call of Elements ('-CE') screen.

The internal transaction code (CATM) is set according to the Data Element's value that is defined as a Transaction Code for the category. The value can be given to the Data Element on:

. the Data Element Description (-D) screen with TYPE OF LINE = 'I',

. the Screen Call of Elements (-CE) screen in the Transaction Code Data Element call line.

Depending on the categories defined on the screen (and for which a transaction code is indicated) the F15 function includes the following:

.F15A for the screen-top category,

.F15R for the repetitive category,

.F15Z for the screen-bottom category.

If the transaction code is wrong, the subsequent 'RECEPTION' procedures are not executed.

```
               *************************************             DO0030
               *                                   *             DO0030
               *  VALIDATION OF TRANSACTION CODE   *             DO0030
               *                                   *             DO0030
               *************************************             DO0030
 F15.            EXIT.                                           DO0030
 F15R.  IF CATX NOT = "R" GO TO F15R-FN.                         DO0030
        IF OPER NOT = "M" MOVE SPACE TO CATM GO TO F15R-FN.      DO0030
        IF    I-0030-CODMVT     = SPACE GO TO F15-FN.            DO0030
        IF    I-0030-CODMVT     = "C"                            DO0030
        MOVE "C" TO CATM.                                        DO0030
        IF    I-0030-CODMVT     = "M"                            DO0030
        MOVE "M" TO CATM.                                        DO0030
        IF    I-0030-CODMVT     = "S"                            DO0030
        MOVE "A" TO CATM.                                        DO0030
        IF    CATM = SPACE                                       DO0030
        MOVE 5 TO    ER-0030-CODMVT  MOVE "E" TO CAT-ER          DO0030
        GO TO F3999-ITER-FI.                                     DO0030
 F15R-FN.        EXIT.                                           DO0030
 F15Z.  IF CATX NOT = "Z" GO TO F15Z-FN.                         DO0030
        IF OPER NOT = "M" MOVE SPACE TO CATM GO TO F15Z-FN.      DO0030
        IF    I-0030-EDIT       = SPACE GO TO F15-FN.            DO0030
        IF    I-0030-EDIT       = "O"                            DO0030
        MOVE "X" TO CATM.                                        DO0030
        IF    CATM = SPACE                                       DO0030
        MOVE 5 TO    ER-0030-EDIT    MOVE "E" TO CAT-ER          DO0030
        GO TO F3999-ITER-FI.                                     DO0030
 F15Z-FN.                                                        DO0030
                 +-----------------------------------+          P000
  LEVEL 10       I INITIALIZATION CATM (HEADING)     I          P000
                 +-----------------------------------+          P000
 F15AA.     IF    CATX = SPACE                                  P000
            AND   OPER = "M"                                    P100
            NEXT SENTENCE ELSE GO TO     F15AA-FN.              P100
     MOVE        "M" TO CATM.                                   P100
 F15AA-FN.       EXIT.                                          P000
 F15-FN.         EXIT.                                          P000
```

5.7. DATA ELEMENT VALIDATION (F20)

F20 : DATA ELEMENT VALIDATION

The DATA ELEMENT VALIDATION (F20) function is generated when one variable Data Element has been specified on the screen.

Depending on which category or categories defined on the screen contain at least one Data Element to be validated, the F20 function includes the following:

. F20A for the screen-top category.
. F20R for the repetitive category.
. F20Z for the screen-bottom category.

The procedure for each category contains one sub-function per Data Element to be validated. The validation procedures are the following:

. Presence validation.

. Numeric class validation.

. Value validation according to the values or value ranges defined on the Data Element Description ('-D') screen, or on the Screen Call of Elements ('-CE') screen.

. Validation of date (via PERFORM) for Data Elements defined with a 'DATE' format.

. Validation of a sub-function (via PERFORM) defined by the user.

The conditioning of each sub-function is generated based on the procedure option of the Data Element.

The validation result for each Data Element is stored in a field coded ER-scrn-delcod (scrn: last four characters of the screen code; delcod: Data Element code), which takes the following values:

```
'0' : Data Element absent
'1' : Data Element present
'2' : invalid absence
'4' : invalid class
'5' : invalid value
```

'CAT-ER' is set when any Data Element (or user) error is detected.

NOTE: Sub-functions are numbered based on the number of Data Elements, their position on the screen, etc.

As a result, direct references should never be made to a label generated in specific procedures.
Use the Relative Positioning types *A, *P, and *R (see chapter "USE OF STRUCTURED CODE" in the ON-LINE SYSTEMS DEVELOPMENT Reference Manual).

```
           ************************************          DO0030
           *                                  *          DO0030
           *  DATA ELEMENT VALIDATION         *          DO0030
           *                                  *          DO0030
           ************************************          DO0030
    F20.         EXIT.                                   DO0030
    F20A.  IF CATX NOT = " " GO TO F20A-FN.              DO0030
    F20A2.       EXIT.                                   DO0030
    F20A2-FN.    EXIT.                                   DO0030
    F20B1.                                               DO0030
              IF I-0030-MATE   NOT = SPACE               DO0030
           MOVE "1" TO    ER-0030-MATE.                  DO0030
              IF     ER-0030-MATE     NOT = 1            DO0030
                                         GO TO F20B1-FN. DO0030
             IF  I-0030-MATE       = "I1"                DO0030
             OR  I-0030-MATE       = "I2"                DO0030
             OR  I-0030-MATE       = "I3"                DO0030
             OR  I-0030-MATE       = "I4"                DO0030
             OR  I-0030-MATE       = "I5"                DO0030
             OR  I-0030-MATE       = "B7"                DO0030
             OR  I-0030-MATE       = "B8"                DO0030
             OR  I-0030-MATE       = "UN"                DO0030
             OR  I-0030-MATE       = "IC"                DO0030
             OR  I-0030-MATE       = "IBM.V.OS"          DO0030
             OR  I-0030-MATE       = "IBM.V.DO"          DO0030
             OR  I-0030-MATE       = "IBM.D.OS"          DO0030
             OR  I-0030-MATE       = "IBM.D.DO"          DO0030
             OR  I-0030-MATE       = "IBM.IMS "          DO0030
             OR  I-0030-MATE       = "DPS7    "          DO0030
             OR  I-0030-MATE       = "DPS8    "          DO0030
             OR  I-0030-MATE       = "UNISYS  "          DO0030
             OR  I-0030-MATE       = "ICL     "          DO0030
             OR  I-0030-MATE       = "SPECIAL"           DO0030
              NEXT SENTENCE ELSE                         DO0030
           MOVE "5" TO    ER-0030-MATE.                  DO0030
              IF     ER-0030-MATE   > "1"                DO0030
           MOVE "E" TO CAT-ER                  GO TO F20B1-FN.      DO0030
    F20B1-FN.    EXIT.                                   DO0030
    F20B2.                                               DO0030
              IF I-0030-RELEA  NOT = SPACE               DO0030
           MOVE "1" TO    ER-0030-RELEA                  DO0030
              ELSE                                       DO0030
           MOVE "2" TO    ER-0030-RELEA                  DO0030
           MOVE "E" TO CAT-ER                  GO TO F20B2-FN.      DO0030
             IF  I-0030-RELEA      = "7.2"               DO0030
             OR  I-0030-RELEA      = "7.3"               DO0030
             OR  I-0030-RELEA      = "8.0"               DO0030
              NEXT SENTENCE ELSE                         DO0030
           MOVE "5" TO    ER-0030-RELEA.                 DO0030
              IF     ER-0030-RELEA  > "1"                DO0030
           MOVE "E" TO CAT-ER                  GO TO F20B2-FN.      DO0030
    F20B2-FN.    EXIT.                                   DO0030
    F20B5.                                               DO0030
              IF I-0030-RUE    NOT = SPACE               DO0030
           MOVE "1" TO    ER-0030-RUE.                   DO0030
    F20B5-FN.    EXIT.                                   DO0030
    F20B7.                                               DO0030
              IF I-0030-COPOS  NOT = SPACE               DO0030
           MOVE "1" TO    ER-0030-COPOS                  DO0030
              ELSE                                       DO0030
           MOVE "2" TO    ER-0030-COPOS                  DO0030
           MOVE "E" TO CAT-ER                  GO TO F20B7-FN.      DO0030
           MOVE  I-0030-COPOS  TO WP30-COPOS             DO0030
           MOVE      ER-0030-COPOS  TO DEL-ER            DO0030
           PERFORM  F93CP  THRU  F93CP-FN                DO0030
           MOVE    WP30-COPOS     TO                     DO0030
                 I-0030-COPOS                            DO0030
           MOVE DEL-ER TO    ER-0030-COPOS.              DO0030
              IF     ER-0030-COPOS  > "1"                DO0030
           MOVE "E" TO CAT-ER                  GO TO F20B7-FN.      DO0030
    F20B7-FN.    EXIT.                                   DO0030
    F20B8.                                               DO0030
              IF I-0030-REFCLI NOT = SPACE               DO0030
           MOVE "1" TO    ER-0030-REFCLI.                DO0030
    F20B8-FN.    EXIT.                                   DO0030
    F20B9.                                               DO0030
              IF I-0030-DATE   NOT = SPACE               DO0030
```

```
       MOVE "1" TO    ER-0030-DATE                               DO0030
          ELSE                                                   DO0030
       MOVE "2" TO    ER-0030-DATE                               DO0030
       MOVE "E" TO CAT-ER                   GO TO F20B9-FN.      DO0030
       MOVE  I-0030-DATE   TO DAT7                               DO0030
       PERFORM  F8120-D THRU  F8120-FN                           DO0030
       MOVE DEL-ER TO    ER-0030-DATE                            DO0030
       IF DEL-ER > "1" MOVE "E" TO CAT-ER GO TO F20B9-FN.        DO0030
F20B9-FN.    EXIT.                                               DO0030
F20C0.                                                           DO0030
          IF I-0030-CORRES NOT = SPACE                           DO0030
       MOVE "1" TO    ER-0030-CORRES.                            DO0030
          IF     ER-0030-CORRES   NOT = 1                        DO0030
                                         GO TO F20C0-FN.         DO0030
F20C0-FN.    EXIT.                                               DO0030
F20C1.                                                           DO0030
          IF E-0030-REMIS  NOT = SPACE                           DO0030
       MOVE "1" TO    ER-0030-REMIS.                             DO0030
       MOVE  E-0030-REMIS  TO ZONUM1                             DO0030
       MOVE  9-0030-REMIS  TO NUMPIC                             DO0030
       MOVE      ER-0030-REMIS  TO DEL-ER                        DO0030
       PERFORM F8110 THRU F8110-FN                               DO0030
       MOVE DEL-ER TO    ER-0030-REMIS                           DO0030
       IF DEL-ER > 1 MOVE "E" TO CAT-ER  GO TO F20C1-FN.         DO0030
       MOVE ZONUM2 TO E-0030-REMIS.                              DO0030
       IF DEL-ER = "1"                                           DO0030
    MOVE I-0030-REMIS  TO  O-0030-REMIS.                         DO0030
F20C1-FN.    EXIT.                                               DO0030
F20A-FN.     EXIT.                                               DO0030
F20R.  IF CATX NOT = "R" GO TO F20R-FN.                          DO0030
F20C3.                                                           DO0030
          IF I-0030-CODMVT NOT = SPACE                           DO0030
       MOVE "1" TO    ER-0030-CODMVT.                            DO0030
F20C3-FN.    EXIT.                                               DO0030
             +-----------------------------------+               P000
 LEVEL 10    I ITEM NOT AVAILABLE                I               P000
             +-----------------------------------+               P000
F20BB.                                                           P000
          IF    I-0030-FOURNI = "CLA"                            P100
          AND   CATM NOT = SPACE                                 P110
    MOVE "A"   TO  ER-0030-FOURNI                                P100
    MOVE "E" TO CAT-ER                                           P100
           GO TO F20C4-FN.                                       P110
F20BB-FN.    EXIT.                                               P000
F20C4.                                                           DO0030
       IF CATM  = SPACE                  GO TO F20C4-FN.         DO0030
          IF I-0030-FOURNI NOT = SPACE                           DO0030
       MOVE "1" TO    ER-0030-FOURNI                             DO0030
          ELSE                                                   DO0030
       MOVE "2" TO    ER-0030-FOURNI                             DO0030
       MOVE "E" TO CAT-ER                   GO TO F20C4-FN.      DO0030
         IF  I-0030-FOURNI     = "DIC"                           DO0030
         OR  I-0030-FOURNI     = "MER"                           DO0030
         OR  I-0030-FOURNI     = "TAB"                           DO0030
         OR  I-0030-FOURNI     = "DBD"                           DO0030
         OR  I-0030-FOURNI     = "DSO"                           DO0030
         OR  I-0030-FOURNI     = "LGS"                           DO0030
         OR  I-0030-FOURNI     = "LGB"                           DO0030
         OR  I-0030-FOURNI     = "DLG"                           DO0030
          NEXT SENTENCE ELSE                                     DO0030
       MOVE "5" TO    ER-0030-FOURNI.                            DO0030
          IF     ER-0030-FOURNI > "1"                            DO0030
       MOVE "E" TO CAT-ER                   GO TO F20C4-FN.      DO0030
F20C4-FN.    EXIT.                                               DO0030
F20C5.                                                           DO0030
       IF CATM = "A" OR CATM = SPACE     GO TO F20C5-FN.         DO0030
          IF E-0030-QTMAC  NOT = SPACE                           DO0030
       MOVE "1" TO    ER-0030-QTMAC                              DO0030
          ELSE                                                   DO0030
       MOVE "2" TO    ER-0030-QTMAC                              DO0030
       MOVE "E" TO CAT-ER                   GO TO F20C5-FN.      DO0030
       MOVE  E-0030-QTMAC  TO ZONUM1                             DO0030
       MOVE  9-0030-QTMAC  TO NUMPIC                             DO0030
       MOVE      ER-0030-QTMAC  TO DEL-ER                        DO0030
       PERFORM F8110 THRU F8110-FN                               DO0030
       MOVE DEL-ER TO    ER-0030-QTMAC                           DO0030
       IF DEL-ER > 1 MOVE "E" TO CAT-ER  GO TO F20C5-FN.         DO0030
       MOVE ZONUM2 TO E-0030-QTMAC.                              DO0030
       IF DEL-ER = "1"                                           DO0030
    MOVE I-0030-QTMAC  TO  O-0030-QTMAC.                         DO0030
         IF  I-0030-QTMAC  NOT <  01                             DO0030
         AND I-0030-QTMAC  NOT >     50                          DO0030
          NEXT SENTENCE ELSE                                     DO0030
       MOVE "5" TO    ER-0030-QTMAC.                             DO0030
          IF     ER-0030-QTMAC  > "1"                            DO0030
       MOVE "E" TO CAT-ER                   GO TO F20C5-FN.      DO0030
F20C5-FN.    EXIT.                                               DO0030
F20C8.                                                           DO0030
       IF CATM = "A" OR CATM = SPACE     GO TO F20C8-FN.         DO0030
          IF I-0030-INFOR  NOT = SPACE                           DO0030
       MOVE "1" TO    ER-0030-INFOR.                             DO0030
          IF     ER-0030-INFOR    NOT = 1                        DO0030
                                         GO TO F20C8-FN.         DO0030
F20C8-FN.    EXIT.                                               DO0030
F20R-FN.     EXIT.                                               DO0030
F20Z.  IF CATX NOT = "Z" GO TO F20Z-FN.                          DO0030
F20D0.                                                           DO0030
          IF I-0030-EDIT   NOT = SPACE                           DO0030
       MOVE "1" TO    ER-0030-EDIT.                              DO0030
F20D0-FN.    EXIT.                                               DO0030
F20Z-FN.     EXIT.                                               DO0030
F20-FN.      EXIT.                                               DO0030
```

5.8. SEGMENT ACCESS FOR VALIDATION (F25)

F25 : SEGMENT ACCESS FOR VALIDATION

The SEGMENT ACCESS FOR VALIDATION (F25) function is generated when there is at least one segment to be accessed in RECEPTION.

Depending on which categories defined on the screen contain a segment to be accessed in RECEPTION, the F25 function includes the following:

. F25A for the screen-top category.

. F25R for the repetitive category.

. F25Z for the screen-bottom category.

In the processing for each category there is one sub-function per segment to be accessed, including:

. The initialization of the key (if indicated on the -CS)

. Read or Read with Segment Update depending on its use in the screen (by a PERFORM of F80-ddss-R or RU)

. Positioning of the segment ddss-CF variable (1 if OK)

. Error processing, if any.

Within a category, accesses are generated in the alphabetical order of the segment codes, except for segments which contain a 'preceding' segment.

If a segment is to be updated, its access depends on the CATM value. It is not performed if CATM = SPACE.

If a segment has a preceding segment, its access is performed if the ddss-CF variable of the preceding segment is equal to '1'.

Other types of reads are not conditioned.

Sub-function F2599 is generated if at least one of the Read segments can be updated.

It contains the PERFORM of functions F80-ddss-UN, according to the segments used, as well as cursor positioning on the first variable data element of the category, in the case of segment error.

NOTE: Sub-functions are numbered based on the number of segments, their positions on the '-CS' screen, etc. As a result, a direct reference should never be made to a generated label in the specific procedures.

Use the Relative Positioning types '*A', '*P' and '*R' (see chapter "USE OF STRUCTURED CODE" in the ON-LINE SYSTEMS DEVELOPMENT Reference Manual).

```
           *************************************                 DO0030
           *                                   *                 DO0030
           *  SEGMENT ACCESS FOR VALIDATION    *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F25.       IF CAT-ER NOT = SPACE GO TO F25-FN.                   DO0030
F25A.  IF CATX NOT = " " GO TO F25A-FN.                          DO0030
F2501.                                                           DO0030
       MOVE "0" TO CD05-CF.                                      DO0030
       IF CATM = SPACE                   GO TO F2501-FN.         DO0030
       MOVE    SPACES            TO    CD00-KEYCD                DO0030
       MOVE    "B"               TO    CD00-COCARA               DO0030
       MOVE    CA00-NUCOM        TO    CD00-NUCOM                DO0030
       PERFORM F80-CD05-RU THRU F80-FN.                          DO0030
       IF IK = "0"                                               DO0030
       MOVE "1" TO CD05-CF.                                      DO0030
       IF CATM NOT = "C" AND IK = "1"                            DO0030
                   MOVE  "F019" TO XERCD                         DO0030
                   PERFORM F81UT         GO TO F2501-FN.         DO0030
F2501-FN.    EXIT.                                               DO0030
F25A-FN.     EXIT.                                               DO0030
F25R.  IF CATX NOT = "R" GO TO F25R-FN.                          DO0030
F2502.                                                           DO0030
       MOVE "0" TO CD10-CF.                                      DO0030
       IF CATM = SPACE                   GO TO F2502-FN.         DO0030
       MOVE    "C"               TO    CD00-KEYCD                DO0030
       MOVE    CA00-NUCOM        TO    CD00-NUCOM                DO0030
       MOVE  I-0030-FOURNI       TO    CD00-FOURNI               DO0030
       PERFORM F80-CD10-RU THRU F80-FN.                          DO0030
       IF IK = "0"                                               DO0030
       MOVE "1" TO CD10-CF.                                      DO0030
       IF CATM = "X" AND IK = "1" MOVE "C" TO CATM.              DO0030
       IF CATM = "X" AND IK = "0" MOVE "M" TO CATM.              DO0030
       IF CATM = "C" AND IK = "0"                                DO0030
                   MOVE  "F028" TO XERCD                         DO0030
                   PERFORM F81UT         GO TO F2502-FN.         DO0030
       IF CATM NOT = "C" AND IK = "1"                            DO0030
                   MOVE  "F029" TO XERCD                         DO0030
                   PERFORM F81UT         GO TO F2502-FN.         DO0030
             +-----------------------------------+               P000
 LEVEL 12    I ACCESS TO FO10                    I               P000
             +-----------------------------------+               P000
F25BB.                                                           P000
    MOVE        "1" TO CD10-CF.                                  P100
F25BB-FN.    EXIT.                                               P000
F2502-FN.    EXIT.                                               P000
F2503.                                                           DO0030
       MOVE "0" TO FO10-CF.                                      DO0030
       IF          CD10-CF NOT = "1"   GO TO   F2503-FN.         DO0030
       IF CATM = SPACE                   GO TO F2503-FN.         DO0030
       MOVE  I-0030-FOURNI       TO    FO10-CLEFO                DO0030
       MOVE    CA00-LANGU        TO    FO10-LANGU                DO0030
       MOVE  I-0030-RELEA        TO    FO10-RELEA                DO0030
       MOVE  I-0030-MATE         TO    FO10-MATE                 DO0030
       PERFORM F80-FO10-RU THRU F80-FN.                          DO0030
       IF IK = "0"                                               DO0030
       MOVE "1" TO FO10-CF.                                      DO0030
       IF IK = "1" MOVE  "F039" TO XERCD                         DO0030
                   PERFORM F81UT         GO TO F2503-FN.         DO0030
F2503-FN.    EXIT.                                               DO0030
F25R-FN.     EXIT.                                               DO0030
F25Z.  IF CATX NOT = "Z" GO TO F25Z-FN.                          DO0030
F2505.                                                           DO0030
       MOVE "0" TO CD20-CF.                                      DO0030
       IF CATM = SPACE                   GO TO F2505-FN.         DO0030
       MOVE    SPACES            TO    CD00-KEYCD                DO0030
       MOVE    "E"               TO    CD00-COCARA               DO0030
       MOVE    CA00-NUCOM        TO    CD00-NUCOM                DO0030
       PERFORM F80-CD20-RU THRU F80-FN.                          DO0030
       IF IK = "0"                                               DO0030
       MOVE "1" TO CD20-CF.                                      DO0030
       IF CATM = "X" AND IK = "1" MOVE "C" TO CATM.              DO0030
       IF CATM = "X" AND IK = "0" MOVE "M" TO CATM.              DO0030
       IF CATM = "C" AND IK = "0"                                DO0030
                   MOVE  "F058" TO XERCD                         DO0030
                   PERFORM F81UT         GO TO F2505-FN.         DO0030
       IF CATM NOT = "C" AND IK = "1"                            DO0030
```

```
                    MOVE  "F059" TO XERCD                         DO0030
                    PERFORM F81UT         GO TO F2505-FN.         DO0030
    F2505-FN.    EXIT.                                            DO0030
    F25Z-FN.     EXIT.                                            DO0030
    F2599.     IF CAT-ER = SPACE GO TO F2599-FN.                  DO0030
           IF          CD05-CF = "1"                              DO0030
           PERFORM F80-CD05-UN THRU F80-FN.                       DO0030
           IF          CD10-CF = "1"                              DO0030
           PERFORM F80-CD10-UN THRU F80-FN.                       DO0030
           IF          FO10-CF = "1"                              DO0030
           PERFORM F80-FO10-UN THRU F80-FN.                       DO0030
           IF          CD20-CF = "1"                              DO0030
           PERFORM F80-CD20-UN THRU F80-FN.                       DO0030
           IF CATX = " " AND DE-AT (4, 009) = "X"                 DO0030
           MOVE  " "   TO  DE-AT (4, 009).                        DO0030
           IF CATX = " "                                          DO0030
           MOVE  "X"   TO A-0030-MATE   (4).                      DO0030
           IF CATX = "R" AND DE-AT (4, 009) = "X"                 DO0030
           MOVE  " "   TO  DE-AT (4, 009).                        DO0030
           IF CATX = "R"                                          DO0030
           MOVE  "X"   TO A-0030-CODMVT (4).                      DO0030
           IF CATX = "Z" AND DE-AT (4, 009) = "X"                 DO0030
           MOVE  " "   TO  DE-AT (4, 009).                        DO0030
           IF CATX = "Z"                                          DO0030
           MOVE  "X"   TO A-0030-EDIT   (4).                      DO0030
    F2599-FN.    EXIT.                                            DO0030
    F25-FN.      EXIT.                                            DO0030
                 +------------------------------------+           P000
     LEVEL 10    I STOCK UPD.: ORDER DELETION/UPD    I           P000
                 +------------------------------------+           P000
    F28BH.    IF    (CATM = "A" OR "M")                           P000
              AND   CATX = "R"                                    P100
              AND   CAT-ER = SPACES                               P120
              NEXT SENTENCE ELSE GO TO     F28BH-FN.              P120
        ADD         CD10-QTMAL TO FO10-QTMAS.                     P100
    F28BH-FN.    EXIT.                                            P000
```

5.9. DATA ELEMENT TRANSFER (F30)

F30: DATA ELEMENT TRANSFER

The DATA ELEMENT TRANSFER (F30) function ensures the transfer of Data Elements on the screen to the corresponding Data Elements in the Segments.

Depending on which categories defined on the screen contain at least one Data Element transfer on reception, the F30 function includes the following:

. F30A for the screen-top category.

. F30R for the repetitive category.

. F30Z for the screen-bottom category.

The condition of the transfer is generated based on the use of the Segment on reception, or the value of the PRESENCE VALIDATION OF DATA ELEMENT field on the Screen Call of Elements ('-CE') screen.

```
           *************************************                 DO0030
           *                                   *                 DO0030
           *  DATA ELEMENT TRANSFER            *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F30.       IF CAT-ER NOT = SPACE GO TO F30-FN.                   DO0030
F30A.  IF CATX NOT = " " GO TO F30A-FN.                          DO0030
       MOVE     I-0030-RELEA       TO     CD05-RELEA.            DO0030
       MOVE     I-0030-COPOS       TO     CD05-COPOS.            DO0030
       MOVE     I-0030-REFCLI      TO     CD05-REFCLI.           DO0030
       MOVE     I-0030-DATE        TO     CD05-DATE.             DO0030
       MOVE     I-0030-REMIS       TO     CD05-REMIS.            DO0030
          IF     ER-0030-MATE   = "1"                            DO0030
       MOVE     I-0030-MATE        TO     CD05-MATE.             DO0030
          IF     ER-0030-CORRES = "1"                            DO0030
       MOVE     I-0030-CORRES      TO     CD05-CORRES.           DO0030
F30A-FN.     EXIT.                                               DO0030
F30R.  IF CATX NOT = "R" GO TO F30R-FN.                          DO0030
          IF     ER-0030-INFOR  = "1"                            DO0030
       MOVE     I-0030-INFOR       TO     CD10-INFOR.            DO0030
       IF CATM NOT = SPACE                                       DO0030
       MOVE     I-0030-FOURNI      TO     CD00-FOURNI.           DO0030
       IF CATM NOT = SPACE AND CATM NOT = "A"                    DO0030
       MOVE     I-0030-QTMAC       TO     CD10-QTMAC             DO0030
       ADD      I-0030-QTMAC       TO     FO10-QTMAM.            DO0030
             +-----------------------------------+               P000
 LEVEL 10    I QUANTITY PROCESSING               I               P000
             +-----------------------------------+               P000
F30BD.                                                           P000
             +-----------------------------------+               P000
 LEVEL 12    I CALC. DELIV. QUANT.   STOCK UPD.  I               P000
             +-----------------------------------+               P000
F30BF.    IF    CATM = "C" OR "M"                                P000
          NEXT SENTENCE ELSE GO TO     F30BF-FN.                 P000
          IF    FO10-QTMAS NOT <                                 P100
                I-0030-QTMAC                                     P110
    MOVE        I-0030-QTMAC TO CD10-QTMAL                       P100
          ELSE                                                   P120
    MOVE        FO10-QTMAS TO CD10-QTMAL.                        P120
    SUBTRACT    CD10-QTMAL FROM FO10-QTMAS                       P130
    MOVE        CD10-QTMAL TO O-0030-QTMAL.                      P140
F30BF-FN.    EXIT.                                               P000
F30BD-FN.    EXIT.                                               P000
F30R-FN.     EXIT.                                               DO0030
F30Z.  IF CATX NOT = "Z" GO TO F30Z-FN.                          DO0030
       MOVE     I-0030-EDIT        TO     CD20-EDIT.             DO0030
F30Z-FN.     EXIT.                                               DO0030
F30-FN.      EXIT.                                               DO0030
```

5.10. SEGMENT ACCESS FOR UPDATE (F35)

F35: SEGMENT ACCESS FOR UPDATE

This function ensures Segment updates. If an error has been detected by the error checks (CAT-ER), this function is not executed.

Depending on which categories contain a Segment to be updated, the SEGMENT ACCESS FOR UPDATE (F35) function includes the following:

. F35A for the screen-top category.

. F35R for the repetitive category.

. F35Z for the screen-bottom category.

In the processing for each category there is one sub-function per Segment to be updated, possibly including several types of access.

The function is accessed by executing a PERFORM of the appropriate subfunction in F80.

For a Segment that does not follow an access to another Segment (i.e. the PRECEDING SEGMENT field in the Screen Call of Segments ('-CS') screen is left blank), access is conditioned by the value of the internal Transaction Code (CATM) found in the category, which corresponds to one of the following operations:

. Creation: writing (F80-ddss-R).

. Deletion: suppression (F80-ddss-D).

. Other cases: rewriting (F80-ddss-RW)

The user must manage the access to other transactions if the rewrite option does not correspond to user needs.

For a Segment that follows an access to another Segment (i.e. a Segment is listed in the PRECEDING SEGMENT field on the Screen Call of Segments ('-CS') screen), access is conditioned by the Segment configuration, which is either:

. ddss-CF = 0, writing, or
. ddss-CF = 1, rewriting.

If a Data Element was defined as a Transaction Code on the Screen Call of Elements ('-CE') screen (in the VALIDATION CONDITIONS/SET VARIABLES field), it is set to blanks.

Paragraph F3999-ITER-FI returns to the beginning of the 'RECEPTION' iteration.

NOTE: Sub-functions are numbered based on the number of segments, their positions on the '-CS' screen, etc. As a result, a direct reference should never be made to a generated label in the specific procedures.

Use the Relative Positioning types '*A', '*P' and '*R' (see chapter "USE OF STRUCTURED CODE" in the ON-LINE SYSTEMS DEVELOPMENT Reference Manual.)

GENERATED PROGRAM: PROCEDURE DIVISION 5
SEGMENT ACCESS FOR UPDATE (F35) 10

```
             *************************************              DO0030
             *                                   *              DO0030
             *  SEGMENT ACCESS FOR UPDATE        *              DO0030
             *                                   *              DO0030
             *************************************              DO0030
       F35.     IF CAT-ER NOT = SPACE OR CATM = SPACE GO TO F35-FN.     DO0030
       F35A.  IF CATX NOT = " " GO TO F35A-FN.                  DO0030
       F3501.                                                   DO0030
              IF CATM NOT = "C" AND CATM NOT = "A"              DO0030
              PERFORM F80-CD05-RW THRU F80-FN.                  DO0030
       F3501-FN.    EXIT.                                       DO0030
       F35A-FN.     EXIT.                                       DO0030
       F35R.  IF CATX NOT = "R" GO TO F35R-FN.                  DO0030
       F3502.                                                   DO0030
              IF CATM = "C"                                     DO0030
              PERFORM F80-CD10-W  THRU F80-FN.                  DO0030
              IF CATM = "A"                                     DO0030
              PERFORM F80-CD10-D  THRU F80-FN.                  DO0030
              IF CATM NOT = "C" AND CATM NOT = "A"              DO0030
              PERFORM F80-CD10-RW THRU F80-FN.                  DO0030
       F3502-FN.    EXIT.                                       DO0030
       F3503.                                                   DO0030
              IF          FO10-CF = "1"                         DO0030
              PERFORM F80-FO10-RW THRU F80-FN.                  DO0030
       F3503-FN.    EXIT.                                       DO0030
       F35R-C3.   MOVE   SPACE     TO       O-0030-CODMVT.      DO0030
       F35R-FN.     EXIT.                                       DO0030
       F35Z.  IF CATX NOT = "Z" GO TO F35Z-FN.                  DO0030
       F3505.                                                   DO0030
              IF CATM = "C"                                     DO0030
              PERFORM F80-CD20-W  THRU F80-FN.                  DO0030
              IF CATM NOT = "C" AND CATM NOT = "A"              DO0030
              PERFORM F80-CD20-RW THRU F80-FN.                  DO0030
       F3505-FN.    EXIT.                                       DO0030
       F35Z-D0.   MOVE   SPACE     TO       O-0030-EDIT.        DO0030
       F35Z-FN.     EXIT.                                       DO0030
       F35-FN.      EXIT.                                       DO0030
       F3999-ITER-FI.  GO TO F10.                               DO0030
       F3999-ITER-FT.     EXIT.                                 DO0030
       F3999-FN.    EXIT.                                       DO0030
```

5.11. END OF RECEPTION (F40)

F40 : END OF RECEPTION

This function contains the procedures for the END OF RECEPTION processing. It is executed if no errors are found.

Within this function, there are sub-functions which correspond to four automatically generated procedures that are conditioned by the value of the Operation Code.

F4010 NEW SCREEN DISPLAY

This is executed for a "display" or "update" operation. The keys to the segments which have no preceding segment, and which are used in display, are given a value here.

Depending on the categories defined on the screen, the access key to the display segment is stored in one of the following:

. F40A for the screen-top category,
. F40R for the repetitive category,
. F40Z for the screen-bottom category.

F4020 DISPLAY OF THE SCREEN CONTINUATION

This is executed for a "screen continuation" operation. It stores the first key for the display of the screen continuation, if the segment is used in the repetitive category.

F4030 END OF CONVERSATION

This is executed for an end-of-conversation operation. The following is executed:

. Stored screen is cleared,
. Files are closed,
. Return to the monitor.

F4040 TRANSFER TO ANOTHER SCREEN

This is executed for a screen transfer operation. The following is executed:

. Return to the monitor,
. Transfer of new screen code,
. Close files.

```
F40.       IF SCR-ER > "1"  MOVE "A" TO OPER  GO TO F40-FN.      DO0030
F40-A.     IF OPERD NOT = SPACE   MOVE OPERD TO OPER.            DO0030
           *************************************                 DO0030
           *                                   *                 DO0030
           *  SET-UP KEYS FOR NEW DISPLAY      *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F4010.     IF OPER NOT = "A" AND NOT = "M" GO TO F4010-FN.       DO0030
F40A.                                                            DO0030
       MOVE    SPACES            TO    CD00-KEYCD                DO0030
       MOVE    "B"               TO    CD00-COCARA               DO0030
       MOVE    CA00-NUCOM        TO    CD00-NUCOM                DO0030
       MOVE        CD00-KEYCD    TO K-ACD05-KEYCD.               DO0030
F40A-FN.     EXIT.                                               DO0030
F40R.                                                            DO0030
       MOVE  J-0030-LINE   (1) TO                                DO0030
             I-0030-LINE.                                        DO0030
       MOVE    SPACES            TO    CD00-KEYCD                DO0030
       MOVE    "C"               TO    CD00-COCARA               DO0030
       MOVE    CA00-NUCOM        TO    CD00-NUCOM                DO0030
       MOVE        CD00-KEYCD    TO K-RCD10-KEYCD  (1).          DO0030
F40R-FN.     EXIT.                                               DO0030
F40Z.                                                            DO0030
       MOVE    CA00-CLEME        TO    ME00-CLEME                DO0030
       MOVE        ME00-CLEME    TO K-ZME00-CLEME.               DO0030
F40Z-FN.     EXIT.                                               DO0030
F4010-FN.    EXIT.                                               DO0030
           *************************************                 DO0030
           *                                   *                 DO0030
           *  SET-UP KEYS FOR SCREEN PAGING    *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F4020.     IF OPER NOT = "S" GO TO F4020-FN.                     DO0030
       MOVE     K-RCD10-KEYCD  (2) TO                            DO0030
                K-RCD10-KEYCD  (1).                              DO0030
F4020-FN.    EXIT.                                               DO0030
           *************************************                 DO0030
           *                                   *                 DO0030
           *  END OF TRANSACTION               *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F4030.     IF OPER NOT = "E" GO TO F4030-FN.                     DO0030
       MOVE OPER TO S-WWSS-OPER.                                 DO0030
       MOVE K-S0030-XTERM  TO HE00-XTERM                         DO0030
       PERFORM F80-HELP-D  THRU F80-FN.                          DO0030
       PERFORM F81FI THRU F81FI-FN.                              DO0030
F4030-A.   EXIT PROGRAM.                                         DO0030
F4030-FN.    EXIT.                                               DO0030
           *************************************                 DO0030
           *                                   *                 DO0030
           *  TRANSFER TO ANOTHER SCREEN       *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F4040.     IF OPER NOT = "O" GO TO F4040-FN.                     DO0030
       MOVE  5-0030-PROGE TO S-WWSS-PROGE.                       DO0030
       MOVE OPER TO S-WWSS-OPER.                                 DO0030
       PERFORM F81FI THRU F81FI-FN.                              DO0030
F4040-A.   EXIT PROGRAM.                                         DO0030
F4040-FN.    EXIT.                                               DO0030
F40-FN.      EXIT.                                               DO0030
END-OF-RECEPTION.      EXIT.                                     DO0030
```

5.12. DISPLAY PREPARATION (F50)

F50: DISPLAY PREPARATION

The DISPLAY PREPARATION (F50) function contains the conditions for the set of procedures used in the 'DISPLAY' part of the program, F50 to F78-FN (END-OF-DISPLAY).

Sub-function F5010 is always generated. It ensures the initialization of work areas, and of the display screen description.

```
            *************************************          DO0030
            *                                   *          DO0030
            *  DISPLAY PREPARATION              *          DO0030
            *                                   *          DO0030
            *************************************          DO0030
 F50.      IF OCF = "0" GO TO END-OF-DISPLAY.              DO0030
 F5010.                                                    DO0030
        MOVE ZERO TO CATX.                                 DO0030
        MOVE ZERO TO CONFIGURATIONS.                       DO0030
        MOVE ALL "1" TO FIRST-ON-SEGMENT.                  DO0030
        IF SCR-ER  NOT > "1" MOVE SPACE TO O-0030.         DO0030
        IF SCR-ER > "1"  GO TO F6999-ITER-FT.              DO0030
        PERFORM F8115 THRU F8115-FN.                       DO0030
        MOVE K-R0030-LINE   (1)  TO                        DO0030
             K-R0030-LINE   (2).                           DO0030
 F5010-FN.    EXIT.                                        DO0030
 F50-FN.      EXIT.                                        DO0030
```

5.13. CATEGORY PROCESSING LOOP (F55)

F55: CATEGORY PROCESSING LOOP

The CATEGORY PROCESSING LOOP (F55) function positions the category to be processed in 'DISPLAY' based on the CATX indicator, which can have the following values:

. '0' Beginning of display.

. ' ' Screen-top category.

. 'R' Repetitive category.

. 'Z' Screen-bottom category.

The procedures are generated based on the categories defined on the Call of Elements ('-CE') screen.

If no category is defined, the screen is considered a screen-top category.

For the repetitive category this function includes:

. The interaction between the line of the category to be processed, and the output screen description field used to access each of the data elements of the line,

. The initialization and incrementation of the ICATR indicator which manages the repetitive category.

```
           **************************************                DO0030
           *                                    *                DO0030
           *  CATEGORY PROCESSING LOOP          *                DO0030
           *                                    *                DO0030
           **************************************                DO0030
F55.         EXIT.                                               DO0030
F5510.                                                           DO0030
       MOVE SPACE TO CAT-ER.                                     DO0030
       IF CATX = "0" MOVE " " TO CATX GO TO F5510-FN.            DO0030
       IF CATX = " " MOVE "R" TO CATX MOVE ZERO TO ICATR.        DO0030
       IF CATX NOT = "R" OR  ICATR > IRR GO TO F5510-R.          DO0030
       IF ICATR > ZERO                                           DO0030
       MOVE  O-0030-LINE            TO                           DO0030
             P-0030-LINE    (ICATR)                              DO0030
       MOVE      ER-0030-LINE       TO                           DO0030
                   PS-30-LINE    (ICATR).                        DO0030
       ADD 1 TO ICATR.                                           DO0030
       IF ICATR NOT > IRR                                        DO0030
       MOVE  P-0030-LINE    (ICATR) TO                           DO0030
             O-0030-LINE                                         DO0030
       MOVE        PS-30-LINE    (ICATR) TO                      DO0030
                 ER-0030-LINE.                                   DO0030
       GO TO F5510-FN.                                           DO0030
F5510-R.     EXIT.                                               DO0030
F5510-Z.                                                         DO0030
       IF CATX = "R" MOVE "Z" TO CATX GO TO F5510-FN.            DO0030
F5510-900. GO TO F6999-ITER-FT.                                  DO0030
F5510-FN.    EXIT.                                               DO0030
F55-FN.      EXIT.                                               DO0030
```

5.14. SEGMENT ACCESS FOR DISPLAY (F60)

F60: SEGMENT ACCESS FOR DISPLAY

The SEGMENT ACCESS FOR DISPLAY (F60) function is generated when there is a segment to be accessed for display.

Depending on which categories defined on the screen contain a segment to be accessed for display, the F60 function includes the following:

. F60A for the screen-top category,

. F60R for the repetitive category,

. F60Z for the screen-bottom category.

To process each category, there is one sub-function per access to a segment, including:

. Loading of the key from the 'K-cddss-KEY' field stored in function F40. For the first display (OCF = '1'), the user must ensure that the 'K-' field is loaded.

. Access by a PERFORM to the appropriate F80 sub-function depending on the category:

- Direct read (F80-ddss-R),

- Sequential Read after positioning (repetitive) (F80-ddss-P and F80-ddss-RN) based on the use of the segment (indicated on the '-CS').

. The positioning of the Segment 'ddss-CF' variable.

. Error processing, if necessary.

If a segment has a preceding segment, its Read will always be a Direct Read, even in the Repetitive category.

NOTE: Sub-functions are numbered based on the number of segments, their positions on the '-CS' screen, etc. As a result, a direct reference should never be made to a generated label in the specific procedures.

Use the Relative Positioning types '*A', '*P' and '*R' (see chapter "USE OF STRUCTURED CODE" in the ON-LINE SYSTEMS DEVELOPMENT Reference Manual.)

```
           *************************************                 DO0030
            *                                  *                 DO0030
            * SEGMENT ACCESS FOR DISPLAY       *                 DO0030
            *                                  *                 DO0030
           *************************************                 DO0030
F60.         EXIT.                                               DO0030
F60A.  IF CATX NOT = " " GO TO F60A-FN.                          DO0030
F6001.                                                           DO0030
       MOVE "0" TO CD05-CF.                                      DO0030
       MOVE     K-ACD05-KEYCD     TO   CD00-KEYCD                DO0030
       PERFORM F80-CD05-R  THRU F80-FN.                          DO0030
       IF IK = "1" MOVE  "G019" TO XERCD                         DO0030
       PERFORM F81UT THRU F81UT-FN       GO TO F6001-FN.         DO0030
       MOVE "1" TO CD05-CF.                                      DO0030
F6001-FN.    EXIT.                                               DO0030
F60A-FN.     EXIT.                                               DO0030
F60R.  IF CATX NOT = "R" OR FT = "1" GO TO F60R-FN.              DO0030
F6003.                                                           DO0030
       MOVE "0" TO CD10-CF.                                      DO0030
       IF          CD10-FST = "1"                                DO0030
       MOVE     K-RCD10-KEYCD  (1) TO  CD00-KEYCD                DO0030
       MOVE        CD00-COCARA   TO  C-0030-COCARA               DO0030
       MOVE        CD00-NUCOM    TO  C-0030-NUCOM                DO0030
       PERFORM F80-CD10-P  THRU F80-FN                           DO0030
       MOVE ZERO TO   CD10-FST ELSE                              DO0030
       PERFORM F80-CD10-RN THRU F80-FN.                          DO0030
       IF IK = "0"                                               DO0030
         IF        CD00-COCARA NOT = C-0030-COCARA               DO0030
         OR        CD00-NUCOM  NOT = C-0030-NUCOM                DO0030
       MOVE "1" TO IK.                                           DO0030
       IF IK = "1" MOVE  "G039" TO XERCD MOVE "1" TO FT          DO0030
       PERFORM F81UT THRU F81UT-FN       GO TO F6003-FN.         DO0030
       MOVE "1" TO CD10-CF.                                      DO0030
       MOVE        CD00-KEYCD    TO K-RCD10-KEYCD  (2).          DO0030
F6003-FN.    EXIT.                                               DO0030
F60R-FN.     EXIT.                                               DO0030
F60Z.  IF CATX NOT = "Z" GO TO F60Z-FN.                          DO0030
F6006.                                                           DO0030
       MOVE "0" TO ME00-CF.                                      DO0030
       MOVE     K-ZME00-CLEME     TO   ME00-CLEME                DO0030
       PERFORM F80-ME00-R  THRU F80-FN.                          DO0030
       IF IK = "1" MOVE  "G069" TO XERCD                         DO0030
       PERFORM F81UT THRU F81UT-FN       GO TO F6006-FN.         DO0030
       MOVE "1" TO ME00-CF.                                      DO0030
F6006-FN.    EXIT.                                               DO0030
F60Z-FN.                                                         DO0030
F60-FN.      EXIT.                                               DO0030
             +------------------------------------+              P000
 LEVEL 10    I PREPARATION DISPLAY DATE/HOUR     I               P000
             +------------------------------------+              P000
F64DA.    IF    CATX = " "                                       P000
          NEXT SENTENCE ELSE GO TO     F64DA-FN.                 P000
    ACCEPT  DATOR  FROM DATE                                     P040
    MOVE            DATOR                                        P040
    TO DAT6 DAT8                                                 P040
    MOVE DAT63 TO DAT61 MOVE DAT81 TO DAT63                      P040
    MOVE      DATOR                                              P080
    TO  DAT6                                                     P080
    PERFORM F8120-I  THRU F8120-Z                                P080
    MOVE  DAT8C TO   DAT8C.                                      P080
    ACCEPT  TIMCO  FROM  TIME                                    P120
    MOVE            TIMCOG                                       P160
         TO TIMCOG                                               P160
    MOVE TIMCOH TO TIMHOU                                        P160
    MOVE TIMCOM TO TIMMIN                                        P160
    MOVE TIMCOS TO TIMSEC                                        P160
    MOVE ":"    TO TIMS1  TIMS2                                  P160
    MOVE TIMDAY TO   TIMDAY.                                     P160
F64DA-FN.    EXIT.                                               P000
```

5.15. DATA ELEMENT TRANSFER (F65)

F65: DATA ELEMENT TRANSFER

The DATA ELEMENT TRANSFER (F65) function ensures the transfer of the segment data elements to the corresponding data elements on the screen.

Depending on which categories defined on the screen contain at least one transfer of a data element for display, the F65 function includes:

. F65A for the screen-top category,

. F65R for the repetitive category,

. F65Z for the screen-bottom category.

If the data element is filled from a segment, the transfer is conditioned by the segment configuration variable (ddss-CF=1).

Paragraph 'F6999-ITER-FI' contains the return to the beginning of the display iteration.

```
           *************************************                 DO0030
           *                                   *                 DO0030
           *  DATA ELEMENT TRANSFER            *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F65.         EXIT.                                               DO0030
F65A.  IF CATX NOT = " " GO TO F65A-FN.                          DO0030
       MOVE    PROGE            TO                               DO0030
             O-0030-PROGE.                                       DO0030
       MOVE    SESSI            TO                               DO0030
             O-0030-SESSI.                                       DO0030
       MOVE    DAT8C            TO                               DO0030
             O-0030-DATEM.                                       DO0030
       MOVE    TIMDAY           TO                               DO0030
             O-0030-HEURE.                                       DO0030
F65A-A7.                                                         DO0030
       MOVE    CA00-NUCOM       TO                               DO0030
             O-0030-NUCOM.                                       DO0030
F65A-A7-FN. EXIT.                                                DO0030
F65A-A8.                                                         DO0030
       MOVE    CA00-RAISOC      TO                               DO0030
             O-0030-RAISOC.                                      DO0030
F65A-A8-FN. EXIT.                                                DO0030
F65A-CD05.                                                       DO0030
       IF      CD05-CF   NOT = "1" GO  TO  F65A-CD05-FN.         DO0030
       MOVE    CD05-MATE        TO                               DO0030
             O-0030-MATE.                                        DO0030
F65A-B0.                                                         DO0030
       MOVE    CD05-RELEA       TO                               DO0030
             O-0030-RELEA.                                       DO0030
F65A-B0-FN. EXIT.                                                DO0030
F65A-B1.                                                         DO0030
       MOVE    CD05-VILLE       TO                               DO0030
             O-0030-VILLE.                                       DO0030
F65A-B1-FN. EXIT.                                                DO0030
F65A-B2.                                                         DO0030
       MOVE    CD05-COPOS       TO                               DO0030
             O-0030-COPOS.                                       DO0030
F65A-B2-FN. EXIT.                                                DO0030
F65A-B3.                                                         DO0030
       MOVE    CD05-REFCLI      TO                               DO0030
             O-0030-REFCLI.                                      DO0030
F65A-B3-FN. EXIT.                                                DO0030
F65A-B4.                                                         DO0030
       MOVE    CD05-DATE        TO                               DO0030
             O-0030-DATE.                                        DO0030
F65A-B4-FN. EXIT.                                                DO0030
F65A-B5.                                                         DO0030
       MOVE    CD05-CORRES      TO                               DO0030
             O-0030-CORRES.                                      DO0030
F65A-B5-FN. EXIT.                                                DO0030
F65A-B6.                                                         DO0030
       MOVE    CD05-REMIS       TO                               DO0030
             O-0030-REMIS.                                       DO0030
F65A-B6-FN. EXIT.                                                DO0030
F65A-CD05-FN. EXIT.                                              DO0030
F65A-FN.     EXIT.                                               DO0030
F65R.  IF CATX NOT = "R" OR FT = "1" GO TO F65R-FN.              DO0030
                      IF ICATR > IRR GO TO F65R-FN.              DO0030
F65R-A4.                                                         DO0030
       MOVE    CD00-FOURNI      TO                               DO0030
             O-0030-FOURNI.                                      DO0030
F65R-A4-FN. EXIT.                                                DO0030
F65R-CD10.                                                       DO0030
       IF      CD10-CF   NOT = "1" GO  TO  F65R-CD10-FN.         DO0030
       MOVE    CD10-QTMAC       TO                               DO0030
             O-0030-QTMAC.                                       DO0030
F65R-A6.                                                         DO0030
       MOVE    CD10-QTMAL       TO                               DO0030
             O-0030-QTMAL.                                       DO0030
F65R-A6-FN. EXIT.                                                DO0030
F65R-A7.                                                         DO0030
       MOVE    CD10-INFOR       TO                               DO0030
             O-0030-INFOR.                                       DO0030
F65R-A7-FN. EXIT.                                                DO0030
F65R-CD10-FN. EXIT.                                              DO0030
             +------------------------------------+              P000
```

```
 LEVEL 10    I REMAINS TO BE DELIVERED           I                P000
             +-----------------------------------+                P000
F65BB.                                                            P000
          IF    CD10-QTMAL NOT = ZERO                             P100
    COMPUTE     WW10-QTMAR =                                      P100
                CD10-QTMAC - CD10-QTMAL                           P110
    MOVE        WW10-QTMAR TO O-0030-QTMAR.                       P120
F65BB-FN.    EXIT.                                                P000
F65R-FN.     EXIT.                                                DO0030
F65Z.  IF CATX NOT = "Z" GO TO F65Z-FN.                           DO0030
F65Z-ME00.                                                        DO0030
       IF      ME00-CF   NOT = "1" GO  TO  F65Z-ME00-FN.          DO0030
       MOVE    ME00-MESSA       TO                                DO0030
             O-0030-MESSA.                                        DO0030
F65Z-ME00-FN. EXIT.                                               DO0030
F65Z-FN.     EXIT.                                                DO0030
F65-FN.      EXIT.                                                DO0030
F6999-ITER-FI.  GO TO F55.                                        DO0030
F6999-ITER-FT.     EXIT.                                          DO0030
F6999-FN.    EXIT.                                                DO0030
```

5.16. ERROR PROCESSSING (F70)

F70 : ERROR PROCESSING

This function is systematically generated.

F7010 includes:

. In F7010-A, testing of the DE-ERR vector, setting the error field attribute, access to the error message file, and loading of the screen error message,

. In F7010-B, testing of T-XEMKEY user error tables, access to error message file, and loading of the screen error message.

F7020 is generated if at least one variable field exists on the Screen Call of Elements (-CE).

This sub-function positions the screen field attributes when there is an error on a variable field and positions the cursor on the first erroneous field.

```
F70.         EXIT.                                               DO0030
           *************************************                 DO0030
           *                                   *                 DO0030
           *  ERROR PROCESSING                 *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F7010.     MOVE ZERO TO K01 K02 K04 MOVE 1 TO K03.               DO0030
       MOVE LIBRA TO EM00-LIBRA MOVE PROGR TO EM00-PROGR         DO0030
       MOVE ZERO TO EM00-LINUM MOVE "H" TO EM00-ENTYP.           DO0030
F7010-A.   IF K02 = INR AND K03 < IRR MOVE INA TO K02            DO0030
       ADD 1 TO K03. ADD 1 TO K01 K02.                           DO0030
       IF DE-ER (K01) > "1" OR < "0" MOVE "Y" TO DE-AT (4, K01)  DO0030
       MOVE "N" TO DE-AT (1, K01)                                DO0030
       MOVE "N" TO DE-AT (2, K01)                                DO0030
       MOVE "W" TO DE-AT (3, K01)                                DO0030
          IF K04 < IER MOVE DE-ER (K01) TO EM00-ERTYP            DO0030
       MOVE K02 TO EM00-ERCOD9 MOVE EM00-XEMKY TO EM00-ERMSG     DO0030
       PERFORM F80-EM00-R THRU F80-FN ADD 1 TO K04               DO0030
       MOVE  EM00-ERMSG  TO    O-0030-ERMSG (K04).               DO0030
       IF K01 < INT      GO TO F7010-A.                          DO0030
       MOVE ZERO TO K50R.                                        DO0030
F7010-B.                                                         DO0030
        ADD 1 TO K50R IF K50R > K50L OR K04 NOT < IER GO TO      DO0030
        F7010-FN. MOVE T-XEMKY (K50R) TO EM00-XEMKY EM00-ERMSG   DO0030
        PERFORM F80-EM00-R THRU F80-FN. ADD 1 TO K04             DO0030
       MOVE  EM00-ERMSG  TO    O-0030-ERMSG (K04)                DO0030
       GO TO F7010-B.                                            DO0030
F7010-FN.    EXIT.                                               DO0030
           *************************************                 DO0030
           *                                   *                 DO0030
           *  POSITIONING OF ATTRIBUTES        *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F7020.                                                           DO0030
       MOVE ZERO TO TALLI  INSPECT DE-ATT1 (4)                   DO0030
       TALLYING TALLI FOR CHARACTERS BEFORE "Y".                 DO0030
       IF TALLI     NOT <       0045                             DO0030
       MOVE ZERO TO TALLI  INSPECT DE-ATT1 (4)                   DO0030
       TALLYING TALLI FOR CHARACTERS BEFORE "Z".                 DO0030
       IF TALLI     NOT <       0045                             DO0030
       MOVE ZERO TO TALLI  INSPECT DE-ATT1 (4)                   DO0030
       TALLYING TALLI FOR CHARACTERS BEFORE "X".                 DO0030
       IF TALLI     NOT <       0045                             DO0030
       MOVE ZERO TO TALLI.                                       DO0030
       ADD 1 TO TALLI                                            DO0030
       MOVE SV-AT (TALLI) TO K01                                 DO0030
       CMES-NUMFLD.                                              DO0030
       MOVE AT-0030-YPCUR (K01) TO CMES-YPCUR.                   DO0030
       MOVE ZERO TO K01.                                         DO0030
F7020-A.                                                         DO0030
       ADD 1 TO K01. IF K01 > INT GO TO F7020-FN.                DO0030
       MOVE SV-AT (K01) TO K02.                                  DO0030
       IF SV-ATTRI (K01) = "D" AND DE-AT (1, K01) NOT = "D"      DO0030
       MOVE "D" TO DE-AT (1, K01).                               DO0030
       IF DE-AT (1, K01) NOT = SPACE                             DO0030
          MOVE DE-AT (1, K01) TO AT-0030-ATTRI (K02).            DO0030
       IF DE-AT (2, K01) NOT = SPACE                             DO0030
          MOVE DE-AT (2, K01) TO AT-0030-ATTRP (K02).            DO0030
       IF DE-AT (3, K01) NOT = SPACE                             DO0030
          MOVE DE-AT (3, K01) TO AT-0030-ATTRC (K02).            DO0030
       GO TO F7020-A.                                            DO0030
F7020-FN.    EXIT.                                               DO0030
F70-FN.      EXIT.                                               DO0030
END-OF-DISPLAY.    EXIT.                                         DO0030
```

5.17. DISPLAY AND END OF PROGRAM (F8Z)

F8Z : DISPLAY AND END OF PROGRAM

F8Z05 is generated if a call for HELP documentation is entered on the Screen Definition screen. It ensures that the fields of the screen are memorized in the 'HE' file.

F8Z10 includes the sending of the CMES-COMMUNICATION area, which contains the message, to the formatting sub-program.

F8Z20 contains the end of the reception-display iteration. The CMES-FMES area is set to '0' indicating that the screen has already been displayed. The sub-function ends with a return to Function F0105 for reception processing.

```
F8Z.         EXIT.                                               DO0030
F8Z05.   IF SCR-ER = "1"                                         DO0030
       NEXT SENTENCE ELSE GO TO F8Z05-FN.                        DO0030
         IF K-S0030-DOC NOT = "1"     GO TO F8Z05-A.             DO0030
       MOVE K-S0030-ERCOD9 TO K01 K02.                           DO0030
       IF K02 > INR                                              DO0030
       COMPUTE K02 = K01 + (INR - INA) * (IRR - 1).              DO0030
       IF K02 < 1 OR K02 > INT MOVE 1 TO K02.                    DO0030
       MOVE "X"  TO DE-AT (4, K02)                               DO0030
       PERFORM F7020 THRU F7020-FN.                              DO0030
F8Z05-A.                                                         DO0030
       MOVE K-S0030-XTERM  TO HE00-XTERM.                        DO0030
         IF K-S0030-DOC = "1"                                    DO0030
       PERFORM F80-HELP-R  THRU F80-FN                           DO0030
       MOVE HE00-SCREEN  TO  O-0030                              DO0030
       MOVE "0" TO K-S0030-DOC      GO TO F8Z05-FN.              DO0030
         IF K-S0030-DOC NOT = ZERO      GO TO F8Z05-FN.          DO0030
       PERFORM F80-HELP-R  THRU F80-FN.                          DO0030
       MOVE K-S0030-XTERM  TO HE00-XTERM                         DO0030
       MOVE  O-0030    TO     HE00-SCREEN.                       DO0030
       IF IK = "1"                                               DO0030
       PERFORM F80-HELP-W  THRU F80-FN  ELSE                     DO0030
       PERFORM F80-HELP-RW THRU F80-FN.                          DO0030
F8Z05-FN.    EXIT.                                               DO0030
           *************************************                 DO0030
           *                                   *                 DO0030
           *  DISPLAY                          *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F8Z10.                                                           DO0030
       IF SCR-ER  NOT > "1"                                      DO0030
       AND DE-AT (4, 009) = "X"                                  DO0030
       PERFORM F7020 THRU F7020-FN.                              DO0030
       PERFORM F8145 THRU F8145-FN.                              DO0030
       MOVE "1" TO CMES-NBZVAR.                                  DO0030
       MOVE "X"  TO CMES-YCRE.                                   DO0030
       IF SCR-ER NOT > "1"                                       DO0030
       MOVE PROGR     TO          K-S0030-PROGR                  DO0030
       PERFORM F8105 THRU F8105-FN                               DO0030
       MOVE "E"  TO CMES-YCRE.                                   DO0030
       MOVE    0030-MESSO TO CMES-YR00.                          DO0030
       MOVE AT-0030-MESSA TO CMES-YO00.                          DO0030
       CALL PRCGI USING CMES-COMMUNICATION.                      DO0030
F8Z10-FN.    EXIT.                                               DO0030
           *************************************                 DO0030
           *                                   *                 DO0030
           *  END OF PROGRAM                   *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F8Z20.                                                           DO0030
       MOVE "DO0030  " TO S-WWSS-PROGE.                          DO0030
       MOVE OPER TO S-WWSS-OPER.                                 DO0030
       MOVE "0"  TO CMES-FMES.                                   DO0030
       GO TO F0105.                                              DO0030
F8Z20-FN.    EXIT.                                               DO0030
F8Z-FN.      EXIT.                                               DO0030
```

5.18. PHYSICAL SEGMENT ACCESS ROUTINES (F80)

F80: PHYSICAL SEGMENT ACCESS ROUTINES

The PHYSICAL SEGMENT ACCESS ROUTINES (F80) function, which is generated when at least one segment is called in the screen, includes physical access to the segments.

The coding for these access sub-functions is illustrated in the following example. (The segment code from the program in this example is CD10.)

```
F80-CD10-R   Direct read.

F80-CD10-RU  Direct read with update.

F80-CD10-P   Positioning of a sequential read.

F80-CD10-RN  Sequential read.

F80-CD10-W   Write.

F80-CD10-RW  Rewrite.

F80-CD10-D   Deletion.

F80-CD10-UN  Unlock of record.
```

If a call for HELP documentation has been entered on the Screen Definition screen, the physical access(es) to the back-up file is (are) generated. The coding of the access sub-functions is illustrated as follows:

```
F80-HELP-W   Write.

F80-HELP-RW  Rewrite.

F80-HELP-R   Direct read.

F80-HELP-D   Deletion.
```

If the access methods are user-programmed, refer to Chapter "USE OF STRUCTURED CODE" in the OLSD Reference Manual.

The key of the backup file is 'TERM': by default the file can not be shared by several users but must be assigned to each user locally.

```
           *************************************                 DO0030
           *                                   *                 DO0030
           *  PHYSICAL SEGMENT ACCESS ROUTINES *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F80.         EXIT.                                               DO0030
F80-CD05-R.                                                      DO0030
       MOVE "READ    " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
       READ    CD-FILE    INVALID KEY GO TO F80-KO.              DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DO0030
F80-CD05-RU.                                                     DO0030
       MOVE "READUPD " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
       READ    CD-FILE    WITH LOCK                              DO0030
           INVALID KEY GO TO F80-KO.                             DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DO0030
F80-CD05-RW.                                                     DO0030
       MOVE "REWRITE " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
       REWRITE     CD05 INVALID KEY GO TO F80-KO.                DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DO0030
F80-CD05-UN.                                                     DO0030
       MOVE "UNLOCK  " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
           UNLOCK  CD-FILE.                                      DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DO0030
F8001-FN.    EXIT.                                               DO0030
F80-CD10-R.                                                      DO0030
       MOVE "READ    " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
       READ    CD-FILE    INVALID KEY GO TO F80-KO.              DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DO0030
F80-CD10-RU.                                                     DO0030
       MOVE "READUPD " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
       READ    CD-FILE    WITH LOCK                              DO0030
           INVALID KEY GO TO F80-KO.                             DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DO0030
F80-CD10-P.                                                      DO0030
       MOVE "START   " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
       START   CD-FILE    KEY NOT <                              DO0030
                  CD00-KEYCD  INVALID KEY GO TO F80-KO.          DO0030
       IF IK = "1" GO TO F81ER.                                  DO0030
F80-CD10-RN.                                                     DO0030
       MOVE "READNEXT" TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
       READ    CD-FILE    NEXT AT END GO TO F80-KO.              DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DO0030
F80-CD10-W.                                                      DO0030
       MOVE "WRITE   " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
       WRITE       CD10 INVALID KEY GO TO F80-KO.                DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DO0030
F80-CD10-RW.                                                     DO0030
       MOVE "REWRITE " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
       REWRITE     CD10 INVALID KEY GO TO F80-KO.                DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DO0030
F80-CD10-D.                                                      DO0030
       MOVE "DELETE  " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
       DELETE  CD-FILE    INVALID KEY GO TO F80-KO.              DO0030
       IF IK = "1" GO TO F81ER.                                  DO0030
F80-CD10-UN.                                                     DO0030
       MOVE "UNLOCK  " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
           UNLOCK  CD-FILE.                                      DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DO0030
F8002-FN.    EXIT.                                               DO0030
F80-CD20-RU.                                                     DO0030
       MOVE "READUPD " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
       READ    CD-FILE    WITH LOCK                              DO0030
           INVALID KEY GO TO F80-KO.                             DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DO0030
F80-CD20-W.                                                      DO0030
       MOVE "WRITE   " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
       WRITE       CD20 INVALID KEY GO TO F80-KO.                DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DO0030
F80-CD20-RW.                                                     DO0030
       MOVE "REWRITE " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
       REWRITE     CD20 INVALID KEY GO TO F80-KO.                DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DO0030
F80-CD20-UN.                                                     DO0030
       MOVE "UNLOCK  " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
           UNLOCK  CD-FILE.                                      DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DO0030
F8003-FN.    EXIT.                                               DO0030
```

```
F80-FO10-RU.                                                       DO0030
       MOVE "READUPD " TO S-WWSS-XFUNCT   MOVE "0" TO IK.          DO0030
       READ    FO-FILE    WITH LOCK                                DO0030
           INVALID KEY GO TO F80-KO.                               DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                  DO0030
F80-FO10-RW.                                                       DO0030
       MOVE "REWRITE " TO S-WWSS-XFUNCT   MOVE "0" TO IK.          DO0030
       REWRITE     FO10 INVALID KEY GO TO F80-KO.                  DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                  DO0030
F80-FO10-UN.                                                       DO0030
       MOVE "UNLOCK  " TO S-WWSS-XFUNCT   MOVE "0" TO IK.          DO0030
           UNLOCK  FO-FILE.                                        DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                  DO0030
F8004-FN.    EXIT.                                                 DO0030
F80-ME00-R.                                                        DO0030
       MOVE "READ    " TO S-WWSS-XFUNCT   MOVE "0" TO IK.          DO0030
       READ    ME-FILE    INVALID KEY GO TO F80-KO.                DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                  DO0030
F8005-FN.    EXIT.                                                 DO0030
F80-HELP-R.                                                        DO0030
       MOVE "READ    " TO S-WWSS-XFUNCT   MOVE "0" TO IK.          DO0030
       READ    HE-FILE    WITH LOCK                                DO0030
       INVALID KEY GO TO F80-KO.                                   DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                  DO0030
F80-HELP-W.                                                        DO0030
       MOVE "WRITE   " TO S-WWSS-XFUNCT   MOVE "0" TO IK.          DO0030
       WRITE   HE00                                                DO0030
       INVALID KEY GO TO F80-KO.                                   DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                  DO0030
F80-HELP-RW.                                                       DO0030
       MOVE "REWRITE " TO S-WWSS-XFUNCT   MOVE "0" TO IK.          DO0030
       REWRITE   HE00                                              DO0030
       INVALID KEY GO TO F80-KO.                                   DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                  DO0030
F80-HELP-D.                                                        DO0030
       MOVE "DELETE  " TO S-WWSS-XFUNCT   MOVE "0" TO IK.          DO0030
       DELETE  HE-FILE    INVALID KEY GO TO F80-KO.                DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                  DO0030
F8095-FN.    EXIT.                                                 DO0030
F80-EM00-R.                                                        DO0030
       MOVE "READ    " TO S-WWSS-XFUNCT   MOVE "0" TO IK.          DO0030
       READ    EM-FILE                                             DO0030
           INVALID KEY GO TO F80-KO.                               DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                  DO0030
F8098-FN.    EXIT.                                                 DO0030
F80-OK.  MOVE "0" TO IK MOVE PROGR TO XPROGR GO TO F80-FN.         DO0030
F80-KO.  MOVE "1" TO IK MOVE PROGR TO XPROGR.                      DO0030
F8099-FN.    EXIT.                                                 DO0030
F80-FN.      EXIT.                                                 DO0030
```

5.19. PERFORMED VALIDATION FUNCTIONS (F81)

F81 : PERFORMED VALIDATION FUNCTIONS

This function is automatically generated.

F81ER contains the abend routine.

F81FI contains the CLOSE of the files used in the program.

F81UT contains the storing of user errors.

F8105 contains the moves of the error messages.

F8110 is generated if the screen contains at least one numeric field. It contains the procedures which format the field to be validated in a working area, the numeric class validation and the possible positioning of error messages.

F8115 ensures the initialization of variable output areas. It is performed in Function F0510 if the processsing indicator for reception, 'ICF', is equal to '0'.

F8120 is generated if at least one variable data element ('V') has a date format, or if a date processing operator is used in the program (in which case the F8120-ER and F8120-KO levels are not generated). It contains date formatting and validation.

F8130 is generated if a HELP documentation call is entered on the Screen Definition screen. It prepares the area to be saved in 'HE'.

F8145 ensures the moves of the display fields to be passed to the message formatting sub-program.

F8155 ensures the transfer of messages received in the reception fields (INPUT-SCREEN-FIELDS).

```
F81.         EXIT.                                               DO0030
           *************************************                 DO0030
           *                                   *                 DO0030
           *  ABNORMAL END PROCEDURE           *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F81ER.                                                           DO0030
       MOVE "X" TO S-WWSS-OPER.                                  DO0030
F81ER-A. EXIT PROGRAM.                                           DO0030
F81ER-FN.    EXIT.                                               DO0030
F81FI.                                                           DO0030
       MOVE "CLOSE   " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DO0030
       CLOSE   CD-FILE.                                          DO0030
       IF IK = "1" GO TO F81ER.                                  DO0030
       CLOSE   EM-FILE    IF IK = "1" GO TO F81ER.               DO0030
       CLOSE   FO-FILE.                                          DO0030
       IF IK = "1" GO TO F81ER.                                  DO0030
       CLOSE HE-FILE.                                            DO0030
       IF IK = "1" GO TO F81ER.                                  DO0030
       CLOSE   ME-FILE.                                          DO0030
       IF IK = "1" GO TO F81ER.                                  DO0030
F81FI-FN.    EXIT.                                               DO0030
           *************************************                 DO0030
           *                                   *                 DO0030
           *  MEMORIZATION OF USER'S ERRORS    *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F81UT.     IF K50L < K50M ADD 1 TO K50L                          DO0030
       MOVE XEMKY TO T-XEMKY (K50L). MOVE "E" TO CAT-ER.         DO0030
F81UT-FN.    EXIT.                                               DO0030
F8105.                                                           DO0030
     MOVE   "-"                                     TO S01013.   DO0030
     MOVE   "***  ORDER INPUT SCREEN  ***  "        TO S01025.   DO0030
     MOVE   "ORDER NUMBER:"                         TO S03004.   DO0030
     MOVE   "SYSTEM:"                               TO S03026.   DO0030
     MOVE   "RELEASE:"                              TO S03054.   DO0030
     MOVE   "CUST."                                 TO S04004.   DO0030
     MOVE   "CUST. REF.:"                           TO S06004.   DO0030
     MOVE   "ORDER DATE:"                           TO S06049.   DO0030
     MOVE   "COORDINATOR:"                          TO S07005.   DO0030
     MOVE   "DISCOUNT RATE:"                        TO S07046.   DO0030
     MOVE   "A"                                     TO S09003.   DO0030
     MOVE   "ITEM  "                                TO S09007.   DO0030
     MOVE   "ORDERED "                              TO S09016.   DO0030
     MOVE   "DELIV. "                               TO S09026.   DO0030
     MOVE   "OUTST."                                TO S09035.   DO0030
     MOVE   "REMARKS                            "   TO S09042.   DO0030
     MOVE   "PRINTING OF FORM  :"                   TO S20002.   DO0030
     MOVE   "UPD : PF07,"                           TO S20035.   DO0030
     MOVE   "ORDERS (NEXT) : PF08,"                 TO S20047.   DO0030
     MOVE   "MENU : PF01, CUSTOMER LIST :"          TO S21002.   DO0030
     MOVE   "PF02, CUST. HIST : PF03, ORDER"        TO S21031.   DO0030
     MOVE   "LIST : PF04,"                          TO S21062.   DO0030
     MOVE   "END : PF12"                            TO S22002.   DO0030
     MOVE   "SCREEN DOC : PF10, "                   TO S22013.   DO0030
     MOVE   "DATA EL. DOC : PF11,"                  TO S22033.   DO0030
F8105-FN.    EXIT.                                               DO0030
           *************************************                 DO0030
           *                                   *                 DO0030
           *  NUMERIC VALIDATION               *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F8110.   MOVE ZERO TO TPOINT K01 K02 K03 ZONUM3 ZONUM2           DO0030
                      C9 C91.                                    DO0030
F8110-1.   IF K01 > 26 OR K02 > 17 GO TO F8110-5.                DO0030
       ADD 1 TO K01.                                             DO0030
       IF C1 (K01) = SPACE OR C1 (K01) = "." GO TO F8110-1.      DO0030
     IF C1 (K01) NOT = "-" AND C1 (K01) NOT = "+" GO TO F8110-2. DO0030
       IF C9 NOT = ZERO                                          DO0030
       MOVE "5" TO DEL-ER GO TO F8110-FN.                        DO0030
       IF K02 = ZERO MOVE "1" TO C91.                            DO0030
       IF C1 (K01) = "+" MOVE 1 TO C9   GO TO F8110-1.           DO0030
       IF SIGNE = " " MOVE "5" TO DEL-ER GO TO F8110-FN.         DO0030
       MOVE -1 TO C9 GO TO F8110-1.                              DO0030
F8110-2. IF C1 (K01) NOT = "," GO TO F8110-4.                    DO0030
       IF TPOINT = "1" OR NBCHP = 0                              DO0030
       MOVE "5" TO DEL-ER GO TO F8110-FN.                        DO0030
```

```
F8110-3. IF K02 > NBCHA MOVE "5" TO DEL-ER GO TO F8110-FN.       DO0030
       COMPUTE K04 = 18 - NBCHA + K02 MOVE 1 TO C3 (K04)         DO0030
       DIVIDE ZONUM4 INTO ZONUM9 MOVE NBCHA TO K02               DO0030
       MOVE "1" TO TPOINT GO TO F8110-1.                         DO0030
F8110-4. IF C1 (K01) NOT NUMERIC MOVE "4" TO DEL-ER              DO0030
       GO TO F8110-FN.                                           DO0030
       IF C9 NOT = ZERO AND C91 = ZERO                           DO0030
       MOVE "5" TO DEL-ER  GO TO F8110-FN.                       DO0030
       IF C1 (K01) = "0" AND K02 = ZERO AND TPOINT = "0"         DO0030
       GO TO F8110-1. ADD 1 TO K02 MOVE C1 (K01) TO C2 (K02).    DO0030
       IF TPOINT = "1" ADD 1 TO K03. IF K03 > NBCHP MOVE "5"     DO0030
       TO DEL-ER GO TO F8110-FN. GO TO F8110-1.                  DO0030
F8110-5. IF TPOINT = "0" AND K02 > ZERO GO TO F8110-3.           DO0030
       IF SIGNE NOT =  "+" GO TO F8110-FN.                       DO0030
       IF C9 = ZERO MOVE 1 TO C9.                                DO0030
       ADD NBCHA NBCHP GIVING K01 MULTIPLY C9 BY C29 (K01).      DO0030
       IF C29 (K01) = ZERO AND C9 = -1 MOVE C4 TO C2 (K01).      DO0030
F8110-FN.    EXIT.                                               DO0030
F8115.                                                           DO0030
       MOVE ALL "-"                                              DO0030
         TO  O-0030-MATE.                                        DO0030
       MOVE ALL "-"                                              DO0030
         TO  O-0030-RELEA.                                       DO0030
       MOVE ALL "-"                                              DO0030
         TO  O-0030-RUE.                                         DO0030
       MOVE ALL "-"                                              DO0030
         TO  O-0030-COPOS.                                       DO0030
       MOVE ALL "-"                                              DO0030
         TO  O-0030-REFCLI.                                      DO0030
       MOVE "..__.."                                             DO0030
         TO  O-0030-DATE.                                        DO0030
       MOVE ALL "-"                                              DO0030
         TO  O-0030-CORRES.                                      DO0030
       MOVE ALL "-"                                              DO0030
         TO  F-0030-REMIS.                                       DO0030
       MOVE  ZERO  TO  ICATR.                                    DO0030
F8115-GRP.   ADD 1 TO  ICATR                                     DO0030
       MOVE  P-0030-LINE  (ICATR) TO O-0030-LINE                 DO0030
       MOVE ALL "-"                                              DO0030
         TO  O-0030-CODMVT.                                      DO0030
       MOVE ALL "-"                                              DO0030
         TO  O-0030-FOURNI.                                      DO0030
       MOVE ALL "-"                                              DO0030
         TO  F-0030-QTMAC.                                       DO0030
       MOVE ALL "-"                                              DO0030
         TO  O-0030-INFOR.                                       DO0030
       MOVE  O-0030-LINE          TO P-0030-LINE  (ICATR).       DO0030
    IF ICATR  < IRR GO TO F8115-GRP.                             DO0030
       MOVE ALL "-"                                              DO0030
         TO  O-0030-EDIT.                                        DO0030
F8115-FN.    EXIT.                                               DO0030
           *************************************                 DO0030
           *                                   *                 DO0030
           *  VALIDATION AND SETTING OF DATE   *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F8120.       EXIT.                                               DO0030
F8120-C. MOVE DAT73C TO DATCTY.                                  DO0030
         MOVE DAT71C TO DAT71.                                   DO0030
         MOVE DAT72C TO DAT72.                                   DO0030
         MOVE DAT74C TO DAT73.                                   DO0030
         MOVE "00111" TO TT-DAT GO TO F8120-T.                   DO0030
F8120-D. MOVE CENTUR TO DATCTY DAT73C.                           DO0030
         MOVE DAT71 TO DAT71C.                                   DO0030
         MOVE DAT72 TO DAT72C                                    DO0030
         MOVE DAT73 TO DAT74C.                                   DO0030
         MOVE "00111" TO TT-DAT GO TO F8120-T.                   DO0030
F8120-E. MOVE CENTUR TO DATCTY DAT83C.                           DO0030
         MOVE DAT81 TO DAT81C.                                   DO0030
         MOVE DAT82 TO DAT82C.                                   DO0030
         MOVE DAT83 TO DAT84C  MOVE DATSEP TO DAT8S1C DAT8S2C.   DO0030
         MOVE "01011" TO TT-DAT GO TO F8120-T.                   DO0030
F8120-G. MOVE DAT81G TO DATCTY.                                  DO0030
         MOVE DAT82G TO DAT61.                                   DO0030
         MOVE DAT83G TO DAT62.                                   DO0030
         MOVE DAT84G TO DAT63.                                   DO0030
         MOVE "10110" TO TT-DAT GO TO F8120-T.                   DO0030
```

```
F8120-I. MOVE CENTUR TO DATCTY DAT61C.                           DO0030
         MOVE DAT61 TO DAT62C.                                   DO0030
         MOVE DAT62 TO DAT63C.                                   DO0030
         MOVE DAT63 TO DAT64C.                                   DO0030
         MOVE "10101" TO TT-DAT GO TO F8120-T.                   DO0030
F8120-M. MOVE DAT83C TO DATCTY.                                  DO0030
         MOVE DAT81C TO DAT81.                                   DO0030
         MOVE DAT82C TO DAT82.                                   DO0030
         MOVE DAT84C TO DAT83  MOVE DATSEP TO DAT8S1 DAT8S2.     DO0030
         MOVE "01011" TO TT-DAT GO TO F8120-T.                   DO0030
F8120-S. MOVE DAT61C TO DATCTY.                                  DO0030
         MOVE DAT62C TO DAT61.                                   DO0030
         MOVE DAT63C TO DAT62.                                   DO0030
         MOVE DAT64C TO DAT63.                                   DO0030
         MOVE "10101" TO TT-DAT.                                 DO0030
F8120-T. IF T-DAT (1) = "1"                                      DO0030
            MOVE DAT61 TO DAT73 DAT74C                           DO0030
            MOVE DAT62 TO DAT72 DAT72C                           DO0030
            MOVE DAT63 TO DAT71 DAT71C                           DO0030
            MOVE DATCTY TO DAT73C.                               DO0030
         IF T-DAT (2) = "1"                                      DO0030
            MOVE DAT81 TO DAT71 DAT71C                           DO0030
            MOVE DAT82 TO DAT72 DAT72C                           DO0030
            MOVE DAT83 TO DAT73 DAT74C                           DO0030
            MOVE DATCTY TO  DAT73C.                              DO0030
         IF T-DAT (3) = "1"                                      DO0030
            MOVE DAT71 TO DAT81 DAT81C                           DO0030
            MOVE DAT72 TO DAT82 DAT82C                           DO0030
            MOVE DAT73 TO DAT83 DAT84C                           DO0030
            MOVE DATSEP TO DAT8S1 DAT8S2 DAT8S1C DAT8S2C         DO0030
            MOVE DATCTY TO DAT83C.                               DO0030
         IF T-DAT (4) = "1"                                      DO0030
            MOVE DAT71 TO DAT63 DAT64C                           DO0030
            MOVE DAT72 TO DAT62 DAT63C                           DO0030
            MOVE DAT73 TO DAT61 DAT62C                           DO0030
            MOVE DATCTY TO DAT61C.                               DO0030
         IF T-DAT (5) = "1"                                      DO0030
            MOVE DAT61 TO DAT82G                                 DO0030
            MOVE DAT62 TO DAT83G                                 DO0030
            MOVE DAT63 TO DAT84G                                 DO0030
            MOVE DATSET TO DAT8S1G DAT8S2G                       DO0030
            MOVE DATCTY TO DAT81G.                               DO0030
F8120-Z.     EXIT.                                               DO0030
F8120-ER.   MOVE "1"   TO DEL-ER.                                DO0030
         IF DAT6 NOT NUMERIC                GO TO F8120-KO.      DO0030
         IF DATCTY NOT NUMERIC              GO TO F8120-KO.      DO0030
         IF DAT62 > "12" OR DAT62 = "00" OR                      DO0030
            DAT63 > "31" OR DAT63 = "00"    GO TO F8120-KO.      DO0030
         IF DAT63 > "30" AND                                     DO0030
           (DAT62 = "04" OR DAT62 = "06" OR                      DO0030
            DAT62 = "09" OR DAT62 = "11")   GO TO F8120-KO.      DO0030
         IF DAT62 NOT = "02"                GO TO F8120-FN.      DO0030
         IF DAT63 > "29"                    GO TO F8120-KO.      DO0030
         IF   DAT619  = ZERO                                     DO0030
         DIVIDE  DATCTY9    BY 4 GIVING  LEAP-REM                DO0030
         COMPUTE LEAP-REM = DATCTY9 - 4 * LEAP-REM               DO0030
         ELSE DIVIDE DAT619  BY 4 GIVING LEAP-REM                DO0030
         COMPUTE LEAP-REM = DAT619 - 4 * LEAP-REM.               DO0030
         IF DAT63 < "29" OR LEAP-REM = ZERO GO TO F8120-FN.      DO0030
F8120-KO. MOVE "5" TO DEL-ER.                                    DO0030
F8120-FN.    EXIT.                                               DO0030
           *************************************                 DO0030
           *                                   *                 DO0030
           *  HELP SUB-FUNCTION                *                 DO0030
           *                                   *                 DO0030
           *************************************                 DO0030
F8130.                                                           DO0030
       MOVE  I-0030-MATE          TO O-0030-MATE.                DO0030
       MOVE  I-0030-RELEA         TO O-0030-RELEA.               DO0030
       MOVE  I-0030-RUE           TO O-0030-RUE.                 DO0030
       MOVE  I-0030-COPOS         TO O-0030-COPOS.               DO0030
       MOVE  I-0030-REFCLI        TO O-0030-REFCLI.              DO0030
       MOVE  I-0030-DATE          TO O-0030-DATE.                DO0030
       MOVE  I-0030-CORRES        TO O-0030-CORRES.              DO0030
       MOVE  E-0030-REMIS         TO F-0030-REMIS.               DO0030
       MOVE  ZERO  TO  ICATR.                                    DO0030
F8130-GRP.   ADD 1 TO  ICATR                                     DO0030
```

```
           MOVE  J-0030-LINE  (ICATR) TO I-0030-LINE                 DO0030
           MOVE  P-0030-LINE  (ICATR) TO O-0030-LINE                 DO0030
           MOVE  I-0030-CODMVT        TO O-0030-CODMVT.              DO0030
           MOVE  I-0030-FOURNI        TO O-0030-FOURNI.              DO0030
           MOVE  E-0030-QTMAC         TO F-0030-QTMAC.               DO0030
           MOVE  I-0030-INFOR         TO O-0030-INFOR.               DO0030
           MOVE  O-0030-LINE          TO P-0030-LINE  (ICATR).       DO0030
        IF ICATR  < IRR GO TO F8130-GRP.                             DO0030
           MOVE  I-0030-EDIT          TO O-0030-EDIT.                DO0030
    F8130-FN.    EXIT.                                               DO0030
    F8145.                                                           DO0030
           MOVE  T01004 TO   S01004.                                 DO0030
           MOVE  T01015 TO   S01015.                                 DO0030
           MOVE  T01060 TO   S01060.                                 DO0030
           MOVE  T01071 TO   S01071.                                 DO0030
           MOVE  T03018 TO   S03018.                                 DO0030
           MOVE  T03034 TO   S03034.                                 DO0030
           MOVE  T03063 TO   S03063.                                 DO0030
           MOVE  T04013 TO   S04013.                                 DO0030
           MOVE  T05009 TO   S05009.                                 DO0030
           MOVE  T05052 TO   S05052.                                 DO0030
           MOVE  T05074 TO   S05074.                                 DO0030
           MOVE  T06016 TO   S06016.                                 DO0030
           MOVE  T06061 TO   S06061.                                 DO0030
           MOVE  T07018 TO   S07018.                                 DO0030
           MOVE  T07061 TO   S07061.                                 DO0030
           MOVE  T10003 TO   S10003.                                 DO0030
           MOVE  T10007 TO   S10007.                                 DO0030
           MOVE  T10016 TO   S10016.                                 DO0030
           MOVE  T10026 TO   S10026.                                 DO0030
           MOVE  T10035 TO   S10035.                                 DO0030
           MOVE  T10042 TO   S10042.                                 DO0030
           MOVE  T11003 TO   S11003.                                 DO0030
           MOVE  T11007 TO   S11007.                                 DO0030
           MOVE  T11016 TO   S11016.                                 DO0030
           MOVE  T11026 TO   S11026.                                 DO0030
           MOVE  T11035 TO   S11035.                                 DO0030
           MOVE  T11042 TO   S11042.                                 DO0030
           MOVE  T12003 TO   S12003.                                 DO0030
           MOVE  T12007 TO   S12007.                                 DO0030
           MOVE  T12016 TO   S12016.                                 DO0030
           MOVE  T12026 TO   S12026.                                 DO0030
           MOVE  T12035 TO   S12035.                                 DO0030
           MOVE  T12042 TO   S12042.                                 DO0030
           MOVE  T13003 TO   S13003.                                 DO0030
           MOVE  T13007 TO   S13007.                                 DO0030
           MOVE  T13016 TO   S13016.                                 DO0030
           MOVE  T13026 TO   S13026.                                 DO0030
           MOVE  T13035 TO   S13035.                                 DO0030
           MOVE  T13042 TO   S13042.                                 DO0030
           MOVE  T14003 TO   S14003.                                 DO0030
           MOVE  T14007 TO   S14007.                                 DO0030
           MOVE  T14016 TO   S14016.                                 DO0030
           MOVE  T14026 TO   S14026.                                 DO0030
           MOVE  T14035 TO   S14035.                                 DO0030
           MOVE  T14042 TO   S14042.                                 DO0030
           MOVE  T15003 TO   S15003.                                 DO0030
           MOVE  T15007 TO   S15007.                                 DO0030
           MOVE  T15016 TO   S15016.                                 DO0030
           MOVE  T15026 TO   S15026.                                 DO0030
           MOVE  T15035 TO   S15035.                                 DO0030
           MOVE  T15042 TO   S15042.                                 DO0030
           MOVE  T16003 TO   S16003.                                 DO0030
           MOVE  T16007 TO   S16007.                                 DO0030
           MOVE  T16016 TO   S16016.                                 DO0030
           MOVE  T16026 TO   S16026.                                 DO0030
           MOVE  T16035 TO   S16035.                                 DO0030
           MOVE  T16042 TO   S16042.                                 DO0030
           MOVE  T17003 TO   S17003.                                 DO0030
           MOVE  T17007 TO   S17007.                                 DO0030
           MOVE  T17016 TO   S17016.                                 DO0030
           MOVE  T17026 TO   S17026.                                 DO0030
           MOVE  T17035 TO   S17035.                                 DO0030
           MOVE  T17042 TO   S17042.                                 DO0030
           MOVE  T18003 TO   S18003.                                 DO0030
           MOVE  T18007 TO   S18007.                                 DO0030
           MOVE  T18016 TO   S18016.                                 DO0030
```

```
       MOVE  T18026 TO   S18026.                                 DO0030
       MOVE  T18035 TO   S18035.                                 DO0030
       MOVE  T18042 TO   S18042.                                 DO0030
       MOVE  T20022 TO   S20022.                                 DO0030
       MOVE  T23002 TO   S23002.                                 DO0030
       MOVE  T24002 TO   S24002.                                 DO0030
F8145-FN.    EXIT.                                               DO0030
F8155.                                                           DO0030
       MOVE  S03034 TO   R03034 T03034.                          DO0030
       MOVE  S03063 TO   R03063 T03063.                          DO0030
       MOVE  S05009 TO   R05009 T05009.                          DO0030
       MOVE  S05052 TO   R05052.                                 DO0030
       MOVE  S05074 TO   R05074 T05074.                          DO0030
       MOVE  S06016 TO   R06016 T06016.                          DO0030
       MOVE  S06061 TO   R06061 T06061.                          DO0030
       MOVE  S07018 TO   R07018 T07018.                          DO0030
       MOVE  S07061 TO   R07061 T07061.                          DO0030
       MOVE  S10003 TO   R10003 T10003.                          DO0030
       MOVE  S10007 TO   R10007 T10007.                          DO0030
       MOVE  S10016 TO   R10016 T10016.                          DO0030
       MOVE  S10026 TO   R10026.                                 DO0030
       MOVE  S10035 TO   R10035.                                 DO0030
       MOVE  S10042 TO   R10042 T10042.                          DO0030
       MOVE  S11003 TO   R11003 T11003.                          DO0030
       MOVE  S11007 TO   R11007 T11007.                          DO0030
       MOVE  S11016 TO   R11016 T11016.                          DO0030
       MOVE  S11026 TO   R11026.                                 DO0030
       MOVE  S11035 TO   R11035.                                 DO0030
       MOVE  S11042 TO   R11042 T11042.                          DO0030
       MOVE  S12003 TO   R12003 T12003.                          DO0030
       MOVE  S12007 TO   R12007 T12007.                          DO0030
       MOVE  S12016 TO   R12016 T12016.                          DO0030
       MOVE  S12026 TO   R12026.                                 DO0030
       MOVE  S12035 TO   R12035.                                 DO0030
       MOVE  S12042 TO   R12042 T12042.                          DO0030
       MOVE  S13003 TO   R13003 T13003.                          DO0030
       MOVE  S13007 TO   R13007 T13007.                          DO0030
       MOVE  S13016 TO   R13016 T13016.                          DO0030
       MOVE  S13026 TO   R13026.                                 DO0030
       MOVE  S13035 TO   R13035.                                 DO0030
       MOVE  S13042 TO   R13042 T13042.                          DO0030
       MOVE  S14003 TO   R14003 T14003.                          DO0030
       MOVE  S14007 TO   R14007 T14007.                          DO0030
       MOVE  S14016 TO   R14016 T14016.                          DO0030
       MOVE  S14026 TO   R14026.                                 DO0030
       MOVE  S14035 TO   R14035.                                 DO0030
       MOVE  S14042 TO   R14042 T14042.                          DO0030
       MOVE  S15003 TO   R15003 T15003.                          DO0030
       MOVE  S15007 TO   R15007 T15007.                          DO0030
       MOVE  S15016 TO   R15016 T15016.                          DO0030
       MOVE  S15026 TO   R15026.                                 DO0030
       MOVE  S15035 TO   R15035.                                 DO0030
       MOVE  S15042 TO   R15042 T15042.                          DO0030
       MOVE  S16003 TO   R16003 T16003.                          DO0030
       MOVE  S16007 TO   R16007 T16007.                          DO0030
       MOVE  S16016 TO   R16016 T16016.                          DO0030
       MOVE  S16026 TO   R16026.                                 DO0030
       MOVE  S16035 TO   R16035.                                 DO0030
       MOVE  S16042 TO   R16042 T16042.                          DO0030
       MOVE  S17003 TO   R17003 T17003.                          DO0030
       MOVE  S17007 TO   R17007 T17007.                          DO0030
       MOVE  S17016 TO   R17016 T17016.                          DO0030
       MOVE  S17026 TO   R17026.                                 DO0030
       MOVE  S17035 TO   R17035.                                 DO0030
       MOVE  S17042 TO   R17042 T17042.                          DO0030
       MOVE  S18003 TO   R18003 T18003.                          DO0030
       MOVE  S18007 TO   R18007 T18007.                          DO0030
       MOVE  S18016 TO   R18016 T18016.                          DO0030
       MOVE  S18026 TO   R18026.                                 DO0030
       MOVE  S18035 TO   R18035.                                 DO0030
       MOVE  S18042 TO   R18042 T18042.                          DO0030
       MOVE  S20022 TO   R20022 T20022.                          DO0030
F8155-FN.    EXIT.                                               DO0030
F81-FN.      EXIT.                                               DO0030
```

5.20. USER CALLED FUNCTIONS (F93)

```
             +-----------------------------------+              P000
 LEVEL 10    I ZIP CODE VALIDATION               I              P000
             +-----------------------------------+              P000
F93CP.                                                          P000
    MOVE 1 TO     IWP20R.                                       P100
F93CP-100. IF     IWP20R NOT >    IWP20L                        P100
    AND             WP20-COPOS   (IWP20R)                       P100
    NOT =            WP30-COPOS                                 P100
    ADD  1 TO     IWP20R    GO TO F93CP-100.                    P100
          IF    IWP20R > IWP20L                                 P200
    MOVE        "5" TO DEL-ER                                   P200
           GO TO F93CP-FN.                                      P220
F93CP-FN.    EXIT.                                              DO0030
```

6. 'HELP' FUNCTION

6.1. INTRODUCTION

INTRODUCTION

This function provides the user with dynamic access to the 'Help' documentation of an On-Line Screen or of Data Elements called on the On-Line Screen, and implements a program called the 'HELP' Function.

The purpose of this function is to display the error messages contained in the Error Message file.

For more information on On-Line Screen General Documentation and called Data Elements, refer to subchapter "DIALOGUE OR SCREEN DEFINITION" in the OLSD Reference Manual.

USING THE "HELP" FUNCTION PROGRAM

An additional Screen must be defined in order to use the 'HELP' function in a Dialogue. This screen is part of the Dialogue, and thus the first two characters of its screen code must be the same as the Dialogue code, followed by the Screen Code 'HELP'.

For an XX Dialogue, the HELP Screen code will be "XXHELP".

The "XXHELP" Screen must be defined but not described; only the Screen Definition must be created. It must have the same variables as the Dialogue. There are no restrictions on coding external names (PROGRAM).

The user must generate and then compile the "XXHELP" program (the generated COBOL program has the same structure as an On-Line Dialogue).

NOTES: A "HELP" program generated from a dialogue can be used by 'n' dialogues, and is generated only once. The different dialogue "XXHELP" screens will have to use the same external names (PROGRAM).

The calling program backs up the input fields in an HE file before entering the "HELP" function.

The HELP program ensures the display of the documentation as follows:

- For the Screen documentation:

. Screen-related documentation (texts and comments),

. Segment access error messages.

- For the Data Element documentation:

. Standard error messages generated by the System,

. Explicit manual error messages,

. Description lines associated with the Data Element (CH: E......D),

. Screen general documentation lines associated with the Data Element (CH: O......G).

(For further details, refer to Subchapter "ERROR MESSAGES: CODING", Chapter "ERROR MESSAGES - HELP FUNCTION" in the ON-LINE SYSTEMS DEVELOPMENT Reference Manual).

NOTE: If the Error Message file is generated with the 'C1' option, only the error messages are generated. If it is generated with the 'C2' option, in addition to the error messages, comments and documentation associated with the Screen are also generated.

6.2. GENERATED 'HELP' PROGRAM

```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION                *PDLB.NDOC.APC.168!
! ON-LINE SCREEN DEFINITION..........: DOHELP                                  !
!                                                                              !
! SCREEN NAME........................: HELP FUNCTION SCREEN                    !
!                                                                              !
! SCREEN SIZE (LINES, COLUMNS) ......:   24       080                          !
! LABEL TYPE, TABS, INITIALIZATION...:   L        01       _                   !
! HELP CHARACTER SCREEN, DATA ELEMENT:   10       11                           !
!                                                                              !
!                                      LABELS   DISPLAY  INPUT  ER.MESS.  ER.FL!
! INTENSITY ATTRIBUTE ...............:   N        N        N        N        N !
! PRESENTATION ATTRIBUTE ............:   N        N        N        N        N !
! COLOR ATTRIBUTE ...................:   W        W        W        W        W !
!                                                                              !
! TYPE OF COBOL AND MAP TO GENERATE..:   3   0     PC MICROFOCUS MS/DOS        !
! CONTROL CARD OPTIONS FRONT & BACK..:            (PROGRAM)               (MAP)!
! EXTERNAL NAMES ....................:   DOP050   (PROGRAM)      DOM050   (MAP)!
! TRANSACTION CODE...................: * DO50                                  !
!                                                                              !
!                                                                              !
! EXPLICIT KEYWORDS..: DO                                                      !
! SESSION NUMBER.....: 0002        LIBRARY......: ACC    LOCK....:             !
! *** END ***                                                                  !
! O: C1 CH: Odohelp                     ACTION:                                !
--------------------------------------------------------------------------------
```

```
 --------------------------------------------------------------------------------
 !                                                                              !
 !DOCUMENTATION OF THE SCREEN :  *** ORDER DETAIL    ***                        !
 !                                                                              !
 !                                                                              !
 !         ON THIS SCREEN YOU ENTER AN ORDER FOR DOCUMENTATION                  !
 !         FOR ANY GIVEN CLIENT.                                                !
 !         EACH ACCESSIBLE FIELD OF THIS SCREEN IS DOCUMENTED. IN               !
 !         ORDER TO OBTAIN THIS DOCUMENTATION, PLACE THE CURSOR                 !
 !         UNDER THE CHOSEN FIELD AND USE THE PROGRAMMABLE FUNC-                !
 !         TION KEY PF11.                                                       !
 !         FROM THIS SCREEN, IT IS POSSIBLE TO ACCESS ANY SCREEN                !
 !         TRANSACTION BY USING THE OFFERED CHOICES WHICH APPEAR                !
 !         AT THE BOTTOM OF THE SCREEN.                                         !
 !         THE UPDATE IS VALIDATED BY THE PROGRAMMABLE FUNCTION                 !
 !         KEY PF07. IF THE SCREEN APPEARS INSUFFICIENT; IT IS                  !
 !         POSSIBLE TO SCROLL FORWARD BY USING THE PF08 KEY.                    !
 !                                                                              !
 ! F019 UNKNOWN ZIP CODE.                                                       !
 !                                                                              !
 ! F028 TECHNICAL PROBLEM  CALL E.D.P. DEPT.(CODE 030-CD05 F8)                  !
 !                                                                              !
 !                                                                              !
 !CHOICE............: S    (E: END - T: TOP - S: NEXT)                          !
 !                                                                              !
 --------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                                                                              !
!DOCUMENTATION OF DATA ELEMENT: QUANTITY ORDERED                               !
!                                                                              !
!                                                                              !
!         IN THE 'ORDER FIELD' YOU ENTER THE NUMBER OF MANUALS                 !
!         ORDERED.                                                             !
!         DEPENDING UPON THE STOCK AVAILABLE, THE SYSTEM CALCU-                !
!         LATES THE QUANTITY DELIVERED AND, IF NEEDED, THE AMOUNT              !
!         OUTSTANDING.                                                         !
! (01 50)      ABOVE 50  SEND BY ANOTHER CHANNEL                               !
!                                                                              !
! 0112 INVALID ABSENCE FOR THE FIELD QUANTITY ORDERED                          !
!                                                                              !
! 0114 NON-NUMERICAL CLASS FIELD     QUANTITY ORDERED                          !
!                                                                              !
! 0115 INVALID VALUE FOR THE FIELD   QUANTITY ORDERED                          !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!CHOICE............: S    (E: END - T: TOP - S: NEXT)                          !
!                                                                              !
--------------------------------------------------------------------------------
```

```
IDENTIFICATION DIVISION.
PROGRAM-ID. DOP050.                                              DOHELP
AUTHOR.     HELP FUNCTION SCREEN.                                DOHELP
DATE-COMPILED. 04/14/93.                                         DOHELP
ENVIRONMENT DIVISION.                                            DOHELP
CONFIGURATION SECTION.                                           DOHELP
SOURCE-COMPUTER. PC-MICROFOCUS.                                  DOHELP
OBJECT-COMPUTER. PC-MICROFOCUS.                                  DOHELP
SPECIAL-NAMES.                                                   DOHELP
     DECIMAL-POINT IS COMMA.                                     DOHELP
INPUT-OUTPUT SECTION.                                            DOHELP
FILE-CONTROL.                                                    DOHELP
     SELECT    EM-FILE                                           DOHELP
     ASSIGN  TO     EMTEST                                       DOHELP
     ORGANIZATION INDEXED                                        DOHELP
     ACCESS IS DYNAMIC                                           DOHELP
     RECORD KEY IS EM00-EMKEY                                    DOHELP
     LOCK MODE IS MANUAL WITH LOCK ON RECORDS                    DOHELP
     FILE STATUS 1-EM00-STATUS.                                  DOHELP
DATA DIVISION.                                                   DOHELP
FILE SECTION.                                                    DOHELP
FD           EM-FILE.                                            DOHELP
01                 EM00.                                         DOHELP
      05           EM00-EMKEY.                                   DOHELP
       10          EM00-LIBRA  PICTURE X(3).                     DOHELP
       10          EM00-ENTYP  PICTURE X.                        DOHELP
       10          EM00-XEMKY.                                   DOHELP
        15         EM00-PROGR  PICTURE X(6).                     DOHELP
        15         EM00-ERCOD.                                   DOHELP
         20        EM00-ERCOD9 PICTURE 9(3).                     DOHELP
        15         EM00-ERTYP  PICTURE X.                        DOHELP
       10          EM00-LINUM  PICTURE 9(3).                     DOHELP
      05           EM00-ERLVL  PICTURE X.                        DOHELP
      05           EM00-ERMSG  PICTURE X(66).                    DOHELP
      05           FILLER      PICTURE X(6).                     DOHELP
WORKING-STORAGE SECTION.                                         DOHELP
01   WSS-BEGIN.                                                  DOHELP
     05 FILLER PICTURE X(7) VALUE "WORKING".                     DOHELP
     05 IK     PICTURE X.                                        DOHELP
     05 BLANC  PICTURE X VALUE SPACE.                            DOHELP
     05 OPER   PICTURE X.                                        DOHELP
     05 OPERD  PICTURE X VALUE SPACE.                            DOHELP
     05 CATX   PICTURE X.                                        DOHELP
     05 CATM   PICTURE X.                                        DOHELP
     05 ICATR  PICTURE 99.                                       DOHELP
     05 SCR-ER PICTURE X.                                        DOHELP
     05 FT     PICTURE X.                                        DOHELP
     05 ICF    PICTURE X.                                        DOHELP
     05 OCF    PICTURE X.                                        DOHELP
     05 CAT-ER PICTURE X.                                        DOHELP
   05   CURPOS.                                                  DOHELP
    10  CPOSL         PICTURE 99.                                DOHELP
    10  CPOSC         PICTURE 999.                               DOHELP
     05 INA    PICTURE 999 VALUE 000.                            DOHELP
     05 INR    PICTURE 999 VALUE 000.                            DOHELP
     05 INZ    PICTURE 999 VALUE 001.                            DOHELP
     05 IRR     PICTURE 99 VALUE 17.                             DOHELP
     05 INT    PICTURE 999 VALUE 001.                            DOHELP
     05 IER     PICTURE 99 VALUE 01.                             DOHELP
     05 DEL-ER  PICTURE X.                                       DOHELP
01   PACBASE-CONSTANTS.                                          DOHELP
 OLSD DATES PACE30 : /02/93                                      DOHELP
            PACE80 : 05/03/93   PAC7SG : 930225                  DOHELP
     05 SESSI  PICTURE X(5) VALUE "0327 ".                       DOHELP
     05 LIBRA  PICTURE X(3) VALUE "APC".                         DOHELP
     05 DATGN  PICTURE X(8) VALUE "04/14/93".                    DOHELP
     05 PROGR  PICTURE X(6) VALUE "DOHELP".                      DOHELP
     05 PROGE  PICTURE X(8) VALUE "DOP050  ".                    DOHELP
     05 TIMGN  PICTURE X(8) VALUE "15:12:01".                    DOHELP
     05 USERCO PICTURE X(8) VALUE "PDKG    ".                    DOHELP
     05 PRCGI  PICTURE X(8) VALUE "ZAR980".                      DOHELP
     05      5-HELP-PROGE  PICTURE X(8).                         DOHELP
01  DATCE.                                                       DOHELP
  05  CENTUR   PICTURE XX VALUE "19".                            DOHELP
     05 DATOR.                                                   DOHELP
     10 DATOA  PICTURE XX.                                       DOHELP
     10 DATOM  PICTURE XX.                                       DOHELP
     10 DATOJ  PICTURE XX.                                       DOHELP
01  DAT6.                                                        DOHELP
     10 DAT61.                                                   DOHELP
     15 DAT619 PICTURE 99.                                       DOHELP
     10 DAT62.                                                   DOHELP
     15 DAT629 PICTURE 99.                                       DOHELP
     10 DAT63  PICTURE XX.                                       DOHELP
01  DAT7.                                                        DOHELP
     10 DAT71  PICTURE XX.                                       DOHELP
     10 DAT72  PICTURE XX.                                       DOHELP
     10 DAT73  PICTURE XX.                                       DOHELP
01  DAT8.                                                        DOHELP
     10 DAT81  PICTURE XX.                                       DOHELP
     10 DAT8S1 PICTURE X.                                        DOHELP
     10 DAT82  PICTURE XX.                                       DOHELP
     10 DAT8S2 PICTURE X.                                        DOHELP
     10 DAT83  PICTURE XX.                                       DOHELP
01  DATSEP     PICTURE X VALUE "/".                              DOHELP
01  DATSET     PICTURE X VALUE "-".                              DOHELP
01  DATCTY.                                                      DOHELP
  05  DATCTY9  PICTURE 99.                                       DOHELP
01  DAT6C.                                                       DOHELP
  10  DAT61C   PICTURE XX.                                       DOHELP
  10  DAT62C   PICTURE XX.                                       DOHELP
  10  DAT63C   PICTURE XX.                                       DOHELP
  10  DAT64C   PICTURE XX.                                       DOHELP
01  DAT7C.                                                       DOHELP
  10  DAT71C   PICTURE XX.                                       DOHELP
  10  DAT72C   PICTURE XX.                                       DOHELP
  10  DAT73C   PICTURE XX.                                       DOHELP
  10  DAT74C   PICTURE XX.                                       DOHELP
01  DAT8C.                                                       DOHELP
  10  DAT81C   PICTURE XX.                                       DOHELP
  10  DAT8S1C  PICTURE X    VALUE "/".                           DOHELP
  10  DAT82C   PICTURE XX.                                       DOHELP
  10  DAT8S2C  PICTURE X    VALUE "/".                           DOHELP
  10  DAT83C   PICTURE XX.                                       DOHELP
  10  DAT84C   PICTURE XX.                                       DOHELP
01  DAT8G.                                                       DOHELP
  10  DAT81G   PICTURE XX.                                       DOHELP
  10  DAT82G   PICTURE XX.                                       DOHELP
  10  DAT8S1G  PICTURE X    VALUE "-".                           DOHELP
  10  DAT83G   PICTURE XX.                                       DOHELP
  10  DAT8S2G  PICTURE X    VALUE "-".                           DOHELP
  10  DAT84G   PICTURE XX.                                       DOHELP
01  TIMCO.                                                       DOHELP
 02  TIMCOG.                                                     DOHELP
   05  TIMCOH  PICTURE XX.                                       DOHELP
   05  TIMCOM  PICTURE XX.                                       DOHELP
   05  TIMCOS  PICTURE XX.                                       DOHELP
  02 TIMCOC    PICTURE XX.                                       DOHELP
01  TIMDAY.                                                      DOHELP
   05  TIMHOU  PICTURE XX.                                       DOHELP
   05  TIMS1   PICTURE X    VALUE ":".                           DOHELP
   05  TIMMIN  PICTURE XX.                                       DOHELP
   05  TIMS2   PICTURE X    VALUE ":".                           DOHELP
   05  TIMSEC  PICTURE XX.                                       DOHELP
01    CONFIGURATIONS.                                            DOHELP
     05      EM00-CF      PICTURE X.                             DOHELP
01     STATUS-AREA.                                              DOHELP
     05    1-EM00-STATUS PICTURE XX VALUE ZERO.                  DOHELP
01              K-HELP-CLE.                                      *AA010
     03          K-RHELP-LIGNE  OCCURS 1.                        *AA010
     10          K-REM00-EMKEY  PICTURE X(17).                   *AA010
01          HELP-MESSO.                                          *AA040
   02      HELP-MESSI.                                           *AA040
     05    S01002  PICTURE X(011).                               *AA040
     05    S03002  PICTURE X(030).                               *AA040
     05    S03033  PICTURE X(036).                               *AA040
     05    S05004  PICTURE X(074).                               *AA040
     05    S06004  PICTURE X(074).                               *AA040
     05    S07004  PICTURE X(074).                               *AA040
     05    S08004  PICTURE X(074).                               *AA040
     05    S09004  PICTURE X(074).                               *AA040
     05    S10004  PICTURE X(074).                               *AA040
     05    S11004  PICTURE X(074).                               *AA040
     05    S12004  PICTURE X(074).                               *AA040
     05    S13004  PICTURE X(074).                               *AA040
     05    S14004  PICTURE X(074).                               *AA040
     05    S15004  PICTURE X(074).                               *AA040
     05    S16004  PICTURE X(074).                               *AA040
     05    S17004  PICTURE X(074).                               *AA040
     05    S18004  PICTURE X(074).                               *AA040
     05    S19004  PICTURE X(074).                               *AA040
     05    S20004  PICTURE X(074).                               *AA040
     05    S21004  PICTURE X(074).                               *AA040
     05    S23002  PICTURE X(019).                               *AA040
     05    S23022  PICTURE X(001).                               *AA040
     05    S23028  PICTURE X(030).                               *AA040
     05    S24002  PICTURE X(072).                               *AA040
01      AT-HELP-MESSO.                                           *AA041
      05 AT-S01002  PICTURE X(12) VALUE "01002011LNNW".          *AA041
      05 AT-S03002  PICTURE X(12) VALUE "03002030FNNW".          *AA041
      05 AT-R000101-LIBEC  REDEFINES AT-S03002 PICTURE X(12).    *AA041
      05 AT-S03033  PICTURE X(12) VALUE "03033036FNNW".          *AA041
      05 AT-R000101-LIENT  REDEFINES AT-S03033 PICTURE X(12).    *AA041
      05 AT-S05004  PICTURE X(12) VALUE "05004074FNNW".          *AA041
      05 AT-R010101-ERMSGD REDEFINES AT-S05004 PICTURE X(12).    *AA041
      05 AT-S06004  PICTURE X(12) VALUE "06004074FNNW".          *AA041
      05 AT-R020101-ERMSGD REDEFINES AT-S06004 PICTURE X(12).    *AA041
      05 AT-S07004  PICTURE X(12) VALUE "07004074FNNW".          *AA041
      05 AT-R030101-ERMSGD REDEFINES AT-S07004 PICTURE X(12).    *AA041
      05 AT-S08004  PICTURE X(12) VALUE "08004074FNNW".          *AA041
      05 AT-R040101-ERMSGD REDEFINES AT-S08004 PICTURE X(12).    *AA041
      05 AT-S09004  PICTURE X(12) VALUE "09004074FNNW".          *AA041
      05 AT-R050101-ERMSGD REDEFINES AT-S09004 PICTURE X(12).    *AA041
      05 AT-S10004  PICTURE X(12) VALUE "10004074FNNW".          *AA041
      05 AT-R060101-ERMSGD REDEFINES AT-S10004 PICTURE X(12).    *AA041
      05 AT-S11004  PICTURE X(12) VALUE "11004074FNNW".          *AA041
      05 AT-R070101-ERMSGD REDEFINES AT-S11004 PICTURE X(12).    *AA041
      05 AT-S12004  PICTURE X(12) VALUE "12004074FNNW".          *AA041
      05 AT-R080101-ERMSGD REDEFINES AT-S12004 PICTURE X(12).    *AA041
      05 AT-S13004  PICTURE X(12) VALUE "13004074FNNW".          *AA041
      05 AT-R090101-ERMSGD REDEFINES AT-S13004 PICTURE X(12).    *AA041
      05 AT-S14004  PICTURE X(12) VALUE "14004074FNNW".          *AA041
      05 AT-R100101-ERMSGD REDEFINES AT-S14004 PICTURE X(12).    *AA041
      05 AT-S15004  PICTURE X(12) VALUE "15004074FNNW".          *AA041
      05 AT-R110101-ERMSGD REDEFINES AT-S15004 PICTURE X(12).    *AA041
      05 AT-S16004  PICTURE X(12) VALUE "16004074FNNW".          *AA041
      05 AT-R120101-ERMSGD REDEFINES AT-S16004 PICTURE X(12).    *AA041
      05 AT-S17004  PICTURE X(12) VALUE "17004074FNNW".          *AA041
      05 AT-R130101-ERMSGD REDEFINES AT-S17004 PICTURE X(12).    *AA041
      05 AT-S18004  PICTURE X(12) VALUE "18004074FNNW".          *AA041
      05 AT-R140101-ERMSGD REDEFINES AT-S18004 PICTURE X(12).    *AA041
      05 AT-S19004  PICTURE X(12) VALUE "19004074FNNW".          *AA041
      05 AT-R150101-ERMSGD REDEFINES AT-S19004 PICTURE X(12).    *AA041
      05 AT-S20004  PICTURE X(12) VALUE "20004074FNNW".          *AA041
      05 AT-R160101-ERMSGD REDEFINES AT-S20004 PICTURE X(12).    *AA041
      05 AT-S21004  PICTURE X(12) VALUE "21004074FNNW".          *AA041
      05 AT-R170101-ERMSGD REDEFINES AT-S21004 PICTURE X(12).    *AA041
      05 AT-S23002  PICTURE X(12) VALUE "23002019FNNW".          *AA041
      05 AT-R000101-LICHOI REDEFINES AT-S23002 PICTURE X(12).    *AA041
      05 AT-S23022  PICTURE X(12) VALUE "23022001 NNW".          *AA041
      05 AT-R000101-OPDOC  REDEFINES AT-S23022 PICTURE X(12).    *AA041
      05 AT-S23028  PICTURE X(12) VALUE "23028030FNNW".          *AA041
      05 AT-R000101-LIOPT  REDEFINES AT-S23028 PICTURE X(12).    *AA041
      05 AT-S24002  PICTURE X(12) VALUE "24002072FNNW".          *AA041
      05 AT-R000101-ERMSG  REDEFINES AT-S24002 PICTURE X(12).    *AA041
01      AT-HELP-MESSA   REDEFINES   AT-HELP-MESSO.               *AA041
     05 AT-HELP-LIGNE   OCCURS 024.                              *AA041
     10 AT-HELP-YPCUR   PICTURE 9(5).                            *AA041
     10 AT-HELP-LENGTH  PICTURE 999.                             *AA041
     10 AT-HELP-ATTRN   PICTURE X.                               *AA041
     10 AT-HELP-ATTRI   PICTURE X.                               *AA041
     10 AT-HELP-ATTRP   PICTURE X.                               *AA041
     10 AT-HELP-ATTRC   PICTURE X.                               *AA041
01        INPUT-HELP.                                            *AA042
     05    R23022  PICTURE X(1).                                 *AA042
01           INPUT-SCREEN-FIELDS  REDEFINES  INPUT-HELP.         *AA045
     02        I-HELP.                                           *AA045
     05        I-HELP-OPDOC  PICTURE X.                          *AA045
01       OUTPUT-HELP.                                            *AA049
     05    T03002  PICTURE X(30).                                *AA049
     05    T03033  PICTURE X(36).                                *AA049
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         05    T05004  PICTURE X(74).                                *AA049
         05    T06004  PICTURE X(74).                                *AA049
         05    T07004  PICTURE X(74).                                *AA049
         05    T08004  PICTURE X(74).                                *AA049
         05    T09004  PICTURE X(74).                                *AA049
         05    T10004  PICTURE X(74).                                *AA049
         05    T11004  PICTURE X(74).                                *AA049
         05    T12004  PICTURE X(74).                                *AA049
         05    T13004  PICTURE X(74).                                *AA049
         05    T14004  PICTURE X(74).                                *AA049
         05    T15004  PICTURE X(74).                                *AA049
         05    T16004  PICTURE X(74).                                *AA049
         05    T17004  PICTURE X(74).                                *AA049
         05    T18004  PICTURE X(74).                                *AA049
         05    T19004  PICTURE X(74).                                *AA049
         05    T20004  PICTURE X(74).                                *AA049
         05    T21004  PICTURE X(74).                                *AA049
         05    T23002  PICTURE X(19).                                *AA049
         05    T23022  PICTURE X(1).                                 *AA049
         05    T23028  PICTURE X(30).                                *AA049
         05    T24002  PICTURE X(72).                                *AA049
    01           OUTPUT-SCREEN-FIELDS REDEFINES OUTPUT-HELP.         *AA050
         02      O-HELP.                                             *AA050
         05      O-HELP-LIBEC  PICTURE X(30).                        *AA050
         05      O-HELP-LIENT  PICTURE X(36).                        *AA050
         05      P-HELP-LIGNE  OCCURS 17.                            *AA050
         10      FILLER        PICTURE X(74).                        *AA050
         05      O-HELP-LICHOI PICTURE X(19).                        *AA050
         05      O-HELP-OPDOC  PICTURE X.                            *AA050
         05      O-HELP-LIOPT  PICTURE X(30).                        *AA050
         05      O-HELP-ERMS.                                        *AA050
         10      FILLER OCCURS 1.                                    *AA050
         15      O-HELP-ERMSG  PICTURE X(72).                        *AA050
    01           REPEAT-LINE.                                        *AA050
         02      O-HELP-LIGNE.                                       *AA050
         05      O-HELP-ERMSGD PICTURE X(74).                        *AA050
    01      CMES-COMMUNICATION.                                      *AA060
      05    CMES-YR00     PICTURE X(4000).                           *AA060
      05    CMES-YO00     PICTURE X(6000).                           *AA060
      05    CMES-NBZVAR   PICTURE X.                                 *AA060
      05    CMES-YCRE     PICTURE X.                                 *AA060
      05    CMES-DIALOG   PICTURE XX.                                *AA060
      05    CMES-YPCUR    PICTURE 9(5).                              *AA060
      05    CMES-NUMFLD   PICTURE 999.                               *AA060
      05    CMES-FMES     PICTURE X.                                 *AA060
      05    CMES-STATUS.                                             *AA060
        10  CMES-RETCOD   PICTURE 99.                                *AA060
      05    I-PFKEY       PICTURE XX.                                *AA060
      05    FILLER        PICTURE X(100).                            *AA060
    01           VALIDATION-TABLE-FIELDS.                            *AA150
         02      DE-ERR.                                             *AA150
         05       DE-ER        PICTURE X                             *AA150
                        OCCURS 001.                                  *AA150
         02      DE-E   REDEFINES DE-ERR.                            *AA150
         03     ER-HELP-ENDRE.                                       *AA150
         05          ER-HELP-OPDOC  PICTURE X.                       *AA150
    01   TT-DAT.                                                     *AA200
         05 T-DAT      PICTURE X OCCURS 5.                           *AA200
    01   USERS-ERROR.                                                *AA200
         05 XEMKY.                                                   *AA200
            10 XPROGR   PICTURE X(6).                                *AA200
            10 XERCD    PICTURE X(4).                                *AA200
         05 T-XEMKY     OCCURS       01.                             *AA200
            10 T-XPROGR PICTURE X(6).                                *AA200
            10 T-XERCD  PICTURE X(4).                                *AA200
    01    PACBASE-INDEXES COMPUTATIONAL SYNC.                        *AA200
         05  TALLI      PICTURE S9(4) VALUE ZERO.                    *AA200
         05 K01         PICTURE S9(4).                               *AA200
         05 K02         PICTURE S9(4).                               *AA200
         05 K03         PICTURE S9(4).                               *AA200
         05 K04         PICTURE S9(4).                               *AA200
         05 K50R        PICTURE S9(4) VALUE ZERO.                    *AA200
         05 K50L        PICTURE S9(4) VALUE ZERO.                    *AA200
         05 K50M        PICTURE S9(4)                                *AA200
                        VALUE       +01.                             *AA200
         05    5-CA00-LTH  PICTURE S9(4) VALUE +0147.                *AA200
         05    5-EM00-LTH  PICTURE S9(4) VALUE +0090.                *AA200
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     05    LTH         PICTURE S9(4) VALUE ZERO.                  *AA200
     05      5-HELP-LENGTH PICTURE S9(4)                          *AA200
                         VALUE      +0853.                        *AA200
01           TABLE-OF-ATTRIBUTES.                                 *AA250
     02      DE-ATT.                                              *AA250
     03      DE-ATT1           OCCURS 4.                          *AA250
     05      DE-AT   PICTURE X                                    *AA250
                    OCCURS 001.                                   *AA250
     02      DE-A    REDEFINES DE-ATT.                            *AA250
     03      DE-ATT2           OCCURS 4.                          *AA250
     04      A-HELP-ENDRE.                                        *AA250
     05      A-HELP-OPDOC  PICTURE X.                             *AA250
01      AT-SV.                                                    *AA260
      10   FILLER PICTURE X(6) VALUE "022NNW".                    *AA260
01      TABLE-SV-AT REDEFINES AT-SV.                              *AA265
     02 LIGNE-SV-AT OCCURS 001.                                   *AA265
     05 SV-AT     PICTURE 999.                                    *AA265
     05 SV-ATTRI  PICTURE X.                                      *AA265
     05 SV-ATTRP  PICTURE X.                                      *AA265
     05 SV-ATTRC  PICTURE X.                                      *AA265
01    FIRST-ON-SEGMENT.                                           *AA301
     05      EM00-FST    PICTURE X.                               *AA301
01           STOP-FIELDS-HELP.                                    *AA400
    02       C-HELP-LE.                                           *AA400
      05     C-HELP-LIBRA      PICTURE XXX.                       *AA400
      05     C-HELP-ERCOD      PICTURE XXX.                       *AA400
      05     C-HELP-PROGR      PICTURE X(6).                      *AA400
      05     C-HELP-ENTYP      PICTURE X.                         *AA400
     02       HELP-LIENT  PICTURE X(36) VALUE SPACE.              *AA400
     02       HELP-LIBEC  PICTURE X(30) VALUE SPACE.              *AA400
01           7-HELP-LIBEL.                                        *AA400
   05        7-HELP-ERMS.                                         *AA400
    10       7-HELP-ERMSG.                                        *AA400
     15      7-HELP-ERMSG1  PICTURE X(12).                        *AA400
     15      7-HELP-ERMSG2  PICTURE X(18).                        *AA400
    10       7-HELP-ERMSC   PICTURE X(36).                        *AA400
01           SCREEN-LIGNE.                                        *AA400
   05        7-HELP-ERMSGD  PICTURE X(74).                        *AA400
   05        7-HELP-CODIF   REDEFINES 7-HELP-ERMSGD.              *AA400
    10       7-HELP-VALRU   PICTURE X(12).                        *AA400
    10       FILLER         PICTURE X.                            *AA400
    10       7-HELP-SIGNI.                                        *AA400
     15      FILLER         PICTURE X(18).                        *AA400
     15      7-HELP-ERMSC1  PICTURE X(43).                        *AA400
   05        7-HELP-DOCUM   REDEFINES 7-HELP-ERMSGD.              *AA400
    10       7-HELP-XEMKY.                                        *AA400
     15      FILLER         PICTURE XXX.                          *AA400
     15      7-HELP-ERTYP   PICTURE X.                            *AA400
     15      FILLER         PICTURE X.                            *AA400
    10       7-HELP-LITAC   PICTURE X(69).                        *AA400
01           7-HELP-POSIT.                                        *AA400
   05        7-HELP-POCEC.                                        *AA400
     10      7-HELP-POCEC9  PICTURE 999.                          *AA400
   05        7-HELP-POLEC.                                        *AA400
     10      7-HELP-POLEC9  PICTURE 99.                           *AA400
01             XZ00.                                              *AA400
    10         XZ00-EMKEY   PICTURE X(17).                        *AA400
    10         XZ00-ERLVL   PICTURE X.                            *AA400
    10         XZ00-ERMSG   PICTURE X(66).                        *AA400
    10         FILLER       PICTURE X(6).                         *AA400
LINKAGE SECTION.                                                  *00000
01      COMMON-AREA.                                              *00000
     02     K-SHELP-PROGR PICTURE X(6).                           *00000
     02            CA00.                                          *00001
       10          CA00-CLECD.                                    *00001
        15         CA00-NUCOM  PICTURE 9(5).                      *00001
       10          CA00-CLECL1.                                   *00001
        15         CA00-NUCLIE PICTURE 9(8).                      *00001
       10          CA00-ME00.                                     *00001
        15         CA00-CLEME.                                    *00001
         20        CA00-COPERS PICTURE X(5).                      *00001
         20        CA00-NUMORD PICTURE XX.                        *00001
        15         CA00-MESSA  PICTURE X(75).                     *00001
       10          CA00-PREM   PICTURE X.                         *00001
       10          CA00-LANGU  PICTURE X.                         *00001
       10          CA00-RAISOC PICTURE X(50).                     *00001
     02     K-SHELP-CDOC  PICTURE X.                              *00002
     02     K-SHELP-PROGE PICTURE X(8).                          *00002
     02     K-SHELP-CPOSL PICTURE S9(4) COMPUTATIONAL.           *00002
     02     K-SHELP-LIBRA PICTURE XXX.                           *00002
     02     K-SHELP-PROHE PICTURE X(8).                          *00002
     02     K-SHELP-ERCOD.                                       *00002
       05   K-SHELP-ERCOD9 PICTURE 999.                          *00002
     02     K-SHELP-ERTYP PICTURE X.                             *00002
     02     K-SHELP-NULIX.                                       *00002
       05   K-SHELP-LINUM  PICTURE 999.                          *00002
     02     K-SHELP-XTERM PICTURE X(10).                         *00002
     02      FILLER        PICTURE X(0700).                      *00002
01           COMMUNICATION-MONITOR.                              *00010
     02    S-WWSS.                                               *00010
       10    S-WWSS-OPER   PICTURE X.                            *00010
       10    S-WWSS-PROGE  PICTURE X(8).                         *00010
       10    S-WWSS-XFILE  PICTURE X(8).                         *00010
       10    S-WWSS-XFUNCT PICTURE X(8).                         *00010
       10    S-WWSS-STATUS PICTURE XX.                           *00010
PROCEDURE DIVISION USING COMMON-AREA                             *99999
                         COMMUNICATION-MONITOR.                  *99999
DECLARATIVES.                                                    DOHELP
SECEM SECTION.                                                   DOHELP
      USE AFTER ERROR PROCEDURE ON EM-FILE.                      DOHELP
F0AEM.                                                           DOHELP
      MOVE 1-EM00-STATUS TO S-WWSS-STATUS.                       DOHELP
       MOVE "EMTEST  " TO S-WWSS-XFILE                           DOHELP
        IF 1-EM00-STATUS NOT = "9A"                              DOHELP
       AND 1-EM00-STATUS NOT = "9D"                              DOHELP
       MOVE "1" TO IK.                                           DOHELP
F0AEM-FN.    EXIT.                                               DOHELP
END DECLARATIVES.                                                DOHELP
MAIN SECTION.                                                    DOHELP
F0A99-FN.    EXIT.                                               DOHELP
F0A-FN.      EXIT.                                               DOHELP
           *************************************                 DOHELP
           *                                   *                 DOHELP
           *  INITIALIZATIONS                  *                 DOHELP
           *                                   *                 DOHELP
           *************************************                 DOHELP
F01.         EXIT.                                               DOHELP
F0101.                                                           DOHELP
       MOVE "OPEN    " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DOHELP
       OPEN INPUT        EM-FILE.                                DOHELP
       IF IK = "1" GO TO F81ER.                                  DOHELP
F0101-FN.    EXIT.                                               DOHELP
F0105.                                                           DOHELP
       MOVE ZERO TO K01.                                         DOHELP
F0105-B.  ADD 1 TO K01.                                          DOHELP
       MOVE SV-AT (K01) TO K02.                                  DOHELP
       MOVE SV-ATTRI (K01) TO AT-HELP-ATTRI (K02)                DOHELP
       MOVE SV-ATTRP (K01) TO AT-HELP-ATTRP (K02)                DOHELP
       MOVE SV-ATTRC (K01) TO AT-HELP-ATTRC (K02).               DOHELP
       IF K01 < INT    GO TO F0105-B.                            DOHELP
F0105-FN.    EXIT.                                               DOHELP
F0110.                                                           DOHELP
       MOVE ZERO TO CATX FT K50L.                                DOHELP
       MOVE "1" TO ICF OCF SCR-ER.                               DOHELP
       MOVE ZERO TO VALIDATION-TABLE-FIELDS.                     DOHELP
       MOVE SPACE TO CATM OPER OPERD CAT-ER.                     DOHELP
       MOVE SPACE TO TABLE-OF-ATTRIBUTES.                        DOHELP
       MOVE ZERO TO CONFIGURATIONS.                              DOHELP
       MOVE SPACE TO XEMKY.                                      DOHELP
       IF  PROGR   NOT =      K-SHELP-PROGR                      DOHELP
       AND (K-SHELP-CDOC = "2" OR K-SHELP-CDOC = "3")            DOHELP
                      MOVE    ZERO  TO  ICF.                     DOHELP
       IF ICF = ZERO                                             DOHELP
       MOVE SPACE TO CMES-COMMUNICATION                          DOHELP
       MOVE LOW-VALUE TO  O-HELP                                 DOHELP
       PERFORM F8115 THRU F8115-FN                               DOHELP
       MOVE "1" TO CMES-FMES.                                    DOHELP
       MOVE "X" TO DE-AT (4, 001).                               DOHELP
       MOVE SPACE      TO            O-HELP-ERMSG (01).          DOHELP
F0110-FN.    EXIT.                                               DOHELP
F0120.                                                           DOHELP
       MOVE "1" TO OCF.                                          DOHELP
       IF K-SHELP-CDOC = "D" OR K-SHELP-CDOC = "R"               DOHELP
       MOVE "1" TO ICF     GO TO F0120-FN.                       DOHELP
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           MOVE "A"  TO OPER                                         DOHELP
           MOVE SPACE TO K-SHELP-ERTYP                               DOHELP
           MOVE SPACE TO K-SHELP-ERCOD                               DOHELP
           IF K-SHELP-CDOC = "2"                                     DOHELP
           MOVE ZERO  TO K-SHELP-LINUM                               DOHELP
           MOVE "D" TO K-SHELP-CDOC   GO TO F3999-ITER-FT.           DOHELP
           MOVE "R"  TO K-SHELP-CDOC.                                DOHELP
           MOVE K-SHELP-CPOSL TO 7-HELP-POLEC9                       DOHELP
           MOVE K-SHELP-LINUM TO 7-HELP-POCEC9                       DOHELP
           MOVE ZERO         TO K-SHELP-LINUM.                       DOHELP
           MOVE SPACE          TO EM00-EMKEY                         DOHELP
           MOVE K-SHELP-LIBRA  TO EM00-LIBRA                         DOHELP
           MOVE  "I"           TO EM00-ENTYP                         DOHELP
           MOVE K-SHELP-PROGR  TO EM00-PROGR                         DOHELP
           MOVE 7-HELP-POLEC9  TO EM00-ERCOD                         DOHELP
           PERFORM F80-EM00-P THRU F80-FN.                           DOHELP
           IF IK = "0"                                               DOHELP
             IF  EM00-LIBRA NOT = K-SHELP-LIBRA                      DOHELP
             OR  EM00-ENTYP NOT = "I"                                DOHELP
             OR  EM00-PROGR NOT = K-SHELP-PROGR                      DOHELP
           MOVE "1" TO IK.                                           DOHELP
           IF IK = "1"  MOVE "D" TO K-SHELP-CDOC                     DOHELP
           MOVE SPACE TO EM00-EMKEY  GO TO F3999-ITER-FT.            DOHELP
           IF 7-HELP-POLEC  <  EM00-ERCOD                            DOHELP
           OR (7-HELP-POLEC =  EM00-ERCOD                            DOHELP
           AND 7-HELP-POCEC9 NOT > EM00-LINUM)                       DOHELP
           MOVE EM00-ERMSG TO K-SHELP-ERCOD                          DOHELP
           GO TO F3999-ITER-FT.                                      DOHELP
    F0120-A.                                                         DOHELP
           IF IK = "1"  MOVE SPACE TO EM00                           DOHELP
           MOVE "D" TO K-SHELP-CDOC  GO TO F3999-ITER-FT.            DOHELP
           MOVE EM00  TO XZ00                                        DOHELP
           PERFORM F80-EM00-RN  THRU F80-FN.                         DOHELP
           IF IK = "0"                                               DOHELP
             IF  EM00-LIBRA NOT = K-SHELP-LIBRA                      DOHELP
             OR  EM00-ENTYP NOT = "I"                                DOHELP
             OR  EM00-PROGR NOT = K-SHELP-PROGR                      DOHELP
           MOVE "1" TO IK.                                           DOHELP
           IF IK = "1"                                               DOHELP
           OR 7-HELP-POLEC  < EM00-ERCOD                             DOHELP
           OR 7-HELP-POCEC9 < EM00-LINUM                             DOHELP
           MOVE XZ00-ERMSG TO K-SHELP-ERCOD                          DOHELP
           MOVE SPACE      TO EM00      GO TO F3999-ITER-FT.         DOHELP
           IF 7-HELP-POLEC  = EM00-ERCOD                             DOHELP
           AND 7-HELP-POCEC9 = EM00-LINUM                            DOHELP
           MOVE EM00-ERMSG TO K-SHELP-ERCOD                          DOHELP
           MOVE SPACE TO EM00           GO TO F3999-ITER-FT.         DOHELP
    F0120-B.   GO TO F0120-A.                                        DOHELP
    F0120-FN.    EXIT.                                               DOHELP
    F01-FN.      EXIT.                                               DOHELP
               **************************************                DOHELP
               *                                    *                DOHELP
               *  RECEPTION                         *                DOHELP
               *                                    *                DOHELP
               **************************************                DOHELP
    F05.   IF ICF = ZERO GO TO END-OF-RECEPTION.                     DOHELP
    F0510.                                                           DOHELP
           MOVE CMES-YPCUR TO CURPOS.                                DOHELP
           MOVE CMES-YR00 TO HELP-MESSO.                             DOHELP
           PERFORM F8155 THRU F8155-FN.                              DOHELP
           MOVE "A" TO OPER  MOVE SPACE TO OPERD.                    DOHELP
    F0510-FN.    EXIT.                                               DOHELP
               **************************************                DOHELP
               *                                    *                DOHELP
               *  VALIDATION OF OPERATION CODE      *                DOHELP
               *                                    *                DOHELP
               **************************************                DOHELP
    F0520.                                                           DOHELP
              IF I-HELP-OPDOC   =  "E" OR "F"                        DOHELP
           MOVE  K-SHELP-PROGE  TO 5-HELP-PROGE                      DOHELP
           MOVE "O" TO OPER OPERD GO TO F0520-900.                   DOHELP
              IF I-HELP-OPDOC   =  "T" OR "D"                        DOHELP
           MOVE  SPACE TO K-SHELP-ERCOD K-SHELP-ERTYP                DOHELP
           MOVE  ZERO  TO K-SHELP-LINUM                              DOHELP
           MOVE  "A" TO OPER      GO TO F0520-900.                   DOHELP
              IF I-HELP-OPDOC   =  "S"                               DOHELP
           MOVE  "A" TO OPER      GO TO F0520-900.                   DOHELP
           MOVE "5" TO    ER-HELP-OPDOC  MOVE "4" TO SCR-ER          DOHELP
           GO TO F3999-ITER-FT.                                      DOHELP
       F0520-900.                                                    DOHELP
           IF OPER NOT = "A" AND OPER NOT = "O"                      DOHELP
           GO TO F3999-ITER-FT.                                      DOHELP
       F0520-FN.    EXIT.                                            DOHELP
       F05-FN.      EXIT.                                            DOHELP
               *************************************                 DOHELP
               *                                   *                 DOHELP
               *  CATEGORY PROCESSING LOOP         *                 DOHELP
               *                                   *                 DOHELP
               *************************************                 DOHELP
       F10.         EXIT.                                            DOHELP
       F1010.     MOVE SPACE TO CATM.                                DOHELP
          IF CAT-ER = "E" MOVE "4" TO SCR-ER GO TO F3999-ITER-FT.    DOHELP
           MOVE SPACE TO CAT-ER.                                     DOHELP
           IF CATX = "0" MOVE "Z" TO CATX GO TO F1010-FN.            DOHELP
       F1010-A.   GO TO F3999-ITER-FT.                               DOHELP
       F1010-FN.    EXIT.                                            DOHELP
       F10-FN.      EXIT.                                            DOHELP
               *************************************                 DOHELP
               *                                   *                 DOHELP
               *  DATA ELEMENT VALIDATION          *                 DOHELP
               *                                   *                 DOHELP
               *************************************                 DOHELP
       F20.         EXIT.                                            DOHELP
       F20Z.  IF CATX NOT = "Z" GO TO F20Z-FN.                       DOHELP
       F20A7.                                                        DOHELP
              IF I-HELP-OPDOC  NOT = SPACE                           DOHELP
           MOVE "1" TO    ER-HELP-OPDOC.                             DOHELP
       F20A7-FN.    EXIT.                                            DOHELP
       F20Z-FN.     EXIT.                                            DOHELP
       F20-FN.      EXIT.                                            DOHELP
       F3999-ITER-FI.  GO TO F10.                                    DOHELP
       F3999-ITER-FT.     EXIT.                                      DOHELP
       F3999-FN.    EXIT.                                            DOHELP
       F40.       IF SCR-ER > "1"  MOVE "A" TO OPER  GO TO F40-FN.   DOHELP
       F40-A.     IF OPERD NOT = SPACE   MOVE OPERD TO OPER.         DOHELP
       F4005. IF OPER NOT = "O"          GO TO F4005-FN.             DOHELP
           IF K-SHELP-CDOC = "D"                                     DOHELP
           MOVE "2" TO K-SHELP-CDOC.                                 DOHELP
           IF K-SHELP-CDOC = "R"                                     DOHELP
           MOVE "3" TO K-SHELP-CDOC.                                 DOHELP
           MOVE ZERO TO K-SHELP-LINUM.                               DOHELP
           IF K-SHELP-ERCOD = SPACE                                  DOHELP
           OR K-SHELP-ERCOD NOT NUMERIC                              DOHELP
           MOVE "001"  TO  K-SHELP-ERCOD.                            DOHELP
           IF K-SHELP-ERCOD > "001"                                  DOHELP
           SUBTRACT 1 FROM K-SHELP-ERCOD9.                           DOHELP
       F4005-FN.    EXIT.                                            DOHELP
       F4010.  IF OPER NOT = "A"    GO TO F4010-FN.                  DOHELP
           MOVE  SPACE          TO EM00-EMKEY                        DOHELP
           MOVE  K-SHELP-LIBRA  TO EM00-LIBRA                        DOHELP
           MOVE  "H"            TO EM00-ENTYP                        DOHELP
           MOVE  K-SHELP-PROGR  TO EM00-PROGR                        DOHELP
           MOVE  K-SHELP-ERCOD  TO EM00-ERCOD                        DOHELP
           MOVE  K-SHELP-ERTYP  TO EM00-ERTYP                        DOHELP
           MOVE  K-SHELP-LINUM  TO EM00-LINUM                        DOHELP
           MOVE  EM00-EMKEY     TO K-REM00-EMKEY (1).                DOHELP
       F4010-FN.    EXIT.                                            DOHELP
               *************************************                 DOHELP
               *                                   *                 DOHELP
               *  END OF TRANSACTION               *                 DOHELP
               *                                   *                 DOHELP
               *************************************                 DOHELP
       F4030.     IF OPER NOT = "E" GO TO F4030-FN.                  DOHELP
           MOVE OPER TO S-WWSS-OPER.                                 DOHELP
           PERFORM F81FI THRU F81FI-FN.                              DOHELP
       F4030-A.   EXIT PROGRAM.                                      DOHELP
       F4030-FN.    EXIT.                                            DOHELP
               *************************************                 DOHELP
               *                                   *                 DOHELP
               *  TRANSFER TO ANOTHER SCREEN       *                 DOHELP
               *                                   *                 DOHELP
               *************************************                 DOHELP
       F4040.     IF OPER NOT = "O" GO TO F4040-FN.                  DOHELP
           MOVE  5-HELP-PROGE TO S-WWSS-PROGE.                       DOHELP
       MOVE OPER TO S-WWSS-OPER.                                 DOHELP
       PERFORM F81FI THRU F81FI-FN.                              DOHELP
F4040-A.   EXIT PROGRAM.                                         DOHELP
F4040-FN.    EXIT.                                               DOHELP
F40-FN.      EXIT.                                               DOHELP
END-OF-RECEPTION.      EXIT.                                     DOHELP
           *************************************                 DOHELP
           *                                   *                 DOHELP
           *  DISPLAY PREPARATION              *                 DOHELP
           *                                   *                 DOHELP
           *************************************                 DOHELP
F50.      IF OCF = "0" GO TO END-OF-DISPLAY.                     DOHELP
F5010.                                                           DOHELP
       MOVE ZERO TO CATX.                                        DOHELP
       MOVE ZERO TO CONFIGURATIONS.                              DOHELP
       MOVE ALL "1" TO FIRST-ON-SEGMENT.                         DOHELP
       IF SCR-ER  NOT > "1" MOVE SPACE TO O-HELP.                DOHELP
       IF SCR-ER > "1"  GO TO F6999-ITER-FT.                     DOHELP
       PERFORM F8115 THRU F8115-FN.                              DOHELP
F5010-FN.    EXIT.                                               DOHELP
F5020.    IF  K-SHELP-ERTYP NOT = SPACE                          DOHELP
          NEXT SENTENCE ELSE   GO TO F5020-FN.                   DOHELP
       MOVE  SPACE  TO EM00-ERTYP.                               DOHELP
         IF K-SHELP-ERCOD < "001"                                DOHELP
       MOVE  SPACE  TO EM00-ERCOD.                               DOHELP
       MOVE  ZERO   TO EM00-LINUM                                DOHELP
       PERFORM F80-EM00-P  THRU F80-FN.                          DOHELP
         IF IK = "1"   GO TO F5020-FN.                           DOHELP
         IF EM00-ERCOD  NOT = SPACE                              DOHELP
       MOVE  EM00-ERMSG TO 7-HELP-ERMS                           DOHELP
       MOVE 7-HELP-ERMSC TO HELP-LIENT                           DOHELP
       MOVE  "DOCUMENTATION OF DATA ELEMENT "                    DOHELP
              TO HELP-LIBEC         ELSE                         DOHELP
       MOVE   EM00-ERMSG TO HELP-LIENT                           DOHELP
       MOVE  "DOCUMENTATION OF THE SCREEN   "                    DOHELP
              TO HELP-LIBEC.                                     DOHELP
F5020-FN.    EXIT.                                               DOHELP
F50-FN.      EXIT.                                               DOHELP
           *************************************                 DOHELP
           *                                   *                 DOHELP
           *  CATEGORY PROCESSING LOOP         *                 DOHELP
           *                                   *                 DOHELP
           *************************************                 DOHELP
F55.         EXIT.                                               DOHELP
F5510.                                                           DOHELP
       MOVE SPACE TO CAT-ER.                                     DOHELP
       IF CATX = "0" MOVE " " TO CATX GO TO F5510-FN.            DOHELP
       IF CATX = " " MOVE "R" TO CATX MOVE ZERO TO ICATR.        DOHELP
       IF CATX NOT = "R" OR  ICATR > IRR GO TO F5510-R.          DOHELP
       IF ICATR > ZERO                                           DOHELP
       MOVE  O-HELP-LIGNE           TO                           DOHELP
             P-HELP-LIGNE   (ICATR).                             DOHELP
       ADD 1 TO ICATR.                                           DOHELP
       IF ICATR NOT > IRR                                        DOHELP
       MOVE  P-HELP-LIGNE   (ICATR) TO                           DOHELP
             O-HELP-LIGNE.                                       DOHELP
       GO TO F5510-FN.                                           DOHELP
F5510-R.     EXIT.                                               DOHELP
F5510-Z.                                                         DOHELP
       IF CATX = "R" MOVE "Z" TO CATX GO TO F5510-FN.            DOHELP
F5510-900. GO TO F6999-ITER-FT.                                  DOHELP
F5510-FN.    EXIT.                                               DOHELP
F55-FN.      EXIT.                                               DOHELP
           *************************************                 DOHELP
           *                                   *                 DOHELP
           *  SEGMENT ACCESS FOR DISPLAY       *                 DOHELP
           *                                   *                 DOHELP
           *************************************                 DOHELP
F60.         EXIT.                                               DOHELP
F60R.  IF CATX NOT = "R" OR FT = "1" GO TO F60R-FN.              DOHELP
F60R-FN.     EXIT.                                               DOHELP
F6010.  IF CATX NOT = "R" OR FT = "1"  GO TO F6010-FN.           DOHELP
       MOVE "0" TO EM00-CF.                                      DOHELP
       IF          EM00-FST = "1"                                DOHELP
       MOVE     K-REM00-EMKEY  (1) TO EM00-EMKEY                 DOHELP
       MOVE        EM00-LIBRA   TO  C-HELP-LIBRA                 DOHELP
       MOVE        EM00-ENTYP   TO  C-HELP-ENTYP                 DOHELP
       MOVE        EM00-PROGR   TO  C-HELP-PROGR                 DOHELP
       MOVE        EM00-ERCOD   TO  C-HELP-ERCOD                 DOHELP
       PERFORM F80-EM00-P  THRU F80-FN                           DOHELP
       MOVE ZERO TO EM00-FST    ELSE                             DOHELP
       PERFORM F80-EM00-RN THRU F80-FN.                          DOHELP
       IF IK = "0"                                               DOHELP
         IF        EM00-LIBRA NOT = C-HELP-LIBRA                 DOHELP
         OR        EM00-ENTYP NOT = C-HELP-ENTYP                 DOHELP
         OR        EM00-PROGR NOT = C-HELP-PROGR                 DOHELP
       MOVE "1" TO IK.                                           DOHELP
       IF IK = "1" MOVE "G109" TO XERCD MOVE "1" TO FT           DOHELP
       PERFORM F81UT THRU F81UT-FN      GO TO F6010-FN.          DOHELP
       MOVE "1" TO EM00-CF.                                      DOHELP
       MOVE  EM00-ERCOD  TO K-SHELP-ERCOD                        DOHELP
       MOVE  EM00-ERTYP  TO K-SHELP-ERTYP                        DOHELP
       MOVE  EM00-LINUM  TO K-SHELP-LINUM.                       DOHELP
       IF   EM00-ERCOD  NOT = C-HELP-ERCOD                       DOHELP
       AND  EM00-ERCOD  > "000"                                  DOHELP
       MOVE "1"  TO FT    GO TO F6010-FN.                        DOHELP
       IF   EM00-ERTYP  = SPACE                                  DOHELP
       NEXT SENTENCE ELSE GO TO F6010-FN.                        DOHELP
       IF   EM00-ERCOD  > ZERO                                   DOHELP
       MOVE EM00-ERMSG    TO 7-HELP-ERMS                         DOHELP
       MOVE 7-HELP-ERMSC  TO HELP-LIENT                          DOHELP
       MOVE  "DOCUMENTATION OF DATA ELEMENT "                    DOHELP
               TO HELP-LIBEC                                     DOHELP
              ELSE                                               DOHELP
       MOVE  EM00-ERMSG     TO HELP-LIENT                        DOHELP
       MOVE  "DOCUMENTATION OF THE SCREEN   "                    DOHELP
               TO HELP-LIBEC.                                    DOHELP
       GO TO F6010.                                              DOHELP
F6010-FN.    EXIT.                                               DOHELP
F60-FN.      EXIT.                                               DOHELP
           *************************************                 DOHELP
           *                                   *                 DOHELP
           *  DATA ELEMENT TRANSFER            *                 DOHELP
           *                                   *                 DOHELP
           *************************************                 DOHELP
F65.         EXIT.                                               DOHELP
F6520. IF FT = "1" OR EM00-ERTYP = " " GO TO F6520-FN.           DOHELP
       IF ICATR > IRR  GO TO F6520-FN.                           DOHELP
        MOVE SPACE TO 7-HELP-ERMSGD.                             DOHELP
         IF  EM00-ERTYP = "1"                                    DOHELP
        MOVE   EM00-ERMSG  TO 7-HELP-ERMS                        DOHELP
        MOVE 7-HELP-ERMSG2 TO 7-HELP-SIGNI                       DOHELP
        MOVE 7-HELP-ERMSC  TO 7-HELP-ERMSC1                      DOHELP
        MOVE 7-HELP-ERMSG1 TO 7-HELP-VALRU                       DOHELP
        GO TO F6520-900.                                         DOHELP
        IF  EM00-ERTYP = "0"                                     DOHELP
        MOVE   SPACE       TO 7-HELP-XEMKY                       DOHELP
        MOVE   EM00-ERMSG  TO 7-HELP-LITAC                       DOHELP
        GO TO F6520-900.                                         DOHELP
        MOVE   EM00-ERMSG  TO 7-HELP-LITAC.                      DOHELP
        IF     EM00-LINUM  NOT = ZERO                            DOHELP
        GO TO F6520-900.                                         DOHELP
        MOVE   EM00-ERCOD  TO 7-HELP-XEMKY                       DOHELP
        MOVE   EM00-ERTYP  TO 7-HELP-ERTYP.                      DOHELP
        MOVE   SPACE       TO O-HELP-ERMSGD.                     DOHELP
        IF  ICATR NOT < IRR ADD 1 TO ICATR  GO TO F55.           DOHELP
        MOVE O-HELP-LIGNE  TO P-HELP-LIGNE (ICATR)               DOHELP
        ADD 1 TO ICATR                                           DOHELP
        MOVE P-HELP-LIGNE (ICATR) TO O-HELP-LIGNE.               DOHELP
F6520-900.                                                       DOHELP
        MOVE 7-HELP-ERMSGD TO O-HELP-ERMSGD.                     DOHELP
F6520-FN.    EXIT.                                               DOHELP
F6530.   IF CATX NOT = "Z"  GO TO F6530-FN.                      DOHELP
        MOVE  HELP-LIENT  TO O-HELP-LIENT                        DOHELP
        MOVE  HELP-LIBEC  TO O-HELP-LIBEC.                       DOHELP
        MOVE "CHOICE............:" TO O-HELP-LICHOI              DOHELP
        MOVE "(E: END - T: TOP - S: NEXT)   "                    DOHELP
              TO O-HELP-LIOPT.                                   DOHELP
         IF XERCD NOT = "G109"                                   DOHELP
        MOVE "S"  TO O-HELP-OPDOC  GO TO F6530-FN.               DOHELP
        MOVE "E"  TO O-HELP-OPDOC.                               DOHELP
        IF K-SHELP-ERCOD NUMERIC AND K-SHELP-ERCOD > ZERO        DOHELP
        ADD 1 TO K-SHELP-ERCOD9.                                 DOHELP
F6530-FN.    EXIT.                                               DOHELP
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F65-FN.      EXIT.                                               DOHELP
F6999-ITER-FI.  GO TO F55.                                       DOHELP
F6999-ITER-FT.     EXIT.                                         DOHELP
F6999-FN.    EXIT.                                               DOHELP
F70.                                                             DOHELP
       GO TO F7020.                                              DOHELP
           *************************************                 DOHELP
           *                                   *                 DOHELP
           *  ERROR PROCESSING                 *                 DOHELP
           *                                   *                 DOHELP
           *************************************                 DOHELP
F7010.     MOVE ZERO TO K01 K02 K04 MOVE 1 TO K03.               DOHELP
       MOVE LIBRA TO EM00-LIBRA MOVE PROGR TO EM00-PROGR         DOHELP
       MOVE ZERO TO EM00-LINUM MOVE "H" TO EM00-ENTYP.           DOHELP
F7010-A.   IF K02 = INR AND K03 < IRR MOVE INA TO K02            DOHELP
       ADD 1 TO K03. ADD 1 TO K01 K02.                           DOHELP
       IF DE-ER (K01) > "1" OR < "0" MOVE "Y" TO DE-AT (4, K01)  DOHELP
       MOVE "N" TO DE-AT (1, K01)                                DOHELP
       MOVE "N" TO DE-AT (2, K01)                                DOHELP
       MOVE "W" TO DE-AT (3, K01)                                DOHELP
          IF K04 < IER MOVE DE-ER (K01) TO EM00-ERTYP            DOHELP
       MOVE K02 TO EM00-ERCOD9 MOVE EM00-XEMKY TO EM00-ERMSG     DOHELP
       PERFORM F80-EM00-R THRU F80-FN ADD 1 TO K04               DOHELP
       MOVE  EM00-ERMSG  TO    O-HELP-ERMSG (K04).               DOHELP
       IF K01 < INT      GO TO F7010-A.                          DOHELP
       MOVE ZERO TO K50R.                                        DOHELP
F7010-B.                                                         DOHELP
        ADD 1 TO K50R IF K50R > K50L OR K04 NOT < IER GO TO      DOHELP
        F7010-FN. MOVE T-XEMKY (K50R) TO EM00-XEMKY EM00-ERMSG   DOHELP
        PERFORM F80-EM00-R THRU F80-FN. ADD 1 TO K04             DOHELP
       MOVE  EM00-ERMSG  TO    O-HELP-ERMSG (K04)                DOHELP
       GO TO F7010-B.                                            DOHELP
F7010-FN.    EXIT.                                               DOHELP
           *************************************                 DOHELP
           *                                   *                 DOHELP
           *  POSITIONING OF ATTRIBUTES        *                 DOHELP
           *                                   *                 DOHELP
           *************************************                 DOHELP
F7020.                                                           DOHELP
       MOVE ZERO TO TALLI  INSPECT DE-ATT1 (4)                   DOHELP
       TALLYING TALLI FOR CHARACTERS BEFORE "Y".                 DOHELP
       IF TALLI     NOT <       0001                             DOHELP
       MOVE ZERO TO TALLI  INSPECT DE-ATT1 (4)                   DOHELP
       TALLYING TALLI FOR CHARACTERS BEFORE "Z".                 DOHELP
       IF TALLI     NOT <       0001                             DOHELP
       MOVE ZERO TO TALLI  INSPECT DE-ATT1 (4)                   DOHELP
       TALLYING TALLI FOR CHARACTERS BEFORE "X".                 DOHELP
       IF TALLI     NOT <       0001                             DOHELP
       MOVE ZERO TO TALLI.                                       DOHELP
       ADD 1 TO TALLI                                            DOHELP
       MOVE SV-AT (TALLI) TO K01                                 DOHELP
       CMES-NUMFLD.                                              DOHELP
       MOVE AT-HELP-YPCUR (K01) TO CMES-YPCUR.                   DOHELP
       MOVE ZERO TO K01.                                         DOHELP
F7020-A.                                                         DOHELP
       ADD 1 TO K01. IF K01 > INT GO TO F7020-FN.                DOHELP
       MOVE SV-AT (K01) TO K02.                                  DOHELP
       IF SV-ATTRI (K01) = "D" AND DE-AT (1, K01) NOT = "D"      DOHELP
       MOVE "D" TO DE-AT (1, K01).                               DOHELP
       IF DE-AT (1, K01) NOT = SPACE                             DOHELP
          MOVE DE-AT (1, K01) TO AT-HELP-ATTRI (K02).            DOHELP
       IF DE-AT (2, K01) NOT = SPACE                             DOHELP
          MOVE DE-AT (2, K01) TO AT-HELP-ATTRP (K02).            DOHELP
       IF DE-AT (3, K01) NOT = SPACE                             DOHELP
          MOVE DE-AT (3, K01) TO AT-HELP-ATTRC (K02).            DOHELP
       GO TO F7020-A.                                            DOHELP
F7020-FN.    EXIT.                                               DOHELP
F7030.                                                           DOHELP
           IF    ER-HELP-OPDOC = "5"                             DOHELP
       MOVE  "INVALID CHOICE" TO O-HELP-ERMSG (1).               DOHELP
       IF  XERCD = "G109"                                        DOHELP
       MOVE  "*** END ***   " TO O-HELP-ERMSG (1).               DOHELP
F7030-FN.    EXIT.                                               DOHELP
F70-FN.      EXIT.                                               DOHELP
END-OF-DISPLAY.    EXIT.                                         DOHELP
F8Z.         EXIT.                                               DOHELP
           *************************************                 DOHELP
           *                                   *                 DOHELP
           *  DISPLAY                          *                 DOHELP
           *                                   *                 DOHELP
           *************************************                 DOHELP
F8Z10.                                                           DOHELP
       IF SCR-ER  NOT > "1"                                      DOHELP
       AND DE-AT (4, 001) = "X"                                  DOHELP
       PERFORM F7020 THRU F7020-FN.                              DOHELP
       PERFORM F8145 THRU F8145-FN.                              DOHELP
       MOVE "1" TO CMES-NBZVAR.                                  DOHELP
       MOVE "X"  TO CMES-YCRE.                                   DOHELP
       IF SCR-ER NOT > "1"                                       DOHELP
       PERFORM F8105 THRU F8105-FN                               DOHELP
       MOVE "E"  TO CMES-YCRE.                                   DOHELP
       MOVE    HELP-MESSO TO CMES-YR00.                          DOHELP
       MOVE AT-HELP-MESSA TO CMES-YO00.                          DOHELP
       CALL PRCGI USING CMES-COMMUNICATION.                      DOHELP
F8Z10-FN.    EXIT.                                               DOHELP
           *************************************                 DOHELP
           *                                   *                 DOHELP
           *  END OF PROGRAM                   *                 DOHELP
           *                                   *                 DOHELP
           *************************************                 DOHELP
F8Z20.                                                           DOHELP
       MOVE "DOP050  " TO S-WWSS-PROGE.                          DOHELP
       MOVE OPER TO S-WWSS-OPER.                                 DOHELP
       MOVE "0"  TO CMES-FMES.                                   DOHELP
       GO TO F0105.                                              DOHELP
F8Z20-FN.    EXIT.                                               DOHELP
F8Z-FN.      EXIT.                                               DOHELP
           *************************************                 DOHELP
           *                                   *                 DOHELP
           *  PHYSICAL SEGMENT ACCESS ROUTINES *                 DOHELP
           *                                   *                 DOHELP
           *************************************                 DOHELP
F80.         EXIT.                                               DOHELP
F80-EM00-R.                                                      DOHELP
       MOVE "READ    " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DOHELP
       READ    EM-FILE    INVALID KEY GO TO F80-KO.              DOHELP
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DOHELP
F80-EM00-P.                                                      DOHELP
       MOVE "START   " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DOHELP
       START   EM-FILE    KEY NOT <                              DOHELP
                  EM00-EMKEY  INVALID KEY GO TO F80-KO.          DOHELP
       IF IK = "1" GO TO F81ER.                                  DOHELP
F80-EM00-RN.                                                     DOHELP
       MOVE "READNEXT" TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DOHELP
       READ    EM-FILE    NEXT AT END GO TO F80-KO.              DOHELP
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DOHELP
F8001-FN.    EXIT.                                               DOHELP
F80-OK.  MOVE "0" TO IK MOVE PROGR TO XPROGR GO TO F80-FN.       DOHELP
F80-KO.  MOVE "1" TO IK MOVE PROGR TO XPROGR.                    DOHELP
F8099-FN.    EXIT.                                               DOHELP
F80-FN.      EXIT.                                               DOHELP
F81.         EXIT.                                               DOHELP
           *************************************                 DOHELP
           *                                   *                 DOHELP
           *  ABNORMAL END PROCEDURE           *                 DOHELP
           *                                   *                 DOHELP
           *************************************                 DOHELP
F81ER.                                                           DOHELP
       MOVE "X" TO S-WWSS-OPER.                                  DOHELP
F81ER-A. EXIT PROGRAM.                                           DOHELP
F81ER-FN.    EXIT.                                               DOHELP
F81FI.                                                           DOHELP
       MOVE "CLOSE   " TO S-WWSS-XFUNCT   MOVE "0" TO IK.        DOHELP
       CLOSE   EM-FILE.                                          DOHELP
       IF IK = "1" GO TO F81ER.                                  DOHELP
F81FI-FN.    EXIT.                                               DOHELP
           *************************************                 DOHELP
           *                                   *                 DOHELP
           *  MEMORIZATION OF USER'S ERRORS    *                 DOHELP
           *                                   *                 DOHELP
           *************************************                 DOHELP
F81UT.     IF K50L < K50M ADD 1 TO K50L                          DOHELP
       MOVE XEMKY TO T-XEMKY (K50L). MOVE "E" TO CAT-ER.         DOHELP
F81UT-FN.    EXIT.                                               DOHELP
```

```
F8105.                                                        DOHELP
     MOVE   "           "                       TO S01002.   DOHELP
F8105-FN.    EXIT.                                            DOHELP
F8115.       EXIT.                                            DOHELP
F8115-FN.    EXIT.                                            DOHELP
F8145.                                                        DOHELP
       MOVE  T03002 TO   S03002.                              DOHELP
       MOVE  T03033 TO   S03033.                              DOHELP
       MOVE  T05004 TO   S05004.                              DOHELP
       MOVE  T06004 TO   S06004.                              DOHELP
       MOVE  T07004 TO   S07004.                              DOHELP
       MOVE  T08004 TO   S08004.                              DOHELP
       MOVE  T09004 TO   S09004.                              DOHELP
       MOVE  T10004 TO   S10004.                              DOHELP
       MOVE  T11004 TO   S11004.                              DOHELP
       MOVE  T12004 TO   S12004.                              DOHELP
       MOVE  T13004 TO   S13004.                              DOHELP
       MOVE  T14004 TO   S14004.                              DOHELP
       MOVE  T15004 TO   S15004.                              DOHELP
       MOVE  T16004 TO   S16004.                              DOHELP
       MOVE  T17004 TO   S17004.                              DOHELP
       MOVE  T18004 TO   S18004.                              DOHELP
       MOVE  T19004 TO   S19004.                              DOHELP
       MOVE  T20004 TO   S20004.                              DOHELP
       MOVE  T21004 TO   S21004.                              DOHELP
       MOVE  T23002 TO   S23002.                              DOHELP
       MOVE  T23022 TO   S23022.                              DOHELP
       MOVE  T23028 TO   S23028.                              DOHELP
       MOVE  T24002 TO   S24002.                              DOHELP
F8145-FN.    EXIT.                                            DOHELP
F8155.                                                        DOHELP
       MOVE  S23022 TO   R23022 T23022.                       DOHELP
F8155-FN.    EXIT.                                            DOHELP
F81-FN.      EXIT.                                            DOHELP
```

7. SCREEN GENERATED USING ORACLE V6 SQL

7.1. EXAMPLE SCREEN

INTRODUCTION

This chapter presents the COBOL lines automatically generated when a screen accesses an ORACLE V6 relational database.

The PROCEDURE DIVISION is not shown in full since functionalities are similar to those presented in the general example. This chapter only presents the specific parts of the WORKING STORAGE SECTION and related functions.

PROGRAM GENERATION

To generate On-line programs it may be necessary to use the complementary screens:

. Work Areas (-W),

. Call of Macro-structures (-CP).

On Work Areas (-W) screens, 'AA' is a reserved value for the code FOR COBOL PLACEMENT; It is used internally by the OLSD Function.

The automatically generated lines are identified in the COBOL code by the '*AAnnn' character string from columns 72 to 80. They can be overridden on the Work Areas (-W) screen on 'AAnnn'-numbered lines.

The user can use the General Documentation (-G) lines of the screen or dialogue to override the value of some generated constants. For more details, refer to Chapter 'DESCRIPTION OF A TRANSACTION', Subchapter 'SCREEN GENERAL DOCUMENTATION (-G)' in the OLSD Reference Manual.

```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION                  *PDLB.NDOC.APC.2!
! ON-LINE SCREEN CALL OF SEGM. DOSQLP CALL SQL ORACLE V6                       !
! .............................................................................!
! A SEGM      :   USE PREC ACCESS KEY     ACCESS     D EXTERNAL LIB. S    :LIBR!
! C CODE C LN : G R D SEGM SOURCE         KEY    B O T NAME     SEGM N LV :    !
! . DZ05 R 00 :   X A                     COCARA   P 1 QPBLOC   DZ05      :*DCC!
! . DZ05 R 02 :                           NUCOD                           :*DCC!
! . DZ05 R 04 :                           FOURNI                          :*DCC!
! . DZ10 R 00 :   X A                     COCARA   P 1 QPBLOC   DZ10      :*DCC!
! . DZ10 R 02 :                           NUCOM                           :*DCC!
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!                                                                              !
! O: C1 CH:                                                                    !
--------------------------------------------------------------------------------
```

7.2. WORKING-STORAGE SECTION

WORKING-STORAGE SECTION

The WORKING-STORAGE section includes:

- The description of input/output fields (Host variables).

  In the heading of the Host variables are the fields corresponding to the user USERID and to the password S-PASSWO (default value, modifiable by the parameter 25, in the -G of the dialogue or screen).

  The segment descriptions are located between the SQL orders: 'BEGIN DECLARE SECTION' and 'END DECLARE SECTION'.

  In a Segment description, only the Data Elements of elementary level are present.

  For the variable Data Elements (VARCHAR) called in a 'FFnn' code Segment (Data Elements with 'V', 'L' or 'W' in the key area of the segment description), the following lines are generated:

  ```
                ffnn-DELCO PICTURE ...
                           VARYING.
  ```

  The LFFnn-delco field must be input with the real length of the field before updating.

- Presence validation keys: each field (delco) of a table or a SQL view (FFnn) is associated with a presence validation key (VFFnnDelco or V-FFnn-Delco if the SQLREF option is indicated in Dialogue complement (-O)).

  The descriptions of the presence validation keys are generated in WORKING-STORAGE, just after the segments and before the command END DECLARE SECTION.
  The SQLIND option, input by the user in Dialogue complement, allows for the management of those keys in update and display. The keys are initialized in function F30 and conditioned for transfer in DISPLAY by the column presence (for columns which can be null).

- The SQL command 'INCLUDE SQLCA' is systematically generated.

```
       EXEC SQL BEGIN DECLARE SECTION END-EXEC.                 DOSQLP
01                USERID       PICTURE X(08).                   DOSQLP
01                S-PASSWO     PICTURE X(08).                   DOSQLP
01                 DZ05.                                         DOSQLP
     05            DZ05-COCARA PICTURE X.                        DOSQLP
     05            DZ05-NUCOD  PICTURE S9(3)                     DOSQLP
                        COMPUTATIONAL-4.                         DOSQLP
     05            DZ05-FOURNI PICTURE X(3).                     DOSQLP
     05            DZ05-NUCLIE PICTURE 9(8).                     DOSQLP
     05            DZ05-DATE   PICTURE X(6).                     DOSQLP
     05            DZ05-RELEA  PICTURE X(3).                     DOSQLP
     05           VDZ05-REFCLI.                                  DOSQLP
       49         LDZ05-REFCLI PICTURE S9(4) COMP.               DOSQLP
       49          DZ05-REFCLI PICTURE X(30).                    DOSQLP
     05           VDZ05-RUE.                                     DOSQLP
       49         LDZ05-RUE    PICTURE S9(4) COMP.               DOSQLP
       49          DZ05-RUE    PICTURE X(40).                    DOSQLP
     05            DZ05-COPOS  PICTURE X(5).                     DOSQLP
     05           VDZ05-VILLE.                                   DOSQLP
       49         LDZ05-VILLE  PICTURE S9(4) COMP.               DOSQLP
       49          DZ05-VILLE  PICTURE X(20).                    DOSQLP
     05           VDZ05-CORESP.                                  DOSQLP
       49         LDZ05-CORESP PICTURE S9(4) COMP.               DOSQLP
       49          DZ05-CORESP PICTURE X(256).                   DOSQLP
     05            DZ05-REMISE PICTURE S9(4)V99                  DOSQLP
                        COMPUTATIONAL-3.                         DOSQLP
     05           VDZ05-MATE.                                    DOSQLP
       49         LDZ05-MATE   PICTURE S9(4) COMP.               DOSQLP
       49          DZ05-MATE   PICTURE X(8).                     DOSQLP
     05            DZ05-PRIX1  PICTURE S9(8)                     DOSQLP
                        COMPUTATIONAL-4.                         DOSQLP
     05            DZ05-HEURE  PICTURE X(8).                     DOSQLP
     05            DZ05-PRECIS PICTURE X(26).                    DOSQLP
01                 DZ10.                                         DOSQLP
     05            DZ10-COCARA PICTURE X.                        DOSQLP
     05            DZ10-NUCOM  PICTURE 9(5).                     DOSQLP
     05            DZ10-FOURNP PICTURE X(3).                     DOSQLP
     05            DZ10-QTMLI  PICTURE S9(2)                     DOSQLP
                        COMPUTATIONAL-4.                         DOSQLP
     05            DZ10-QTMCO  PICTURE S9(2)                     DOSQLP
                        COMPUTATIONAL-4.                         DOSQLP
     05           VDZ10-INFOR.                                   DOSQLP
       49         LDZ10-INFOR  PICTURE S9(4) COMP.               DOSQLP
       49          DZ10-INFOR  PICTURE X(35).                    DOSQLP
01                VDZ05.                                         DOSQLP
     05           VDZ05COCARA  PICTURE S9(4) COMP.               DOSQLP
     05           VDZ05NUCOD   PICTURE S9(4) COMP.               DOSQLP
     05           VDZ05FOURNI  PICTURE S9(4) COMP.               DOSQLP
     05           VDZ05NUCLIE  PICTURE S9(4) COMP.               DOSQLP
     05           VDZ05DATE    PICTURE S9(4) COMP.               DOSQLP
     05           VDZ05RELEA   PICTURE S9(4) COMP.               DOSQLP
     05           VDZ05REFCLI  PICTURE S9(4) COMP.               DOSQLP
     05           VDZ05RUE     PICTURE S9(4) COMP.               DOSQLP
     05           VDZ05COPOS   PICTURE S9(4) COMP.               DOSQLP
     05           VDZ05VILLE   PICTURE S9(4) COMP.               DOSQLP
     05           VDZ05CORESP  PICTURE S9(4) COMP.               DOSQLP
     05           VDZ05REMISE  PICTURE S9(4) COMP.               DOSQLP
     05           VDZ05MATE    PICTURE S9(4) COMP.               DOSQLP
     05           VDZ05PRIX1   PICTURE S9(4) COMP.               DOSQLP
     05           VDZ05HEURE   PICTURE S9(4) COMP.               DOSQLP
     05           VDZ05PRECIS  PICTURE S9(4) COMP.               DOSQLP
01                VDZ10.                                         DOSQLP
     05           VDZ10COCARA  PICTURE S9(4) COMP.               DOSQLP
     05           VDZ10NUCOM   PICTURE S9(4) COMP.               DOSQLP
     05           VDZ10FOURNP  PICTURE S9(4) COMP.               DOSQLP
     05           VDZ10QTMLI   PICTURE S9(4) COMP.               DOSQLP
     05           VDZ10QTMCO   PICTURE S9(4) COMP.               DOSQLP
     05           VDZ10INFOR   PICTURE S9(4) COMP.               DOSQLP
       EXEC SQL END   DECLARE SECTION END-EXEC.                  DOSQLP
       EXEC SQL INCLUDE SQLCA         END-EXEC.                  DOSQLP
01      AT-SQLP-MESSO.                                           *AA041
01      AT-SQLP-MESSA   REDEFINES   AT-SQLP-MESSO.               *AA041
01           INPUT-SCREEN-FIELDS  REDEFINES  INPUT-SQLP.         *AA045
     02      I-SQLP.                                             *AA045
01           OUTPUT-SCREEN-FIELDS REDEFINES OUTPUT-SQLP.         *AA050
     02      O-SQLP.                                             *AA050
01      CMES-COMMUNICATION.                                      *AA060
```

```
  05    CMES-YR00     PICTURE X(4000).                           *AA060
  05    CMES-YO00     PICTURE X(6000).                           *AA060
  05    CMES-NBZVAR   PICTURE X.                                 *AA060
  05    CMES-YCRE     PICTURE X.                                 *AA060
  05    CMES-DIALOG   PICTURE XX.                                *AA060
  05    CMES-YPCUR    PICTURE 9(5).                              *AA060
  05    CMES-NUMFLD   PICTURE 999.                               *AA060
  05    CMES-FMES     PICTURE X.                                 *AA060
  05    CMES-STATUS.                                             *AA060
    10  CMES-RETCOD   PICTURE 99.                                *AA060
  05    I-PFKEY       PICTURE XX.                                *AA060
  05    FILLER        PICTURE X(100).                            *AA060
01   TT-DAT.                                                     *AA200
     05 T-DAT      PICTURE X OCCURS 5.                           *AA200
01   USERS-ERROR.                                                *AA200
     05 XEMKY.                                                   *AA200
        10 XPROGR   PICTURE X(6).                                *AA200
        10 XERCD    PICTURE X(4).                                *AA200
     05 T-XEMKY     OCCURS       01.                             *AA200
        10 T-XPROGR PICTURE X(6).                                *AA200
        10 T-XERCD  PICTURE X(4).                                *AA200
01    PACBASE-INDEXES COMPUTATIONAL SYNC.                        *AA200
     05  TALLI      PICTURE S9(4) VALUE ZERO.                    *AA200
     05 K01         PICTURE S9(4).                               *AA200
     05 K02         PICTURE S9(4).                               *AA200
     05 K03         PICTURE S9(4).                               *AA200
     05 K04         PICTURE S9(4).                               *AA200
     05 K50R        PICTURE S9(4) VALUE ZERO.                    *AA200
     05 K50L        PICTURE S9(4) VALUE ZERO.                    *AA200
     05 K50M        PICTURE S9(4)                                *AA200
                    VALUE       +01.                             *AA200
     05    5-DZ05-LTH  PICTURE S9(4) VALUE +0424.                *AA200
     05    5-DZ10-LTH  PICTURE S9(4) VALUE +0048.                *AA200
     05    5-CA00-LTH  PICTURE S9(4) VALUE +0147.                *AA200
     05    5-DZ05-LTHV PICTURE S9(4) VALUE +0424.                *AA200
     05    5-DZ10-LTHV PICTURE S9(4) VALUE +0048.                *AA200
     05    LTH         PICTURE S9(4) VALUE ZERO.                 *AA200
     05      5-SQLP-LENGTH PICTURE S9(4)                         *AA200
                         VALUE      +0853.                       *AA200
01    FIRST-ON-SEGMENT.                                          *AA301
     05      DZ05-FST    PICTURE X.                              *AA301
     05      DZ10-FST    PICTURE X.                              *AA301
01    OPEN-ON-SEGMENT.                                           *AA301
     05            DZ05-OPE    PICTURE X.                        *AA301
     05            DZ10-OPE    PICTURE X.                        *AA301
```

7.3. COMMUNICATION AREA

COMMUNICATION AREA

After the description of the common area (CA00), display keys are grouped by category under the K-eeee level.

All Data Elements declared as display Segment keys in the Screen Call of Segments (-CS) are present and independently located on level 05.

They are also independently input in the PROCEDURE DIVISION.

```
LINKAGE SECTION.                                                  *00000
01      COMMON-AREA.                                              *00000
     02     K-SSQLP-PROGR PICTURE X(6).                           *00000
     02            CA00.                                          *00001
       10          CA00-CLECD.                                    *00001
        15         CA00-NUCOM  PICTURE 9(5).                      *00001
       10          CA00-CLECL1.                                   *00001
        15         CA00-NUCLIE PICTURE 9(8).                      *00001
       10          CA00-ME00.                                     *00001
        15         CA00-CLEME.                                    *00001
         20        CA00-COPERS PICTURE X(5).                      *00001
         20        CA00-NUMORD PICTURE XX.                        *00001
        15         CA00-MESSA  PICTURE X(75).                     *00001
       10          CA00-PREM   PICTURE X.                         *00001
       10          CA00-LANGU  PICTURE X.                         *00001
       10          CA00-RAISOC PICTURE X(50).                     *00001
     02     K-SSQLP-DOC   PICTURE X.                              *00002
     02     K-SSQLP-PROGE PICTURE X(8).                           *00002
     02     K-SSQLP-CPOSL PICTURE S9(4) COMPUTATIONAL.            *00002
     02     K-SSQLP-LIBRA PICTURE XXX.                            *00002
     02     K-SSQLP-PROHE PICTURE X(8).                           *00002
     02     K-SSQLP-ERCOD.                                        *00002
       05   K-SSQLP-ERCOD9 PICTURE 999.                           *00002
     02     K-SSQLP-ERTYP PICTURE X.                              *00002
     02     K-SSQLP-LINUM PICTURE 999.                            *00002
     02     K-SSQLP-XTERM PICTURE X(10).                          *00002
     02      K-SQLP.                                              *00002
      05        K-RDZ05-COCARA PICTURE X.                         *00002
      05        K-RDZ05-NUCOD  PICTURE S9(3)                      *00002
                        COMPUTATIONAL-4.                          *00002
      05        K-RDZ05-FOURNI PICTURE X(3).                      *00002
      05        K-RDZ10-COCARA PICTURE X.                         *00002
      05        K-RDZ10-NUCOM  PICTURE 9(5).                      *00002
     02      FILLER        PICTURE X(0676).                       *00002
```

7.4. PROCEDURE DIVISION

CALLED SQL VALIDATION FUNCTIONS : F0B

PROCESSING OF THE ABNORMAL END

The F0B function processes SQL errors.

```
   F0B.                                                             DOSQLP
          EXEC SQL WHENEVER NOT FOUND GO TO F80-KO END-EXEC.        DOSQLP
          EXEC SQL WHENEVER SQLWARNING CONTINUE    END-EXEC.        DOSQLP
          EXEC SQL WHENEVER SQLERROR  GO TO F81EQ  END-EXEC.        DOSQLP
   F0B-FN.      EXIT.                                               DOSQLP
```

DECLARE CURSOR : F0C

This function contains the SQL statements corresponding to the cursor declaration when a table is used in display in the repetitive category.

. The clause FROM "external table name" names the external table or view called in the description of the Database Block (-DR). By default this external name is found in the Segment definition screen. The Database Block code is indicated in the EXTERNAL NAME field of the Screen Call of Segments (-CS).

. The clause WHERE ... ORDER lists the key Data Elements in the order found on the Screen Call of Segments (-CS).

```
 F0CDZ.                                                         DOSQLP
        EXEC SQL               DECLARE     DISPLAY_DZ05         DOSQLP
            CURSOR FOR SELECT ALL                               DOSQLP
                   COCARA ,                                     DOSQLP
                   NUCOD ,                                      DOSQLP
                   FOURNI ,                                     DOSQLP
                   NUCLIE ,                                     DOSQLP
                   TO_CHAR(DATE,'DDMMYY') ,                     DOSQLP
                   RELEA ,                                      DOSQLP
                   REFERENCECLIENT ,                            DOSQLP
                   RUE ,                                        DOSQLP
                   COPOS ,                                      DOSQLP
                   VILLE ,                                      DOSQLP
                   CORESP ,                                     DOSQLP
                   REMISE ,                                     DOSQLP
                   MATERIEL ,                                   DOSQLP
                   PRIX1 ,                                      DOSQLP
                   TO_CHAR(HEURE,'DD/MM/YY') ,                  DOSQLP
                   PRECIS                                       DOSQLP
                 FROM DODZ05                                    DOSQLP
      WHERE COCARA >  :DZ05-COCARA                              DOSQLP
       OR (COCARA =  :DZ05-COCARA                               DOSQLP
      AND  NUCOD >  :DZ05-NUCOD)                                DOSQLP
       OR (COCARA =  :DZ05-COCARA                               DOSQLP
      AND  NUCOD =  :DZ05-NUCOD                                 DOSQLP
      AND  FOURNI >= :DZ05-FOURNI)                              DOSQLP
          ORDER BY    COCARA,                                   DOSQLP
                      NUCOD,                                    DOSQLP
                      FOURNI                                    DOSQLP
        END-EXEC.                                               DOSQLP
        EXEC SQL               DECLARE     DISPLAY_DZ10         DOSQLP
            CURSOR FOR SELECT ALL                               DOSQLP
                   COCARA ,                                     DOSQLP
                   NUCOM ,                                      DOSQLP
                   FOURNP ,                                     DOSQLP
                   LIVRABLE ,                                   DOSQLP
                   QUANTITE-COMMANDEE ,                         DOSQLP
                   INFOR                                        DOSQLP
                 FROM DODZ10                                    DOSQLP
      WHERE COCARA >  :DZ10-COCARA                              DOSQLP
       OR (COCARA =  :DZ10-COCARA                               DOSQLP
      AND  NUCOM >= :DZ10-NUCOM)                                DOSQLP
          ORDER BY    COCARA,                                   DOSQLP
                      NUCOM                                     DOSQLP
        END-EXEC.                                               DOSQLP
 F0CDZ-FN.    EXIT.                                             DOSQLP
```

CONNECTION : F0101

The F0101 function contains the order of connexion to the Database.

```
           *************************************                 DOSQLP
           *                                   *                 DOSQLP
           *  INITIALIZATIONS                  *                 DOSQLP
           *                                   *                 DOSQLP
           *************************************                 DOSQLP
       F01.         EXIT.                                        DOSQLP
       F0101.                                                    DOSQLP
              MOVE "OPEN    " TO S-WWSS-XFUNCT   MOVE "0" TO IK.   DOSQLP
              EXEC SQL CONNECT :USERID                           DOSQLP
                       IDENTIFIED BY :S-PASSWO     END-EXEC.     DOSQLP
              OPEN INPUT        EM-FILE.                         DOSQLP
              IF IK = "1" GO TO F81ER.                           DOSQLP
              OPEN I-O  HE-FILE.                                 DOSQLP
              IF IK = "1" GO TO F81ER.                           DOSQLP
       F0101-FN.    EXIT.                                        DOSQLP
```

PHYSICAL ACCESS TO SEGMENTS : F80

By default, all the 'SELECT' commands are generated with the ALL option.

The presence validation keys are shown with the commands:

SELECT (in the INTO clause),
UPDATE (in the SET clause),
INSERT (in the VALUES clause).

```
           *************************************                 DOSQLP
           *                                   *                 DOSQLP
           *  PHYSICAL SEGMENT ACCESS ROUTINES *                 DOSQLP
           *                                   *                 DOSQLP
           *************************************                 DOSQLP
F80.         EXIT.                                               DOSQLP
F80-DZ05-R.                                                      DOSQLP
       EXEC SQL             SELECT ALL                           DOSQLP
                  COCARA ,                                       DOSQLP
                  NUCOD ,                                        DOSQLP
                  FOURNI ,                                       DOSQLP
                  NUCLIE ,                                       DOSQLP
                  TO_CHAR(DATE,'DDMMYY') ,                       DOSQLP
                  RELEA ,                                        DOSQLP
                  REFERENCECLIENT ,                              DOSQLP
                  RUE ,                                          DOSQLP
                  COPOS ,                                        DOSQLP
                  VILLE ,                                        DOSQLP
                  CORESP ,                                       DOSQLP
                  REMISE ,                                       DOSQLP
                  MATERIEL ,                                     DOSQLP
                  PRIX1 ,                                        DOSQLP
                  TO_CHAR(HEURE,'DD/MM/YY') ,                    DOSQLP
                  PRECIS                                         DOSQLP
         INTO  :DZ05-COCARA:VDZ05COCARA,                         DOSQLP
               :DZ05-NUCOD:VDZ05NUCOD,                           DOSQLP
               :DZ05-FOURNI:VDZ05FOURNI,                         DOSQLP
               :DZ05-NUCLIE:VDZ05NUCLIE,                         DOSQLP
               :DZ05-DATE:VDZ05DATE,                             DOSQLP
               :DZ05-RELEA:VDZ05RELEA,                           DOSQLP
               :VDZ05-REFCLI:VDZ05REFCLI,                        DOSQLP
               :VDZ05-RUE:VDZ05RUE,                              DOSQLP
               :DZ05-COPOS:VDZ05COPOS,                           DOSQLP
               :VDZ05-VILLE:VDZ05VILLE,                          DOSQLP
               :VDZ05-CORESP:VDZ05CORESP,                        DOSQLP
               :DZ05-REMISE:VDZ05REMISE,                         DOSQLP
               :VDZ05-MATE:VDZ05MATE,                            DOSQLP
               :DZ05-PRIX1:VDZ05PRIX1,                           DOSQLP
               :DZ05-HEURE:VDZ05HEURE,                           DOSQLP
               :DZ05-PRECIS:VDZ05PRECIS                          DOSQLP
                FROM DODZ05                                      DOSQLP
     WHERE COCARA =  :DZ05-COCARA                                DOSQLP
       AND NUCOD =  :DZ05-NUCOD                                  DOSQLP
       AND FOURNI =  :DZ05-FOURNI                                DOSQLP
       END-EXEC.                                                 DOSQLP
       GO TO F80-OK.                                             DOSQLP
F80-DZ05-RU.                                                     DOSQLP
       EXEC SQL             SELECT ALL                           DOSQLP
                  COCARA ,                                       DOSQLP
                  NUCOD ,                                        DOSQLP
                  FOURNI ,                                       DOSQLP
                  NUCLIE ,                                       DOSQLP
                  TO_CHAR(DATE,'DDMMYY') ,                       DOSQLP
                  RELEA ,                                        DOSQLP
                  REFERENCECLIENT ,                              DOSQLP
                  RUE ,                                          DOSQLP
                  COPOS ,                                        DOSQLP
                  VILLE ,                                        DOSQLP
                  CORESP ,                                       DOSQLP
                  REMISE ,                                       DOSQLP
                  MATERIEL ,                                     DOSQLP
                  PRIX1 ,                                        DOSQLP
                  TO_CHAR(HEURE,'DD/MM/YY') ,                    DOSQLP
                  PRECIS                                         DOSQLP
         INTO  :DZ05-COCARA:VDZ05COCARA,                         DOSQLP
               :DZ05-NUCOD:VDZ05NUCOD,                           DOSQLP
               :DZ05-FOURNI:VDZ05FOURNI,                         DOSQLP
               :DZ05-NUCLIE:VDZ05NUCLIE,                         DOSQLP
               :DZ05-DATE:VDZ05DATE,                             DOSQLP
               :DZ05-RELEA:VDZ05RELEA,                           DOSQLP
               :VDZ05-REFCLI:VDZ05REFCLI,                        DOSQLP
               :VDZ05-RUE:VDZ05RUE,                              DOSQLP
               :DZ05-COPOS:VDZ05COPOS,                           DOSQLP
               :VDZ05-VILLE:VDZ05VILLE,                          DOSQLP
               :VDZ05-CORESP:VDZ05CORESP,                        DOSQLP
               :DZ05-REMISE:VDZ05REMISE,                         DOSQLP
               :VDZ05-MATE:VDZ05MATE,                            DOSQLP
               :DZ05-PRIX1:VDZ05PRIX1,                           DOSQLP
               :DZ05-HEURE:VDZ05HEURE,                           DOSQLP
               :DZ05-PRECIS:VDZ05PRECIS                          DOSQLP
                FROM DODZ05                                      DOSQLP
     WHERE COCARA =  :DZ05-COCARA                                DOSQLP
       AND NUCOD =  :DZ05-NUCOD                                  DOSQLP
       AND FOURNI =  :DZ05-FOURNI                                DOSQLP
       END-EXEC.                                                 DOSQLP
       GO TO F80-OK.                                             DOSQLP
F80-DZ05-P.                                                      DOSQLP
       EXEC SQL                 OPEN      DISPLAY_DZ05           DOSQLP
       END-EXEC.                                                 DOSQLP
       MOVE   "1"   TO   DZ05-OPE.                               DOSQLP
F80-DZ05-RN.                                                     DOSQLP
       EXEC SQL                FETCH      DISPLAY_DZ05           DOSQLP
         INTO  :DZ05-COCARA:VDZ05COCARA,                         DOSQLP
               :DZ05-NUCOD:VDZ05NUCOD,                           DOSQLP
               :DZ05-FOURNI:VDZ05FOURNI,                         DOSQLP
               :DZ05-NUCLIE:VDZ05NUCLIE,                         DOSQLP
               :DZ05-DATE:VDZ05DATE,                             DOSQLP
               :DZ05-RELEA:VDZ05RELEA,                           DOSQLP
               :VDZ05-REFCLI:VDZ05REFCLI,                        DOSQLP
               :VDZ05-RUE:VDZ05RUE,                              DOSQLP
               :DZ05-COPOS:VDZ05COPOS,                           DOSQLP
               :VDZ05-VILLE:VDZ05VILLE,                          DOSQLP
               :VDZ05-CORESP:VDZ05CORESP,                        DOSQLP
               :DZ05-REMISE:VDZ05REMISE,                         DOSQLP
               :VDZ05-MATE:VDZ05MATE,                            DOSQLP
               :DZ05-PRIX1:VDZ05PRIX1,                           DOSQLP
               :DZ05-HEURE:VDZ05HEURE,                           DOSQLP
               :DZ05-PRECIS:VDZ05PRECIS                          DOSQLP
       END-EXEC.                                                 DOSQLP
       GO TO F80-OK.                                             DOSQLP
F80-DZ05-W.                                                      DOSQLP
       EXEC SQL             INSERT                               DOSQLP
                      INTO DODZ05                                DOSQLP
                  ( COCARA ,                                     DOSQLP
                    NUCOD ,                                      DOSQLP
                    FOURNI ,                                     DOSQLP
                    NUCLIE ,                                     DOSQLP
                    DATE ,                                       DOSQLP
                    RELEA ,                                      DOSQLP
                    REFERENCECLIENT ,                            DOSQLP
                    RUE ,                                        DOSQLP
                    COPOS ,                                      DOSQLP
                    VILLE ,                                      DOSQLP
                    CORESP ,                                     DOSQLP
                    REMISE ,                                     DOSQLP
                    MATERIEL ,                                   DOSQLP
                    PRIX1 ,                                      DOSQLP
                    HEURE ,                                      DOSQLP
                    PRECIS )                                     DOSQLP
      VALUES (:DZ05-COCARA:VDZ05COCARA,                          DOSQLP
              :DZ05-NUCOD:VDZ05NUCOD,                            DOSQLP
              :DZ05-FOURNI:VDZ05FOURNI,                          DOSQLP
              :DZ05-NUCLIE:VDZ05NUCLIE,                          DOSQLP
              TO_DATE(:DZ05-DATE:VDZ05DATE,'DDMMYY'),            DOSQLP
              :DZ05-RELEA:VDZ05RELEA,                            DOSQLP
              :VDZ05-REFCLI:VDZ05REFCLI,                         DOSQLP
              :VDZ05-RUE:VDZ05RUE,                               DOSQLP
              :DZ05-COPOS:VDZ05COPOS,                            DOSQLP
              :VDZ05-VILLE:VDZ05VILLE,                           DOSQLP
              :VDZ05-CORESP:VDZ05CORESP,                         DOSQLP
              :DZ05-REMISE:VDZ05REMISE,                          DOSQLP
              :VDZ05-MATE:VDZ05MATE,                             DOSQLP
              :DZ05-PRIX1:VDZ05PRIX1,                            DOSQLP
              TO_DATE(:DZ05-HEURE:VDZ05HEURE,'DD/MM/YY'),        DOSQLP
              :DZ05-PRECIS:VDZ05PRECIS)                          DOSQLP
       END-EXEC.                                                 DOSQLP
       GO TO F80-OK.                                             DOSQLP
F80-DZ05-RW.                                                     DOSQLP
       EXEC SQL             UPDATE                               DOSQLP
                           DODZ05                                DOSQLP
         SET NUCLIE =                                            DOSQLP
              :DZ05-NUCLIE:VDZ05NUCLIE,                          DOSQLP
             DATE =                                              DOSQLP
              TO_DATE(:DZ05-DATE:VDZ05DATE,'DDMMYY'),            DOSQLP
             RELEA =                                            DOSQLP
              :DZ05-RELEA:VDZ05RELEA,                           DOSQLP
             REFERENCECLIENT =                                  DOSQLP
              :VDZ05-REFCLI:VDZ05REFCLI,                        DOSQLP
             RUE =                                              DOSQLP
              :VDZ05-RUE:VDZ05RUE,                              DOSQLP
             COPOS =                                            DOSQLP
              :DZ05-COPOS:VDZ05COPOS,                           DOSQLP
             VILLE =                                            DOSQLP
              :VDZ05-VILLE:VDZ05VILLE,                          DOSQLP
             CORESP =                                           DOSQLP
              :VDZ05-CORESP:VDZ05CORESP,                        DOSQLP
             REMISE =                                           DOSQLP
              :DZ05-REMISE:VDZ05REMISE,                         DOSQLP
             MATERIEL =                                         DOSQLP
              :VDZ05-MATE:VDZ05MATE,                            DOSQLP
             PRIX1 =                                            DOSQLP
              :DZ05-PRIX1:VDZ05PRIX1,                           DOSQLP
             HEURE =                                            DOSQLP
              TO_DATE(:DZ05-HEURE:VDZ05HEURE,'DD/MM/YY'),       DOSQLP
             PRECIS =                                           DOSQLP
              :DZ05-PRECIS:VDZ05PRECIS                          DOSQLP
     WHERE COCARA =  :DZ05-COCARA                               DOSQLP
       AND NUCOD =  :DZ05-NUCOD                                 DOSQLP
       AND FOURNI =  :DZ05-FOURNI                               DOSQLP
       END-EXEC.                                                DOSQLP
       GO TO F80-OK.                                            DOSQLP
F80-DZ05-UN.                                                    DOSQLP
       GO TO F80-OK.                                            DOSQLP
F80-DZ05-CL.                                                    DOSQLP
       EXEC SQL                CLOSE      DISPLAY_DZ05          DOSQLP
       END-EXEC.                                                DOSQLP
       GO TO F80-OK.                                            DOSQLP
F8001-FN.    EXIT.                                              DOSQLP
F80-DZ10-R.                                                     DOSQLP
       EXEC SQL             SELECT ALL                          DOSQLP
                  COCARA ,                                      DOSQLP
                  NUCOM ,                                       DOSQLP
                  FOURNP ,                                      DOSQLP
                  LIVRABLE ,                                    DOSQLP
                  QUANTITE-COMMANDEE ,                          DOSQLP
                  INFOR                                         DOSQLP
         INTO  :DZ10-COCARA:VDZ10COCARA,                        DOSQLP
               :DZ10-NUCOM:VDZ10NUCOM,                          DOSQLP
               :DZ10-FOURNP:VDZ10FOURNP,                        DOSQLP
               :DZ10-QTMLI:VDZ10QTMLI,                          DOSQLP
               :DZ10-QTMCO:VDZ10QTMCO,                          DOSQLP
               :VDZ10-INFOR:VDZ10INFOR                          DOSQLP
                FROM DODZ10                                     DOSQLP
     WHERE COCARA =  :DZ10-COCARA                               DOSQLP
       AND NUCOM =  :DZ10-NUCOM                                 DOSQLP
       END-EXEC.                                                DOSQLP
       GO TO F80-OK.                                            DOSQLP
F80-DZ10-RU.                                                    DOSQLP
       EXEC SQL             SELECT ALL                          DOSQLP
                  COCARA ,                                      DOSQLP
                  NUCOM ,                                       DOSQLP
                  FOURNP ,                                      DOSQLP
                  LIVRABLE ,                                    DOSQLP
                  QUANTITE-COMMANDEE ,                          DOSQLP
                  INFOR                                         DOSQLP
         INTO  :DZ10-COCARA:VDZ10COCARA,                        DOSQLP
               :DZ10-NUCOM:VDZ10NUCOM,                          DOSQLP
               :DZ10-FOURNP:VDZ10FOURNP,                        DOSQLP
               :DZ10-QTMLI:VDZ10QTMLI,                          DOSQLP
               :DZ10-QTMCO:VDZ10QTMCO,                          DOSQLP
               :VDZ10-INFOR:VDZ10INFOR                          DOSQLP
                FROM DODZ10                                     DOSQLP
     WHERE COCARA =  :DZ10-COCARA                               DOSQLP
       AND NUCOM =  :DZ10-NUCOM                                 DOSQLP
       END-EXEC.                                                DOSQLP
       GO TO F80-OK.                                            DOSQLP
F80-DZ10-P.                                                     DOSQLP
       EXEC SQL                 OPEN      DISPLAY_DZ10          DOSQLP
       END-EXEC.                                                DOSQLP
       MOVE   "1"   TO   DZ10-OPE.                              DOSQLP
F80-DZ10-RN.                                                    DOSQLP
```

```
           EXEC SQL                FETCH      DISPLAY_DZ10           DOSQLP
             INTO  :DZ10-COCARA:VDZ10COCARA,                         DOSQLP
                   :DZ10-NUCOM:VDZ10NUCOM,                           DOSQLP
                   :DZ10-FOURNP:VDZ10FOURNP,                         DOSQLP
                   :DZ10-QTMLI:VDZ10QTMLI,                           DOSQLP
                   :DZ10-QTMCO:VDZ10QTMCO,                           DOSQLP
                   :VDZ10-INFOR:VDZ10INFOR                           DOSQLP
           END-EXEC.                                                 DOSQLP
           GO TO F80-OK.                                             DOSQLP
    F80-DZ10-W.                                                      DOSQLP
           EXEC SQL             INSERT                               DOSQLP
                          INTO DODZ10                                DOSQLP
                      ( COCARA ,                                     DOSQLP
                        NUCOM ,                                      DOSQLP
                        FOURNP ,                                     DOSQLP
                        LIVRABLE ,                                   DOSQLP
                        QUANTITE-COMMANDEE ,                         DOSQLP
                        INFOR )                                      DOSQLP
          VALUES (:DZ10-COCARA:VDZ10COCARA,                          DOSQLP
                  :DZ10-NUCOM:VDZ10NUCOM,                            DOSQLP
                  :DZ10-FOURNP:VDZ10FOURNP,                          DOSQLP
                  :DZ10-QTMLI:VDZ10QTMLI,                            DOSQLP
                  :DZ10-QTMCO:VDZ10QTMCO,                            DOSQLP
                  :VDZ10-INFOR:VDZ10INFOR)                           DOSQLP
           END-EXEC.                                                 DOSQLP
           GO TO F80-OK.                                             DOSQLP
    F80-DZ10-RW.                                                     DOSQLP
           EXEC SQL             UPDATE                               DOSQLP
                               DODZ10                                DOSQLP
             SET FOURNP =                                            DOSQLP
                  :DZ10-FOURNP:VDZ10FOURNP,                          DOSQLP
                 LIVRABLE =                                          DOSQLP
                  :DZ10-QTMLI:VDZ10QTMLI,                            DOSQLP
                 QUANTITE-COMMANDEE =                                DOSQLP
                  :DZ10-QTMCO:VDZ10QTMCO,                            DOSQLP
                 INFOR =                                             DOSQLP
                  :VDZ10-INFOR:VDZ10INFOR                            DOSQLP
         WHERE COCARA =  :DZ10-COCARA                                DOSQLP
           AND NUCOM =  :DZ10-NUCOM                                  DOSQLP
           END-EXEC.                                                 DOSQLP
           GO TO F80-OK.                                             DOSQLP
    F80-DZ10-UN.                                                     DOSQLP
           GO TO F80-OK.                                             DOSQLP
    F80-DZ10-CL.                                                     DOSQLP
           EXEC SQL                CLOSE      DISPLAY_DZ10           DOSQLP
           END-EXEC.                                                 DOSQLP
           GO TO F80-OK.                                             DOSQLP
    F8002-FN.    EXIT.                                               DOSQLP
```

8. SCREEN GENERATED USING SQL INFORMIX - ESQL

8.1. EXAMPLE SCREEN

INTRODUCTION

The object of this chapter is to present the sections of the generated screen which concern access to SQL INFORMIX - ESQL relational database.

Procedures are not explained in detail. Their functions are analogous to the general example. Only the parts of WORKING-STORAGE and functions which are specific to SQL INFORMIX - ESQL are presented.

PROGRAM GENERATION

To generate On-line programs it may be necessary to use the complementary screens:

. Work Areas (-W),

. Call of Macro-structures (-CP).

On Work Areas (-W) screens, 'AA' is a reserved value for the code FOR COBOL PLACEMENT; It is used internally by the OLSD Function.

The automatically generated lines are identified in the COBOL code by the '*AAnnn' character string from columns 72 to 80. They can be overridden on the Work Areas (-W) screen on 'AAnnn'-numbered lines.

The user can use the General Documentation (-G) lines of the screen or dialogue to override the value of some generated constants. For more details, refer to Chapter 'DESCRIPTION OF A TRANSACTION', Subchapter 'SCREEN GENERAL DOCUMENTATION (-G)' in the OLSD Reference Manual.

```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION                  *PDLB.NDOC.APC.2!
! ON-LINE SCREEN CALL OF SEGM. DOSQLI CALL SQL INFORMIX-ESQL                   !
! .............................................................................!
! A SEGM      :   USE PREC ACCESS KEY     ACCESS     D EXTERNAL LIB. S    :LIBR!
! C CODE C LN : G R D SEGM SOURCE         KEY    B O T NAME     SEGM N LV :    !
! . DZ05 R 00 :   X A                     COCARA   I 1 QIBLOC   DZ05      :*DCC!
! . DZ05 R 02 :                           NUCOD                           :*DCC!
! . DZ05 R 04 :                           FOURNI                          :*DCC!
! . DZ10 R 00 :   X A                     COCARA   I 1 QIBLOC   DZ10      :*DCC!
! . DZ10 R 02 :                           NUCOM                           :*DCC!
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!                                                                              !
! O: C1 CH:                                                                    !
--------------------------------------------------------------------------------
```

8.2. WORKING-STORAGE SECTION

WORKING-STORAGE SECTION

The WORKING-STORAGE section includes:

- The description of input/output fields (Host variables).

The segment descriptions are located between the SQL orders: 'BEGIN DECLARE SECTION' and 'END DECLARE SECTION'.

In a Segment description, only the Data Elements of elementary level are present.

For the variable Data Elements (VARCHAR) called in a 'FFnn' code Segment (Data Elements with 'V', 'L' or 'W' in the key area of the segment description), the following lines are generated:

```
          ffnn-DELCO PICTURE ...
                     VARYING.
```

The LFFnn-delco field must be input with the real length of the field before updating.

- Presence validation keys: each field (delco) of a table or a SQL view (FFnn) is associated with a presence validation key (VFFnnDelco or V-FFnn-Delco if the SQLREF option is indicated in Dialogue complement (-O)).

The descriptions of the presence validation keys are generated in WORKING-STORAGE, just after the segments and before the command END DECLARE SECTION.
The SQLIND option, input by the user in Dialogue complement, allows for the management of those keys in update and display. The keys are initialized in function F30 and conditioned for transfer in DISPLAY by the column presence (for columns which can be null).

- The SQL command 'INCLUDE SQLCA' is systematically generated.

```
       EXEC SQL BEGIN DECLARE SECTION END-EXEC.                  DOSQLI
01                 DZ05.                                         DOSQLI
     05            DZ05-COCARA PICTURE X.                        DOSQLI
     05            DZ05-NUCOD  PICTURE S9(3)                     DOSQLI
                        COMPUTATIONAL-4.                         DOSQLI
     05            DZ05-FOURNI PICTURE X(3).                     DOSQLI
     05            DZ05-NUCLIE PICTURE 9(8).                     DOSQLI
     05            DZ05-DATE   PICTURE X(6).                     DOSQLI
     05            DZ05-RELEA  PICTURE X(3).                     DOSQLI
     05           VDZ05-REFCLI.                                  DOSQLI
       49         LDZ05-REFCLI PICTURE S9(4) COMP.               DOSQLI
       49          DZ05-REFCLI PICTURE X(30).                    DOSQLI
     05           VDZ05-RUE.                                     DOSQLI
       49         LDZ05-RUE    PICTURE S9(4) COMP.               DOSQLI
       49          DZ05-RUE    PICTURE X(40).                    DOSQLI
     05            DZ05-COPOS  PICTURE X(5).                     DOSQLI
     05           VDZ05-VILLE.                                   DOSQLI
       49         LDZ05-VILLE  PICTURE S9(4) COMP.               DOSQLI
       49          DZ05-VILLE  PICTURE X(20).                    DOSQLI
     05           VDZ05-CORESP.                                  DOSQLI
       49         LDZ05-CORESP PICTURE S9(4) COMP.               DOSQLI
       49          DZ05-CORESP PICTURE X(256).                   DOSQLI
     05            DZ05-REMISE PICTURE S9(4)V99                  DOSQLI
                        COMPUTATIONAL-3.                         DOSQLI
     05           VDZ05-MATE.                                    DOSQLI
       49         LDZ05-MATE   PICTURE S9(4) COMP.               DOSQLI
       49          DZ05-MATE   PICTURE X(8).                     DOSQLI
     05            DZ05-PRIX1  PICTURE S9(8)                     DOSQLI
                        COMPUTATIONAL-4.                         DOSQLI
     05            DZ05-HEURE  PICTURE X(8).                     DOSQLI
     05            DZ05-PRECIS PICTURE X(26).                    DOSQLI
01                 DZ10.                                         DOSQLI
     05            DZ10-COCARA PICTURE X.                        DOSQLI
     05            DZ10-NUCOM  PICTURE 9(5).                     DOSQLI
     05            DZ10-FOURNP PICTURE X(3).                     DOSQLI
     05            DZ10-QTMLI  PICTURE S9(2)                     DOSQLI
                        COMPUTATIONAL-4.                         DOSQLI
     05            DZ10-QTMCO  PICTURE S9(2)                     DOSQLI
                        COMPUTATIONAL-4.                         DOSQLI
     05           VDZ10-INFOR.                                   DOSQLI
       49         LDZ10-INFOR  PICTURE S9(4) COMP.               DOSQLI
       49          DZ10-INFOR  PICTURE X(35).                    DOSQLI
01                VDZ05.                                         DOSQLI
     05           VDZ05COCARA  PICTURE S9(4) COMP.               DOSQLI
     05           VDZ05NUCOD   PICTURE S9(4) COMP.               DOSQLI
     05           VDZ05FOURNI  PICTURE S9(4) COMP.               DOSQLI
     05           VDZ05NUCLIE  PICTURE S9(4) COMP.               DOSQLI
     05           VDZ05DATE    PICTURE S9(4) COMP.               DOSQLI
     05           VDZ05RELEA   PICTURE S9(4) COMP.               DOSQLI
     05           VDZ05REFCLI  PICTURE S9(4) COMP.               DOSQLI
     05           VDZ05RUE     PICTURE S9(4) COMP.               DOSQLI
     05           VDZ05COPOS   PICTURE S9(4) COMP.               DOSQLI
     05           VDZ05VILLE   PICTURE S9(4) COMP.               DOSQLI
     05           VDZ05CORESP  PICTURE S9(4) COMP.               DOSQLI
     05           VDZ05REMISE  PICTURE S9(4) COMP.               DOSQLI
     05           VDZ05MATE    PICTURE S9(4) COMP.               DOSQLI
     05           VDZ05PRIX1   PICTURE S9(4) COMP.               DOSQLI
     05           VDZ05HEURE   PICTURE S9(4) COMP.               DOSQLI
     05           VDZ05PRECIS  PICTURE S9(4) COMP.               DOSQLI
01                VDZ10.                                         DOSQLI
     05           VDZ10COCARA  PICTURE S9(4) COMP.               DOSQLI
     05           VDZ10NUCOM   PICTURE S9(4) COMP.               DOSQLI
     05           VDZ10FOURNP  PICTURE S9(4) COMP.               DOSQLI
     05           VDZ10QTMLI   PICTURE S9(4) COMP.               DOSQLI
     05           VDZ10QTMCO   PICTURE S9(4) COMP.               DOSQLI
     05           VDZ10INFOR   PICTURE S9(4) COMP.               DOSQLI
       EXEC SQL END   DECLARE SECTION END-EXEC.                  DOSQLI
       EXEC SQL INCLUDE SQLCA         END-EXEC.                  DOSQLI
```

8.3. COMMUNICATION AREA

COMMUNICATION AREA

After the description of the common area (CA00), display keys are grouped by category under the K-eeee level.

All Data Elements declared as display Segment keys in the Screen Call of Segments (-CS) are present and independently located on level 05.

They are also independently input in the PROCEDURE DIVISION.

SCREEN GENERATED USING SQL INFORMIX - ESQL 8

COMMUNICATION AREA 3

```
LINKAGE SECTION.                                                  *00000
01      COMMON-AREA.                                              *00000
     02     K-SSQLI-PROGR PICTURE X(6).                           *00000
     02            CA00.                                          *00001
       10          CA00-CLECD.                                    *00001
        15         CA00-NUCOM  PICTURE 9(5).                      *00001
       10          CA00-CLECL1.                                   *00001
        15         CA00-NUCLIE PICTURE 9(8).                      *00001
       10          CA00-ME00.                                     *00001
        15         CA00-CLEME.                                    *00001
         20        CA00-COPERS PICTURE X(5).                      *00001
         20        CA00-NUMORD PICTURE XX.                        *00001
        15         CA00-MESSA  PICTURE X(75).                     *00001
       10          CA00-PREM   PICTURE X.                         *00001
       10          CA00-LANGU  PICTURE X.                         *00001
       10          CA00-RAISOC PICTURE X(50).                     *00001
     02     K-SSQLI-DOC   PICTURE X.                              *00002
     02     K-SSQLI-PROGE PICTURE X(8).                           *00002
     02     K-SSQLI-CPOSL PICTURE S9(4) COMPUTATIONAL.            *00002
     02     K-SSQLI-LIBRA PICTURE XXX.                            *00002
     02     K-SSQLI-PROHE PICTURE X(8).                           *00002
     02     K-SSQLI-ERCOD.                                        *00002
       05   K-SSQLI-ERCOD9 PICTURE 999.                           *00002
     02     K-SSQLI-ERTYP PICTURE X.                              *00002
     02     K-SSQLI-LINUM PICTURE 999.                            *00002
     02     K-SSQLI-XTERM PICTURE X(10).                          *00002
     02      K-SQLI.                                              *00002
      05        K-RDZ05-COCARA PICTURE X.                         *00002
      05        K-RDZ05-NUCOD  PICTURE S9(3)                      *00002
                        COMPUTATIONAL-4.                          *00002
      05        K-RDZ05-FOURNI PICTURE X(3).                      *00002
      05        K-RDZ10-COCARA PICTURE X.                         *00002
      05        K-RDZ10-NUCOM  PICTURE 9(5).                      *00002
     02      FILLER        PICTURE X(0676).                       *00002
```

8.4. PROCEDURE DIVISION

CALLED SQL VALIDATION FUNCTIONS : F0B

PROCESSING OF THE ABNORMAL END

The F0B function processes SQL errors.

CONNECTION TO THE DATABASE

The F01 function contains the order of connection to the Database.

```
   F0B.                                                             DOSQLI
          EXEC SQL WHENEVER NOT FOUND GO TO F80-KO END-EXEC.        DOSQLI
          EXEC SQL WHENEVER SQLERROR  GO TO F81ES  END-EXEC.        DOSQLI
          EXEC SQL  DATABASE   EXQIBLOC  END-EXEC.                  DOSQLI
          EXEC SQL WHENEVER SQLWARNING GO TO F81EW END-EXEC.        DOSQLI
   F0B-FN.      EXIT.                                               DOSQLI
```

DECLARE CURSOR : F0C

This function contains the SQL statements corresponding to the cursor declaration when a table is used in display in the repetitive category.

. The clause FROM "external table name" names the external table or view called in the description of the Database Block (-DR). By default this external name is found in the Segment definition screen. The Database Block code is indicated in the EXTERNAL NAME field of the Screen Call of Segments (-CS).

. The clause WHERE ... ORDER lists the key Data Elements in the order found on the Screen Call of Segments (-CS).

```
F0CDZ.                                                           DOSQLI
       EXEC SQL               DECLARE     DISPLAY_DZ05           DOSQLI
           CURSOR FOR SELECT ALL                                 DOSQLI
                  COCARA ,                                       DOSQLI
                  NUCOD ,                                        DOSQLI
                  FOURNI ,                                       DOSQLI
                  NUCLIE ,                                       DOSQLI
                  DATE ,                                         DOSQLI
                  RELEA ,                                        DOSQLI
                  REFERENCECLIENT ,                              DOSQLI
                  RUE ,                                          DOSQLI
                  COPOS ,                                        DOSQLI
                  VILLE ,                                        DOSQLI
                  CORESP ,                                       DOSQLI
                  REMISE ,                                       DOSQLI
                  MATERIEL ,                                     DOSQLI
                  PRIX1 ,                                        DOSQLI
                  HEURE ,                                        DOSQLI
                  PRECIS                                         DOSQLI
                FROM PDKG.DODZ05                                 DOSQLI
     WHERE COCARA >  :DZ05-COCARA                                DOSQLI
      OR (COCARA =  :DZ05-COCARA                                 DOSQLI
     AND  NUCOD >  :DZ05-NUCOD)                                  DOSQLI
      OR (COCARA =  :DZ05-COCARA                                 DOSQLI
     AND  NUCOD =  :DZ05-NUCOD                                   DOSQLI
     AND  FOURNI >= :DZ05-FOURNI)                                DOSQLI
         ORDER BY    COCARA,                                     DOSQLI
                     NUCOD,                                      DOSQLI
                     FOURNI                                      DOSQLI
       END-EXEC.                                                 DOSQLI
       EXEC SQL               DECLARE     DISPLAY_DZ10           DOSQLI
           CURSOR FOR SELECT ALL                                 DOSQLI
                  COCARA ,                                       DOSQLI
                  NUCOM ,                                        DOSQLI
                  FOURNP ,                                       DOSQLI
                  LIVRABLE ,                                     DOSQLI
                  QUANTITE-COMMANDEE ,                           DOSQLI
                  INFOR                                          DOSQLI
                FROM PDKG.DODZ10                                 DOSQLI
     WHERE COCARA >  :DZ10-COCARA                                DOSQLI
      OR (COCARA =  :DZ10-COCARA                                 DOSQLI
     AND  NUCOM >= :DZ10-NUCOM)                                  DOSQLI
         ORDER BY    COCARA,                                     DOSQLI
                     NUCOM                                       DOSQLI
       END-EXEC.                                                 DOSQLI
F0CDZ-FN.    EXIT.                                               DOSQLI
```

PHYSICAL ACCESS TO SEGMENTS : F80

By default, all the 'SELECT' commands are generated with the ALL option.

The presence validation keys are shown with the commands:

SELECT (in the INTO clause),
UPDATE (in the SET clause),
INSERT (in the VALUES clause).

The F8090 function (PERFORM in reception) determines the beginning of the transaction.
The F8091 function (PERFORM in reception) unlocks the database at the end of the update.

The F8092 function (PERFORM in display) determines the beginning of the DISPLAY routine.
The F8093 function (PERFORM in display) unlocks the database at the end of the DISPLAY routine.

```
                  *************************************                 DOSQLI
                  *                                   *                 DOSQLI
                  *  PHYSICAL SEGMENT ACCESS ROUTINES *                 DOSQLI
                  *                                   *                 DOSQLI
                  *************************************                 DOSQLI
       F80.         EXIT.                                               DOSQLI
       F80-DZ05-R.                                                      DOSQLI
              EXEC SQL             SELECT ALL                           DOSQLI
                         COCARA ,                                       DOSQLI
                         NUCOD ,                                        DOSQLI
                         FOURNI ,                                       DOSQLI
                         NUCLIE ,                                       DOSQLI
                         DATE ,                                         DOSQLI
                         RELEA ,                                        DOSQLI
                         REFERENCECLIENT ,                              DOSQLI
                         RUE ,                                          DOSQLI
                         COPOS ,                                        DOSQLI
                         VILLE ,                                        DOSQLI
                         CORESP ,                                       DOSQLI
                         REMISE ,                                       DOSQLI
                         MATERIEL ,                                     DOSQLI
                         PRIX1 ,                                        DOSQLI
                         HEURE ,                                        DOSQLI
                         PRECIS                                         DOSQLI
                INTO  :DZ05-COCARA:VDZ05COCARA,                         DOSQLI
                      :DZ05-NUCOD:VDZ05NUCOD,                           DOSQLI
                      :DZ05-FOURNI:VDZ05FOURNI,                         DOSQLI
                      :DZ05-NUCLIE:VDZ05NUCLIE,                         DOSQLI
                      :DZ05-DATE:VDZ05DATE,                             DOSQLI
                      :DZ05-RELEA:VDZ05RELEA,                           DOSQLI
                      :VDZ05-REFCLI:VDZ05REFCLI,                        DOSQLI
                      :VDZ05-RUE:VDZ05RUE,                              DOSQLI
                      :DZ05-COPOS:VDZ05COPOS,                           DOSQLI
                      :VDZ05-VILLE:VDZ05VILLE,                          DOSQLI
                      :VDZ05-CORESP:VDZ05CORESP,                        DOSQLI
                      :DZ05-REMISE:VDZ05REMISE,                         DOSQLI
                      :VDZ05-MATE:VDZ05MATE,                            DOSQLI
                      :DZ05-PRIX1:VDZ05PRIX1,                           DOSQLI
                      :DZ05-HEURE:VDZ05HEURE,                           DOSQLI
                      :DZ05-PRECIS:VDZ05PRECIS                          DOSQLI
                       FROM PDKG.DODZ05                                 DOSQLI
            WHERE COCARA =  :DZ05-COCARA                                DOSQLI
              AND NUCOD =  :DZ05-NUCOD                                  DOSQLI
              AND FOURNI =  :DZ05-FOURNI                                DOSQLI
              END-EXEC.                                                 DOSQLI
              GO TO F80-OK.                                             DOSQLI
       F80-DZ05-RU.                                                     DOSQLI
              EXEC SQL             SELECT ALL                           DOSQLI
                         COCARA ,                                       DOSQLI
                         NUCOD ,                                        DOSQLI
                         FOURNI ,                                       DOSQLI
                         NUCLIE ,                                       DOSQLI
                         DATE ,                                         DOSQLI
                         RELEA ,                                        DOSQLI
                         REFERENCECLIENT ,                              DOSQLI
                         RUE ,                                          DOSQLI
                         COPOS ,                                        DOSQLI
                         VILLE ,                                        DOSQLI
                         CORESP ,                                       DOSQLI
                         REMISE ,                                       DOSQLI
                         MATERIEL ,                                     DOSQLI
                         PRIX1 ,                                        DOSQLI
                         HEURE ,                                        DOSQLI
                         PRECIS                                         DOSQLI
                INTO  :DZ05-COCARA:VDZ05COCARA,                         DOSQLI
                      :DZ05-NUCOD:VDZ05NUCOD,                           DOSQLI
                      :DZ05-FOURNI:VDZ05FOURNI,                         DOSQLI
                      :DZ05-NUCLIE:VDZ05NUCLIE,                         DOSQLI
                      :DZ05-DATE:VDZ05DATE,                             DOSQLI
                      :DZ05-RELEA:VDZ05RELEA,                           DOSQLI
                      :VDZ05-REFCLI:VDZ05REFCLI,                        DOSQLI
                      :VDZ05-RUE:VDZ05RUE,                              DOSQLI
                      :DZ05-COPOS:VDZ05COPOS,                           DOSQLI
                      :VDZ05-VILLE:VDZ05VILLE,                          DOSQLI
                      :VDZ05-CORESP:VDZ05CORESP,                        DOSQLI
                      :DZ05-REMISE:VDZ05REMISE,                         DOSQLI
                      :VDZ05-MATE:VDZ05MATE,                            DOSQLI
```

```
               :DZ05-PRIX1:VDZ05PRIX1,                           DOSQLI
               :DZ05-HEURE:VDZ05HEURE,                           DOSQLI
               :DZ05-PRECIS:VDZ05PRECIS                          DOSQLI
                FROM PDKG.DODZ05                                 DOSQLI
     WHERE COCARA =  :DZ05-COCARA                                DOSQLI
       AND NUCOD =  :DZ05-NUCOD                                  DOSQLI
       AND FOURNI =  :DZ05-FOURNI                                DOSQLI
       END-EXEC.                                                 DOSQLI
       GO TO F80-OK.                                             DOSQLI
F80-DZ05-P.                                                      DOSQLI
       EXEC SQL                 OPEN      DISPLAY_DZ05           DOSQLI
       END-EXEC.                                                 DOSQLI
F80-DZ05-RN.                                                     DOSQLI
       EXEC SQL                FETCH      DISPLAY_DZ05           DOSQLI
         INTO  :DZ05-COCARA:VDZ05COCARA,                         DOSQLI
               :DZ05-NUCOD:VDZ05NUCOD,                           DOSQLI
               :DZ05-FOURNI:VDZ05FOURNI,                         DOSQLI
               :DZ05-NUCLIE:VDZ05NUCLIE,                         DOSQLI
               :DZ05-DATE:VDZ05DATE,                             DOSQLI
               :DZ05-RELEA:VDZ05RELEA,                           DOSQLI
               :VDZ05-REFCLI:VDZ05REFCLI,                        DOSQLI
               :VDZ05-RUE:VDZ05RUE,                              DOSQLI
               :DZ05-COPOS:VDZ05COPOS,                           DOSQLI
               :VDZ05-VILLE:VDZ05VILLE,                          DOSQLI
               :VDZ05-CORESP:VDZ05CORESP,                        DOSQLI
               :DZ05-REMISE:VDZ05REMISE,                         DOSQLI
               :VDZ05-MATE:VDZ05MATE,                            DOSQLI
               :DZ05-PRIX1:VDZ05PRIX1,                           DOSQLI
               :DZ05-HEURE:VDZ05HEURE,                           DOSQLI
               :DZ05-PRECIS:VDZ05PRECIS                          DOSQLI
       END-EXEC.                                                 DOSQLI
       GO TO F80-OK.                                             DOSQLI
F80-DZ05-W.                                                      DOSQLI
       EXEC SQL             INSERT                               DOSQLI
                      INTO PDKG.DODZ05                           DOSQLI
                  ( COCARA ,                                     DOSQLI
                    NUCOD ,                                      DOSQLI
                    FOURNI ,                                     DOSQLI
                    NUCLIE ,                                     DOSQLI
                    DATE ,                                       DOSQLI
                    RELEA ,                                      DOSQLI
                    REFERENCECLIENT ,                            DOSQLI
                    RUE ,                                        DOSQLI
                    COPOS ,                                      DOSQLI
                    VILLE ,                                      DOSQLI
                    CORESP ,                                     DOSQLI
                    REMISE ,                                     DOSQLI
                    MATERIEL ,                                   DOSQLI
                    PRIX1 ,                                      DOSQLI
                    HEURE ,                                      DOSQLI
                    PRECIS )                                     DOSQLI
      VALUES (:DZ05-COCARA:VDZ05COCARA,                          DOSQLI
              :DZ05-NUCOD:VDZ05NUCOD,                            DOSQLI
              :DZ05-FOURNI:VDZ05FOURNI,                          DOSQLI
              :DZ05-NUCLIE:VDZ05NUCLIE,                          DOSQLI
              :DZ05-DATE:VDZ05DATE,                              DOSQLI
              :DZ05-RELEA:VDZ05RELEA,                            DOSQLI
              :VDZ05-REFCLI:VDZ05REFCLI,                         DOSQLI
              :VDZ05-RUE:VDZ05RUE,                               DOSQLI
              :DZ05-COPOS:VDZ05COPOS,                            DOSQLI
              :VDZ05-VILLE:VDZ05VILLE,                           DOSQLI
              :VDZ05-CORESP:VDZ05CORESP,                         DOSQLI
              :DZ05-REMISE:VDZ05REMISE,                          DOSQLI
              :VDZ05-MATE:VDZ05MATE,                             DOSQLI
              :DZ05-PRIX1:VDZ05PRIX1,                            DOSQLI
              :DZ05-HEURE:VDZ05HEURE,                            DOSQLI
              :DZ05-PRECIS:VDZ05PRECIS)                          DOSQLI
       END-EXEC.                                                 DOSQLI
       GO TO F80-OK.                                             DOSQLI
F80-DZ05-RW.                                                     DOSQLI
       EXEC SQL             UPDATE                               DOSQLI
                           PDKG.DODZ05                           DOSQLI
         SET NUCLIE =                                            DOSQLI
              :DZ05-NUCLIE:VDZ05NUCLIE,                          DOSQLI
             DATE =                                              DOSQLI
              :DZ05-DATE:VDZ05DATE,                              DOSQLI
             RELEA =                                             DOSQLI
```

```
              :DZ05-RELEA:VDZ05RELEA,                            DOSQLI
             REFERENCECLIENT =                                   DOSQLI
              :VDZ05-REFCLI:VDZ05REFCLI,                         DOSQLI
             RUE =                                               DOSQLI
              :VDZ05-RUE:VDZ05RUE,                               DOSQLI
             COPOS =                                             DOSQLI
              :DZ05-COPOS:VDZ05COPOS,                            DOSQLI
             VILLE =                                             DOSQLI
              :VDZ05-VILLE:VDZ05VILLE,                           DOSQLI
             CORESP =                                            DOSQLI
              :VDZ05-CORESP:VDZ05CORESP,                         DOSQLI
             REMISE =                                            DOSQLI
              :DZ05-REMISE:VDZ05REMISE,                          DOSQLI
             MATERIEL =                                          DOSQLI
              :VDZ05-MATE:VDZ05MATE,                             DOSQLI
             PRIX1 =                                             DOSQLI
              :DZ05-PRIX1:VDZ05PRIX1,                            DOSQLI
             HEURE =                                             DOSQLI
              :DZ05-HEURE:VDZ05HEURE,                            DOSQLI
             PRECIS =                                            DOSQLI
              :DZ05-PRECIS:VDZ05PRECIS                           DOSQLI
     WHERE COCARA =  :DZ05-COCARA                                DOSQLI
       AND NUCOD =  :DZ05-NUCOD                                  DOSQLI
       AND FOURNI =  :DZ05-FOURNI                                DOSQLI
       END-EXEC.                                                 DOSQLI
       GO TO F80-OK.                                             DOSQLI
F80-DZ05-UN.                                                     DOSQLI
       GO TO F80-OK.                                             DOSQLI
F80-DZ05-CL.                                                     DOSQLI
       EXEC SQL                CLOSE      DISPLAY_DZ05           DOSQLI
       END-EXEC.                                                 DOSQLI
       GO TO F80-OK.                                             DOSQLI
F8001-FN.    EXIT.                                               DOSQLI
F80-DZ10-R.                                                      DOSQLI
       EXEC SQL             SELECT ALL                           DOSQLI
                  COCARA ,                                       DOSQLI
                  NUCOM ,                                        DOSQLI
                  FOURNP ,                                       DOSQLI
                  LIVRABLE ,                                     DOSQLI
                  QUANTITE-COMMANDEE ,                           DOSQLI
                  INFOR                                          DOSQLI
         INTO  :DZ10-COCARA:VDZ10COCARA,                         DOSQLI
               :DZ10-NUCOM:VDZ10NUCOM,                           DOSQLI
               :DZ10-FOURNP:VDZ10FOURNP,                         DOSQLI
               :DZ10-QTMLI:VDZ10QTMLI,                           DOSQLI
               :DZ10-QTMCO:VDZ10QTMCO,                           DOSQLI
               :VDZ10-INFOR:VDZ10INFOR                           DOSQLI
                FROM PDKG.DODZ10                                 DOSQLI
     WHERE COCARA =  :DZ10-COCARA                                DOSQLI
       AND NUCOM =  :DZ10-NUCOM                                  DOSQLI
       END-EXEC.                                                 DOSQLI
       GO TO F80-OK.                                             DOSQLI
F80-DZ10-RU.                                                     DOSQLI
       EXEC SQL             SELECT ALL                           DOSQLI
                  COCARA ,                                       DOSQLI
                  NUCOM ,                                        DOSQLI
                  FOURNP ,                                       DOSQLI
                  LIVRABLE ,                                     DOSQLI
                  QUANTITE-COMMANDEE ,                           DOSQLI
                  INFOR                                          DOSQLI
         INTO  :DZ10-COCARA:VDZ10COCARA,                         DOSQLI
               :DZ10-NUCOM:VDZ10NUCOM,                           DOSQLI
               :DZ10-FOURNP:VDZ10FOURNP,                         DOSQLI
               :DZ10-QTMLI:VDZ10QTMLI,                           DOSQLI
               :DZ10-QTMCO:VDZ10QTMCO,                           DOSQLI
               :VDZ10-INFOR:VDZ10INFOR                           DOSQLI
                FROM PDKG.DODZ10                                 DOSQLI
     WHERE COCARA =  :DZ10-COCARA                                DOSQLI
       AND NUCOM =  :DZ10-NUCOM                                  DOSQLI
       END-EXEC.                                                 DOSQLI
       GO TO F80-OK.                                             DOSQLI
F80-DZ10-P.                                                      DOSQLI
       EXEC SQL                 OPEN      DISPLAY_DZ10           DOSQLI
       END-EXEC.                                                 DOSQLI
F80-DZ10-RN.                                                     DOSQLI
       EXEC SQL                FETCH      DISPLAY_DZ10           DOSQLI
         INTO  :DZ10-COCARA:VDZ10COCARA,                         DOSQLI
```

```
               :DZ10-NUCOM:VDZ10NUCOM,                           DOSQLI
               :DZ10-FOURNP:VDZ10FOURNP,                         DOSQLI
               :DZ10-QTMLI:VDZ10QTMLI,                           DOSQLI
               :DZ10-QTMCO:VDZ10QTMCO,                           DOSQLI
               :VDZ10-INFOR:VDZ10INFOR                           DOSQLI
       END-EXEC.                                                 DOSQLI
       GO TO F80-OK.                                             DOSQLI
F80-DZ10-W.                                                      DOSQLI
       EXEC SQL             INSERT                               DOSQLI
                      INTO PDKG.DODZ10                           DOSQLI
                  ( COCARA ,                                     DOSQLI
                    NUCOM ,                                      DOSQLI
                    FOURNP ,                                     DOSQLI
                    LIVRABLE ,                                   DOSQLI
                    QUANTITE-COMMANDEE ,                         DOSQLI
                    INFOR )                                      DOSQLI
      VALUES (:DZ10-COCARA:VDZ10COCARA,                          DOSQLI
              :DZ10-NUCOM:VDZ10NUCOM,                            DOSQLI
              :DZ10-FOURNP:VDZ10FOURNP,                          DOSQLI
              :DZ10-QTMLI:VDZ10QTMLI,                            DOSQLI
              :DZ10-QTMCO:VDZ10QTMCO,                            DOSQLI
              :VDZ10-INFOR:VDZ10INFOR)                           DOSQLI
       END-EXEC.                                                 DOSQLI
       GO TO F80-OK.                                             DOSQLI
F80-DZ10-RW.                                                     DOSQLI
       EXEC SQL             UPDATE                               DOSQLI
                           PDKG.DODZ10                           DOSQLI
         SET FOURNP =                                            DOSQLI
              :DZ10-FOURNP:VDZ10FOURNP,                          DOSQLI
             LIVRABLE =                                          DOSQLI
              :DZ10-QTMLI:VDZ10QTMLI,                            DOSQLI
             QUANTITE-COMMANDEE =                                DOSQLI
              :DZ10-QTMCO:VDZ10QTMCO,                            DOSQLI
             INFOR =                                             DOSQLI
              :VDZ10-INFOR:VDZ10INFOR                            DOSQLI
     WHERE COCARA =  :DZ10-COCARA                                DOSQLI
       AND NUCOM =  :DZ10-NUCOM                                  DOSQLI
       END-EXEC.                                                 DOSQLI
       GO TO F80-OK.                                             DOSQLI
F80-DZ10-UN.                                                     DOSQLI
       GO TO F80-OK.                                             DOSQLI
F80-DZ10-CL.                                                     DOSQLI
       EXEC SQL                CLOSE      DISPLAY_DZ10           DOSQLI
       END-EXEC.                                                 DOSQLI
       GO TO F80-OK.                                             DOSQLI
F8002-FN.    EXIT.                                               DOSQLI
F8090.                                                           DOSQLI
       MOVE "9" TO CATX.                                         DOSQLI
       EXEC SQL  BEGIN WORK   END-EXEC.                          DOSQLI
F8090-FN.    EXIT.                                               DOSQLI
F8091.                                                           DOSQLI
       MOVE "1" TO CATX.                                         DOSQLI
       EXEC SQL  COMMIT WORK  END-EXEC.                          DOSQLI
F8091-FN.    EXIT.                                               DOSQLI
F8092.                                                           DOSQLI
       EXEC SQL  BEGIN WORK   END-EXEC.                          DOSQLI
F8092-FN.    EXIT.                                               DOSQLI
F8093.                                                           DOSQLI
       MOVE "2" TO CATX.                                         DOSQLI
       EXEC SQL  COMMIT WORK  END-EXEC.                          DOSQLI
F8093-FN.    EXIT.                                               DOSQLI
```

9. SCREEN GENERATED USING SQL INGRES

9.1. EXAMPLE SCREEN

INTRODUCTION

The object of this chapter is to present the sections of the generated screen which concern access to SQL INGRES relational database.

Procedures are not explained in detail. Their functions are analogous to the general example. Only the parts of WORKING-STORAGE and functions which are specific to SQL INGRES are presented.

PROGRAM GENERATION

To generate On-line programs it may be necessary to use the complementary screens:

. Work Areas (-W),

. Call of Macro-structures (-CP).

On Work Areas (-W) screens, 'AA' is a reserved value for the code FOR COBOL PLACEMENT; It is used internally by the OLSD Function.

The automatically generated lines are identified in the COBOL code by the '*AAnnn' character string from columns 72 to 80. They can be overridden on the Work Areas (-W) screen on 'AAnnn'-numbered lines.

The user can use the General Documentation (-G) lines of the screen or dialogue to override the value of some generated constants. For more details, refer to Chapter 'DESCRIPTION OF A TRANSACTION', Subchapter 'SCREEN GENERAL DOCUMENTATION (-G)' in the OLSD Reference Manual.

```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION                  *PDLB.NDOC.APC.2!
! ON-LINE SCREEN CALL OF SEGM. DOSQLI CALL SQL INGRES                          !
! .............................................................................!
! A SEGM      :   USE PREC ACCESS KEY     ACCESS     D EXTERNAL LIB. S    :LIBR!
! C CODE C LN : G R D SEGM SOURCE         KEY    B O T NAME     SEGM N LV :    !
! . DZ05 R 00 :   X A                     COCARA   I 1 QGBLOC   DZ05      :*DCC!
! . DZ05 R 02 :                           NUCOD                           :*DCC!
! . DZ05 R 04 :                           FOURNI                          :*DCC!
! . DZ10 R 00 :   X A                     COCARA   I 1 QGBLOC   DZ10      :*DCC!
! . DZ10 R 02 :                           NUCOM                           :*DCC!
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!                                                                              !
! O: C1 CH:                                                                    !
--------------------------------------------------------------------------------
```

9.2. WORKING-STORAGE SECTION

WORKING-STORAGE SECTION

The WORKING-STORAGE section includes:

- The description of input/output fields (Host variables).

The segment descriptions are located between the SQL orders: 'BEGIN DECLARE SECTION' and 'END DECLARE SECTION'.

In a Segment description, only the Data Elements of elementary level are present.

- Presence validation keys: each field (delco) of a table or a SQL view (FFnn) is associated with a presence validation key (VFFnnDelco or V-FFnn-Delco if the SQLREF option is indicated in Dialogue complement (-O)).

The descriptions of the presence validation keys are generated in WORKING-STORAGE, just after the segments and before the command END DECLARE SECTION.
The SQLIND option, input by the user in Dialogue complement, allows for the management of those keys in update and display. The keys are initialized in function F30 and conditioned for transfer in DISPLAY by the column presence (for columns which can be null).

- The SQL command 'INCLUDE SQLCA' is systematically generated.

```
       EXEC SQL BEGIN DECLARE SECTION END-EXEC.                 DOSQLG
01                 DZ05.                                        DOSQLG
     05            DZ05-COCARA PICTURE X.                       DOSQLG
     05            DZ05-NUCOD  PICTURE S9(3)                    DOSQLG
                        COMPUTATIONAL-4.                        DOSQLG
     05            DZ05-FOURNI PICTURE X(3).                    DOSQLG
     05            DZ05-NUCLIE PICTURE X(8).                    DOSQLG
     05            DZ05-DATE   PICTURE X(10).                   DOSQLG
     05            DZ05-RELEA  PICTURE X(3).                    DOSQLG
     05            DZ05-REFCLI PICTURE X(30).                   DOSQLG
     05            DZ05-RUE    PICTURE X(40).                   DOSQLG
     05            DZ05-COPOS  PICTURE X(5).                    DOSQLG
     05            DZ05-VILLE  PICTURE X(20).                   DOSQLG
     05            DZ05-CORESP PICTURE X(256).                  DOSQLG
     05            DZ05-REMISE PICTURE S9(4)V99                 DOSQLG
                        COMPUTATIONAL-3.                        DOSQLG
     05            DZ05-MATE   PICTURE X(10).                   DOSQLG
     05            DZ05-PRIX1  PICTURE S9(8)                    DOSQLG
                        COMPUTATIONAL-4.                        DOSQLG
     05            DZ05-HEURE  PICTURE X(8).                    DOSQLG
     05            DZ05-PRECIS PICTURE X(26).                   DOSQLG
01                 DZ10.                                        DOSQLG
     05            DZ10-COCARA PICTURE X.                       DOSQLG
     05            DZ10-NUCOM  PICTURE X(5).                    DOSQLG
     05            DZ10-FOURNP PICTURE X(3).                    DOSQLG
     05            DZ10-QTMLI  PICTURE S9(2)                    DOSQLG
                        COMPUTATIONAL-4.                        DOSQLG
     05            DZ10-QTMCO  PICTURE S9(2)                    DOSQLG
                        COMPUTATIONAL-4.                        DOSQLG
     05            DZ10-INFOR  PICTURE X(35).                   DOSQLG
01                VDZ05.                                        DOSQLG
     05           VDZ05COCARA  PICTURE S9(4) COMP.              DOSQLG
     05           VDZ05NUCOD   PICTURE S9(4) COMP.              DOSQLG
     05           VDZ05FOURNI  PICTURE S9(4) COMP.              DOSQLG
     05           VDZ05NUCLIE  PICTURE S9(4) COMP.              DOSQLG
     05           VDZ05DATE    PICTURE S9(4) COMP.              DOSQLG
     05           VDZ05RELEA   PICTURE S9(4) COMP.              DOSQLG
     05           VDZ05REFCLI  PICTURE S9(4) COMP.              DOSQLG
     05           VDZ05RUE     PICTURE S9(4) COMP.              DOSQLG
     05           VDZ05COPOS   PICTURE S9(4) COMP.              DOSQLG
     05           VDZ05VILLE   PICTURE S9(4) COMP.              DOSQLG
     05           VDZ05CORESP  PICTURE S9(4) COMP.              DOSQLG
     05           VDZ05REMISE  PICTURE S9(4) COMP.              DOSQLG
     05           VDZ05MATE    PICTURE S9(4) COMP.              DOSQLG
     05           VDZ05PRIX1   PICTURE S9(4) COMP.              DOSQLG
     05           VDZ05HEURE   PICTURE S9(4) COMP.              DOSQLG
     05           VDZ05PRECIS  PICTURE S9(4) COMP.              DOSQLG
01                VDZ10.                                        DOSQLG
     05           VDZ10COCARA  PICTURE S9(4) COMP.              DOSQLG
     05           VDZ10NUCOM   PICTURE S9(4) COMP.              DOSQLG
     05           VDZ10FOURNP  PICTURE S9(4) COMP.              DOSQLG
     05           VDZ10QTMLI   PICTURE S9(4) COMP.              DOSQLG
     05           VDZ10QTMCO   PICTURE S9(4) COMP.              DOSQLG
     05           VDZ10INFOR   PICTURE S9(4) COMP.              DOSQLG
       EXEC SQL END   DECLARE SECTION END-EXEC.                 DOSQLG
       EXEC SQL INCLUDE SQLCA         END-EXEC.                 DOSQLG
```

9.3. COMMUNICATION AREA

COMMUNICATION AREA

After the description of the common area (CA00), display keys are grouped by category under the K-eeee level.

All Data Elements declared as display Segment keys in the Screen Call of Segments (-CS) are present and independently located on level 05.

They are also independently input in the PROCEDURE DIVISION.

```
LINKAGE SECTION.                                                 *00000
01      COMMON-AREA.                                             *00000
     02     K-SSQLG-PROGR PICTURE X(6).                          *00000
     02            CA00.                                         *00001
       10          CA00-CLECD.                                   *00001
        15         CA00-NUCOM  PICTURE X(5).                     *00001
       10          CA00-CLECL1.                                  *00001
        15         CA00-NUCLIE PICTURE X(8).                     *00001
       10          CA00-ME00.                                    *00001
        15         CA00-CLEME.                                   *00001
         20        CA00-COPERS PICTURE X(5).                     *00001
         20        CA00-NUMORD PICTURE XX.                       *00001
        15         CA00-MESSA  PICTURE X(75).                    *00001
       10          CA00-PREM   PICTURE X.                        *00001
       10          CA00-LANGU  PICTURE X.                        *00001
       10          CA00-RAISOC PICTURE X(50).                    *00001
     02     K-SSQLG-DOC   PICTURE X.                             *00002
     02     K-SSQLG-PROGE PICTURE X(8).                          *00002
     02     K-SSQLG-CPOSL PICTURE S9(4) COMPUTATIONAL.           *00002
     02     K-SSQLG-LIBRA PICTURE XXX.                           *00002
     02     K-SSQLG-PROHE PICTURE X(8).                          *00002
     02     K-SSQLG-NUERR.                                       *00002
       05   K-SSQLG-NUERR9 PICTURE 999.                          *00002
     02     K-SSQLG-TYERR PICTURE X.                             *00002
     02     K-SSQLG-NULIG PICTURE 999.                           *00002
     02     K-SSQLG-XTERM PICTURE X(10).                         *00002
     02      K-SQLG.                                             *00002
      05        K-RDZ05-COCARA PICTURE X.                        *00002
      05        K-RDZ05-NUCOD  PICTURE S9(3)                     *00002
                        COMPUTATIONAL-4.                         *00002
      05        K-RDZ05-FOURNI PICTURE X(3).                     *00002
      05        K-RDZ10-COCARA PICTURE X.                        *00002
      05        K-RDZ10-NUCOM  PICTURE X(5).                     *00002
     02      FILLER        PICTURE X(0676).                      *00002
```

9.4. PROCEDURE DIVISION

DECLARE CURSOR : F0C

This function contains the SQL statements corresponding to the cursor declaration when a table is used in display in the repetitive category.

. The clause FROM "external table name" names the external table or view called in the description of the Database Block (-DR). By default this external name is found in the Segment definition screen. The Database Block code is indicated in the EXTERNAL NAME field of the Screen Call of Segments (-CS).

. The clause WHERE ... ORDER lists the key Data Elements in the order found on the Screen Call of Segments (-CS).

```
F0CDZ.                                                           DOSQLG
       EXEC SQL               DECLARE     DISPLAY_DZ05           DOSQLG
           CURSOR FOR SELECT ALL                                 DOSQLG
                  COCARA ,                                       DOSQLG
                  NUCOD ,                                        DOSQLG
                  FOURNI ,                                       DOSQLG
                  NUCLIE ,                                       DOSQLG
                  DATE ,                                         DOSQLG
                  RELEA ,                                        DOSQLG
                  REFERENCECLIENT ,                              DOSQLG
                  RUE ,                                          DOSQLG
                  COPOS ,                                        DOSQLG
                  VILLE ,                                        DOSQLG
                  CORESP ,                                       DOSQLG
                  REMISE ,                                       DOSQLG
                  MATERIEL ,                                     DOSQLG
                  PRIX1 ,                                        DOSQLG
                  HEURE ,                                        DOSQLG
                  PRECIS                                         DOSQLG
                FROM DODZ05                                      DOSQLG
     WHERE COCARA >  :DZ05-COCARA                                DOSQLG
      OR (COCARA =  :DZ05-COCARA                                 DOSQLG
     AND  NUCOD >  :DZ05-NUCOD)                                  DOSQLG
      OR (COCARA =  :DZ05-COCARA                                 DOSQLG
     AND  NUCOD =  :DZ05-NUCOD                                   DOSQLG
     AND  FOURNI >= :DZ05-FOURNI)                                DOSQLG
         ORDER BY    COCARA,                                     DOSQLG
                     NUCOD,                                      DOSQLG
                     FOURNI                                      DOSQLG
       END-EXEC.                                                 DOSQLG
       EXEC SQL               DECLARE     DISPLAY_DZ10           DOSQLG
           CURSOR FOR SELECT ALL                                 DOSQLG
                  COCARA ,                                       DOSQLG
                  NUCOM ,                                        DOSQLG
                  FOURNP ,                                       DOSQLG
                  LIVRABLE ,                                     DOSQLG
                  QUANTITE-COMMANDEE ,                           DOSQLG
                  INFOR                                          DOSQLG
                FROM DODZ10                                      DOSQLG
     WHERE COCARA >  :DZ10-COCARA                                DOSQLG
      OR (COCARA =  :DZ10-COCARA                                 DOSQLG
     AND  NUCOM >= :DZ10-NUCOM)                                  DOSQLG
         ORDER BY    COCARA,                                     DOSQLG
                     NUCOM                                       DOSQLG
       END-EXEC.                                                 DOSQLG
F0CDZ-FN.    EXIT.                                               DOSQLG
```

CALLED SQL VALIDATION FUNCTIONS : F01

PROCESSING OF THE ABNORMAL END

The F01 function processes SQL errors.

CONNECTION TO THE DATABASE

The F01 function contains the order of connection to the Database.

NOTE: These commands are found in the same function as the opening of files.

```
    F01.                                                            DOSQLG
    F0101.                                                          DOSQLG
           MOVE "OPEN    " TO S-WWSS-XFUNCT   MOVE "0" TO IK.       DOSQLG
           EXEC SQL WHENEVER NOT FOUND GO TO F80-KO END-EXEC.       DOSQLG
           EXEC SQL WHENEVER SQLERROR  GO TO F81ES  END-EXEC.       DOSQLG
           EXEC SQL WHENEVER SQLWARNING GO TO F81EW END-EXEC.       DOSQLG
           EXEC SQL  CONNECT   "EXQGBLOC" END-EXEC.                 DOSQLG
           OPEN I-O  HE-FICHIER.                                    DOSQLG
           IF IK = "1" GO TO F81ER.                                 DOSQLG
           OPEN INPUT        LE-FICHIER.                            DOSQLG
           IF IK = "1" GO TO F81ER.                                 DOSQLG
    F0101-FN.    EXIT.                                              DOSQLG
```

PHYSICAL ACCESS TO SEGMENTS : F80

By default, all the 'SELECT' commands are generated with the ALL option.

The presence validation keys are shown with the commands:

SELECT (in the INTO clause),
UPDATE (in the SET clause),
INSERT (in the VALUES clause).

The F8091 function (PERFORM in reception) unlocks the database at the end of the update.

The F8093 function (PERFORM in display) unlocks the database at the end of the DISPLAY routine.

```
F80.         EXIT.                                               DOSQLG
F80-DZ05-R.                                                      DOSQLG
       EXEC SQL             SELECT ALL                           DOSQLG
                  COCARA ,                                       DOSQLG
                  NUCOD ,                                        DOSQLG
                  FOURNI ,                                       DOSQLG
                  NUCLIE ,                                       DOSQLG
                  DATE ,                                         DOSQLG
                  RELEA ,                                        DOSQLG
                  REFERENCECLIENT ,                              DOSQLG
                  RUE ,                                          DOSQLG
                  COPOS ,                                        DOSQLG
                  VILLE ,                                        DOSQLG
                  CORESP ,                                       DOSQLG
                  REMISE ,                                       DOSQLG
                  MATERIEL ,                                     DOSQLG
                  PRIX1 ,                                        DOSQLG
                  HEURE ,                                        DOSQLG
                  PRECIS                                         DOSQLG
         INTO  :DZ05-COCARA:VDZ05COCARA,                         DOSQLG
               :DZ05-NUCOD:VDZ05NUCOD,                           DOSQLG
               :DZ05-FOURNI:VDZ05FOURNI,                         DOSQLG
               :DZ05-NUCLIE:VDZ05NUCLIE,                         DOSQLG
               :DZ05-DATE:VDZ05DATE,                             DOSQLG
               :DZ05-RELEA:VDZ05RELEA,                           DOSQLG
               :VDZ05-REFCLI:VDZ05REFCLI,                        DOSQLG
               :VDZ05-RUE:VDZ05RUE,                              DOSQLG
               :DZ05-COPOS:VDZ05COPOS,                           DOSQLG
               :VDZ05-VILLE:VDZ05VILLE,                          DOSQLG
               :VDZ05-CORESP:VDZ05CORESP,                        DOSQLG
               :DZ05-REMISE:VDZ05REMISE,                         DOSQLG
               :VDZ05-MATE:VDZ05MATE,                            DOSQLG
               :DZ05-PRIX1:VDZ05PRIX1,                           DOSQLG
               :DZ05-HEURE:VDZ05HEURE,                           DOSQLG
               :DZ05-PRECIS:VDZ05PRECIS                          DOSQLG
                FROM DODZ05                                      DOSQLG
     WHERE COCARA =  :DZ05-COCARA                                DOSQLG
       AND NUCOD =  :DZ05-NUCOD                                  DOSQLG
       AND FOURNI =  :DZ05-FOURNI                                DOSQLG
       END-EXEC.                                                 DOSQLG
       GO TO F80-OK.                                             DOSQLG
F80-DZ05-RU.                                                     DOSQLG
       EXEC SQL             SELECT ALL                           DOSQLG
                  COCARA ,                                       DOSQLG
                  NUCOD ,                                        DOSQLG
                  FOURNI ,                                       DOSQLG
                  NUCLIE ,                                       DOSQLG
                  DATE ,                                         DOSQLG
                  RELEA ,                                        DOSQLG
                  REFERENCECLIENT ,                              DOSQLG
                  RUE ,                                          DOSQLG
                  COPOS ,                                        DOSQLG
                  VILLE ,                                        DOSQLG
                  CORESP ,                                       DOSQLG
                  REMISE ,                                       DOSQLG
                  MATERIEL ,                                     DOSQLG
                  PRIX1 ,                                        DOSQLG
                  HEURE ,                                        DOSQLG
                  PRECIS                                         DOSQLG
         INTO  :DZ05-COCARA:VDZ05COCARA,                         DOSQLG
               :DZ05-NUCOD:VDZ05NUCOD,                           DOSQLG
               :DZ05-FOURNI:VDZ05FOURNI,                         DOSQLG
               :DZ05-NUCLIE:VDZ05NUCLIE,                         DOSQLG
               :DZ05-DATE:VDZ05DATE,                             DOSQLG
               :DZ05-RELEA:VDZ05RELEA,                           DOSQLG
               :VDZ05-REFCLI:VDZ05REFCLI,                        DOSQLG
               :VDZ05-RUE:VDZ05RUE,                              DOSQLG
               :DZ05-COPOS:VDZ05COPOS,                           DOSQLG
               :VDZ05-VILLE:VDZ05VILLE,                          DOSQLG
               :VDZ05-CORESP:VDZ05CORESP,                        DOSQLG
               :DZ05-REMISE:VDZ05REMISE,                         DOSQLG
               :VDZ05-MATE:VDZ05MATE,                            DOSQLG
               :DZ05-PRIX1:VDZ05PRIX1,                           DOSQLG
               :DZ05-HEURE:VDZ05HEURE,                           DOSQLG
               :DZ05-PRECIS:VDZ05PRECIS                          DOSQLG
                FROM DODZ05                                      DOSQLG
     WHERE COCARA =  :DZ05-COCARA                                DOSQLG
```

```
       AND NUCOD =  :DZ05-NUCOD                                  DOSQLG
       AND FOURNI =  :DZ05-FOURNI                                DOSQLG
       END-EXEC.                                                 DOSQLG
       GO TO F80-OK.                                             DOSQLG
F80-DZ05-P.                                                      DOSQLG
       EXEC SQL                 OPEN      DISPLAY_DZ05           DOSQLG
       END-EXEC.                                                 DOSQLG
F80-DZ05-RN.                                                     DOSQLG
       EXEC SQL                FETCH      DISPLAY_DZ05           DOSQLG
         INTO  :DZ05-COCARA:VDZ05COCARA,                         DOSQLG
               :DZ05-NUCOD:VDZ05NUCOD,                           DOSQLG
               :DZ05-FOURNI:VDZ05FOURNI,                         DOSQLG
               :DZ05-NUCLIE:VDZ05NUCLIE,                         DOSQLG
               :DZ05-DATE:VDZ05DATE,                             DOSQLG
               :DZ05-RELEA:VDZ05RELEA,                           DOSQLG
               :VDZ05-REFCLI:VDZ05REFCLI,                        DOSQLG
               :VDZ05-RUE:VDZ05RUE,                              DOSQLG
               :DZ05-COPOS:VDZ05COPOS,                           DOSQLG
               :VDZ05-VILLE:VDZ05VILLE,                          DOSQLG
               :VDZ05-CORESP:VDZ05CORESP,                        DOSQLG
               :DZ05-REMISE:VDZ05REMISE,                         DOSQLG
               :VDZ05-MATE:VDZ05MATE,                            DOSQLG
               :DZ05-PRIX1:VDZ05PRIX1,                           DOSQLG
               :DZ05-HEURE:VDZ05HEURE,                           DOSQLG
               :DZ05-PRECIS:VDZ05PRECIS                          DOSQLG
       END-EXEC.                                                 DOSQLG
       GO TO F80-OK.                                             DOSQLG
F80-DZ05-W.                                                      DOSQLG
       EXEC SQL             INSERT                               DOSQLG
                      INTO DODZ05                                DOSQLG
                  ( COCARA ,                                     DOSQLG
                    NUCOD ,                                      DOSQLG
                    FOURNI ,                                     DOSQLG
                    NUCLIE ,                                     DOSQLG
                    DATE ,                                       DOSQLG
                    RELEA ,                                      DOSQLG
                    REFERENCECLIENT ,                            DOSQLG
                    RUE ,                                        DOSQLG
                    COPOS ,                                      DOSQLG
                    VILLE ,                                      DOSQLG
                    CORESP ,                                     DOSQLG
                    REMISE ,                                     DOSQLG
                    MATERIEL ,                                   DOSQLG
                    PRIX1 ,                                      DOSQLG
                    HEURE ,                                      DOSQLG
                    PRECIS )                                     DOSQLG
      VALUES (:DZ05-COCARA:VDZ05COCARA,                          DOSQLG
              :DZ05-NUCOD:VDZ05NUCOD,                            DOSQLG
              :DZ05-FOURNI:VDZ05FOURNI,                          DOSQLG
              :DZ05-NUCLIE:VDZ05NUCLIE,                          DOSQLG
              :DZ05-DATE:VDZ05DATE,                              DOSQLG
              :DZ05-RELEA:VDZ05RELEA,                            DOSQLG
              :VDZ05-REFCLI:VDZ05REFCLI,                         DOSQLG
              :VDZ05-RUE:VDZ05RUE,                               DOSQLG
              :DZ05-COPOS:VDZ05COPOS,                            DOSQLG
              :VDZ05-VILLE:VDZ05VILLE,                           DOSQLG
              :VDZ05-CORESP:VDZ05CORESP,                         DOSQLG
              :DZ05-REMISE:VDZ05REMISE,                          DOSQLG
              :VDZ05-MATE:VDZ05MATE,                             DOSQLG
              :DZ05-PRIX1:VDZ05PRIX1,                            DOSQLG
              :DZ05-HEURE:VDZ05HEURE,                            DOSQLG
              :DZ05-PRECIS:VDZ05PRECIS)                          DOSQLG
       END-EXEC.                                                 DOSQLG
       GO TO F80-OK.                                             DOSQLG
F80-DZ05-RW.                                                     DOSQLG
       EXEC SQL             UPDATE                               DOSQLG
                           DODZ05                                DOSQLG
         SET NUCLIE =                                            DOSQLG
              :DZ05-NUCLIE:VDZ05NUCLIE,                          DOSQLG
             DATE =                                              DOSQLG
              :DZ05-DATE:VDZ05DATE,                              DOSQLG
             RELEA =                                             DOSQLG
              :DZ05-RELEA:VDZ05RELEA,                            DOSQLG
             REFERENCECLIENT =                                   DOSQLG
              :VDZ05-REFCLI:VDZ05REFCLI,                         DOSQLG
             RUE =                                               DOSQLG
              :VDZ05-RUE:VDZ05RUE,                               DOSQLG
```

```
                COPOS =                                                 DOSQLG
                 :DZ05-COPOS:VDZ05COPOS,                                DOSQLG
                VILLE =                                                 DOSQLG
                 :VDZ05-VILLE:VDZ05VILLE,                               DOSQLG
                CORESP =                                                DOSQLG
                 :VDZ05-CORESP:VDZ05CORESP,                             DOSQLG
                REMISE =                                                DOSQLG
                 :DZ05-REMISE:VDZ05REMISE,                              DOSQLG
                MATERIEL =                                              DOSQLG
                 :VDZ05-MATE:VDZ05MATE,                                 DOSQLG
                PRIX1 =                                                 DOSQLG
                 :DZ05-PRIX1:VDZ05PRIX1,                                DOSQLG
                HEURE =                                                 DOSQLG
                 :DZ05-HEURE:VDZ05HEURE,                                DOSQLG
                PRECIS =                                                DOSQLG
                 :DZ05-PRECIS:VDZ05PRECIS                               DOSQLG
        WHERE COCARA =  :DZ05-COCARA                                    DOSQLG
          AND NUCOD =  :DZ05-NUCOD                                      DOSQLG
          AND FOURNI =  :DZ05-FOURNI                                    DOSQLG
          END-EXEC.                                                     DOSQLG
          GO TO F80-OK.                                                 DOSQLG
    F80-DZ05-UN.                                                        DOSQLG
          GO TO F80-OK.                                                 DOSQLG
    F80-DZ05-CL.                                                        DOSQLG
          EXEC SQL                CLOSE      DISPLAY_DZ05               DOSQLG
          END-EXEC.                                                     DOSQLG
          GO TO F80-OK.                                                 DOSQLG
    F8001-FN.    EXIT.                                                  DOSQLG
    F80-DZ10-R.                                                         DOSQLG
          EXEC SQL             SELECT ALL                               DOSQLG
                     COCARA ,                                           DOSQLG
                     NUCOM ,                                            DOSQLG
                     FOURNP ,                                           DOSQLG
                     LIVRABLE ,                                         DOSQLG
                     QUANTITE-COMMANDEE ,                               DOSQLG
                     INFOR                                              DOSQLG
            INTO  :DZ10-COCARA:VDZ10COCARA,                             DOSQLG
                  :DZ10-NUCOM:VDZ10NUCOM,                               DOSQLG
                  :DZ10-FOURNP:VDZ10FOURNP,                             DOSQLG
                  :DZ10-QTMLI:VDZ10QTMLI,                               DOSQLG
                  :DZ10-QTMCO:VDZ10QTMCO,                               DOSQLG
                  :VDZ10-INFOR:VDZ10INFOR                               DOSQLG
                   FROM DODZ10                                          DOSQLG
        WHERE COCARA =  :DZ10-COCARA                                    DOSQLG
          AND NUCOM =  :DZ10-NUCOM                                      DOSQLG
          END-EXEC.                                                     DOSQLG
          GO TO F80-OK.                                                 DOSQLG
    F80-DZ10-RU.                                                        DOSQLG
          EXEC SQL             SELECT ALL                               DOSQLG
                     COCARA ,                                           DOSQLG
                     NUCOM ,                                            DOSQLG
                     FOURNP ,                                           DOSQLG
                     LIVRABLE ,                                         DOSQLG
                     QUANTITE-COMMANDEE ,                               DOSQLG
                     INFOR                                              DOSQLG
            INTO  :DZ10-COCARA:VDZ10COCARA,                             DOSQLG
                  :DZ10-NUCOM:VDZ10NUCOM,                               DOSQLG
                  :DZ10-FOURNP:VDZ10FOURNP,                             DOSQLG
                  :DZ10-QTMLI:VDZ10QTMLI,                               DOSQLG
                  :DZ10-QTMCO:VDZ10QTMCO,                               DOSQLG
                  :VDZ10-INFOR:VDZ10INFOR                               DOSQLG
                   FROM DODZ10                                          DOSQLG
        WHERE COCARA =  :DZ10-COCARA                                    DOSQLG
          AND NUCOM =  :DZ10-NUCOM                                      DOSQLG
          END-EXEC.                                                     DOSQLG
          GO TO F80-OK.                                                 DOSQLG
    F80-DZ10-P.                                                         DOSQLG
          EXEC SQL                 OPEN      DISPLAY_DZ10               DOSQLG
          END-EXEC.                                                     DOSQLG
    F80-DZ10-RN.                                                        DOSQLG
          EXEC SQL                FETCH      DISPLAY_DZ10               DOSQLG
            INTO  :DZ10-COCARA:VDZ10COCARA,                             DOSQLG
                  :DZ10-NUCOM:VDZ10NUCOM,                               DOSQLG
                  :DZ10-FOURNP:VDZ10FOURNP,                             DOSQLG
                  :DZ10-QTMLI:VDZ10QTMLI,                               DOSQLG
                  :DZ10-QTMCO:VDZ10QTMCO,                               DOSQLG
                  :VDZ10-INFOR:VDZ10INFOR                               DOSQLG
```

```
       END-EXEC.                                                 DOSQLG
       GO TO F80-OK.                                             DOSQLG
F80-DZ10-W.                                                      DOSQLG
       EXEC SQL             INSERT                               DOSQLG
                      INTO DODZ10                                DOSQLG
                  ( COCARA ,                                     DOSQLG
                    NUCOM ,                                      DOSQLG
                    FOURNP ,                                     DOSQLG
                    LIVRABLE ,                                   DOSQLG
                    QUANTITE-COMMANDEE ,                         DOSQLG
                    INFOR )                                      DOSQLG
      VALUES (:DZ10-COCARA:VDZ10COCARA,                          DOSQLG
              :DZ10-NUCOM:VDZ10NUCOM,                            DOSQLG
              :DZ10-FOURNP:VDZ10FOURNP,                          DOSQLG
              :DZ10-QTMLI:VDZ10QTMLI,                            DOSQLG
              :DZ10-QTMCO:VDZ10QTMCO,                            DOSQLG
              :VDZ10-INFOR:VDZ10INFOR)                           DOSQLG
       END-EXEC.                                                 DOSQLG
       GO TO F80-OK.                                             DOSQLG
F80-DZ10-RW.                                                     DOSQLG
       EXEC SQL             UPDATE                               DOSQLG
                           DODZ10                                DOSQLG
         SET FOURNP =                                            DOSQLG
              :DZ10-FOURNP:VDZ10FOURNP,                          DOSQLG
             LIVRABLE =                                          DOSQLG
              :DZ10-QTMLI:VDZ10QTMLI,                            DOSQLG
             QUANTITE-COMMANDEE =                                DOSQLG
              :DZ10-QTMCO:VDZ10QTMCO,                            DOSQLG
             INFOR =                                             DOSQLG
              :VDZ10-INFOR:VDZ10INFOR                            DOSQLG
     WHERE COCARA =  :DZ10-COCARA                                DOSQLG
       AND NUCOM =  :DZ10-NUCOM                                  DOSQLG
       END-EXEC.                                                 DOSQLG
       GO TO F80-OK.                                             DOSQLG
F80-DZ10-UN.                                                     DOSQLG
       GO TO F80-OK.                                             DOSQLG
F80-DZ10-CL.                                                     DOSQLG
       EXEC SQL                CLOSE      DISPLAY_DZ10           DOSQLG
       END-EXEC.                                                 DOSQLG
       GO TO F80-OK.                                             DOSQLG
F8002-FN.    EXIT.                                               DOSQLG
F8091.                                                           DOSQLG
       MOVE "1" TO CATX.                                         DOSQLG
       EXEC SQL  COMMIT WORK  END-EXEC.                          DOSQLG
F8091-FN.    EXIT.                                               DOSQLG
F8093.                                                           DOSQLG
       MOVE "2" TO CATX.                                         DOSQLG
       EXEC SQL  COMMIT WORK  END-EXEC.                          DOSQLG
F8093-FN.    EXIT.                                               DOSQLG
F80-FN.      EXIT.                                               DOSQLG
```

10. SCREEN GENERATED USING DB2/2 OR DB2/6000

10.1. PRESENTATION OF THE EXAMPLE

INTRODUCTION

This chapter presents the COBOL lines automatically generated when a screen accesses DB2/2 or DB2/6000 relational databases.

The PROCEDURE DIVISION is not shown in full since functionalities are similar to those presented in the general example. This chapter only presents the specific parts of the WORKING STORAGE SECTION and related functions.

PROGRAM GENERATION

To generate On-line programs it may be necessary to use the complementary screens:

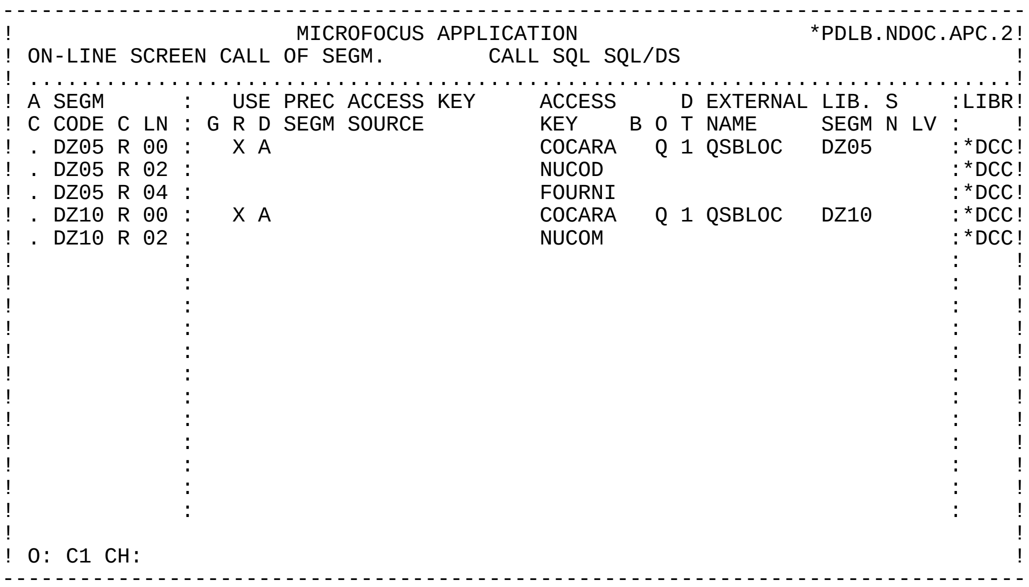
. Work Areas (-W),

. Call of Macro-structures (-CP).

On Work Areas (-W) screens, 'AA' is a reserved value for the code FOR COBOL PLACEMENT; It is used internally by the OLSD Function.

The automatically generated lines are identified in the COBOL code by the '*AAnnn' character string from columns 72 to 80. They can be overridden on the Work Areas (-W) screen on 'AAnnn'-numbered lines.

The user can use the General Documentation (-G) lines of the screen or dialogue to override the value of some generated constants. For more details, refer to Chapter 'DESCRIPTION OF A TRANSACTION', Subchapter 'SCREEN GENERAL DOCUMENTATION (-G)' in the OLSD Reference Manual.



```
--------------------------------------------------------------------------------
!                      MICROFOCUS APPLICATION                  *PDLB.NDOC.APC.2!
! ON-LINE SCREEN CALL OF SEGM.        CALL SQL SQL/DS                          !
! .............................................................................!
! A SEGM      :   USE PREC ACCESS KEY      ACCESS     D EXTERNAL LIB. S    :LIBR!
! C CODE C LN : G R D SEGM SOURCE         KEY    B O T NAME     SEGM N LV :    !
! . DZ05 R 00 :   X A                     COCARA   Q 1 QSBLOC   DZ05      :*DCC!
! . DZ05 R 02 :                           NUCOD                           :*DCC!
! . DZ05 R 04 :                           FOURNI                          :*DCC!
! . DZ10 R 00 :   X A                     COCARA   Q 1 QSBLOC   DZ10      :*DCC!
! . DZ10 R 02 :                           NUCOM                           :*DCC!
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!                                                                              !
! O: C1 CH:                                                                    !
--------------------------------------------------------------------------------
```

10.2. WORKING

WORKING-STORAGE SECTION

The WORKING-STORAGE section includes:

- The description of input/output fields (Host variables).

The segment descriptions are located between the SQL orders: 'BEGIN DECLARE SECTION' and 'END DECLARE SECTION'.
There is no Segment level SQL/DS: elementary areas are generated in level 01.

For the variable Data Elements (VARCHAR) called in a 'FFnn' code Segment (Data Elements with 'V', 'L' or 'W' in the key area of the segment description), the following lines are generated:

```
ffnn-DELCO PICTURE ...
           VARYING.
```

The LFFnn-delco field must be input with the real length of the field before updating.

- Presence validation keys: each field (delco) of a table or a SQL view (FFnn) is associated with a presence validation key (VFFnnDelco or V-FFnn-Delco if the SQLREF option is indicated in Dialogue complement (-O)).

The presence validation keys description is directly associated with its host variable on level 01.
The SQLIND option, input by the user in Dialogue complement, allows for the management of those keys in update and display. The keys are initialized in function F30 and conditioned for transfer in DISPLAY by the column presence (for columns which can be null).

- The 'INCLUDE SQLCA' SQL order if the SQLCA option is indicated in Dialogue complement (-O).

10.3. COMMUNICATION AREA

COMMUNICATION AREA

After the description of the common area (CA00), display keys are grouped by category under the K-eeee level.

All Data Elements declared as display Segment keys in the Screen Call of Segments (-CS) are present and independently located on level 05.

They are also independently input in the PROCEDURE DIVISION.

```
LINKAGE SECTION.                                                 DOSQLQ
01   DFHCOMMAREA.                                                DOSQLQ
     02     K-SSQLQ-PROGR PICTURE X(6).                          *00000
     02     K-SSQLQ-DOC   PICTURE X.                             *00000
     02     K-SSQLQ-PROGE PICTURE X(8).                          *00000
     02     K-SSQLQ-CPOSL PICTURE S9(4) COMPUTATIONAL.           *00000
     02     K-SSQLQ-PROLE PICTURE X(8).                          *00000
     02     K-SSQLQ-LIBRA PICTURE XXX.                           *00000
     02     K-SSQLQ-PROHE PICTURE X(8).                          *00000
     02     K-SSQLQ-ERCOD.                                       *00000
       05   K-SSQLQ-ERCOD9 PICTURE 999.                          *00000
     02     K-SSQLQ-ERTYP PICTURE X.                             *00000
     02     K-SSQLQ-LINUM PICTURE 999.                           *00000
     02            CA00.                                         *00001
       10          CA00-CLECD.                                   *00001
        15         CA00-NUCOM  PICTURE 9(5).                     *00001
       10          CA00-CLECL1.                                  *00001
        15         CA00-NUCLIE PICTURE 9(8).                     *00001
       10          CA00-ME00.                                    *00001
        15         CA00-CLEME.                                   *00001
         20        CA00-COPERS PICTURE X(5).                     *00001
         20        CA00-NUMORD PICTURE XX.                       *00001
        15         CA00-MESSA  PICTURE X(75).                    *00001
       10          CA00-PREM   PICTURE X.                        *00001
       10          CA00-LANGU  PICTURE X.                        *00001
       10          CA00-RAISOC PICTURE X(50).                    *00001
     02      FILLER PICTURE X.                                   *00002
     02      K-SQLQ.                                             *00002
      05        K-RDZ05-COCARA PICTURE X.                        *00002
      05        K-RDZ05-NUCOD  PICTURE S9(3)                     *00002
                        COMPUTATIONAL.                           *00002
      05        K-RDZ05-FOURNI PICTURE X(3).                     *00002
      05        K-RDZ10-COCARA PICTURE X.                        *00002
      05        K-RDZ10-NUCOM  PICTURE 9(5).                     *00002
     02      FILLER        PICTURE X(0675).                      *00002
```

10.4. PROCEDURE

DECLARE CURSOR : F0A

This function contains the SQL statements corresponding to the cursor declaration when a table is used in display in the repetitive category.

. The clause FROM "external table name" names the external table or view called in the description of the Database Block (-DR). By default this external name is found in the Segment definition screen. The Database Block code is indicated in the EXTERNAL NAME field of the Screen Call of Segments (-CS).

. The clause WHERE ... ORDER lists the key Data Elements in the order found in the Screen Call of Segments (-CS).

```
PROCEDURE DIVISION.                                               *99999
F0ADZ.                                                            DOSQLQ
       EXEC SQL                                                   DOSQLQ
                              DECLARE     DISPLAY_DZ05            DOSQLQ
           CURSOR FOR SELECT ALL                                  DOSQLQ
                  COCARA ,                                        DOSQLQ
                  NUCOD ,                                         DOSQLQ
                  FOURNI ,                                        DOSQLQ
                  NUCLIE ,                                        DOSQLQ
                  DATE ,                                          DOSQLQ
                  RELEA ,                                         DOSQLQ
                  REFERENCECLIENT ,                               DOSQLQ
                  RUE ,                                           DOSQLQ
                  COPOS ,                                         DOSQLQ
                  VILLE ,                                         DOSQLQ
                  CORESP ,                                        DOSQLQ
                  REMISE ,                                        DOSQLQ
                  MATERIEL ,                                      DOSQLQ
                  PRIX1 ,                                         DOSQLQ
                  HEURE ,                                         DOSQLQ
                  PRECIS                                          DOSQLQ
                FROM PDMCA.DODZ05                                 DOSQLQ
     WHERE COCARA >  :DZ05-COCARA                                 DOSQLQ
      OR (COCARA =  :DZ05-COCARA                                  DOSQLQ
     AND  NUCOD >  :DZ05-NUCOD)                                   DOSQLQ
      OR (COCARA =  :DZ05-COCARA                                  DOSQLQ
     AND  NUCOD =  :DZ05-NUCOD                                    DOSQLQ
     AND  FOURNI >= :DZ05-FOURNI)                                 DOSQLQ
         ORDER BY    COCARA,                                      DOSQLQ
                     NUCOD,                                       DOSQLQ
                     FOURNI                                       DOSQLQ
       END-EXEC.                                                  DOSQLQ
       EXEC SQL                                                   DOSQLQ
                              DECLARE     DISPLAY_DZ10            DOSQLQ
           CURSOR FOR SELECT ALL                                  DOSQLQ
                  COCARA ,                                        DOSQLQ
                  NUCOM ,                                         DOSQLQ
                  FOURNP ,                                        DOSQLQ
                  LIVRABLE ,                                      DOSQLQ
                  QUANTITE-COMMANDEE ,                            DOSQLQ
                  INFOR                                           DOSQLQ
                FROM PDMCA.DODZ10                                 DOSQLQ
     WHERE COCARA >  :DZ10-COCARA                                 DOSQLQ
      OR (COCARA =  :DZ10-COCARA                                  DOSQLQ
     AND  NUCOM >= :DZ10-NUCOM)                                   DOSQLQ
         ORDER BY    COCARA,                                      DOSQLQ
                     NUCOM                                        DOSQLQ
       END-EXEC.                                                  DOSQLQ
F0ADZ-FN.    EXIT.                                                DOSQLQ
```

PERFORMED VALIDATIONS FUNCTIONS: F0101

ABEND

The F0101 function processes SQL errors.

NOTE: Only labels are generated for the sub-function F81ES. Procedure code is to be performed by the user.

```
   *           ************************************              DOSQLQ
   *           *                                  *              DOSQLQ
   *           *  INITIALIZATIONS                 *              DOSQLQ
   *           *                                  *              DOSQLQ
   *           ************************************              DOSQLQ
    F01.          EXIT.                                          DOSQLQ
    F0101.                                                       DOSQLQ
           EXEC SQL WHENEVER NOT FOUND GO TO F80-KO END-EXEC.    DOSQLQ
           EXEC SQL WHENEVER SQLWARNING CONTINUE    END-EXEC.    DOSQLQ
           EXEC SQL WHENEVER SQLERROR  GO TO F81ES  END-EXEC.    DOSQLQ
    F0101-FN.    EXIT.                                           DOSQLQ
```

PHYSICAL SEGMENT ACCESS ROUTINE: F80

All 'SELECT' orders have the '*' default option.

The option 'SELECT ALL' with the list of the table columns can be obtained by using 'SQLALL' option (OPTIONS area in Dialogue complement (-O)). The following lines are then generated:

```
       SQL SELECT ALL COLDELCO1,
                      COLDELCO2, ...

           INTO    :FFNN-DELCO1:VFFNN-DELCO1,
                    FFNN-DELCO2:VFFNN-DELCO2, ...
```

NOTE: This option is not available with SQL/DS.

With the DB2 MVS V2R3 version, the parameters FOR FETCH ONLY and OPTIMIZE n ROWS (n is the line number of the repetitive category +1) are generated in the DECLARE CURSOR.

The presence validation keys are shown with the commands:

SELECT (in the INTO clause),
UPDATE (in the SET clause),
INSERT (in the VALUES clause).

```
*           *************************************                 DOSQLQ
*           *                                   *                 DOSQLQ
*           *  PHYSICAL SEGMENT ACCESS ROUTINES *                 DOSQLQ
*           *                                   *                 DOSQLQ
*           *************************************                 DOSQLQ
 F80.          EXIT.                                              DOSQLQ
 F80-DZ05-R.                                                      DOSQLQ
        EXEC SQL                                                  DOSQLQ
                             SELECT ALL                           DOSQLQ
                   COCARA ,                                       DOSQLQ
                   NUCOD ,                                        DOSQLQ
                   FOURNI ,                                       DOSQLQ
                   NUCLIE ,                                       DOSQLQ
                   DATE ,                                         DOSQLQ
                   RELEA ,                                        DOSQLQ
                   REFERENCECLIENT ,                              DOSQLQ
                   RUE ,                                          DOSQLQ
                   COPOS ,                                        DOSQLQ
                   VILLE ,                                        DOSQLQ
                   CORESP ,                                       DOSQLQ
                   REMISE ,                                       DOSQLQ
                   MATERIEL ,                                     DOSQLQ
                   PRIX1 ,                                        DOSQLQ
                   HEURE ,                                        DOSQLQ
                   PRECIS                                         DOSQLQ
          INTO  :DZ05-COCARA:V-DZ05-COCARA,                       DOSQLQ
                :DZ05-NUCOD:V-DZ05-NUCOD,                         DOSQLQ
                :DZ05-FOURNI:V-DZ05-FOURNI,                       DOSQLQ
                :DZ05-NUCLIE:V-DZ05-NUCLIE,                       DOSQLQ
                :DZ05-DATE:V-DZ05-DATE,                           DOSQLQ
                :DZ05-RELEA:V-DZ05-RELEA,                         DOSQLQ
                :VDZ05-REFCLI:V-DZ05-REFCLI,                      DOSQLQ
                :VDZ05-RUE:V-DZ05-RUE,                            DOSQLQ
                :DZ05-COPOS:V-DZ05-COPOS,                         DOSQLQ
                :VDZ05-VILLE:V-DZ05-VILLE,                        DOSQLQ
                :VDZ05-CORESP:V-DZ05-CORESP,                      DOSQLQ
                :DZ05-REMISE:V-DZ05-REMISE,                       DOSQLQ
                :VDZ05-MATE:V-DZ05-MATE,                          DOSQLQ
                :DZ05-PRIX1:V-DZ05-PRIX1,                         DOSQLQ
                :DZ05-HEURE:V-DZ05-HEURE,                         DOSQLQ
                :DZ05-PRECIS:V-DZ05-PRECIS                        DOSQLQ
                 FROM PDMCA.DODZ05                                DOSQLQ
      WHERE COCARA =  :DZ05-COCARA                                DOSQLQ
        AND NUCOD =  :DZ05-NUCOD                                  DOSQLQ
        AND FOURNI =  :DZ05-FOURNI                                DOSQLQ
        END-EXEC.                                                 DOSQLQ
        GO TO F80-OK.                                             DOSQLQ
 F80-DZ05-RU.                                                     DOSQLQ
        EXEC SQL                                                  DOSQLQ
                             SELECT ALL                           DOSQLQ
                   COCARA ,                                       DOSQLQ
                   NUCOD ,                                        DOSQLQ
                   FOURNI ,                                       DOSQLQ
                   NUCLIE ,                                       DOSQLQ
                   DATE ,                                         DOSQLQ
                   RELEA ,                                        DOSQLQ
                   REFERENCECLIENT ,                              DOSQLQ
                   RUE ,                                          DOSQLQ
                   COPOS ,                                        DOSQLQ
                   VILLE ,                                        DOSQLQ
                   CORESP ,                                       DOSQLQ
                   REMISE ,                                       DOSQLQ
                   MATERIEL ,                                     DOSQLQ
                   PRIX1 ,                                        DOSQLQ
                   HEURE ,                                        DOSQLQ
                   PRECIS                                         DOSQLQ
          INTO  :DZ05-COCARA:V-DZ05-COCARA,                       DOSQLQ
                :DZ05-NUCOD:V-DZ05-NUCOD,                         DOSQLQ
                :DZ05-FOURNI:V-DZ05-FOURNI,                       DOSQLQ
                :DZ05-NUCLIE:V-DZ05-NUCLIE,                       DOSQLQ
                :DZ05-DATE:V-DZ05-DATE,                           DOSQLQ
                :DZ05-RELEA:V-DZ05-RELEA,                         DOSQLQ
                :VDZ05-REFCLI:V-DZ05-REFCLI,                      DOSQLQ
                :VDZ05-RUE:V-DZ05-RUE,                            DOSQLQ
                :DZ05-COPOS:V-DZ05-COPOS,                         DOSQLQ
                :VDZ05-VILLE:V-DZ05-VILLE,                        DOSQLQ
                :VDZ05-CORESP:V-DZ05-CORESP,                      DOSQLQ
```

```
               :DZ05-REMISE:V-DZ05-REMISE,                       DOSQLQ
               :VDZ05-MATE:V-DZ05-MATE,                          DOSQLQ
               :DZ05-PRIX1:V-DZ05-PRIX1,                         DOSQLQ
               :DZ05-HEURE:V-DZ05-HEURE,                         DOSQLQ
               :DZ05-PRECIS:V-DZ05-PRECIS                        DOSQLQ
                FROM PDMCA.DODZ05                                DOSQLQ
     WHERE COCARA =  :DZ05-COCARA                                DOSQLQ
       AND NUCOD =  :DZ05-NUCOD                                  DOSQLQ
       AND FOURNI =  :DZ05-FOURNI                                DOSQLQ
       END-EXEC.                                                 DOSQLQ
       GO TO F80-OK.                                             DOSQLQ
F80-DZ05-P.                                                      DOSQLQ
       EXEC SQL                                                  DOSQLQ
                                OPEN      DISPLAY_DZ05           DOSQLQ
       END-EXEC.                                                 DOSQLQ
F80-DZ05-RN.                                                     DOSQLQ
       EXEC SQL                                                  DOSQLQ
                               FETCH      DISPLAY_DZ05           DOSQLQ
         INTO  :DZ05-COCARA:V-DZ05-COCARA,                       DOSQLQ
               :DZ05-NUCOD:V-DZ05-NUCOD,                         DOSQLQ
               :DZ05-FOURNI:V-DZ05-FOURNI,                       DOSQLQ
               :DZ05-NUCLIE:V-DZ05-NUCLIE,                       DOSQLQ
               :DZ05-DATE:V-DZ05-DATE,                           DOSQLQ
               :DZ05-RELEA:V-DZ05-RELEA,                         DOSQLQ
               :VDZ05-REFCLI:V-DZ05-REFCLI,                      DOSQLQ
               :VDZ05-RUE:V-DZ05-RUE,                            DOSQLQ
               :DZ05-COPOS:V-DZ05-COPOS,                         DOSQLQ
               :VDZ05-VILLE:V-DZ05-VILLE,                        DOSQLQ
               :VDZ05-CORESP:V-DZ05-CORESP,                      DOSQLQ
               :DZ05-REMISE:V-DZ05-REMISE,                       DOSQLQ
               :VDZ05-MATE:V-DZ05-MATE,                          DOSQLQ
               :DZ05-PRIX1:V-DZ05-PRIX1,                         DOSQLQ
               :DZ05-HEURE:V-DZ05-HEURE,                         DOSQLQ
               :DZ05-PRECIS:V-DZ05-PRECIS                        DOSQLQ
       END-EXEC.                                                 DOSQLQ
       GO TO F80-OK.                                             DOSQLQ
F80-DZ05-W.                                                      DOSQLQ
       EXEC SQL                                                  DOSQLQ
                            INSERT                               DOSQLQ
                      INTO PDMCA.DODZ05                          DOSQLQ
                  ( COCARA ,                                     DOSQLQ
                    NUCOD ,                                      DOSQLQ
                    FOURNI ,                                     DOSQLQ
                    NUCLIE ,                                     DOSQLQ
                    DATE ,                                       DOSQLQ
                    RELEA ,                                      DOSQLQ
                    REFERENCECLIENT ,                            DOSQLQ
                    RUE ,                                        DOSQLQ
                    COPOS ,                                      DOSQLQ
                    VILLE ,                                      DOSQLQ
                    CORESP ,                                     DOSQLQ
                    REMISE ,                                     DOSQLQ
                    MATERIEL ,                                   DOSQLQ
                    PRIX1 ,                                      DOSQLQ
                    HEURE ,                                      DOSQLQ
                    PRECIS )                                     DOSQLQ
      VALUES (:DZ05-COCARA:V-DZ05-COCARA,                        DOSQLQ
              :DZ05-NUCOD:V-DZ05-NUCOD,                          DOSQLQ
              :DZ05-FOURNI:V-DZ05-FOURNI,                        DOSQLQ
              :DZ05-NUCLIE:V-DZ05-NUCLIE,                        DOSQLQ
              :DZ05-DATE:V-DZ05-DATE,                            DOSQLQ
              :DZ05-RELEA:V-DZ05-RELEA,                          DOSQLQ
              :VDZ05-REFCLI:V-DZ05-REFCLI,                       DOSQLQ
              :VDZ05-RUE:V-DZ05-RUE,                             DOSQLQ
              :DZ05-COPOS:V-DZ05-COPOS,                          DOSQLQ
              :VDZ05-VILLE:V-DZ05-VILLE,                         DOSQLQ
              :VDZ05-CORESP:V-DZ05-CORESP,                       DOSQLQ
              :DZ05-REMISE:V-DZ05-REMISE,                        DOSQLQ
              :VDZ05-MATE:V-DZ05-MATE,                           DOSQLQ
              :DZ05-PRIX1:V-DZ05-PRIX1,                          DOSQLQ
              :DZ05-HEURE:V-DZ05-HEURE,                          DOSQLQ
              :DZ05-PRECIS:V-DZ05-PRECIS)                        DOSQLQ
       END-EXEC.                                                 DOSQLQ
       GO TO F80-OK.                                             DOSQLQ
F80-DZ05-RW.                                                     DOSQLQ
       EXEC SQL                                                  DOSQLQ
                            UPDATE                               DOSQLQ
                           PDMCA.DODZ05                         DOSQLQ
         SET NUCLIE =                                         DOSQLQ
              :DZ05-NUCLIE:V-DZ05-NUCLIE,                    DOSQLQ
             DATE =                                           DOSQLQ
              :DZ05-DATE:V-DZ05-DATE,                         DOSQLQ
             RELEA =                                          DOSQLQ
              :DZ05-RELEA:V-DZ05-RELEA,                       DOSQLQ
             REFERENCECLIENT =                                DOSQLQ
              :VDZ05-REFCLI:V-DZ05-REFCLI,                    DOSQLQ
             RUE =                                            DOSQLQ
              :VDZ05-RUE:V-DZ05-RUE,                          DOSQLQ
             COPOS =                                          DOSQLQ
              :DZ05-COPOS:V-DZ05-COPOS,                       DOSQLQ
             VILLE =                                          DOSQLQ
              :VDZ05-VILLE:V-DZ05-VILLE,                      DOSQLQ
             CORESP =                                         DOSQLQ
              :VDZ05-CORESP:V-DZ05-CORESP,                    DOSQLQ
             REMISE =                                         DOSQLQ
              :DZ05-REMISE:V-DZ05-REMISE,                     DOSQLQ
             MATERIEL =                                       DOSQLQ
              :VDZ05-MATE:V-DZ05-MATE,                        DOSQLQ
             PRIX1 =                                          DOSQLQ
              :DZ05-PRIX1:V-DZ05-PRIX1,                       DOSQLQ
             HEURE =                                          DOSQLQ
              :DZ05-HEURE:V-DZ05-HEURE,                       DOSQLQ
             PRECIS =                                         DOSQLQ
              :DZ05-PRECIS:V-DZ05-PRECIS                      DOSQLQ
     WHERE COCARA =  :DZ05-COCARA                             DOSQLQ
       AND NUCOD =  :DZ05-NUCOD                               DOSQLQ
       AND FOURNI =  :DZ05-FOURNI                             DOSQLQ
       END-EXEC.                                              DOSQLQ
       GO TO F80-OK.                                          DOSQLQ
F80-DZ05-UN.                                                  DOSQLQ
       GO TO F80-OK.                                          DOSQLQ
F80-DZ05-CL.                                                  DOSQLQ
       EXEC SQL                                               DOSQLQ
                               CLOSE      DISPLAY_DZ05            DOSQLQ
       END-EXEC.                                              DOSQLQ
       GO TO F80-OK.                                          DOSQLQ
F8001-FN.    EXIT.                                            DOSQLQ
F80-DZ10-R.                                                   DOSQLQ
       EXEC SQL                                               DOSQLQ
                            SELECT ALL                            DOSQLQ
                  COCARA ,                                    DOSQLQ
                  NUCOM ,                                     DOSQLQ
                  FOURNP ,                                    DOSQLQ
                  LIVRABLE ,                                  DOSQLQ
                  QUANTITE-COMMANDEE ,                        DOSQLQ
                  INFOR                                       DOSQLQ
         INTO  :DZ10-COCARA:V-DZ10-COCARA,                    DOSQLQ
               :DZ10-NUCOM:V-DZ10-NUCOM,                      DOSQLQ
               :DZ10-FOURNP:V-DZ10-FOURNP,                    DOSQLQ
               :DZ10-QTMLI:V-DZ10-QTMLI,                      DOSQLQ
               :DZ10-QTMCO:V-DZ10-QTMCO,                      DOSQLQ
               :VDZ10-INFOR:V-DZ10-INFOR                      DOSQLQ
                FROM PDMCA.DODZ10                             DOSQLQ
     WHERE COCARA =  :DZ10-COCARA                             DOSQLQ
       AND NUCOM =  :DZ10-NUCOM                               DOSQLQ
       END-EXEC.                                              DOSQLQ
       GO TO F80-OK.                                          DOSQLQ
F80-DZ10-RU.                                                  DOSQLQ
       EXEC SQL                                               DOSQLQ
                            SELECT ALL                            DOSQLQ
                  COCARA ,                                    DOSQLQ
                  NUCOM ,                                     DOSQLQ
                  FOURNP ,                                    DOSQLQ
                  LIVRABLE ,                                  DOSQLQ
                  QUANTITE-COMMANDEE ,                        DOSQLQ
                  INFOR                                       DOSQLQ
         INTO  :DZ10-COCARA:V-DZ10-COCARA,                    DOSQLQ
               :DZ10-NUCOM:V-DZ10-NUCOM,                      DOSQLQ
               :DZ10-FOURNP:V-DZ10-FOURNP,                    DOSQLQ
               :DZ10-QTMLI:V-DZ10-QTMLI,                      DOSQLQ
               :DZ10-QTMCO:V-DZ10-QTMCO,                      DOSQLQ
               :VDZ10-INFOR:V-DZ10-INFOR                      DOSQLQ
                FROM PDMCA.DODZ10                             DOSQLQ
     WHERE COCARA =  :DZ10-COCARA                             DOSQLQ
```

```
       AND NUCOM =  :DZ10-NUCOM                                  DOSQLQ
       END-EXEC.                                                 DOSQLQ
       GO TO F80-OK.                                             DOSQLQ
F80-DZ10-P.                                                      DOSQLQ
       EXEC SQL                                                  DOSQLQ
                                OPEN      DISPLAY_DZ10           DOSQLQ
       END-EXEC.                                                 DOSQLQ
F80-DZ10-RN.                                                     DOSQLQ
       EXEC SQL                                                  DOSQLQ
                               FETCH      DISPLAY_DZ10           DOSQLQ
         INTO  :DZ10-COCARA:V-DZ10-COCARA,                       DOSQLQ
               :DZ10-NUCOM:V-DZ10-NUCOM,                         DOSQLQ
               :DZ10-FOURNP:V-DZ10-FOURNP,                       DOSQLQ
               :DZ10-QTMLI:V-DZ10-QTMLI,                         DOSQLQ
               :DZ10-QTMCO:V-DZ10-QTMCO,                         DOSQLQ
               :VDZ10-INFOR:V-DZ10-INFOR                         DOSQLQ
       END-EXEC.                                                 DOSQLQ
       GO TO F80-OK.                                             DOSQLQ
F80-DZ10-W.                                                      DOSQLQ
       EXEC SQL                                                  DOSQLQ
                            INSERT                               DOSQLQ
                      INTO PDMCA.DODZ10                          DOSQLQ
                  ( COCARA ,                                     DOSQLQ
                    NUCOM ,                                      DOSQLQ
                    FOURNP ,                                     DOSQLQ
                    LIVRABLE ,                                   DOSQLQ
                    QUANTITE-COMMANDEE ,                         DOSQLQ
                    INFOR )                                      DOSQLQ
      VALUES (:DZ10-COCARA:V-DZ10-COCARA,                        DOSQLQ
              :DZ10-NUCOM:V-DZ10-NUCOM,                          DOSQLQ
              :DZ10-FOURNP:V-DZ10-FOURNP,                        DOSQLQ
              :DZ10-QTMLI:V-DZ10-QTMLI,                          DOSQLQ
              :DZ10-QTMCO:V-DZ10-QTMCO,                          DOSQLQ
              :VDZ10-INFOR:V-DZ10-INFOR)                         DOSQLQ
       END-EXEC.                                                 DOSQLQ
       GO TO F80-OK.                                             DOSQLQ
F80-DZ10-RW.                                                     DOSQLQ
       EXEC SQL                                                  DOSQLQ
                            UPDATE                               DOSQLQ
                           PDMCA.DODZ10                          DOSQLQ
         SET FOURNP =                                            DOSQLQ
              :DZ10-FOURNP:V-DZ10-FOURNP,                        DOSQLQ
             LIVRABLE =                                          DOSQLQ
              :DZ10-QTMLI:V-DZ10-QTMLI,                          DOSQLQ
             QUANTITE-COMMANDEE =                                DOSQLQ
              :DZ10-QTMCO:V-DZ10-QTMCO,                          DOSQLQ
             INFOR =                                             DOSQLQ
              :VDZ10-INFOR:V-DZ10-INFOR                          DOSQLQ
     WHERE COCARA =  :DZ10-COCARA                                DOSQLQ
       AND NUCOM =  :DZ10-NUCOM                                  DOSQLQ
       END-EXEC.                                                 DOSQLQ
       GO TO F80-OK.                                             DOSQLQ
F80-DZ10-UN.                                                     DOSQLQ
       GO TO F80-OK.                                             DOSQLQ
F80-DZ10-CL.                                                     DOSQLQ
       EXEC SQL                                                  DOSQLQ
                               CLOSE      DISPLAY_DZ10           DOSQLQ
       END-EXEC.                                                 DOSQLQ
       GO TO F80-OK.                                             DOSQLQ
F8002-FN.    EXIT.                                               DOSQLQ
F80-HELP-W.                                                      DOSQLQ
    EXEC  CICS  WRITEQ  TS  QUEUE (NAMEQ)  FROM (O-SQLQ)         DOSQLQ
         LENGTH (SCRLGTH) ITEM (TSQITEM) MAIN END-EXEC.          DOSQLQ
         GO TO F80-OK.                                           DOSQLQ
F80-HELP-RW.                                                     DOSQLQ
    EXEC  CICS  WRITEQ  TS  QUEUE (NAMEQ)  FROM (O-SQLQ)         DOSQLQ
    LENGTH (SCRLGTH) ITEM (TSQITEM) REWRITE MAIN END-EXEC.       DOSQLQ
         GO TO F80-OK.                                           DOSQLQ
F80-HELP-R.                                                      DOSQLQ
    EXEC  CICS  READQ   TS  QUEUE (NAMEQ)  INTO (O-SQLQ)         DOSQLQ
         LENGTH (SCRLGTH) ITEM (TSQITEM) END-EXEC.               DOSQLQ
         GO TO F80-OK.                                           DOSQLQ
F80-HELP-D.                                                      DOSQLQ
    EXEC CICS HANDLE CONDITION QIDERR (F80-OK) END-EXEC.         DOSQLQ
    EXEC  CICS  DELETEQ TS  QUEUE (NAMEQ)  END-EXEC.             DOSQLQ
         GO TO F80-OK.                                           DOSQLQ
F8095-FN.    EXIT.                                               DOSQLQ
```

```
    F80-OK.  MOVE '0' TO IK MOVE PROGR TO XPROGR GO TO F80-FN.       DOSQLQ
    F80-KO.  MOVE '1' TO IK MOVE PROGR TO XPROGR.                    DOSQLQ
    F8099-FN.    EXIT.                                               DOSQLQ
    F80-FN.      EXIT.                                               DOSQLQ
```

11. TABLE OF VARIABLES AND CONSTANTS

CHART OF ON-LINE CONSTANTS AND VARIABLES

CURPOS	CURSOR POSITIONING IN RECEPTION SCREEN WHERE CPOSL = LINE NUMBER & CPOSC = COLUMN NUMBER (except for DPS7 FORMS).
CPOSN	"ABSOLUTE" CURSOR POSITIONING WHERE CPOSL = 1 AND CPOSC = 1 (except for DPS7 FORMS).
INA	NUMBER OF DATA ELEMENTS IN SCREEN-TOP CATEGORY
INR	INA + NUMBER OF DATA ELEMENTS IN REPETITIVE CATEGORY
INZ	INR + NUMBER OF DATA ELEMENTS IN SCREEN-BOTTOM CATEGORY
IRR	NUMBER OF REPETITIONS IN REPETITIVE CATEGORY
INT	NUMBER OF INPUT FIELDS IN SCREEN
IER	NUMBER OF SCREEN-RELATED ERROR MESSAGES
SESSI	SESSION NUMBER OF GENERATED PROGRAM
LIBRA	LIBRARY CODE
USERCO	USER CODE
DATGN	DATE OF GENERATED PROGRAM
TIMGN	TIME OF GENERATED PROGRAM
PROGR	PROGRAM CODE
PROGE	PROGRAM EXTERNAL NAME
PRDOC	HELP PROGRAM EXTERNAL NAME

CHART OF ON-LINE CONSTANTS AND VARIABLES (CONT'D)

DATOR	YEAR-MONTH-DAY FORMATTED MACHINE DATE
DATSEP	SEPARATOR USED IN DATES DEFAULT VALUE: '/'
DAT6 DAT7 DAT8	DATE FORMATTING: DDMMYY OR YYMMDD ALSO OUTPUT FORMATS (DD/MM/YY FOR INSTANCE) IF A VARIABLE DATA ELEMENT (V) HAS A DATE FORMAT
DATCTY	FIELD FOR CENTURY LOAD
DAT6C DAT7C	NON-FORMATTED DATE WITH CENTURY
DAT8C	FORMATTED DATE WITH CENTURY: MM/DD/CCYY
DAT8G	GREGORIAN FORMATTED DATE: CCYY/MM/DD
TIMCO	TIME
TIMDAY	FORMATTED TIME: HH:MM:SS
5-scrn-PROGE	THIS FIELD CONTAINS THE NAME OF THE PROGRAM TO BRANCH TO

```
+----------------------------------------------------------+
!       CHART OF VALIDATION VARIABLES AND INDICATORS       !
+----------------------------------------------------------+
!        !                                                 !
! ICF    ! CONFIGURATION VARIABLE                          !
!        ! '1' = SCREEN IN INPUT                           !
!        ! '0' = NO SCREEN IN INPUT                        !
!        !                                                 !
! OCF    ! CONFIGURATION VARIABLE                          !
!        ! '1' = SCREEN IN OUTPUT                          !
!        ! '0' = NO SCREEN IN OUTPUT                       !
!        !                                                 !
! OPER   ! OPERATION CODE                                  !
!        ! 'A' = INQUIRY                                   !
!        ! 'M' = UPDATE                                    !
!        ! 'S' = SCREEN CONTINUATION                       !
!        ! 'E' = CONVERSATION END                          !
!        ! 'P' = PREVIOUS DISPLAY                          !
!        ! 'O' = TRANSFER TO ANOTHER SCREEN                !
!        !                                                 !
! OPERD  ! OPERATION CODE FOR DEFERRED BRANCHING           !
!        ! 'O' = DEFERRED CALL OF ANOTHER SCREEN           !
!        ! INITIALIZED IN F0520 AND MOVED INTO OPER IN F40 !
!        !                                                 !
! CATX   ! CATEGORY BEING PROCESSED                        !
!        ! '0' = BEGINNING OF RECEPTION OR DISPLAY         !
!        ! ' ' = SCREEN TOP                                !
!        ! 'R' = REPETITIVE CATEGORY                       !
!        ! 'Z' = SCREEN BOTTOM                             !
!        !                                                 !
! CATM   ! TRANSACTION CODE                                !
!        ! 'C' = CREATION                                  !
!        ! 'M' = MODIFICATION                              !
!        ! 'A' = DELETION                                  !
!        ! 'X' = IMPLICIT UPDATE                           !
!        !                                                 !
! ICATR  ! INDICATOR OF CATEGORY BEING PROCESSED           !
!        ! (REPETITIVE CATEGORY ONLY)                      !
!        !                                                 !
! FT     ! END OF REPETITIVE CATEGORY INDICATOR            !
!        ! '0' LINES TO DISPLAY                            !
!        ! '1' NO MORE LINES TO DISPLAY                    !
!        !                                                 !
!ddss-CF ! SEGMENT CONFIGURATION INDICATOR (seg. ddss)     !
!        ! '1' THE SEGMENT IS PROCESSED                    !
!        ! '0' THE SEGMENT IS NOT PROCESSED                !
!        !                                                 !
+----------------------------------------------------------+
+-----------------------------------------------------------+
!    CHART OF VALIDATION VARIABLES AND INDICATORS (CONT'D) !
+-----------------------------------------------------------+
! IK      ! PHYSICAL FILE ACCESS ERROR INDICATOR            !
!         ! '0' NO ERROR                                    !
!         ! '1' ERROR                                       !
!         !                                                 !
+-----------------------------------------------------------+

+-----------------------------------------------------------+
!               ERROR VARIABLES                             !
+-----------------------------------------------------------+
!         !                                                 !
! SCR-ER  ! STORAGE OF SCREEN ERROR                         !
!         ! '1' NO ERROR                                    !
!         ! '4' ERROR                                       !
!         !                                                 !
! CAT-ER  ! STORAGE OF ERROR ON CURRENT CATEGORY            !
!         ! ' ' NO ERROR                                    !
!         ! 'E' ERROR                                       !
!         !                                                 !
!ER-scrn-! MEMORIZATION OF DATA ELEMENT ERROR              !
! delcod  ! '0' DATA ELEMENT ABSENT                         !
!         ! '1' DATA ELEMENT PRESENT                        !
!         ! '2' INVALID ABSENCE                             !
!         ! '4' INVALID CLASS                               !
!         ! '5' INVALID VALUE                               !
!         !                                                 !
+-----------------------------------------------------------+
```