VisualAge Pacbase 2.5

CICS OLSD
REFERENCE MANUAL

DDOCI000151A

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TABLE OF CONTENTS

1. PRESENTATION OF THE EXAMPLE

1.1. 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.

The sample program ('DO0030') uses the IBM OS variant using the CICS monitor. The described segments have an IBM/VSAM organization and use the VSAM access method.

The program is also presented with the multi-terminal type variant.

The specifics of generation with DL/1 databases are presented as well.

Another generated program presents the SQL-type generated accesses.

1.2. THE 'DO' DIALOGUE

```
--------------------------------------------------------------------------------
!                   APPLICATION VSAM/CICS-MVS                *PDLB.NDOC.ACI.125!
! ON-LINE DIALOGUE DEFINITION........: DO                                      !
!                                                                              !
! DIALOGUE NAME......................: PACBASE DOCUMENTATION MANAG.            !
!                                                                              !
! SCREEN TYPE........................:          STANDARD 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..:   X   0     IBM VS2 CICS (PRO.   MAP BMS!
! CONTROL CARD OPTIONS FRONT & BACK..:            (PROGRAM)               (MAP)!
! EXTERNAL NAMES ....................:            (PROGRAM)               (MAP)!
! TRANSACTION CODE...................:                                         !
!                                                                              !
!                                                                              !
! EXPLICIT KEYWORDS..: DO                                                      !
! SESSION NUMBER.....: 0123        LIBRARY......: ACI    LOCK....:             !
!                                                                              !
! O: C1 CH: Odo                         ACTION:                                !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   APPLICATION VSAM/CICS-MVS                *PDLB.NDOC.ACI.125!
! DIALOGUE COMPLEMENT....:  DO PACBASE DOCUMENTATION MANAG.                    !
!                                                                              !
!                                                                              !
! COMMON AREA-DATA STRUCTURE CODE.......: CA                                   !
!                                                                              !
! ERROR MESSAGE FILE CHARACTERISTICS                                           !
!                       ORGANIZATION....: V                                    !
!                       EXTERNAL NAME...: DODOLE                               !
!                                                                              !
! FIRST SCREEN CODE OF THE DIALOGUE.....: 0060                                 !
!                                                                              !
! COMPLEMENTARY COMMON AREA LENGTH......:  700                                 !
!                                                                              !
! CODE OF PSB OR SUB-SCHEMA............:                                       !
!                                                                              !
!                                                                              !
! OPTIONS : OCF F10 SQA                                                        !
!                                                                              !
!                                                                              !
!                                                                              !
! SESSION NUMBER     : 0109  LIBRARY      : DCC                                !
!                                                                              !
! O: C1 CH: Odo O                       ACTION:                                !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   APPLICATION VSAM/CICS-MVS                *PDLB.NDOC.ACI.125!
! ON-LINE SCREEN GENERAL DOC.     DO     PACBASE DOCUMENTATION MANAG.          !
!                                                                              !
! A LIN : T COMMENT                                                        LIBR!
! . 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                                                              !
--------------------------------------------------------------------------------
```

1.3. THE 'DO0030' ON-LINE SCREEN

```
--------------------------------------------------------------------------------
!                   APPLICATION VSAM/CICS-MVS                *PDLB.NDOC.ACI.125!
! ON-LINE SCREEN DEFINITION..........: DO0030                                  !
!                                                                              !
! SCREEN NAME........................: ***  ORDER INPUT SCREEN  ***            !
!                                                                              !
! SCREEN TYPE........................:            STANDARD 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.FLD!
! 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..:   X   0     IBM VS2 CICS (PRO.  MAP BMS)!
! CONTROL CARD OPTIONS FRONT & BACK..:            (PROGRAM)               (MAP)!
! EXTERNAL NAMES ....................:   DOP030   (PROGRAM)      DOM030   (MAP)!
! TRANSACTION CODE...................: * DO30                                  !
!                                                                              !
!                                                                              !
! EXPLICIT KEYWORDS..:                                                         !
! SESSION NUMBER.....: 0123        LIBRARY......: ACI    LOCK....:             !
!                                                                              !
! O: C1 CH: Odo0030                     ACTION:                                !
--------------------------------------------------------------------------------
```

```
 --------------------------------------------------------------------------------
 !                   APPLICATION VSAM/CICS-MVS                *PDLB.NDOC.ACI.125!
 ! ON-LINE SCREEN GENERAL DOC.     DO0030 ***  ORDER INPUT SCREEN  ***          !
 !                                                                              !
 ! A LIN : T COMMENT                                                        LIBR!
 ! . 020 : C      THIS SCREEN ALLOWS TO ENTER AN ORDER OF                   *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 DOCUMENTATION.                  *ACC!
 !                                                                              !
 ! O: C1 CH: Odo0030 G                                                          !
 --------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   APPLICATION VSAM/CICS-MVS                *PDLB.NDOC.ACI.125!
! ON-LINE SCREEN GENERAL DOC.     DO0030 ***  ORDER INPUT SCREEN  ***          !
!                                                                              !
! A LIN : T COMMENT                                                        LIBR!
! . 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 TO ORDER 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!
!                                                                              !
! O: C1 CH:                                                                    !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   APPLICATION VSAM/CICS-MVS                *PDLB.NDOC.ACI.125!
! 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 : COPOS  .      003 V F N        .  R   P 93CP       .    WP30         !
! . 155 :        .                       .        CD05COPOS  .    CD05COPOS    !
! . 160 : VILLE  .      003 F F          .                   .    CD05         !
! . 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                                                         !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   APPLICATION VSAM/CICS-MVS                *PDLB.NDOC.ACI.125!
! 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:                                                                    !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   APPLICATION VSAM/CICS-MVS                *PDLB.NDOC.ACI.125!
! 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 : COPOS  .      003 V F                .                               !
! . 155 :        .                             .                               !
! . 160 : VILLE  .      003 F F                .                               !
! . 200 : REFCLI .   01 004 V U                .                               !
! . 210 : DATE   .      003 V U                . I ..__..                      !
! . 220 : CORRES .   01 005 V U                .                               !
!                                                                              !
! O: C2 CH:                                                                    !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   APPLICATION VSAM/CICS-MVS                *PDLB.NDOC.ACI.125!
! 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:                                                                    !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   APPLICATION VSAM/CICS-MVS                *PDLB.NDOC.ACI.125!
! 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: *ACC!
!   CD05   04 :            CA00-NUCOM     NUCOM                          : 0002!
! . CD10 R 00 :   T        'C'            KEYCD    V   DOCD00   CD10     : *ACC!
!   CD10 R 02 :            CA00-NUCOM     NUCOM                          : 0002!
!   CD10 R 04 :            0030-FOURNI    FOURNI                         : 0002!
!   CD10 R 06 :     A      SPACES         KEYCD                          : 0002!
!   CD10 R 08 :            'C'            COCARA C                       : 0002!
!   CD10 R 10 :            CA00-NUCOM     NUCOM  C                       : 0002!
! . FO10 R 00 :   M N CD10 0030-FOURNI    CLEFO    V 1 DOFO00   FO10     : *DCC!
!   FO10 R 02 :            CA00-LANGU     LANGU                          : 0002!
!   FO10 R 04 :            0030-RELEA     RELEA                          : 0002!
!   FO10 R 06 :            0030-MATE      MATE                           : 0002!
! . CD20 Z 00 :   X N      SPACES         KEYCD    V   DOCD00   CD20     : *ACC!
!   CD20 Z 02 :            'E'            COCARA                         : 0002!
!   CD20 Z 04 :            CA00-NUCOM     NUCOM                          : 0002!
! . ME00 Z 00 :   N A      CA00-CLEME     CLEME    V   DOME00   ME00     : *DCC!
!             :                                                          :     !
!                                                                              !
! O: C1 CH: Odo0030 CS                                                         !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   APPLICATION VSAM/CICS-MVS                *PDLB.NDOC.ACI.125!
! 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                                                         !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   APPLICATION VSAM/CICS-MVS                *PDLB.NDOC.ACI.125!
! 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                                                          !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   APPLICATION VSAM/CICS-MVS                *PDLB.NDOC.ACI.125!
! 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:                                                                    !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   APPLICATION VSAM/CICS-MVS                *PDLB.NDOC.ACI.125!
! 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: IBM.V.OS            RELEASE: 2.0             !
!   CUST.    BEST     D.P. MANAGEMENT                                          !
!        84, OLD TOWNLINE ROAD                      48016   CINCINNATI         !
!   CUST. REF.: LP-KCP  ORDER NUMBER: 05179      ORDER DATE: ..__..            !
!    COORDINATOR: MR. GUY DANCE               DISCOUNT RATE:    12.25          !
!                                                                              !
!  A   ITEM     ORDERED   DELIV.   OUTST. REMARKS                              !
!  C   DLG       3         1        2     REST TO BE DELIVERED : 05/03/93      !
!  .   ...      ..        ..       ..     ...................................  !
!  .   ...      ..        ..       ..     ...................................  !
!  .   ...      ..        ..       ..     ...................................  !
!  .   ...      ..        ..       ..     ...................................  !
!  .   ...      ..        ..       ..     ...................................  !
!  .   ...      ..        ..       ..     ...................................  !
!  .   ...      ..        ..       ..     ...................................  !
!  .   ...      ..        ..       ..     ...................................  !
!                                                                              !
! 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     !
--------------------------------------------------------------------------------
```

```
              DO0030 SCREEN FUNCTIONS
              =======================

            O DO0030 FUNCTION: 02
ASF LIN OPE OPERANDS                        LVTY CONDITION
*CP     N   INIT. NUMBER OF LOADED ITEMS    10BL
*CP 100 M   IWP20M IWP20L
--- --- --- ------------------------------------ ---------------------
            O DO0030 FUNCTION: 08
ASF LIN OPE OPERANDS                        LVTY CONDITION
*BB     N   NO UPDATE ==> END OF RECEIVE    10IT OPER NOT = 'M'
*BB 100 GFT
--- --- --- ------------------------------------ ---------------------
            O DO0030 FUNCTION: 15
ASF LIN OPE OPERANDS                        LVTY CONDITION
.AA     N   INITIALIZATION CATM (HEADING)   10IT CATX = SPACE
.AA 100 M   'M' CATM                          AN OPER = 'M'
--- --- --- ------------------------------------ ---------------------
            O DO0030 FUNCTION: 20
ASF LIN OPE OPERANDS                        LVTY CONDITION
.BB     N   ITEM NOT AVAILABLE              10*A FOURNI
.BB 100 ERR A FOURNI                        99IT I-0030-FOURNI = 'CLA'
.BB 110 GF                                    AN CATM NOT = SPACE
--- --- --- ------------------------------------ ---------------------
            O DO0030 FUNCTION: 25
ASF LIN OPE OPERANDS                        LVTY CONDITION
.BB     N   ACCESS TO FO10                  12*P CD10
.BB 100 M   '1' CD10-CF
--- --- --- ------------------------------------ ---------------------
            O DO0030 FUNCTION: 28
ASF LIN OPE OPERANDS                        LVTY CONDITION
.BH     N   STOCK UPD.: ORDER DELETION/UPD  10IT (CATM = 'A' OR 'M')
.BH 100 A   CD10-QTMAL FO10-QTMAS             AN CATX = 'R'
.BH 120                                       AN CAT-ER = SPACES
--- --- --- ------------------------------------ ---------------------
            O DO0030 FUNCTION: 30
ASF LIN OPE OPERANDS                        LVTY CONDITION
.BD     N   QUANTITY PROCESSING             10*P R
--- --- --- ------------------------------------ ---------------------
.BF     N   CALC. DELIV. QUANT.   STOCK UPD.12IT CATM = 'C' OR 'M'
.BF 100 M   I-0030-QTMAC  CD10-QTMAL        99IT FO10-QTMAS NOT <
.BF 110                                          I-0030-QTMAC
.BF 120 M   FO10-QTMAS    CD10-QTMAL        99EL
.BF 130 S   CD10-QTMAL    FO10-QTMAS        99BL
.BF 140 M   CD10-QTMAL    O-0030-QTMAL
--- --- --- ------------------------------------ ---------------------
            O DO0030 FUNCTION: 64
ASF LIN OPE OPERANDS                        LVTY CONDITION
*DA     N   PREPARATION DISPLAY DATE/HOUR   10IT CATX = ' '
*DA  40 AD6
*DA  80 AD  IM DATOR DAT8C
*DA 120 TIM                                 99BL
*DA 160 TIF TIMCOG TIMDAY
--- --- --- ------------------------------------ ---------------------
            O DO0030 FUNCTION: 65
ASF LIN OPE OPERANDS                        LVTY CONDITION
.BB     N   REMAINS TO BE DELIVERED         10*P R
.BB 100 C   WW10-QTMAR =                    99IT CD10-QTMAL NOT = ZERO
.BB 110     CD10-QTMAC - CD10-QTMAL
.BB 120 M   WW10-QTMAR   O-0030-QTMAR
--- --- --- ------------------------------------ ---------------------
            O DO0030 FUNCTION: 93
ASF LIN OPE OPERANDS                        LVTY CONDITION
*CP     N   ZIP CODE VALIDATION             10BL
*CP 100 SCH WP20-COPOS WP30-COPOS
*CP 200 M   '5' DEL-ER                      99IT IWP20R > IWP20L
*CP 220 GT  10
--- --- --- ------------------------------------ ---------------------
```

2. THE GENERATED PROGRAM

2.1. 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.

The clause 'DECIMAL POINT IS COMMA' is generated if, on the Library Definition screen, the value in the DECIMAL POINT PRESENTATION CHARACTER field is a comma (,).

All other clauses that may be necessary in this part of the program are the user's responsibility.

All modifications to this part of the program must be done on the Beginning Insertions (-B) screen. (See the STRUCTURED CODE Reference Manual).

```
IDENTIFICATION DIVISION.
PROGRAM-ID. DOP030.                                                 DO0030
AUTHOR.     ***  ORDER INPUT SCREEN  ***.                           DO0030
DATE-COMPILED. 04/24/96.                                            DO0030
ENVIRONMENT DIVISION.                                               DO0030
CONFIGURATION SECTION.                                              DO0030
SOURCE-COMPUTER. IBM-370.                                           DO0030
OBJECT-COMPUTER. IBM-370.                                           DO0030
SPECIAL-NAMES.                                                      DO0030
     DECIMAL-POINT IS COMMA.                                        DO0030
INPUT-OUTPUT SECTION.                                               DO0030
FILE-CONTROL.                                                       DO0030
DATA DIVISION.                                                      DO0030
FILE SECTION.                                                       DO0030
```

2.2. BEGINNING OF WORKING-STORAGE

BEGINNING OF WORKING-STORAGE

The 'LIST OF REFERENCED ENTITIES' at the beginning of the WORKING-STORAGE SECTION is printed when the REFER option on the Dialogue Complement (-O) screen is selected.

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.

CURPOS Cursor position on the screen.

CPOSL Line number.
CPOSC Column number.
CPOSN BMS cursor position.

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 documentation help character has been entered on the Screen Definition screen, the following fields are generated:

PRDOC	External name of the 'HELP SCREEN' program.
SCRLGTH	Length of the 'TS' used to backup the screen entry fields.
NAMEQ	Name of the 'TS'.
TRMID	Name of the terminal.
TSQITEM	Item number of the 'TS'.

5-0030-MAP MAP Code.

5-0030-MAPSET MAP external name.

5-0030-TRAN Transaction code associated to the screen.

5-0030-PROGE Field containing the name of the called program, to be entered by the user.

For all these areas, the data element codes are fixed (TRAN, PROGE, ...), 0030 being the screen code within the dialogue.

5-DOCD00 Indicates the positioning of the beginning of the sequential read of a segment:

.'O' Beginning of sequential read.
.'1' Restart of a sequential read.

'DOCD00' is the external name of the segment. It is generated for each segment which has a different EXTERNAL NAME on the Segment Call of Segments, and is used in display in the repetitive category, without a preceding segment.

5-CD05-DDNAME
5-CD10-DDNAME
5-CD20-DDNAME
5-FO00-DDNAME
5-ME00-DDNAME
5-EM00-DDNAME

One area per segment containing the value of the external name associated with the segment.

The 'DATSEP' variable contains the separator used for dates. Its default value ('/') can be modified by using the DATSEP variable on the '-P' lines.

The 'DATSET' variable contains the separator used for the Gregorian type date. Its default value ('-') can be modified by using the DATSET variable on the '-P' lines.

The 'DATCE' variable 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).

```
DAT6     MMDDYY or YYMMDD and output formats (YY/MM/DD for
DAT7     example) generated if an 'AD' type operator is
DAT8     used in the program's '-P' lines, or if a variable
         data element (NATURE = 'V') has a date format.

DATCTY   Field for loading the century.

DAT6C    Fields for loading the non formatted date with the
DAT7C    century.

DAT8C    Field for loading the date with the century using
         the slash ('/').

DAT8G    Field for loading the Gregorian formatted date
         (CCYY-MM-DD).

TIMCO    Field for loading the time.

TIMDAY   Field for loading the formatted time (HH:MM:SS).
```

```
 WORKING-STORAGE SECTION.                                         DO0030
*        *************************************************        DO0030
*        *         LIST OF REFERENCED ENTITIES           *        DO0030
*        *         ---------------------------           *        DO0030
*        *  ADFOU   SUPPLIER'S ADDRESS                   *        DO0030
*        *  CLECD   ORDER FILE KEY                       *        DO0030
*        *  CLECL1  CUSTOMER FILE KEY                    *        DO0030
*        *  CLEFO   MANUALS FILE KEY                     *        DO0030
*        *  CLEME   MAILBOX FILE KEY                     *        DO0030
*        *  COCARA  STRUCTURE CODE                       *        DO0030
*        *  CODMVT  TRANSACTION CODE                     *        DO0030
*        *  COPERS  PERSONAL CODE                        *        DO0030
*        *  COPOS   ZIP CODE                             *        DO0030
*        *  CORRES  COORDINATOR                          *        DO0030
*        *  DATE    ORDER DATE                           *        DO0030
*        *  DATEM   DATE EXTENDED FORMAT WITH CENTURY    *        DO0030
*        *  EDIT    PRINTING REQUEST                     *        DO0030
*        *  ERMSG   ERROR MESSAGE                        *        DO0030
*        *  FOURNI  CODE OF THE MANUAL ORDERED           *        DO0030
*        *  HEURE   DISPLAY TIME                         *        DO0030
*        *  INFOR   INFORMATION--ORDER DETAILS           *        DO0030
*        *  KEYCD   'CD' FILE ACCESS KEY                 *        DO0030
*        *  LANGU   LANGUAGE CODE                        *        DO0030
*        *  LIBFO   MANUAL TITLE                         *        DO0030
*        *  MATE    SYSTEM                               *        DO0030
*        *  MESSA   MAILBOX MESSAGES                     *        DO0030
*        *  NUCLIE  CUSTOMER NUMBER                      *        DO0030
*        *  NUCOM   ORDER NUMBER                         *        DO0030
*        *  NUMORD  ORDER NUMBER                         *        DO0030
*        *  PREM    FIRST INPUT IN TRANSACTION           *        DO0030
*        *  PROGE   EXTERNAL NAME OF PROGRAM             *        DO0030
*        *  QTMAC   QUANTITY ORDERED                     *        DO0030
*        *  QTMAL   QUANTITY DELIVERABLE                 *        DO0030
*        *  QTMAM   QUANTITY MINIMUM                     *        DO0030
*        *  QTMAR   QUANTITY OUTSTANDING                 *        DO0030
*        *  QTMAS   QUANTITE MASS                        *        DO0030
*        *  RAISOC  PRINCIPLE ACTIVITY OF CUSTOMER       *        DO0030
*        *  REFCLI  CUSTOMER REFERENCES                  *        DO0030
*        *  RELEA   PACBASE RELEASE                      *        DO0030
*        *  REMIS   DISCOUNT                             *        DO0030
*        *  RUE     MAIN                                 *        DO0030
*        *  SESSI   SESSION NUMBER                       *        DO0030
*        *  VILLE   NAME OF THE CITY                     *        DO0030
*        *  VILLEL  NAME OF THE CITY                     *        DO0030
*        *************************************************        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 S9(4) COMPUTATIONAL.                    DO0030
      10 CPOSC    PICTURE S9(4) COMPUTATIONAL.                    DO0030
      05 CPOSN    PICTURE S9(4) COMPUTATIONAL.                    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 : 23/06/95                                    DO0030
*            PACE80 : 16/01/96   PAC7SG : 960115                  DO0030
      05 FILLER PICTURE X(50) VALUE                               DO0030
      '0523 ACI04/24/96DO0030DOP030  10:17:05PDMCA   NDOC'.       DO0030
 01   CONSTANTS-PACBASE REDEFINES PACBASE-CONSTANTS.              DO0030
      05 SESSI  PICTURE X(5).                                     DO0030
```

```
     05 LIBRA  PICTURE X(3).                                     DO0030
     05 DATGN  PICTURE X(8).                                     DO0030
     05 PROGR  PICTURE X(6).                                     DO0030
     05 PROGE  PICTURE X(8).                                     DO0030
     05 TIMGN  PICTURE X(8).                                     DO0030
     05 USERCO PICTURE X(8).                                     DO0030
     05 COBASE PICTURE X(4).                                     DO0030
01   PACBASE-WORK.                                               DO0030
     05 PRDOC  PICTURE X(8) VALUE 'DOP050'.                      DO0030
     05 SCRLGTH PICTURE S9(4) COMPUTATIONAL VALUE +1012.         DO0030
     05 NAMEQ.                                                   DO0030
     10 FILLER   PICTURE X(04) VALUE 'PAC7'.                     DO0030
     10 TRMID    PICTURE X(4).                                   DO0030
     05 TSQITEM  PICTURE S9(4) COMPUTATIONAL VALUE +1.           DO0030
     05      5-0030-MAP    PICTURE X(7)  VALUE   'DO0030 '.      DO0030
     05      5-0030-MAPSET PICTURE X(7)  VALUE                   DO0030
                                'DOM030 '.                       DO0030
     05      5-0030-TRAN                                         DO0030
                PICTURE X(4) VALUE  'DO30'.                      DO0030
     05      5-0030-PROGE  PICTURE X(8).                         DO0030
     05                  5-DOCD00   PIC X VALUE '0'.             DO0030
     05    5-CD05-DDNAME PICTURE X(8)                            DO0030
              VALUE       'DOCD00  '.                            DO0030
     05    5-CD10-DDNAME PICTURE X(8)                            DO0030
              VALUE       'DOCD00  '.                            DO0030
     05    5-CD20-DDNAME PICTURE X(8)                            DO0030
              VALUE       'DOCD00  '.                            DO0030
     05    5-FO10-DDNAME PICTURE X(8)                            DO0030
              VALUE       'DOFO00  '.                            DO0030
     05    5-ME00-DDNAME PICTURE X(8)                            DO0030
              VALUE       'DOME00  '.                            DO0030
     05      5-EM00-DDNAME PICTURE X(8) VALUE 'DODOLE  '.        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  TIMCIC     PICTURE 9(7).                                     DO0030
01  TIMCI1     REDEFINES TIMCIC.                                 DO0030
  05  FILLER PIC X.                                              DO0030
  05  TIMCIG.                                                    DO0030
   10 TIMCIH   PICTURE XX.                                       DO0030
   10 TIMCIM   PICTURE XX.                                       DO0030
   10 TIMCIS   PICTURE XX.                                       DO0030
01  DATCIC     PICTURE 9(7).                                     DO0030
01  DATQTM     REDEFINES DATCIC.                                 DO0030
  05  FILLER   PICTURE XX.                                       DO0030
  05  DATQUY   PICTURE 99.                                       DO0030
  05  DATQUD   PICTURE 999.                                      DO0030
01  TABDAT.                                                      DO0030
 02  TABQTM.                                                     DO0030
  05  FILLER PIC X(18) VALUE '031059090120151181'.               DO0030
  05  FILLER PIC X(18) VALUE '212243273304334365'.               DO0030
 02  TABQT1 REDEFINES TABQTM PIC 999 OCCURS 12.                  DO0030
 02  TABBIS.                                                     DO0030
  05  FILLER PIC X(18) VALUE '031060091121152182'.               DO0030
  05  FILLER PIC X(18) VALUE '213244274305335366'.               DO0030
 02  TABBI1 REDEFINES TABBIS PIC 999 OCCURS 12.                  DO0030
```

2.3. SEGMENT DESCRIPTION

SEGMENT DESCRIPTION

The segment description part of the program is generated when a segment is used in the screen.

The 'CONFIGURATIONS' level contains a 'ddss-CF' variable per segment accessed in the program ('ddss' = the code of the generated segment). This permits the access to each segment to be conditioned in the processing.

The Segment DESCRIPTION TYPE is defined by the user on the segment call line:

. 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 additional FILLER).

Tables

The description of a table (segment with ORGANIZATION = 'G') is preceded by the description of the communication area with the PACTABLE function 'G-ddss-PARAM'.

The System generates a communication area per table, that is, one per segment with a 'G' ORGANIZATION.

Segment with a DL/1 organization

The segment description will be found in this part of the program if its SEGMENT CODE IN THE PROGRAM is not the same as its code in the database. It is possible to choose a SEGMENT CODE IN THE PROGRAM that is not the segment code in the database if it is not a code already used in the PSB of the dialogue.

The complete description of the PSB is generated in the LINKAGE SECTION.

```
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                 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     REDEFINES  CD00.                     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     REDEFINES  CD00.                     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     REDEFINES  CD00.                     DO0030
       10          FILLER      PICTURE X(00009).                 DO0030
       10          CD20-EDIT   PICTURE X.                        DO0030
       10          FILLER      PICTURE X(00156).                 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.                           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
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
```

2.4. SCREEN MAP DESCRIPTION

SCREEN MAP DESCRIPTION

The fields of the screen are generated according to the rules that are illustrated by the example:

```
      .I-0030        Screen in reception.
      .O-0030        Screen in display.

      .I-0030-REMIS  Reception field.
      .E-0030-REMIS  Alphanumeric definition of an
                     I-0030-REMIS field, which is numeric in
                     reception.

      .O-0030-QTMAC  Display field.
      .F-0030-QTMAC  Alphanumeric definition of an
                     O-0030-QTMAC field, which is numeric in
                     display.

      .X-0030-MATE   Attributes of the fields.
      .Y-0030-MATE   Attributes of the fields.
```

The data element defining the repetitive category is coded in the screen description:

```
      .J-0030-LINE OCCURS 9 in reception,

      .P-0030-LINE OCCURS 9 in display,

containing a FILLER.
```

The description of the fields defined by the data elements of the repetitive category is generated outside of the screen description.

This description is made up of a 'FILLER' field which is filled in at each occurrence of the category and which is used to execute the procedures for each of the elementary data elements.

This description is generated according to the same rules as above, for example:

```
.I-0030-LINE   Used for procedures in reception,
containing,

  .I-0030-FOURNI

  .E-0001-QTMAC
  etc.

.O-0030-LINE   Used for procedures in display,
containing,

  .O-0030-FOURNI

  .O-0030-QTMAC
```

An ordinary repetitive data element (which does not define a repetitive category) is described directly in the screen description in the following form:

```
.05 FILLER Occurs 2.
  .10 I-0030-LREF1      in reception

.05 FILLER Occurs 2.
  .10 O-0030-LREF1      in display
```

In this case, the procedures (validations, transfers, etc.) for each occurrence of the data element are not generated and are to be inserted by the user in Structured Code.

If the chosen generation option is 'MDT OFF' (in the OPTIONS field on the Dialogue Complement (-O) screen), an additional description of variable data elements (NATURE = 'V') is generated outside of the screen description.

This description is generated according to the rules that are illustrated in the example (repetitive category):

```
02 T-0030-LINE.
  05 T-0030-CODMVT
  05 T-0030-FOURNI
```

If parameter 21 'ARRAY' or 'TABLE' has been specified on the Dialogue General Documentation (-G) screen, complementary descriptions of the physical and logical messages are generated (generation similar to the Multi-terminal type generation variant).

The tranfers between these fields and the INPUT- and OUTPUT-SCREEN-FIELDS are generated after the RECEIVE (in F0510, PERFORM F8165) and before the SEND (in F8Z10, PERFORM F8145), respectively.

```
 01          INPUT-SCREEN-FIELDS.                                     *AA050
      02     I-0030.                                                  *AA050
      05     FILLER PICTURE X(12).                                    *AA050
      05     Z-0030-PROGE  PICTURE X(3).                              *AA050
      05     I-0030-PROGE  PICTURE X(8).                              *AA050
      05     Z-0030-SESSI  PICTURE X(3).                              *AA050
      05     I-0030-SESSI  PICTURE X(5).                              *AA050
      05     Z-0030-DATEM  PICTURE X(3).                              *AA050
      05     I-0030-DATEM  PICTURE X(10).                             *AA050
      05     Z-0030-HEURE  PICTURE X(3).                              *AA050
      05     I-0030-HEURE  PICTURE X(8).                              *AA050
      05     Z-0030-NUCOM  PICTURE X(3).                              *AA050
      05     I-0030-NUCOM  PICTURE 9(5).                              *AA050
      05     Z-0030-MATE   PICTURE X(3).                              *AA050
      05     I-0030-MATE   PICTURE X(8).                              *AA050
      05     Z-0030-RELEA  PICTURE X(3).                              *AA050
      05     I-0030-RELEA  PICTURE X(3).                              *AA050
      05     Z-0030-RAISOC PICTURE X(3).                              *AA050
      05     I-0030-RAISOC PICTURE X(50).                             *AA050
      05     Z-0030-RUE    PICTURE X(3).                              *AA050
      05     I-0030-RUE    PICTURE X(40).                             *AA050
      05     Z-0030-VILLE  PICTURE X(3).                              *AA050
      05     I-0030-VILLE  PICTURE X(20).                             *AA050
      05     Z-0030-COPOS  PICTURE X(3).                              *AA050
      05     I-0030-COPOS  PICTURE X(5).                              *AA050
      05     Z-0030-REFCLI PICTURE X(3).                              *AA050
      05     I-0030-REFCLI PICTURE X(30).                             *AA050
      05     Z-0030-DATE   PICTURE X(3).                              *AA050
      05     I-0030-DATE   PICTURE X(6).                              *AA050
      05     Z-0030-CORRES PICTURE X(3).                              *AA050
      05     I-0030-CORRES PICTURE X(25).                             *AA050
      05     Z-0030-REMIS  PICTURE X(3).                              *AA050
      05     E-0030-REMIS.                                            *AA050
      10     I-0030-REMIS  PICTURE S9(4)V99.                          *AA050
      10     FILLER        PICTURE X(2).                              *AA050
      05     J-0030-LINE   OCCURS 9.                                  *AA050
      10     FILLER        PICTURE X(63).                             *AA050
      05     Z-0030-EDIT   PICTURE X(3).                              *AA050
      05     I-0030-EDIT   PICTURE X.                                 *AA050
      05     Z-0030-MESSA  PICTURE X(3).                              *AA050
      05     I-0030-MESSA  PICTURE X(75).                             *AA050
      05     I-0030-ERMS.                                             *AA050
      10     FILLER OCCURS 1.                                         *AA050
      15     Z-0030-ERMSG  PICTURE X(3).                              *AA050
      15     I-0030-ERMSG  PICTURE X(72).                             *AA050
 01          OUTPUT-SCREEN-FIELDS.                                    *AA050
      02     O-0030.                                                  *AA050
      05     FILLER PICTURE X(12).                                    *AA050
      05     X-0030-PROGE  PICTURE S9(4) COMP.                        *AA050
      05     Y-0030-PROGE  PICTURE X.                                 *AA050
      05     O-0030-PROGE  PICTURE X(8).                              *AA050
      05     X-0030-SESSI  PICTURE S9(4) COMP.                        *AA050
      05     Y-0030-SESSI  PICTURE X.                                 *AA050
      05     O-0030-SESSI  PICTURE X(5).                              *AA050
      05     X-0030-DATEM  PICTURE S9(4) COMP.                        *AA050
      05     Y-0030-DATEM  PICTURE X.                                 *AA050
      05     O-0030-DATEM  PICTURE X(10).                             *AA050
      05     X-0030-HEURE  PICTURE S9(4) COMP.                        *AA050
      05     Y-0030-HEURE  PICTURE X.                                 *AA050
      05     O-0030-HEURE  PICTURE X(8).                              *AA050
      05     X-0030-NUCOM  PICTURE S9(4) COMP.                        *AA050
      05     Y-0030-NUCOM  PICTURE X.                                 *AA050
      05     O-0030-NUCOM  PICTURE 9(5).                              *AA050
      05     X-0030-MATE   PICTURE S9(4) COMP.                        *AA050
      05     Y-0030-MATE   PICTURE X.                                 *AA050
      05     O-0030-MATE   PICTURE X(8).                              *AA050
      05     X-0030-RELEA  PICTURE S9(4) COMP.                        *AA050
      05     Y-0030-RELEA  PICTURE X.                                 *AA050
      05     O-0030-RELEA  PICTURE X(3).                              *AA050
      05     X-0030-RAISOC PICTURE S9(4) COMP.                        *AA050
      05     Y-0030-RAISOC PICTURE X.                                 *AA050
      05     O-0030-RAISOC PICTURE X(50).                             *AA050
      05     X-0030-RUE    PICTURE S9(4) COMP.                        *AA050
      05     Y-0030-RUE    PICTURE X.                                 *AA050
      05     O-0030-RUE    PICTURE X(40).                             *AA050
      05     X-0030-VILLE  PICTURE S9(4) COMP.                        *AA050
      05     Y-0030-VILLE  PICTURE X.                                 *AA050
```

```
         05      O-0030-VILLE  PICTURE X(20).                        *AA050
         05      X-0030-COPOS  PICTURE S9(4) COMP.                   *AA050
         05      Y-0030-COPOS  PICTURE X.                            *AA050
         05      O-0030-COPOS  PICTURE X(5).                         *AA050
         05      X-0030-REFCLI PICTURE S9(4) COMP.                   *AA050
         05      Y-0030-REFCLI PICTURE X.                            *AA050
         05      O-0030-REFCLI PICTURE X(30).                        *AA050
         05      X-0030-DATE   PICTURE S9(4) COMP.                   *AA050
         05      Y-0030-DATE   PICTURE X.                            *AA050
         05      O-0030-DATE   PICTURE X(6).                         *AA050
         05      X-0030-CORRES PICTURE S9(4) COMP.                   *AA050
         05      Y-0030-CORRES PICTURE X.                            *AA050
         05      O-0030-CORRES PICTURE X(25).                        *AA050
         05      X-0030-REMIS  PICTURE S9(4) COMP.                   *AA050
         05      Y-0030-REMIS  PICTURE X.                            *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(63).                        *AA050
         05      X-0030-EDIT   PICTURE S9(4) COMP.                   *AA050
         05      Y-0030-EDIT   PICTURE X.                            *AA050
         05      O-0030-EDIT   PICTURE X.                            *AA050
         05      X-0030-MESSA  PICTURE S9(4) COMP.                   *AA050
         05      Y-0030-MESSA  PICTURE X.                            *AA050
         05      O-0030-MESSA  PICTURE X(75).                        *AA050
         05      O-0030-ERMS.                                        *AA050
         10      FILLER OCCURS 1.                                    *AA050
         15      X-0030-ERMSG  PICTURE S9(4) COMP.                   *AA050
         15      Y-0030-ERMSG  PICTURE X.                            *AA050
         15      O-0030-ERMSG  PICTURE X(72).                        *AA050
    01           REPEAT-LINE.                                        *AA050
         02      I-0030-LINE.                                        *AA050
         05      Z-0030-CODMVT PICTURE X(3).                         *AA050
         05      I-0030-CODMVT PICTURE X.                            *AA050
         05      Z-0030-FOURNI PICTURE X(3).                         *AA050
         05      I-0030-FOURNI PICTURE X(3).                         *AA050
         05      Z-0030-QTMAC  PICTURE X(3).                         *AA050
         05      E-0030-QTMAC.                                       *AA050
         10      I-0030-QTMAC  PICTURE 99.                           *AA050
         05      Z-0030-QTMAL  PICTURE X(3).                         *AA050
         05      I-0030-QTMAL  PICTURE 99.                           *AA050
         05      Z-0030-QTMAR  PICTURE X(3).                         *AA050
         05      I-0030-QTMAR  PICTURE 99.                           *AA050
         05      Z-0030-INFOR  PICTURE X(3).                         *AA050
         05      I-0030-INFOR  PICTURE X(35).                        *AA050
         02      O-0030-LINE.                                        *AA050
         05      X-0030-CODMVT PICTURE S9(4) COMP.                   *AA050
         05      Y-0030-CODMVT PICTURE X.                            *AA050
         05      O-0030-CODMVT PICTURE X.                            *AA050
         05      X-0030-FOURNI PICTURE S9(4) COMP.                   *AA050
         05      Y-0030-FOURNI PICTURE X.                            *AA050
         05      O-0030-FOURNI PICTURE X(3).                         *AA050
         05      X-0030-QTMAC  PICTURE S9(4) COMP.                   *AA050
         05      Y-0030-QTMAC  PICTURE X.                            *AA050
         05      F-0030-QTMAC.                                       *AA050
         10      O-0030-QTMAC  PICTURE Z(01)9.                       *AA050
         05      X-0030-QTMAL  PICTURE S9(4) COMP.                   *AA050
         05      Y-0030-QTMAL  PICTURE X.                            *AA050
         05      O-0030-QTMAL  PICTURE 99.                           *AA050
         05      X-0030-QTMAR  PICTURE S9(4) COMP.                   *AA050
         05      Y-0030-QTMAR  PICTURE X.                            *AA050
         05      O-0030-QTMAR  PICTURE 99.                           *AA050
         05      X-0030-INFOR  PICTURE S9(4) COMP.                   *AA050
         05      Y-0030-INFOR  PICTURE X.                            *AA050
         05      O-0030-INFOR  PICTURE X(35).                        *AA050
    01           VARIABLES-GROUPE.                                   *AA050
         02      T-0030-LINE.                                        *AA050
         05      T-0030-CODMVT PICTURE X(1).                         *AA050
         05      T-0030-FOURNI PICTURE X(3).                         *AA050
         05      T-0030-QTMAC  PICTURE X(2).                         *AA050
         05      T-0030-INFOR  PICTURE X(35).                        *AA050
```

The formats used in the generated programs correspond to the following rules:

DATA ELEMENT WITH NATURE = 'F' or 'P'

Whether reception or display screen, the format is the internal format of the data element.

DATA ELEMENT WITH NATURE = 'V'

Reception screen:

. The format is the internal format of the data element.

Display screen:

. For alphanumeric data elements, it is the extended internal format of the data element,
. For numeric data elements, it is a print format based on the internal format, with replacement of non-significant leading zeros with spaces.

DATA ELEMENT WITH A CONVERSATIONAL FORMAT

(See the SPECIFICATIONS DICTIONARY Reference Manual, Chapter "DATA ELEMENTS", Subchapter "DESCRIPTION SCREEN").

Reception screen:

. The internal format is based on the conversational format entered on the Data Element (-D) Description screen.

```
EXAMPLE :    Conversational format    ZZZ99.99
             Internal format          9(5)v9(2)
```

Display screen:

. The format is the conversational format of the data element entered on the Data Element (-D) Description screen.

2.5. 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.

DESCRIPTION OF ERROR MESSAGE FILE

The EM00 level corresponding to the description of the error message file, is systematically generated. This description can be replaced by the user, as long as the new description uses the same field names as in the PROCEDURE DIVISION: EM00-LIBRA, EM00-PROGR, etc.

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").

The 'PFKEYS-TABLE' level is always generated.

It contains the work areas necessary for the search and storage of the function key used for re-entry into the program.

```
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              EM00.                                            *AA100
    05          EM00-EMKEY.                                      *AA100
      10        EM00-LIBRA     PICTURE X(3).                     *AA100
      10        EM00-ENTYP     PICTURE X.                        *AA100
      10        EM00-XEMKY.                                      *AA100
        15      EM00-PROGR     PICTURE X(6).                     *AA100
        15      EM00-ERCOD.                                      *AA100
          20    EM00-ERCOD9    PICTURE 9(3).                     *AA100
        15      EM00-ERTYP     PICTURE X.                        *AA100
      10        EM00-LINUM     PICTURE 9(3).                     *AA100
    05          EM00-ERLVL     PICTURE X.                        *AA100
    05          EM00-ERMSG     PICTURE X(66).                    *AA100
    05          FILLER         PICTURE X(6).                     *AA100
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-EM00-LTH  PICTURE S9(4) VALUE +0090.                *AA200
     05    5-CA00-LTH  PICTURE S9(4) VALUE +0147.                *AA200
     05    5-CD00-LTH  PICTURE S9(4) VALUE +0166.                *AA200
     05    5-CD05-LTH  PICTURE S9(4) VALUE +0157.                *AA200
     05    5-CD05-LTHV PICTURE S9(4) VALUE +0166.                *AA200
     05    5-CD10-LTH  PICTURE S9(4) VALUE +0139.                *AA200
     05    5-CD10-LTHV PICTURE S9(4) VALUE +0148.                *AA200
     05    5-CD20-LTH  PICTURE S9(4) VALUE +0001.                *AA200
     05    5-CD20-LTHV PICTURE S9(4) VALUE +0010.                *AA200
     05    5-FO10-LTH  PICTURE S9(4) VALUE +0057.                *AA200
     05    5-FO10-LTHV PICTURE S9(4) VALUE +0057.                *AA200
     05    5-ME00-LTH  PICTURE S9(4) VALUE +0082.                *AA200
     05    LTH         PICTURE S9(4) VALUE ZERO.                 *AA200
     05    KEYLTH      PICTURE S9(4) VALUE ZERO.                 *AA200
     05      5-0030-LENGTH PICTURE S9(4)                         *AA200
                         VALUE      +0890.                       *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
01   PFKEYS-TABLE.                                               *AA230
     02    PF-TAB.                                               *AA230
       05  FILLER       PIC X     VALUE QUOTE.                   *AA230
       05  FILLER       PIC X(11) VALUE '  _00%A1>A2'.           *AA230
       05  FILLER       PIC X(36) VALUE                          *AA230
           '101202303404505606707808909:10£11à12'.               *AA230
       05  FILLER       PIC X(36) VALUE                          *AA230
           'A13B14C15D16E17F18G19H20I21°22.23<24'.               *AA230
     02    PFTA  REDEFINES  PF-TAB.                              *AA230
       05  PFTA-POS    OCCURS 28.                                *AA230
        10 PFTA-VAL    PIC X.                                    *AA230
        10 PFTA-IFONCT PIC XX.                                   *AA230
     02    I-FONCT.                                              *AA230
     05    I-PFKEY  PIC XX.                                      *AA230
```

2.6. 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 '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 5.                         *AA250
     05      DE-AT   PICTURE X                                   *AA250
                    OCCURS 045.                                  *AA250
     02      DE-A    REDEFINES DE-ATT.                           *AA250
     03      DE-ATT2           OCCURS 5.                         *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 5.                         *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           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
```

2.7. EXAMPLE OF SCREEN WORK AREAS (-W)

```
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
```

2.8. LINKAGE SECTION: COMMON AREA

LINKAGE SECTION: COMMON-AREA

The description of the Common-Area depends on the structure of the dialogue (See Subchapter "DIALOGUE COMPLEMENT" in the OLSD Reference Manual specific to your environment).

When the FIRST SCREEN CODE OF THE DIALOGUE field on the Dialogue Complement (-O) screen contains a value, the description of the Common-Area is generated in the WORKING-STORAGE SECTION for the first screen of the dialogue; it is generated in the LINKAGE SECTION for the others.

The 'DFHCOMMAREA' level is generated according to the input on the Dialogue Complement (-O) screen, and the access keys to segments used in display.

This constitutes the area that is common to all the screens of a dialogue.

. K-S0030-PROGR is systematically generated and is used to memorize the complete code of the screen.

CALL FOR DOCUMENTATION

If a documentation Help Character has been entered on the Screen Definition screen, the following fields are generated:

. K-S0030-DOC Indicates the 'HELP' function.

'0': 'TS' not created for this screen
'1': 'TS' created for this screen
'2': request screen-level documentation
'3': request for field-level documentation

. K-S0030-PROGE Used to memorize the external name of the calling program.

. K-S0030-CPOSL Used to memorize the position of the cursor on the screen.

. K-S0030-PROLE Used to memorize the external name of the error messages file.

. K-S0030-LIBRA Used to memorize the library code.

. K-S0030-PROHE
. K-S0030-ERCOD
. K-S0030-ERTYP
. K-S0030-LINUM

Technological fields reserved for the 'HELP' function program.

CA00 Data Structure describing the user Common Area (if the data structure contains several segments, they are described in 'redefines' clauses).

K-0030 Complementary field for memorization of the dialogue (see Subchapter "DIALOGUE COMPLEMENT", Chapter "DESCRIPTION OF A TRANSACTION" in the OLSD Reference Manual).

The following fields are used to store the access keys of segments used in display (without a preceding segment):

K-A0030-BEGIN
Automatic generation of screen-top category.

K-AC005-CLECD

Key of the screen-top category.

K-R0030-LINE OCCURS 2
Generated according to the data element defining the repetitive category (the 1st occurrence stores the beginning of display key; the 2nd stores the display key of the next screen (i.e. page).

K-RCD10-CLECD

Key for repetitive category.

K-Z0030-END
Key of the screen-bottom category (generated according to the data element defining the screen-bottom category).

K-ZME00-CLEME

Key of the screen-bottom category.

ZONES-VARIABLES
Generated if the chosen generation option is 'MDT OFF' or "Dynamic protection of variable fields". This level retrieves the description of the variable fields of the screen. The description of the fields belonging to the data element defining the repetitive category is generated after the screen description. This level retrieves also a table of attributes for each variable field of the screen. This table will be used in case of a field protection.

A FILLER aligns the K-0030 and 'ZONES-VARIABLES' fields on 100 positions (by default), unless the user has specified a greater length on the Dialogue Complement (-O) screen.

```
LINKAGE SECTION.                                                 DO0030
01   DFHCOMMAREA.                                                DO0030
     02     K-S0030-PROGR PICTURE X(6).                          *00000
     02     K-S0030-DOC   PICTURE X.                             *00000
     02     K-S0030-PROGE PICTURE X(8).                          *00000
     02     K-S0030-CPOSL PICTURE S9(4) COMPUTATIONAL.           *00000
     02     K-S0030-PROLE PICTURE X(8).                          *00000
     02     K-S0030-LIBRA PICTURE XXX.                           *00000
     02     K-S0030-PROHE PICTURE X(8).                          *00000
     02     K-S0030-ERCOD.                                       *00000
       05   K-S0030-ERCOD9 PICTURE 999.                          *00000
     02     K-S0030-ERTYP PICTURE X.                             *00000
     02     K-S0030-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-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      ZONES-VARIABLES.                                    *00002
     03      T-0030-BEGIN.                                       *00002
     05      T-0030-MATE   PICTURE X(8).                         *00002
     05      T-0030-RELEA  PICTURE X(3).                         *00002
     05      T-0030-RUE    PICTURE X(40).                        *00002
     05      T-0030-COPOS  PICTURE X(5).                         *00002
     05      T-0030-REFCLI PICTURE X(30).                        *00002
     05      T-0030-DATE   PICTURE X(6).                         *00002
     05      T-0030-CORRES PICTURE X(25).                        *00002
     05      T-0030-REMIS  PICTURE X(8).                         *00002
     03      U-0030-LINE   OCCURS 9.                             *00002
     05      FILLER        PICTURE X(0041).                      *00002
     03      T-0030-END.                                         *00002
     05      T-0030-EDIT   PICTURE X(1).                         *00002
     02      FILLER        PICTURE X(0170).                      *00002
```

3. GENERATED PROGRAM: PROCEDURE DIVISION

3.1. STANDARD STRUCTURE OF THE PROCEDURE DIV.

STANDARD STRUCTURE OF THE PROCEDURE DIVISION

```
F0110  Initializations

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

F05       RECEPTION     (ICF = '1')

F0510     Reception of the screen
F0510-A   PFkey positioning
F0512     Documentation call procedure
F0520     Validation of Operation Code (OPER)
F1010     Category processing               <--------
F15       Validation of the Transaction Code    (CATM)!
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 PROCESSING

F4010     Set-up keys for new display
F4020     Set-up keys for screen paging
F4030     End of transaction
F4040     Transfer to another screen

END-OF-RECEPTION.  (F45-FN)

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

F50       DISPLAY PREPARATION      (OCF = '1')

F5010     Initialization
F5510     Category processing               <--------
F60       Segment access for display                 !
F65       Data element transfer                      !
F6999-ITER-FN. GO TO F55.  ---------------------------
F6999-ITER-FT. EXIT.

F7010     Error processing
F7020     Positioning of attributes

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

```
-------------------------------------------------------

F8Z       DISPLAY AND END OF PROGRAM

F8Z05     Memorization of the screen
F8Z10     Display
F8Z20     End of program

------  Performed Functions --------------------------

F80       PHYSICAL SEGMENT ACCESS ROUTINES
F8098     Error Message File Access
F81ER     Abnormal End Procedure
F81UT     Memorization of User's Errors
F8110     Numeric Validation
F8115     Initialization of the Variable Fields
F8120     Date Format Validation
F8125     Transfer to Display
F8130     Help Sub-function
F8135     Transfer to Reception
F8140     Cursor Position Calculation
```

Most of the CICS commands are no longer included in the PROCEDURE DIVISION. They are described in the F81 function and called by a PERFORM, thus enabling the user to replace them.

In addition to the above-mentioned functions, for CICS, the F81 function contains:

F81HC: HANDLE CONDITION
F81RE: RECEIVE MAP
F81SM: SEND MAP
F81SE: SEND MAP ERASE
F81XC: XCTL

3.2. INITIALIZATIONS (F01)

F01: INITIALIZATIONS

The INITIALIZATIONS function is always generated.

It initializes the work areas.

Depending on the TP Monitor variant and on the positioning of the conversation area, it contains the transfer of the communication area of the LINKAGE SECTION to the conversation common area (COMMON-AREA) when it is generated in the WORKING-STORAGE SECTION.

This function triggers the procedure to be executed in case of error.

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

It ensures the cursor position location for the first display.

```
 PROCEDURE DIVISION.                                              *99999
*           ************************************                  DO0030
*           *                                  *                  DO0030
*           *  INITIALIZATIONS                 *                  DO0030
*           *                                  *                  DO0030
*           ************************************                  DO0030
 F01.           EXIT.                                             DO0030
 F0110.                                                           DO0030
        MOVE EIBTIME TO TIMCIC.                                   DO0030
        MOVE TIMCIG  TO TIMCOG.                                   DO0030
        MOVE EIBDATE TO DATCIC.                                   DO0030
        PERFORM F8155 THRU F8155-FN.                              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 EIBCALEN = ZERO OR    PROGR NOT = K-S0030-PROGR        DO0030
                       MOVE    ZERO  TO  ICF.                     DO0030
               IF EIBCALEN = ZERO                                 DO0030
        MOVE ZERO TO  K-S0030-DOC.                                DO0030
        PERFORM F81HC THRU F81HC-FN.                              DO0030
        MOVE LOW-VALUE  TO            O-0030.                     DO0030
        IF ICF = ZERO PERFORM F8115 THRU F8115-FN.                DO0030
        MOVE EIBTRMID TO TRMID.                                   DO0030
          IF K-S0030-DOC = '2'  OR   K-S0030-DOC = '3'            DO0030
        PERFORM F80-HELP-R  THRU F80-FN  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
```

3.3. RECEPTION (F05)

F05 : RECEPTION

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

The automatic functions in this part of the program are generated if there is at least one variable data element (NATURE = 'V') defined on the screen.

The F0510 sub-function contains the 'SCREEN RECEPTION' procedure, which is actually processed by the F81RE sub-function. The F81RE sub-function is called by a PERFORM, which facilitates any necessary modifications.

The PFkey number in use is moved into 'I-PFKEY'.

If an error is detected during the reception of the screen, (MAPFAIL), the I-PFKEY field is initialized with value '99'.

If an initialization character has been specified on the Screen Definition screen, it will be replaced by blanks (except when a branch to a "HELP" screen is executed).

The F0512 sub-function is generated if a documentation call has been entered on the Screen Definition screen. It initializes the fields that are necessary for branching to the "HELP" screen.

The F0520 sub-function 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.

The internal Operation Code 'OPER' is set according to the:

- Value of the screen data element defined as an Operation Code (values specified with TYPE OF LINE = 'O' on the Data Element Description (-D) screen;
- Value of the PFKEY data element (entered on the Screen Call of Elements (-CE)).

If an error is found in the value of the Operation Code, 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 SPACE TO I-PFKEY                                     DO0030
        MOVE 1     TO K01.                                        DO0030
 F0510-A.   IF  K01 NOT > 28                                      DO0030
        AND PFTA-VAL (K01) NOT = EIBAID                           DO0030
        ADD 1 TO K01  GO TO F0510-A.                              DO0030
            IF  K01 NOT > 28                                      DO0030
        MOVE PFTA-IFONCT (K01) TO I-PFKEY.                        DO0030
            IF  I-PFKEY = '00'  GO TO F0510-C.                    DO0030
        PERFORM F81RE THRU F81RE-FN.                              DO0030
        GO TO F0510-C.                                            DO0030
 F0510-B. IF I-PFKEY = SPACE  MOVE '99' TO I-PFKEY.               DO0030
        MOVE LOW-VALUE TO  I-0030.                                DO0030
 F0510-C.                                                         DO0030
        PERFORM F8140 THRU F8140-FN.                              DO0030
        PERFORM F8135 THRU F8135-FN                               DO0030
        INSPECT I-0030 REPLACING ALL LOW-VALUE BY SPACE.          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
        MOVE 5-EM00-DDNAME TO K-S0030-PROLE.                      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
        PERFORM F80-HELP-R  THRU F80-FN                           DO0030
        PERFORM F8130       THRU F8130-FN                         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
```

3.4. 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  T-0030-LINE            TO                     DO0030
              U-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  U-0030-LINE   (ICATR)    TO                   DO0030
              T-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
```

3.5. 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.   EXIT.                                         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
```

3.6. 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
```

3.7. SEGMENT ACCESS FOR VALIDATION (F25)

F25 : SEGMENT ACCESS FOR VALIDATION

The SEGMENT ACCESS FOR VALIDATION (F25) function is generated when there is a Segment to be accessed in reception.

Depending on the categories defined on the Screen for which a Segment is 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.

Within the processing of each category, there is a sub-function per Segment access including:

. Initialization of the key (if indicated on the '-CS'),

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

. Positioning of the Segment variable 'ddss-CF' (to '1' if OK),

. Error processing, if necessary.

Within a category, the accesses are generated in alphabetical order according to the Segment codes, except for a Segment which has a 'preceding Segment'.

If the Segment is being updated, the access is conditionned by the value of CATM and not executed if the value of CATM is SPACE.

If the Segment has a 'preceding Segment', the access is only executed if the value of the 'ddss-CF' variable of the preceding Segment is '1'.

The other types of Reads are not conditioned.

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

It contains the PERFORMs of the F80-ddss-UN functions, according to the Segments in use, as well as the positioning of the cursor on the first variable data element in the category, if there is an error on a Segment. (For the DL/1 databases that do not require unlocking, sub-function F80-ddss-UN only contains branching operation).

NOTE: Sub-functions are numbered according to the number of Segments, their positions on the '-CS' Screen, etc. Thus, it can vary.

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    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
```

3.8. 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.        EXIT.                                              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
```

3.9. 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.)

```
*           *************************************                 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
            MOVE   SPACE     TO       T-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
            MOVE   SPACE     TO       T-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
```

3.10. END-OF-RECEPTION PROCESSING (F40)

F40: END-OF-RECEPTION PROCESSING

This function contains the procedures for the end-of-reception processing of the program. It is executed as long as no errors have been found.

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

SET-UP KEYS FOR NEW DISPLAY (F4010)

This function is executed for a 'display' or an 'update' operation. The keys to the segments with no preceding segment, or those used in display, are given a value here.

Depending on the categories defined on the screen, the memorization of the access key for the display segment is found in:

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

SET-UP KEYS FOR SCREEN PAGING (F4020)

This function is executed for a 'screen continuation' operation. It contains the memorization of the first key for the display of the screen continuation, if the segment is used in the repetitive category.

END OF TRANSACTION (F4030)

This function is executed for an end-of-transaction operation.

This function also clears the memorized screen and returns to the CICS monitor.

TRANSFER TO ANOTHER SCREEN (F4040)

This function is executed for a transfer to another screen operation.

This function ensures branching off to another screen via the CICS XCTL EXEC after the resources have been freed.

```
 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    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
        PERFORM F80-HELP-D  THRU F80-FN.                          DO0030
     EXEC CICS SEND LENGTH (4) ERASE FROM (5-0030-TRAN) END-EXEC. DO0030
        EXEC CICS RETURN END-EXEC. GOBACK.                        DO0030
 F4030-FN.    EXIT.                                               DO0030
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  TRANSFER TO ANOTHER SCREEN       *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F4040.     IF OPER NOT = 'O' GO TO F4040-FN.                     DO0030
              IF          5-DOCD00    = 1                         DO0030
        EXEC CICS ENDBR     DATASET  (5-CD20-DDNAME)              DO0030
             END-EXEC.                                            DO0030
        PERFORM F81XC THRU F81XC-FN.                              DO0030
 F4040-FN.    EXIT.                                               DO0030
 F40-FN.      EXIT.                                               DO0030
 END-OF-RECEPTION.      EXIT.                                     DO0030
```

3.11. 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 LOW-VALUE 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
```

3.12. 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
```

3.13. 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.   EXIT.                                                 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
     EXEC CICS ASKTIME END-EXEC                                   P040
     MOVE EIBDATE TO DATCIC                                       P040
     PERFORM F8155 THRU F8155-FN                                  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
     EXEC CICS ASKTIME END-EXEC                                   P120
     MOVE EIBTIME TO TIMCIC                                       P120
     MOVE TIMCIG TO TIMCOG                                        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
```

3.14. DATA ELEMENT TRANSFER TO DISPLAY (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-A5.                                                         DO0030
        MOVE    CD00-FOURNI      TO                               DO0030
              O-0030-FOURNI.                                      DO0030
 F65R-A5-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-A7.                                                         DO0030
        MOVE    CD10-QTMAL       TO                               DO0030
              O-0030-QTMAL.                                       DO0030
 F65R-A7-FN. EXIT.                                                DO0030
 F65R-A8.                                                         DO0030
        MOVE    CD10-INFOR       TO                               DO0030
              O-0030-INFOR.                                       DO0030
 F65R-A8-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
```

3.15. ERROR PROCESSING (F70)

F70: ERROR PROCESSING

The ERROR PROCESSING (F70) function is always generated.

Sub-function F7010 contains:

. in F7010-A, testing of DE-ERR, positioning of the error attributes, access to the error message file, and coding of the error message on the screen.

. in F7010-B, testing of T-XEMKY, access to the error message file, and coding of the error message on the screen.

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

This sub-function positions the attributes of the fields on the screen in display.

An 'invisible' field ('DARK' attribute) retains this attribute, even if it is erroneous (for ex., with passwords).

```
 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
        INSPECT DE-ATT1 (1) REPLACING ALL SPACE BY LOW-VALUE      DO0030
        INSPECT DE-ATT1 (1) REPLACING ALL 'D' BY '<'              DO0030
        INSPECT DE-ATT1 (1) REPLACING ALL 'B' BY 'H'              DO0030
        INSPECT DE-ATT1 (1) REPLACING ALL 'N' BY 'D'              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
        MOVE SPACE TO DE-ATT1 (4) ADD 1 TO TALLI                  DO0030
               MOVE 'Y' TO DE-AT (4, TALLI).                      DO0030
 F7020-A.                                                         DO0030
        IF    A-0030-MATE   (5 ) NOT = 'F'                        DO0030
        MOVE  A-0030-MATE   (1)  TO   Y-0030-MATE.                DO0030
        IF    A-0030-MATE   (5 ) = 'F'                            DO0030
        AND  (A-0030-MATE   (1 ) = 'N'                            DO0030
        OR    A-0030-MATE   (1 ) = LOW-VALUE)                     DO0030
        MOVE '1' TO  Y-0030-MATE.                                 DO0030
        IF    A-0030-MATE   (5 ) = 'F'                            DO0030
        AND   A-0030-MATE   (1 ) = 'B'                            DO0030
        MOVE '9' TO  Y-0030-MATE.                                 DO0030
        IF    A-0030-MATE   (5 ) = 'F'                            DO0030
        AND   A-0030-MATE   (1 ) = 'D'                            DO0030
        MOVE QUOTE TO Y-0030-MATE.                                DO0030
         MOVE ZERO TO X-0030-MATE.                                DO0030
        IF    A-0030-MATE   (4 ) = 'Y'                            DO0030
         MOVE  -1 TO  X-0030-MATE.                                DO0030
        IF    A-0030-RELEA  (5 ) NOT = 'F'                        DO0030
        MOVE  A-0030-RELEA  (1)  TO   Y-0030-RELEA.               DO0030
        IF    A-0030-RELEA  (5 ) = 'F'                            DO0030
        AND  (A-0030-RELEA  (1 ) = 'N'                            DO0030
        OR    A-0030-RELEA  (1 ) = LOW-VALUE)                     DO0030
        MOVE '1' TO  Y-0030-RELEA.                                DO0030
        IF    A-0030-RELEA  (5 ) = 'F'                            DO0030
        AND   A-0030-RELEA  (1 ) = 'B'                            DO0030
        MOVE '9' TO  Y-0030-RELEA.                                DO0030
        IF    A-0030-RELEA  (5 ) = 'F'                            DO0030
        AND   A-0030-RELEA  (1 ) = 'D'                            DO0030
```

```
MOVE QUOTE TO Y-0030-RELEA.                               DO0030
 MOVE ZERO TO X-0030-RELEA.                               DO0030
IF    A-0030-RELEA  (4 ) = 'Y'                            DO0030
 MOVE  -1 TO  X-0030-RELEA.                               DO0030
IF    A-0030-RUE    (5 ) NOT = 'F'                        DO0030
MOVE  A-0030-RUE    (1)  TO   Y-0030-RUE.                 DO0030
IF    A-0030-RUE    (5 ) = 'F'                            DO0030
AND  (A-0030-RUE    (1 ) = 'N'                            DO0030
OR    A-0030-RUE    (1 ) = LOW-VALUE)                     DO0030
MOVE '1' TO  Y-0030-RUE.                                  DO0030
IF    A-0030-RUE    (5 ) = 'F'                            DO0030
AND   A-0030-RUE    (1 ) = 'B'                            DO0030
MOVE '9' TO  Y-0030-RUE.                                  DO0030
IF    A-0030-RUE    (5 ) = 'F'                            DO0030
AND   A-0030-RUE    (1 ) = 'D'                            DO0030
MOVE QUOTE TO Y-0030-RUE.                                 DO0030
 MOVE ZERO TO X-0030-RUE.                                 DO0030
IF    A-0030-RUE    (4 ) = 'Y'                            DO0030
 MOVE  -1 TO  X-0030-RUE.                                 DO0030
IF    A-0030-COPOS  (5 ) NOT = 'F'                        DO0030
MOVE  A-0030-COPOS  (1)  TO   Y-0030-COPOS.               DO0030
IF    A-0030-COPOS  (5 ) = 'F'                            DO0030
AND  (A-0030-COPOS  (1 ) = 'N'                            DO0030
OR    A-0030-COPOS  (1 ) = LOW-VALUE)                     DO0030
MOVE '1' TO  Y-0030-COPOS.                                DO0030
IF    A-0030-COPOS  (5 ) = 'F'                            DO0030
AND   A-0030-COPOS  (1 ) = 'B'                            DO0030
MOVE '9' TO  Y-0030-COPOS.                                DO0030
IF    A-0030-COPOS  (5 ) = 'F'                            DO0030
AND   A-0030-COPOS  (1 ) = 'D'                            DO0030
MOVE QUOTE TO Y-0030-COPOS.                               DO0030
 MOVE ZERO TO X-0030-COPOS.                               DO0030
IF    A-0030-COPOS  (4 ) = 'Y'                            DO0030
 MOVE  -1 TO  X-0030-COPOS.                               DO0030
IF    A-0030-REFCLI (5 ) NOT = 'F'                        DO0030
MOVE  A-0030-REFCLI (1)  TO   Y-0030-REFCLI.              DO0030
IF    A-0030-REFCLI (5 ) = 'F'                            DO0030
AND  (A-0030-REFCLI (1 ) = 'N'                            DO0030
OR    A-0030-REFCLI (1 ) = LOW-VALUE)                     DO0030
MOVE '1' TO  Y-0030-REFCLI.                               DO0030
IF    A-0030-REFCLI (5 ) = 'F'                            DO0030
AND   A-0030-REFCLI (1 ) = 'B'                            DO0030
MOVE '9' TO  Y-0030-REFCLI.                               DO0030
IF    A-0030-REFCLI (5 ) = 'F'                            DO0030
AND   A-0030-REFCLI (1 ) = 'D'                            DO0030
MOVE QUOTE TO Y-0030-REFCLI.                              DO0030
 MOVE ZERO TO X-0030-REFCLI.                              DO0030
IF    A-0030-REFCLI (4 ) = 'Y'                            DO0030
 MOVE  -1 TO  X-0030-REFCLI.                              DO0030
IF    A-0030-DATE   (5 ) NOT = 'F'                        DO0030
MOVE  A-0030-DATE   (1)  TO   Y-0030-DATE.                DO0030
IF    A-0030-DATE   (5 ) = 'F'                            DO0030
AND  (A-0030-DATE   (1 ) = 'N'                            DO0030
OR    A-0030-DATE   (1 ) = LOW-VALUE)                     DO0030
MOVE '1' TO  Y-0030-DATE.                                 DO0030
IF    A-0030-DATE   (5 ) = 'F'                            DO0030
AND   A-0030-DATE   (1 ) = 'B'                            DO0030
MOVE '9' TO  Y-0030-DATE.                                 DO0030
IF    A-0030-DATE   (5 ) = 'F'                            DO0030
AND   A-0030-DATE   (1 ) = 'D'                            DO0030
MOVE QUOTE TO Y-0030-DATE.                                DO0030
 MOVE ZERO TO X-0030-DATE.                                DO0030
IF    A-0030-DATE   (4 ) = 'Y'                            DO0030
 MOVE  -1 TO  X-0030-DATE.                                DO0030
IF    A-0030-CORRES (5 ) NOT = 'F'                        DO0030
MOVE  A-0030-CORRES (1)  TO   Y-0030-CORRES.              DO0030
IF    A-0030-CORRES (5 ) = 'F'                            DO0030
AND  (A-0030-CORRES (1 ) = 'N'                            DO0030
OR    A-0030-CORRES (1 ) = LOW-VALUE)                     DO0030
MOVE '1' TO  Y-0030-CORRES.                               DO0030
IF    A-0030-CORRES (5 ) = 'F'                            DO0030
AND   A-0030-CORRES (1 ) = 'B'                            DO0030
MOVE '9' TO  Y-0030-CORRES.                               DO0030
IF    A-0030-CORRES (5 ) = 'F'                            DO0030
AND   A-0030-CORRES (1 ) = 'D'                            DO0030
MOVE QUOTE TO Y-0030-CORRES.                              DO0030
 MOVE ZERO TO X-0030-CORRES.                              DO0030
```

```
       IF    A-0030-CORRES (4 ) = 'Y'                            DO0030
        MOVE  -1 TO  X-0030-CORRES.                              DO0030
       IF    A-0030-REMIS  (5 ) NOT = 'F'                        DO0030
       MOVE  A-0030-REMIS  (1)  TO   Y-0030-REMIS.               DO0030
       IF    A-0030-REMIS  (5 ) = 'F'                            DO0030
       AND  (A-0030-REMIS  (1 ) = 'N'                            DO0030
       OR    A-0030-REMIS  (1 ) = LOW-VALUE)                     DO0030
       MOVE '1' TO  Y-0030-REMIS.                                DO0030
       IF    A-0030-REMIS  (5 ) = 'F'                            DO0030
       AND   A-0030-REMIS  (1 ) = 'B'                            DO0030
       MOVE '9' TO  Y-0030-REMIS.                                DO0030
       IF    A-0030-REMIS  (5 ) = 'F'                            DO0030
       AND   A-0030-REMIS  (1 ) = 'D'                            DO0030
       MOVE QUOTE TO Y-0030-REMIS.                               DO0030
        MOVE ZERO TO X-0030-REMIS.                               DO0030
       IF    A-0030-REMIS  (4 ) = 'Y'                            DO0030
        MOVE  -1 TO  X-0030-REMIS.                               DO0030
       MOVE ZERO TO ICATR.                                       DO0030
F7020-R.   ADD 1 TO ICATR                                        DO0030
       MOVE  P-0030-LINE   (ICATR)    TO                         DO0030
             O-0030-LINE                                         DO0030
       MOVE  B-0030-LINE   (1, ICATR) TO                         DO0030
             A-0030-LINE   (1)                                   DO0030
       MOVE  B-0030-LINE   (4, ICATR) TO                         DO0030
             A-0030-LINE   (4)                                   DO0030
       MOVE  B-0030-LINE   (5, ICATR) TO                         DO0030
             A-0030-LINE   (5)                                   DO0030
       IF    A-0030-CODMVT (5 ) NOT = 'F'                        DO0030
       MOVE  A-0030-CODMVT (1)  TO   Y-0030-CODMVT.              DO0030
       IF    A-0030-CODMVT (5 ) = 'F'                            DO0030
       AND  (A-0030-CODMVT (1 ) = 'N'                            DO0030
       OR    A-0030-CODMVT (1 ) = LOW-VALUE)                     DO0030
       MOVE '1' TO  Y-0030-CODMVT.                               DO0030
       IF    A-0030-CODMVT (5 ) = 'F'                            DO0030
       AND   A-0030-CODMVT (1 ) = 'B'                            DO0030
       MOVE '9' TO  Y-0030-CODMVT.                               DO0030
       IF    A-0030-CODMVT (5 ) = 'F'                            DO0030
       AND   A-0030-CODMVT (1 ) = 'D'                            DO0030
       MOVE QUOTE TO Y-0030-CODMVT.                              DO0030
        MOVE ZERO TO X-0030-CODMVT.                              DO0030
       IF    A-0030-CODMVT (4 ) = 'Y'                            DO0030
        MOVE  -1 TO  X-0030-CODMVT.                              DO0030
       IF    A-0030-FOURNI (5 ) NOT = 'F'                        DO0030
       MOVE  A-0030-FOURNI (1)  TO   Y-0030-FOURNI.              DO0030
       IF    A-0030-FOURNI (5 ) = 'F'                            DO0030
       AND  (A-0030-FOURNI (1 ) = 'N'                            DO0030
       OR    A-0030-FOURNI (1 ) = LOW-VALUE)                     DO0030
       MOVE '1' TO  Y-0030-FOURNI.                               DO0030
       IF    A-0030-FOURNI (5 ) = 'F'                            DO0030
       AND   A-0030-FOURNI (1 ) = 'B'                            DO0030
       MOVE '9' TO  Y-0030-FOURNI.                               DO0030
       IF    A-0030-FOURNI (5 ) = 'F'                            DO0030
       AND   A-0030-FOURNI (1 ) = 'D'                            DO0030
       MOVE QUOTE TO Y-0030-FOURNI.                              DO0030
        MOVE ZERO TO X-0030-FOURNI.                              DO0030
       IF    A-0030-FOURNI (4 ) = 'Y'                            DO0030
        MOVE  -1 TO  X-0030-FOURNI.                              DO0030
       IF    A-0030-QTMAC  (5 ) NOT = 'F'                        DO0030
       MOVE  A-0030-QTMAC  (1)  TO   Y-0030-QTMAC.               DO0030
       IF    A-0030-QTMAC  (5 ) = 'F'                            DO0030
       AND  (A-0030-QTMAC  (1 ) = 'N'                            DO0030
       OR    A-0030-QTMAC  (1 ) = LOW-VALUE)                     DO0030
       MOVE '1' TO  Y-0030-QTMAC.                                DO0030
       IF    A-0030-QTMAC  (5 ) = 'F'                            DO0030
       AND   A-0030-QTMAC  (1 ) = 'B'                            DO0030
       MOVE '9' TO  Y-0030-QTMAC.                                DO0030
       IF    A-0030-QTMAC  (5 ) = 'F'                            DO0030
       AND   A-0030-QTMAC  (1 ) = 'D'                            DO0030
       MOVE QUOTE TO Y-0030-QTMAC.                               DO0030
        MOVE ZERO TO X-0030-QTMAC.                               DO0030
       IF    A-0030-QTMAC  (4 ) = 'Y'                            DO0030
        MOVE  -1 TO  X-0030-QTMAC.                               DO0030
       IF    A-0030-INFOR  (5 ) NOT = 'F'                        DO0030
       MOVE  A-0030-INFOR  (1)  TO   Y-0030-INFOR.               DO0030
       IF    A-0030-INFOR  (5 ) = 'F'                            DO0030
       AND  (A-0030-INFOR  (1 ) = 'N'                            DO0030
       OR    A-0030-INFOR  (1 ) = LOW-VALUE)                     DO0030
```

```
           MOVE '1' TO  Y-0030-INFOR.                                DO0030
           IF    A-0030-INFOR  (5 ) = 'F'                            DO0030
           AND   A-0030-INFOR  (1 ) = 'B'                            DO0030
           MOVE '9' TO  Y-0030-INFOR.                                DO0030
           IF    A-0030-INFOR  (5 ) = 'F'                            DO0030
           AND   A-0030-INFOR  (1 ) = 'D'                            DO0030
           MOVE QUOTE TO Y-0030-INFOR.                               DO0030
            MOVE ZERO TO X-0030-INFOR.                               DO0030
           IF    A-0030-INFOR  (4 ) = 'Y'                            DO0030
            MOVE  -1 TO  X-0030-INFOR.                               DO0030
           MOVE  O-0030-LINE              TO                         DO0030
                 P-0030-LINE   (ICATR)                               DO0030
           IF ICATR < IRR GO TO F7020-R.                             DO0030
    F7020-Z.                                                         DO0030
           IF    A-0030-EDIT   (5 ) NOT = 'F'                        DO0030
           MOVE  A-0030-EDIT   (1)  TO   Y-0030-EDIT.                DO0030
           IF    A-0030-EDIT   (5 ) = 'F'                            DO0030
           AND  (A-0030-EDIT   (1 ) = 'N'                            DO0030
           OR    A-0030-EDIT   (1 ) = LOW-VALUE)                     DO0030
           MOVE '1' TO  Y-0030-EDIT.                                 DO0030
           IF    A-0030-EDIT   (5 ) = 'F'                            DO0030
           AND   A-0030-EDIT   (1 ) = 'B'                            DO0030
           MOVE '9' TO  Y-0030-EDIT.                                 DO0030
           IF    A-0030-EDIT   (5 ) = 'F'                            DO0030
           AND   A-0030-EDIT   (1 ) = 'D'                            DO0030
           MOVE QUOTE TO Y-0030-EDIT.                                DO0030
            MOVE ZERO TO X-0030-EDIT.                                DO0030
           IF    A-0030-EDIT   (4 ) = 'Y'                            DO0030
            MOVE  -1 TO  X-0030-EDIT.                                DO0030
    F7020-FN.    EXIT.                                               DO0030
    F70-FN.      EXIT.                                               DO0030
    END-OF-DISPLAY.    EXIT.                                         DO0030
```

3.16. DISPLAY AND END OF PROGRAM (F8Z)

F8Z: DISPLAY AND END OF PROGRAM

The DISPLAY AND END OF PROGRAM function is always generated.

The F8Z05 sub-function is generated if a documentation Help character has been entered on the Screen Definition screen.

It ensures that the fields of the screen are memorized in 'TS' (Temporary Storage).

The F8Z10 sub-function only contains the 'PERFORM' of the F81SE and F81SM sub-functions, in order to facilitate possible modifications. These sub-functions contain the operations which send the screen.

If it concerns an initial display, F8Z10 carries out a PERFORM of F7020 (Positionning of Attributes) after taking into account cursor placement (in relation to F0110).

The F8Z20 sub-function contains the end-of-program operation.

These procedures depend on the variant of the TP Monitor.

```
 F8Z.          EXIT.                                              DO0030
 F8Z05.   IF SCR-ER = '1'                                         DO0030
        NEXT SENTENCE ELSE GO TO F8Z05-FN.                        DO0030
          IF K-S0030-DOC NOT = '2'                                DO0030
         AND K-S0030-DOC NOT = '3'     GO TO F8Z05-A.             DO0030
        MOVE '1' TO K-S0030-DOC                                   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
          IF K-S0030-DOC = ZERO                                   DO0030
        MOVE '1' TO K-S0030-DOC                                   DO0030
        PERFORM F80-HELP-D  THRU F80-FN                           DO0030
        PERFORM F80-HELP-W  THRU F80-FN  GO TO F8Z05-FN.          DO0030
          IF K-S0030-DOC = '1'                                    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
        IF SCR-ER NOT > '1'                                       DO0030
        MOVE PROGR     TO          K-S0030-PROGR                  DO0030
        PERFORM F8125 THRU F8125-FN                               DO0030
        PERFORM F81SE THRU F81SE-FN.                              DO0030
        IF SCR-ER > '1'                                           DO0030
        PERFORM F81SM THRU F81SM-FN.                              DO0030
 F8Z10-FN.    EXIT.                                               DO0030
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  END OF PROGRAM                   *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F8Z20.                                                           DO0030
        EXEC CICS RETURN     TRANSID (5-0030-TRAN)                DO0030
      LENGTH (EIBCALEN)    COMMAREA (DFHCOMMAREA)  END-EXEC.      DO0030
 F8Z20-FN.    EXIT.                                               DO0030
 F8Z-FN.      EXIT.                                               DO0030
```

3.17. 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.

```
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  PHYSICAL SEGMENT ACCESS ROUTINES *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F80.          EXIT.                                              DO0030
 F80-CD05-R.                                                      DO0030
     MOVE         5-CD00-LTH   TO   LTH                           DO0030
     MOVE LENGTH OF CD00-KEYCD  TO KEYLTH                         DO0030
     EXEC CICS READ         DATASET  (5-CD05-DDNAME)              DO0030
          LENGTH (LTH)         KEYLENGTH (KEYLTH)                 DO0030
          RIDFLD   (CD00-KEYCD )  INTO (CD00)  END-EXEC.          DO0030
          GO TO F80-OK.                                           DO0030
 F80-CD05-RU.                                                     DO0030
     MOVE         5-CD00-LTH    TO  LTH                           DO0030
     MOVE LENGTH OF CD00-KEYCD  TO KEYLTH                         DO0030
     EXEC CICS READ          DATASET (5-CD05-DDNAME) UPDATE       DO0030
          LENGTH (LTH)         KEYLENGTH (KEYLTH)                 DO0030
          RIDFLD   (CD00-KEYCD )  INTO (CD00)  END-EXEC.          DO0030
          GO TO F80-OK.                                           DO0030
 F80-CD05-RW.                                                     DO0030
     EXEC CICS REWRITE       DATASET (5-CD05-DDNAME)              DO0030
          LENGTH (5-CD00-LTH )    FROM (CD00)  END-EXEC.          DO0030
          GO TO F80-OK.                                           DO0030
 F80-CD05-UN.                                                     DO0030
     EXEC CICS UNLOCK        DATASET (5-CD05-DDNAME)              DO0030
                   END-EXEC.                                      DO0030
          GO TO F80-OK.                                           DO0030
 F8001-FN.    EXIT.                                               DO0030
 F80-CD10-R.                                                      DO0030
     MOVE         5-CD00-LTH   TO   LTH                           DO0030
     MOVE LENGTH OF CD00-KEYCD  TO KEYLTH                         DO0030
     EXEC CICS READ         DATASET  (5-CD10-DDNAME)              DO0030
          LENGTH (LTH)         KEYLENGTH (KEYLTH)                 DO0030
          RIDFLD   (CD00-KEYCD )  INTO (CD00)  END-EXEC.          DO0030
          GO TO F80-OK.                                           DO0030
 F80-CD10-RU.                                                     DO0030
     MOVE         5-CD00-LTH    TO  LTH                           DO0030
     MOVE LENGTH OF CD00-KEYCD  TO KEYLTH                         DO0030
     EXEC CICS READ          DATASET (5-CD10-DDNAME) UPDATE       DO0030
          LENGTH (LTH)         KEYLENGTH (KEYLTH)                 DO0030
          RIDFLD   (CD00-KEYCD )  INTO (CD00)  END-EXEC.          DO0030
          GO TO F80-OK.                                           DO0030
 F80-CD10-P.                 IF 5-DOCD00   = 1                    DO0030
          GO TO F80-CD10-P1.                                      DO0030
     MOVE LENGTH OF CD00-KEYCD  TO KEYLTH                         DO0030
     EXEC CICS STARTBR       DATASET (5-CD10-DDNAME)              DO0030
          KEYLENGTH (KEYLTH)                                      DO0030
          RIDFLD   (CD00-KEYCD )               END-EXEC.          DO0030
                      MOVE 1 TO 5-DOCD00.                         DO0030
          GO TO F80-CD10-RN.                                      DO0030
 F80-CD10-P1.                                                     DO0030
     MOVE LENGTH OF CD00-KEYCD  TO KEYLTH                         DO0030
     EXEC CICS RESETBR       DATASET (5-CD10-DDNAME)              DO0030
          KEYLENGTH (KEYLTH)                                      DO0030
          RIDFLD   (CD00-KEYCD )               END-EXEC.          DO0030
 F80-CD10-RN.                                                     DO0030
     MOVE         5-CD00-LTH   TO   LTH                           DO0030
     MOVE LENGTH OF CD00-KEYCD  TO KEYLTH                         DO0030
         EXEC CICS READNEXT       DATASET (5-CD10-DDNAME)         DO0030
          LENGTH (LTH)         KEYLENGTH (KEYLTH)                 DO0030
          RIDFLD   (CD00-KEYCD )  INTO (CD00)  END-EXEC.          DO0030
          GO TO F80-OK.                                           DO0030
 F80-CD10-W.                                                      DO0030
     MOVE LENGTH OF CD00-KEYCD  TO KEYLTH                         DO0030
     EXEC CICS WRITE         DATASET (5-CD10-DDNAME)              DO0030
          LENGTH (5-CD00-LTH ) KEYLENGTH (KEYLTH)                 DO0030
          RIDFLD   (CD00-KEYCD )  FROM (CD00)  END-EXEC.          DO0030
          GO TO F80-OK.                                           DO0030
 F80-CD10-RW.                                                     DO0030
     EXEC CICS REWRITE       DATASET (5-CD10-DDNAME)              DO0030
          LENGTH (5-CD00-LTH )    FROM (CD00)  END-EXEC.          DO0030
          GO TO F80-OK.                                           DO0030
 F80-CD10-D.                                                      DO0030
     EXEC CICS DELETE        DATASET (5-CD10-DDNAME)              DO0030
                   END-EXEC.                                      DO0030
          GO TO F80-OK.                                           DO0030
```

```
F80-CD10-UN.                                                     DO0030
    EXEC CICS UNLOCK        DATASET (5-CD10-DDNAME)              DO0030
                  END-EXEC.                                      DO0030
         GO TO F80-OK.                                           DO0030
F8002-FN.    EXIT.                                               DO0030
F80-CD20-RU.                                                     DO0030
    MOVE         5-CD00-LTH    TO  LTH                           DO0030
    MOVE LENGTH OF CD00-KEYCD  TO KEYLTH                         DO0030
    EXEC CICS READ          DATASET (5-CD20-DDNAME) UPDATE       DO0030
         LENGTH (LTH)         KEYLENGTH (KEYLTH)                 DO0030
         RIDFLD   (CD00-KEYCD )  INTO (CD00)  END-EXEC.          DO0030
         GO TO F80-OK.                                           DO0030
F80-CD20-W.                                                      DO0030
    MOVE LENGTH OF CD00-KEYCD  TO KEYLTH                         DO0030
    EXEC CICS WRITE         DATASET (5-CD20-DDNAME)              DO0030
         LENGTH (5-CD00-LTH ) KEYLENGTH (KEYLTH)                 DO0030
         RIDFLD   (CD00-KEYCD )  FROM (CD00)  END-EXEC.          DO0030
         GO TO F80-OK.                                           DO0030
F80-CD20-RW.                                                     DO0030
    EXEC CICS REWRITE       DATASET (5-CD20-DDNAME)              DO0030
         LENGTH (5-CD00-LTH )    FROM (CD00)  END-EXEC.          DO0030
         GO TO F80-OK.                                           DO0030
F80-CD20-UN.                                                     DO0030
    EXEC CICS UNLOCK        DATASET (5-CD20-DDNAME)              DO0030
                  END-EXEC.                                      DO0030
         GO TO F80-OK.                                           DO0030
F8003-FN.    EXIT.                                               DO0030
F80-FO10-RU.                                                     DO0030
    MOVE         5-FO10-LTH    TO  LTH                           DO0030
    MOVE LENGTH OF FO10-CLEFO  TO KEYLTH                         DO0030
    EXEC CICS READ          DATASET (5-FO10-DDNAME) UPDATE       DO0030
         LENGTH (LTH)         KEYLENGTH (KEYLTH)                 DO0030
         RIDFLD   (FO10-CLEFO )  INTO (FO10)  END-EXEC.          DO0030
         GO TO F80-OK.                                           DO0030
F80-FO10-RW.                                                     DO0030
    EXEC CICS REWRITE       DATASET (5-FO10-DDNAME)              DO0030
         LENGTH (5-FO10-LTH )    FROM (FO10)  END-EXEC.          DO0030
         GO TO F80-OK.                                           DO0030
F80-FO10-UN.                                                     DO0030
    EXEC CICS UNLOCK        DATASET (5-FO10-DDNAME)              DO0030
                  END-EXEC.                                      DO0030
         GO TO F80-OK.                                           DO0030
F8004-FN.    EXIT.                                               DO0030
F80-ME00-R.                                                      DO0030
    MOVE         5-ME00-LTH   TO   LTH                           DO0030
    MOVE LENGTH OF ME00-CLEME  TO KEYLTH                         DO0030
    EXEC CICS READ         DATASET  (5-ME00-DDNAME)              DO0030
         LENGTH (LTH)         KEYLENGTH (KEYLTH)                 DO0030
         RIDFLD   (ME00-CLEME )  INTO (ME00)  END-EXEC.          DO0030
         GO TO F80-OK.                                           DO0030
F8005-FN.    EXIT.                                               DO0030
F80-HELP-W.                                                      DO0030
    EXEC  CICS  WRITEQ  TS  QUEUE (NAMEQ)  FROM (O-0030)         DO0030
         LENGTH (SCRLGTH) ITEM (TSQITEM) MAIN END-EXEC.          DO0030
         GO TO F80-OK.                                           DO0030
F80-HELP-RW.                                                     DO0030
    EXEC  CICS  WRITEQ  TS  QUEUE (NAMEQ)  FROM (O-0030)         DO0030
    LENGTH (SCRLGTH) ITEM (TSQITEM) REWRITE MAIN END-EXEC.       DO0030
         GO TO F80-OK.                                           DO0030
F80-HELP-R.                                                      DO0030
    EXEC  CICS  READQ   TS  QUEUE (NAMEQ)  INTO (O-0030)         DO0030
         LENGTH (SCRLGTH) ITEM (TSQITEM) END-EXEC.               DO0030
         GO TO F80-OK.                                           DO0030
F80-HELP-D.                                                      DO0030
    EXEC CICS HANDLE CONDITION QIDERR (F80-OK) END-EXEC.         DO0030
    EXEC  CICS  DELETEQ TS  QUEUE (NAMEQ)  END-EXEC.             DO0030
         GO TO F80-OK.                                           DO0030
F8095-FN.    EXIT.                                               DO0030
F80-EM00-R.                                                      DO0030
    MOVE         5-EM00-LTH   TO   LTH                           DO0030
    MOVE LENGTH OF EM00-EMKEY TO KEYLTH                          DO0030
    EXEC CICS READ     DATASET (5-EM00-DDNAME)                   DO0030
         LENGTH (LTH)         KEYLENGTH (KEYLTH)                 DO0030
         RIDFLD   (EM00-EMKEY )  INTO (EM00)  END-EXEC.          DO0030
         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
```

3.18. PERFORMED VALIDATION FUNCTIONS (F81)

F81: PERFORMED VALIDATION FUNCTIONS

The PERFORMED VALIDATION FUNCTIONS (F81) function is always generated.

F81ER contains the abnormal end procedure.

F81UT contains the memorization of user errors.

F8110 is generated when there is a numeric field on the screen.

This function contains the procedures which format the field to be validated in the work area, the numeric class validation and the possible positioning of error messages.

F8115 ensures the initialization of the variables according to the initialization character indicated on the Dialogue/Screen Definition screen, and/or according to the initialization values of the data elements.

F8120 is generated if at least one variable data element ('V') has a date format or if an 'AD'-type operator is specified on the '-P' lines of the program (in this last case, the F8120-ER and F8120-KO functions are not generated).

It contains the formatting and validation of a date.

F8125 is generated if the chosen generation option is 'MDT OFF'. It ensures the transfer of the variable fields on a screen to the memorization fields.

F8130 is generated if a documentation Help character has been specified on the Screen Definition screen. It prepares the fields to be backed-up in 'TS' (Temporary Storage).

F8135 is generated if the chosen generation option is 'MDT OFF'. It ensures the filling-in of the fields in reception.

F8140 contains the cursor position calculation for the screen.

F8155 contains the conversion of the nth day of the year into a YYMMDD date.

It is always generated, and used to convert EIBDATE in function F01.

The CICS commands contained in sub-functions executing several operations, are described in Function F81 and are called by a PERFORM, thus allowing the user to replace them.

These commands are as follows:

```
    .HANDLE CONDITION of Function F0110 ===> F81HC

    .RECEIVE MAP      of Function F0510 ===> F81RE

    .SEND MAP         of Function F8Z10 ===> F81SM

    .SEND MAP ERASE   of Function F8Z10 ===> F81SE

    .XCTL             of Function F4040 ===> F81XC
```

The SEND and the RETURN of the F40 Function are not called by a PERFORM, since the F4030 sub-function only contains these commands. The same occurs for the RETURN TRANSID of the F8Z20 sub-function.

During generation, a 'WARNING' message indicates the overlay of these generated sub-functions.

```
 F81.          EXIT.                                              DO0030
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  ABNORMAL END PROCEDURE           *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F81ER.                                                           DO0030
        EXEC CICS ABEND END-EXEC.                                 DO0030
 F81ER-FN.    EXIT.                                               DO0030
 F81HC.                                                           DO0030
        EXEC CICS HANDLE CONDITION ERROR (F81ER) LENGERR (F80-KO) DO0030
        NOTFND (F80-KO) ENDFILE (F80-KO) DUPREC (F80-KO)          DO0030
        MAPFAIL (F0510-B)    END-EXEC.                            DO0030
 F81HC-FN.    EXIT.                                               DO0030
 F81RE.                                                           DO0030
        EXEC CICS RECEIVE MAP (5-0030-MAP) MAPSET (5-0030-MAPSET) DO0030
        INTO (I-0030) END-EXEC.                                   DO0030
 F81RE-FN.    EXIT.                                               DO0030
 F81SE.                                                           DO0030
        EXEC CICS SEND    MAP (5-0030-MAP) MAPSET (5-0030-MAPSET) DO0030
        FROM (O-0030) CURSOR ERASE FREEKB END-EXEC.               DO0030
 F81SE-FN.    EXIT.                                               DO0030
 F81SM.                                                           DO0030
        EXEC CICS SEND    MAP (5-0030-MAP) MAPSET (5-0030-MAPSET) DO0030
        FROM (O-0030) CURSOR FREEKB END-EXEC.                     DO0030
 F81SM-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
 F81XC.                                                           DO0030
          EXEC CICS XCTL   PROGRAM   (5-0030-PROGE)               DO0030
                           COMMAREA (DFHCOMMAREA)                 DO0030
                           LENGTH   (EIBCALEN)     END-EXEC.      DO0030
 F81XC-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
*           *  DISPLAY TRANSFER                 *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F8125.                                                           DO0030
        MOVE  O-0030-MATE          TO T-0030-MATE                 DO0030
        MOVE  O-0030-RELEA         TO T-0030-RELEA                DO0030
        MOVE  O-0030-RUE           TO T-0030-RUE                  DO0030
        MOVE  O-0030-COPOS         TO T-0030-COPOS                DO0030
        MOVE  O-0030-REFCLI        TO T-0030-REFCLI               DO0030
        MOVE  O-0030-DATE          TO T-0030-DATE                 DO0030
        MOVE  O-0030-CORRES        TO T-0030-CORRES               DO0030
        MOVE  F-0030-REMIS         TO T-0030-REMIS                DO0030
        MOVE  ZERO  TO  ICATR.                                    DO0030
 F8125-GRP.   ADD 1 TO  ICATR                                     DO0030
        MOVE  P-0030-LINE  (ICATR) TO O-0030-LINE                 DO0030
        MOVE  U-0030-LINE  (ICATR) TO T-0030-LINE                 DO0030
        MOVE  O-0030-CODMVT        TO T-0030-CODMVT               DO0030
        MOVE  O-0030-FOURNI        TO T-0030-FOURNI               DO0030
        MOVE  F-0030-QTMAC         TO T-0030-QTMAC                DO0030
        MOVE  O-0030-INFOR         TO T-0030-INFOR                DO0030
        MOVE  T-0030-LINE          TO U-0030-LINE  (ICATR).       DO0030
     IF ICATR  < IRR GO TO F8125-GRP.                             DO0030
        MOVE  O-0030-EDIT          TO T-0030-EDIT.                DO0030
 F8125-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
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  RECEPTION TRANSFER               *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F8135.                                                           DO0030
          IF  Z-0030-MATE   = LOW-VALUE                           DO0030
        MOVE  T-0030-MATE          TO I-0030-MATE   ELSE          DO0030
        MOVE  I-0030-MATE          TO T-0030-MATE.                DO0030
          IF  Z-0030-RELEA  = LOW-VALUE                           DO0030
        MOVE  T-0030-RELEA         TO I-0030-RELEA  ELSE          DO0030
        MOVE  I-0030-RELEA         TO T-0030-RELEA.               DO0030
          IF  Z-0030-RUE    = LOW-VALUE                           DO0030
        MOVE  T-0030-RUE           TO I-0030-RUE    ELSE          DO0030
        MOVE  I-0030-RUE           TO T-0030-RUE.                 DO0030
          IF  Z-0030-COPOS  = LOW-VALUE                           DO0030
        MOVE  T-0030-COPOS         TO I-0030-COPOS  ELSE          DO0030
        MOVE  I-0030-COPOS         TO T-0030-COPOS.               DO0030
          IF  Z-0030-REFCLI = LOW-VALUE                           DO0030
        MOVE  T-0030-REFCLI        TO I-0030-REFCLI ELSE          DO0030
        MOVE  I-0030-REFCLI        TO T-0030-REFCLI.              DO0030
          IF  Z-0030-DATE   = LOW-VALUE                           DO0030
        MOVE  T-0030-DATE          TO I-0030-DATE   ELSE          DO0030
        MOVE  I-0030-DATE          TO T-0030-DATE.                DO0030
          IF  Z-0030-CORRES = LOW-VALUE                           DO0030
        MOVE  T-0030-CORRES        TO I-0030-CORRES ELSE          DO0030
        MOVE  I-0030-CORRES        TO T-0030-CORRES.              DO0030
          IF  Z-0030-REMIS  = LOW-VALUE                           DO0030
        MOVE  T-0030-REMIS         TO E-0030-REMIS  ELSE          DO0030
        MOVE  E-0030-REMIS         TO T-0030-REMIS.               DO0030
        MOVE  ZERO  TO  ICATR.                                    DO0030
 F8135-GRP.   ADD 1 TO  ICATR                                     DO0030
        MOVE  J-0030-LINE  (ICATR) TO I-0030-LINE                 DO0030
        MOVE  U-0030-LINE  (ICATR) TO T-0030-LINE                 DO0030
          IF  Z-0030-CODMVT = LOW-VALUE                           DO0030
        MOVE  T-0030-CODMVT        TO I-0030-CODMVT ELSE          DO0030
        MOVE  I-0030-CODMVT        TO T-0030-CODMVT.              DO0030
          IF  Z-0030-FOURNI = LOW-VALUE                           DO0030
        MOVE  T-0030-FOURNI        TO I-0030-FOURNI ELSE          DO0030
        MOVE  I-0030-FOURNI        TO T-0030-FOURNI.              DO0030
          IF  Z-0030-QTMAC  = LOW-VALUE                           DO0030
        MOVE  T-0030-QTMAC         TO E-0030-QTMAC  ELSE          DO0030
        MOVE  E-0030-QTMAC         TO T-0030-QTMAC.               DO0030
          IF  Z-0030-INFOR  = LOW-VALUE                           DO0030
        MOVE  T-0030-INFOR         TO I-0030-INFOR  ELSE          DO0030
        MOVE  I-0030-INFOR         TO T-0030-INFOR.               DO0030
        MOVE  I-0030-LINE          TO J-0030-LINE  (ICATR).       DO0030
        MOVE  T-0030-LINE          TO U-0030-LINE  (ICATR).       DO0030
     IF ICATR  < IRR GO TO F8135-GRP.                             DO0030
          IF  Z-0030-EDIT   = LOW-VALUE                           DO0030
        MOVE  T-0030-EDIT          TO I-0030-EDIT   ELSE          DO0030
        MOVE  I-0030-EDIT          TO T-0030-EDIT.                DO0030
 F8135-FN.    EXIT.                                               DO0030
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  CURSOR POSITION                  *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F8140.                                                           DO0030
```

```
           MOVE  EIBCPOSN  TO  CPOSN                                 DO0030
           DIVIDE  CPOSN  BY  080                                    DO0030
           GIVING  CPOSL  REMAINDER  CPOSC                           DO0030
           ADD  1  TO  CPOSL  CPOSC.                                 DO0030
       F8140-FN.    EXIT.                                            DO0030
      *          *************************************               DO0030
      *          *                                   *               DO0030
      *          * CICS DATE TRANSFORMATION          *               DO0030
      *          *                                   *               DO0030
      *          *************************************               DO0030
       F8155.                                                        DO0030
           MOVE ZERO TO K01.                                         DO0030
           DIVIDE  DATQUY  BY  4  GIVING LEAP-REM.                   DO0030
           COMPUTE LEAP-REM = DATQUY - 4 * LEAP-REM.                 DO0030
           IF LEAP-REM = ZERO GO TO F8155-B.                         DO0030
       F8155-A.                                                      DO0030
           ADD  1  TO  K01.                                          DO0030
           IF DATQUD > TABQT1 (K01) GO TO F8155-A.                   DO0030
           MOVE  K01  TO DAT629.                                     DO0030
           IF K01 = 1 MOVE DATQUD TO DAT619                          DO0030
           GO  TO  F8155-C.                                          DO0030
           SUBTRACT  1  FROM  K01.                                   DO0030
           SUBTRACT  TABQT1 (K01) FROM DATQUD GIVING DAT619.         DO0030
           GO  TO  F8155-C.                                          DO0030
       F8155-B.                                                      DO0030
           ADD  1  TO  K01.                                          DO0030
           IF DATQUD > TABBI1 (K01) GO TO F8155-B.                   DO0030
           MOVE  K01  TO DAT629.                                     DO0030
           IF K01 = 1 MOVE DATQUD TO DAT619                          DO0030
           GO  TO  F8155-C.                                          DO0030
           SUBTRACT  1  FROM  K01.                                   DO0030
           SUBTRACT  TABBI1 (K01) FROM DATQUD GIVING DAT619.         DO0030
       F8155-C.                                                      DO0030
           MOVE  DATQUY  TO  DATOA.                                  DO0030
           MOVE DAT62  TO DATOM  MOVE DAT619 TO DATOJ.               DO0030
       F8155-FN.    EXIT.                                            DO0030
       F81-FN.      EXIT.                                            DO0030
```

3.19. CALLED USER 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
```

4. USING DL/1 WITH CICS

4.1. DESCRIPTION OF SEGMENTS

DESCRIPTION OF SEGMENTS

The description of segments is accomplished in the standard manner, each segment of the database corresponds to the System Segment entity.

To describe a DL/1 database, the segments do not have to belong to a same Data Structure.

REFERENCING THE FIELDS THAT SERVE AS KEYS

The fields that can be used as keys are referenced by an alphanumeric character in the KEY INDICATOR FOR ACCESS OR SORT field on the Segment Call of Elements (-CE) screen.
The values 'U' and 'M' have a particular significance: they can be used in the generation of the DBD associated to the database (unique or multiple key).

Each field referenced by a Key Indicator will trigger the generation of the description of a qualified SSA associated to the field in the programs using the segment.

4.2. DESCRIPTION OF RELATIONSHIPS

DESCRIPTION OF RELATIONSHIPS

Relationships between segments are supported by the Database Block entity, managed by the Specifications Dictionary function.

The description of relationships will be used at two levels:

. The actual generation of the DBD's and PSB's when the Database Description function is used.
. Preparation of the path used in the DL/1 accesses for the OLSD function.

DEFINITION AND DESCRIPTION OF DBD'S

The definition and description of a DBD is done by means of a 'DP'-type (physical DBD) or a 'DL'-type (logical DBD) Block (Refer to the SPECIFICATIONS DICTIONARY Reference Manual).

The description consists of a list of parent-child relationships between segments that exist in the database.

DEFINITION AND DESCRIPTION OF THE PCB'S AND PSB'S

The definition and description of PCB's and PSB's is done by means of a 'PS'-type Block. There are two types of descriptions of the PSB:

. With a total view of the database: the description of the PSB is obtained by mentioning the DBD associated to the database.
. With a partial view of the database: the description of the PSB is made up of the list of PCB's ('PC'-type blocks) defined for each database.

USE OF THE KEY FIELD

On the segment description (-CE), each key element is referenced by a specific character. In the description of the PCB (PC-type block, -DH), a key may be chosen by entering a specific character in the KEY INDICATOR field. (See the DL/1 DATABASE DESCRIPTION Reference Manual). The SSA corresponding to the element will then be used in the generated accesses. If no key is specified, the element which is referenced by the 'U' character will be used by default.

4.3. UTILIZATION WITH THE OLSD FUNCTION

UTILIZATION WITH THE OLSD FUNCTION

Using DL/1 with the On-Line Systems Development function entails action at two levels:

. At the dialogue level

. At the level of the segments accessed for a screen.

THE DIALOGUE LEVEL

The name of the PSB used is entered in the CODE OF PSB OR SUB-SCHEMA field on the Dialogue Complement (-O) screen.

THE SCREEN LEVEL

The PSB entered at the dialogue level represents the default for all of the screens of a dialogue.

If, for a given screen, the user wishes to use a different PSB, it is possible to specify this on the first General Documentation (-G) line of the screen.

With Operation 'C2' (O: C2), the user specifies:

. 'G' in the TYPE field,

. PSB= left-justified in the COMMENT field,

. Name of the PSB at the tabulation position in the center of the COMMENT field.

The name of a PSB entered in this way will be taken into account in the program that processes the screen.

THE SEGMENT LEVEL

On the Screen Call of Segments (-CS) screen, the user must specify the following for each segment of a DL/1 database which is accessed in a screen program:

. In the ACCESS KEY SOURCE and ACCESS KEY (DATA ELEMENT CODE) fields: the information referencing the data elements used to access the segment,

. In the ORGANIZATION OF THE SEGMENT field: value 'D' (DL/1 segment),

. In the EXTERNAL NAME OF THE FILE field: the code of the associated PCB.

NOTE

If the entire hierarchical structure defined by the PCB appears on the Screen Call of Segments, the user only specifies the filling mode of the key associated to each segment.

However, if the screen does not access all the parent segments from the hierarchical structure defined by the PCB, then each key that corresponds to the non-accessed parent segments (SSA's of higher levels) must be filled in.

EXAMPLE: Segment FF00 (with key DELCO1) is the parent of Segment GG00 (with key DELCO2) in a given PCB:

```
1. The screen program accesses both FF00 and GG00.
   The user specifies:

   FF00 ... 00 ...       field1  DELCO1  ...  D  PCBXXX
   GG00 ... 00 ...       field2  DELCO2  ...  D  PCBXXX

To access segment GG00, the program will use the filling
mode of segment FF00.

2. The Screen program accesses GG00, but not FF00.
   The user specifies:

   GG00 ... 00 ...       field1  DELCO1  ...  D  PCBXXX
   GG00 ... 01 ...       field2  DELCO2
```

In both cases, the filling mode of DELCO1 and DELCO2 may necessitate several lines if the fields are sub-defined.

Since the system automatically deduces the key filling mode (qualified SSA); it is not possible to use identical data element key codes for different segments in the same hierarchical sequence within a given PCB (parent segments).

4.4. GENERATED PROGRAM: DATA DIVISION

GENERATED PROGRAM: DATA DIVISION

The use of DL/1 databases in programs developed with the OLSD function entails the generation of specific fields in the DATA DIVISION.

GENERATION OF SSA's

The following is generated for each FFnn segment called in the program:

. A non-qualified SSA in the format:

```
01       S-FFnn-SSA.
  10   FILLER        PICTURE X(8) VALUE 'nnnnnnnn'.
  10   FILLER        PICTURE X    VALUE '*'.
  10   S-FFnn-CCOD   PICTURE X(5) VALUE '_____'.
  10   FILLER        PICTURE X    VALUE SPACE.
```

where 'nnnnnnnn' is the code in the CODE/VALUE OF RECORD TYPE ELEMENT field on the Segment Definition screen.

. A qualified SSA for each data element that is referenced by an alphabetic character (X) in the description of segment FFnn, in the format:

```
01       S-FFXnn-SSA.
  09   FILLER        PICTURE X(8) VALUE 'nnnnnnnn'.
  09   FILLER        PICTURE X    VALUE '*'.
  09   S-FFXnn-CCOD  PICTURE X(5) VALUE '_____'.
  09   FILLER        PICTURE X(9) VALUE '(DATA ELE'.
  09   S-FFXnn-OPER  PICTURE X(2) VALUE ' ='.
  09   S-FFXnn-DELCO.
  pp   S-FFXnn-DATEL PICTURE X(..).
  (...)
  09   FILLER        PICTURE X    VALUE ')'.
```

where 'pp' is the generated level number for the data element 'DATA ELE' in the description of segment FFnn.

NOTE: When the data element is a group element, the data elements belonging to the group are also generated in the SSA (...).

. A qualified SSA for each data element referenced by a numeric character in the segment description. This SSA is identical to the preceding one except that the code of the generated data element is preceded by an 'X'.

```
...
09   FILLER        PICTURE X(9) VALUE '(XDATA ELE'.
...
(permitting access by a secondary index)
```

ADDITIONAL FIELDS

The System also generates additional fields grouped under
level 01 COMMUNICATION-MONITOR. They are:

. A PCB work-area (S-PCB,) which will be used to test the values of the DL/1 return code.

. A function code work-area (S-WPCB-XFONC), which will be used in the generated accesses.

. The external name of the PSB associated with the screen program in the field: S-WPCB-PSB.

COMPLEMENTARY DESCRIPTION OF THE LINKAGE SECTION

In the LINKAGE SECTION, the System generates:

. A BLLCELLS field containing the different pointers that are associated with all subsequent 01 levels:

```
01     BLLCELLS.
 05    ZTSY-FILLER        PIC S9(8)   COMP.
 05    ZPTR-UIB           PIC S9(8)   COMP.
 05    ZDL1-PSB           PIC S9(8)   COMP.
 05    ZDL1-xxxxxx        PIC S9(8)   COMP.
 ...
```

where xxxxxx is the code of the first PCB associated with a segment called in the screen program.

. The DL1UIB field which permits access to the return code (UIBRCODE),

. A ZPTR-PSB field, containing as many pointers as PCB's contained in the PSB (ZPTR-xxxxxx),

. As many 01 levels as PCB's contained in the PSB:

```
01    S-xxxxxx.
 05   FILLER PIC X(100).
```

LIST OF PCB's

The List of PCB's is generated in the PROCEDURE DIVISION. However, the user may have this list generated in the WORKING-STORAGE SECTION. In order to do this, the user creates a '-W' line and in the WORK AREA DESCRIPTION field enters:

'$PCB' or '$PCB.' left-justified.

When '$PCB.' is entered, a period ('.') is generated at the end of the list.

4.5. GENERATED PROGRAM: PROCEDURE DIVISION

GENERATED PROGRAM: PROCEDURE DIVISION

At the PROCEDURE DIVISION level, the use of DL/1 databases entails the generation of specific procedures.

ACCESS TO THE PSB

Access to the PSB is ensured by function F0112 (immediately after the Initializations function), which executes:

. The DL/1 call that accesses the PSB,

. The return code test: in case of error it branches to the F81ER sub-function,

. The filling in of the pointers.

ACCESSES TO THE DATABASES

The accesses to the databases are grouped into function F80. The System generates the following for each segment, according to its use (in reception and/or in display):

. The filling in of the function code corresponding to the required accesses (as many paragraphs are generated as there are possibilities linked to the usage) and branching to the appropriate access.

```
Example:  F80-FFnn-R.
           MOVE 'GU' TO S-WPCB-XFONC GO TO F80-FFnn-1.
```

. The required access (as many paragraphs as possibilities) and branching to the return code processing.

```
Example:  F80-FFnn-1.
           CALL 'CBLTDLI' USING S-WPCB-XFONC
                S-nnnnnn FFnn S-FFXnn-SSA
           MOVE ' =' TO S-FFXnn-OPER
           MOVE S-nnnnnn TO S-PCB GO TO F80-ER.
```

RETURN CODE PROCESSING

Return code processing is executed in F80-ER.

. In case of a serious error, there is a branch to sub-function F81ER, which provokes an ABEND, after having closed the database.

. Otherwise, the 'IK' variable is set to zero if the return code is blank, and to '1' if it is not.

CLOSING THE DATABASES

The databases are closed before any program exit:

. In sub-function F4030, before the RETURN command

. In sub-function F4040, before the XCTL command

. In sub-function F8Z20, before the RETURN command (TRANSID)

. In sub-function F81ER, before the ABEND command.

Function F81FI is called:

```
     F81FI.
            MOVE 'TERM' TO S-WPCB-XFONC
            CALL 'CBLTDLI' USING S-WPCB-XFONC.
```

4.6. USING THE HLPI INTERFACE

USING THE HLPI INTERFACE

The System can generates accesses to the segments using the HLPI Interface (High Level Programming Interface) if the user enters 'HLPI' in the OPTIONS field on the Dialogue Complement (-O) screen.

With HLPI, the accesses are done using EXEC DLI statements.
In the WORKING-STORAGE SECTION, the generation of the SSA's is different, and in the PROCEDURE DIVISION, the generated statements are changed. The program organization remains the same.

DESCRIPTION OF THE PCB

The PCB's are described under level 01 S-PCB COMPUTATIONAL.

```
01                  S-PCB     COMPUTATIONAL.
       05           S-pcbnam  PIC S9(4) VALUE +002.
```

'VALUE +002' represents the PCB level in the PSB.

GENERATION OF THE SSA's

With HLPI, the system generates the length of the SSA's. This length will be used in function F80.

It is generated under level 01 S-PCB COMPUTATIONAL.

```
01            S-PEB00-SSA.
       10     S-PEB00-COMCO.
        15    S-PEB00-DPTCO   PICTURE X(2).
        15    S-PEB00-COMCOR  PICTURE X(3).
01                  S-PCB     COMPUTATIONAL.
       05           S-PCBNAM  PIC S9(4) VALUE +002.
       05     L-PEB00-SSA     PIC S9(4) VALUE +005.
```

ACCESS TO THE PSB

The connection to the PSB indicated on the Dialogue Complement (-O) is ensured by an EXEC DLI statement in function F0112.

```
F0112.
              EXEC DLI SCHEDULE PSB(EXTPSB )
              END-EXEC.
F0112-FN.    EXIT.
```

ACCESSES TO THE DATABASES

The accesses to the databases are grouped into function F80.

For each segment, the system generates an 'EXEC DLI' statement ensuring:

. The filling in of the function code corresponding to the required accesses (as many paragraphs as possibilities), and the branching to the appropriate access,

. The required access and the branching to the test of the return code.

```
F80-PG02-W.
    EXEC DLI INSERT      USING
                 PCB (S-pcbnam  )
             SEGMENT (PG01        )
               WHERE (RPG01        = S-PGU01-SSA)
               FIELDLENGTH          (L-PGU01-SSA)
             SEGMENT (PG02        )
               INTO  (PG02)
         SEGLENGTH (5-PG02-LTH)      END-EXEC.
    GO TO F80-ER.
```

RETURN CODE PROCESSING

Return code processing is executed in F80-ER.

. In case of a serious error, the program branches to sub-function F81ER which provokes an ABEND, after having closed the databases.

. Otherwise, the 'IK' variable is set to zero if the return code is blank, and to '1' if it is not.

CLOSING THE DATABASES

The databases are closed before any program exit by an EXEC CICS statement:

. In sub-function F4030, before the RETURN

. In sub-function F4040, before the XCTL

. In sub-function F8Z20, before the RETURN (TRANSID..)

. In sub-function F81ER, before the ABEND.

At each program exit, the corresponding PSB is disconnected in function F81FI. This disconnection is ensured by an EXEC DLI statement.

```
F81FI.
    EXEC DLI TERMINATE END-EXEC.
F81FI-FN.    EXIT.
```

5. "HELP" FUNCTION

5.1. PRESENTATION

PRESENTATION

The user can access context-sensitive help for a screen or a data element on that screen through the activation of a program commonly known as the "HELP Function".

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

For information on the character used to call the HELP documentation of a given screen or data element, refer to Subchapter, "DIALOGUE OR SCREEN DEFINITION" in the ON-LINE SYSTEMS DEVELOPMENT Reference Manual.

USING THE "HELP" PROGRAM

To use the specifications of the "HELP" function in a dialogue, an additional screen has to be defined.

This screen belongs to the dialogue. Thus, the first two characters of its code must be the same as those of the corresponding dialogue, the last four being the code of the HELP screen. For Dialogue 'XX', the HELP screen would be coded: 'XXHELP'.

The 'XXHELP' screen must be defined but not described (i.e., only the Definition screen must be created). It must have the same variants as the dialogue. Coding the external names (MAP and PROGRAM) is not restricted and is up to the user.

The user must generate and compile the 'XXHELP' program (the generated COBOL program has the same structure as an on-line screen program).

NOTE

A "HELP" program generated from a dialogue can be used by 'n' dialogues. It is generated once, and the 'XXHELP' screens of the various dialogues must have the same external names (PROGRAM and MAP).

The calling program ensures the back-up of the fields entered before branching to the "HELP" function. The fields are saved in Temporary Storage (TS).

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.

5.2. GENERATED "HELP" PROGRAM

```
--------------------------------------------------------------------------------
!                   APPLICATION VSAM/CICS-MVS                *PDLB.NDOC.ACI.125!
! ON-LINE SCREEN DEFINITION..........: DOHELP                                  !
!                                                                              !
! SCREEN NAME........................: HELP FUNCTION SCREEN                    !
!                                                                              !
! SCREEN TYPE........................:           STANDARD 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.FLD!
! 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..:   X   0     IBM VS2 CICS (PRO. & MAP BMS!
! 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:                                !
--------------------------------------------------------------------------------
```

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--------------------------------------------------------------------------------
! HELP SCREEN                                                                  !
!                                                                              !
! DOCUMENTATION OF THE SCREEN :   DO0030  ***  ORDER INPUT SCREEN  ***         !
!                                                                              !
!        THIS SCREEN ALLOWS TO ENTER AN ORDER FOR DOCUMENTATION                !
!        PLACED BY A REFERENCED CLIENT.                                        !
!        FROM THIS SCREEN, YOU MAY ACCESS ANY OTHER SCREEN OF THE              !
!        DIALOG BY ENTERING THE CORRESPONDING CHOICE VALUE FIELD.              !
!        THE DIFFERENT VALUES ARE DISPLAYED IN THE BOTTOM PART                 !
!        OF ALL THE DIALOG'S SCREENS.                                          !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
! CHOICE............: N     (E: END - T: TOP - N: NEXT)                        !
!                                                                              !
--------------------------------------------------------------------------------
```

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 --------------------------------------------------------------------------------
 ! HELP SCREEN                                                                  !
 !                                                                              !
 ! DOCUMENTATION OF DATA ELEMENT: QUANTITY ORDERED                              !
 !                                                                              !
 !        THE 'ORDER' FIELD IS USED TO 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............: N     (E: END - T: TOP - N: NEXT)                        !
 --------------------------------------------------------------------------------
 IDENTIFICATION DIVISION.
 PROGRAM-ID. DOP050.                                              DOHELP
 AUTHOR.     HELP FUNCTION SCREEN.                                DOHELP
 DATE-COMPILED. 04/24/96.                                         DOHELP
 ENVIRONMENT DIVISION.                                            DOHELP
 CONFIGURATION SECTION.                                           DOHELP
 SOURCE-COMPUTER. IBM-370.                                        DOHELP
 OBJECT-COMPUTER. IBM-370.                                        DOHELP
 SPECIAL-NAMES.                                                   DOHELP
      DECIMAL-POINT IS COMMA.                                     DOHELP
 INPUT-OUTPUT SECTION.                                            DOHELP
 FILE-CONTROL.                                                    DOHELP
 DATA DIVISION.                                                   DOHELP
 FILE SECTION.                                                    DOHELP
 WORKING-STORAGE SECTION.                                         DOHELP
*        *************************************************        DOHELP
*        *         LIST OF REFERENCED ENTITIES           *        DOHELP
*        *         ---------------------------           *        DOHELP
*        *  CLECD   ORDER FILE KEY                       *        DOHELP
*        *  CLECL1  CUSTOMER FILE KEY                    *        DOHELP
*        *  CLEME   MAILBOX FILE KEY                     *        DOHELP
*        *  COPERS  PERSONAL CODE                        *        DOHELP
*        *  LANGU   LANGUAGE CODE                        *        DOHELP
*        *  LIBEC   SCREEN LABEL                         *        DOHELP
*        *  LICHOI  CHOICE LABEL                         *        DOHELP
*        *  LIENT   ENTITY LABEL                         *        DOHELP
*        *  ERMSG   ERROR MESSAGE                        *        DOHELP
*        *  ERMSGD  DOCUMENTATION LINE                   *        DOHELP
*        *  LIOPT   OPTION LABEL                         *        DOHELP
*        *  MESSA   MAILBOX MESSAGES                     *        DOHELP
*        *  NUCLIE  CUSTOMER NUMBER                      *        DOHELP
*        *  NUCOM   ORDER NUMBER                         *        DOHELP
*        *  NUMORD  ORDER NUMBER                         *        DOHELP
*        *  OPDOC   CHOICE                               *        DOHELP
*        *  PREM    FIRST INPUT IN TRANSACTION           *        DOHELP
*        *  RAISOC  PRINCIPLE ACTIVITY OF CUSTOMER       *        DOHELP
*        *************************************************        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 S9(4) COMPUTATIONAL.                    DOHELP
      10 CPOSC    PICTURE S9(4) COMPUTATIONAL.                    DOHELP
      05 CPOSN    PICTURE S9(4) COMPUTATIONAL.                    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 : 23/06/95                                    DOHELP
*            PACE80 : 16/01/96   PAC7SG : 960115                  DOHELP
      05 FILLER PICTURE X(50) VALUE                               DOHELP
      '0523 ACI04/24/96DOHELPDOP050  10:40:00PDMCA   NDOC'.       DOHELP
 01   CONSTANTS-PACBASE REDEFINES PACBASE-CONSTANTS.              DOHELP
      05 SESSI  PICTURE X(5).                                     DOHELP
      05 LIBRA  PICTURE X(3).                                     DOHELP
      05 DATGN  PICTURE X(8).                                     DOHELP
      05 PROGR  PICTURE X(6).                                     DOHELP
      05 PROGE  PICTURE X(8).                                     DOHELP
      05 TIMGN  PICTURE X(8).                                     DOHELP
      05 USERCO PICTURE X(8).                                     DOHELP
      05 COBASE PICTURE X(4).                                     DOHELP
 01   PACBASE-WORK.                                               DOHELP
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     05 SCRLGTH PICTURE S9(4) COMPUTATIONAL VALUE +1527.         DOHELP
     05 NAMEQ.                                                   DOHELP
     10 FILLER   PICTURE X(04) VALUE 'PAC7'.                     DOHELP
     10 TRMID    PICTURE X(4).                                   DOHELP
     05 TSQITEM  PICTURE S9(4) COMPUTATIONAL VALUE +1.           DOHELP
     05      5-HELP-MAP    PICTURE X(7)  VALUE   'DOHELP '.      DOHELP
     05      5-HELP-MAPSET PICTURE X(7)  VALUE                   DOHELP
                                'DOM050 '.                       DOHELP
     05      5-HELP-TRAN                                         DOHELP
                PICTURE X(4) VALUE  'DO50'.                      DOHELP
     05      5-HELP-PROGE  PICTURE X(8).                         DOHELP
     05                  5-DODOLE   PIC X VALUE '0'.             DOHELP
     05    5-EM00-DDNAME PICTURE X(8)                            DOHELP
              VALUE       'DODOLE  '.                            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
```

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     05      EM00-CF      PICTURE X.                             DOHELP
01               K-HELP-CLE.                                     *AA010
     03          K-RHELP-LIGNE  OCCURS 1.                        *AA010
     10          K-REM00-EMKEY  PICTURE X(17).                   *AA010
01           INPUT-SCREEN-FIELDS.                                *AA050
     02      I-HELP.                                             *AA050
     05      FILLER PICTURE X(12).                               *AA050
     05      Z-HELP-LIBEC  PICTURE X(3).                         *AA050
     05      I-HELP-LIBEC  PICTURE X(30).                        *AA050
     05      Z-HELP-LIENT  PICTURE X(3).                         *AA050
     05      I-HELP-LIENT  PICTURE X(36).                        *AA050
     05      J-HELP-LIGNE  OCCURS 17.                            *AA050
     10      FILLER        PICTURE X(77).                        *AA050
     05      Z-HELP-LICHOI PICTURE X(3).                         *AA050
     05      I-HELP-LICHOI PICTURE X(19).                        *AA050
     05      Z-HELP-OPDOC  PICTURE X(3).                         *AA050
     05      I-HELP-OPDOC  PICTURE X.                            *AA050
     05      Z-HELP-LIOPT  PICTURE X(3).                         *AA050
     05      I-HELP-LIOPT  PICTURE X(30).                        *AA050
     05      I-HELP-ERMS.                                        *AA050
     10      FILLER OCCURS 1.                                    *AA050
     15      Z-HELP-ERMSG  PICTURE X(3).                         *AA050
     15      I-HELP-ERMSG  PICTURE X(72).                        *AA050
01           OUTPUT-SCREEN-FIELDS.                               *AA050
     02      O-HELP.                                             *AA050
     05      FILLER PICTURE X(12).                               *AA050
     05      X-HELP-LIBEC  PICTURE S9(4) COMP.                   *AA050
     05      Y-HELP-LIBEC  PICTURE X.                            *AA050
     05      O-HELP-LIBEC  PICTURE X(30).                        *AA050
     05      X-HELP-LIENT  PICTURE S9(4) COMP.                   *AA050
     05      Y-HELP-LIENT  PICTURE X.                            *AA050
     05      O-HELP-LIENT  PICTURE X(36).                        *AA050
     05      P-HELP-LIGNE  OCCURS 17.                            *AA050
     10      FILLER        PICTURE X(77).                        *AA050
     05      X-HELP-LICHOI PICTURE S9(4) COMP.                   *AA050
     05      Y-HELP-LICHOI PICTURE X.                            *AA050
     05      O-HELP-LICHOI PICTURE X(19).                        *AA050
     05      X-HELP-OPDOC  PICTURE S9(4) COMP.                   *AA050
     05      Y-HELP-OPDOC  PICTURE X.                            *AA050
     05      O-HELP-OPDOC  PICTURE X.                            *AA050
     05      X-HELP-LIOPT  PICTURE S9(4) COMP.                   *AA050
     05      Y-HELP-LIOPT  PICTURE X.                            *AA050
     05      O-HELP-LIOPT  PICTURE X(30).                        *AA050
     05      O-HELP-ERMS.                                        *AA050
     10      FILLER OCCURS 1.                                    *AA050
     15      X-HELP-ERMSG  PICTURE S9(4) COMP.                   *AA050
     15      Y-HELP-ERMSG  PICTURE X.                            *AA050
     15      O-HELP-ERMSG  PICTURE X(72).                        *AA050
01           REPEAT-LINE.                                        *AA050
     02      I-HELP-LIGNE.                                       *AA050
     05      Z-HELP-ERMSGD PICTURE X(3).                         *AA050
     05      I-HELP-ERMSGD PICTURE X(74).                        *AA050
     02      O-HELP-LIGNE.                                       *AA050
     05      X-HELP-ERMSGD PICTURE S9(4) COMP.                   *AA050
     05      Y-HELP-ERMSGD PICTURE X.                            *AA050
     05      O-HELP-ERMSGD PICTURE X(74).                        *AA050
01              EM00.                                            *AA100
    05          EM00-EMKEY.                                      *AA100
      10        EM00-LIBRA     PICTURE X(3).                     *AA100
      10        EM00-ENTYP     PICTURE X.                        *AA100
      10        EM00-XEMKY.                                      *AA100
        15      EM00-PROGR     PICTURE X(6).                     *AA100
        15      EM00-ERCOD.                                      *AA100
          20    EM00-ERCOD9    PICTURE 9(3).                     *AA100
        15      EM00-ERTYP     PICTURE X.                        *AA100
      10        EM00-LINUM     PICTURE 9(3).                     *AA100
    05          EM00-ERLVL     PICTURE X.                        *AA100
    05          EM00-ERMSG     PICTURE X(66).                    *AA100
    05          FILLER         PICTURE X(6).                     *AA100
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
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     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    5-EM00-LTH  PICTURE S9(4) VALUE +0090.                *AA200
     05    5-CA00-LTH  PICTURE S9(4) VALUE +0147.                *AA200
     05    LTH         PICTURE S9(4) VALUE ZERO.                 *AA200
     05    KEYLTH      PICTURE S9(4) VALUE ZERO.                 *AA200
     05      5-HELP-LENGTH PICTURE S9(4)                         *AA200
                         VALUE      +0890.                       *AA200
01   PFKEYS-TABLE.                                               *AA230
     02    PF-TAB.                                               *AA230
       05  FILLER       PIC X     VALUE QUOTE.                   *AA230
       05  FILLER       PIC X(11) VALUE '  _00%A1>A2'.           *AA230
       05  FILLER       PIC X(36) VALUE                          *AA230
           '101202303404505606707808909:10£11à12'.               *AA230
       05  FILLER       PIC X(36) VALUE                          *AA230
           'A13B14C15D16E17F18G19H20I21°22.23<24'.               *AA230
     02    PFTA  REDEFINES  PF-TAB.                              *AA230
       05  PFTA-POS    OCCURS 28.                                *AA230
        10 PFTA-VAL    PIC X.                                    *AA230
        10 PFTA-IFONCT PIC XX.                                   *AA230
     02    I-FONCT.                                              *AA230
     05    I-PFKEY  PIC XX.                                      *AA230
01           TABLE-OF-ATTRIBUTES.                                *AA250
     02      DE-ATT.                                             *AA250
     03      DE-ATT1           OCCURS 5.                         *AA250
     05      DE-AT   PICTURE X                                   *AA250
                    OCCURS 001.                                  *AA250
     02      DE-A    REDEFINES DE-ATT.                           *AA250
     03      DE-ATT2           OCCURS 5.                         *AA250
     04      A-HELP-ENDRE.                                       *AA250
     05      A-HELP-OPDOC  PICTURE X.                            *AA250
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
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      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.                                                 DOHELP
 01   DFHCOMMAREA.                                                DOHELP
      02     K-SHELP-PROGR PICTURE X(6).                          *00000
      02     K-SHELP-CDOC  PICTURE X.                             *00000
      02     K-SHELP-PROGE PICTURE X(8).                          *00000
      02     K-SHELP-CPOSL PICTURE S9(4) COMPUTATIONAL.           *00000
      02     K-SHELP-PROLE PICTURE X(8).                          *00000
      02     K-SHELP-LIBRA PICTURE XXX.                           *00000
      02     K-SHELP-PROHE PICTURE X(8).                          *00000
      02     K-SHELP-ERCOD.                                       *00000
        05   K-SHELP-ERCOD9 PICTURE 999.                          *00000
      02     K-SHELP-ERTYP PICTURE X.                             *00000
      02     K-SHELP-NULIX.                                       *00000
        05   K-SHELP-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      ZONES-VARIABLES.                                    *00002
      03      T-HELP-ENDRE.                                       *00002
      05      T-HELP-OPDOC  PICTURE X(1).                         *00002
      02      FILLER        PICTURE X(0699).                      *00002
 PROCEDURE DIVISION.                                              *99999
*           *************************************                 DOHELP
*           *                                   *                 DOHELP
*           *  INITIALIZATIONS                  *                 DOHELP
*           *                                   *                 DOHELP
*           *************************************                 DOHELP
 F01.          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 EIBCALEN = ZERO OR    PROGR NOT = K-SHELP-PROGR        DOHELP
                       MOVE    ZERO  TO  ICF.                     DOHELP
        PERFORM F81HC THRU F81HC-FN.                              DOHELP
        MOVE LOW-VALUE  TO            O-HELP.                     DOHELP
        IF ICF = ZERO PERFORM F8115 THRU F8115-FN.                DOHELP
        MOVE 'X' TO DE-AT (4, 001).                               DOHELP
        MOVE SPACE      TO            O-HELP-ERMSG (01).          DOHELP
 F0110-FN.    EXIT.                                               DOHELP
 F0120.                                                           DOHELP
        IF  EIBAID = '_' MOVE 'E' TO OPER GO TO F40.              DOHELP
        MOVE '1' TO OCF.                                          DOHELP
        MOVE K-SHELP-PROLE TO 5-EM00-DDNAME                       DOHELP
        IF K-SHELP-CDOC = 'D' OR K-SHELP-CDOC = 'R'               DOHELP
        MOVE '1' TO ICF     GO TO F0120-FN.                       DOHELP
        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
        IF  K-SHELP-NULIX NOT NUMERIC                             DOHELP
        OR  K-SHELP-LINUM = ZERO                                  DOHELP
        DIVIDE K-SHELP-CPOSL BY 80                                DOHELP
        GIVING    7-HELP-POLEC9                                   DOHELP
        REMAINDER 7-HELP-POCEC9                                   DOHELP
        ADD 1 TO  7-HELP-POLEC9 7-HELP-POCEC9                     DOHELP
        MOVE ZERO TO K-SHELP-LINUM.                               DOHELP
        IF K-SHELP-LINUM NOT = ZERO                               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 SPACE TO I-PFKEY                                     DOHELP
        MOVE 1     TO K01.                                        DOHELP
 F0510-A.   IF  K01 NOT > 28                                      DOHELP
        AND PFTA-VAL (K01) NOT = EIBAID                           DOHELP
        ADD 1 TO K01  GO TO F0510-A.                              DOHELP
            IF  K01 NOT > 28                                      DOHELP
        MOVE PFTA-IFONCT (K01) TO I-PFKEY.                        DOHELP
            IF  I-PFKEY = '00'  GO TO F0510-C.                    DOHELP
        PERFORM F81RE THRU F81RE-FN.                              DOHELP
        GO TO F0510-C.                                            DOHELP
 F0510-B. IF I-PFKEY = SPACE  MOVE '99' TO I-PFKEY.               DOHELP
        MOVE LOW-VALUE TO  I-HELP.                                DOHELP
 F0510-C.                                                         DOHELP
        PERFORM F8140 THRU F8140-FN.                              DOHELP
        PERFORM F8135 THRU F8135-FN                               DOHELP
        INSPECT I-HELP REPLACING ALL LOW-VALUE BY SPACE.          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
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*           *************************************                 DOHELP
*           *                                   *                 DOHELP
*           *  END OF TRANSACTION               *                 DOHELP
*           *                                   *                 DOHELP
*           *************************************                 DOHELP
 F4030.     IF OPER NOT = 'E' GO TO F4030-FN.                     DOHELP
     EXEC CICS SEND LENGTH (4) ERASE FROM (5-HELP-TRAN) END-EXEC. DOHELP
        EXEC CICS RETURN END-EXEC. GOBACK.                        DOHELP
 F4030-FN.    EXIT.                                               DOHELP
*           *************************************                 DOHELP
*           *                                   *                 DOHELP
*           *  TRANSFER TO ANOTHER SCREEN       *                 DOHELP
*           *                                   *                 DOHELP
*           *************************************                 DOHELP
 F4040.     IF OPER NOT = 'O' GO TO F4040-FN.                     DOHELP
              IF          5-DODOLE    = 1                         DOHELP
        EXEC CICS ENDBR     DATASET  (5-EM00-DDNAME)              DOHELP
             END-EXEC.                                            DOHELP
        PERFORM F81XC THRU F81XC-FN.                              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 LOW-VALUE 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
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            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
    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
           INSPECT DE-ATT1 (1) REPLACING ALL SPACE BY LOW-VALUE      DOHELP
           INSPECT DE-ATT1 (1) REPLACING ALL 'D' BY '<'              DOHELP
           INSPECT DE-ATT1 (1) REPLACING ALL 'B' BY 'H'              DOHELP
           INSPECT DE-ATT1 (1) REPLACING ALL 'N' BY 'D'              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
           MOVE SPACE TO DE-ATT1 (4) ADD 1 TO TALLI                  DOHELP
                  MOVE 'Y' TO DE-AT (4, TALLI).                      DOHELP
    F7020-Z.                                                         DOHELP
           IF    A-HELP-OPDOC  (5 ) NOT = 'F'                        DOHELP
           MOVE  A-HELP-OPDOC  (1)  TO   Y-HELP-OPDOC.               DOHELP
           IF    A-HELP-OPDOC  (5 ) = 'F'                            DOHELP
           AND  (A-HELP-OPDOC  (1 ) = 'N'                            DOHELP
           OR    A-HELP-OPDOC  (1 ) = LOW-VALUE)                     DOHELP
```

```
        MOVE '1' TO  Y-HELP-OPDOC.                                DOHELP
        IF    A-HELP-OPDOC  (5 ) = 'F'                            DOHELP
        AND   A-HELP-OPDOC  (1 ) = 'B'                            DOHELP
        MOVE '9' TO  Y-HELP-OPDOC.                                DOHELP
        IF    A-HELP-OPDOC  (5 ) = 'F'                            DOHELP
        AND   A-HELP-OPDOC  (1 ) = 'D'                            DOHELP
        MOVE QUOTE TO Y-HELP-OPDOC.                               DOHELP
         MOVE ZERO TO X-HELP-OPDOC.                               DOHELP
        IF    A-HELP-OPDOC  (4 ) = 'Y'                            DOHELP
         MOVE  -1 TO  X-HELP-OPDOC.                               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
        IF SCR-ER NOT > '1'                                       DOHELP
        PERFORM F8125 THRU F8125-FN                               DOHELP
        PERFORM F81SE THRU F81SE-FN.                              DOHELP
        IF SCR-ER > '1'                                           DOHELP
        PERFORM F81SM THRU F81SM-FN.                              DOHELP
 F8Z10-FN.    EXIT.                                               DOHELP
*           *************************************                 DOHELP
*           *                                   *                 DOHELP
*           *  END OF PROGRAM                   *                 DOHELP
*           *                                   *                 DOHELP
*           *************************************                 DOHELP
 F8Z20.                                                           DOHELP
        EXEC CICS RETURN     TRANSID (5-HELP-TRAN)                DOHELP
      LENGTH (EIBCALEN)    COMMAREA (DFHCOMMAREA)  END-EXEC.      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         5-EM00-LTH   TO   LTH                           DOHELP
     MOVE LENGTH OF EM00-EMKEY  TO KEYLTH                         DOHELP
     EXEC CICS READ         DATASET  (5-EM00-DDNAME)              DOHELP
          LENGTH (LTH)         KEYLENGTH (KEYLTH)                 DOHELP
          RIDFLD   (EM00-EMKEY )  INTO (EM00)  END-EXEC.          DOHELP
          GO TO F80-OK.                                           DOHELP
 F80-EM00-P.                 IF 5-DODOLE   = 1                    DOHELP
          GO TO F80-EM00-P1.                                      DOHELP
     MOVE LENGTH OF EM00-EMKEY  TO KEYLTH                         DOHELP
     EXEC CICS STARTBR       DATASET (5-EM00-DDNAME)              DOHELP
          KEYLENGTH (KEYLTH)                                      DOHELP
          RIDFLD   (EM00-EMKEY )               END-EXEC.          DOHELP
                      MOVE 1 TO 5-DODOLE.                         DOHELP
          GO TO F80-EM00-RN.                                      DOHELP
 F80-EM00-P1.                                                     DOHELP
     MOVE LENGTH OF EM00-EMKEY  TO KEYLTH                         DOHELP
     EXEC CICS RESETBR       DATASET (5-EM00-DDNAME)              DOHELP
          KEYLENGTH (KEYLTH)                                      DOHELP
          RIDFLD   (EM00-EMKEY )               END-EXEC.          DOHELP
 F80-EM00-RN.                                                     DOHELP
     MOVE         5-EM00-LTH   TO   LTH                           DOHELP
     MOVE LENGTH OF EM00-EMKEY  TO KEYLTH                         DOHELP
         EXEC CICS READNEXT       DATASET (5-EM00-DDNAME)         DOHELP
          LENGTH (LTH)         KEYLENGTH (KEYLTH)                 DOHELP
          RIDFLD   (EM00-EMKEY )  INTO (EM00)  END-EXEC.          DOHELP
          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
        EXEC CICS ABEND END-EXEC.                                 DOHELP
 F81ER-FN.    EXIT.                                               DOHELP
 F81HC.                                                           DOHELP
        EXEC CICS HANDLE CONDITION ERROR (F81ER) LENGERR (F80-KO) DOHELP
        NOTFND (F80-KO) ENDFILE (F80-KO) DUPREC (F80-KO)          DOHELP
        MAPFAIL (F0510-B)    END-EXEC.                            DOHELP
 F81HC-FN.    EXIT.                                               DOHELP
 F81RE.                                                           DOHELP
        EXEC CICS RECEIVE MAP (5-HELP-MAP) MAPSET (5-HELP-MAPSET) DOHELP
        INTO (I-HELP) END-EXEC.                                   DOHELP
 F81RE-FN.    EXIT.                                               DOHELP
 F81SE.                                                           DOHELP
        EXEC CICS SEND    MAP (5-HELP-MAP) MAPSET (5-HELP-MAPSET) DOHELP
        FROM (O-HELP) CURSOR ERASE FREEKB END-EXEC.               DOHELP
 F81SE-FN.    EXIT.                                               DOHELP
 F81SM.                                                           DOHELP
        EXEC CICS SEND    MAP (5-HELP-MAP) MAPSET (5-HELP-MAPSET) DOHELP
        FROM (O-HELP) CURSOR FREEKB END-EXEC.                     DOHELP
 F81SM-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
 F81XC.                                                           DOHELP
          EXEC CICS XCTL   PROGRAM   (5-HELP-PROGE)               DOHELP
                           COMMAREA (DFHCOMMAREA)                 DOHELP
                           LENGTH   (EIBCALEN)     END-EXEC.      DOHELP
 F81XC-FN.    EXIT.                                               DOHELP
 F8115.        EXIT.                                              DOHELP
 F8115-FN.    EXIT.                                               DOHELP
*           *************************************                 DOHELP
*           *                                   *                 DOHELP
*           *  DISPLAY TRANSFER                 *                 DOHELP
*           *                                   *                 DOHELP
*           *************************************                 DOHELP
 F8125.                                                           DOHELP
        MOVE  O-HELP-OPDOC         TO T-HELP-OPDOC.               DOHELP
 F8125-FN.    EXIT.                                               DOHELP
*           *************************************                 DOHELP
*           *                                   *                 DOHELP
*           *  RECEPTION TRANSFER               *                 DOHELP
*           *                                   *                 DOHELP
*           *************************************                 DOHELP
 F8135.                                                           DOHELP
          IF  Z-HELP-OPDOC  = LOW-VALUE                           DOHELP
        MOVE  T-HELP-OPDOC         TO I-HELP-OPDOC  ELSE          DOHELP
        MOVE  I-HELP-OPDOC         TO T-HELP-OPDOC.               DOHELP
 F8135-FN.    EXIT.                                               DOHELP
*           *************************************                 DOHELP
*           *                                   *                 DOHELP
*           *  CURSOR POSITION                  *                 DOHELP
*           *                                   *                 DOHELP
*           *************************************                 DOHELP
 F8140.                                                           DOHELP
        MOVE  EIBCPOSN  TO  CPOSN                                 DOHELP
        DIVIDE  CPOSN  BY  080                                    DOHELP
        GIVING  CPOSL  REMAINDER  CPOSC                           DOHELP
        ADD  1  TO  CPOSL  CPOSC.                                 DOHELP
 F8140-FN.    EXIT.                                               DOHELP
 F81-FN.      EXIT.                                               DOHELP
```

6. MULTI-TERMINAL TYPE GENERATED SCREEN PROGRAM

6.1. INTRODUCTION

MULTI-SCREEN VARIANT

The following example shows the same screen, 'DO0030', generated with the CICS Multi-Terminal variant ('C').

The functionalities are the same as in the preceding example, so only the additional parts in WORKING-STORAGE and the specific functions are presented.

The HELP program generated with this variant is also presented.

With the Multi-Terminal variant, the program only processes the logical message, and the transfers to and from a buffer.

According to the type of terminal used, a sub-program ensures the formatting of the physical message for the Send and the reformatting of the logical message to be received.

The product provides sub-program 'PRCGI' for 3270-type terminals; the user has to write sub-program 'PRUSER' for other types of terminals. Branching to one or the other is ensured in the program through the use of a variable.

6.2. BEGINNING OF WORKING-STORAGE

BEGINNING OF WORKING-STORAGE

In the 'WSS-BEGIN' there are five fields which represent the initial values of the parameter to be passed to the sub-program (PRCGI or PRUSER) in order to determine the type of action.

7-YCREE = 'E' (normal display)

7-YCREF = 'F' (end of transaction)

7-YCRER = 'R' (reception)

7-YCRER = 'X' (error display)

7-YCREP = 'P' (not used in IBM)

In the PACBASE-CONSTANTS, there are the names of the message formatting sub-programs in function with the type of terminal:

. PRCGI (standard external name 'D4R980'): name of message formatting sub-program for 3270-type terminals, provided with the release.

. PRUSER (standard external name 'ZAR980'): name of the user sub-program for the other terminals.

MULTI-TERMINAL TYPE GENERATED SCREEN PROGRAM 6

BEGINNING OF WORKING-STORAGE 2

```
 IDENTIFICATION DIVISION.
 PROGRAM-ID. DOP030.                                              DO0030
 AUTHOR.     ***  ORDER INPUT SCREEN  ***.                        DO0030
 DATE-COMPILED. 04/24/96.                                         DO0030
 ENVIRONMENT DIVISION.                                            DO0030
 CONFIGURATION SECTION.                                           DO0030
 SOURCE-COMPUTER. IBM-370.                                        DO0030
 OBJECT-COMPUTER. IBM-370.                                        DO0030
 SPECIAL-NAMES.                                                   DO0030
      DECIMAL-POINT IS COMMA.                                     DO0030
 INPUT-OUTPUT SECTION.                                            DO0030
 FILE-CONTROL.                                                    DO0030
 DATA DIVISION.                                                   DO0030
 FILE SECTION.                                                    DO0030
 WORKING-STORAGE SECTION.                                         DO0030
*        **************************************************       DO0030
*        *         LIST OF REFERENCED ENTITIES            *       DO0030
*        *         ---------------------------            *       DO0030
*        *  ADFOU   SUPPLIER'S ADDRESS                    *       DO0030
*        *  CLECD   ORDER FILE KEY                        *       DO0030
*        *  CLECL1  CUSTOMER FILE KEY                     *       DO0030
*        *  CLEFO   MANUALS FILE KEY                      *       DO0030
*        *  CLEME   MAILBOX FILE KEY                      *       DO0030
*        *  COCARA  STRUCTURE CODE                        *       DO0030
*        *  CODMVT  TRANSACTION CODE                      *       DO0030
*        *  COPERS  PERSONAL CODE                         *       DO0030
*        *  COPOS   ZIP CODE                              *       DO0030
*        *  CORRES  COORDINATOR                           *       DO0030
*        *  DATE    ORDER DATE                            *       DO0030
*        *  DATEM   DATE EXTENDED FORMAT WITH CENTURY     *       DO0030
*        *  EDIT    PRINTING REQUEST                      *       DO0030
*        *  ERMSG   ERROR MESSAGE                         *       DO0030
*        *  FOURNI  CODE OF THE MANUAL ORDERED            *       DO0030
*        *  HEURE   DISPLAY TIME                          *       DO0030
*        *  INFOR   INFORMATION--ORDER DETAILS            *       DO0030
*        *  KEYCD   'CD' FILE ACCESS KEY                  *       DO0030
*        *  LANGU   LANGUAGE CODE                         *       DO0030
*        *  LIBFO   MANUAL TITLE                          *       DO0030
*        *  MATE    SYSTEM                                *       DO0030
*        *  MESSA   MAILBOX MESSAGES                      *       DO0030
*        *  NUCLIE  CUSTOMER NUMBER                       *       DO0030
*        *  NUCOM   ORDER NUMBER                          *       DO0030
*        *  NUMORD  ORDER NUMBER                          *       DO0030
*        *  PREM    FIRST INPUT IN TRANSACTION            *       DO0030
*        *  PROGE   EXTERNAL NAME OF PROGRAM              *       DO0030
*        *  QTMAC   QUANTITY ORDERED                      *       DO0030
*        *  QTMAL   QUANTITY DELIVERABLE                  *       DO0030
*        *  QTMAM   QUANTITY MINIMUM                      *       DO0030
*        *  QTMAR   QUANTITY OUTSTANDING                  *       DO0030
*        *  QTMAS   QUANTITE MASS                         *       DO0030
*        *  RAISOC  PRINCIPLE ACTIVITY OF CUSTOMER        *       DO0030
*        *  REFCLI  CUSTOMER REFERENCES                   *       DO0030
*        *  RELEA   PACBASE RELEASE                       *       DO0030
*        *  REMIS   DISCOUNT                              *       DO0030
*        *  RUE     MAIN                                  *       DO0030
*        *  SESSI   SESSION NUMBER                        *       DO0030
*        *  VILLE   NAME OF THE CITY                      *       DO0030
*        *  VILLEL  NAME OF THE CITY                      *       DO0030
*        **************************************************       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 S9(4) COMPUTATIONAL.                    DO0030
      10 CPOSC    PICTURE S9(4) COMPUTATIONAL.                    DO0030
      05 CPOSN    PICTURE S9(4) COMPUTATIONAL.                    DO0030
      05 7-YCREE PICTURE X VALUE 'E'.                             DO0030
      05 7-YCREF PICTURE X VALUE 'F'.                             DO0030
      05 7-YCREP PICTURE X VALUE 'P'.                             DO0030
      05 7-YCRER PICTURE X VALUE 'R'.                             DO0030
      05 7-YCREX PICTURE X VALUE 'X'.                             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 : 23/06/95                                    DO0030
*            PACE80 : 16/01/96   PAC7SG : 960115                  DO0030
      05 FILLER PICTURE X(50) VALUE                               DO0030
      '0523 ACI04/24/96DO0030DOP030  10:30:35PDMCA   NDOC'.       DO0030
 01   CONSTANTS-PACBASE REDEFINES PACBASE-CONSTANTS.              DO0030
      05 SESSI  PICTURE X(5).                                     DO0030
      05 LIBRA  PICTURE X(3).                                     DO0030
      05 DATGN  PICTURE X(8).                                     DO0030
      05 PROGR  PICTURE X(6).                                     DO0030
      05 PROGE  PICTURE X(8).                                     DO0030
      05 TIMGN  PICTURE X(8).                                     DO0030
      05 USERCO PICTURE X(8).                                     DO0030
      05 COBASE PICTURE X(4).                                     DO0030
 01   PACBASE-WORK.                                               DO0030
      05 PRDOC  PICTURE X(8) VALUE 'DOP050'.                      DO0030
      05 SCRLGTH PICTURE S9(4) COMPUTATIONAL VALUE +0784.         DO0030
      05 NAMEQ.                                                   DO0030
      10 FILLER   PICTURE X(04) VALUE 'PAC7'.                     DO0030
      10 TRMID    PICTURE X(4).                                   DO0030
      05 TSQITEM  PICTURE S9(4) COMPUTATIONAL VALUE +1.           DO0030
      05 PRCGI  PICTURE X(8) VALUE 'D4R980'.                      DO0030
      05 PRUSER PICTURE X(8) VALUE 'ZAR980'.                      DO0030
      05      5-0030-TRAN                                         DO0030
                 PICTURE X(4) VALUE  'DO30'.                      DO0030
      05      5-0030-PROGE  PICTURE X(8).                         DO0030
      05                  5-DOCD00   PIC X VALUE '0'.             DO0030
      05    5-CD05-DDNAME PICTURE X(8)                            DO0030
               VALUE       'DOCD00  '.                            DO0030
      05    5-CD10-DDNAME PICTURE X(8)                            DO0030
               VALUE       'DOCD00  '.                            DO0030
      05    5-CD20-DDNAME PICTURE X(8)                            DO0030
               VALUE       'DOCD00  '.                            DO0030
      05    5-FO10-DDNAME PICTURE X(8)                            DO0030
               VALUE       'DOFO00  '.                            DO0030
      05    5-ME00-DDNAME PICTURE X(8)                            DO0030
               VALUE       'DOME00  '.                            DO0030
      05      5-EM00-DDNAME PICTURE X(8) VALUE 'DODOLE  '.        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
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  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  TIMCIC     PICTURE 9(7).                                     DO0030
01  TIMCI1     REDEFINES TIMCIC.                                 DO0030
  05  FILLER PIC X.                                              DO0030
  05  TIMCIG.                                                    DO0030
   10 TIMCIH   PICTURE XX.                                       DO0030
   10 TIMCIM   PICTURE XX.                                       DO0030
   10 TIMCIS   PICTURE XX.                                       DO0030
01  DATCIC     PICTURE 9(7).                                     DO0030
01  DATQTM     REDEFINES DATCIC.                                 DO0030
  05  FILLER   PICTURE XX.                                       DO0030
  05  DATQUY   PICTURE 99.                                       DO0030
  05  DATQUD   PICTURE 999.                                      DO0030
01  TABDAT.                                                      DO0030
 02  TABQTM.                                                     DO0030
  05  FILLER PIC X(18) VALUE '031059090120151181'.               DO0030
  05  FILLER PIC X(18) VALUE '212243273304334365'.               DO0030
 02  TABQT1 REDEFINES TABQTM PIC 999 OCCURS 12.                  DO0030
 02  TABBIS.                                                     DO0030
  05  FILLER PIC X(18) VALUE '031060091121152182'.               DO0030
  05  FILLER PIC X(18) VALUE '213244274305335366'.               DO0030
 02  TABBI1 REDEFINES TABBIS PIC 999 OCCURS 12.                  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                 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     REDEFINES  CD00.                     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     REDEFINES  CD00.                     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     REDEFINES  CD00.                     DO0030
       10          FILLER      PICTURE X(00009).                 DO0030
       10          CD20-EDIT   PICTURE X.                        DO0030
       10          FILLER      PICTURE X(00156).                 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.                           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
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
```

6.3. DESCRIPTION OF MESSAGE

DESCRIPTION OF MESSAGE

The following fields exist for the description of physical and logical messages ('scrn' represents the last four characters of the screen code).

1) scrn-MESSO, is split into fields

Sllccc (ll = line, ccc = column)

It is a temporary field for the reception and sending of messages.

2) AT-scrn-MESSO

It is the physical description of the message.
It contains one occurrence per field.
For each occurrence, the VALUE consists of:
- the line position, column
- the length
- the nature (L, P, F or blank)
- the attributes (intensity, presentation, color)
- the format type: 'N' numeric ' ' non-numeric

AT-Sllccc
AT-Rllhhvv for a V, F or P nature
AT-Lllhhvv for a Data Element label

Where
ll = line number of the repetitive category (00 for a screen top or bottom category)
ccc = column
hh and vv correspond to the horizontal and vertical repetition number.

3) INPUT-scrn, is split into fields

Rllccc (ll =line, ccc=column)

It is the input message description in order to establish the logical/physical correspondence during the transfer.

It is redefined by the INPUT-SCREEN-FIELDS (I- fields).

4) OUTPUT-scrn, is split into fields

Tllccc (ll= line, ccc= column)

It is the output message description in order to establish the logical/physical correspondence during the transfer.

It is redefined by the OUTPUT-SCREEN-FIELDS (O- fields).

```
    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
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     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-R000101-PROGE  PICTURE X(13) VALUE '01004008PNNW '.  *AA041
      05 AT-S01013         PICTURE X(13) VALUE '01013001LNNW '.  *AA041
      05 AT-R000101-SESSI  PICTURE X(13) VALUE '01015005PNNW '.  *AA041
      05 AT-S01025         PICTURE X(13) VALUE '01025030LNNW '.  *AA041
      05 AT-R000101-DATEM  PICTURE X(13) VALUE '01060010PNNW '.  *AA041
      05 AT-R000101-HEURE  PICTURE X(13) VALUE '01071008PNNW '.  *AA041
      05 AT-L000101-NUCOM  PICTURE X(13) VALUE '03004013LNNW '.  *AA041
      05 AT-R000101-NUCOM  PICTURE X(13) VALUE '03018005PNNWN'.  *AA041
      05 AT-L000101-MATE   PICTURE X(13) VALUE '03026007LNNW '.  *AA041
      05 AT-R000101-MATE   PICTURE X(13) VALUE '03034008 NNW '.  *AA041
      05 AT-L000101-RELEA  PICTURE X(13) VALUE '03054008LNNW '.  *AA041
      05 AT-R000101-RELEA  PICTURE X(13) VALUE '03063003 NNW '.  *AA041
      05 AT-L000101-NUCLIE PICTURE X(13) VALUE '04004005LNNW '.  *AA041
      05 AT-R000101-RAISOC PICTURE X(13) VALUE '04013050PNNW '.  *AA041
      05 AT-R000101-RUE    PICTURE X(13) VALUE '05009040 NNW '.  *AA041
      05 AT-R000101-VILLE  PICTURE X(13) VALUE '05052020FNNW '.  *AA041
      05 AT-R000101-COPOS  PICTURE X(13) VALUE '05074005 NNW '.  *AA041
      05 AT-L000101-REFCLI PICTURE X(13) VALUE '06004011LNNW '.  *AA041
      05 AT-R000101-REFCLI PICTURE X(13) VALUE '06016030 NNW '.  *AA041
      05 AT-L000101-DATE   PICTURE X(13) VALUE '06049011LNNW '.  *AA041
      05 AT-R000101-DATE   PICTURE X(13) VALUE '06061006 NNW '.  *AA041
      05 AT-L000101-CORRES PICTURE X(13) VALUE '07005012LNNW '.  *AA041
      05 AT-R000101-CORRES PICTURE X(13) VALUE '07018025 NNW '.  *AA041
      05 AT-L000101-REMIS  PICTURE X(13) VALUE '07046014LNNW '.  *AA041
      05 AT-R000101-REMIS  PICTURE X(13) VALUE '07061008 NNWN'.  *AA041
      05 AT-L010101-CODMVT PICTURE X(13) VALUE '09003001LNNW '.  *AA041
      05 AT-L010101-FOURNI PICTURE X(13) VALUE '09007006LNNW '.  *AA041
      05 AT-L010101-QTMAC  PICTURE X(13) VALUE '09016008LNNW '.  *AA041
      05 AT-L010101-QTMAL  PICTURE X(13) VALUE '09026007LNNW '.  *AA041
      05 AT-L010101-QTMAR  PICTURE X(13) VALUE '09035006LNNW '.  *AA041
      05 AT-L010101-INFOR  PICTURE X(13) VALUE '09042035LNNW '.  *AA041
      05 AT-R010101-CODMVT PICTURE X(13) VALUE '10003001 NNW '.  *AA041
      05 AT-R010101-FOURNI PICTURE X(13) VALUE '10007003 NNW '.  *AA041
      05 AT-R010101-QTMAC  PICTURE X(13) VALUE '10016002 NNWN'.  *AA041
      05 AT-R010101-QTMAL  PICTURE X(13) VALUE '10026002FBNWN'.  *AA041
      05 AT-R010101-QTMAR  PICTURE X(13) VALUE '10035002FNNWN'.  *AA041
      05 AT-R010101-INFOR  PICTURE X(13) VALUE '10042035 NNW '.  *AA041
      05 AT-R020101-CODMVT PICTURE X(13) VALUE '11003001 NNW '.  *AA041
      05 AT-R020101-FOURNI PICTURE X(13) VALUE '11007003 NNW '.  *AA041
      05 AT-R020101-QTMAC  PICTURE X(13) VALUE '11016002 NNWN'.  *AA041
      05 AT-R020101-QTMAL  PICTURE X(13) VALUE '11026002FBNWN'.  *AA041
      05 AT-R020101-QTMAR  PICTURE X(13) VALUE '11035002FNNWN'.  *AA041
      05 AT-R020101-INFOR  PICTURE X(13) VALUE '11042035 NNW '.  *AA041
      05 AT-R030101-CODMVT PICTURE X(13) VALUE '12003001 NNW '.  *AA041
      05 AT-R030101-FOURNI PICTURE X(13) VALUE '12007003 NNW '.  *AA041
      05 AT-R030101-QTMAC  PICTURE X(13) VALUE '12016002 NNWN'.  *AA041
      05 AT-R030101-QTMAL  PICTURE X(13) VALUE '12026002FBNWN'.  *AA041
      05 AT-R030101-QTMAR  PICTURE X(13) VALUE '12035002FNNWN'.  *AA041
      05 AT-R030101-INFOR  PICTURE X(13) VALUE '12042035 NNW '.  *AA041
      05 AT-R040101-CODMVT PICTURE X(13) VALUE '13003001 NNW '.  *AA041
      05 AT-R040101-FOURNI PICTURE X(13) VALUE '13007003 NNW '.  *AA041
      05 AT-R040101-QTMAC  PICTURE X(13) VALUE '13016002 NNWN'.  *AA041
      05 AT-R040101-QTMAL  PICTURE X(13) VALUE '13026002FBNWN'.  *AA041
      05 AT-R040101-QTMAR  PICTURE X(13) VALUE '13035002FNNWN'.  *AA041
      05 AT-R040101-INFOR  PICTURE X(13) VALUE '13042035 NNW '.  *AA041
      05 AT-R050101-CODMVT PICTURE X(13) VALUE '14003001 NNW '.  *AA041
      05 AT-R050101-FOURNI PICTURE X(13) VALUE '14007003 NNW '.  *AA041
      05 AT-R050101-QTMAC  PICTURE X(13) VALUE '14016002 NNWN'.  *AA041
      05 AT-R050101-QTMAL  PICTURE X(13) VALUE '14026002FBNWN'.  *AA041
      05 AT-R050101-QTMAR  PICTURE X(13) VALUE '14035002FNNWN'.  *AA041
      05 AT-R050101-INFOR  PICTURE X(13) VALUE '14042035 NNW '.  *AA041
      05 AT-R060101-CODMVT PICTURE X(13) VALUE '15003001 NNW '.  *AA041
      05 AT-R060101-FOURNI PICTURE X(13) VALUE '15007003 NNW '.  *AA041
      05 AT-R060101-QTMAC  PICTURE X(13) VALUE '15016002 NNWN'.  *AA041
      05 AT-R060101-QTMAL  PICTURE X(13) VALUE '15026002FBNWN'.  *AA041
      05 AT-R060101-QTMAR  PICTURE X(13) VALUE '15035002FNNWN'.  *AA041
      05 AT-R060101-INFOR  PICTURE X(13) VALUE '15042035 NNW '.  *AA041
      05 AT-R070101-CODMVT PICTURE X(13) VALUE '16003001 NNW '.  *AA041
      05 AT-R070101-FOURNI PICTURE X(13) VALUE '16007003 NNW '.  *AA041
      05 AT-R070101-QTMAC  PICTURE X(13) VALUE '16016002 NNWN'.  *AA041
      05 AT-R070101-QTMAL  PICTURE X(13) VALUE '16026002FBNWN'.  *AA041
      05 AT-R070101-QTMAR  PICTURE X(13) VALUE '16035002FNNWN'.  *AA041
      05 AT-R070101-INFOR  PICTURE X(13) VALUE '16042035 NNW '.  *AA041
      05 AT-R080101-CODMVT PICTURE X(13) VALUE '17003001 NNW '.  *AA041
      05 AT-R080101-FOURNI PICTURE X(13) VALUE '17007003 NNW '.  *AA041
      05 AT-R080101-QTMAC  PICTURE X(13) VALUE '17016002 NNWN'.  *AA041
      05 AT-R080101-QTMAL  PICTURE X(13) VALUE '17026002FBNWN'.  *AA041
      05 AT-R080101-QTMAR  PICTURE X(13) VALUE '17035002FNNWN'.  *AA041
      05 AT-R080101-INFOR  PICTURE X(13) VALUE '17042035 NNW '.  *AA041
      05 AT-R090101-CODMVT PICTURE X(13) VALUE '18003001 NNW '.  *AA041
      05 AT-R090101-FOURNI PICTURE X(13) VALUE '18007003 NNW '.  *AA041
      05 AT-R090101-QTMAC  PICTURE X(13) VALUE '18016002 NNWN'.  *AA041
      05 AT-R090101-QTMAL  PICTURE X(13) VALUE '18026002FBNWN'.  *AA041
      05 AT-R090101-QTMAR  PICTURE X(13) VALUE '18035002FNNWN'.  *AA041
      05 AT-R090101-INFOR  PICTURE X(13) VALUE '18042035 NNW '.  *AA041
      05 AT-S20002         PICTURE X(13) VALUE '20002019LNNW '.  *AA041
      05 AT-R000101-EDIT   PICTURE X(13) VALUE '20022001 NNW '.  *AA041
      05 AT-S20035         PICTURE X(13) VALUE '20035011LNNW '.  *AA041
      05 AT-S20047         PICTURE X(13) VALUE '20047021LNNW '.  *AA041
      05 AT-S21002         PICTURE X(13) VALUE '21002028LNNW '.  *AA041
      05 AT-S21031         PICTURE X(13) VALUE '21031030LNNW '.  *AA041
      05 AT-S21062         PICTURE X(13) VALUE '21062012LNNW '.  *AA041
      05 AT-S22002         PICTURE X(13) VALUE '22002010LNNW '.  *AA041
      05 AT-S22013         PICTURE X(13) VALUE '22013019LNNW '.  *AA041
      05 AT-S22033         PICTURE X(13) VALUE '22033020LNNW '.  *AA041
      05 AT-R000101-MESSA  PICTURE X(13) VALUE '23002075PBNW '.  *AA041
      05 AT-R000101-ERMSG  PICTURE X(13) VALUE '24002072PNNW '.  *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
     10 AT-0030-ATTRF   PICTURE X.                               *AA041
01        INPUT-0030.                                            *AA042
     05    R01004  PICTURE X(8).                                 *AA042
     05    R01015  PICTURE X(5).                                 *AA042
     05    R01060  PICTURE X(10).                                *AA042
     05    R01071  PICTURE X(8).                                 *AA042
     05    R03018  PICTURE X(5).                                 *AA042
     05    R03034  PICTURE X(8).                                 *AA042
     05    R03063  PICTURE X(3).                                 *AA042
     05    R04013  PICTURE X(50).                                *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
     05    R23002  PICTURE X(75).                                *AA042
     05    R24002  PICTURE X(72).                                *AA042
01           INPUT-SCREEN-FIELDS  REDEFINES  INPUT-0030.         *AA045
     02      I-0030.                                             *AA045
     05      I-0030-PROGE  PICTURE X(8).                         *AA045
     05      I-0030-SESSI  PICTURE X(5).                         *AA045
     05      I-0030-DATEM  PICTURE X(10).                        *AA045
     05      I-0030-HEURE  PICTURE X(8).                         *AA045
     05      I-0030-NUCOM  PICTURE 9(5).                         *AA045
     05      I-0030-MATE   PICTURE X(8).                         *AA045
     05      I-0030-RELEA  PICTURE X(3).                         *AA045
     05      I-0030-RAISOC PICTURE X(50).                        *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
     05      E-0030-REMIS.                                       *AA045
     10      I-0030-REMIS  PICTURE S9(4)V99.                     *AA045
     10      FILLER        PICTURE X(2).                         *AA045
     05      J-0030-LINE   OCCURS 9.                             *AA045
     10      FILLER        PICTURE X(45).                        *AA045
     05      I-0030-EDIT   PICTURE X.                            *AA045
     05      I-0030-MESSA  PICTURE X(75).                        *AA045
     05      I-0030-ERMS.                                        *AA045
     10      FILLER OCCURS 1.                                    *AA045
     15      I-0030-ERMSG  PICTURE X(72).                        *AA045
01       OUTPUT-0030.                                            *AA049
     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
     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
     01           VARIABLES-GROUPE.                                *AA050
          02      T-0030-LINE.                                     *AA050
          05      T-0030-CODMVT PICTURE X(1).                      *AA050
          05      T-0030-FOURNI PICTURE X(3).                      *AA050
          05      T-0030-QTMAC  PICTURE X(2).                      *AA050
          05      T-0030-INFOR  PICTURE X(35).                     *AA050
```

6.4. SUB-PROGRAM COMMUNICATION AREA

SUB-PROGRAM COMMUNICATION AREA

The communication area 'CMES-COMMUNICATION' contains the following fields:

LOMES message length (variable size of the YR00 field)

NBFLD number of fields (to find the size of the YO00 field)

YR00 contains the logical message (variable size adapted to the logical message INPUT- and OUTPUT-SCREEN-FIELDS)

YO00 contains the physical message description (size= number of fields (NBFLD) * 13))

YCRE Type of operation to be executed

- 'E' Send of message

- 'X' Send of message in case of error

- 'R' Reception

- 'F' Conversation end

YPCUR Field position on which the cursor can be positionned.

MDTOFF Flag for MDTOFF option (1 if yes, 0 if not)

LNCOL Screen dimension (taken from the Definition screen)

YMAT Screen type

- = '0' 3270-type screen message (message formatted by PRCGI)

- not= '0' other type of terminal (the user has to format the message in PRUSER).

YCOUL Color screen ('M' = monochrome)

FMES Message sending (=1 if it is the first time, =0 if not)

In the indexes, the following area is found:

5-CMES-LENGTH, which represents the length of the communication area passed to the message formatting sub-program. (initialized by the F0110 function.)

```
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-LOMES    PICTURE S9(4) VALUE +1129.              *AA060
     05    CMES-NBFLD    PICTURE S9(4) VALUE +097.               *AA060
     05    CMES-YR00     PICTURE X(1129).                        *AA060
     05    CMES-YO00     PICTURE X(1261).                        *AA060
     05    CMES-YCRE     PICTURE X.                              *AA060
     05    CMES-YPCUR    PICTURE 9(5).                           *AA060
     05    CMES-MDTOFF   PICTURE X   VALUE '1'.                  *AA060
     05    CMES-LNCOL    PICTURE 9(5)  VALUE 24080.              *AA060
     05    CMES-YMAT     PICTURE X.                              *AA060
     05    CMES-YCOUL    PICTURE X.                              *AA060
     05    CMES-FMES     PICTURE X.                              *AA060
01              EM00.                                            *AA100
    05          EM00-EMKEY.                                      *AA100
      10        EM00-LIBRA     PICTURE X(3).                     *AA100
      10        EM00-ENTYP     PICTURE X.                        *AA100
      10        EM00-XEMKY.                                      *AA100
        15      EM00-PROGR     PICTURE X(6).                     *AA100
        15      EM00-ERCOD.                                      *AA100
          20    EM00-ERCOD9    PICTURE 9(3).                     *AA100
        15      EM00-ERTYP     PICTURE X.                        *AA100
      10        EM00-LINUM     PICTURE 9(3).                     *AA100
    05          EM00-ERLVL     PICTURE X.                        *AA100
    05          EM00-ERMSG     PICTURE X(66).                    *AA100
    05          FILLER         PICTURE X(6).                     *AA100
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-EM00-LTH  PICTURE S9(4) VALUE +0090.                *AA200
     05    5-CA00-LTH  PICTURE S9(4) VALUE +0147.                *AA200
     05    5-CD00-LTH  PICTURE S9(4) VALUE +0166.                *AA200
     05    5-CD05-LTH  PICTURE S9(4) VALUE +0157.                *AA200
     05    5-CD05-LTHV PICTURE S9(4) VALUE +0166.                *AA200
     05    5-CD10-LTH  PICTURE S9(4) VALUE +0139.                *AA200
     05    5-CD10-LTHV PICTURE S9(4) VALUE +0148.                *AA200
     05    5-CD20-LTH  PICTURE S9(4) VALUE +0001.                *AA200
     05    5-CD20-LTHV PICTURE S9(4) VALUE +0010.                *AA200
     05    5-FO10-LTH  PICTURE S9(4) VALUE +0057.                *AA200
     05    5-FO10-LTHV PICTURE S9(4) VALUE +0057.                *AA200
     05    5-ME00-LTH  PICTURE S9(4) VALUE +0082.                *AA200
     05    LTH         PICTURE S9(4) VALUE ZERO.                 *AA200
     05      5-0030-LENGTH PICTURE S9(4)                         *AA200
                         VALUE      +0892.                       *AA200
     05    5-CMES-LENGTH    PICTURE S9(4).                       *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
01   PFKEYS-TABLE.                                               *AA230
     02    PF-TAB.                                               *AA230
       05  FILLER       PIC X     VALUE QUOTE.                   *AA230
       05  FILLER       PIC X(11) VALUE '  _00%A1>A2'.           *AA230
       05  FILLER       PIC X(36) VALUE                          *AA230
           '101202303404505606707808909:10£11à12'.               *AA230
       05  FILLER       PIC X(36) VALUE                          *AA230
           'A13B14C15D16E17F18G19H20I21°22.23<24'.               *AA230
     02    PFTA  REDEFINES  PF-TAB.                              *AA230
       05  PFTA-POS    OCCURS 28.                                *AA230
        10 PFTA-VAL    PIC X.                                    *AA230
        10 PFTA-IFONCT PIC XX.                                   *AA230
     02    I-FONCT.                                              *AA230
     05    I-PFKEY  PIC XX.                                      *AA230
```

6.5. TABLE-OF-ATTRIBUTES

TABLE-OF-ATTRIBUTES

This part of the program contains the initial values of the attributes for a reinitialization of the attributes in the variable fields.

There is one occurrence per variable field, consisting of:

. Its rank in the physical message (rank of the occurrence of the table AT-scrn-MESSO).

. The initial attributes (Intensity, Presentation, Color).

```
01           TABLE-OF-ATTRIBUTES.                                *AA250
     02      DE-ATT.                                             *AA250
     03      DE-ATT1           OCCURS 5.                         *AA250
     05      DE-AT   PICTURE X                                   *AA250
                    OCCURS 045.                                  *AA250
     02      DE-A    REDEFINES DE-ATT.                           *AA250
     03      DE-ATT2           OCCURS 5.                         *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 5.                         *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
```

6.6. SCREEN PROGRAM COMMAREA

SCREEN PROGRAM COMMUNICATION AREA

After the user communication area (Data Structure indicated on the Dialogue Complement screen), there are two fields which determine the characteristics of the terminal in use:

. K-Sscrn-YMAT ('0' for the 3270 terminal)

. K-Sscrn-YCOUL ('M' for the monochrome screen)

These two fields are initialized in the first screen.

```
LINKAGE SECTION.                                                 DO0030
01   DFHCOMMAREA.                                                DO0030
     02     K-S0030-PROGR PICTURE X(6).                          *00000
     02     K-S0030-DOC   PICTURE X.                             *00000
     02     K-S0030-PROGE PICTURE X(8).                          *00000
     02     K-S0030-CPOSL PICTURE S9(4) COMPUTATIONAL.           *00000
     02     K-S0030-PROLE PICTURE X(8).                          *00000
     02     K-S0030-LIBRA PICTURE XXX.                           *00000
     02     K-S0030-PROHE PICTURE X(8).                          *00000
     02     K-S0030-ERCOD.                                       *00000
       05   K-S0030-ERCOD9 PICTURE 999.                          *00000
     02     K-S0030-ERTYP PICTURE X.                             *00000
     02     K-S0030-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     K-S0030-YMAT  PICTURE X.                             *00002
     02     K-S0030-YCOUL PICTURE X.                             *00002
     02      FILLER PICTURE X.                                   *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      ZONES-VARIABLES.                                    *00002
     03      T-0030-BEGIN.                                       *00002
     05      T-0030-MATE   PICTURE X(8).                         *00002
     05      T-0030-RELEA  PICTURE X(3).                         *00002
     05      T-0030-RUE    PICTURE X(40).                        *00002
     05      T-0030-COPOS  PICTURE X(5).                         *00002
     05      T-0030-REFCLI PICTURE X(30).                        *00002
     05      T-0030-DATE   PICTURE X(6).                         *00002
     05      T-0030-CORRES PICTURE X(25).                        *00002
     05      T-0030-REMIS  PICTURE X(8).                         *00002
     03      U-0030-LINE   OCCURS 9.                             *00002
     05      FILLER        PICTURE X(0041).                      *00002
     03      T-0030-END.                                         *00002
     05      T-0030-EDIT   PICTURE X(1).                         *00002
     02      FILLER        PICTURE X(0170).                      *00002
```

6.7. INITIALIZATIONS (F01)

F01: INITIALIZATIONS

Sub-function F0105 initializes the attributes of variable fields in the physical message description (table AT-scrn-MESSO) from the initial values (table AT-SV).

MULTI-TERMINAL TYPE GENERATED SCREEN PROGRAM 6
INITIALIZATIONS (F01) 7

```
 PROCEDURE DIVISION.                                             *99999
*           *************************************                DO0030
*           *                                   *                DO0030
*           *  INITIALIZATIONS                  *                DO0030
*           *                                   *                DO0030
*           *************************************                DO0030
 F01.          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
        MOVE EIBTIME TO TIMCIC.                                  DO0030
        MOVE TIMCIG  TO TIMCOG.                                  DO0030
        MOVE EIBDATE TO DATCIC.                                  DO0030
        PERFORM F8155 THRU F8155-FN.                             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
        MOVE +2413 TO 5-CMES-LENGTH.                             DO0030
        IF EIBCALEN = ZERO OR    PROGR NOT = K-S0030-PROGR       DO0030
                       MOVE    ZERO  TO  ICF.                    DO0030
               IF EIBCALEN = ZERO                                DO0030
        MOVE ZERO TO  K-S0030-DOC.                               DO0030
        PERFORM F81HC THRU F81HC-FN.                             DO0030
        MOVE LOW-VALUE  TO            O-0030.                    DO0030
        IF ICF = ZERO                                            DO0030
        OR   K-S0030-DOC = '2'  OR   K-S0030-DOC = '3'           DO0030
        MOVE '1'  TO CMES-FMES.                                  DO0030
        IF ICF = ZERO PERFORM F8115 THRU F8115-FN.               DO0030
        MOVE EIBTRMID TO TRMID.                                  DO0030
          IF K-S0030-DOC = '2'  OR   K-S0030-DOC = '3'           DO0030
        PERFORM F80-HELP-R  THRU F80-FN  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
```

6.8. RECEPTION (F05)

F05: RECEPTION

Message reception is ensured by sub-function F81RE, which calls PRCGI or PRUSER depending on the terminal's characteristics (K-Sscrn-YMAT)

The input message INPUT-SCREEN-FIELDS is formatted in sub-function F8165 called by a PERFORM.

```
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  RECEPTION                        *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F05.   IF ICF = ZERO GO TO END-OF-RECEPTION.                     DO0030
 F0510.                                                           DO0030
        MOVE SPACE TO I-PFKEY                                     DO0030
        MOVE 1     TO K01.                                        DO0030
 F0510-A.   IF  K01 NOT > 28                                      DO0030
        AND PFTA-VAL (K01) NOT = EIBAID                           DO0030
        ADD 1 TO K01  GO TO F0510-A.                              DO0030
            IF  K01 NOT > 28                                      DO0030
        MOVE PFTA-IFONCT (K01) TO I-PFKEY.                        DO0030
            IF  I-PFKEY = '00'  GO TO F0510-C.                    DO0030
        PERFORM F81RE THRU F81RE-FN.                              DO0030
        MOVE CMES-YR00 TO 0030-MESSO.                             DO0030
        PERFORM F8165 THRU F8165-FN.                              DO0030
 F0510-C.                                                         DO0030
        PERFORM F8140 THRU F8140-FN.                              DO0030
        PERFORM F8135 THRU F8135-FN                               DO0030
        INSPECT I-0030 REPLACING ALL LOW-VALUE BY SPACE.          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
        MOVE 5-EM00-DDNAME TO K-S0030-PROLE.                      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
        PERFORM F80-HELP-R  THRU F80-FN                           DO0030
        PERFORM F8130       THRU F8130-FN                         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
```

6.9. END OF RECEPTION (F40)

F40: END OF RECEPTION

Sub-function F4030:

In case of conversation end, sub-program PRCGI only returns the transaction code.

```
 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    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 7-YCREF       TO CMES-YCRE                           DO0030
        MOVE K-S0030-YCOUL TO CMES-YCOUL                          DO0030
        MOVE K-S0030-YMAT  TO CMES-YMAT.                          DO0030
        IF   K-S0030-YMAT = ZERO                                  DO0030
             PERFORM F81PR THRU F81PR-FN                          DO0030
        ELSE PERFORM F81PU THRU F81PU-FN.                         DO0030
        PERFORM F80-HELP-D  THRU F80-FN.                          DO0030
        EXEC CICS RETURN END-EXEC. GOBACK.                        DO0030
 F4030-FN.    EXIT.                                               DO0030
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  TRANSFER TO ANOTHER SCREEN       *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F4040.     IF OPER NOT = 'O' GO TO F4040-FN.                     DO0030
              IF          5-DOCD00    = 1                         DO0030
        EXEC CICS ENDBR     DATASET  (5-CD20-DDNAME)              DO0030
             END-EXEC.                                            DO0030
        PERFORM F81XC THRU F81XC-FN.                              DO0030
 F4040-FN.    EXIT.                                               DO0030
 F40-FN.      EXIT.                                               DO0030
 END-OF-RECEPTION.      EXIT.                                     DO0030
 F70.          EXIT.                                              DO0030
```

6.10. ERROR PROCESSING (F70)

F70: ERROR PROCESSING

The ERROR PROCESSING (F70) function is always generated.

Sub-function F7010 contains:

. in F7010-A, testing of DE-ERR, positioning of the error attributes, access to the error message file, and coding of the error message on the screen.

. in F7010-B, testing of T-XEMKY, access to the error message file, and coding of the error message on the screen.

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

This sub-function positions the attributes of the screen fields in display in the Table used by the Message Formatting sub-program.

An 'invisible' field ('DARK' attribute) retains this attribute, even if it is erroneous (e.g. passwords).

```
*           *************************************                 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
        MOVE SPACE TO DE-ATT1 (4) ADD 1 TO TALLI                  DO0030
        MOVE SV-AT (TALLI) TO K01                                 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
           MOVE DE-AT (5, K01) TO AT-0030-ATTRN (K02).            DO0030
        GO TO F7020-A.                                            DO0030
 F7020-FN.    EXIT.                                               DO0030
 F70-FN.      EXIT.                                               DO0030
 END-OF-DISPLAY.    EXIT.                                         DO0030
```

6.11. DISPLAY AND END OF PROGRAM (F8Z)

F8Z: DISPLAY AND END OF PROGRAM

Sub-function F8Z05: generated if a call for help documentation is entered on the Screen Definition screen. It ensures the memorization of screen fields in the 'HE' file.

Sub-function F8Z10:

When there is a normal send, the logical message is formatted (sub-functions F8125 and F8105 called by a PERFORM).

The temporary field for the send of the message (scrn-MESSO) is always formatted.

The send is ensured through sub-function F81SM called by a PERFORM. Sub-function F81SM calls PRCGI or PRUSER depending on the terminal's characteristics (K-Sscrn-YMAT field).

Sub-function F8Z20: contains the end-of-program operations.

```
 F8Z.          EXIT.                                              DO0030
 F8Z05.   IF SCR-ER = '1'                                         DO0030
        NEXT SENTENCE ELSE GO TO F8Z05-FN.                        DO0030
          IF K-S0030-DOC NOT = '2'                                DO0030
         AND K-S0030-DOC NOT = '3'     GO TO F8Z05-A.             DO0030
        MOVE '1' TO K-S0030-DOC                                   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
          IF K-S0030-DOC = ZERO                                   DO0030
        MOVE '1' TO K-S0030-DOC                                   DO0030
        PERFORM F80-HELP-D  THRU F80-FN                           DO0030
        PERFORM F80-HELP-W  THRU F80-FN  GO TO F8Z05-FN.          DO0030
          IF K-S0030-DOC = '1'                                    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
        MOVE 7-YCREX  TO CMES-YCRE.                               DO0030
        IF SCR-ER NOT > '1'                                       DO0030
        MOVE PROGR     TO          K-S0030-PROGR                  DO0030
        PERFORM F8125 THRU F8125-FN                               DO0030
        PERFORM F8105 THRU F8105-FN                               DO0030
        MOVE 7-YCREE  TO CMES-YCRE.                               DO0030
        PERFORM F8145 THRU F8145-FN.                              DO0030
        PERFORM F81SM THRU F81SM-FN.                              DO0030
 F8Z10-FN.    EXIT.                                               DO0030
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  END OF PROGRAM                   *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F8Z20.                                                           DO0030
        MOVE '0'  TO CMES-FMES.                                   DO0030
        EXEC CICS RETURN     TRANSID (5-0030-TRAN)                DO0030
      LENGTH (EIBCALEN)    COMMAREA (DFHCOMMAREA)  END-EXEC.      DO0030
 F8Z20-FN.    EXIT.                                               DO0030
 F8Z-FN.      EXIT.                                               DO0030
```

6.12. PERFORMED VALIDATION FUNCTIONS (F81)

F81: PERFORMED VALIDATION FUNCTIONS

1) Call of formatting sub-programs.

Sub-function F81PR ensures the branching to (LINK) sub- program PRCGI which formats the message for 3270-type terminals. This sub-program is supplied by the product.

Sub-function F81PU ensures the branching to (LINK) sub- program PRUSER which formats the message for terminal types other than 3270. This sub-program is the user's responsibility.

These sub-functions are called by a PERFORM in display, reception and end of transaction (see preceding functions) and use the communication area CMES-COMMUNICATION (see the description of WORKING-STORAGE).

The switch to one or the other is conditionned by the variable K-Seeee-YMAT ('0' if terminal 3270)

2) Message transfers

F8145: Transfer field-by-field of the logical message (after reformatting from the OUTPUT-SCREEN-FIELDS by sub-function F8125 and possibly F8105) into the message send field.

F8165: Transfer field-by-field of the physical message received in the logical message INPUT-SCREEN-FIELDS.

```
 F81.          EXIT.                                              DO0030
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  ABNORMAL END PROCEDURE           *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F81ER.                                                           DO0030
        EXEC CICS ABEND END-EXEC.                                 DO0030
 F81ER-FN.    EXIT.                                               DO0030
 F81HC.                                                           DO0030
        EXEC CICS HANDLE CONDITION ERROR (F81ER) LENGERR (F80-KO) DO0030
        NOTFND (F80-KO) ENDFILE (F80-KO) DUPREC (F80-KO)          DO0030
                             END-EXEC.                            DO0030
 F81HC-FN.    EXIT.                                               DO0030
 F81PR.                                                           DO0030
        EXEC CICS LINK  PROGRAM (PRCGI)                           DO0030
        COMMAREA (CMES-COMMUNICATION)                             DO0030
        LENGTH   (5-CMES-LENGTH) END-EXEC.                        DO0030
 F81PR-FN.    EXIT.                                               DO0030
 F81PU.                                                           DO0030
        EXEC CICS LINK  PROGRAM (PRUSER)                          DO0030
        COMMAREA (CMES-COMMUNICATION)                             DO0030
        LENGTH   (5-CMES-LENGTH) END-EXEC.                        DO0030
 F81PU-FN.    EXIT.                                               DO0030
 F81RE.                                                           DO0030
        MOVE  7-YCRER      TO CMES-YCRE.                          DO0030
        MOVE  LOW-VALUE    TO CMES-YR00.                          DO0030
        MOVE AT-0030-MESSA TO CMES-YO00.                          DO0030
        IF   K-S0030-YMAT = ZERO                                  DO0030
             PERFORM F81PR THRU F81PR-FN                          DO0030
        ELSE PERFORM F81PU THRU F81PU-FN.                         DO0030
 F81RE-FN.    EXIT.                                               DO0030
 F81SM.                                                           DO0030
        MOVE    0030-MESSO TO CMES-YR00.                          DO0030
        MOVE AT-0030-MESSA TO CMES-YO00.                          DO0030
        MOVE K-S0030-YCOUL TO CMES-YCOUL.                         DO0030
        MOVE K-S0030-YMAT  TO CMES-YMAT.                          DO0030
        IF   K-S0030-YMAT = ZERO                                  DO0030
             PERFORM F81PR THRU F81PR-FN                          DO0030
        ELSE PERFORM F81PU THRU F81PU-FN.                         DO0030
 F81SM-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
 F81XC.                                                           DO0030
          EXEC CICS XCTL   PROGRAM   (5-0030-PROGE)               DO0030
                           COMMAREA (DFHCOMMAREA)                 DO0030
                           LENGTH   (EIBCALEN)     END-EXEC.      DO0030
 F81XC-FN.    EXIT.                                               DO0030
 F8105.                                                           DO0030
          IF CMES-FMES = '0' GO TO F8105-FN.                      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
*           *  DISPLAY TRANSFER                 *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F8125.                                                           DO0030
        MOVE  O-0030-MATE          TO T-0030-MATE                 DO0030
        MOVE  O-0030-RELEA         TO T-0030-RELEA                DO0030
        MOVE  O-0030-RUE           TO T-0030-RUE                  DO0030
        MOVE  O-0030-COPOS         TO T-0030-COPOS                DO0030
        MOVE  O-0030-REFCLI        TO T-0030-REFCLI               DO0030
        MOVE  O-0030-DATE          TO T-0030-DATE                 DO0030
        MOVE  O-0030-CORRES        TO T-0030-CORRES               DO0030
        MOVE  F-0030-REMIS         TO T-0030-REMIS                DO0030
        MOVE  ZERO  TO  ICATR.                                    DO0030
 F8125-GRP.   ADD 1 TO  ICATR                                     DO0030
        MOVE  P-0030-LINE  (ICATR) TO O-0030-LINE                 DO0030
        MOVE  U-0030-LINE  (ICATR) TO T-0030-LINE                 DO0030
        MOVE  O-0030-CODMVT        TO T-0030-CODMVT               DO0030
        MOVE  O-0030-FOURNI        TO T-0030-FOURNI               DO0030
        MOVE  F-0030-QTMAC         TO T-0030-QTMAC                DO0030
        MOVE  O-0030-INFOR         TO T-0030-INFOR                DO0030
        MOVE  T-0030-LINE          TO U-0030-LINE  (ICATR).       DO0030
     IF ICATR  < IRR GO TO F8125-GRP.                             DO0030
        MOVE  O-0030-EDIT          TO T-0030-EDIT.                DO0030
 F8125-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
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  RECEPTION TRANSFER               *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F8135.                                                           DO0030
          IF  I-0030-MATE   = LOW-VALUE                           DO0030
        MOVE  T-0030-MATE          TO I-0030-MATE   ELSE          DO0030
        MOVE  I-0030-MATE          TO T-0030-MATE.                DO0030
          IF  I-0030-RELEA  = LOW-VALUE                           DO0030
        MOVE  T-0030-RELEA         TO I-0030-RELEA  ELSE          DO0030
        MOVE  I-0030-RELEA         TO T-0030-RELEA.               DO0030
          IF  I-0030-RUE    = LOW-VALUE                           DO0030
        MOVE  T-0030-RUE           TO I-0030-RUE    ELSE          DO0030
        MOVE  I-0030-RUE           TO T-0030-RUE.                 DO0030
          IF  I-0030-COPOS  = LOW-VALUE                           DO0030
        MOVE  T-0030-COPOS         TO I-0030-COPOS  ELSE          DO0030
        MOVE  I-0030-COPOS         TO T-0030-COPOS.               DO0030
          IF  I-0030-REFCLI = LOW-VALUE                           DO0030
        MOVE  T-0030-REFCLI        TO I-0030-REFCLI ELSE          DO0030
        MOVE  I-0030-REFCLI        TO T-0030-REFCLI.              DO0030
          IF  I-0030-DATE   = LOW-VALUE                           DO0030
        MOVE  T-0030-DATE          TO I-0030-DATE   ELSE          DO0030
        MOVE  I-0030-DATE          TO T-0030-DATE.                DO0030
          IF  I-0030-CORRES = LOW-VALUE                           DO0030
        MOVE  T-0030-CORRES        TO I-0030-CORRES ELSE          DO0030
        MOVE  I-0030-CORRES        TO T-0030-CORRES.              DO0030
          IF  E-0030-REMIS  = LOW-VALUE                           DO0030
        MOVE  T-0030-REMIS         TO E-0030-REMIS  ELSE          DO0030
        MOVE  E-0030-REMIS         TO T-0030-REMIS.               DO0030
        MOVE  ZERO  TO  ICATR.                                    DO0030
 F8135-GRP.   ADD 1 TO  ICATR                                     DO0030
        MOVE  J-0030-LINE  (ICATR) TO I-0030-LINE                 DO0030
        MOVE  U-0030-LINE  (ICATR) TO T-0030-LINE                 DO0030
          IF  I-0030-CODMVT = LOW-VALUE                           DO0030
        MOVE  T-0030-CODMVT        TO I-0030-CODMVT ELSE          DO0030
        MOVE  I-0030-CODMVT        TO T-0030-CODMVT.              DO0030
          IF  I-0030-FOURNI = LOW-VALUE                           DO0030
        MOVE  T-0030-FOURNI        TO I-0030-FOURNI ELSE          DO0030
        MOVE  I-0030-FOURNI        TO T-0030-FOURNI.              DO0030
          IF  E-0030-QTMAC  = LOW-VALUE                           DO0030
        MOVE  T-0030-QTMAC         TO E-0030-QTMAC  ELSE          DO0030
        MOVE  E-0030-QTMAC         TO T-0030-QTMAC.               DO0030
          IF  I-0030-INFOR  = LOW-VALUE                           DO0030
        MOVE  T-0030-INFOR         TO I-0030-INFOR  ELSE          DO0030
        MOVE  I-0030-INFOR         TO T-0030-INFOR.               DO0030
        MOVE  I-0030-LINE          TO J-0030-LINE  (ICATR).       DO0030
        MOVE  T-0030-LINE          TO U-0030-LINE  (ICATR).       DO0030
     IF ICATR  < IRR GO TO F8135-GRP.                             DO0030
          IF  I-0030-EDIT   = LOW-VALUE                           DO0030
        MOVE  T-0030-EDIT          TO I-0030-EDIT   ELSE          DO0030
        MOVE  I-0030-EDIT          TO T-0030-EDIT.                DO0030
 F8135-FN.    EXIT.                                               DO0030
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  CURSOR POSITION                  *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F8140.                                                           DO0030
        MOVE  EIBCPOSN  TO  CPOSN                                 DO0030
        DIVIDE  CPOSN  BY  080                                    DO0030
        GIVING  CPOSL  REMAINDER  CPOSC                           DO0030
        ADD  1  TO  CPOSL  CPOSC.                                 DO0030
 F8140-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
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           * CICS DATE TRANSFORMATION          *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F8155.                                                           DO0030
        MOVE ZERO TO K01.                                         DO0030
        DIVIDE  DATQUY  BY  4  GIVING LEAP-REM.                   DO0030
        COMPUTE LEAP-REM = DATQUY - 4 * LEAP-REM.                 DO0030
        IF LEAP-REM = ZERO GO TO F8155-B.                         DO0030
 F8155-A.                                                         DO0030
        ADD  1  TO  K01.                                          DO0030
        IF DATQUD > TABQT1 (K01) GO TO F8155-A.                   DO0030
        MOVE  K01  TO DAT629.                                     DO0030
        IF K01 = 1 MOVE DATQUD TO DAT619                          DO0030
        GO  TO  F8155-C.                                          DO0030
        SUBTRACT  1  FROM  K01.                                   DO0030
        SUBTRACT  TABQT1 (K01) FROM DATQUD GIVING DAT619.         DO0030
        GO  TO  F8155-C.                                          DO0030
 F8155-B.                                                         DO0030
        ADD  1  TO  K01.                                          DO0030
        IF DATQUD > TABBI1 (K01) GO TO F8155-B.                   DO0030
        MOVE  K01  TO DAT629.                                     DO0030
        IF K01 = 1 MOVE DATQUD TO DAT619                          DO0030
        GO  TO  F8155-C.                                          DO0030
        SUBTRACT  1  FROM  K01.                                   DO0030
        SUBTRACT  TABBI1 (K01) FROM DATQUD GIVING DAT619.         DO0030
 F8155-C.                                                         DO0030
        MOVE  DATQUY  TO  DATOA.                                  DO0030
        MOVE DAT62  TO DATOM  MOVE DAT619 TO DATOJ.               DO0030
 F8155-FN.    EXIT.                                               DO0030
 F8165.                                                           DO0030
```

```
           MOVE  S01004 TO   R01004.                                    DO0030
           MOVE  S01015 TO   R01015.                                    DO0030
           MOVE  S01060 TO   R01060.                                    DO0030
           MOVE  S01071 TO   R01071.                                    DO0030
           MOVE  S03018 TO   R03018.                                    DO0030
           MOVE  S03034 TO   R03034.                                    DO0030
           MOVE  S03063 TO   R03063.                                    DO0030
           MOVE  S04013 TO   R04013.                                    DO0030
           MOVE  S05009 TO   R05009.                                    DO0030
           MOVE  S05052 TO   R05052.                                    DO0030
           MOVE  S05074 TO   R05074.                                    DO0030
           MOVE  S06016 TO   R06016.                                    DO0030
           MOVE  S06061 TO   R06061.                                    DO0030
           MOVE  S07018 TO   R07018.                                    DO0030
           MOVE  S07061 TO   R07061.                                    DO0030
           MOVE  S10003 TO   R10003.                                    DO0030
           MOVE  S10007 TO   R10007.                                    DO0030
           MOVE  S10016 TO   R10016.                                    DO0030
           MOVE  S10026 TO   R10026.                                    DO0030
           MOVE  S10035 TO   R10035.                                    DO0030
           MOVE  S10042 TO   R10042.                                    DO0030
           MOVE  S11003 TO   R11003.                                    DO0030
           MOVE  S11007 TO   R11007.                                    DO0030
           MOVE  S11016 TO   R11016.                                    DO0030
           MOVE  S11026 TO   R11026.                                    DO0030
           MOVE  S11035 TO   R11035.                                    DO0030
           MOVE  S11042 TO   R11042.                                    DO0030
           MOVE  S12003 TO   R12003.                                    DO0030
           MOVE  S12007 TO   R12007.                                    DO0030
           MOVE  S12016 TO   R12016.                                    DO0030
           MOVE  S12026 TO   R12026.                                    DO0030
           MOVE  S12035 TO   R12035.                                    DO0030
           MOVE  S12042 TO   R12042.                                    DO0030
           MOVE  S13003 TO   R13003.                                    DO0030
           MOVE  S13007 TO   R13007.                                    DO0030
           MOVE  S13016 TO   R13016.                                    DO0030
           MOVE  S13026 TO   R13026.                                    DO0030
           MOVE  S13035 TO   R13035.                                    DO0030
           MOVE  S13042 TO   R13042.                                    DO0030
           MOVE  S14003 TO   R14003.                                    DO0030
           MOVE  S14007 TO   R14007.                                    DO0030
           MOVE  S14016 TO   R14016.                                    DO0030
           MOVE  S14026 TO   R14026.                                    DO0030
           MOVE  S14035 TO   R14035.                                    DO0030
           MOVE  S14042 TO   R14042.                                    DO0030
           MOVE  S15003 TO   R15003.                                    DO0030
           MOVE  S15007 TO   R15007.                                    DO0030
           MOVE  S15016 TO   R15016.                                    DO0030
           MOVE  S15026 TO   R15026.                                    DO0030
           MOVE  S15035 TO   R15035.                                    DO0030
           MOVE  S15042 TO   R15042.                                    DO0030
           MOVE  S16003 TO   R16003.                                    DO0030
           MOVE  S16007 TO   R16007.                                    DO0030
           MOVE  S16016 TO   R16016.                                    DO0030
           MOVE  S16026 TO   R16026.                                    DO0030
           MOVE  S16035 TO   R16035.                                    DO0030
           MOVE  S16042 TO   R16042.                                    DO0030
           MOVE  S17003 TO   R17003.                                    DO0030
           MOVE  S17007 TO   R17007.                                    DO0030
           MOVE  S17016 TO   R17016.                                    DO0030
           MOVE  S17026 TO   R17026.                                    DO0030
           MOVE  S17035 TO   R17035.                                    DO0030
           MOVE  S17042 TO   R17042.                                    DO0030
           MOVE  S18003 TO   R18003.                                    DO0030
           MOVE  S18007 TO   R18007.                                    DO0030
           MOVE  S18016 TO   R18016.                                    DO0030
           MOVE  S18026 TO   R18026.                                    DO0030
           MOVE  S18035 TO   R18035.                                    DO0030
           MOVE  S18042 TO   R18042.                                    DO0030
           MOVE  S20022 TO   R20022.                                    DO0030
           MOVE  S23002 TO   R23002.                                    DO0030
           MOVE  S24002 TO   R24002.                                    DO0030
    F8165-FN.    EXIT.                                                  DO0030
    F81-FN.      EXIT.                                                  DO0030
```

7. GENERATED SCREEN PROGRAM USING SQL DB2

7.1. PRESENTATION OF THE EXAMPLE

INTRODUCTION

This chapter presents the COBOL lines automatically generated when a screen accesses a DB2 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.

```
--------------------------------------------------------------------------------
!                  APPLICATION VSAM/CICS-MVS                                   !
! ON-LINE SCREEN CALL OF SEGM. DOSQLS APPEL SQL DB2                            !
! .............................................................................!
! 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 : *DCC!
! . DZ05 R 00 :   X A                    COCARA   S 1 Q2BLOC   DZ05       : *DCC!
! . DZ05 R 02 :                          NUCOD                           : *DCC!
! . DZ05 R 04 :                          FOURNI                          : *DCC!
! . DZ10 R 00 :   X A                    COCARA   S 1 Q2BLOC   DZ10       : *DCC!
! . DZ10 R 02 :                          NUCOM                           : *DCC!
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
! *** END ***                                                                  !
! O: C1 CH:                                                                    !
--------------------------------------------------------------------------------
```

7.2. WORKING-STORAGE SECTION

WORKING-STORAGE SECTION

The WORKING-STORAGE section includes:

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

Segment descriptions are delimited by the comments: 'BEGIN DB2' and 'END DB2'.

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)).

Those keys are generated separately on line AA351 and redefined in a table format.
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).

- The SQL orders which correspond to the CURSOR declaration when a Table is used in display in the repetitive category.

They are located on lines which can be converted in structured code by FFNN0 to FFNN9.

(See the '*DZ050' to '*DZ059' COBOL generated lines at the end of this part.)

. Clause FROM 'external name of the table': it is the external name of the table or the view called in the database block(-DR). By default the external name is found in the Segment definition screen. The block code is indicated in the 'EXTERNAL NAME' area of the call lines of segments (-CS).

. Clause WHERE ... ORDER: the key data elements are indicated on call lines of segments in the order of these lines (-CS).

- Referential integrity processing: WORKING description for the processing of the errors detected by SQL on DB2 tables (used in F35 function after table updating).

```
*BEGIN DB2          DZ05                                          DOSQLS
 01                 DZ05.                                         DOSQLS
      05            DZ05-COCARA PICTURE X.                        DOSQLS
      05            DZ05-NUCOD  PICTURE S9(3)                     DOSQLS
                         COMPUTATIONAL.                           DOSQLS
      05            DZ05-FOURNI PICTURE X(3).                     DOSQLS
      05            DZ05-NUCLIE PICTURE 9(8).                     DOSQLS
      05            DZ05-DATE   PICTURE X(6).                     DOSQLS
      05            DZ05-RELEA  PICTURE X(3).                     DOSQLS
      05           VDZ05-REFCLI.                                  DOSQLS
        49         LDZ05-REFCLI PICTURE S9(4) COMP.               DOSQLS
        49          DZ05-REFCLI PICTURE X(30).                    DOSQLS
      05           VDZ05-RUE.                                     DOSQLS
        49         LDZ05-RUE    PICTURE S9(4) COMP.               DOSQLS
        49          DZ05-RUE    PICTURE X(40).                    DOSQLS
      05            DZ05-COPOS  PICTURE X(5).                     DOSQLS
      05           VDZ05-VILLE.                                   DOSQLS
        49         LDZ05-VILLE  PICTURE S9(4) COMP.               DOSQLS
        49          DZ05-VILLE  PICTURE X(20).                    DOSQLS
      05           VDZ05-CORESP.                                  DOSQLS
        49         LDZ05-CORESP PICTURE S9(4) COMP.               DOSQLS
        49          DZ05-CORESP PICTURE X(256).                   DOSQLS
      05            DZ05-REMISE PICTURE S9(4)V99                  DOSQLS
                         COMPUTATIONAL-3.                         DOSQLS
      05           VDZ05-MATE.                                    DOSQLS
        49         LDZ05-MATE   PICTURE S9(4) COMP.               DOSQLS
        49          DZ05-MATE   PICTURE X(8).                     DOSQLS
      05            DZ05-PRIX1                                    DOSQLS
                         COMPUTATIONAL-2.                         DOSQLS
      05            DZ05-HEURE  PICTURE X(8).                     DOSQLS
      05            DZ05-PRECIS PICTURE X(26).                    DOSQLS
*END   DB2                                                        DOSQLS
*BEGIN DB2          DZ10                                          DOSQLS
 01                 DZ10.                                         DOSQLS
      05            DZ10-COCARA PICTURE X.                        DOSQLS
      05            DZ10-NUCOM  PICTURE 9(5).                     DOSQLS
      05            DZ10-FOURNP PICTURE X(3).                     DOSQLS
      05            DZ10-QTMLI  PICTURE S9(2)                     DOSQLS
                         COMPUTATIONAL.                           DOSQLS
      05            DZ10-QTMCO  PICTURE S9(2)                     DOSQLS
                         COMPUTATIONAL.                           DOSQLS
      05           VDZ10-INFOR.                                   DOSQLS
        49         LDZ10-INFOR  PICTURE S9(4) COMP.               DOSQLS
        49          DZ10-INFOR  PICTURE X(35).                    DOSQLS
*END   DB2                                                        DOSQLS
        EXEC SQL INCLUDE SQLCA         END-EXEC.                  DOSQLS
 01           INPUT-SCREEN-FIELDS.                                *AA050
      02      I-SQLS.                                             *AA050
      05      FILLER PICTURE X(12).                               *AA050
 01           OUTPUT-SCREEN-FIELDS.                               *AA050
      02      O-SQLS.                                             *AA050
      05      FILLER PICTURE X(12).                               *AA050
 01              EM00.                                            *AA100
     05          EM00-EMKEY.                                      *AA100
       10        EM00-LIBRA     PICTURE X(3).                     *AA100
       10        EM00-ENTYP     PICTURE X.                        *AA100
       10        EM00-XEMKY.                                      *AA100
         15      EM00-PROGR     PICTURE X(6).                     *AA100
         15      EM00-ERCOD.                                      *AA100
           20    EM00-ERCOD9    PICTURE 9(3).                     *AA100
         15      EM00-ERTYP     PICTURE X.                        *AA100
       10        EM00-LINUM     PICTURE 9(3).                     *AA100
     05          EM00-ERLVL     PICTURE X.                        *AA100
     05          EM00-ERMSG     PICTURE X(66).                    *AA100
     05          FILLER         PICTURE X(6).                     *AA100
 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    5-EM00-LTH  PICTURE S9(4) VALUE +0090.                *AA200
     05    5-CA00-LTH  PICTURE S9(4) VALUE +0147.                *AA200
     05    5-DZ05-LTH  PICTURE S9(4) VALUE +0428.                *AA200
     05    5-DZ05-LTHV PICTURE S9(4) VALUE +0428.                *AA200
     05    5-DZ10-LTH  PICTURE S9(4) VALUE +0048.                *AA200
     05    5-DZ10-LTHV PICTURE S9(4) VALUE +0048.                *AA200
     05    LTH         PICTURE S9(4) VALUE ZERO.                 *AA200
     05    KEYLTH      PICTURE S9(4) VALUE ZERO.                 *AA200
     05      5-SQLS-LENGTH PICTURE S9(4)                         *AA200
                         VALUE      +0890.                       *AA200
01   PFKEYS-TABLE.                                               *AA230
     02    PF-TAB.                                               *AA230
       05  FILLER       PIC X     VALUE QUOTE.                   *AA230
       05  FILLER       PIC X(11) VALUE '  _00%A1>A2'.           *AA230
       05  FILLER       PIC X(36) VALUE                          *AA230
           '101202303404505606707808909:10£11à12'.               *AA230
       05  FILLER       PIC X(36) VALUE                          *AA230
           'A13B14C15D16E17F18G19H20I21°22.23<24'.               *AA230
     02    PFTA  REDEFINES  PF-TAB.                              *AA230
       05  PFTA-POS    OCCURS 28.                                *AA230
        10 PFTA-VAL    PIC X.                                    *AA230
        10 PFTA-IFONCT PIC XX.                                   *AA230
     02    I-FONCT.                                              *AA230
     05    I-PFKEY  PIC XX.                                      *AA230
01    FIRST-ON-SEGMENT.                                          *AA301
     05      DZ05-FST    PICTURE X.                              *AA301
     05      DZ10-FST    PICTURE X.                              *AA301
01             V-DZ05.                                           *AA351
     05         V-DZ05-COCARA  PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-NUCOD   PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-FOURNI  PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-NUCLIE  PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-DATE    PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-RELEA   PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-REFCLI  PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-RUE     PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-COPOS   PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-VILLE   PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-CORESP  PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-REMISE  PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-MATE    PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-PRIX1   PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-HEURE   PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-PRECIS  PICTURE S9(4) COMP.               *AA351
01              V-DZ05-R REDEFINES  V-DZ05.                      *AA351
     05         V-DZ05-A PIC S9(4) COMP     OCCURS 0016.         *AA351
01             V-DZ10.                                           *AA351
     05         V-DZ10-COCARA  PICTURE S9(4) COMP.               *AA351
     05         V-DZ10-NUCOM   PICTURE S9(4) COMP.               *AA351
     05         V-DZ10-FOURNP  PICTURE S9(4) COMP.               *AA351
     05         V-DZ10-QTMLI   PICTURE S9(4) COMP.               *AA351
     05         V-DZ10-QTMCO   PICTURE S9(4) COMP.               *AA351
     05         V-DZ10-INFOR   PICTURE S9(4) COMP.               *AA351
01              V-DZ10-R REDEFINES  V-DZ10.                      *AA351
     05         V-DZ10-A PIC S9(4) COMP     OCCURS 0006.         *AA351
01     INTEGRITY-REFERENCE.                                      *AA360
    05  FILLER     PICTURE X(51) VALUE                           *AA360
        'DZ05CEXISTF 000FOURNITURE                         '.   *AA360
    05  FILLER     PICTURE X(51) VALUE                           *AA360
        'DZ10CEXISTF 000FOURNITURE STOCK                   '.   *AA360
01     INTEGRITY-TABLE REDEFINES INTEGRITY-REFERENCE.            *AA360
   05  S-SSQL-ERTAB OCCURS 002.                                  *AA360
    10 S-SSQL-ERCOD PICTURE X(12).                               *AA360
    10 S-SSQL-ERNUM PICTURE 999.                                 *AA360
    10 S-SSQL-ERLIB PICTURE X(36).                               *AA360
01     S-SSQL-XERCOD.                                            *AA361
   05  S-SSQL-TNAME PICTURE X(4).                                *AA361
```

```
       05  S-SSQL-CNAME.                                            *AA361
        10 S-SSQL-CA    PICTURE X  OCCURS 8.                        *AA361
    01     S-SSQL-ERRMC.                                            *AA361
       05  S-SSQL-CC    PICTURE X  OCCURS 8.                        *AA361
    01     S-SSQL-ELIB.                                             *AA362
       05  S-SSQL-XLIB  PICTURE X(30) VALUE                         *AA362
          '  INVALID UPDATE ON SEGMENT '.                           *AA362
       05  S-SSQL-SLIB  PICTURE X(36).                              *AA362
           EXEC SQL                                                 *DZ050
                                  DECLARE     DISPLAY_DZ05          *DZ050
               CURSOR FOR SELECT ALL                                *DZ050
                      COCARA ,                                      *DZ050
                      NUCOD ,                                       *DZ050
                      FOURNI ,                                      *DZ050
                      NUCLIE ,                                      *DZ050
                      DATE ,                                        *DZ050
                      RELEA ,                                       *DZ050
                      REFERENCECLIENT ,                             *DZ050
                      RUE ,                                         *DZ050
                      COPOS ,                                       *DZ050
                      VILLE ,                                       *DZ050
                      CORESP ,                                      *DZ050
                      REMISE ,                                      *DZ050
                      MATERIEL ,                                    *DZ050
                      PRIX1 ,                                       *DZ050
                      HEURE ,                                       *DZ050
                      PRECIS                                        *DZ050
                    FROM PDMCA.DODZ05                               *DZ050
         WHERE COCARA >  :DZ05-COCARA                               *DZ052
          OR (COCARA =  :DZ05-COCARA                                *DZ052
         AND  NUCOD >  :DZ05-NUCOD)                                 *DZ052
          OR (COCARA =  :DZ05-COCARA                                *DZ052
         AND  NUCOD =  :DZ05-NUCOD                                  *DZ052
         AND  FOURNI >= :DZ05-FOURNI)                               *DZ052
             ORDER BY    COCARA,                                    *DZ059
                         NUCOD,                                     *DZ059
                         FOURNI                                     *DZ059
           END-EXEC.                                                *DZ059
           EXEC SQL                                                 *DZ100
                                  DECLARE     DISPLAY_DZ10          *DZ100
               CURSOR FOR SELECT ALL                                *DZ100
                      COCARA ,                                      *DZ100
                      NUCOM ,                                       *DZ100
                      FOURNP ,                                      *DZ100
                      LIVRABLE ,                                    *DZ100
                      QUANTITE-COMMANDEE ,                          *DZ100
                      INFOR                                         *DZ100
                    FROM PDMCA.DODZ10                               *DZ100
         WHERE COCARA >  :DZ10-COCARA                               *DZ102
          OR (COCARA =  :DZ10-COCARA                                *DZ102
         AND  NUCOM >= :DZ10-NUCOM)                                 *DZ102
             ORDER BY    COCARA,                                    *DZ109
                         NUCOM                                      *DZ109
           END-EXEC.                                                *DZ109
```

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.                                                   DOSQLS
01   DFHCOMMAREA.                                                  DOSQLS
     02     K-SSQLS-PROGR PICTURE X(6).                            *00000
     02     K-SSQLS-DOC   PICTURE X.                               *00000
     02     K-SSQLS-PROGE PICTURE X(8).                            *00000
     02     K-SSQLS-CPOSL PICTURE S9(4) COMPUTATIONAL.             *00000
     02     K-SSQLS-PROLE PICTURE X(8).                            *00000
     02     K-SSQLS-LIBRA PICTURE XXX.                             *00000
     02     K-SSQLS-PROHE PICTURE X(8).                            *00000
     02     K-SSQLS-ERCOD.                                         *00000
       05   K-SSQLS-ERCOD9 PICTURE 999.                            *00000
     02     K-SSQLS-ERTYP PICTURE X.                               *00000
     02     K-SSQLS-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-SQLS.                                               *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
```

7.4. PROCEDURE DIVISION (F01 - F8Z)

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.

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

SEGMENT ACCESS FOR UPDATE: F35

In F35: Referencial integrity processing.

After the updating of DB2 table, the DB2 return code is tested and the error message is formatted (PERFORM F81SC).

```
 *           *************************************             DOSQLS
 *           *                                   *             DOSQLS
 *           *  SEGMENT ACCESS FOR UPDATE        *             DOSQLS
 *           *                                   *             DOSQLS
 *           *************************************             DOSQLS
  F35.     IF CAT-ER NOT = SPACE OR CATM = SPACE GO TO F35-FN.     DOSQLS
  F3501.                                                           DOSQLS
         IF CATM = 'C'                                             DOSQLS
         PERFORM F80-DZ05-W  THRU F80-FN.                          DOSQLS
         IF CATM NOT = 'C' AND CATM NOT = 'A'                      DOSQLS
         PERFORM F80-DZ05-RW THRU F80-FN.                          DOSQLS
         IF SQLCODE = -530 OR -531 OR -532                         DOSQLS
         MOVE 'DZ05'  TO S-SSQL-TNAME                              DOSQLS
         PERFORM F81SC THRU F81SC-FN.                              DOSQLS
  F3501-FN.    EXIT.                                               DOSQLS
  F3502.                                                           DOSQLS
         IF CATM = 'C'                                             DOSQLS
         PERFORM F80-DZ10-W  THRU F80-FN.                          DOSQLS
         IF CATM NOT = 'C' AND CATM NOT = 'A'                      DOSQLS
         PERFORM F80-DZ10-RW THRU F80-FN.                          DOSQLS
         IF SQLCODE = -530 OR -531 OR -532                         DOSQLS
         MOVE 'DZ10'  TO S-SSQL-TNAME                              DOSQLS
         PERFORM F81SC THRU F81SC-FN.                              DOSQLS
  F3502-FN.    EXIT.                                               DOSQLS
  F35-FN.      EXIT.                                               DOSQLS
```

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).

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

```
               :DZ05-REMISE:V-DZ05-REMISE,                       DOSQLS
               :VDZ05-MATE:V-DZ05-MATE,                          DOSQLS
               :DZ05-PRIX1:V-DZ05-PRIX1,                         DOSQLS
               :DZ05-HEURE:V-DZ05-HEURE,                         DOSQLS
               :DZ05-PRECIS:V-DZ05-PRECIS                        DOSQLS
                FROM PDMCA.DODZ05                                DOSQLS
     WHERE COCARA =  :DZ05-COCARA                                DOSQLS
       AND NUCOD =  :DZ05-NUCOD                                  DOSQLS
       AND FOURNI =  :DZ05-FOURNI                                DOSQLS
       END-EXEC.                                                 DOSQLS
       GO TO F80-OK.                                             DOSQLS
F80-DZ05-P.                                                      DOSQLS
       EXEC SQL                                                  DOSQLS
                                OPEN      DISPLAY_DZ05           DOSQLS
       END-EXEC.                                                 DOSQLS
F80-DZ05-RN.                                                     DOSQLS
       EXEC SQL                                                  DOSQLS
                               FETCH      DISPLAY_DZ05           DOSQLS
         INTO  :DZ05-COCARA:V-DZ05-COCARA,                       DOSQLS
               :DZ05-NUCOD:V-DZ05-NUCOD,                         DOSQLS
               :DZ05-FOURNI:V-DZ05-FOURNI,                       DOSQLS
               :DZ05-NUCLIE:V-DZ05-NUCLIE,                       DOSQLS
               :DZ05-DATE:V-DZ05-DATE,                           DOSQLS
               :DZ05-RELEA:V-DZ05-RELEA,                         DOSQLS
               :VDZ05-REFCLI:V-DZ05-REFCLI,                      DOSQLS
               :VDZ05-RUE:V-DZ05-RUE,                            DOSQLS
               :DZ05-COPOS:V-DZ05-COPOS,                         DOSQLS
               :VDZ05-VILLE:V-DZ05-VILLE,                        DOSQLS
               :VDZ05-CORESP:V-DZ05-CORESP,                      DOSQLS
               :DZ05-REMISE:V-DZ05-REMISE,                       DOSQLS
               :VDZ05-MATE:V-DZ05-MATE,                          DOSQLS
               :DZ05-PRIX1:V-DZ05-PRIX1,                         DOSQLS
               :DZ05-HEURE:V-DZ05-HEURE,                         DOSQLS
               :DZ05-PRECIS:V-DZ05-PRECIS                        DOSQLS
       END-EXEC.                                                 DOSQLS
       GO TO F80-OK.                                             DOSQLS
F80-DZ05-W.                                                      DOSQLS
       EXEC SQL                                                  DOSQLS
                            INSERT                               DOSQLS
                      INTO PDMCA.DODZ05                          DOSQLS
                  ( COCARA ,                                     DOSQLS
                    NUCOD ,                                      DOSQLS
                    FOURNI ,                                     DOSQLS
                    NUCLIE ,                                     DOSQLS
                    DATE ,                                       DOSQLS
                    RELEA ,                                      DOSQLS
                    REFERENCECLIENT ,                            DOSQLS
                    RUE ,                                        DOSQLS
                    COPOS ,                                      DOSQLS
                    VILLE ,                                      DOSQLS
                    CORESP ,                                     DOSQLS
                    REMISE ,                                     DOSQLS
                    MATERIEL ,                                   DOSQLS
                    PRIX1 ,                                      DOSQLS
                    HEURE ,                                      DOSQLS
                    PRECIS )                                     DOSQLS
      VALUES (:DZ05-COCARA:V-DZ05-COCARA,                        DOSQLS
              :DZ05-NUCOD:V-DZ05-NUCOD,                          DOSQLS
              :DZ05-FOURNI:V-DZ05-FOURNI,                        DOSQLS
              :DZ05-NUCLIE:V-DZ05-NUCLIE,                        DOSQLS
              :DZ05-DATE:V-DZ05-DATE,                            DOSQLS
              :DZ05-RELEA:V-DZ05-RELEA,                          DOSQLS
              :VDZ05-REFCLI:V-DZ05-REFCLI,                       DOSQLS
              :VDZ05-RUE:V-DZ05-RUE,                             DOSQLS
              :DZ05-COPOS:V-DZ05-COPOS,                          DOSQLS
              :VDZ05-VILLE:V-DZ05-VILLE,                         DOSQLS
              :VDZ05-CORESP:V-DZ05-CORESP,                       DOSQLS
              :DZ05-REMISE:V-DZ05-REMISE,                        DOSQLS
              :VDZ05-MATE:V-DZ05-MATE,                           DOSQLS
              :DZ05-PRIX1:V-DZ05-PRIX1,                          DOSQLS
              :DZ05-HEURE:V-DZ05-HEURE,                          DOSQLS
              :DZ05-PRECIS:V-DZ05-PRECIS)                        DOSQLS
       END-EXEC.                                                 DOSQLS
       GO TO F80-OK.                                             DOSQLS
F80-DZ05-RW.                                                     DOSQLS
       EXEC SQL                                                  DOSQLS
                            UPDATE                               DOSQLS
```

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

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

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

REFERENTIAL INTEGRITY ERROR PROCESSING: F81SC

Search of the error message which corresponds to the DB2 return code.

```
F81SC.                                                           DOSQLS
       MOVE SQLERRMC TO S-SSQL-ERRMC.                            DOSQLS
       MOVE 1  TO K01 K02.                                       DOSQLS
F81SC-A.  IF   S-SSQL-CC (K01) = HIGH-VALUE                      DOSQLS
       GO TO F81SC-B.                                            DOSQLS
       MOVE S-SSQL-CC (K01) TO S-SSQL-CA (K01).                  DOSQLS
       IF K01  < 8  ADD 1 TO K01  GO TO F81SC-A.                 DOSQLS
F81SC-B. MOVE 1  TO K01.                                         DOSQLS
F81SC-C. IF  S-SSQL-ERCOD (K01) = S-SSQL-XERCOD                  DOSQLS
       MOVE S-SSQL-ERLIB (K01) TO S-SSQL-SLIB                    DOSQLS
       MOVE S-SSQL-ERNUM (K01) TO K02                            DOSQLS
       GO TO F81SC-E.                                            DOSQLS
          IF K01  NOT <    002   GO TO F81SC-FN.                 DOSQLS
       ADD 1 TO K01   GO TO F81SC-C.                             DOSQLS
F81SC-E.                                                         DOSQLS
       MOVE 'FSQL' TO XERCD PERFORM F81UT THRU F81UT-FN.         DOSQLS
F81SC-FN.    EXIT.                                               DOSQLS
```

8. GENERATED SCREEN PROGRAM USING SQL DATACOM DB

8.1. PRESENTATION OF THE EXAMPLE

INTRODUCTION

This chapter presents the COBOL lines automatically generated when a screen accesses a DATACOM 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.

```
--------------------------------------------------------------------------------
!                  APPLICATION VSAM/CICS-MVS                  PDLB.NDOC.ACI.125!
! ON-LINE SCREEN CALL OF SEGM. DOSQLM APPEL SQL DATACOM DB                     !
! .............................................................................!
! 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 : *DCC!
! . DZ05 R 00 :   X A                    COCARA   M 1 QCBLOC   DZ05      : *DCC!
! . DZ05 R 02 :                          NUCOD                           : *DCC!
! . DZ05 R 04 :                          FOURNI                          : *DCC!
! . DZ10 R 00 :   X A                    COCARA   M 1 QCBLOC   DZ10      : *DCC!
! . DZ10 R 02 :                          NUCOM                           : *DCC!
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
! *** END ***                                                                  !
! O: C1 CH:                                                                    !
--------------------------------------------------------------------------------
```

8.2. 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'.

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 located between the SQL orders 'BEGIN DECLARE SECTION' and 'END DECLARE SECTION'.
Those keys are generated separately on line AA351 and redefined in a table format.
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 orders which correspond to the CURSOR declaration when a Table is used in display in the repetitive category.

They are located on lines which can be converted in structured code by FFNN0 to FFNN9.

(See the '*DZ050' to '*DZ059' COBOL generated lines at the end of this part.)

. Clause FROM 'external name of the table': it is the external name of the table or the view called in the database block(-DR). By default the external name is found in the Segment definition screen. The block code is indicated in the 'EXTERNAL NAME' area of the call lines of segments (-CS).

. Clause WHERE ... ORDER: the key data elements are indicated on call lines of segments in the order of these lines (-CS).

```
01                 DZ05.                                        DOSQLM
     05            DZ05-COCARA PICTURE X.                       DOSQLM
     05            DZ05-NUCOD  PICTURE S9(3)                    DOSQLM
                        COMPUTATIONAL.                          DOSQLM
     05            DZ05-FOURNI PICTURE X(3).                    DOSQLM
     05            DZ05-NUCLIE PICTURE 9(8).                    DOSQLM
     05            DZ05-DATE   PICTURE X(6).                    DOSQLM
     05            DZ05-RELEA  PICTURE X(3).                    DOSQLM
     05            DZ05-REFCLI PICTURE X(30).                   DOSQLM
     05            DZ05-RUE    PICTURE X(40).                   DOSQLM
     05            DZ05-COPOS  PICTURE X(5).                    DOSQLM
     05            DZ05-VILLE  PICTURE X(20).                   DOSQLM
     05            DZ05-CORESP PICTURE X(256).                  DOSQLM
     05            DZ05-REMISE PICTURE S9(4)V99                 DOSQLM
                        COMPUTATIONAL-3.                        DOSQLM
     05            DZ05-MATE   PICTURE X(8).                    DOSQLM
     05            DZ05-PRIX1                                   DOSQLM
                        COMPUTATIONAL-2.                        DOSQLM
     05            DZ05-HEURE  PICTURE X(8).                    DOSQLM
     05            DZ05-PRECIS PICTURE X(26).                   DOSQLM
01                 DZ10.                                        DOSQLM
     05            DZ10-COCARA PICTURE X.                       DOSQLM
     05            DZ10-NUCOM  PICTURE 9(5).                    DOSQLM
     05            DZ10-FOURNP PICTURE X(3).                    DOSQLM
     05            DZ10-QTMLI  PICTURE S9(2)                    DOSQLM
                        COMPUTATIONAL.                          DOSQLM
     05            DZ10-QTMCO  PICTURE S9(2)                    DOSQLM
                        COMPUTATIONAL.                          DOSQLM
     05            DZ10-INFOR  PICTURE X(35).                   DOSQLM
       EXEC SQL END   DECLARE SECTION END-EXEC                  DOSQLM
01           INPUT-SCREEN-FIELDS.                               *AA050
     02      I-SQLM.                                            *AA050
     05      FILLER PICTURE X(12).                              *AA050
01           OUTPUT-SCREEN-FIELDS.                              *AA050
     02      O-SQLM.                                            *AA050
     05      FILLER PICTURE X(12).                              *AA050
01              EM00.                                           *AA100
    05          EM00-EMKEY.                                     *AA100
      10        EM00-LIBRA     PICTURE X(3).                    *AA100
      10        EM00-ENTYP     PICTURE X.                       *AA100
      10        EM00-XEMKY.                                     *AA100
        15      EM00-PROGR     PICTURE X(6).                    *AA100
        15      EM00-ERCOD.                                     *AA100
          20    EM00-ERCOD9    PICTURE 9(3).                    *AA100
        15      EM00-ERTYP     PICTURE X.                       *AA100
      10        EM00-LINUM     PICTURE 9(3).                    *AA100
    05          EM00-ERLVL     PICTURE X.                       *AA100
    05          EM00-ERMSG     PICTURE X(66).                   *AA100
    05          FILLER         PICTURE X(6).                    *AA100
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    5-EM00-LTH  PICTURE S9(4) VALUE +0090.               *AA200
     05    5-CA00-LTH  PICTURE S9(4) VALUE +0147.               *AA200
     05    5-DZ05-LTH  PICTURE S9(4) VALUE +0428.               *AA200
     05    5-DZ05-LTHV PICTURE S9(4) VALUE +0428.               *AA200
     05    5-DZ10-LTH  PICTURE S9(4) VALUE +0048.               *AA200
     05    5-DZ10-LTHV PICTURE S9(4) VALUE +0048.               *AA200
     05    LTH         PICTURE S9(4) VALUE ZERO.                 *AA200
     05    KEYLTH      PICTURE S9(4) VALUE ZERO.                 *AA200
     05      5-SQLM-LENGTH PICTURE S9(4)                         *AA200
                         VALUE      +0890.                       *AA200
01   PFKEYS-TABLE.                                               *AA230
     02    PF-TAB.                                               *AA230
       05  FILLER       PIC X     VALUE QUOTE.                   *AA230
       05  FILLER       PIC X(11) VALUE '  _00%A1>A2'.           *AA230
       05  FILLER       PIC X(36) VALUE                          *AA230
           '101202303404505606707808909:10£11à12'.               *AA230
       05  FILLER       PIC X(36) VALUE                          *AA230
           'A13B14C15D16E17F18G19H20I21°22.23<24'.               *AA230
     02    PFTA  REDEFINES  PF-TAB.                              *AA230
       05  PFTA-POS    OCCURS 28.                                *AA230
        10 PFTA-VAL    PIC X.                                    *AA230
        10 PFTA-IFONCT PIC XX.                                   *AA230
     02    I-FONCT.                                              *AA230
     05    I-PFKEY  PIC XX.                                      *AA230
01    FIRST-ON-SEGMENT.                                          *AA301
     05      DZ05-FST    PICTURE X.                              *AA301
     05      DZ10-FST    PICTURE X.                              *AA301
       EXEC SQL BEGIN DECLARE SECTION END-EXEC                   *AA351
01              V-DZ05.                                          *AA351
     05         V-DZ05-FOURNI  PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-NUCLIE  PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-DATE    PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-RELEA   PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-REFCLI  PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-RUE     PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-COPOS   PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-VILLE   PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-CORESP  PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-REMISE  PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-MATE    PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-PRIX1   PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-HEURE   PICTURE S9(4) COMP.               *AA351
     05         V-DZ05-PRECIS  PICTURE S9(4) COMP.               *AA351
01              V-DZ10.                                          *AA351
     05         V-DZ10-FOURNP  PICTURE S9(4) COMP.               *AA351
     05         V-DZ10-QTMLI   PICTURE S9(4) COMP.               *AA351
     05         V-DZ10-QTMCO   PICTURE S9(4) COMP.               *AA351
     05         V-DZ10-INFOR   PICTURE S9(4) COMP.               *AA351
       EXEC SQL END   DECLARE SECTION END-EXEC                   *AA351
       EXEC SQL                                                  *DZ050
                              DECLARE     DISPLAY_DZ05           *DZ050
           CURSOR FOR SELECT ALL                                 *DZ050
                  COCARA ,                                       *DZ050
                  NUCOD ,                                        *DZ050
                  FOURNI ,                                       *DZ050
                  NUCLIE ,                                       *DZ050
                  DATE ,                                         *DZ050
                  RELEA ,                                        *DZ050
                  REFERENCECLIENT ,                              *DZ050
                  RUE ,                                          *DZ050
                  COPOS ,                                        *DZ050
                  VILLE ,                                        *DZ050
                  CORESP ,                                       *DZ050
                  REMISE ,                                       *DZ050
                  MATERIEL ,                                     *DZ050
                  PRIX1 ,                                        *DZ050
                  HEURE ,                                        *DZ050
                  PRECIS                                         *DZ050
                FROM DODZ05                                      *DZ050
     WHERE COCARA >  :DZ05-COCARA                                *DZ052
      OR (COCARA =  :DZ05-COCARA                                 *DZ052
     AND  NUCOD >  :DZ05-NUCOD)                                  *DZ052
      OR (COCARA =  :DZ05-COCARA                                 *DZ052
     AND  NUCOD =  :DZ05-NUCOD                                   *DZ052
     AND  FOURNI >= :DZ05-FOURNI)                                *DZ052
        ORDER BY    COCARA,                                      *DZ059
                    NUCOD,                                       *DZ059
                    FOURNI                                       *DZ059
       END-EXEC.                                                 *DZ059
```

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.

COMMUNICATION AREA 3

```
LINKAGE SECTION.                                                 DOSQLM
01   DFHCOMMAREA.                                                DOSQLM
     02     K-SSQLM-PROGR PICTURE X(6).                          *00000
     02     K-SSQLM-DOC   PICTURE X.                             *00000
     02     K-SSQLM-PROGE PICTURE X(8).                          *00000
     02     K-SSQLM-CPOSL PICTURE S9(4) COMPUTATIONAL.           *00000
     02     K-SSQLM-PROLE PICTURE X(8).                          *00000
     02     K-SSQLM-LIBRA PICTURE XXX.                           *00000
     02     K-SSQLM-PROHE PICTURE X(8).                          *00000
     02     K-SSQLM-ERCOD.                                       *00000
       05   K-SSQLM-ERCOD9 PICTURE 999.                          *00000
     02     K-SSQLM-ERTYP PICTURE X.                             *00000
     02     K-SSQLM-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-SQLM.                                             *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
```

8.4. PROCEDURE

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.

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

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).

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

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

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

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

9. SCREEN GENERATED PROGRAM USING SQL ORACLE V6

9.1. PRESENTATION OF THE EXAMPLE

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.

```
--------------------------------------------------------------------------------
!                  APPLICATION VSAM/CICS-MVS                  PDLB.NDOC.ACI.125!
! ON-LINE SCREEN CALL OF SEGM. DOSQLP APPEL 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 : *DCC!
! . 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!
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
! *** END ***                                                                  !
! O: C1 CH:                                                                    !
--------------------------------------------------------------------------------
```

9.2. WORKING

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.

```
 WORKING-STORAGE SECTION.                                         DOSQLP
*        **************************************************       DOSQLP
*        *         LIST OF REFERENCED ENTITIES            *       DOSQLP
*        *         ---------------------------            *       DOSQLP
*        *  CLECD   ORDER FILE KEY                        *       DOSQLP
*        *  CLECL1  CUSTOMER FILE KEY                     *       DOSQLP
*        *  CLEME   MAILBOX FILE KEY                      *       DOSQLP
*        *  COCARA  STRUCTURE CODE                        *       DOSQLP
*        *  COPERS  PERSONAL CODE                         *       DOSQLP
*        *  COPOS   ZIP CODE                              *       DOSQLP
*        *  CORESP  CORRESPONDENT                         *       DOSQLP
*        *  DATE    ORDER DATE                            *       DOSQLP
*        *  FOURNI  CODE OF THE MANUAL ORDERED            *       DOSQLP
*        *  FOURNP  MAIN SUPPLIER                         *       DOSQLP
*        *  GROUPH  TIME GROUP                            *       DOSQLP
*        *  HEURE   DISPLAY TIME                          *       DOSQLP
*        *  INFOR   INFORMATION--ORDER DETAILS            *       DOSQLP
*        *  LANGU   LANGUAGE CODE                         *       DOSQLP
*        *  MATE    SYSTEM                                *       DOSQLP
*        *  MESSA   MAILBOX MESSAGES                      *       DOSQLP
*        *  NUCLIE  CUSTOMER NUMBER                       *       DOSQLP
*        *  NUCOD   CODE NUMBER                           *       DOSQLP
*        *  NUCOM   ORDER NUMBER                          *       DOSQLP
*        *  NUMORD  ORDER NUMBER                          *       DOSQLP
*        *  PRECIS  ACCURATE TIME                         *       DOSQLP
*        *  PREM    FIRST INPUT IN TRANSACTION            *       DOSQLP
*        *  PRIX1   PRICE                                 *       DOSQLP
*        *  QTMCO   ORDERED QUANTITY                      *       DOSQLP
*        *  QTMLI   DELIVERED QUANTITY                    *       DOSQLP
*        *  RAISOC  PRINCIPLE ACTIVITY OF CUSTOMER        *       DOSQLP
*        *  REFCLI  CUSTOMER REFERENCES                   *       DOSQLP
*        *  RELEA   PACBASE RELEASE                       *       DOSQLP
*        *  REMISE  DISCOUNT                              *       DOSQLP
*        *  RUE     MAIN                                  *       DOSQLP
*        *  VILLE   NAME OF THE CITY                      *       DOSQLP
*        **************************************************       DOSQLP
 01   WSS-BEGIN.                                                  DOSQLP
      05 FILLER PICTURE X(7) VALUE 'WORKING'.                     DOSQLP
      05 IK     PICTURE X.                                        DOSQLP
      05 BLANC  PICTURE X VALUE SPACE.                            DOSQLP
      05 OPER   PICTURE X.                                        DOSQLP
      05 OPERD  PICTURE X VALUE SPACE.                            DOSQLP
      05 CATX   PICTURE X.                                        DOSQLP
      05 CATM   PICTURE X.                                        DOSQLP
      05 ICATR  PICTURE 99.                                       DOSQLP
      05 SCR-ER PICTURE X.                                        DOSQLP
      05 FT     PICTURE X.                                        DOSQLP
      05 ICF    PICTURE X.                                        DOSQLP
      05 OCF    PICTURE X.                                        DOSQLP
      05 CAT-ER PICTURE X.                                        DOSQLP
      05 CURPOS.                                                  DOSQLP
      10 CPOSL    PICTURE S9(4) COMPUTATIONAL.                    DOSQLP
      10 CPOSC    PICTURE S9(4) COMPUTATIONAL.                    DOSQLP
      05 CPOSN    PICTURE S9(4) COMPUTATIONAL.                    DOSQLP
      05 INA    PICTURE 999 VALUE 000.                            DOSQLP
      05 INR    PICTURE 999 VALUE 000.                            DOSQLP
      05 INZ    PICTURE 999 VALUE 000.                            DOSQLP
      05 IRR     PICTURE 99 VALUE 00.                             DOSQLP
      05 INT    PICTURE 999 VALUE 000.                            DOSQLP
      05 IER     PICTURE 99 VALUE 01.                             DOSQLP
      05 DEL-ER  PICTURE X.                                       DOSQLP
 01   PACBASE-CONSTANTS.                                          DOSQLP
* OLSD DATES PACE30 : 23/06/95                                    DOSQLP
*            PACE80 : 16/01/96   PAC7SG : 960115                  DOSQLP
      05 FILLER PICTURE X(50) VALUE                               DOSQLP
      '0523 ACI04/24/96DOSQLPDOSQLP  10:49:22PDMCA   NDOC'.       DOSQLP
 01   CONSTANTS-PACBASE REDEFINES PACBASE-CONSTANTS.              DOSQLP
      05 SESSI  PICTURE X(5).                                     DOSQLP
      05 LIBRA  PICTURE X(3).                                     DOSQLP
      05 DATGN  PICTURE X(8).                                     DOSQLP
      05 PROGR  PICTURE X(6).                                     DOSQLP
      05 PROGE  PICTURE X(8).                                     DOSQLP
      05 TIMGN  PICTURE X(8).                                     DOSQLP
      05 USERCO PICTURE X(8).                                     DOSQLP
      05 COBASE PICTURE X(4).                                     DOSQLP
 01   PACBASE-WORK.                                               DOSQLP
      05 PRDOC  PICTURE X(8) VALUE 'DOP050'.                      DOSQLP
```

```
     05 SCRLGTH PICTURE S9(4) COMPUTATIONAL VALUE +0012.         DOSQLP
     05 NAMEQ.                                                   DOSQLP
     10 FILLER   PICTURE X(04) VALUE 'PAC7'.                     DOSQLP
     10 TRMID    PICTURE X(4).                                   DOSQLP
     05 TSQITEM  PICTURE S9(4) COMPUTATIONAL VALUE +1.           DOSQLP
     05      5-SQLP-MAP    PICTURE X(7)  VALUE   'DOSQLP '.      DOSQLP
     05      5-SQLP-MAPSET PICTURE X(7)  VALUE                   DOSQLP
                                'DOSQLP '.                       DOSQLP
     05      5-SQLP-TRAN                                         DOSQLP
                PICTURE X(4) VALUE  'DOSQ'.                      DOSQLP
     05      5-SQLP-PROGE  PICTURE X(8).                         DOSQLP
     05      5-EM00-DDNAME PICTURE X(8) VALUE 'DODOLE  '.        DOSQLP
01  DATCE.                                                       DOSQLP
  05  CENTUR   PICTURE XX VALUE '19'.                            DOSQLP
     05 DATOR.                                                   DOSQLP
     10 DATOA  PICTURE XX.                                       DOSQLP
     10 DATOM  PICTURE XX.                                       DOSQLP
     10 DATOJ  PICTURE XX.                                       DOSQLP
01  DAT6.                                                        DOSQLP
     10 DAT61.                                                   DOSQLP
     15 DAT619 PICTURE 99.                                       DOSQLP
     10 DAT62.                                                   DOSQLP
     15 DAT629 PICTURE 99.                                       DOSQLP
     10 DAT63  PICTURE XX.                                       DOSQLP
01  DAT7.                                                        DOSQLP
     10 DAT71  PICTURE XX.                                       DOSQLP
     10 DAT72  PICTURE XX.                                       DOSQLP
     10 DAT73  PICTURE XX.                                       DOSQLP
01  DAT8.                                                        DOSQLP
     10 DAT81  PICTURE XX.                                       DOSQLP
     10 DAT8S1 PICTURE X.                                        DOSQLP
     10 DAT82  PICTURE XX.                                       DOSQLP
     10 DAT8S2 PICTURE X.                                        DOSQLP
     10 DAT83  PICTURE XX.                                       DOSQLP
01  DATSEP     PICTURE X VALUE '/'.                              DOSQLP
01  DATSET     PICTURE X VALUE '-'.                              DOSQLP
01  DATCTY.                                                      DOSQLP
  05  DATCTY9  PICTURE 99.                                       DOSQLP
01  DAT6C.                                                       DOSQLP
  10  DAT61C   PICTURE XX.                                       DOSQLP
  10  DAT62C   PICTURE XX.                                       DOSQLP
  10  DAT63C   PICTURE XX.                                       DOSQLP
  10  DAT64C   PICTURE XX.                                       DOSQLP
01  DAT7C.                                                       DOSQLP
  10  DAT71C   PICTURE XX.                                       DOSQLP
  10  DAT72C   PICTURE XX.                                       DOSQLP
  10  DAT73C   PICTURE XX.                                       DOSQLP
  10  DAT74C   PICTURE XX.                                       DOSQLP
01  DAT8C.                                                       DOSQLP
  10  DAT81C   PICTURE XX.                                       DOSQLP
  10  DAT8S1C  PICTURE X    VALUE '/'.                           DOSQLP
  10  DAT82C   PICTURE XX.                                       DOSQLP
  10  DAT8S2C  PICTURE X    VALUE '/'.                           DOSQLP
  10  DAT83C   PICTURE XX.                                       DOSQLP
  10  DAT84C   PICTURE XX.                                       DOSQLP
01  DAT8G.                                                       DOSQLP
  10  DAT81G   PICTURE XX.                                       DOSQLP
  10  DAT82G   PICTURE XX.                                       DOSQLP
  10  DAT8S1G  PICTURE X    VALUE '-'.                           DOSQLP
  10  DAT83G   PICTURE XX.                                       DOSQLP
  10  DAT8S2G  PICTURE X    VALUE '-'.                           DOSQLP
  10  DAT84G   PICTURE XX.                                       DOSQLP
01  TIMCO.                                                       DOSQLP
 02  TIMCOG.                                                     DOSQLP
   05  TIMCOH  PICTURE XX.                                       DOSQLP
   05  TIMCOM  PICTURE XX.                                       DOSQLP
   05  TIMCOS  PICTURE XX.                                       DOSQLP
  02 TIMCOC    PICTURE XX.                                       DOSQLP
01  TIMDAY.                                                      DOSQLP
   05  TIMHOU  PICTURE XX.                                       DOSQLP
   05  TIMS1   PICTURE X    VALUE ':'.                           DOSQLP
   05  TIMMIN  PICTURE XX.                                       DOSQLP
   05  TIMS2   PICTURE X    VALUE ':'.                           DOSQLP
   05  TIMSEC  PICTURE XX.                                       DOSQLP
01  TIMCIC     PICTURE 9(7).                                     DOSQLP
01  TIMCI1     REDEFINES TIMCIC.                                 DOSQLP
  05  FILLER PIC X.                                              DOSQLP
  05  TIMCIG.                                                    DOSQLP
   10 TIMCIH   PICTURE XX.                                       DOSQLP
   10 TIMCIM   PICTURE XX.                                       DOSQLP
   10 TIMCIS   PICTURE XX.                                       DOSQLP
01  DATCIC     PICTURE 9(7).                                     DOSQLP
01  DATQTM     REDEFINES DATCIC.                                 DOSQLP
  05  FILLER   PICTURE XX.                                       DOSQLP
  05  DATQUY   PICTURE 99.                                       DOSQLP
  05  DATQUD   PICTURE 999.                                      DOSQLP
01  TABDAT.                                                      DOSQLP
 02  TABQTM.                                                     DOSQLP
  05  FILLER PIC X(18) VALUE '031059090120151181'.               DOSQLP
  05  FILLER PIC X(18) VALUE '212243273304334365'.               DOSQLP
 02  TABQT1 REDEFINES TABQTM PIC 999 OCCURS 12.                  DOSQLP
 02  TABBIS.                                                     DOSQLP
  05  FILLER PIC X(18) VALUE '031060091121152182'.               DOSQLP
  05  FILLER PIC X(18) VALUE '213244274305335366'.               DOSQLP
 02  TABBI1 REDEFINES TABBIS PIC 999 OCCURS 12.                  DOSQLP
01    CONFIGURATIONS.                                            DOSQLP
     05      DZ05-CF      PICTURE X.                             DOSQLP
     05      DZ10-CF      PICTURE X.                             DOSQLP
       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.                           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            DZ05-REFCLI PICTURE X(30)                     DOSQLP
                        VARYING.                                 DOSQLP
     05            DZ05-RUE    PICTURE X(40)                     DOSQLP
                        VARYING.                                 DOSQLP
     05            DZ05-COPOS  PICTURE X(5).                     DOSQLP
     05            DZ05-VILLE  PICTURE X(20)                     DOSQLP
                        VARYING.                                 DOSQLP
     05            DZ05-CORESP PICTURE X(256)                    DOSQLP
                        VARYING.                                 DOSQLP
     05            DZ05-REMISE PICTURE S9(4)V99                  DOSQLP
                        COMPUTATIONAL-3.                         DOSQLP
     05            DZ05-MATE   PICTURE X(8)                      DOSQLP
                        VARYING.                                 DOSQLP
     05            DZ05-PRIX1                                    DOSQLP
                        COMPUTATIONAL-2.                         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.                           DOSQLP
     05            DZ10-QTMCO  PICTURE S9(2)                     DOSQLP
                        COMPUTATIONAL.                           DOSQLP
     05            DZ10-INFOR  PICTURE X(35)                     DOSQLP
                        VARYING.                                 DOSQLP
01              V-DZ05.                                          DOSQLP
     05         V-DZ05-COCARA  PICTURE S9(4) COMP.               DOSQLP
     05         V-DZ05-NUCOD   PICTURE S9(4) COMP.               DOSQLP
     05         V-DZ05-FOURNI  PICTURE S9(4) COMP.               DOSQLP
     05         V-DZ05-NUCLIE  PICTURE S9(4) COMP.               DOSQLP
     05         V-DZ05-DATE    PICTURE S9(4) COMP.               DOSQLP
     05         V-DZ05-RELEA   PICTURE S9(4) COMP.               DOSQLP
     05         V-DZ05-REFCLI  PICTURE S9(4) COMP.               DOSQLP
     05         V-DZ05-RUE     PICTURE S9(4) COMP.               DOSQLP
     05         V-DZ05-COPOS   PICTURE S9(4) COMP.               DOSQLP
     05         V-DZ05-VILLE   PICTURE S9(4) COMP.               DOSQLP
     05         V-DZ05-CORESP  PICTURE S9(4) COMP.               DOSQLP
     05         V-DZ05-REMISE  PICTURE S9(4) COMP.               DOSQLP
     05         V-DZ05-MATE    PICTURE S9(4) COMP.               DOSQLP
     05         V-DZ05-PRIX1   PICTURE S9(4) COMP.               DOSQLP
     05         V-DZ05-HEURE   PICTURE S9(4) COMP.               DOSQLP
     05         V-DZ05-PRECIS  PICTURE S9(4) COMP.               DOSQLP
01              V-DZ10.                                          DOSQLP
```

```
        05         V-DZ10-COCARA  PICTURE S9(4) COMP.               DOSQLP
        05         V-DZ10-NUCOM   PICTURE S9(4) COMP.               DOSQLP
        05         V-DZ10-FOURNP  PICTURE S9(4) COMP.               DOSQLP
        05         V-DZ10-QTMLI   PICTURE S9(4) COMP.               DOSQLP
        05         V-DZ10-QTMCO   PICTURE S9(4) COMP.               DOSQLP
        05         V-DZ10-INFOR   PICTURE S9(4) COMP.               DOSQLP
          EXEC SQL END   DECLARE SECTION END-EXEC.                  DOSQLP
          EXEC SQL INCLUDE SQLCA         END-EXEC.                  DOSQLP
```

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.                                                DOSQLP
01   DFHCOMMAREA.                                               DOSQLP
     02     K-SSQLP-PROGR PICTURE X(6).                         *00000
     02     K-SSQLP-DOC   PICTURE X.                            *00000
     02     K-SSQLP-PROGE PICTURE X(8).                         *00000
     02     K-SSQLP-CPOSL PICTURE S9(4) COMPUTATIONAL.          *00000
     02     K-SSQLP-PROLE PICTURE X(8).                         *00000
     02     K-SSQLP-LIBRA PICTURE XXX.                          *00000
     02     K-SSQLP-PROHE PICTURE X(8).                         *00000
     02     K-SSQLP-ERCOD.                                      *00000
       05   K-SSQLP-ERCOD9 PICTURE 999.                         *00000
     02     K-SSQLP-ERTYP PICTURE X.                            *00000
     02     K-SSQLP-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-SQLP.                                            *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
```

9.4. PROCEDURE

CALLED SQL VALIDATION FUNCTIONS : F0B

PROCESSING OF THE ABNORMAL END

The F0B function processes SQL errors.

```
PROCEDURE DIVISION.                                             *99999
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                                                  DOSQLP
                              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                                                  DOSQLP
                              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
        EXEC SQL CONNECT :USERID                                  DOSQLP
                 IDENTIFIED BY :S-PASSWO     END-EXEC.            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                                                  DOSQLP
                             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:V-DZ05-COCARA,                       DOSQLP
                :DZ05-NUCOD:V-DZ05-NUCOD,                         DOSQLP
                :DZ05-FOURNI:V-DZ05-FOURNI,                       DOSQLP
                :DZ05-NUCLIE:V-DZ05-NUCLIE,                       DOSQLP
                :DZ05-DATE:V-DZ05-DATE,                           DOSQLP
                :DZ05-RELEA:V-DZ05-RELEA,                         DOSQLP
                :DZ05-REFCLI:V-DZ05-REFCLI,                       DOSQLP
                :DZ05-RUE:V-DZ05-RUE,                             DOSQLP
                :DZ05-COPOS:V-DZ05-COPOS,                         DOSQLP
                :DZ05-VILLE:V-DZ05-VILLE,                         DOSQLP
                :DZ05-CORESP:V-DZ05-CORESP,                       DOSQLP
                :DZ05-REMISE:V-DZ05-REMISE,                       DOSQLP
                :DZ05-MATE:V-DZ05-MATE,                           DOSQLP
                :DZ05-PRIX1:V-DZ05-PRIX1,                         DOSQLP
                :DZ05-HEURE:V-DZ05-HEURE,                         DOSQLP
                :DZ05-PRECIS:V-DZ05-PRECIS                        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                                                  DOSQLP
                             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:V-DZ05-COCARA,                       DOSQLP
                :DZ05-NUCOD:V-DZ05-NUCOD,                         DOSQLP
                :DZ05-FOURNI:V-DZ05-FOURNI,                       DOSQLP
                :DZ05-NUCLIE:V-DZ05-NUCLIE,                       DOSQLP
                :DZ05-DATE:V-DZ05-DATE,                           DOSQLP
                :DZ05-RELEA:V-DZ05-RELEA,                         DOSQLP
                :DZ05-REFCLI:V-DZ05-REFCLI,                       DOSQLP
                :DZ05-RUE:V-DZ05-RUE,                             DOSQLP
                :DZ05-COPOS:V-DZ05-COPOS,                         DOSQLP
                :DZ05-VILLE:V-DZ05-VILLE,                         DOSQLP
                :DZ05-CORESP:V-DZ05-CORESP,                       DOSQLP
```

```
               :DZ05-REMISE:V-DZ05-REMISE,                       DOSQLP
               :DZ05-MATE:V-DZ05-MATE,                           DOSQLP
               :DZ05-PRIX1:V-DZ05-PRIX1,                         DOSQLP
               :DZ05-HEURE:V-DZ05-HEURE,                         DOSQLP
               :DZ05-PRECIS:V-DZ05-PRECIS                        DOSQLP
                FROM DODZ05                                      DOSQLP
     WHERE COCARA =  :DZ05-COCARA                                DOSQLP
       AND NUCOD =  :DZ05-NUCOD                                  DOSQLP
       AND FOURNI =  :DZ05-FOURNI                                DOSQLP
       FOR UPDATE                                                DOSQLP
       END-EXEC.                                                 DOSQLP
       GO TO F80-OK.                                             DOSQLP
F80-DZ05-P.                                                      DOSQLP
       EXEC SQL                                                  DOSQLP
                                OPEN      DISPLAY_DZ05           DOSQLP
       END-EXEC.                                                 DOSQLP
F80-DZ05-RN.                                                     DOSQLP
       EXEC SQL                                                  DOSQLP
                               FETCH      DISPLAY_DZ05           DOSQLP
         INTO  :DZ05-COCARA:V-DZ05-COCARA,                       DOSQLP
               :DZ05-NUCOD:V-DZ05-NUCOD,                         DOSQLP
               :DZ05-FOURNI:V-DZ05-FOURNI,                       DOSQLP
               :DZ05-NUCLIE:V-DZ05-NUCLIE,                       DOSQLP
               :DZ05-DATE:V-DZ05-DATE,                           DOSQLP
               :DZ05-RELEA:V-DZ05-RELEA,                         DOSQLP
               :DZ05-REFCLI:V-DZ05-REFCLI,                       DOSQLP
               :DZ05-RUE:V-DZ05-RUE,                             DOSQLP
               :DZ05-COPOS:V-DZ05-COPOS,                         DOSQLP
               :DZ05-VILLE:V-DZ05-VILLE,                         DOSQLP
               :DZ05-CORESP:V-DZ05-CORESP,                       DOSQLP
               :DZ05-REMISE:V-DZ05-REMISE,                       DOSQLP
               :DZ05-MATE:V-DZ05-MATE,                           DOSQLP
               :DZ05-PRIX1:V-DZ05-PRIX1,                         DOSQLP
               :DZ05-HEURE:V-DZ05-HEURE,                         DOSQLP
               :DZ05-PRECIS:V-DZ05-PRECIS                        DOSQLP
       END-EXEC.                                                 DOSQLP
       GO TO F80-OK.                                             DOSQLP
F80-DZ05-W.                                                      DOSQLP
       EXEC SQL                                                  DOSQLP
                            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:V-DZ05-COCARA,                        DOSQLP
              :DZ05-NUCOD:V-DZ05-NUCOD,                          DOSQLP
              :DZ05-FOURNI:V-DZ05-FOURNI,                        DOSQLP
              :DZ05-NUCLIE:V-DZ05-NUCLIE,                        DOSQLP
              TO_DATE(:DZ05-DATE:V-DZ05-DATE,'DDMMYY'),          DOSQLP
              :DZ05-RELEA:V-DZ05-RELEA,                          DOSQLP
              :DZ05-REFCLI:V-DZ05-REFCLI,                        DOSQLP
              :DZ05-RUE:V-DZ05-RUE,                              DOSQLP
              :DZ05-COPOS:V-DZ05-COPOS,                          DOSQLP
              :DZ05-VILLE:V-DZ05-VILLE,                          DOSQLP
              :DZ05-CORESP:V-DZ05-CORESP,                        DOSQLP
              :DZ05-REMISE:V-DZ05-REMISE,                        DOSQLP
              :DZ05-MATE:V-DZ05-MATE,                            DOSQLP
              :DZ05-PRIX1:V-DZ05-PRIX1,                          DOSQLP
              TO_DATE(:DZ05-HEURE:V-DZ05-HEURE,'DD/MM/YY'),      DOSQLP
              :DZ05-PRECIS:V-DZ05-PRECIS)                        DOSQLP
       END-EXEC.                                                 DOSQLP
       GO TO F80-OK.                                             DOSQLP
F80-DZ05-RW.                                                     DOSQLP
       EXEC SQL                                                  DOSQLP
```

```
                            UPDATE                               DOSQLP
                           DODZ05                                DOSQLP
         SET NUCLIE =                                            DOSQLP
              :DZ05-NUCLIE:V-DZ05-NUCLIE,                        DOSQLP
             DATE =                                              DOSQLP
              TO_DATE(:DZ05-DATE:V-DZ05-DATE,'DDMMYY'),          DOSQLP
             RELEA =                                             DOSQLP
              :DZ05-RELEA:V-DZ05-RELEA,                          DOSQLP
             REFERENCECLIENT =                                   DOSQLP
              :DZ05-REFCLI:V-DZ05-REFCLI,                        DOSQLP
             RUE =                                               DOSQLP
              :DZ05-RUE:V-DZ05-RUE,                              DOSQLP
             COPOS =                                             DOSQLP
              :DZ05-COPOS:V-DZ05-COPOS,                          DOSQLP
             VILLE =                                             DOSQLP
              :DZ05-VILLE:V-DZ05-VILLE,                          DOSQLP
             CORESP =                                            DOSQLP
              :DZ05-CORESP:V-DZ05-CORESP,                        DOSQLP
             REMISE =                                            DOSQLP
              :DZ05-REMISE:V-DZ05-REMISE,                        DOSQLP
             MATERIEL =                                          DOSQLP
              :DZ05-MATE:V-DZ05-MATE,                            DOSQLP
             PRIX1 =                                             DOSQLP
              :DZ05-PRIX1:V-DZ05-PRIX1,                          DOSQLP
             HEURE =                                             DOSQLP
              TO_DATE(:DZ05-HEURE:V-DZ05-HEURE,'DD/MM/YY'),      DOSQLP
             PRECIS =                                            DOSQLP
              :DZ05-PRECIS:V-DZ05-PRECIS                         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                                                  DOSQLP
                               CLOSE      DISPLAY_DZ05           DOSQLP
       END-EXEC.                                                 DOSQLP
       GO TO F80-OK.                                             DOSQLP
F8001-FN.    EXIT.                                               DOSQLP
F80-DZ10-R.                                                      DOSQLP
       EXEC SQL                                                  DOSQLP
                            SELECT ALL                           DOSQLP
                  COCARA ,                                       DOSQLP
                  NUCOM ,                                        DOSQLP
                  FOURNP ,                                       DOSQLP
                  LIVRABLE ,                                     DOSQLP
                  QUANTITE-COMMANDEE ,                           DOSQLP
                  INFOR                                          DOSQLP
         INTO  :DZ10-COCARA:V-DZ10-COCARA,                       DOSQLP
               :DZ10-NUCOM:V-DZ10-NUCOM,                         DOSQLP
               :DZ10-FOURNP:V-DZ10-FOURNP,                       DOSQLP
               :DZ10-QTMLI:V-DZ10-QTMLI,                         DOSQLP
               :DZ10-QTMCO:V-DZ10-QTMCO,                         DOSQLP
               :DZ10-INFOR:V-DZ10-INFOR                          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                                                  DOSQLP
                            SELECT ALL                           DOSQLP
                  COCARA ,                                       DOSQLP
                  NUCOM ,                                        DOSQLP
                  FOURNP ,                                       DOSQLP
                  LIVRABLE ,                                     DOSQLP
                  QUANTITE-COMMANDEE ,                           DOSQLP
                  INFOR                                          DOSQLP
         INTO  :DZ10-COCARA:V-DZ10-COCARA,                       DOSQLP
               :DZ10-NUCOM:V-DZ10-NUCOM,                         DOSQLP
               :DZ10-FOURNP:V-DZ10-FOURNP,                       DOSQLP
               :DZ10-QTMLI:V-DZ10-QTMLI,                         DOSQLP
               :DZ10-QTMCO:V-DZ10-QTMCO,                         DOSQLP
               :DZ10-INFOR:V-DZ10-INFOR                          DOSQLP
                FROM DODZ10                                      DOSQLP
     WHERE COCARA =  :DZ10-COCARA                                DOSQLP
       AND NUCOM =  :DZ10-NUCOM                                  DOSQLP
       FOR UPDATE                                                DOSQLP
       END-EXEC.                                                 DOSQLP
       GO TO F80-OK.                                             DOSQLP
F80-DZ10-P.                                                      DOSQLP
       EXEC SQL                                                  DOSQLP
                                OPEN      DISPLAY_DZ10           DOSQLP
       END-EXEC.                                                 DOSQLP
F80-DZ10-RN.                                                     DOSQLP
       EXEC SQL                                                  DOSQLP
                               FETCH      DISPLAY_DZ10           DOSQLP
         INTO  :DZ10-COCARA:V-DZ10-COCARA,                       DOSQLP
               :DZ10-NUCOM:V-DZ10-NUCOM,                         DOSQLP
               :DZ10-FOURNP:V-DZ10-FOURNP,                       DOSQLP
               :DZ10-QTMLI:V-DZ10-QTMLI,                         DOSQLP
               :DZ10-QTMCO:V-DZ10-QTMCO,                         DOSQLP
               :DZ10-INFOR:V-DZ10-INFOR                          DOSQLP
       END-EXEC.                                                 DOSQLP
       GO TO F80-OK.                                             DOSQLP
F80-DZ10-W.                                                      DOSQLP
       EXEC SQL                                                  DOSQLP
                            INSERT                               DOSQLP
                      INTO DODZ10                                DOSQLP
                  ( COCARA ,                                     DOSQLP
                    NUCOM ,                                      DOSQLP
                    FOURNP ,                                     DOSQLP
                    LIVRABLE ,                                   DOSQLP
                    QUANTITE-COMMANDEE ,                         DOSQLP
                    INFOR )                                      DOSQLP
      VALUES (:DZ10-COCARA:V-DZ10-COCARA,                        DOSQLP
              :DZ10-NUCOM:V-DZ10-NUCOM,                          DOSQLP
              :DZ10-FOURNP:V-DZ10-FOURNP,                        DOSQLP
              :DZ10-QTMLI:V-DZ10-QTMLI,                          DOSQLP
              :DZ10-QTMCO:V-DZ10-QTMCO,                          DOSQLP
              :DZ10-INFOR:V-DZ10-INFOR)                          DOSQLP
       END-EXEC.                                                 DOSQLP
       GO TO F80-OK.                                             DOSQLP
F80-DZ10-RW.                                                     DOSQLP
       EXEC SQL                                                  DOSQLP
                            UPDATE                               DOSQLP
                           DODZ10                                DOSQLP
         SET FOURNP =                                            DOSQLP
              :DZ10-FOURNP:V-DZ10-FOURNP,                        DOSQLP
             LIVRABLE =                                          DOSQLP
              :DZ10-QTMLI:V-DZ10-QTMLI,                          DOSQLP
             QUANTITE-COMMANDEE =                                DOSQLP
              :DZ10-QTMCO:V-DZ10-QTMCO,                          DOSQLP
             INFOR =                                             DOSQLP
              :DZ10-INFOR:V-DZ10-INFOR                           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                                                  DOSQLP
                               CLOSE      DISPLAY_DZ10           DOSQLP
       END-EXEC.                                                 DOSQLP
       GO TO F80-OK.                                             DOSQLP
F8002-FN.    EXIT.                                               DOSQLP
F80-HELP-W.                                                      DOSQLP
    EXEC  CICS  WRITEQ  TS  QUEUE (NAMEQ)  FROM (O-SQLP)         DOSQLP
         LENGTH (SCRLGTH) ITEM (TSQITEM) MAIN END-EXEC.          DOSQLP
         GO TO F80-OK.                                           DOSQLP
F80-HELP-RW.                                                     DOSQLP
    EXEC  CICS  WRITEQ  TS  QUEUE (NAMEQ)  FROM (O-SQLP)         DOSQLP
    LENGTH (SCRLGTH) ITEM (TSQITEM) REWRITE MAIN END-EXEC.       DOSQLP
         GO TO F80-OK.                                           DOSQLP
F80-HELP-R.                                                      DOSQLP
    EXEC  CICS  READQ   TS  QUEUE (NAMEQ)  INTO (O-SQLP)         DOSQLP
         LENGTH (SCRLGTH) ITEM (TSQITEM) END-EXEC.               DOSQLP
         GO TO F80-OK.                                           DOSQLP
F80-HELP-D.                                                      DOSQLP
    EXEC CICS HANDLE CONDITION QIDERR (F80-OK) END-EXEC.         DOSQLP
    EXEC  CICS  DELETEQ TS  QUEUE (NAMEQ)  END-EXEC.             DOSQLP
```

```
           GO TO F80-OK.                                        DOSQLP
    F8095-FN.    EXIT.                                          DOSQLP
    F80-OK.  MOVE '0' TO IK MOVE PROGR TO XPROGR GO TO F80-FN.  DOSQLP
    F80-KO.  MOVE '1' TO IK MOVE PROGR TO XPROGR.               DOSQLP
    F8099-FN.    EXIT.                                          DOSQLP
    F80-FN.      EXIT.                                          DOSQLP
```

10. SCREEN GENERATED USING SQL/DS, DB2/2 OR DB2/6000

10.1. PRESENTATION OF THE EXAMPLE

INTRODUCTION

This chapter presents the COBOL lines automatically generated when a screen accesses SQL/DS, 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.

```
--------------------------------------------------------------------------------
!                  APPLICATION VSAM/CICS-MVS                  PDLB.NDOC.ACI.125!
! ON-LINE SCREEN CALL OF SEGM. DOSQLQ APPEL 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 : *DCC!
! . 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!
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
! *** END ***                                                                  !
! 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).

```
       EXEC SQL BEGIN DECLARE SECTION END-EXEC.                  DOSQLQ
01                 DZ05-COCARA PICTURE X.                        DOSQLQ
01              V-DZ05-COCARA  PICTURE S9(4) COMP.               DOSQLQ
01                 DZ05-NUCOD  PICTURE S9(3)                     DOSQLQ
                        COMPUTATIONAL.                           DOSQLQ
01              V-DZ05-NUCOD   PICTURE S9(4) COMP.               DOSQLQ
01                 DZ05-FOURNI PICTURE X(3).                     DOSQLQ
01              V-DZ05-FOURNI  PICTURE S9(4) COMP.               DOSQLQ
01                 DZ05-NUCLIE PICTURE 9(8).                     DOSQLQ
01              V-DZ05-NUCLIE  PICTURE S9(4) COMP.               DOSQLQ
01                 DZ05-DATE   PICTURE X(6).                     DOSQLQ
01              V-DZ05-DATE    PICTURE S9(4) COMP.               DOSQLQ
01                 DZ05-RELEA  PICTURE X(3).                     DOSQLQ
01              V-DZ05-RELEA   PICTURE S9(4) COMP.               DOSQLQ
01                VDZ05-REFCLI.                                  DOSQLQ
       49         LDZ05-REFCLI PICTURE S9(4) COMP.               DOSQLQ
       49          DZ05-REFCLI PICTURE X(30).                    DOSQLQ
01              V-DZ05-REFCLI  PICTURE S9(4) COMP.               DOSQLQ
01                VDZ05-RUE.                                     DOSQLQ
       49         LDZ05-RUE    PICTURE S9(4) COMP.               DOSQLQ
       49          DZ05-RUE    PICTURE X(40).                    DOSQLQ
01              V-DZ05-RUE     PICTURE S9(4) COMP.               DOSQLQ
01                 DZ05-COPOS  PICTURE X(5).                     DOSQLQ
01              V-DZ05-COPOS   PICTURE S9(4) COMP.               DOSQLQ
01                VDZ05-VILLE.                                   DOSQLQ
       49         LDZ05-VILLE  PICTURE S9(4) COMP.               DOSQLQ
       49          DZ05-VILLE  PICTURE X(20).                    DOSQLQ
01              V-DZ05-VILLE   PICTURE S9(4) COMP.               DOSQLQ
01                VDZ05-CORESP.                                  DOSQLQ
       49         LDZ05-CORESP PICTURE S9(4) COMP.               DOSQLQ
       49          DZ05-CORESP PICTURE X(256).                   DOSQLQ
01              V-DZ05-CORESP  PICTURE S9(4) COMP.               DOSQLQ
01                 DZ05-REMISE PICTURE S9(4)V99                  DOSQLQ
                        COMPUTATIONAL-3.                         DOSQLQ
01              V-DZ05-REMISE  PICTURE S9(4) COMP.               DOSQLQ
01                VDZ05-MATE.                                    DOSQLQ
       49         LDZ05-MATE   PICTURE S9(4) COMP.               DOSQLQ
       49          DZ05-MATE   PICTURE X(8).                     DOSQLQ
01              V-DZ05-MATE    PICTURE S9(4) COMP.               DOSQLQ
01                 DZ05-PRIX1                                    DOSQLQ
                        COMPUTATIONAL-2.                         DOSQLQ
01              V-DZ05-PRIX1   PICTURE S9(4) COMP.               DOSQLQ
01                 DZ05-HEURE  PICTURE X(8).                     DOSQLQ
01              V-DZ05-HEURE   PICTURE S9(4) COMP.               DOSQLQ
01                 DZ05-PRECIS PICTURE X(26).                    DOSQLQ
01              V-DZ05-PRECIS  PICTURE S9(4) COMP.               DOSQLQ
01                 DZ10-COCARA PICTURE X.                        DOSQLQ
01              V-DZ10-COCARA  PICTURE S9(4) COMP.               DOSQLQ
01                 DZ10-NUCOM  PICTURE 9(5).                     DOSQLQ
01              V-DZ10-NUCOM   PICTURE S9(4) COMP.               DOSQLQ
01                 DZ10-FOURNP PICTURE X(3).                     DOSQLQ
01              V-DZ10-FOURNP  PICTURE S9(4) COMP.               DOSQLQ
01                 DZ10-QTMLI  PICTURE S9(2)                     DOSQLQ
                        COMPUTATIONAL.                           DOSQLQ
01              V-DZ10-QTMLI   PICTURE S9(4) COMP.               DOSQLQ
01                 DZ10-QTMCO  PICTURE S9(2)                     DOSQLQ
                        COMPUTATIONAL.                           DOSQLQ
01              V-DZ10-QTMCO   PICTURE S9(4) COMP.               DOSQLQ
01                VDZ10-INFOR.                                   DOSQLQ
       49         LDZ10-INFOR  PICTURE S9(4) COMP.               DOSQLQ
       49          DZ10-INFOR  PICTURE X(35).                    DOSQLQ
01              V-DZ10-INFOR   PICTURE S9(4) COMP.               DOSQLQ
       EXEC SQL END   DECLARE SECTION END-EXEC.                  DOSQLQ
       EXEC SQL INCLUDE SQLCA         END-EXEC.                  DOSQLQ
```

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                                 !
!        !                                                   !
+------------------------------------------------------------+
```