VisualAge Pacbase 2.5

HP3000 OLSD
REFERENCE MANUAL

DDOHP000021A

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TRADEMARKS

TABLE OF CONTENTS

1. PRESENTATION OF THE EXAMPLE

1.1. PURPOSE OF THE MANUAL

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.

The 'HP3000' generator allows the generation of on-line systems running under the HPE/XL Operating System with a HP3000 hardware.

To get a generation which is specific to 'HP3000', indicate the values 7 and 0 in the area called TYPE OF COBOL AND MAP TO GENERATE.

1.2. ARCHITECTURE OF GENERATED TRANSACTIONS

CONVERSATIONAL MANAGEMENT

Under HP3000, generated on-line programs are executed under the control of the MPE/XL Operating System.

In these contexts, there is no option for freeing resources required by the program after screen display.

The execution of a program from another can only be performed in COBOL using a "CALL" statement, which follows the standard rules of sub-program calls.

For example, using this statement does not allow the follow- ing branching:

PGM A --> PGM B --> PGM C --> PGM A

because a sub-program cannot directly or indirectly call its calling program (PGM C --> PGM A forbidden).

However, this type of branching between the screens of a dialogue must always be insured.

The constraints related to the use of this "CALL" statement imply a specific program organization within a same dialogue different from that of the basic version of the System.

A "monitor" program is generated for each dialogue of an on-line application.

This monitor manages dynamic CALLs to the different screens of a dialogue. Contrary to the above example, branching is ensured by this monitor in the following way:

MON-->PGM A-->MON-->PGM B-->MON-->PGM C-->MON-->PGM A.

The reader will find more information on the monitor program in Chapter "GENERATED MONITOR EXAMPLE: DATA DIVISION".

PHYSICAL DESCRIPTION OF SCREENS

The physical description of a screen is stored in a VFAST file. The following steps must be performed to obtain this description:

- generate screen transactions via the System

- create the following two files via the HPFORM utility under HP3000:

. FORM skeleton file

. batch command file

The HPFORM utility is supplied by C.G.I.

- obtain the FORM and FAST files via the FORMSPEC program

The set of a dialog's screens correspond to the same FORM file. A FAST file corresponds to this FORM file.

1.3. IMPLEMENTATION OF A CONVERSATION

IMPLEMENTATION OF A CONVERSATION

Implementing a conversation requires executing the following operations:

- get the screens for VPLUS

  for each screen:
  . run the utility HPFORM provided by C.G.I.
  . execute FORMSPEC

- compile and link the monitor program.

  When using ALLBASE/SQL, don't forget to do a precompile. The database must have previously been created.

- compile, link and store the sub-programs in an XL library.

  When using ALLBASE/SQL, don't forget to do a precompile. The database must have previously been created.

In a multi-user configuration, don't forget to specify "shared" parameters for KSAM files that are used.

NOTES ON THE MPE COMMANDS

The HPFORM program creates 2 temporary files :
- PAC7CF : commands
- PAC7SF : skeleton

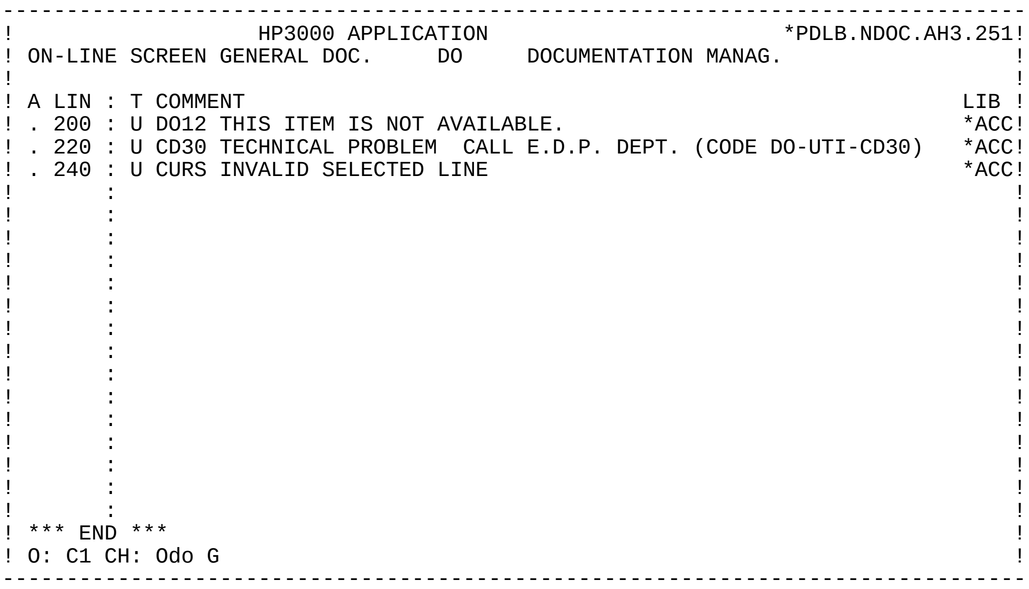
The RUN FORMSPEC.PUB.SYS;INFO='PAC7CF' treats the commands of the PAC7CF file. The skeleton FORM name follows the command SCREENFILE.

Before you run this command, don't forget to do the following :
- save the skeleton: SAVE PAC7SF
- rename the skeleton file:
RENAME PAC7SF.SFnom_programme_PAC
- before performing the operation another time, do not forget to do DELETE SFxxxxx.

1.4. THE 'DO' DIALOGUE

```
--------------------------------------------------------------------------------
!                   HP3000 APPLICATION                       *PDLB.NDOC.AH3.251!
! ON-LINE DIALOGUE DEFINITION........: DO                                      !
!                                                                              !
! DIALOGUE NAME......................:   DOCUMENTATION MANAG.                  !
!                                                                              !
! SCREEN SIZE (LINES, COLUMNS) ......:   24       080                          !
! LABEL TYPE, TABS, INITIALIZATION...:   L        01       _                   !
! HELP CHARACTER SCREEN, DATA ELEMENT:   %        ?                            !
!                                                                              !
!                                      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..:   7   0     HP-3000 (VPLUS/V)           !
! CONTROL CARD OPTIONS FRONT & BACK..:            (PROGRAM)      $$       (MAP)!
! EXTERNAL NAMES ....................:            (PROGRAM)               (MAP)!
! TRANSACTION CODE...................:                                         !
!                                                                              !
!                                                                              !
! EXPLICIT KEYWORDS..: DOC                                                     !
! SESSION NUMBER.....: 0111        LIBRARY......: AH3    LOCK....:             !
!                                                                              !
! O: C1 CH: Odo                         ACTION:                                !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   HP3000 APPLICATION                       *PDLB.NDOC.AH3.251!
! DIALOGUE COMPLEMENT....:  DO 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.............: QABLOC                               !
!                                                                              !
!                                                                              !
! OPTIONS : OCF F10                                                            !
!                                                                              !
!                                                                              !
!                                                                              !
! SESSION NUMBER     : 0111  LIBRARY      : AH3                                !
!                                                                              !
! O: C1 CH: Odo O                       ACTION:                                !
--------------------------------------------------------------------------------
```



```
--------------------------------------------------------------------------------
!                   HP3000 APPLICATION                       *PDLB.NDOC.AH3.251!
! ON-LINE SCREEN GENERAL DOC.     DO     DOCUMENTATION MANAG.                  !
!                                                                              !
! A LIN : T COMMENT                                                        LIB !
! . 200 : U DO12 THIS ITEM IS NOT AVAILABLE.                               *ACC!
! . 220 : U CD30 TECHNICAL PROBLEM  CALL E.D.P. DEPT. (CODE DO-UTI-CD30)   *ACC!
! . 240 : U CURS INVALID SELECTED LINE                                     *ACC!
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
!       :                                                                      !
! *** END ***                                                                  !
! O: C1 CH: Odo G                                                              !
--------------------------------------------------------------------------------
```

1.5. THE 'DO0030' SCREEN

```
--------------------------------------------------------------------------------
!                   HP3000 APPLICATION                       *PDLB.NDOC.AH3.251!
! ON-LINE SCREEN DEFINITION..........: DO0030                                  !
!                                                                              !
! SCREEN NAME........................: ***  ORDER INPUT SCREEN  ***            !
!                                                                              !
! SCREEN SIZE (LINES, COLUMNS) ......:   24       080                          !
! LABEL TYPE, TABS, INITIALIZATION...:   L        01     * -                   !
! HELP CHARACTER SCREEN, DATA ELEMENT:   %        ?                            !
!                                                                              !
!                                      LABELS   DISPLAY  INPUT  ER.MESS.  ER.FL!
! INTENSITY ATTRIBUTE ...............: * B        N        N        N        N !
! PRESENTATION ATTRIBUTE ............:   N        N        N        N        N !
! COLOR ATTRIBUTE ...................:   W        W        W        W        W !
!                                                                              !
! TYPE OF COBOL AND MAP TO GENERATE..:   7   0     HP-3000 (VPLUS/V)           !
! CONTROL CARD OPTIONS FRONT & BACK..:            (PROGRAM)      $$       (MAP)!
! EXTERNAL NAMES ....................:   DOP0030  (PROGRAM)      DOM0030  (MAP)!
! TRANSACTION CODE...................: * DO30                                  !
!                                                                              !
!                                                                              !
! EXPLICIT KEYWORDS..:                                                         !
! SESSION NUMBER.....: 0094        LIBRARY......: AH3    LOCK....:             !
!                                                                              !
! O: C1 CH: Odo0030                     ACTION:                                !
--------------------------------------------------------------------------------
```

```
 --------------------------------------------------------------------------------
 !                  HP3000 APPLICATION                     *PDLB.NDOC.AH3.251!
 ! ON-LINE SCREEN GENERAL DOC.     DO0030 ***  ORDER INPUT SCREEN  ***           !
 !                                                                               !
 ! A LIN : T COMMENT                                                       LIB !
 ! . 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                                                           !
 --------------------------------------------------------------------------------
 --------------------------------------------------------------------------------
 !                  HP3000 APPLICATION                      *PDLB.NDOC.AH3.251!
 ! ON-LINE SCREEN GENERAL DOC.     DO0030 ***  ORDER INPUT SCREEN  ***           !
 !                                                                               !
 ! A LIN : T COMMENT                                                       LIB !
 ! . 350 : F CODMVT                                                        *ACC!
 ! . 360 : C      AN ACTION CODE MUST BE ENTERED.                          *ACC!
 ! . 400 : F FOURNI                                                        *ACC!
 ! . 402 : C      THE FIELD 'ITEM' IS ENTERED WITH THE 3-CHARACTER CODE    *ACC!
 ! . 403 : C      OF THE MANUAL. IT IS NOT POSSIBLE TO ENTER               *ACC!
 ! . 404 : C      REQUESTS CONCERNING THE BINDERS.                         *ACC!
 ! . 430 : U    A THIS PROCEDURE DOES NOT PERMIT TO ORDER BINDERS.         *ACC!
 ! . 450 : F MATE                                                          *ACC!
 ! . 451 : T    0 DOCUM DD                                                 *ACC!
 ! . 453 : U    5 THIS TYPE OF HARDWARE IS NOT SUPPORTED BY PACBASE.       *ACC!
 ! . 500 : F QTMAC                                                         *ACC!
 ! . 510 : C      THE 'QUANTITY ORDERED' FIELD MUST BE ENTERED WITH THE    *ACC!
 ! . 520 : C      NUMBER OF COPIES NEEDED FOR THE SPECIFIED MANUAL.        *ACC!
 ! . 530 : C      ACCORDING TO STOCK AVAILABILITY, THE SYSTEM FILLS IN     *ACC!
 ! . 540 : C      THE 'QUANTITY DELIVERED' AND, IF NEEDED, THE 'QUANTITY   *ACC!
 ! . 541 : C      OUTSTANDING'.                                            *ACC!
 ! . 600 : F INFOR                                                         *ACC!
 ! . 610 : C      THE 'REMARKS' COLUMN ALLOWS TO ENTER SPECIFICS           *ACC!
 ! . 625 : C      CONCERNING THE LEAD TIMES OF OUTSTANDING ORDERS.         *ACC!
 ! O: C1 CH:                                                                     !
 --------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   HP3000 APPLICATION                       *PDLB.NDOC.AH3.251!
! 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                                                         !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   HP3000 APPLICATION                       *PDLB.NDOC.AH3.251!
! 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:                                                                    !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   HP3000 APPLICATION                       *PDLB.NDOC.AH3.251!
! 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:                                                                    !
--------------------------------------------------------------------------------
```

```
 --------------------------------------------------------------------------------
 !                   HP3000 APPLICATION                      *PDLB.NDOC.AH3.251!
 ! 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:                                                                   !
 --------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   HP3000 APPLICATION                       *PDLB.NDOC.AH3.251!
! ON-LINE SCREEN CALL OF P.M.S.......:     DO0030 ***  ORDER INPUT SCREEN  *** !
!                                                                              !
! A   MACRO  LN C : COMMENTS OR PARAMETER VALUES                       D E     !
! .   AADOCP      : WP/                                                        !
!     AERSQL      :                                                            !
! .   BBDEBR      :                                                            !
! .   BBINIT      :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                                                                              !
! O: C1 CH: Odo0030 CP                                                         !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   HP3000 APPLICATION                       *PDLB.NDOC.AH3.251!
! 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      ZERO            NUCOM    Q 1 QABLOC   CD05      :0111!
!   CD10 R 00 :   T        CA00-NUCOM      NUCOM    Q 1 QABLOC   CD10      :0111!
!   CD10 R 02 :            0030-FOURNI     FOURNI                          :0111!
!   CD10 R 06 :     A      CA00-NUCOM      NUCOM                           :0111!
!   CD10 R 08 :            SPACE           FOURNI                          :0111!
!   FO10 R 00 :   M N CD10 0030-FOURNI     CLEFO    Q 1 QABLOC   FO10      :0111!
!   CD20 Z 00 :   X N      '0'             EDIT     Q 1 QABLOC   CD20      :0111!
!   ME00 Z 00 :   N A      CA00-COPERS     COPERS   Q 1 QABLOC   ME00      :0111!
!   ME00 Z 10 :            CA00-NUMORD     NUMORD                          :0111!
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!             :                                                           :    !
!                                                                              !
! O: C1 CH: Odo0030 CS                                                         !
--------------------------------------------------------------------------------
```

```
PROCEDURAL CODE       O DO0030      FUNCTION: 02
ASFLIN OPE OPERANDS                         LVTY CONDITION
*CP    N   INIT. NUMBER OF LOADED ITEMS     10BL
*CP100 M   IWP20M IWP20L
- -- --- --- -------------------------------- ---- -------------------
PROCEDURAL CODE       O DO0030      FUNCTION: 08
ASFLIN OPE OPERANDS                         LVTY CONDITION
*BB    N   NO UPDATE ==> END OF RECEIVE     10IT OPER NOT = "M"
*BB100 GFT
- -- --- --- -------------------------------- ---- -------------------
PROCEDURAL CODE       O DO0030      FUNCTION: 15
ASFLIN OPE OPERANDS                         LVTY CONDITION
.AA    N   INITIALIZATION CATM (HEADING)    10IT CATX = SPACE
.AA100 M   "M" CATM                           AN OPER = "M"
- -- --- --- -------------------------------- ---- -------------------
PROCEDURAL CODE       O DO0030      FUNCTION: 20
ASFLIN OPE OPERANDS                         LVTY CONDITION
.BB    N   ITEM NOT AVAILABLE               10*A FOURNI
.BB100 ERR A FOURNI                         99IT I-0030-FOURNI = "CLA"
.BB110 GF                                     AN CATM NOT = SPACE
- -- --- --- -------------------------------- ---- -------------------
PROCEDURAL CODE       O DO0030      FUNCTION: 25
ASFLIN OPE OPERANDS                         LVTY CONDITION
.BB    N   ACCESS TO FO10                   12*P CD10
.BB100 M   "1" CD10-CF
- -- --- --- -------------------------------- ---- -------------------
PROCEDURAL CODE       O DO0030      FUNCTION: 28
ASFLIN OPE OPERANDS                         LVTY CONDITION
.BH    N   STOCK UPD.: ORDER DELETION/UPD   10IT (CATM = "A" OR "M")
.BH100 A   CD10-QTMAL FO10-QTMAS              AN CATX = "R"
.BH120                                        AN CAT-ER = SPACES
- -- --- --- -------------------------------- ---- -------------------
PROCEDURAL CODE       O DO0030      FUNCTION: 30
ASFLIN OPE OPERANDS                         LVTY CONDITION
.BD    N   QUANTITY PROCESSING              10*P R
- -- --- --- -------------------------------- ---- -------------------
.BF    N   CALC. DELIV. QUANT.   STOCK UPD. 12IT CATM = "C" OR "M"
.BF100 M   I-0030-QTMAC  CD10-QTMAL         99IT FO10-QTMAS NOT <
.BF110                                           I-0030-QTMAC
.BF120 M   FO10-QTMAS    CD10-QTMAL         99EL
.BF130 S   CD10-QTMAL    FO10-QTMAS         99BL
.BF140 M   CD10-QTMAL    O-0030-QTMAL
- -- --- --- -------------------------------- ---- -------------------
PROCEDURAL CODE       O DO0030      FUNCTION: 64
ASFLIN OPE OPERANDS                         LVTY CONDITION
*DA    N   PREPARATION DISPLAY DATE/HOUR    10IT CATX = " "
*DA 40 AD6
*DA 80 AD  IM DATOR DAT8C
*DA120 TIM                                  99BL
*DA160 TIF TIMCOG TIMDAY
- -- --- --- -------------------------------- ---- -------------------
PROCEDURAL CODE       O DO0030      FUNCTION: 65
ASFLIN OPE OPERANDS                         LVTY CONDITION
.BB    N   REMAINS TO BE DELIVERED          10*P R
.BB100 C   WW10-QTMAR =                     99IT CD10-QTMAL NOT = ZERO
.BB110     CD10-QTMAC - CD10-QTMAL
.BB120 M   WW10-QTMAR   O-0030-QTMAR
- -- --- --- -------------------------------- ---- -------------------
PROCEDURAL CODE       O DO0030      FUNCTION: 81
ASFLIN OPE OPERANDS                         LVTY CONDITION
*ES    N   ALLBASE/SQL ERROR                10BL
*ES100 *   DEADLOCK                         99IT SQLCODE = -14024
*ES110 M   "1"  7-SQLA-POSMSG
*ES190 COB GO TO F50.
*ES200 *   BEGIN TWICE                      99IT SQLCODE NOT = -2103
*ES205 COB GO TO F81ES-299.
*ES210 EXQ  COMMIT WORK
*ES290 COB GO TO F50.
*ES299 COA F81ES-299.
*ES300 *   COMMIT WITHOUT BEGIN             99IT SQLCODE NOT = -2102
*ES305 COB GO TO F81ES-399.
*ES350 COB GO TO F3999-FN                   99IT CATX = "1"
*ES370 COB GO TO F6999-FN                   99IT CATX = "2"
*ES399 COA F81ES-399.
*ES500 *   ANOTHER ERROR
*ES510 M   "SQ"  S-WWSS-STATUS
*ES590 COB GO TO F81ER.
```

```
- -- --- --- -------------------------------- ---- -------------------
PROCEDURAL CODE       O DO0030      FUNCTION: 93
ASFLIN OPE OPERANDS                         LVTY CONDITION
*CP    N   ZIP CODE VALIDATION              10BL
*CP100 SCH WP20-COPOS WP30-COPOS
*CP200 M   "5" DEL-ER                       99IT IWP20R > IWP20L
*CP220 GT  10
- -- --- --- -------------------------------- ---- -------------------
```

2. GENERATED MONITOR EXAMPLE: DATA DIVISION

2.1. INTRODUCTION

EXAMPLE OF GENERATED MONITOR

The monitor is obtained through the generation of the Dialogue ('GCO di' Generation-Print request, with 'di'=dialogue code).

The general structure of the monitor is as follows:

DATA DIVISION

Declaration of the dialogue conversation area in the WORKING-STORAGE SECTION.

DISTINCTIVE FEATURES OF VPLUS

For the sake of speed, the VPLUS VOPENTERM and VOPENFORM commands are inserted in the generated monitor program. The VPLUS management field is indicated, in the generated monitor program, in the call to screen sub-programs.

A status code set to VP indicates a VPLUS error. The CALL "VERRMSG" instruction of the F81EV function provides a corresponding explanatory message.

DISTINCTIVE FEATURES OF ALLBASE/SQL

To save time, the command for logging on to the database is executed in the generated monitor program. The database to be used is indicated on the System "DIALOG SUPPLEMENT (-O)" screen, in the "PSB OR SUB-SCHEMA NAME" field.

The SQLCA control block for ALLBASE/SQL is indicated as a parameter in the call to screen sub-programs.

In the case of an SQL error corresponding to a status code set to SQ, you can get the associated explanatory message (F81ES) via SQLEXPLAIN.

2.2. DATA DIVISION

DATA DIVISION

The Monitor is generated from the Dialogue Definition Screen.

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

'CONSTANTS'
This level inludes information associated with the System context: session number, library, generation date, etc.

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

'COMMUNICATION-MONITOR'
This level contains the fields allowing the monitor to communicate with the Dialogue screens:

. S-WWSS-OPER

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

- 'O': Screen branching

- 'E': End of conversation

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

. S-WWSS-PROGE

External name of the screen program to be called.

. S-WWSS-XFILE

In the event of an input-output error, this field stores the file name.

. S-WWSS-XFUNCT

In the event of an input-output error, this field stores the operation performed on the file (READ, WRITE, START, etc.).

. S-WWSS-STATUS

In the event of an input-output error, this field stores the file status.

'SQL' (if necessary)
This level includes the SQL message field, as well as the SQLCA INCLUDE.

'VPLUS field'
This field contains the VPLUS parameters and communication block.
All of the fields are initialized with values.

```
IDENTIFICATION DIVISION.
PROGRAM-ID. DO.                                                  DO
AUTHOR.     PACBASE DOCUMENTATION MANAG.                         DO
DATE-COMPILED. 08/06/92.                                         DO
ENVIRONMENT DIVISION.                                            DO
CONFIGURATION SECTION.                                           DO
SOURCE-COMPUTER. HP-3000.                                        DO
OBJECT-COMPUTER. HP-3000.                                        DO
DATA DIVISION.                                                   DO
WORKING-STORAGE SECTION.                                         DO
01   WSS-BEGIN.                                                  DO
     05 FILLER PICTURE X(7) VALUE "WORKING".                     DO
     05 IK     PICTURE X.                                        DO
     05 BLANC  PICTURE X VALUE SPACE.                            DO
01   CONSTANTS.                                                  DO
     05 SESSI  PICTURE X(5) VALUE "0251 ".                       DO
     05 LIBRA  PICTURE X(3) VALUE "AH3".                         DO
     05 DATGN  PICTURE X(8) VALUE "08/06/92".                    DO
     05 PROGR  PICTURE X(6) VALUE "DO    ".                      DO
     05 PROGE  PICTURE X(8) VALUE "DO      ".                    DO
     05 TIMGN  PICTURE X(8) VALUE "10:25:03".                    DO
     05 USERCO PICTURE X(8) VALUE "PDLB    ".                    DO
01      COMMON-AREA.                                             *AA000
     02 K-PROGR  PICTURE X(6).                                   *AA000
     02            CA00.                                         *AA001
       10          CA00-CLECD.                                   *AA001
        15         CA00-NUCOM  PICTURE S9(5)                     *AA001
                        COMPUTATIONAL-3.                         *AA001
       10          CA00-CLECL1.                                  *AA001
        15         CA00-NUCLIE PICTURE S9(8)                     *AA001
                        COMPUTATIONAL-3.                         *AA001
       10          CA00-ME00.                                    *AA001
        15         CA00-CLEME.                                   *AA001
         20        CA00-COPERS PICTURE X(5).                     *AA001
         20        CA00-NUMORD PICTURE XX.                       *AA001
        15         CA00-MESSA  PICTURE X(75).                    *AA001
       10          CA00-PREM   PICTURE X.                        *AA001
       10          CA00-LANGU  PICTURE X.                        *AA001
       10          CA00-RAISOC PICTURE X(50).                    *AA001
     02  K-SDOC PICTURE X.                                       *AA002
     02  FILLER PICTURE X(30).                                   *AA002
     02  FILLER      PICTURE X(0700).                            *AA002
     EXEC SQL  INCLUDE SQLCA  END-EXEC.                          *AA005
     EXEC SQL  BEGIN DECLARE SECTION  END-EXEC.                  *AA006
01     SQLMESSAGE PICTURE X(132).                                *AA006
     EXEC SQL  END   DECLARE SECTION  END-EXEC.                  *AA006
01           HP30.                                               *AA010
    05       HP30-FMFILE  PICTURE X(8).                          *AA010
    05       HP30-TERMIN  PICTURE X(6).                          *AA010
    05       HP30-ERRBUF  PICTURE X(72).                         *AA010
    05       HP30-ERBFLN  PICTURE S9(4) COMP VALUE 72.           *AA010
    05       HP30-MSGLEN  PICTURE S9(4) COMP VALUE 72.           *AA010
01     VPLUS-COMARE.                                             *AA020
   05  VPLUS-STATUS PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-LANGUE PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-COMLEN PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-UBFLEN PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-CMODE  PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-LSTKEY PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-NUMERS PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-WINENH PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-MLTUSI PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-LABOPT PICTURE S9(4) COMP VALUE 1.                  *AA020
   05  VPLUS-CFNAME PICTURE X(16) VALUE SPACES.                  *AA020
   05  VPLUS-NFNAME PICTURE X(16) VALUE SPACES.                  *AA020
   05  VPLUS-REPAPP PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-FREAPP PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-CFNUML PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-DBFLEN PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  FILLER       PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-LOOKAH PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-DELFLA PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-SHOCNT PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  FILLER       PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-PRFLNU PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-FLERNU PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-ERFLNU PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-FOSTSZ PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  FILLER       PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  FILLER       PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  FILLER       PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-NUMREC PICTURE S9(8) COMP VALUE 0.                  *AA020
   05  VPLUS-RECNUM PICTURE S9(8) COMP VALUE 0.                  *AA020
   05  FILLER       PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  FILLER       PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-TEFLEN PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  FILLER       PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  FILLER       PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  FILLER       PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  FILLER       PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  FILLER       PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-RETRIE PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-TERMOP PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-ENVIRO PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-USTIME PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-IDENTI PICTURE S9(4) COMP VALUE 0.                  *AA020
   05  VPLUS-LABINF PICTURE S9(4) COMP VALUE 0.                  *AA020
01   INDEXES COMPUTATIONAL.                                      *AA200
     05 K01         PICTURE S9(4).                               *AA200
     05    5-CA00-LTH  PICTURE S9(4) VALUE +0142.                *AA200
01          COMMUNICATION-MONITOR.                               *00010
     02    S-WWSS.                                               *00010
       10    S-WWSS-OPER   PICTURE X.                            *00010
       10    S-WWSS-PROGE  PICTURE X(8).                         *00010
       10    S-WWSS-XFILE  PICTURE X(8).                         *00010
       10    S-WWSS-XFUNCT PICTURE X(8).                         *00010
       10    S-WWSS-STATUS PICTURE XX.                           *00010
```

2.3. PROCEDURE DIVISION

PROCEDURE DIVISION

The PROCEDURE DIVISION structure of the Monitor is as follows:

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

F0101 Commands for opening VPLUS and for logging on to the database.

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

F2910 Program stop at the end of the transaction.

F81EA Interception of VPLUS and ALLBASE/SQL errors.

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

F81ES Processing of ALLBASE/SQL errors.

F81EX Processing of VPLUS errors.

F81FI Commands for closing VPLUS.

```
 PROCEDURE DIVISION.                                              *99999
*           *************************************                 DO
*           *                                   *                 DO
*           *  INITIALIZATIONS                  *                 DO
*           *                                   *                 DO
*           *************************************                 DO
 F01.                                                             DO
        MOVE "DO0060  " TO S-WWSS-PROGE.                          DO
        MOVE ZERO TO K-SDOC.                                      DO
 F0101.                                                           DO
        MOVE  60  TO  VPLUS-COMLEN.                               DO
        MOVE  "DOFORMS "   TO S-WWSS-XFILE.                       DO
        EXEC SQL  WHENEVER SQLERROR GO TO F81ES  END-EXEC.        DO
        EXEC SQL  CONNECT TO 'QABLOC  '  END-EXEC.                DO
        MOVE  "DOFORMS "   TO HP30-FMFILE.                        DO
        MOVE  "VOPENFOR"   TO S-WWSS-XFUNCT.                      DO
        CALL  "VOPENFORMF" USING VPLUS-COMARE HP30-FMFILE.        DO
        IF  VPLUS-STATUS NOT = 0                                  DO
        GO TO F81EV.                                              DO
        MOVE  SPACE        TO HP30-TERMIN.                        DO
        MOVE  "VOPENTER"   TO S-WWSS-XFUNCT.                      DO
        CALL  "VOPENTERM"  USING VPLUS-COMARE HP30-TERMIN.        DO
        IF  VPLUS-STATUS NOT = 0                                  DO
        GO TO F81EV.                                              DO
 F0101-FN.    EXIT.                                               DO
 F01-FN.      EXIT.                                               DO
 F28.         EXIT.                                               DO
 F28AA.                                                           DO
        MOVE  "A"  TO  S-WWSS-OPER.                               DO
 F28AA-FN.    EXIT.                                               DO
 F2899.                                                           DO
        CALL S-WWSS-PROGE USING COMMON-AREA                       DO
                                COMMUNICATION-MONITOR             DO
                                SQLCA VPLUS-COMARE.               DO
 F2899-FN.    EXIT.                                               DO
 F28-FN.      EXIT.                                               DO
 F29.                                                             DO
        IF S-WWSS-OPER = "X" GO TO F81EA.                         DO
 F2910.     IF S-WWSS-OPER = "E"                                  DO
     PERFORM F81FV  THRU F81FV-FN                                 DO
     DISPLAY "END OF CONVERSATION"                                DO
        STOP RUN.                                                 DO
 F2910-FN.    EXIT.                                               DO
 F2980.                                                           DO
        GO TO F28.                                                DO
 F2980-FN.    EXIT.                                               DO
 F29-FN.      EXIT.                                               DO
 F81EA.                                                           DO
     PERFORM F81FV  THRU F81FV-FN                                 DO
      IF S-WWSS-STATUS = "VP"  GO TO F81EV.                       DO
      IF S-WWSS-STATUS = "SQ"  GO TO F81ES.                       DO
 F81EA-FN.    EXIT.                                               DO
 F81ER.                                                           DO
     DISPLAY "I-O ERROR IN PROGRAM " S-WWSS-PROGE " : "           DO
                S-WWSS-XFUNCT "."                                 DO
             S-WWSS-XFILE  "."  S-WWSS-STATUS.                    DO
     IF S-WWSS-STATUS = "VP" DISPLAY HP30-ERRBUF.                 DO
     IF S-WWSS-STATUS = "SQ" DISPLAY SQLMESSAGE.                  DO
     DISPLAY "ABNORMAL END OF CONVERSATION".                      DO
        STOP RUN.                                                 DO
 F81ER-FN.    EXIT.                                               DO
     MOVE SPACE TO SQLMESSAGE.                                    DO
        EXEC SQL  SQLEXPLAIN :SQLMESSAGE END-EXEC.                DO
     MOVE "SQ" TO S-WWSS-STATUS.                                  DO
 F81ES.                                                           DO
     GO TO F81ER.                                                 DO
 F81ES-FN.    EXIT.                                               DO
 F81EV.                                                           DO
        MOVE  SPACE  TO HP30-ERRBUF.                              DO
        CALL  "VERRMSG"      USING VPLUS-COMARE                   DO
                  HP30-ERRBUF HP30-ERBFLN HP30-MSGLEN.            DO
        MOVE  "VP" TO S-WWSS-STATUS.                              DO
        GO TO F81ER.                                              DO
 F81EV-FN.    EXIT.                                               DO
 F81FV.                                                           DO
        EXEC SQL  RELEASE  END-EXEC.                              DO
        MOVE  0  TO  VPLUS-STATUS.                                DO
```

```
           CALL  "VCLOSEFORMF"  USING VPLUS-COMARE.                    DO
           MOVE  0  TO  VPLUS-STATUS.                                  DO
           CALL  "VCLOSETERM"   USING VPLUS-COMARE.                    DO
    F81FV-FN.    EXIT.                                                 DO
```

3. GENERATED PROGRAM EXAMPLE

3.1. DESCRIPTION OF SEGMENTS

SEGMENT DESCRIPTION

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

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

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

. Specific part only;

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

Back-up file for the HELP Function

When documentation is requested (HELP Function), a file stores the input fields before branching to the HELP documentation screen. Its length must be 1924 characters; the size of the longest screen being 1920 characters.

The structure of this file is as follows:

```
01            HE00.
       05     HE00-XTERM             PICTURE X(4).
       05     HE00-SCREEN            PICTURE X(1920).
```

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

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

```
DATA DIVISION.                                                DO0030
FILE SECTION.                                                 DO0030
FD          EM-FILE                                           DO0030
            LABEL RECORD STANDARD.                            DO0030
01                EM00.                                       DO0030
      05          EM00-EMKEY.                                 DO0030
       10         EM00-LIBRA  PICTURE X(3).                   DO0030
       10         EM00-ENTYP  PICTURE X.                      DO0030
       10         EM00-XEMKY.                                 DO0030
        15        EM00-PROGR  PICTURE X(6).                   DO0030
        15        EM00-ERCOD.                                 DO0030
         20       EM00-ERCOD9 PICTURE 9(3).                   DO0030
        15        EM00-ERTYP  PICTURE X.                      DO0030
       10         EM00-LINUM  PICTURE 9(3).                   DO0030
      05          EM00-ERLVL  PICTURE X.                      DO0030
      05          EM00-ERMSG  PICTURE X(66).                  DO0030
      05          FILLER      PICTURE X(6).                   DO0030
FD          HE-FILE                                           DO0030
            LABEL RECORD STANDARD.                            DO0030
01                HE00.                                       DO0030
       05         HE00-XTERM  PICTURE X(4).                   DO0030
       05         HE00-SCREEN PICTURE X(1920).                DO0030
```

3.2. 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 'DECIMAL POINT IS COMMA' clause is generated only when there's a comma (,) in the DECIMAL POINT PRESENTATION CHARACTER field on the library definition screen.

In the FILE-CONTROL section:

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

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

. A SELECT clause is generated for the file which stores the screen before a branch to the HELP documentation, if a Help character is coded on the Dialogue Definition screen, unless the NOSAV option is entered on the Dialogue Complement (-O) screen. (Default filename: 'HE').

```
IDENTIFICATION DIVISION.
PROGRAM-ID. DOP0030.                                             DO0030
AUTHOR.     ***  ORDER INPUT SCREEN  ***.                        DO0030
DATE-COMPILED. 08/06/92.                                         DO0030
ENVIRONMENT DIVISION.                                            DO0030
CONFIGURATION SECTION.                                           DO0030
SOURCE-COMPUTER. HP-3000.                                        DO0030
OBJECT-COMPUTER. HP-3000.                                        DO0030
SPECIAL-NAMES.                                                   DO0030
     DECIMAL-POINT IS COMMA.                                     DO0030
INPUT-OUTPUT SECTION.                                            DO0030
FILE-CONTROL.                                                    DO0030
     SELECT    EM-FILE                                           DO0030
     ASSIGN TO             "DODOLE  "                            DO0030
     ORGANIZATION INDEXED                                        DO0030
     ACCESS IS DYNAMIC                                           DO0030
     RECORD KEY IS EM00-EMKEY                                    DO0030
     FILE STATUS 1-EM00-STATUS.                                  DO0030
     SELECT  HE-FILE    ASSIGN TO         "SAVESCR"              DO0030
     ORGANIZATION INDEXED                                        DO0030
     ACCESS IS DYNAMIC                                           DO0030
     RECORD KEY IS HE00-XTERM                                    DO0030
     FILE STATUS 1-HE00-STATUS.                                  DO0030
```

3.3. BEGINNING OF WORKING-STORAGE

BEGINNING OF WORKING-STORAGE

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

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

IK Error indicator for file accesses.

'0' No error.
'1' Error.

OPER Operation code.

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

OPERD Operation code for deferred branching.

Transferred to OPER in F40.

'O' Deferred call of another screen.

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

CATX Code of the category being executed.

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

CATM Transaction code.

'C' Creation.
'M' Modification.

'A' Deletion.
'X' Implicit update.

ICATR Indicator for current category being processed.

(Repetitive category only)

SCR-ER Screen error indicator.

'1' no error.
'4' error.

FT End of repetitive category indicator.

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

ICF Input Configuration.

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

OCF Output Configuration.

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

CAT-ER Ongoing error indicator for current category.

' ' No error.
'E' Error.

I-PFKEY Stores the function key used. This information

comes from the VPLUS-LSTKEY field (function F0501).

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.

USERCO The System user responsible for genera tion.

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

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

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

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

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

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

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

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

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

DATCTY Field for century loading.

DAT6C Field for non-formatted date with century.

DAT7C Field for non-formatted date with century.

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

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

TIMCO Field for time loading.

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

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

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

```
 WORKING-STORAGE SECTION.                                         DO0030
 01   WSS-BEGIN.                                                  DO0030
      05 FILLER PICTURE X(7) VALUE "WORKING".                     DO0030
      05 IK     PICTURE X.                                        DO0030
      05 BLANC  PICTURE X VALUE SPACE.                            DO0030
      05 OPER   PICTURE X.                                        DO0030
      05 OPERD  PICTURE X VALUE SPACE.                            DO0030
      05 CATX   PICTURE X.                                        DO0030
      05 CATM   PICTURE X.                                        DO0030
      05 ICATR  PICTURE 99.                                       DO0030
      05 SCR-ER PICTURE X.                                        DO0030
      05 FT     PICTURE X.                                        DO0030
      05 ICF    PICTURE X.                                        DO0030
      05 OCF    PICTURE X.                                        DO0030
      05 CAT-ER PICTURE X.                                        DO0030
      05 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
      05 I-PFKEY.                                                 DO0030
        10 I-PFKEY9 PICTURE 99.                                   DO0030
 01   CONSTANTS.                                                  DO0030
* OLSD DATES PACE30 : 26/06/92                                    DO0030
*            PACE80 : 26/06/92   PAC7SG : 920325                  DO0030
      05 SESSI  PICTURE X(5) VALUE "0251 ".                       DO0030
      05 LIBRA  PICTURE X(3) VALUE "AH3".                         DO0030
      05 DATGN  PICTURE X(8) VALUE "08/06/92".                    DO0030
      05 PROGR  PICTURE X(6) VALUE "DO0030".                      DO0030
      05 PROGE  PICTURE X(8) VALUE "DOP0030 ".                    DO0030
      05 TIMGN  PICTURE X(8) VALUE "10:25:03".                    DO0030
      05 USERCO PICTURE X(8) VALUE "PDLB    ".                    DO0030
      05 PRDOC  PICTURE X(8) VALUE "DOP050".                      DO0030
      05      5-0030-PROGE  PICTURE X(8).                         DO0030
 01  DATCE.                                                       DO0030
   05  CENTUR   PICTURE XX VALUE "19".                            DO0030
      05 DATOR.                                                   DO0030
      10 DATOA  PICTURE XX.                                       DO0030
      10 DATOM  PICTURE XX.                                       DO0030
      10 DATOJ  PICTURE XX.                                       DO0030
 01  DAT6.                                                        DO0030
      10 DAT61.                                                   DO0030
      15 DAT619 PICTURE 99.                                       DO0030
      10 DAT62.                                                   DO0030
      15 DAT629 PICTURE 99.                                       DO0030
      10 DAT63  PICTURE XX.                                       DO0030
 01  DAT7.                                                        DO0030
      10 DAT71  PICTURE XX.                                       DO0030
      10 DAT72  PICTURE XX.                                       DO0030
      10 DAT73  PICTURE XX.                                       DO0030
 01  DAT8.                                                        DO0030
      10 DAT81  PICTURE XX.                                       DO0030
      10 DAT8S1 PICTURE X.                                        DO0030
      10 DAT82  PICTURE XX.                                       DO0030
      10 DAT8S2 PICTURE X.                                        DO0030
      10 DAT83  PICTURE XX.                                       DO0030
 01  DATSEP     PICTURE X VALUE "/".                              DO0030
 01  DATSET     PICTURE X VALUE "-".                              DO0030
 01  DATCTY.                                                      DO0030
   05  DATCTY9  PICTURE 99.                                       DO0030
 01  DAT6C.                                                       DO0030
   10  DAT61C   PICTURE XX.                                       DO0030
   10  DAT62C   PICTURE XX.                                       DO0030
   10  DAT63C   PICTURE XX.                                       DO0030
   10  DAT64C   PICTURE XX.                                       DO0030
 01  DAT7C.                                                       DO0030
   10  DAT71C   PICTURE XX.                                       DO0030
   10  DAT72C   PICTURE XX.                                       DO0030
   10  DAT73C   PICTURE XX.                                       DO0030
   10  DAT74C   PICTURE XX.                                       DO0030
 01  DAT8C.                                                       DO0030
   10  DAT81C   PICTURE XX.                                       DO0030
   10  DAT8S1C  PICTURE X    VALUE "/".                           DO0030
   10  DAT82C   PICTURE XX.                                       DO0030
   10  DAT8S2C  PICTURE X    VALUE "/".                           DO0030
```

```
  10  DAT83C   PICTURE XX.                                       DO0030
  10  DAT84C   PICTURE XX.                                       DO0030
01  DAT8G.                                                       DO0030
  10  DAT81G   PICTURE XX.                                       DO0030
  10  DAT82G   PICTURE XX.                                       DO0030
  10  DAT8S1G  PICTURE X    VALUE "-".                           DO0030
  10  DAT83G   PICTURE XX.                                       DO0030
  10  DAT8S2G  PICTURE X    VALUE "-".                           DO0030
  10  DAT84G   PICTURE XX.                                       DO0030
01  TIMCO.                                                       DO0030
 02  TIMCOG.                                                     DO0030
   05  TIMCOH  PICTURE XX.                                       DO0030
   05  TIMCOM  PICTURE XX.                                       DO0030
   05  TIMCOS  PICTURE XX.                                       DO0030
  02 TIMCOC    PICTURE XX.                                       DO0030
01  TIMDAY.                                                      DO0030
   05  TIMHOU  PICTURE XX.                                       DO0030
   05  TIMS1   PICTURE X    VALUE ":".                           DO0030
   05  TIMMIN  PICTURE XX.                                       DO0030
   05  TIMS2   PICTURE X    VALUE ":".                           DO0030
   05  TIMSEC  PICTURE XX.                                       DO0030
01    CONFIGURATIONS.                                            DO0030
     05      CD05-CF      PICTURE X.                             DO0030
     05      CD10-CF      PICTURE X.                             DO0030
     05      CD20-CF      PICTURE X.                             DO0030
     05      FO10-CF      PICTURE X.                             DO0030
     05      ME00-CF      PICTURE X.                             DO0030
01     STATUS-AREA.                                              DO0030
     05    1-EM00-STATUS PICTURE XX VALUE ZERO.                  DO0030
     05    1-HE00-STATUS PICTURE XX VALUE ZERO.                  DO0030
```

3.4. DESCRIPTION OF DATA USED BY ALLBASE/SQL

DESCRIPTION OF THE DATA USED BY ALLBASE/SQL

This data, which is used in SQL commands, is found between the following two commands in the generated program:

EXEC SQL BEGIN DECLARE SECTION...

and

EXEC SQL END DECLARE SECTION...

Each data element is followed by its code.

GENERATED PROGRAM EXAMPLE 3

DESCRIPTION OF DATA USED BY ALLBASE/SQL 4

```
       EXEC SQL BEGIN DECLARE SECTION END-EXEC.                  DO0030
01                 CD05-NUCOM  PICTURE S9(5)                     DO0030
                        COMPUTATIONAL-3.                         DO0030
01                VCD05NUCOM   SQLIND.                           DO0030
01                 CD05-NUCLIE PICTURE S9(8)                     DO0030
                        COMPUTATIONAL-3.                         DO0030
01                VCD05NUCLIE  SQLIND.                           DO0030
01                 CD05-DATE   PICTURE X(6).                     DO0030
01                VCD05DATE    SQLIND.                           DO0030
01                 CD05-RELEA  PICTURE X(3).                     DO0030
01                VCD05RELEA   SQLIND.                           DO0030
01                 CD05-REFCLI PICTURE X(30).                    DO0030
01                VCD05REFCLI  SQLIND.                           DO0030
01                 CD05-RUE    PICTURE X(40).                    DO0030
01                VCD05RUE     SQLIND.                           DO0030
01                 CD05-COPOS  PICTURE X(5).                     DO0030
01                VCD05COPOS   SQLIND.                           DO0030
01                 CD05-VILLE  PICTURE X(20).                    DO0030
01                VCD05VILLE   SQLIND.                           DO0030
01                 CD05-CORRES PICTURE X(25).                    DO0030
01                VCD05CORRES  SQLIND.                           DO0030
01                 CD05-REMIS  PICTURE S9(4)V99                  DO0030
                        COMPUTATIONAL-3.                         DO0030
01                VCD05REMIS   SQLIND.                           DO0030
01                 CD05-MATE   PICTURE X(8).                     DO0030
01                VCD05MATE    SQLIND.                           DO0030
01                 CD05-LANGU  PICTURE X.                        DO0030
01                VCD05LANGU   SQLIND.                           DO0030
01                 CD10-NUCOM  PICTURE S9(5)                     DO0030
                        COMPUTATIONAL-3.                         DO0030
01                VCD10NUCOM   SQLIND.                           DO0030
01                 CD10-FOURNI PICTURE X(3).                     DO0030
01                VCD10FOURNI  SQLIND.                           DO0030
01                 CD10-QTMAC  PICTURE S99                       DO0030
                        COMPUTATIONAL-3.                         DO0030
01                VCD10QTMAC   SQLIND.                           DO0030
01                 CD10-QTMAL  PICTURE S99                       DO0030
                        COMPUTATIONAL-3.                         DO0030
01                VCD10QTMAL   SQLIND.                           DO0030
01                 CD10-INFOR  PICTURE X(35).                    DO0030
01                VCD10INFOR   SQLIND.                           DO0030
01                 CD10-ADFOU  PICTURE X(100).                   DO0030
01                VCD10ADFOU   SQLIND.                           DO0030
01                 CD20-EDIT   PICTURE X.                        DO0030
01                VCD20EDIT    SQLIND.                           DO0030
01                 FO10-FOURNI PICTURE X(3).                     DO0030
01                VFO10FOURNI  SQLIND.                           DO0030
01                 FO10-MATE   PICTURE X(8).                     DO0030
01                VFO10MATE    SQLIND.                           DO0030
01                 FO10-RELEA  PICTURE X(3).                     DO0030
01                VFO10RELEA   SQLIND.                           DO0030
01                 FO10-LANGU  PICTURE X.                        DO0030
01                VFO10LANGU   SQLIND.                           DO0030
01                 FO10-QTMAS  PICTURE S9(4)                     DO0030
                        COMPUTATIONAL.                           DO0030
01                VFO10QTMAS   SQLIND.                           DO0030
01                 FO10-QTMAM  PICTURE S9(4)                     DO0030
                        COMPUTATIONAL.                           DO0030
01                VFO10QTMAM   SQLIND.                           DO0030
01                 FO10-LIBFO  PICTURE X(20).                    DO0030
01                VFO10LIBFO   SQLIND.                           DO0030
01                 FO10-DATE   PICTURE X(6).                     DO0030
01                VFO10DATE    SQLIND.                           DO0030
01                 FO10-HEURE  PICTURE X(8).                     DO0030
01                VFO10HEURE   SQLIND.                           DO0030
01                 ME00-COPERS PICTURE X(5).                     DO0030
01                VME00COPERS  SQLIND.                           DO0030
01                 ME00-NUMORD PICTURE XX.                       DO0030
01                VME00NUMORD  SQLIND.                           DO0030
01                 ME00-MESSA  PICTURE X(75).                    DO0030
01                VME00MESSA   SQLIND.                           DO0030
       EXEC SQL END   DECLARE SECTION END-EXEC.                  DO0030
```

3.5. HP3000/VPLUS WORK FIELD

HP3000/VPLUS WORK FIELD

- level 01 HP30.:

  Attribute value change table. The information in this table is used by the VPLUS VCHANGEFIELDS command, in the function F8Z08.

- level 01 HP30-ZONENV.:

  When a screen back-up file is used, the F01 function uses this work field to retrieve the terminal number.

```
 01            HP30.                                       *AA010
     05        HP30-FLDNUM  PICTURE S9(4) COMP VALUE ZERO.  *AA010
     05        HP30-SPEBUF.                                 *AA010
         10      HP30-CHGLIN  OCCURS 045.                   *AA010
         20    HP30-CHGFNU  PICTURE S9(4) COMP.             *AA010
         20    HP30-CHGTYP  PICTURE S9(4) COMP.             *AA010
         20    HP30-CHGSPE.                                 *AA010
           30  HP30-CHGATT  PICTURE X   OCCURS 4.           *AA010
     05        HP30-CHGNBE  PICTURE S9(4) COMP VALUE ZERO.  *AA010
 01          HP30-ZONENV.                                  *AA010
    05       HP30-ENVIRO PICTURE S9(4) COMP.               *AA010
    05       HP30-ENVIRR REDEFINES HP30-ENVIRO.            *AA010
       10    HP30-TERMNO PICTURE X.                        *AA010
       10    FILLER      PICTURE X.                        *AA010
    05       HP30-TERMIL PICTURE  9(4) COMP VALUE ZERO.    *AA010
    05       HP30-TERMIR REDEFINES HP30-TERMIL.            *AA010
       10    FILLER      PICTURE X.                        *AA010
       10    HP30-TERMNU PICTURE X.                        *AA010
```

3.6. SCREEN MAP DESCRIPTION

SCREEN DESCRIPTION

The fields of the screen are coded according to the rules illustrated by the example supplied in this manual.

scrn-MESSO (equivalent to scrn-MESSI) is a buffer field used by VPLUS, in line with the description obtained by FORM from all the fields defined and coded as Slncol (e.g., S12007).

INPUT-scrn indicates the receiving screen.

OUTPUT-scrn represents the display screen. The receiving fields are described in the form Rlncol (e.g., R15003) and displayable fields appear in the form Tlncol.

The description of the fields belonging to the data element defining the repetitive category is generated outside of the screen description.

This description is made up of a 'FILLER' field which is filled in with 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-scrn-LINE Used for procedures on reception; it contains:

.I-scrn-FOURNI
.E-scrn-QTMAC
etc.

O-scrn-LINE Used for procedures on display; it contains:

.O-scrn-FOURNI
.O-scrn-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-scrn-LREF1      on reception

.05 FILLER OCCURS 2.
 .10 O-scrn-LREF1      on display
```

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

```
01         0030-MESSO.                                *AA030
   02      0030-MESSI.                                *AA030
     05    S01004  PICTURE X(008).                    *AA030
     05    S01013  PICTURE X(001).                    *AA030
     05    S01015  PICTURE X(005).                    *AA030
     05    S01060  PICTURE X(010).                    *AA030
     05    S01071  PICTURE X(008).                    *AA030
     05    S03018  PICTURE X(005).                    *AA030
     05    S03034  PICTURE X(008).                    *AA030
     05    S03063  PICTURE X(003).                    *AA030
     05    S04013  PICTURE X(050).                    *AA030
     05    S05009  PICTURE X(040).                    *AA030
     05    S05052  PICTURE X(005).                    *AA030
     05    S05060  PICTURE X(020).                    *AA030
     05    S06016  PICTURE X(030).                    *AA030
     05    S06061  PICTURE X(006).                    *AA030
     05    S07018  PICTURE X(025).                    *AA030
     05    S07061  PICTURE X(008).                    *AA030
     05    S10003  PICTURE X(001).                    *AA030
     05    S10007  PICTURE X(003).                    *AA030
     05    S10016  PICTURE X(003).                    *AA030
     05    S10026  PICTURE X(002).                    *AA030
     05    S10035  PICTURE X(002).                    *AA030
     05    S10042  PICTURE X(035).                    *AA030
     05    S11003  PICTURE X(001).                    *AA030
     05    S11007  PICTURE X(003).                    *AA030
     05    S11016  PICTURE X(003).                    *AA030
     05    S11026  PICTURE X(002).                    *AA030
     05    S11035  PICTURE X(002).                    *AA030
     05    S11042  PICTURE X(035).                    *AA030
     05    S12003  PICTURE X(001).                    *AA030
     05    S12007  PICTURE X(003).                    *AA030
     05    S12016  PICTURE X(003).                    *AA030
     05    S12026  PICTURE X(002).                    *AA030
     05    S12035  PICTURE X(002).                    *AA030
     05    S12042  PICTURE X(035).                    *AA030
     05    S13003  PICTURE X(001).                    *AA030
     05    S13007  PICTURE X(003).                    *AA030
     05    S13016  PICTURE X(003).                    *AA030
     05    S13026  PICTURE X(002).                    *AA030
     05    S13035  PICTURE X(002).                    *AA030
     05    S13042  PICTURE X(035).                    *AA030
     05    S14003  PICTURE X(001).                    *AA030
     05    S14007  PICTURE X(003).                    *AA030
     05    S14016  PICTURE X(003).                    *AA030
     05    S14026  PICTURE X(002).                    *AA030
     05    S14035  PICTURE X(002).                    *AA030
     05    S14042  PICTURE X(035).                    *AA030
     05    S15003  PICTURE X(001).                    *AA030
     05    S15007  PICTURE X(003).                    *AA030
     05    S15016  PICTURE X(003).                    *AA030
     05    S15026  PICTURE X(002).                    *AA030
     05    S15035  PICTURE X(002).                    *AA030
     05    S15042  PICTURE X(035).                    *AA030
     05    S16003  PICTURE X(001).                    *AA030
     05    S16007  PICTURE X(003).                    *AA030
     05    S16016  PICTURE X(003).                    *AA030
     05    S16026  PICTURE X(002).                    *AA030
     05    S16035  PICTURE X(002).                    *AA030
     05    S16042  PICTURE X(035).                    *AA030
     05    S17003  PICTURE X(001).                    *AA030
     05    S17007  PICTURE X(003).                    *AA030
     05    S17016  PICTURE X(003).                    *AA030
     05    S17026  PICTURE X(002).                    *AA030
     05    S17035  PICTURE X(002).                    *AA030
     05    S17042  PICTURE X(035).                    *AA030
     05    S18003  PICTURE X(001).                    *AA030
     05    S18007  PICTURE X(003).                    *AA030
     05    S18016  PICTURE X(003).                    *AA030
     05    S18026  PICTURE X(002).                    *AA030
     05    S18035  PICTURE X(002).                    *AA030
     05    S18042  PICTURE X(035).                    *AA030
     05    S20022  PICTURE X(001).                    *AA030
     05    S20035  PICTURE X(011).                    *AA030
     05    S20047  PICTURE X(021).                    *AA030
     05    S21002  PICTURE X(028).                    *AA030
     05    S21031  PICTURE X(030).                    *AA030
```

```
         05    S21062  PICTURE X(012).                               *AA030
         05    S22002  PICTURE X(010).                               *AA030
         05    S22013  PICTURE X(019).                               *AA030
         05    S22033  PICTURE X(020).                               *AA030
         05    S23002  PICTURE X(075).                               *AA030
         05    S24002  PICTURE X(072).                               *AA030
    01        INPUT-0030.                                            *AA042
         05    R03034  PICTURE X(8).                                 *AA042
         05    R03063  PICTURE X(3).                                 *AA042
         05    R05009  PICTURE X(40).                                *AA042
         05    R05052  PICTURE X(5).                                 *AA042
         05    R05060  PICTURE X(20).                                *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(3).                                 *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(3).                                 *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(3).                                 *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(3).                                 *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(3).                                 *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(3).                                 *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(3).                                 *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(3).                                 *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(3).                                 *AA042
         05    R18026  PICTURE X(2).                                 *AA042
         05    R18035  PICTURE X(2).                                 *AA042
         05    R18042  PICTURE X(35).                                *AA042
         05    R20022  PICTURE X(1).                                 *AA042
    01           INPUT-SCREEN-FIELDS  REDEFINES  INPUT-0030.         *AA045
         02      I-0030.                                             *AA045
         05      I-0030-MATE   PICTURE X(8).                         *AA045
         05      I-0030-RELEA  PICTURE X(3).                         *AA045
         05      I-0030-RUE    PICTURE X(40).                        *AA045
         05      I-0030-COPOS  PICTURE X(5).                         *AA045
```

```
       05      I-0030-VILLE  PICTURE X(20).                          *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(46).                          *AA045
       05      I-0030-EDIT   PICTURE X.                              *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(5).                                   *AA049
       05    T05060  PICTURE X(20).                                  *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(3).                                   *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(3).                                   *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(3).                                   *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(3).                                   *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(3).                                   *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(3).                                   *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(3).                                   *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(3).                                   *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(3).                                   *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-COPOS  PICTURE X(5).                         *AA050
       05      O-0030-VILLE  PICTURE X(20).                        *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(46).                        *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 S99.                          *AA050
       10      FILLER        PICTURE X(1).                         *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 -(02)9.                       *AA050
       05      O-0030-QTMAL  PICTURE 99.                           *AA050
       05      O-0030-QTMAR  PICTURE 99.                           *AA050
       05      O-0030-INFOR  PICTURE X(35).                        *AA050
```

3.7. 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.

VALIDATION VARIABLES

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

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

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

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

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

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

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

ER-nn-BEGIN.

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

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

In this example:

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

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

```
.02  ER-nn-LINE.

.05  ER-nn-CODMVT  PICTURE X.

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

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

```
.05 FILLER OCCURS 2.

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

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

```
.03 ER-nn-END.

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

TT-DAT

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

LEAP-YEAR

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

USERS-ERROR

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

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

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

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

INDEXES

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

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

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

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

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

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

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

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

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

NUMERIC-VALIDATION-FIELDS

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

```
01           NUMERIC-FIELDS.                                     *AA050
     05      9-0030-REMIS  PICTURE X(5) VALUE "+0402".           *AA050
     05      9-0030-QTMAC  PICTURE X(5) VALUE "+0200".           *AA050
01           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   INDEXES COMPUTATIONAL.                                      *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-CD05-LTH  PICTURE S9(4) VALUE +0150.                *AA200
     05    5-CD10-LTH  PICTURE S9(4) VALUE +0145.                *AA200
     05    5-CD20-LTH  PICTURE S9(4) VALUE +0001.                *AA200
     05    5-FO10-LTH  PICTURE S9(4) VALUE +0053.                *AA200
     05    5-ME00-LTH  PICTURE S9(4) VALUE +0082.                *AA200
     05    5-CA00-LTH  PICTURE S9(4) VALUE +0142.                *AA200
     05    5-CD05-LTHV PICTURE S9(4) VALUE +0150.                *AA200
     05    5-CD10-LTHV PICTURE S9(4) VALUE +0145.                *AA200
     05    5-CD20-LTHV PICTURE S9(4) VALUE +0001.                *AA200
     05    5-FO10-LTHV PICTURE S9(4) VALUE +0053.                *AA200
     05    LTH         PICTURE S9(4) VALUE ZERO.                 *AA200
     05      5-0030-LENGTH PICTURE S9(4)                         *AA200
                         VALUE      +0879.                       *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
```

3.8. TABLE-OF-ATTRIBUTES AND SEGMENT VARIABLES

TABLE-OF-ATTRIBUTES AND SEGMENT VARIABLES

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

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

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

The coding for each Data Element is formatted as follows:

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

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

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

The table positions correspond to the attributes:

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

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

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

The AT-SV level is generated if at least one field on the screen is an input field. It contains the numerical order of the data element on the screen and is used to implement the HP30 table by indicating the fields for which an attribute must be changed when a VPLUS VCHANGEFIELDS command is executed.

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

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

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

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

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

Example:

```
05  CD10-FST   PICTURE X.

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

```
01           TABLE-OF-ATTRIBUTES.                                *AA250
     02      DE-ATT.                                             *AA250
     03      DE-ATT1           OCCURS 4.                         *AA250
     05      DE-AT   PICTURE X                                   *AA250
                    OCCURS 045.                                  *AA250
     02      DE-A    REDEFINES DE-ATT.                           *AA250
     03      DE-ATT2           OCCURS 4.                         *AA250
     04      A-0030-BEGIN.                                       *AA250
     05      A-0030-MATE   PICTURE X.                            *AA250
     05      A-0030-RELEA  PICTURE X.                            *AA250
     05      A-0030-RUE    PICTURE X.                            *AA250
     05      A-0030-COPOS  PICTURE X.                            *AA250
     05      A-0030-REFCLI PICTURE X.                            *AA250
     05      A-0030-DATE   PICTURE X.                            *AA250
     05      A-0030-CORRES PICTURE X.                            *AA250
     05      A-0030-REMIS  PICTURE X.                            *AA250
     04      B-0030-LINE   OCCURS 9.                             *AA250
     05      FILLER        PICTURE X(0004).                      *AA250
     04      A-0030-END.                                         *AA250
     05      A-0030-EDIT   PICTURE X.                            *AA250
     02      A-0030-LINE       OCCURS 4.                         *AA250
     05      A-0030-CODMVT PICTURE X.                            *AA250
     05      A-0030-FOURNI PICTURE X.                            *AA250
     05      A-0030-QTMAC  PICTURE X.                            *AA250
     05      A-0030-INFOR  PICTURE X.                            *AA250
01      AT-SV.                                                   *AA260
      10   FILLER  PICTURE 999  VALUE 007.                       *AA260
      10   FILLER  PICTURE 999  VALUE 008.                       *AA260
      10   FILLER  PICTURE 999  VALUE 010.                       *AA260
      10   FILLER  PICTURE 999  VALUE 011.                       *AA260
      10   FILLER  PICTURE 999  VALUE 012.                       *AA260
      10   FILLER  PICTURE 999  VALUE 013.                       *AA260
      10   FILLER  PICTURE 999  VALUE 014.                       *AA260
      10   FILLER  PICTURE 999  VALUE 015.                       *AA260
      10   FILLER  PICTURE 999  VALUE 016.                       *AA260
      10   FILLER  PICTURE 999  VALUE 017.                       *AA260
      10   FILLER  PICTURE 999  VALUE 018.                       *AA260
      10   FILLER  PICTURE 999  VALUE 019.                       *AA260
      10   FILLER  PICTURE 999  VALUE 020.                       *AA260
      10   FILLER  PICTURE 999  VALUE 021.                       *AA260
      10   FILLER  PICTURE 999  VALUE 022.                       *AA260
      10   FILLER  PICTURE 999  VALUE 023.                       *AA260
      10   FILLER  PICTURE 999  VALUE 024.                       *AA260
      10   FILLER  PICTURE 999  VALUE 025.                       *AA260
      10   FILLER  PICTURE 999  VALUE 026.                       *AA260
      10   FILLER  PICTURE 999  VALUE 027.                       *AA260
      10   FILLER  PICTURE 999  VALUE 028.                       *AA260
      10   FILLER  PICTURE 999  VALUE 029.                       *AA260
      10   FILLER  PICTURE 999  VALUE 030.                       *AA260
      10   FILLER  PICTURE 999  VALUE 031.                       *AA260
      10   FILLER  PICTURE 999  VALUE 032.                       *AA260
      10   FILLER  PICTURE 999  VALUE 033.                       *AA260
      10   FILLER  PICTURE 999  VALUE 034.                       *AA260
      10   FILLER  PICTURE 999  VALUE 035.                       *AA260
      10   FILLER  PICTURE 999  VALUE 036.                       *AA260
      10   FILLER  PICTURE 999  VALUE 037.                       *AA260
      10   FILLER  PICTURE 999  VALUE 038.                       *AA260
      10   FILLER  PICTURE 999  VALUE 039.                       *AA260
      10   FILLER  PICTURE 999  VALUE 040.                       *AA260
      10   FILLER  PICTURE 999  VALUE 041.                       *AA260
      10   FILLER  PICTURE 999  VALUE 042.                       *AA260
      10   FILLER  PICTURE 999  VALUE 043.                       *AA260
      10   FILLER  PICTURE 999  VALUE 044.                       *AA260
      10   FILLER  PICTURE 999  VALUE 045.                       *AA260
      10   FILLER  PICTURE 999  VALUE 046.                       *AA260
      10   FILLER  PICTURE 999  VALUE 047.                       *AA260
      10   FILLER  PICTURE 999  VALUE 048.                       *AA260
      10   FILLER  PICTURE 999  VALUE 049.                       *AA260
      10   FILLER  PICTURE 999  VALUE 050.                       *AA260
      10   FILLER  PICTURE 999  VALUE 051.                       *AA260
      10   FILLER  PICTURE 999  VALUE 052.                       *AA260
      10   FILLER  PICTURE 999  VALUE 053.                       *AA260
      10   FILLER  PICTURE 999  VALUE 054.                       *AA260
      10   FILLER  PICTURE 999  VALUE 055.                       *AA260
      10   FILLER  PICTURE 999  VALUE 056.                       *AA260
      10   FILLER  PICTURE 999  VALUE 057.                       *AA260
      10   FILLER  PICTURE 999  VALUE 058.                       *AA260
      10   FILLER  PICTURE 999  VALUE 059.                         *AA260
      10   FILLER  PICTURE 999  VALUE 060.                         *AA260
      10   FILLER  PICTURE 999  VALUE 061.                         *AA260
      10   FILLER  PICTURE 999  VALUE 062.                         *AA260
      10   FILLER  PICTURE 999  VALUE 063.                         *AA260
      10   FILLER  PICTURE 999  VALUE 064.                         *AA260
      10   FILLER  PICTURE 999  VALUE 065.                         *AA260
      10   FILLER  PICTURE 999  VALUE 066.                         *AA260
      10   FILLER  PICTURE 999  VALUE 067.                         *AA260
      10   FILLER  PICTURE 999  VALUE 068.                         *AA260
      10   FILLER  PICTURE 999  VALUE 069.                         *AA260
      10   FILLER  PICTURE 999  VALUE 070.                         *AA260
      10   FILLER  PICTURE 999  VALUE 071.                         *AA260
01      TABLE-SV-AT REDEFINES AT-SV.                               *AA265
     05 SV-AT PICTURE 999 OCCURS 045.                              *AA265
01    FIRST-ON-SEGMENT.                                            *AA301
     05      CD10-FST    PICTURE X.                                *AA301
01               WW10-QTMAR                                        *BB200
                              PICTURE 99                           *BB200
                 VALUE ZERO.                                       *BB201
01               7-SQLA-POSMSG PICTURE X VALUE "0".                *SQ010
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
```

3.9. COMMON AREA

COMMON AREA

The 'COMMON AREA' level is generated based on the dialog complements ('O..O') entered by the user as well as access keys of segments used on display in Calls of Segments ('-CS').

This level is the common area of every screen of the dia- logue.

(In the field codes, 'scrn'= last four chatacters of the screen code.)

K-Sscrn-PROGR

is always generated and is used to store the full code of the screen.

CA00 Data structure which describes the communication area (if it contains several segments, these segments are described upon redefinition).

The following areas are generated if a call for documentation is entered on the screen's Definition Screen:

K-Sscrn-DOC

HELP function indicator:
'0' No back-up created for the screen,
'1' Back-up created for the screen,
'2' Call for documentation on a screen,
'3' Call for documentation on data element.

K-Sscrn-PROGE

Used to store the external name of the calling program.

K-Sscrn-CPOSL

Used to store the cursor position.

K-Sscrn-LIBRA

Used to store the library code.

K-Sscrn-PROHE, K-Sscrn-ERCOD, K-Sscrn-ERTYP, K-Sscrn-LINUM, K-Sscrn-XTERM

Technological fields for HELP program.

K-scrn This level includes additional fields used for storing the dialog.

Coding of fields for storing access keys to segments on display (which need no preceding segment):

K-Ascrn-DEBUT

Automatically generated for the screen-top category.

K-ACD05-CLECD

Key of the screen-top category.

K-Rscrn-LINE OCCURS 2

Generated according to the element defining the repetitive category (Position 1 stores the key of the beginning of display, position 2 stores the key of the next segment read in continuation).

K-RCD10-CLECD

Key of the repetitive category.

K-Zscrn-END

Key of the screen-bottom category. Generated according to element defining the screen-bottom category.

K-ZME00-CLEME

Key of the end category.

The ZONES-VARIABLES field is generated if the MDT-OFF option is selected. This field stores all input fields on the screen.

A 02 level FILLER completes the lengths of both the K-scrn and ZONES-VARIABLES fields up to 100. This length is a default value which can be increased by the user by entering in the Dialogue Complement Screen (-O), the COMPLEMENTARY COMMON AREA LENGTH field.

In this example the value entered is 700:

K-scrn + ZONES-VARIABLES + FILLER = 700.

The COMMUNICATION-MONITOR level contains the information necessary for communication with the monitor.

In addition, the following fields are placed in the LINKAGE SECTION:

- the ALLBASE/SQL communication area: SQLCA
- the VPLUS control block: VPLUS-COMARE.

```
LINKAGE SECTION.                                                 DO0030
01   COMMON-AREA.                                                *00000
     02     K-S0030-PROGR PICTURE X(6).                          *00000
     02            CA00.                                         *00001
       10          CA00-CLECD.                                   *00001
        15         CA00-NUCOM  PICTURE S9(5)                     *00001
                        COMPUTATIONAL-3.                         *00001
       10          CA00-CLECL1.                                  *00001
        15         CA00-NUCLIE PICTURE S9(8)                     *00001
                        COMPUTATIONAL-3.                         *00001
       10          CA00-ME00.                                    *00001
        15         CA00-CLEME.                                   *00001
         20        CA00-COPERS PICTURE X(5).                     *00001
         20        CA00-NUMORD PICTURE XX.                       *00001
        15         CA00-MESSA  PICTURE X(75).                    *00001
       10          CA00-PREM   PICTURE X.                        *00001
       10          CA00-LANGU  PICTURE X.                        *00001
       10          CA00-RAISOC PICTURE X(50).                    *00001
     02     K-S0030-DOC   PICTURE X.                             *00002
     02     K-S0030-PROGE PICTURE X(8).                          *00002
     02     K-S0030-LIBRA PICTURE XXX.                           *00002
     02     K-S0030-PROHE PICTURE X(8).                          *00002
     02     K-S0030-ERCOD.                                       *00002
       05   K-S0030-ERCOD9 PICTURE 999.                          *00002
     02     K-S0030-ERTYP PICTURE X.                             *00002
     02     K-S0030-LINUM PICTURE 999.                           *00002
     02     K-S0030-XTERM.                                       *00002
       05   K-S0030-XTERM9  PICTURE 9(4).                        *00002
     02      K-0030.                                             *00002
     03     K-A0030-DEBUT.                                       *00002
      05         K-ACD05-NUCOM  PICTURE S9(5)                    *00002
                        COMPUTATIONAL-3.                         *00002
     03     K-R0030-LINE   OCCURS 2.                             *00002
      05         K-RCD10-NUCOM  PICTURE S9(5)                    *00002
                        COMPUTATIONAL-3.                         *00002
      05         K-RCD10-FOURNI PICTURE X(3).                    *00002
     03     K-Z0030-END.                                         *00002
      05         K-ZME00-COPERS PICTURE X(5).                    *00002
      05         K-ZME00-NUMORD PICTURE XX.                      *00002
     02      FILLER        PICTURE X(0678).                      *00002
01           COMMUNICATION-MONITOR.                              *00010
     02    S-WWSS.                                               *00010
       10    S-WWSS-OPER   PICTURE X.                            *00010
       10    S-WWSS-PROGE  PICTURE X(8).                         *00010
       10    S-WWSS-XFILE  PICTURE X(8).                         *00010
       10    S-WWSS-XFUNCT PICTURE X(8).                         *00010
       10    S-WWSS-STATUS PICTURE XX.                           *00010
       EXEC SQL INCLUDE SQLCA         END-EXEC.                  *00015
01     VPLUS-COMARE.                                             *00020
   05  VPLUS-STATUS PICTURE S9(4) COMP.                          *00020
   05  VPLUS-LANGUE PICTURE S9(4) COMP.                          *00020
   05  VPLUS-COMLEN PICTURE S9(4) COMP.                          *00020
   05  VPLUS-UBFLEN PICTURE S9(4) COMP.                          *00020
   05  VPLUS-CMODE  PICTURE S9(4) COMP.                          *00020
   05  VPLUS-LSTKEY PICTURE S9(4) COMP.                          *00020
   05  VPLUS-NUMERS PICTURE S9(4) COMP.                          *00020
   05  VPLUS-WINENH PICTURE S9(4) COMP.                          *00020
   05  VPLUS-MLTUSI PICTURE S9(4) COMP.                          *00020
   05  VPLUS-LABOPT PICTURE S9(4) COMP.                          *00020
   05  VPLUS-CFNAME PICTURE X(16).                               *00020
   05  VPLUS-NFNAME PICTURE X(16).                               *00020
   05  VPLUS-REPAPP PICTURE S9(4) COMP.                          *00020
   05  VPLUS-FREAPP PICTURE S9(4) COMP.                          *00020
   05  VPLUS-CFNUML PICTURE S9(4) COMP.                          *00020
   05  VPLUS-DBFLEN PICTURE S9(4) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
   05  VPLUS-LOOKAH PICTURE S9(4) COMP.                          *00020
   05  VPLUS-DELFLA PICTURE S9(4) COMP.                          *00020
   05  VPLUS-SHOCNT PICTURE S9(4) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
   05  VPLUS-PRFLNU PICTURE S9(4) COMP.                          *00020
   05  VPLUS-FLERNU PICTURE S9(4) COMP.                          *00020
   05  VPLUS-ERFLNU PICTURE S9(4) COMP.                          *00020
   05  VPLUS-FOSTSZ PICTURE S9(4) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
```

```
       05  VPLUS-NUMREC PICTURE S9(8) COMP.                          *00020
       05  VPLUS-RECNUM PICTURE S9(8) COMP.                          *00020
       05  FILLER       PICTURE S9(4) COMP.                          *00020
       05  FILLER       PICTURE S9(4) COMP.                          *00020
       05  VPLUS-TEFLEN PICTURE S9(4) COMP.                          *00020
       05  FILLER       PICTURE S9(4) COMP.                          *00020
       05  FILLER       PICTURE S9(4) COMP.                          *00020
       05  FILLER       PICTURE S9(4) COMP.                          *00020
       05  FILLER       PICTURE S9(4) COMP.                          *00020
       05  FILLER       PICTURE S9(4) COMP.                          *00020
       05  VPLUS-RETRIE PICTURE S9(4) COMP.                          *00020
       05  VPLUS-TERMOP PICTURE S9(4) COMP.                          *00020
       05  VPLUS-ENVIRO PICTURE S9(4) COMP.                          *00020
       05  VPLUS-USTIME PICTURE S9(4) COMP.                          *00020
       05  VPLUS-IDENTI PICTURE S9(4) COMP.                          *00020
       05  VPLUS-LABINF PICTURE S9(4) COMP.                          *00020
```

4. GENERATED PROGRAM EXAMPLE: PROCEDURE DIVISION

4.1. STRUCTURE OF THE PROCEDURE DIVISION

STRUCTURE OF THE PROCEDURE DIVISION

```
F0A       DECLARATIVES
F0C       DECLARE CURSOR ORDER
F01       INITIALIZATION
F0101     OPEN files
F0110     Initialization

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

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

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

END-OF-RECEPTION.   (F45-FN)

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

F50       DISPLAY PREPARATION  (OCF = '1')

F5010     Initialization

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

F70       ERROR PROCESSING
F7020     Positioning of attributes
```

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

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

F8Z        DISPLAY AND END OF PROGRAM

F8Z05      Memorization of the screen
F8Z06      Read FORM file with the mask of the screen to
           be displayed
F8Z08      Fill buffer and attribute change command
F8Z10      Sub-program call for display
F8Z11      Position cursor
F8Z20      End of processing. Return to the beginning
           of the iteration (F0110)

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

F80        PHYSICAL ACCESS TO SEGMENTS
F81ER      Abnormal end routine for VPLUS
F81ES      Abnormal end routine for ALLBASE/SQL
F81EW      "Warning" processing for ALLBASE/SQL
F81FI      CLOSE files
F81UT      Error memorization
F8101      Initialization of ALLBASE/SQL indicators
F8105      Filling in of literals
F8110      Numeric class validation
F8115      Initialization of the variable fields
F8120      Date format validation
F8130      Help function procedure
F8150      Detection of documentation requests
F8155      Transfer of messages in the reception fields
```

4.2. DECLARATIVES (F0A)

F0A : DECLARATIVES

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

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

When an I/O error is found the F0A function prepares to transfer information regarding the file concerned to the monitor.

FOC : DECLARE CURSOR ORDER

This function contains the DECLARE CURSOR order.
There is a sub-function for each -cs segment called for display in an iterative category.

```
PROCEDURE DIVISION USING COMMON-AREA                                  *99999
                         COMMUNICATION-MONITOR                        *99999
                         SQLCA VPLUS-COMARE.                          *99999
DECLARATIVES.                                                         DO0030
SECEM SECTION.                                                        DO0030
      USE AFTER ERROR PROCEDURE ON EM-FILE.                           DO0030
F0AEM.                                                                DO0030
      MOVE 1-EM00-STATUS TO S-WWSS-STATUS                             DO0030
      MOVE "DODOLE  " TO S-WWSS-XFILE                                 DO0030
      MOVE "1" TO IK.                                                 DO0030
F0AEM-FN.    EXIT.                                                    DO0030
SECHE SECTION.                                                        DO0030
      USE AFTER ERROR PROCEDURE ON HE-FILE.                           DO0030
F0AHE.                                                                DO0030
      MOVE 1-HE00-STATUS TO S-WWSS-STATUS.                            DO0030
      MOVE "SAVESCR " TO S-WWSS-XFILE                                 DO0030
      MOVE "1" TO IK.                                                 DO0030
F0AHE-FN.    EXIT.                                                    DO0030
END DECLARATIVES.                                                     DO0030
MAIN SECTION.                                                         DO0030
F0A99-FN.    EXIT.                                                    DO0030
F0A-FN.      EXIT.                                                    DO0030
F0CCD.                                                                DO0030
       EXEC SQL   DECLARE     DISPLAY_CD10                            DO0030
           CURSOR FOR SELECT ALL                                      DO0030
                  NUCOM ,                                             DO0030
                  FOURNI ,                                            DO0030
                  QTMAC ,                                             DO0030
                  QTMAL ,                                             DO0030
                  INFOR ,                                             DO0030
                  ADFOU                                               DO0030
                FROM PDLB.C                                           DO0030
     WHERE NUCOM >  :CD10-NUCOM                                       DO0030
      OR (NUCOM =  :CD10-NUCOM                                        DO0030
     AND  FOURNI >= :CD10-FOURNI)                                     DO0030
         ORDER BY    NUCOM,                                           DO0030
                     FOURNI                                           DO0030
       END-EXEC.                                                      DO0030
F0CCD-FN.    EXIT.                                                    DO0030
```

4.3. INITIALIZATION (F01)

F01 : INITIALIZATION

This function is always generated.

F0101 includes the file OPEN.

F0105 retrieves the terminal number and initializes the "reception" and "display" screen fields.

F0110 initializes the work areas.

It sets the procedure to be executed in case of error.

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

It indicates the cursor position for the first display.

```
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  INITIALIZATIONS                  *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F01.         EXIT.                                               DO0030
 F0101.                                                           DO0030
        EXEC SQL WHENEVER NOT FOUND GO TO F80-KO END-EXEC.        DO0030
        EXEC SQL WHENEVER SQLERROR  GO TO F81ES  END-EXEC.        DO0030
        EXEC SQL WHENEVER SQLWARNING GO TO F81EW END-EXEC.        DO0030
        MOVE VPLUS-ENVIRO TO HP30-ENVIRO.                         DO0030
        MOVE HP30-TERMNO  TO HP30-TERMNU.                         DO0030
        MOVE HP30-TERMIL  TO K-S0030-XTERM9.                      DO0030
        MOVE SPACE TO    0030-MESSO.                              DO0030
        MOVE SPACE TO  O-0030.                                    DO0030
        MOVE SPACE TO  I-0030.                                    DO0030
        MOVE "OPEN    " TO S-WWSS-XFUNCT MOVE "0" TO IK.          DO0030
        OPEN INPUT        EM-FILE.                                DO0030
        IF IK = "1" GO TO F81ER.                                  DO0030
        OPEN I-O          HE-FILE.                                DO0030
        IF IK = "1" GO TO F81ER.                                  DO0030
        PERFORM F8101 THRU F8101-FN.                              DO0030
 F0101-FN.    EXIT.                                               DO0030
 F0110.                                                           DO0030
        ACCEPT TIMCO FROM TIME.                                   DO0030
        ACCEPT  DATOR FROM DATE.                                  DO0030
        MOVE ZERO TO CATX FT K50L.                                DO0030
        MOVE "1" TO ICF OCF SCR-ER.                               DO0030
        MOVE ZERO TO VALIDATION-TABLE-FIELDS.                     DO0030
        MOVE SPACE TO CATM OPER OPERD CAT-ER.                     DO0030
        MOVE SPACE TO TABLE-OF-ATTRIBUTES.                        DO0030
        MOVE ZERO TO CONFIGURATIONS.                              DO0030
        IF   K-S0030-PROGR NOT = PROGR                            DO0030
                       MOVE    ZERO  TO  ICF.                     DO0030
        MOVE ZERO TO HP30-CHGNBE.                                 DO0030
        MOVE ZERO TO HP30-FLDNUM.                                 DO0030
        IF ICF = ZERO PERFORM F8115 THRU F8115-FN.                DO0030
          IF K-S0030-DOC = "2"  OR   K-S0030-DOC = "3"            DO0030
        MOVE "1" TO K-S0030-DOC     GO TO F8Z05.                  DO0030
        MOVE "X" TO DE-AT (4, 009).                               DO0030
        MOVE SPACE      TO           O-0030-ERMSG (01).           DO0030
 F0110-FN.    EXIT.                                               DO0030
 F0160.                                                           DO0030
        IF ICF = ZERO MOVE "A" TO OPER                            DO0030
        GO TO F3999-ITER-FT.                                      DO0030
 F0160-FN.    EXIT.                                               DO0030
 F01-FN.      EXIT.                                               DO0030
*             +-----------------------------------+               P000
* LEVEL 10    I INIT. NUMBER OF LOADED ITEMS      I               P000
*             +-----------------------------------+               P000
 F02CP.                                                           P000
     MOVE        IWP20M TO IWP20L.                                P100
 F02CP-FN.    EXIT.                                               P000
```

4.4. RECEPTION (F05)

F05 : RECEPTION

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

In general, all of the automatic functions in this part of the program are generated if at least one variable data element is defined on the screen.

Sub-function F0501 includes reading the screen via the VPLUS VREADFIELDS command. This function also determines whether a function key was used and retrieves its value.

Sub-function F0510 includes the reception of the screen into the buffer field (VPLUS VGETBUFFER command).

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

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

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

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

- the special PFKEY data element (value entered on the Screen Call of Elements (-CE)).

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

```
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  RECEPTION                        *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F05.   IF ICF = ZERO GO TO END-OF-RECEPTION.                     DO0030
 F0501.                                                           DO0030
        MOVE  "VREADFIE"   TO S-WWSS-XFUNCT.                      DO0030
        CALL  "VREADFIELDS"  USING VPLUS-COMARE.                  DO0030
        IF  VPLUS-STATUS NOT = 0                                  DO0030
        PERFORM F81EV THRU F81EV-FN.                              DO0030
        MOVE  VPLUS-LSTKEY TO I-PFKEY9.                           DO0030
        IF  VPLUS-LSTKEY NOT = 0                                  DO0030
          ADD  2  TO VPLUS-TERMOP                                 DO0030
          CALL  "VREADFIELDS"  USING VPLUS-COMARE                 DO0030
          SUBTRACT 2 FROM VPLUS-TERMOP                            DO0030
          MOVE  "VREADFI2"   TO S-WWSS-XFUNCT                     DO0030
          IF  VPLUS-STATUS NOT = 0                                DO0030
          PERFORM F81EV THRU F81EV-FN.                            DO0030
 F0501-FN.    EXIT.                                               DO0030
 F0510.                                                           DO0030
        MOVE  "VGETBUFF"   TO S-WWSS-XFUNCT.                      DO0030
        CALL  "VGETBUFFER" USING VPLUS-COMARE                     DO0030
                         0030-MESSI VPLUS-DBFLEN.                 DO0030
        IF  VPLUS-STATUS NOT = 0                                  DO0030
        PERFORM F81EV THRU F81EV-FN.                              DO0030
        PERFORM F8165 THRU F8165-FN.                              DO0030
        MOVE "A" TO OPER  MOVE SPACE TO OPERD.                    DO0030
        PERFORM F8150 THRU F8150-FN.                              DO0030
        IF   K-S0030-ERCOD = ZERO                                 DO0030
        EXAMINE I-0030 REPLACING ALL "-" BY SPACE.                DO0030
 F0510-FN.    EXIT.                                               DO0030
 F0512.  IF  K-S0030-ERCOD NOT = ZERO                             DO0030
            NEXT SENTENCE ELSE GO TO F0512-FN.                    DO0030
        MOVE "2"   TO K-S0030-DOC                                 DO0030
        MOVE PROGE TO K-S0030-PROGE                               DO0030
        MOVE LIBRA TO K-S0030-LIBRA.                              DO0030
         IF  K-S0030-ERCOD NOT = SPACE                            DO0030
        MOVE "3" TO K-S0030-DOC.                                  DO0030
        MOVE K-S0030-XTERM  TO HE00-XTERM                         DO0030
        PERFORM F80-HELP-R  THRU F80-FN                           DO0030
        MOVE HE00-SCREEN  TO  O-0030                              DO0030
        PERFORM F8130       THRU F8130-FN                         DO0030
        MOVE  O-0030    TO     HE00-SCREEN                        DO0030
        PERFORM F80-HELP-RW THRU F80-FN                           DO0030
        MOVE PRDOC TO  5-0030-PROGE  K-S0030-PROHE                DO0030
        MOVE "O" TO OPER  GO TO F4040.                            DO0030
 F0512-FN.    EXIT.                                               DO0030
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  VALIDATION OF OPERATION CODE     *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F0520.                                                           DO0030
           IF      I-PFKEY      = "01"                            DO0030
            MOVE    "DO0000  "   TO   5-0030-PROGE                DO0030
        MOVE  "O"  TO  OPER       GO TO F40-A.                    DO0030
           IF      I-PFKEY      = "02"                            DO0030
            MOVE    "DO0010  "   TO   5-0030-PROGE                DO0030
        MOVE  "O"  TO  OPER       GO TO F40-A.                    DO0030
           IF      I-PFKEY      = "03"                            DO0030
            MOVE    "DO0020  "   TO   5-0030-PROGE                DO0030
        MOVE  "O"  TO  OPER       GO TO F40-A.                    DO0030
           IF      I-PFKEY      = "04"                            DO0030
            MOVE    "DO0040  "   TO   5-0030-PROGE                DO0030
        MOVE  "O"  TO  OPER       GO TO F40-A.                    DO0030
           IF      I-PFKEY      = "05"                            DO0030
            MOVE    "DO0050  "   TO   5-0030-PROGE                DO0030
        MOVE  "O"  TO  OPER       GO TO F40-A.                    DO0030
           IF      I-PFKEY      = "12"                            DO0030
            MOVE    "DO0070  "   TO   5-0030-PROGE                DO0030
        MOVE  "O"  TO  OPER       GO TO F40-A.                    DO0030
           IF      I-PFKEY      = "00"                            DO0030
        MOVE  "E"  TO  OPER       GO TO F40-A.                    DO0030
           IF      I-PFKEY      = "07"                            DO0030
        MOVE "M" TO OPER GO TO F0520-900.                         DO0030
           IF      I-PFKEY      = "08"                            DO0030
        MOVE "S" TO OPER GO TO F0520-900.                          DO0030
 F0520-900.                                                        DO0030
        IF OPER NOT = "A" AND OPER NOT = "M" AND OPER NOT = "O"    DO0030
        GO TO F3999-ITER-FT.                                       DO0030
 F0520-FN.    EXIT.                                                DO0030
 F05-FN.      EXIT.                                                DO0030
*             +------------------------------------+               P000
* LEVEL 10    I NO UPDATE ==> END OF RECEIVE      I               P000
*             +------------------------------------+               P000
 F08BB.    IF    OPER NOT = "M"                                    P000
           NEXT SENTENCE ELSE GO TO     F08BB-FN.                  P000
     GO TO F3999-ITER-FT.                                          P100
 F08BB-FN.    EXIT.                                                P000
```

4.5. CATEGORY PROCESSING LOOP (F10)

F10 : CATEGORY POSITIONING

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

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

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

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

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

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

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

For ALLBASE/SQL, after all the categories have been processed, a call to the COMMIT command is generated, allowing the system to actually take into account the updates in the database.

```
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  CATEGORY PROCESSING LOOP         *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F10.         EXIT.                                               DO0030
 F1010.     MOVE SPACE TO CATM.                                   DO0030
        IF CATX = "R"                                             DO0030
        MOVE  O-0030-LINE            TO                           DO0030
              P-0030-LINE    (ICATR)                              DO0030
        MOVE  A-0030-LINE   (1)      TO                           DO0030
              B-0030-LINE   (1, ICATR)                            DO0030
        MOVE  A-0030-LINE   (2)      TO                           DO0030
              B-0030-LINE   (2, ICATR)                            DO0030
        MOVE  A-0030-LINE   (4)      TO                           DO0030
              B-0030-LINE   (4, ICATR)                            DO0030
        MOVE  I-0030-LINE            TO                           DO0030
              J-0030-LINE    (ICATR)                              DO0030
        MOVE      ER-0030-LINE       TO                           DO0030
                    PS-30-LINE    (ICATR).                        DO0030
       IF CAT-ER = "E" MOVE "4" TO SCR-ER GO TO F3999-ITER-FT.    DO0030
        MOVE SPACE TO CAT-ER.                                     DO0030
        IF CATX = "0" MOVE " " TO CATX GO TO F1010-FN.            DO0030
        IF CATX = " " MOVE "R" TO CATX MOVE ZERO TO ICATR.        DO0030
        IF CATX = "R" AND ICATR < IRR  ADD  1 TO ICATR            DO0030
        MOVE        PS-30-LINE   (ICATR) TO                       DO0030
                  ER-0030-LINE                                    DO0030
        MOVE  B-0030-LINE   (4, ICATR) TO                         DO0030
              A-0030-LINE   (4)                                   DO0030
        MOVE  P-0030-LINE    (ICATR) TO                           DO0030
              O-0030-LINE                                         DO0030
        MOVE  J-0030-LINE    (ICATR) TO                           DO0030
              I-0030-LINE    GO TO F1010-FN.                      DO0030
        IF CATX = "R" MOVE "Z" TO CATX GO TO F1010-FN.            DO0030
        PERFORM F8091 THRU F8091-FN.                              DO0030
 F1010-A.   GO TO F3999-ITER-FT.                                  DO0030
 F1010-FN.    EXIT.                                               DO0030
 F10-FN.      EXIT.                                               DO0030
```

4.6. VALIDATION OF TRANSACTION CODE (F15)

F15 : TRANSACTION CODE POSITIONING

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

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

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

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

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

.F15A for the screen-top category,

.F15R for the repetitive category,

.F15Z for the screen-bottom category.

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

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

4.7. DATA ELEMENT VALIDATION (F20)

F20 : DATA ELEMENT VALIDATION

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

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

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

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

. Presence validation.

. Numeric class validation.

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

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

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

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

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

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

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

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

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

```
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  DATA ELEMENT VALIDATION          *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F20.         EXIT.                                               DO0030
 F20A.  IF CATX NOT = " " GO TO F20A-FN.                          DO0030
 F20A2.       EXIT.                                               DO0030
 F20A2-FN.    EXIT.                                               DO0030
 F20B1.                                                           DO0030
           IF I-0030-MATE   NOT = SPACE                           DO0030
        MOVE "1" TO    ER-0030-MATE                               DO0030
           ELSE                                                   DO0030
        MOVE "2" TO    ER-0030-MATE                               DO0030
        MOVE "E" TO CAT-ER                   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
 F20B6.                                                           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 F20B6-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 F20B6-FN.      DO0030
 F20B6-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
```

4.8. SEGMENT ACCESS FOR VALIDATION (F25)

F25 : SEGMENT ACCESS FOR VALIDATION

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

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

. F25A for the screen-top category.

. F25R for the repetitive category.

. F25Z for the screen-bottom category.

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

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

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

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

. Error processing, if any.

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

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

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

Other types of reads are not conditioned.

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

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

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

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

```
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  SEGMENT ACCESS FOR VALIDATION    *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F25.       IF CAT-ER NOT = SPACE GO TO F25-FN.                   DO0030
 F25A.  IF CATX NOT = " " GO TO F25A-FN.                          DO0030
 F2501.                                                           DO0030
        MOVE "0" TO CD05-CF.                                      DO0030
        IF CATM = SPACE                   GO TO F2501-FN.         DO0030
        MOVE    ZERO              TO    CD05-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    CA00-NUCOM        TO    CD10-NUCOM                DO0030
        MOVE  I-0030-FOURNI       TO    CD10-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
        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    '0'               TO    CD20-EDIT                 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
```

4.9. DATA ELEMENT TRANSFER (F30)

F30: DATA ELEMENT TRANSFER

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

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

. F30A for the screen-top category.

. F30R for the repetitive category.

. F30Z for the screen-bottom category.

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

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

4.10. SEGMENT ACCESS FOR UPDATE (F35)

F35: SEGMENT ACCESS FOR UPDATE

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

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

. F35A for the screen-top category.

. F35R for the repetitive category.

. F35Z for the screen-bottom category.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

4.11. END OF RECEPTION (F40)

F40 : END OF RECEPTION

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

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

F4010 NEW SCREEN DISPLAY

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

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

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

F4020 DISPLAY OF THE SCREEN CONTINUATION

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

F4030 END OF CONVERSATION

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

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

F4040 TRANSFER TO ANOTHER SCREEN

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

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

```
 F40.       IF SCR-ER > "1"  MOVE "A" TO OPER  GO TO F40-FN.      DO0030
 F40-A.     IF OPERD NOT = SPACE   MOVE OPERD TO OPER.            DO0030
*           **************************************                DO0030
*           *                                    *                DO0030
*           *  SET-UP KEYS FOR NEW DISPLAY       *                DO0030
*           *                                    *                DO0030
*           **************************************                DO0030
 F4010.     IF OPER NOT = "A" AND NOT = "M" GO TO F4010-FN.       DO0030
 F40A.                                                            DO0030
        MOVE    ZERO              TO    CD05-NUCOM                DO0030
        MOVE        CD05-NUCOM    TO K-ACD05-NUCOM.               DO0030
 F40A-FN.     EXIT.                                               DO0030
 F40R.                                                            DO0030
        MOVE  J-0030-LINE   (1) TO                                DO0030
              I-0030-LINE.                                        DO0030
        MOVE    CA00-NUCOM        TO    CD10-NUCOM                DO0030
        MOVE    SPACE             TO    CD10-FOURNI               DO0030
        MOVE        CD10-NUCOM    TO K-RCD10-NUCOM  (1).          DO0030
        MOVE        CD10-FOURNI   TO K-RCD10-FOURNI (1).          DO0030
 F40R-FN.     EXIT.                                               DO0030
 F40Z.                                                            DO0030
        MOVE    CA00-COPERS       TO    ME00-COPERS               DO0030
        MOVE    CA00-NUMORD       TO    ME00-NUMORD               DO0030
        MOVE        ME00-COPERS   TO K-ZME00-COPERS.              DO0030
        MOVE        ME00-NUMORD   TO K-ZME00-NUMORD.              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-NUCOM  (2) TO                            DO0030
                 K-RCD10-NUCOM  (1).                              DO0030
        MOVE     K-RCD10-FOURNI (2) TO                            DO0030
                 K-RCD10-FOURNI (1).                              DO0030
 F4020-FN.    EXIT.                                               DO0030
*           **************************************                DO0030
*           *                                    *                DO0030
*           *  END OF TRANSACTION                *                DO0030
*           *                                    *                DO0030
*           **************************************                DO0030
 F4030.     IF OPER NOT = "E" GO TO F4030-FN.                     DO0030
        MOVE OPER         TO S-WWSS-OPER.                         DO0030
        MOVE K-S0030-XTERM  TO HE00-XTERM                         DO0030
        PERFORM F80-HELP-D  THRU F80-FN.                          DO0030
        PERFORM F81FI  THRU F81FI-FN.                             DO0030
 F4030-A.       EXIT PROGRAM.                                     DO0030
 F4030-FN.    EXIT.                                               DO0030
*           **************************************                DO0030
*           *                                    *                DO0030
*           *  TRANSFER TO ANOTHER SCREEN        *                DO0030
*           *                                    *                DO0030
*           **************************************                DO0030
 F4040.     IF OPER NOT = "O" GO TO F4040-FN.                     DO0030
        MOVE 5-0030-PROGE TO S-WWSS-PROGE.                        DO0030
        MOVE OPER         TO S-WWSS-OPER.                         DO0030
        PERFORM F81FI  THRU F81FI-FN.                             DO0030
 F4040-A.       EXIT PROGRAM.                                     DO0030
 F4040-FN.    EXIT.                                               DO0030
 F40-FN.      EXIT.                                               DO0030
 END-OF-RECEPTION.      EXIT.                                     DO0030
```

4.12. DISPLAY PREPARATION (F50)

F50: DISPLAY PREPARATION

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

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

For ALLBASE/SQL, after all the categories have been processed, a call to the BEGIN command (option RU) is generated, allowing for shared access with other users.

```
   *           *************************************          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 > "1"  GO TO F6999-ITER-FT.              DO0030
           MOVE SPACE TO  O-0030.                             DO0030
           PERFORM F8115 THRU F8115-FN.                       DO0030
           PERFORM F8092 THRU F8092-FN.                       DO0030
           MOVE K-R0030-LINE   (1)  TO                        DO0030
                K-R0030-LINE   (2).                           DO0030
    F5010-FN.    EXIT.                                        DO0030
    F50-FN.      EXIT.                                        DO0030
```

4.13. CATEGORY PROCESSING LOOP (F55)

F55: CATEGORY PROCESSING LOOP

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

. '0' Beginning of display.

. ' ' Screen-top category.

. 'R' Repetitive category.

. 'Z' Screen-bottom category.

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

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

For the repetitive category this function includes:

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

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

For ALLBASE/SQL, after all the categories have been processed, a call to the BEGIN command (option RU) is generated, allowing for shared access with other users.

```
*           *************************************              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
        PERFORM F8093 THRU F8093-FN.                           DO0030
 F5510-900. GO TO F6999-ITER-FT.                               DO0030
 F5510-FN.    EXIT.                                            DO0030
 F55-FN.      EXIT.                                            DO0030
```

4.14. SEGMENT ACCESS FOR DISPLAY (F60)

F60: SEGMENT ACCESS FOR DISPLAY

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

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

. F60A for the screen-top category,

. F60R for the repetitive category,

. F60Z for the screen-bottom category.

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

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

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

- Direct read (F80-ddss-R),

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

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

. Error processing, if necessary.

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

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

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

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

4.15. DATA ELEMENT TRANSFER (F65)

F65: DATA ELEMENT TRANSFER

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

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

. F65A for the screen-top category,

. F65R for the repetitive category,

. F65Z for the screen-bottom category.

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

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

```
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  DATA ELEMENT TRANSFER            *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F65.         EXIT.                                               DO0030
 F65A.  IF CATX NOT = " " GO TO F65A-FN.                          DO0030
        MOVE    PROGE           TO                                DO0030
              O-0030-PROGE.                                       DO0030
        MOVE    SESSI           TO                                DO0030
              O-0030-SESSI.                                       DO0030
        MOVE    DAT8C           TO                                DO0030
              O-0030-DATEM.                                       DO0030
        MOVE    TIMDAY          TO                                DO0030
              O-0030-HEURE.                                       DO0030
 F65A-A7.                                                         DO0030
        MOVE    CA00-NUCOM      TO                                DO0030
              O-0030-NUCOM.                                       DO0030
 F65A-A7-FN. EXIT.                                                DO0030
 F65A-A8.                                                         DO0030
        MOVE    CA00-RAISOC     TO                                DO0030
              O-0030-RAISOC.                                      DO0030
 F65A-A8-FN. EXIT.                                                DO0030
 F65A-CD05.                                                       DO0030
        IF      CD05-CF   NOT = "1" GO  TO  F65A-CD05-FN.         DO0030
        MOVE    CD05-MATE       TO                                DO0030
              O-0030-MATE.                                        DO0030
 F65A-B0.                                                         DO0030
        MOVE    CD05-RELEA      TO                                DO0030
              O-0030-RELEA.                                       DO0030
 F65A-B0-FN. EXIT.                                                DO0030
 F65A-B1.                                                         DO0030
        MOVE    CD05-COPOS      TO                                DO0030
              O-0030-COPOS.                                       DO0030
 F65A-B1-FN. EXIT.                                                DO0030
 F65A-B2.                                                         DO0030
        MOVE    CD05-VILLE      TO                                DO0030
              O-0030-VILLE.                                       DO0030
 F65A-B2-FN. EXIT.                                                DO0030
 F65A-B3.                                                         DO0030
        MOVE    CD05-REFCLI     TO                                DO0030
              O-0030-REFCLI.                                      DO0030
 F65A-B3-FN. EXIT.                                                DO0030
 F65A-B4.                                                         DO0030
        MOVE    CD05-DATE       TO                                DO0030
              O-0030-DATE.                                        DO0030
 F65A-B4-FN. EXIT.                                                DO0030
 F65A-B5.                                                         DO0030
        MOVE    CD05-CORRES     TO                                DO0030
              O-0030-CORRES.                                      DO0030
 F65A-B5-FN. EXIT.                                                DO0030
 F65A-B6.                                                         DO0030
        MOVE    CD05-REMIS      TO                                DO0030
              O-0030-REMIS.                                       DO0030
 F65A-B6-FN. EXIT.                                                DO0030
 F65A-CD05-FN. EXIT.                                              DO0030
 F65A-FN.     EXIT.                                               DO0030
 F65R.  IF CATX NOT = "R" OR FT = "1" GO TO F65R-FN.              DO0030
                       IF ICATR > IRR GO TO F65R-FN.              DO0030
 F65R-A4.                                                         DO0030
        MOVE    CD00-FOURNI     TO                                DO0030
              O-0030-FOURNI.                                      DO0030
 F65R-A4-FN. EXIT.                                                DO0030
 F65R-CD10.                                                       DO0030
        IF      CD10-CF   NOT = "1" GO  TO  F65R-CD10-FN.         DO0030
        MOVE    CD10-QTMAC      TO                                DO0030
              O-0030-QTMAC.                                       DO0030
 F65R-A6.                                                         DO0030
        MOVE    CD10-QTMAL      TO                                DO0030
              O-0030-QTMAL.                                       DO0030
 F65R-A6-FN. EXIT.                                                DO0030
 F65R-A7.                                                         DO0030
        MOVE    CD10-INFOR      TO                                DO0030
              O-0030-INFOR.                                       DO0030
 F65R-A7-FN. EXIT.                                                DO0030
 F65R-CD10-FN. EXIT.                                              DO0030
*             +------------------------------------+              P000
* LEVEL 10    I REMAINS TO BE DELIVERED           I               P000
*             +-----------------------------------+               P000
 F65BB.                                                           P000
           IF    CD10-QTMAL NOT = ZERO                            P100
     COMPUTE     WW10-QTMAR =                                     P100
                 CD10-QTMAC - CD10-QTMAL                          P110
     MOVE        WW10-QTMAR TO O-0030-QTMAR.                      P120
 F65BB-FN.    EXIT.                                               P000
 F65R-FN.     EXIT.                                               DO0030
 F65Z.  IF CATX NOT = "Z" GO TO F65Z-FN.                          DO0030
 F65Z-ME00.                                                       DO0030
        IF      ME00-CF   NOT = "1" GO  TO  F65Z-ME00-FN.         DO0030
        MOVE    ME00-MESSA       TO                               DO0030
              O-0030-MESSA.                                       DO0030
 F65Z-ME00-FN. EXIT.                                              DO0030
 F65Z-FN.     EXIT.                                               DO0030
 F65-FN.      EXIT.                                               DO0030
 F6999-ITER-FI.  GO TO F55.                                       DO0030
 F6999-ITER-FT.     EXIT.                                         DO0030
 F6999-FN.    EXIT.                                               DO0030
```

4.16. ERROR PROCESSING (F70)

F70 : ERROR PROCESSING

This function is routinely generated.

F7010 includes:

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

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

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

This sub-function converts the System attribute values into HP3000 values. It retrieves the field number of the first invalid field.

. In F7020-A, the table linked to the VCHANGEFIELDS command is filled, which makes it possible to change the attributes of the screen generated by VPLUS.

. In F7020-B, the number of occupied table elements is retrieved.

```
 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                         DO0030
        "N" BY "H", "D" BY "S".                                   DO0030
        INSPECT DE-ATT1 (2) REPLACING ALL                         DO0030
        "N" BY "H", "B" BY " ", "R" BY "I".                       DO0030
        INSPECT DE-ATT1 (3) REPLACING ALL                         DO0030
        "W" BY " ", "G" BY "1", "Y" BY "2",                       DO0030
        "B" BY "3", "P" BY "4", "T" BY "5",                       DO0030
        "R" BY "8".                                               DO0030
        MOVE ZERO TO TALLI  INSPECT DE-ATT1 (4)                   DO0030
        TALLYING TALLI FOR CHARACTERS BEFORE "Y".                 DO0030
        IF TALLI     NOT <       0045                             DO0030
        MOVE ZERO TO TALLI  INSPECT DE-ATT1 (4)                   DO0030
        TALLYING TALLI FOR CHARACTERS BEFORE "Z".                 DO0030
        IF TALLI     NOT <       0045                             DO0030
        MOVE ZERO TO TALLI  INSPECT DE-ATT1 (4)                   DO0030
        TALLYING TALLI FOR CHARACTERS BEFORE "X".                 DO0030
        IF TALLI     NOT <       0045                             DO0030
        MOVE ZERO TO TALLI.                                       DO0030
        ADD   1    TO TALLI.                                      DO0030
        MOVE TALLI TO K01.                                        DO0030
        MOVE SV-AT (K01) TO HP30-FLDNUM.                          DO0030
        MOVE ZERO TO K01 K02.                                     DO0030
 F7020-A.                                                         DO0030
        ADD 1 TO K01.                                             DO0030
        IF K01 > INT  GO TO F7020-1.                              DO0030
        IF DE-AT (4, K01) = SPACE GO TO F7020-A.                  DO0030
        ADD 1 TO K02.                                             DO0030
        MOVE SV-AT (K01) TO HP30-CHGFNU(K02).                     DO0030
        MOVE 4           TO HP30-CHGTYP(K02).                     DO0030
        MOVE DE-AT (1, K01) TO HP30-CHGATT (K02, 1).              DO0030
        MOVE DE-AT (2, K01) TO HP30-CHGATT (K02, 2).              DO0030
        MOVE DE-AT (3, K01) TO HP30-CHGATT (K02, 3).              DO0030
        MOVE SPACE          TO HP30-CHGATT (K02, 4).              DO0030
        IF HP30-CHGSPE(K02) = SPACE                               DO0030
        MOVE "NONE"      TO HP30-CHGSPE(K02).                     DO0030
        GO TO F7020-A.                                            DO0030
 F7020-1.                                                         DO0030
        MOVE K02 TO HP30-CHGNBE.                                  DO0030
 F7020-FN.    EXIT.                                               DO0030
 F70-FN.      EXIT.                                               DO0030
 END-OF-DISPLAY.    EXIT.                                         DO0030
```

4.17. DISPLAY AND END OF PROGRAM (F8Z)

F8Z : DISPLAY AND END OF PROGRAM

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

F8Z06 corresponds to the read of the FORM file containing the mask of the screen to be displayed.

F8Z08 allows the screen to be updated by filling in the buffer field (VPUTBUFFER) and by changing the attributes (VCHANGEFIELDS).

F8Z10 includes sending the screen to the terminal (VSHOWFORM). If it's the first display, this function ensures that F7020 (setting of attributes) will be PERFORMed in order to take into account the position of the cursor (in relation to F0110).

F8Z11 positions the cursor, if necessary (VPLACECURSOR). Re-establishment of the attributes initial values.

F8Z20 contains the end of the reception-display iteration.

```
 F8Z.         EXIT.                                               DO0030
 F8Z05.   IF SCR-ER = "1"                                         DO0030
        NEXT SENTENCE ELSE GO TO F8Z05-FN.                        DO0030
          IF K-S0030-DOC NOT = "1"     GO TO F8Z05-A.             DO0030
        MOVE K-S0030-ERCOD9 TO K01 K02.                           DO0030
        IF K02 > INR                                              DO0030
        COMPUTE K02 = K01 + (INR - INA) * (IRR - 1).              DO0030
        IF K02 < 1 OR K02 > INT MOVE 1 TO K02.                    DO0030
        MOVE "X"  TO DE-AT (4, K02)                               DO0030
        PERFORM F7020 THRU F7020-FN.                              DO0030
 F8Z05-A.                                                         DO0030
        MOVE K-S0030-XTERM  TO HE00-XTERM.                        DO0030
          IF K-S0030-DOC = "1"                                    DO0030
        PERFORM F80-HELP-R  THRU F80-FN                           DO0030
        MOVE HE00-SCREEN  TO  O-0030                              DO0030
        MOVE "0" TO K-S0030-DOC      GO TO F8Z05-FN.              DO0030
          IF K-S0030-DOC NOT = ZERO      GO TO F8Z05-FN.          DO0030
        PERFORM F80-HELP-R  THRU F80-FN.                          DO0030
        MOVE K-S0030-XTERM  TO HE00-XTERM                         DO0030
        MOVE O-0030     TO     HE00-SCREEN.                       DO0030
        IF IK = "1"                                               DO0030
        PERFORM F80-HELP-W  THRU F80-FN  ELSE                     DO0030
        PERFORM F80-HELP-RW THRU F80-FN.                          DO0030
 F8Z05-FN.    EXIT.                                               DO0030
 F8Z06.                                                           DO0030
        MOVE  "DOM0030 "   TO VPLUS-NFNAME.                       DO0030
        MOVE  "VGETNEXT"   TO S-WWSS-XFUNCT.                      DO0030
        CALL  "VGETNEXTFORM" USING VPLUS-COMARE.                  DO0030
        IF  VPLUS-STATUS NOT = 0                                  DO0030
        PERFORM F81EV THRU F81EV-FN.                              DO0030
 F8Z06-FN.    EXIT.                                               DO0030
 F8Z08.                                                           DO0030
        PERFORM F8145 THRU F8145-FN.                              DO0030
        MOVE  "VPUTBUFF"   TO S-WWSS-XFUNCT.                      DO0030
        CALL  "VPUTBUFFER" USING VPLUS-COMARE                     DO0030
                         0030-MESSO VPLUS-DBFLEN.                 DO0030
        IF  VPLUS-STATUS NOT = 0                                  DO0030
        PERFORM F81EV THRU F81EV-FN.                              DO0030
        IF HP30-CHGNBE > ZERO                                     DO0030
        MOVE  "VCHANGEFIELD" TO S-WWSS-XFUNCT                     DO0030
        CALL  "VCHANGEFIELD" USING VPLUS-COMARE                   DO0030
                        HP30-SPEBUF HP30-CHGNBE                   DO0030
        IF  VPLUS-STATUS NOT = 0                                  DO0030
        PERFORM F81EV THRU F81EV-FN.                              DO0030
 F8Z08-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 PROGR     TO          K-S0030-PROGR                  DO0030
        MOVE  "VSHOWFOR"   TO S-WWSS-XFUNCT.                      DO0030
        CALL  "VSHOWFORM"    USING VPLUS-COMARE.                  DO0030
        IF  VPLUS-STATUS NOT = 0                                  DO0030
        PERFORM F81EV THRU F81EV-FN.                              DO0030
 F8Z10-FN.    EXIT.                                               DO0030
 8Z11.                                                            DO0030
        IF HP30-FLDNUM > ZERO                                     DO0030
        MOVE  "VPLACECURSOR" TO S-WWSS-XFUNCT                     DO0030
        CALL  "VPLACECURSOR" USING VPLUS-COMARE HP30-FLDNUM       DO0030
        IF  VPLUS-STATUS NOT = 0                                  DO0030
        PERFORM F81EV THRU F81EV-FN.                              DO0030
 F8Z11-FN.    EXIT.                                               DO0030
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  END OF PROGRAM                   *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F8Z20.                                                           DO0030
        GO TO F0110.                                              DO0030
 F8Z20-FN.    EXIT.                                               DO0030
 F8Z-FN.      EXIT.                                               DO0030
```

4.18. PHYSICAL SEGMENT ACCESS ROUTINES (F80)

F80 : PHYSICAL SEGMENT ACCESS ROUTINES

The PHYSICAL SEGMENT ACCESS ROUTINES (F80) function is generated when at least one segment is called in the screen.

These procedures depend on the variant of the TP Monitor and on the method used to access the segment.

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

- for a KSAM file:

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.

- for ALLBASE/SQL (corresponding SQL sub-function/command)

F80-CD10-R	SELECT
F80-CD10-RU	SELECT
F80-CD10-P	OPEN
F80-CD10-RN	FETCH
F80-CD10-W	INSERT
F80-CD10-RW	MODIFY

F80-CD10-D	DELETE
F80-CD10-UN	no operation

In this case, the following sub-functions are also automatically generated:

F8091 which includes the COMMIT for end of reception,

F8092 which includes the BEGIN for beginning of display,

F8093 which includes the COMMIT for end of display.

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
        EXEC SQL SELECT ALL                                       DO0030
                   NUCOM ,                                        DO0030
                   NUCLIE ,                                       DO0030
                   DATE ,                                         DO0030
                   RELEA ,                                        DO0030
                   REFERENCECLIENT ,                              DO0030
                   RUE ,                                          DO0030
                   COPOS ,                                        DO0030
                   VILLE ,                                        DO0030
                   CORRES ,                                       DO0030
                   REMIS ,                                        DO0030
                   MATE ,                                         DO0030
                   LANGU                                          DO0030
          INTO  :CD05-NUCOM:VCD05NUCOM ,                          DO0030
                :CD05-NUCLIE:VCD05NUCLIE ,                        DO0030
                :CD05-DATE:VCD05DATE ,                            DO0030
                :CD05-RELEA:VCD05RELEA ,                          DO0030
                :CD05-REFCLI:VCD05REFCLI ,                        DO0030
                :CD05-RUE:VCD05RUE ,                              DO0030
                :CD05-COPOS:VCD05COPOS ,                          DO0030
                :CD05-VILLE:VCD05VILLE ,                          DO0030
                :CD05-CORRES:VCD05CORRES ,                        DO0030
                :CD05-REMIS:VCD05REMIS ,                          DO0030
                :CD05-MATE:VCD05MATE ,                            DO0030
                :CD05-LANGU:VCD05LANGU                            DO0030
                 FROM PDLB.B                                      DO0030
      WHERE NUCOM =  :CD05-NUCOM                                  DO0030
        END-EXEC.                                                 DO0030
        GO TO F80-OK.                                             DO0030
 F80-CD05-RU.                                                     DO0030
        EXEC SQL SELECT ALL                                       DO0030
                   NUCOM ,                                        DO0030
                   NUCLIE ,                                       DO0030
                   DATE ,                                         DO0030
                   RELEA ,                                        DO0030
                   REFERENCECLIENT ,                              DO0030
                   RUE ,                                          DO0030
                   COPOS ,                                        DO0030
                   VILLE ,                                        DO0030
                   CORRES ,                                       DO0030
                   REMIS ,                                        DO0030
                   MATE ,                                         DO0030
                   LANGU                                          DO0030
          INTO  :CD05-NUCOM:VCD05NUCOM ,                          DO0030
                :CD05-NUCLIE:VCD05NUCLIE ,                        DO0030
                :CD05-DATE:VCD05DATE ,                            DO0030
                :CD05-RELEA:VCD05RELEA ,                          DO0030
                :CD05-REFCLI:VCD05REFCLI ,                        DO0030
                :CD05-RUE:VCD05RUE ,                              DO0030
                :CD05-COPOS:VCD05COPOS ,                          DO0030
                :CD05-VILLE:VCD05VILLE ,                          DO0030
                :CD05-CORRES:VCD05CORRES ,                        DO0030
                :CD05-REMIS:VCD05REMIS ,                          DO0030
                :CD05-MATE:VCD05MATE ,                            DO0030
                :CD05-LANGU:VCD05LANGU                            DO0030
                 FROM PDLB.B                                      DO0030
      WHERE NUCOM =  :CD05-NUCOM                                  DO0030
        END-EXEC.                                                 DO0030
        GO TO F80-OK.                                             DO0030
 F80-CD05-RW.                                                     DO0030
        EXEC SQL UPDATE     PDLB.B                                DO0030
          SET NUCLIE =                                            DO0030
               :CD05-NUCLIE:VCD05NUCLIE,                          DO0030
              DATE =                                              DO0030
               :CD05-DATE:VCD05DATE,                              DO0030
              RELEA =                                             DO0030
               :CD05-RELEA:VCD05RELEA,                            DO0030
              REFERENCECLIENT =                                   DO0030
               :CD05-REFCLI:VCD05REFCLI,                          DO0030
              RUE =                                               DO0030
               :CD05-RUE:VCD05RUE,                                DO0030
              COPOS =                                             DO0030
               :CD05-COPOS:VCD05COPOS,                            DO0030
              VILLE =                                             DO0030
               :CD05-VILLE:VCD05VILLE,                            DO0030
              CORRES =                                            DO0030
               :CD05-CORRES:VCD05CORRES,                          DO0030
              REMIS =                                             DO0030
               :CD05-REMIS:VCD05REMIS,                            DO0030
              MATE =                                              DO0030
               :CD05-MATE:VCD05MATE,                              DO0030
              LANGU =                                             DO0030
               :CD05-LANGU:VCD05LANGU                             DO0030
      WHERE NUCOM =  :CD05-NUCOM                                  DO0030
        END-EXEC.                                                 DO0030
        GO TO F80-OK.                                             DO0030
 F80-CD05-UN.                                                     DO0030
        GO TO F80-OK.                                             DO0030
 F8001-FN.    EXIT.                                               DO0030
 F80-CD10-R.                                                      DO0030
        EXEC SQL SELECT ALL                                       DO0030
                   NUCOM ,                                        DO0030
                   FOURNI ,                                       DO0030
                   QTMAC ,                                        DO0030
                   QTMAL ,                                        DO0030
                   INFOR ,                                        DO0030
                   ADFOU                                          DO0030
          INTO  :CD10-NUCOM:VCD10NUCOM ,                          DO0030
                :CD10-FOURNI:VCD10FOURNI ,                        DO0030
                :CD10-QTMAC:VCD10QTMAC ,                          DO0030
                :CD10-QTMAL:VCD10QTMAL ,                          DO0030
                :CD10-INFOR:VCD10INFOR ,                          DO0030
                :CD10-ADFOU:VCD10ADFOU                            DO0030
                 FROM PDLB.C                                      DO0030
      WHERE NUCOM =  :CD10-NUCOM                                  DO0030
        AND FOURNI =  :CD10-FOURNI                                DO0030
        END-EXEC.                                                 DO0030
        GO TO F80-OK.                                             DO0030
 F80-CD10-RU.                                                     DO0030
        EXEC SQL SELECT ALL                                       DO0030
                   NUCOM ,                                        DO0030
                   FOURNI ,                                       DO0030
                   QTMAC ,                                        DO0030
                   QTMAL ,                                        DO0030
                   INFOR ,                                        DO0030
                   ADFOU                                          DO0030
          INTO  :CD10-NUCOM:VCD10NUCOM ,                          DO0030
                :CD10-FOURNI:VCD10FOURNI ,                        DO0030
                :CD10-QTMAC:VCD10QTMAC ,                          DO0030
                :CD10-QTMAL:VCD10QTMAL ,                          DO0030
                :CD10-INFOR:VCD10INFOR ,                          DO0030
                :CD10-ADFOU:VCD10ADFOU                            DO0030
                 FROM PDLB.C                                      DO0030
      WHERE NUCOM =  :CD10-NUCOM                                  DO0030
        AND FOURNI =  :CD10-FOURNI                                DO0030
        END-EXEC.                                                 DO0030
        GO TO F80-OK.                                             DO0030
 F80-CD10-P.                                                      DO0030
        EXEC SQL     OPEN      DISPLAY_CD10                       DO0030
        END-EXEC.                                                 DO0030
 F80-CD10-RN.                                                     DO0030
        EXEC SQL    FETCH      DISPLAY_CD10                       DO0030
          INTO  :CD10-NUCOM:VCD10NUCOM ,                          DO0030
                :CD10-FOURNI:VCD10FOURNI ,                        DO0030
                :CD10-QTMAC:VCD10QTMAC ,                          DO0030
                :CD10-QTMAL:VCD10QTMAL ,                          DO0030
                :CD10-INFOR:VCD10INFOR ,                          DO0030
                :CD10-ADFOU:VCD10ADFOU                            DO0030
        END-EXEC.                                                 DO0030
        GO TO F80-OK.                                             DO0030
 F80-CD10-W.                                                      DO0030
      EXEC SQL INSERT INTO PDLB.C                                 DO0030
                   ( NUCOM ,                                      DO0030
                     FOURNI ,                                     DO0030
                     QTMAC ,                                      DO0030
                     QTMAL ,                                      DO0030
                     INFOR ,                                      DO0030
                     ADFOU )                                  DO0030
       VALUES (:CD10-NUCOM:VCD10NUCOM,                    DO0030
               :CD10-FOURNI:VCD10FOURNI,                  DO0030
               :CD10-QTMAC:VCD10QTMAC,                    DO0030
               :CD10-QTMAL:VCD10QTMAL,                    DO0030
               :CD10-INFOR:VCD10INFOR,                    DO0030
               :CD10-ADFOU:VCD10ADFOU)                    DO0030
        END-EXEC.                                         DO0030
        GO TO F80-OK.                                     DO0030
 F80-CD10-RW.                                             DO0030
        EXEC SQL UPDATE     PDLB.C                        DO0030
          SET QTMAC =                                     DO0030
               :CD10-QTMAC:VCD10QTMAC,                    DO0030
              QTMAL =                                     DO0030
               :CD10-QTMAL:VCD10QTMAL,                    DO0030
              INFOR =                                     DO0030
               :CD10-INFOR:VCD10INFOR,                    DO0030
              ADFOU =                                     DO0030
               :CD10-ADFOU:VCD10ADFOU                     DO0030
      WHERE NUCOM =  :CD10-NUCOM                          DO0030
        AND FOURNI =  :CD10-FOURNI                        DO0030
        END-EXEC.                                         DO0030
        GO TO F80-OK.                                     DO0030
 F80-CD10-D.                                              DO0030
      EXEC SQL DELETE FROM PDLB.C                         DO0030
      WHERE NUCOM =  :CD10-NUCOM                          DO0030
        AND FOURNI =  :CD10-FOURNI                        DO0030
        END-EXEC.                                         DO0030
        GO TO F80-OK.                                     DO0030
 F80-CD10-UN.                                             DO0030
        GO TO F80-OK.                                     DO0030
 F80-CD10-CL.                                             DO0030
        EXEC SQL    CLOSE      DISPLAY_CD10               DO0030
        END-EXEC.                                         DO0030
        GO TO F80-OK.                                     DO0030
 F8002-FN.    EXIT.                                       DO0030
 F80-CD20-RU.                                             DO0030
        EXEC SQL SELECT ALL                               DO0030
                   EDIT                                   DO0030
          INTO  :CD20-EDIT:VCD20EDIT                      DO0030
                 FROM PDLB.E                              DO0030
      WHERE EDIT =  :CD20-EDIT                            DO0030
        END-EXEC.                                         DO0030
        GO TO F80-OK.                                     DO0030
 F80-CD20-W.                                              DO0030
      EXEC SQL INSERT INTO PDLB.E                         DO0030
                   ( EDIT )                               DO0030
       VALUES (:CD20-EDIT:VCD20EDIT)                      DO0030
        END-EXEC.                                         DO0030
        GO TO F80-OK.                                     DO0030
 F80-CD20-RW.                                             DO0030
        EXEC SQL UPDATE     PDLB.E                        DO0030
      WHERE EDIT =  :CD20-EDIT                            DO0030
        END-EXEC.                                         DO0030
        GO TO F80-OK.                                     DO0030
 F80-CD20-UN.                                             DO0030
        GO TO F80-OK.                                     DO0030
 F8003-FN.    EXIT.                                       DO0030
 F80-FO10-RU.                                             DO0030
        EXEC SQL SELECT ALL                               DO0030
                   FOURNI ,                               DO0030
                   MATE ,                                 DO0030
                   RELEA ,                                DO0030
                   LANGU ,                                DO0030
                   QTMAS ,                                DO0030
                   QTMAM ,                                DO0030
                   LIBFO ,                                DO0030
                   DATE ,                                 DO0030
                   HEURE                                  DO0030
          INTO  :FO10-FOURNI:VFO10FOURNI ,                DO0030
                :FO10-MATE:VFO10MATE ,                    DO0030
                :FO10-RELEA:VFO10RELEA ,                  DO0030
                :FO10-LANGU:VFO10LANGU ,                  DO0030
                :FO10-QTMAS:VFO10QTMAS ,                  DO0030
                :FO10-QTMAM:VFO10QTMAM ,                  DO0030
                :FO10-LIBFO:VFO10LIBFO ,                  DO0030
                :FO10-DATE:VFO10DATE ,                    DO0030
```

```
               :FO10-HEURE:VFO10HEURE                            DO0030
                FROM PDLB.FO10                                   DO0030
       END-EXEC.                                                 DO0030
       GO TO F80-OK.                                             DO0030
F80-FO10-RW.                                                     DO0030
       EXEC SQL UPDATE     PDLB.FO10                             DO0030
         SET FOURNI =                                            DO0030
             :FO10-FOURNI:VFO10FOURNI,                           DO0030
             MATE =                                              DO0030
              :FO10-MATE:VFO10MATE,                              DO0030
             RELEA =                                             DO0030
              :FO10-RELEA:VFO10RELEA,                            DO0030
             LANGU =                                             DO0030
              :FO10-LANGU:VFO10LANGU,                            DO0030
             QTMAS =                                             DO0030
              :FO10-QTMAS:VFO10QTMAS,                            DO0030
             QTMAM =                                             DO0030
              :FO10-QTMAM:VFO10QTMAM,                            DO0030
             LIBFO =                                             DO0030
              :FO10-LIBFO:VFO10LIBFO,                            DO0030
             DATE =                                              DO0030
              :FO10-DATE:VFO10DATE,                              DO0030
             HEURE =                                             DO0030
              :FO10-HEURE:VFO10HEURE                             DO0030
       END-EXEC.                                                 DO0030
       GO TO F80-OK.                                             DO0030
F80-FO10-UN.                                                     DO0030
       GO TO F80-OK.                                             DO0030
F8004-FN.    EXIT.                                               DO0030
F80-ME00-R.                                                      DO0030
       EXEC SQL SELECT ALL                                       DO0030
                  COPERS ,                                       DO0030
                  NUMORD ,                                       DO0030
                  MESSA                                          DO0030
         INTO  :ME00-COPERS:VME00COPERS ,                        DO0030
               :ME00-NUMORD:VME00NUMORD ,                        DO0030
               :ME00-MESSA:VME00MESSA                            DO0030
                FROM PDLB.ME00                                   DO0030
     WHERE COPERS =  :ME00-COPERS                                DO0030
       AND NUMORD =  :ME00-NUMORD                                DO0030
       END-EXEC.                                                 DO0030
       GO TO F80-OK.                                             DO0030
F8005-FN.    EXIT.                                               DO0030
F8091.                                                           DO0030
       MOVE "1" TO CATX.                                         DO0030
       EXEC SQL  COMMIT WORK  END-EXEC.                          DO0030
F8091-FN.    EXIT.                                               DO0030
F8092.                                                           DO0030
       EXEC SQL  BEGIN WORK RU  END-EXEC.                        DO0030
F8092-FN.    EXIT.                                               DO0030
F8093.                                                           DO0030
       MOVE "2" TO CATX.                                         DO0030
       EXEC SQL  COMMIT WORK  END-EXEC.                          DO0030
F8093-FN.    EXIT.                                               DO0030
F80-HELP-R.                                                      DO0030
       MOVE "READ    " TO S-WWSS-XFUNCT MOVE "0" TO IK.          DO0030
       READ    HE-FILE    INVALID KEY GO TO F80-KO.              DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                DO0030
F80-HELP-W.                                                      DO0030
       MOVE "WRITE   " TO S-WWSS-XFUNCT MOVE "0" TO IK.          DO0030
       EXCLUSIVE  HE-FILE.                                       DO0030
       WRITE      HE00   INVALID KEY GO TO F80-HELP-UNKO.        DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-HELP-UNOK.         DO0030
F80-HELP-RW.                                                     DO0030
       MOVE "REWRITE " TO S-WWSS-XFUNCT MOVE "0" TO IK.          DO0030
       EXCLUSIVE  HE-FILE.                                       DO0030
       REWRITE    HE00   INVALID KEY GO TO F80-HELP-UNKO.        DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-HELP-UNOK.         DO0030
F80-HELP-D.                                                      DO0030
       MOVE "DELETE  " TO S-WWSS-XFUNCT MOVE "0" TO IK.          DO0030
       EXCLUSIVE  HE-FILE.                                       DO0030
       DELETE  HE-FILE    RECORD                                 DO0030
                           INVALID KEY GO TO F80-HELP-UNKO.      DO0030
       IF IK = "1" GO TO F81ER ELSE GO TO F80-HELP-UNOK.         DO0030
F80-HELP-UNOK.                                                   DO0030
       MOVE "UNLOCK  " TO S-WWSS-XFUNCT.                         DO0030
       UN-EXCLUSIVE HE-FILE.                                     DO0030
```

```
           GO TO F80-OK.                                         DO0030
       F80-HELP-UNKO.                                            DO0030
           MOVE "UNLOCK  " TO S-WWSS-XFUNCT.                     DO0030
           UN-EXCLUSIVE HE-FILE.                                 DO0030
           GO TO F80-KO.                                         DO0030
       F8095-FN.    EXIT.                                        DO0030
       F80-EM00-R.                                               DO0030
           MOVE "READ    " TO S-WWSS-XFUNCT MOVE "0" TO IK.      DO0030
           READ    EM-FILE    INVALID KEY GO TO F80-KO.          DO0030
           IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.            DO0030
       F8098-FN.    EXIT.                                        DO0030
       F80-OK.  MOVE "0" TO IK MOVE PROGR TO XPROGR GO TO F80-FN.   DO0030
       F80-KO.  MOVE "1" TO IK MOVE PROGR TO XPROGR.             DO0030
       F8099-FN.    EXIT.                                        DO0030
       F80-FN.      EXIT.                                        DO0030
```

4.19. PERFORMED VALIDATION FUNCTIONS (F81)

F81 : PERFORMED VALIDATION FUNCTIONS

This function is automatically generated.

F81ER contains the abend routine for files.

F81ES contains the abend routine for ALLBASE/SQL. Only the title is generated.

A standard macro (see example) handles the following:

- the DEADLOCK with transfer to the initial display
- the COMMIT without a BEGIN (if error on reception)
- the double BEGIN (if error on reception after reading the database and transferring to display)

F81EV contains the processing in case of a VPLUS error.

F81EW only the title of this function is generated. The processing for handling ALLBASE/SQL SQLWARNINGs must be inserted into this function.

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

F81UT contains the storing of user errors.

F8101 contains the initialization to zero of the set of data element indicators for ALLBASE/SQL.

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

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

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

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

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

F8150 ensures the detection of all documentation requests.

F8165 ensures the transfer of the FORM buffer field to the reception fields (INPUT-SCREEN FIELDS).

```
 F81.         EXIT.                                               DO0030
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  ABNORMAL END PROCEDURE           *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F81ER.                                                           DO0030
        MOVE  PROGE    TO  S-WWSS-PROGE.                          DO0030
        MOVE  "X"      TO  S-WWSS-OPER.                           DO0030
 F81ER-A.  EXIT PROGRAM.                                          DO0030
 F81ER-FN.    EXIT.                                               DO0030
*             +------------------------------------+              P000
* LEVEL 10    I ALLBASE/SQL ERROR                  I              P000
*             +------------------------------------+              P000
 F81ES.                                                           P000
           IF    SQLCODE = -14024                                 P100
*----->       DEADLOCK                                            P100
     MOVE        "1" TO 7-SQLA-POSMSG                             P110
     GO TO F50.                                                   P190
           IF    SQLCODE NOT = -2103                              P200
*----->       BEGIN TWICE                                         P200
     GO TO F81ES-299.                                             P205
     EXEC SQL     COMMIT WORK                          END-EXEC.  P210
     GO TO F50.                                                   P290
 F81ES-299.                                                       P299
           IF    SQLCODE NOT = -2102                              P300
*----->       COMMIT WITHOUT BEGIN                                P300
     GO TO F81ES-399.                                             P305
           IF    CATX = "1"                                       P350
     GO TO F3999-FN.                                              P350
           IF    CATX = "2"                                       P370
     GO TO F6999-FN.                                              P370
 F81ES-399.                                                       P399
*----->       ANOTHER ERROR                                       P500
     MOVE        "SQ" TO S-WWSS-STATUS                            P510
     GO TO F81ER.                                                 P590
 F81ES-FN.    EXIT.                                               P000
 F81EV.                                                           DO0030
        MOVE  "VP" TO S-WWSS-STATUS.                              DO0030
        GO TO F81ER.                                              DO0030
 F81EV-FN.    EXIT.                                               DO0030
 F81EW.                                                           DO0030
       GO TO F80-OK.                                              DO0030
 F81EW-FN.    EXIT.                                               DO0030
 F81FI.                                                           DO0030
        MOVE "CLOSE   " TO S-WWSS-XFUNCT MOVE "0" TO IK.          DO0030
        CLOSE   EM-FILE.                                          DO0030
        IF IK = "1" GO TO F81ER.                                  DO0030
        CLOSE   HE-FILE.                                          DO0030
        IF IK = "1" GO TO F81ER.                                  DO0030
 F81FI-FN.    EXIT.                                               DO0030
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  MEMORIZATION OF USER'S ERRORS    *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F81UT.     IF K50L < K50M ADD 1 TO K50L                          DO0030
        MOVE XEMKY TO T-XEMKY (K50L). MOVE "E" TO CAT-ER.         DO0030
 F81UT-FN.    EXIT.                                               DO0030
 F8101.                                                           DO0030
      MOVE 0 TO    VCD05NUCOM.                                    DO0030
      MOVE 0 TO    VCD05NUCLIE.                                   DO0030
      MOVE 0 TO    VCD05DATE.                                     DO0030
      MOVE 0 TO    VCD05RELEA.                                    DO0030
      MOVE 0 TO    VCD05REFCLI.                                   DO0030
      MOVE 0 TO    VCD05RUE.                                      DO0030
      MOVE 0 TO    VCD05COPOS.                                    DO0030
      MOVE 0 TO    VCD05VILLE.                                    DO0030
      MOVE 0 TO    VCD05CORRES.                                   DO0030
      MOVE 0 TO    VCD05REMIS.                                    DO0030
      MOVE 0 TO    VCD05MATE.                                     DO0030
      MOVE 0 TO    VCD05LANGU.                                    DO0030
      MOVE 0 TO    VCD10NUCOM.                                    DO0030
      MOVE 0 TO    VCD10FOURNI.                                   DO0030
      MOVE 0 TO    VCD10QTMAC.                                    DO0030
      MOVE 0 TO    VCD10QTMAL.                                    DO0030
      MOVE 0 TO    VCD10INFOR.                                    DO0030
      MOVE 0 TO    VCD10ADFOU.                                    DO0030
      MOVE 0 TO    VCD20EDIT.                                     DO0030
      MOVE 0 TO    VFO10FOURNI.                                   DO0030
      MOVE 0 TO    VFO10MATE.                                     DO0030
      MOVE 0 TO    VFO10RELEA.                                    DO0030
      MOVE 0 TO    VFO10LANGU.                                    DO0030
      MOVE 0 TO    VFO10QTMAS.                                    DO0030
      MOVE 0 TO    VFO10QTMAM.                                    DO0030
      MOVE 0 TO    VFO10LIBFO.                                    DO0030
      MOVE 0 TO    VFO10DATE.                                     DO0030
      MOVE 0 TO    VFO10HEURE.                                    DO0030
      MOVE 0 TO    VME00COPERS.                                   DO0030
      MOVE 0 TO    VME00NUMORD.                                   DO0030
      MOVE 0 TO    VME00MESSA.                                    DO0030
 F8101-FN.    EXIT.                                               DO0030
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  NUMERIC VALIDATION               *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F8110.   MOVE ZERO TO TPOINT K01 K02 K03 ZONUM3 ZONUM2           DO0030
                       C9 C91.                                    DO0030
 F8110-1.   IF K01 > 26 OR K02 > 17 GO TO F8110-5.                DO0030
        ADD 1 TO K01.                                             DO0030
        IF C1 (K01) = SPACE OR C1 (K01) = "." GO TO F8110-1.      DO0030
      IF C1 (K01) NOT = "-" AND C1 (K01) NOT = "+" GO TO F8110-2. DO0030
        IF C9 NOT = ZERO                                          DO0030
        MOVE "5" TO DEL-ER GO TO F8110-FN.                        DO0030
        IF K02 = ZERO MOVE "1" TO C91.                            DO0030
        IF C1 (K01) = "+" MOVE 1 TO C9   GO TO F8110-1.           DO0030
        IF SIGNE = " " MOVE "5" TO DEL-ER GO TO F8110-FN.         DO0030
        MOVE -1 TO C9 GO TO F8110-1.                              DO0030
 F8110-2. IF C1 (K01) NOT = "," GO TO F8110-4.                    DO0030
        IF TPOINT = "1" OR NBCHP = 0                              DO0030
        MOVE "5" TO DEL-ER GO TO F8110-FN.                        DO0030
 F8110-3. IF K02 > NBCHA MOVE "5" TO DEL-ER GO TO F8110-FN.       DO0030
        COMPUTE K04 = 18 - NBCHA + K02 MOVE 1 TO C3 (K04)         DO0030
        DIVIDE ZONUM4 INTO ZONUM9 MOVE NBCHA TO K02               DO0030
        MOVE "1" TO TPOINT GO TO F8110-1.                         DO0030
 F8110-4. IF C1 (K01) NOT NUMERIC MOVE "4" TO DEL-ER              DO0030
        GO TO F8110-FN.                                           DO0030
        IF C9 NOT = ZERO AND C91 = ZERO                           DO0030
        MOVE "5" TO DEL-ER  GO TO F8110-FN.                       DO0030
        IF C1 (K01) = "0" AND K02 = ZERO AND TPOINT = "0"         DO0030
        GO TO F8110-1. ADD 1 TO K02 MOVE C1 (K01) TO C2 (K02).    DO0030
        IF TPOINT = "1" ADD 1 TO K03. IF K03 > NBCHP MOVE "5"     DO0030
        TO DEL-ER GO TO F8110-FN. GO TO F8110-1.                  DO0030
 F8110-5. IF TPOINT = "0" AND K02 > ZERO GO TO F8110-3.           DO0030
        IF SIGNE NOT =  "+" GO TO F8110-FN.                       DO0030
        IF C9 = ZERO MOVE 1 TO C9.                                DO0030
        ADD NBCHA NBCHP GIVING K01 MULTIPLY C9 BY C29 (K01).      DO0030
        IF C29 (K01) = ZERO AND C9 = -1 MOVE C4 TO C2 (K01).      DO0030
 F8110-FN.    EXIT.                                               DO0030
 F8115.                                                           DO0030
        MOVE ALL "-"                                              DO0030
          TO  O-0030-MATE.                                        DO0030
        MOVE ALL "-"                                              DO0030
          TO  O-0030-RELEA.                                       DO0030
        MOVE ALL "-"                                              DO0030
          TO  O-0030-RUE.                                         DO0030
        MOVE ALL "-"                                              DO0030
          TO  O-0030-COPOS.                                       DO0030
        MOVE ALL "-"                                              DO0030
          TO  O-0030-REFCLI.                                      DO0030
        MOVE "..__.."                                             DO0030
          TO  O-0030-DATE.                                        DO0030
        MOVE ALL "-"                                              DO0030
          TO  O-0030-CORRES.                                      DO0030
        MOVE ALL "-"                                              DO0030
          TO  F-0030-REMIS.                                       DO0030
        MOVE  ZERO  TO  ICATR.                                    DO0030
 F8115-GRP.   ADD 1 TO  ICATR                                     DO0030
        MOVE  P-0030-LINE  (ICATR) TO O-0030-LINE                 DO0030
        MOVE ALL "-"                                              DO0030
          TO  O-0030-CODMVT.                                      DO0030
        MOVE ALL "-"                                              DO0030
          TO  O-0030-FOURNI.                                      DO0030
        MOVE ALL "-"                                              DO0030
          TO  F-0030-QTMAC.                                       DO0030
        MOVE ALL "-"                                              DO0030
          TO  O-0030-INFOR.                                       DO0030
        MOVE  O-0030-LINE          TO P-0030-LINE  (ICATR).       DO0030
     IF ICATR  < IRR GO TO F8115-GRP.                             DO0030
        MOVE ALL "-"                                              DO0030
          TO  O-0030-EDIT.                                        DO0030
 F8115-FN.    EXIT.                                               DO0030
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  VALIDATION AND SETTING OF DATE   *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F8120.       EXIT.                                               DO0030
 F8120-C. MOVE DAT73C TO DATCTY.                                  DO0030
          MOVE DAT71C TO DAT71.                                   DO0030
          MOVE DAT72C TO DAT72.                                   DO0030
          MOVE DAT74C TO DAT73.                                   DO0030
          MOVE "00111" TO TT-DAT GO TO F8120-T.                   DO0030
 F8120-D. MOVE CENTUR TO DATCTY DAT73C.                           DO0030
          MOVE DAT71 TO DAT71C.                                   DO0030
          MOVE DAT72 TO DAT72C                                    DO0030
          MOVE DAT73 TO DAT74C.                                   DO0030
          MOVE "00111" TO TT-DAT GO TO F8120-T.                   DO0030
 F8120-E. MOVE CENTUR TO DATCTY DAT83C.                           DO0030
          MOVE DAT81 TO DAT81C.                                   DO0030
          MOVE DAT82 TO DAT82C.                                   DO0030
          MOVE DAT83 TO DAT84C  MOVE DATSEP TO DAT8S1C DAT8S2C.   DO0030
          MOVE "01011" TO TT-DAT GO TO F8120-T.                   DO0030
 F8120-G. MOVE DAT81G TO DATCTY.                                  DO0030
          MOVE DAT82G TO DAT61.                                   DO0030
          MOVE DAT83G TO DAT62.                                   DO0030
          MOVE DAT84G TO DAT63.                                   DO0030
          MOVE "10110" TO TT-DAT GO TO F8120-T.                   DO0030
 F8120-I. MOVE CENTUR TO DATCTY DAT61C.                           DO0030
          MOVE DAT61 TO DAT62C.                                   DO0030
          MOVE DAT62 TO DAT63C.                                   DO0030
          MOVE DAT63 TO DAT64C.                                   DO0030
          MOVE "10101" TO TT-DAT GO TO F8120-T.                   DO0030
 F8120-M. MOVE DAT83C TO DATCTY.                                  DO0030
          MOVE DAT81C TO DAT81.                                   DO0030
          MOVE DAT82C TO DAT82.                                   DO0030
          MOVE DAT84C TO DAT83  MOVE DATSEP TO DAT8S1 DAT8S2.     DO0030
          MOVE "01011" TO TT-DAT GO TO F8120-T.                   DO0030
 F8120-S. MOVE DAT61C TO DATCTY.                                  DO0030
          MOVE DAT62C TO DAT61.                                   DO0030
          MOVE DAT63C TO DAT62.                                   DO0030
          MOVE DAT64C TO DAT63.                                   DO0030
          MOVE "10101" TO TT-DAT.                                 DO0030
 F8120-T. IF T-DAT (1) = "1"                                      DO0030
             MOVE DAT61 TO DAT73 DAT74C                           DO0030
             MOVE DAT62 TO DAT72 DAT72C                           DO0030
             MOVE DAT63 TO DAT71 DAT71C                           DO0030
             MOVE DATCTY TO DAT73C.                               DO0030
          IF T-DAT (2) = "1"                                      DO0030
             MOVE DAT81 TO DAT71 DAT71C                           DO0030
             MOVE DAT82 TO DAT72 DAT72C                           DO0030
             MOVE DAT83 TO DAT73 DAT74C                           DO0030
             MOVE DATCTY TO  DAT73C.                              DO0030
          IF T-DAT (3) = "1"                                      DO0030
             MOVE DAT71 TO DAT81 DAT81C                           DO0030
             MOVE DAT72 TO DAT82 DAT82C                           DO0030
             MOVE DAT73 TO DAT83 DAT84C                           DO0030
             MOVE DATSEP TO DAT8S1 DAT8S2 DAT8S1C DAT8S2C         DO0030
             MOVE DATCTY TO DAT83C.                               DO0030
          IF T-DAT (4) = "1"                                      DO0030
             MOVE DAT71 TO DAT63 DAT64C                           DO0030
             MOVE DAT72 TO DAT62 DAT63C                           DO0030
             MOVE DAT73 TO DAT61 DAT62C                           DO0030
             MOVE DATCTY TO DAT61C.                               DO0030
          IF T-DAT (5) = "1"                                      DO0030
             MOVE DAT61 TO DAT82G                                 DO0030
             MOVE DAT62 TO DAT83G                                 DO0030
             MOVE DAT63 TO DAT84G                                 DO0030
             MOVE DATSET TO DAT8S1G DAT8S2G                       DO0030
             MOVE DATCTY TO DAT81G.                               DO0030
 F8120-Z.     EXIT.                                               DO0030
 F8120-ER.   MOVE "1"   TO DEL-ER.                                DO0030
          IF DAT6 NOT NUMERIC                GO TO F8120-KO.      DO0030
          IF DATCTY NOT NUMERIC              GO TO F8120-KO.      DO0030
          IF DAT62 > "12" OR DAT62 = "00" OR                      DO0030
             DAT63 > "31" OR DAT63 = "00"    GO TO F8120-KO.      DO0030
          IF DAT63 > "30" AND                                     DO0030
            (DAT62 = "04" OR DAT62 = "06" OR                      DO0030
             DAT62 = "09" OR DAT62 = "11")   GO TO F8120-KO.      DO0030
          IF DAT62 NOT = "02"                GO TO F8120-FN.      DO0030
          IF DAT63 > "29"                    GO TO F8120-KO.      DO0030
          IF   DAT619  = ZERO                                     DO0030
          DIVIDE  DATCTY9    BY 4 GIVING  LEAP-REM                DO0030
          COMPUTE LEAP-REM = DATCTY9 - 4 * LEAP-REM               DO0030
          ELSE DIVIDE DAT619  BY 4 GIVING LEAP-REM                DO0030
          COMPUTE LEAP-REM = DAT619 - 4 * LEAP-REM.               DO0030
          IF DAT63 < "29" OR LEAP-REM = ZERO GO TO F8120-FN.      DO0030
 F8120-KO. MOVE "5" TO DEL-ER.                                    DO0030
 F8120-FN.    EXIT.                                               DO0030
*           *************************************                 DO0030
*           *                                   *                 DO0030
*           *  HELP SUB-FUNCTION                *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F8130.                                                           DO0030
        IF    I-0030-MATE   NOT = HIGH-VALUE                      DO0030
        MOVE  I-0030-MATE          TO O-0030-MATE.                DO0030
        IF    I-0030-RELEA  NOT = HIGH-VALUE                      DO0030
        MOVE  I-0030-RELEA         TO O-0030-RELEA.               DO0030
        IF    I-0030-RUE    NOT = HIGH-VALUE                      DO0030
        MOVE  I-0030-RUE           TO O-0030-RUE.                 DO0030
        IF    I-0030-COPOS  NOT = HIGH-VALUE                      DO0030
        MOVE  I-0030-COPOS         TO O-0030-COPOS.               DO0030
        IF    I-0030-REFCLI NOT = HIGH-VALUE                      DO0030
        MOVE  I-0030-REFCLI        TO O-0030-REFCLI.              DO0030
        IF    I-0030-DATE   NOT = HIGH-VALUE                      DO0030
        MOVE  I-0030-DATE          TO O-0030-DATE.                DO0030
        IF    I-0030-CORRES NOT = HIGH-VALUE                      DO0030
        MOVE  I-0030-CORRES        TO O-0030-CORRES.              DO0030
        IF    E-0030-REMIS  NOT = HIGH-VALUE                      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
        IF    I-0030-CODMVT NOT = HIGH-VALUE                      DO0030
        MOVE  I-0030-CODMVT        TO O-0030-CODMVT.              DO0030
        IF    I-0030-FOURNI NOT = HIGH-VALUE                      DO0030
        MOVE  I-0030-FOURNI        TO O-0030-FOURNI.              DO0030
        IF    E-0030-QTMAC  NOT = HIGH-VALUE                      DO0030
        MOVE  E-0030-QTMAC         TO F-0030-QTMAC.               DO0030
        IF    I-0030-INFOR  NOT = HIGH-VALUE                      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
        IF    I-0030-EDIT   NOT = HIGH-VALUE                      DO0030
        MOVE  I-0030-EDIT          TO O-0030-EDIT.                DO0030
 F8130-FN.    EXIT.                                               DO0030
 F8145.                                                           DO0030
        MOVE  T01004 TO   S01004.                                 DO0030
        MOVE  T01015 TO   S01015.                                 DO0030
        MOVE  T01060 TO   S01060.                                 DO0030
        MOVE  T01071 TO   S01071.                                 DO0030
        MOVE  T03018 TO   S03018.                                 DO0030
        MOVE  T03034 TO   S03034.                                 DO0030
        MOVE  T03063 TO   S03063.                                 DO0030
        MOVE  T04013 TO   S04013.                                 DO0030
        MOVE  T05009 TO   S05009.                                 DO0030
        MOVE  T05052 TO   S05052.                                 DO0030
        MOVE  T05060 TO   S05060.                                 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
*           * SEARCH FOR DOCUMENTATION REQUEST  *                 DO0030
*           *                                   *                 DO0030
*           *************************************                 DO0030
 F8150.                                                           DO0030
        MOVE ZERO TO K-S0030-ERCOD.                               DO0030
          IF  I-0030-MATE      =         "?"                      DO0030
          MOVE  HIGH-VALUE  TO  I-0030-MATE                       DO0030
        MOVE 001  TO K-S0030-ERCOD  GO TO F8150-FN.               DO0030
          IF  I-0030-MATE      =         "%"                      DO0030
          MOVE  HIGH-VALUE  TO  I-0030-MATE                       DO0030
        MOVE SPACE TO K-S0030-ERCOD GO TO F8150-FN.               DO0030
          IF  I-0030-RELEA     =         "?"                      DO0030
          MOVE  HIGH-VALUE  TO  I-0030-RELEA                      DO0030
        MOVE 002  TO K-S0030-ERCOD  GO TO F8150-FN.               DO0030
          IF  I-0030-RELEA     =         "%"                      DO0030
          MOVE  HIGH-VALUE  TO  I-0030-RELEA                      DO0030
        MOVE SPACE TO K-S0030-ERCOD GO TO F8150-FN.               DO0030
          IF  I-0030-RUE       =         "?"                      DO0030
          MOVE  HIGH-VALUE  TO  I-0030-RUE                        DO0030
        MOVE 003  TO K-S0030-ERCOD  GO TO F8150-FN.               DO0030
```

```
             IF  I-0030-RUE       =         "%"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-RUE                        DO0030
           MOVE SPACE TO K-S0030-ERCOD GO TO F8150-FN.               DO0030
             IF  I-0030-COPOS     =         "?"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-COPOS                      DO0030
           MOVE 004  TO K-S0030-ERCOD  GO TO F8150-FN.               DO0030
             IF  I-0030-COPOS     =         "%"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-COPOS                      DO0030
           MOVE SPACE TO K-S0030-ERCOD GO TO F8150-FN.               DO0030
             IF  I-0030-REFCLI    =         "?"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-REFCLI                     DO0030
           MOVE 005  TO K-S0030-ERCOD  GO TO F8150-FN.               DO0030
             IF  I-0030-REFCLI    =         "%"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-REFCLI                     DO0030
           MOVE SPACE TO K-S0030-ERCOD GO TO F8150-FN.               DO0030
             IF  I-0030-DATE      =         "?"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-DATE                       DO0030
           MOVE 006  TO K-S0030-ERCOD  GO TO F8150-FN.               DO0030
             IF  I-0030-DATE      =         "%"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-DATE                       DO0030
           MOVE SPACE TO K-S0030-ERCOD GO TO F8150-FN.               DO0030
             IF  I-0030-CORRES    =         "?"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-CORRES                     DO0030
           MOVE 007  TO K-S0030-ERCOD  GO TO F8150-FN.               DO0030
             IF  I-0030-CORRES    =         "%"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-CORRES                     DO0030
           MOVE SPACE TO K-S0030-ERCOD GO TO F8150-FN.               DO0030
             IF  E-0030-REMIS     =         "?"                      DO0030
             MOVE  HIGH-VALUE  TO  E-0030-REMIS                      DO0030
           MOVE 008  TO K-S0030-ERCOD  GO TO F8150-FN.               DO0030
             IF  E-0030-REMIS     =         "%"                      DO0030
             MOVE  HIGH-VALUE  TO  E-0030-REMIS                      DO0030
           MOVE SPACE TO K-S0030-ERCOD GO TO F8150-FN.               DO0030
           MOVE  ZERO  TO  ICATR.                                    DO0030
    F8150-GRP.   ADD 1 TO  ICATR                                     DO0030
           MOVE  J-0030-LINE  (ICATR) TO I-0030-LINE                 DO0030
             IF  I-0030-CODMVT    =         "?"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-CODMVT                     DO0030
           MOVE 009  TO K-S0030-ERCOD  GO TO F8150-A.                DO0030
             IF  I-0030-CODMVT    =         "%"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-CODMVT                     DO0030
           MOVE SPACE TO K-S0030-ERCOD GO TO F8150-A.                DO0030
             IF  I-0030-FOURNI    =         "?"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-FOURNI                     DO0030
           MOVE 010  TO K-S0030-ERCOD  GO TO F8150-A.                DO0030
             IF  I-0030-FOURNI    =         "%"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-FOURNI                     DO0030
           MOVE SPACE TO K-S0030-ERCOD GO TO F8150-A.                DO0030
             IF  E-0030-QTMAC     =         "?"                      DO0030
             MOVE  HIGH-VALUE  TO  E-0030-QTMAC                      DO0030
           MOVE 011  TO K-S0030-ERCOD  GO TO F8150-A.                DO0030
             IF  E-0030-QTMAC     =         "%"                      DO0030
             MOVE  HIGH-VALUE  TO  E-0030-QTMAC                      DO0030
           MOVE SPACE TO K-S0030-ERCOD GO TO F8150-A.                DO0030
             IF  I-0030-INFOR     =         "?"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-INFOR                      DO0030
           MOVE 012  TO K-S0030-ERCOD  GO TO F8150-A.                DO0030
             IF  I-0030-INFOR     =         "%"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-INFOR                      DO0030
           MOVE SPACE TO K-S0030-ERCOD GO TO F8150-A.                DO0030
           MOVE  I-0030-LINE          TO J-0030-LINE  (ICATR).       DO0030
        IF ICATR  < IRR GO TO F8150-GRP.                             DO0030
             IF  I-0030-EDIT      =         "?"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-EDIT                       DO0030
           MOVE 013  TO K-S0030-ERCOD  GO TO F8150-FN.               DO0030
             IF  I-0030-EDIT      =         "%"                      DO0030
             MOVE  HIGH-VALUE  TO  I-0030-EDIT                       DO0030
           MOVE SPACE TO K-S0030-ERCOD GO TO F8150-FN.               DO0030
           GO TO F8150-FN.                                           DO0030
    F8150-A. MOVE I-0030-LINE          TO J-0030-LINE  (ICATR).      DO0030
    F8150-FN.    EXIT.                                               DO0030
    F8165.                                                           DO0030
           MOVE  S03034 TO   R03034 T03034.                          DO0030
           MOVE  S03063 TO   R03063 T03063.                          DO0030
           MOVE  S05009 TO   R05009 T05009.                          DO0030
           MOVE  S05052 TO   R05052 T05052.                          DO0030
           MOVE  S05060 TO   R05060 T05060.                          DO0030
           MOVE  S06016 TO   R06016 T06016.                         DO0030
           MOVE  S06061 TO   R06061 T06061.                         DO0030
           MOVE  S07018 TO   R07018 T07018.                         DO0030
           MOVE  S07061 TO   R07061 T07061.                         DO0030
           MOVE  S10003 TO   R10003 T10003.                         DO0030
           MOVE  S10007 TO   R10007 T10007.                         DO0030
           MOVE  S10016 TO   R10016 T10016.                         DO0030
           MOVE  S10026 TO   R10026 T10026.                         DO0030
           MOVE  S10035 TO   R10035 T10035.                         DO0030
           MOVE  S10042 TO   R10042 T10042.                         DO0030
           MOVE  S11003 TO   R11003 T11003.                         DO0030
           MOVE  S11007 TO   R11007 T11007.                         DO0030
           MOVE  S11016 TO   R11016 T11016.                         DO0030
           MOVE  S11026 TO   R11026 T11026.                         DO0030
           MOVE  S11035 TO   R11035 T11035.                         DO0030
           MOVE  S11042 TO   R11042 T11042.                         DO0030
           MOVE  S12003 TO   R12003 T12003.                         DO0030
           MOVE  S12007 TO   R12007 T12007.                         DO0030
           MOVE  S12016 TO   R12016 T12016.                         DO0030
           MOVE  S12026 TO   R12026 T12026.                         DO0030
           MOVE  S12035 TO   R12035 T12035.                         DO0030
           MOVE  S12042 TO   R12042 T12042.                         DO0030
           MOVE  S13003 TO   R13003 T13003.                         DO0030
           MOVE  S13007 TO   R13007 T13007.                         DO0030
           MOVE  S13016 TO   R13016 T13016.                         DO0030
           MOVE  S13026 TO   R13026 T13026.                         DO0030
           MOVE  S13035 TO   R13035 T13035.                         DO0030
           MOVE  S13042 TO   R13042 T13042.                         DO0030
           MOVE  S14003 TO   R14003 T14003.                         DO0030
           MOVE  S14007 TO   R14007 T14007.                         DO0030
           MOVE  S14016 TO   R14016 T14016.                         DO0030
           MOVE  S14026 TO   R14026 T14026.                         DO0030
           MOVE  S14035 TO   R14035 T14035.                         DO0030
           MOVE  S14042 TO   R14042 T14042.                         DO0030
           MOVE  S15003 TO   R15003 T15003.                         DO0030
           MOVE  S15007 TO   R15007 T15007.                         DO0030
           MOVE  S15016 TO   R15016 T15016.                         DO0030
           MOVE  S15026 TO   R15026 T15026.                         DO0030
           MOVE  S15035 TO   R15035 T15035.                         DO0030
           MOVE  S15042 TO   R15042 T15042.                         DO0030
           MOVE  S16003 TO   R16003 T16003.                         DO0030
           MOVE  S16007 TO   R16007 T16007.                         DO0030
           MOVE  S16016 TO   R16016 T16016.                         DO0030
           MOVE  S16026 TO   R16026 T16026.                         DO0030
           MOVE  S16035 TO   R16035 T16035.                         DO0030
           MOVE  S16042 TO   R16042 T16042.                         DO0030
           MOVE  S17003 TO   R17003 T17003.                         DO0030
           MOVE  S17007 TO   R17007 T17007.                         DO0030
           MOVE  S17016 TO   R17016 T17016.                         DO0030
           MOVE  S17026 TO   R17026 T17026.                         DO0030
           MOVE  S17035 TO   R17035 T17035.                         DO0030
           MOVE  S17042 TO   R17042 T17042.                         DO0030
           MOVE  S18003 TO   R18003 T18003.                         DO0030
           MOVE  S18007 TO   R18007 T18007.                         DO0030
           MOVE  S18016 TO   R18016 T18016.                         DO0030
           MOVE  S18026 TO   R18026 T18026.                         DO0030
           MOVE  S18035 TO   R18035 T18035.                         DO0030
           MOVE  S18042 TO   R18042 T18042.                         DO0030
           MOVE  S20022 TO   R20022 T20022.                         DO0030
    F8165-FN.    EXIT.                                              DO0030
    F81-FN.      EXIT.                                              DO0030
```

4.20. 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
```

5. USE OF TurboImage

5.1. INTRODUCTION

PRESENTATION RULES

The objective of this chapter is to describe the various elements related to TurboImage that are present into a PACBASE-generated program.
The following presentation rules are used:

- uppercases : fixed parts.
- lowercases : variable elements:

. cobloc : Pacbase code for the TurboImage block.
. ffss : Segment code.
. datael : Data Element code.
. item : Item name of a Data Element (its code or label).
. set : Name of Set.

5.2. *TurboImage DATA*

TURBO-IMAGE DATA

Files can be opened and closed in the following ways:

- if a code of T.Image block is entered at the dialog complement level (CH:O.. O), both open and close of files take place in the monitor.
- if no code is entered at the dialog complement level, both open and close of files take place in the sub-routine.
- if a code is entered at the dialog complement level and if the OPTION field is set at NOOPENB, close of files is performed by the monitor while open is performed by the sub-routine.

```
The following lines corespond to a generation at the monitor level
and to a linked passage to the sub-routines or to a direct
generation in the sub-routines.01         cobloc-BASE   PICTURE
X(16).
01          cobloc-STAT.
   05       cobloc-RCODE  PICTURE S9(4)  COMP  VALUE 0.
   05       cobloc-LENGTH PICTURE S9(4)  COMP  VALUE 0.
   05       cobloc-RCURR  PICTURE S9(9)  COMP  VALUE 0.
   05       cobloc-NBESYN PICTURE S9(9)  COMP  VALUE 0.
   05       cobloc-RLAST  PICTURE S9(9)  COMP  VALUE 0.
   05       cobloc-RNEXT  PICTURE S9(9)  COMP  VALUE 0.
```

```
The following line can either be generated by the monitor or by the
sub-routine, depending on the type of open / close chosen.01
cobloc-PWORD  PICTURE X(16).
```

```
The following line can either be generated by the monitor or by the
sub-routine, depending on the type of open / close chosen.01
cobloc-MODE   PICTURE S9(4)  COMP  VALUE 0.
```

```
The following line is generated by the sub-routine.01
cobloc-SET    PICTURE X(16).
```

```
The following line is generated by the sub-routine.01
cobloc-ITEM   PICTURE X(16).
```

```
The following lines are used by the DBGET.01         Scobloc-RCURR
PICTURE S9(9)  COMP  VALUE 0.
01        cobloc-NUARG  PICTURE S9(9)  COMP  VALUE 0.
```

```
List management :01         cobloc-ARROB  PICTURE X         VALUE
%100.
01        TIffss-LIST   PICTURE XX.
01        .........................

or

01        TIffss-LIST   PICTURE X(lll)    VALUE
          "item1,item2,item3,....,itemi,....,itemn;"
01        .......................................
<generated for each -CS Segment.
```

In the first case, the entire set of items is read.
In the second case, a selection of items is read. A value containing the item names of Data Elements is created, with no space, commas as separators and a semi-colon at the end.

```
Key or search Data Element.01         TIffss-datael PICTURE
???????.
01        TIffss-dataell PICTURE ???????.
01        ..............................
<generated for every -CS key field.
```

```
Key Data Element for positioning of repetitive category:01
TPffss-datael  PICTURE ???????.
01        TPffss-dataell PICTURE ???????.
01        ..............................
<generated for every -CS key field.
```

```
Description of the LOCK block :01         cobloc-LOCK.
   05      cobloc-NUMEL  PICTURE S9(4)  COMP  VALUE 0.
   05      TLffss-LOCK.
     10    TLffss-LENGTH PICTURE S9(4)  COMP.
     10    TLffss-SET    PICTURE X(16).
     10    TLffss-ITEM   PICTURE X(16).
     10    TLffss-RELOP  PICTURE X(2).
     10    TLffss-datael  PICTURE ??????.
   05      ............
<generated if there are updated Segments in the -CS.
 NUMEL is the number of affected Segments.
```

There is a LOCK for each Segment (at the set level for a Master, at the path level for a Detail).

```
Text to mark the begining and the end of a transaction:01
cobloc-TEXT   PICTURE X(20).
01         cobloc-TEXTL  PICTURE S9(9)  COMP  VALUE 20.
```

5.3. DATABASE MANAGEMENT

OPENING OF THE DATABASE

This fonction is found in F01TI.
It is not generated when the NOOPENB option is active.

```
Generated lines :MOVE 1 TO cobloc-MODE.
MOVE "  basename" TO cobloc-BASE.
CALL "DBOPEN" USING cobloc-BASE  ,
                    cobloc-PWORD ,
                    cobloc-MODE  ,
                    cobloc-STAT.
IF cobloc-RCODE NOT = ZERO
MOVE "DBOPEN" TO S-WWSS-XFUNCT
GO TO F81ET.

In the case of a complete read of the items (F01TI) :
MOVE cobloc-ARROB TO TIffss-LIST.
.................................
```

IMPORTANT NOTES

The entering of the cobloc-PWORD field is under the developer's responsability.

The NOOPENB option (database opening by a sub-routine and closing by the monitor) allows to enter the PASSWORD in a sub-routine, via a screen created for this purpose.

CLOSING OF THE DATABASE

This function is generated in F81FV when close is performed by the monitor and in F81FI when close is performed by a sub-routine.

```
Generated lines :MOVE 1 TO cobloc-MODE.
MOVE SPACE TO cobloc-SET.
CALL "DBCLOSE" using cobloc-BASE ,
                     cobloc-SET  ,
                     cobloc-MODE ,
                     cobloc-STAT .
IF cobloc-RCODE NOT = ZERO
MOVE "DBCLOSE" TO S-WWSS-XFUNCT
GO TO F81ET.
```

5.4. ACTIONS ON FILES

DIRECT READ OF FILE (R - RU)

This function is generated in F80-ffss-R or in F80-ffss-RU.
It is generated for each -CS Segment for read (R) or update (RU).

- SET MASTER :

A DBGET "calculated read" is performed: a calculated read is a direct read according to a value of the key Data Element.

```
Generated lines :F80-ffss-R.
MOVE 7 TO cobloc-MODE.
MOVE "set            " TO cobloc-SET.
MOVE ffss-datael TIffss-datael.
CALL "DBGET" USING cobloc-BASE ,
                   cobloc-SET  ,
                   cobloc-MODE ,
                   cobloc-STAT ,
                   TIffss-LIST ,
                     ffss      ,
                   TIffss-datael.
IF cobloc-RCODE = 17 GO TO F80-KO.
IF cobloc-RCODE NOT = ZERO
MOVE "DBGET-R" TO S-WWSS-XFUNCT
MOVE "set             " TO S-WWSS-XFILE
GO TO F81ET.
GO TO F80-OK.
```

The Data Element is the key field of the first line of the -CS.

- SET DETAIL :

The path is followed to find the record.

```
Generated lines :F80-ffss-R.
MOVE 1 TO cobloc-MODE.
MOVE "set            " TO cobloc-SET.
MOVE "item           " TO cobloc-ITEM.
MOVE ffss-datael  TO TIffss-datael.
MOVE ffss-datael1 TO TIffss-datael1.
.etc...........................
CALL "DBFIND" USING cobloc-BASE ,
                    cobloc-SET  ,
                    cobloc-MODE ,
                    cobloc-STAT ,
                    cobloc-ITEM ,
                    TIffss-datael.
IF cobloc-RCODE = 17 GO TO F80-KO.
IF cobloc-RCODE NOT = ZERO
MOVE "DBFIND" TO S-WWSS-XFUNCT
MOVE "set             " TO S-WWSS-XFILE
GO TO F81ET.
F80-ffss-RC.
MOVE 5 TO cobloc-MODE.
CALL "DBGET" USING cobloc-BASE ,
                   cobloc-SET  ,
                   cobloc-MODE ,
                   cobloc-STAT ,
                   TIffss-LIST ,
                     ffss      ,
                   cobloc-NUARG.
IF cobloc-RCODE = 15 GO TO F80-KO.
IF cobloc-RCODE NOT = ZERO
MOVE "DBGET" TO S-WWSS-XFUNCT
MOVE "set             " TO S-WWSS-XFILE
GO TO F81ET.
IF  ffss-datael =  TIffss-datael
AND ffss-dataell =  TIffss-dataell
.etc............................
GO TO F80-OK.
GO TO F80-ffss-RC.
```

The path Data Element is the key field of the first line of the -CS.
The test Data Elements are the key fields of the following lines of the -CS. (they can be sub-Data Elements of the path Data Element).

NOTE : The entire set is read to take into account the following cases:
- the key field is not unique
- a path is not sorted according to the second search Data Element.

FILE WRITING (W)

This function is generated in F80-ffss-W. It is generated for each -CS update Segment with Use in reception equal to T.

```
The following lines corespond either to a Master Set or a Detail
Set.F80-ffss-W.
MOVE 1 TO cobloc-MODE.
MOVE "set            " TO cobloc-SET.
CALL "DBPUT" USING cobloc-BASE ,
                   cobloc-SET  ,
                   cobloc-MODE ,
                   cobloc-STAT ,
                   TIffss-LIST ,
                     ffss      .
IF cobloc-RCODE NOT = ZERO
MOVE "DBPUT" TO S-WWSS-XFUNCT
MOVE "set             " TO S-WWSS-XFILE
GO TO F81ET.
GO TO F80-OK.
```

RECORD REWRITING (RW)

This function is generated in F80-ffss-RW. It is generated for each -CS update Segment, with Use in reception equal to T or M.

```
The following lines are generated for a Master set :F80-ffss-RW.
MOVE 1 TO cobloc-MODE.
MOVE "set            " TO cobloc-SET.
CALL "DBUPDATE" USING cobloc-BASE ,
                      cobloc-SET  ,
                      cobloc-MODE ,
                      cobloc-STAT ,
                      TIffss-LIST ,
                        ffss.
IF cobloc-RCODE NOT = ZERO
MOVE "DBUPDATE" TO S-WWSS-XFUNCT
MOVE "set             " TO S-WWSS-XFILE
GO TO F81ET.
GO TO F80-OK.
```

```
The following lines are generated for a Detail set :F80-ffss-RW.
MOVE 1 TO cobloc-MODE.
MOVE "set            " TO cobloc-SET.
CALL "DBUPDATE" USING cobloc-BASE ,
                      cobloc-SET  ,
                      cobloc-MODE ,
                      cobloc-STAT ,
                      TIffss-LIST ,
                         ffss.
IF  cobloc-RCODE = 41
GO TO F80-ffss-WD.
IF cobloc-RCODE NOT = ZERO
MOVE "DBUPDATE" TO S-WWSS-XFUNCT
MOVE "set             " TO S-WWSS-XFILE
GO TO F81ET.
GO TO F80-OK.
```

```
F80-ffss-WD.
MOVE cobloc-RCURR TO Scobloc-RCURR.
PERFORM F80-ffss-W THRU F80-FN
MOVE Scobloc-RCURR TO cobloc-RCURR.
MOVE 4 TO cobloc-MODE.
CALL "DBGET" using cobloc-BASE ,
                   cobloc-SET  ,
                   cobloc-MODE ,
                   cobloc-STAT ,
                   TIffss-LIST ,
                    ffss       ,
                  Scobloc-RCURR.
IF cobloc-RCODE NOT = ZERO
MOVE "DBGET-RW" TO S-WWSS-XFUNCT
MOVE "set             " TO S-WWSS-XFILE
GO TO F81ET.
PERFORM F80-ffss-D THRU F80-FN
GO TO F80-OK.
```

The generated program retrieves, in a standard way, the error 41 (change of the path support item or the sort item). The DBdelete is placed after the DBput in order not to lose the record if DBput does not work properly. (error 1.xx : no path support exists in the Master file). The updated item must be read again because the T.image deletes the last item it accesses.

FILE DELETE (D)

This function is generated in F80-ffss-D. It is generated for each -CS update Segment with Use in reception equal to T.

```
The following lines either correspond to a Master Set or a Detail
Set :F80-ffss-D.
MOVE 1 TO cobloc-MODE.
MOVE "set            " TO cobloc-SET.
CALL "DBDELETE" USING cobloc-BASE ,
                      cobloc-SET  ,
                      cobloc-MODE ,
                      cobloc-STAT.
IF cobloc-RCODE NOT = ZERO
MOVE "DBDELETE" TO S-WWSS-XFUNCT
MOVE "set             " TO S-WWSS-XFILE
GO TO F81ET.
GO TO F80-OK.
```

FILE POSITIONING (P) - NEXT RECORD READ (RN)

The objective of this generation is to access data needed for the display of a repetitive category.

- MASTER SET:

  When the next screen is called, a RN is performed.
  Otherwise, the position is set at the begining of the file.
  RN performs a sequential read of the file, in the key item (hcodage) order and not in the sort order.

```
The corresponding lines generated are:F80-ffss-P.
IF OPER = "S" GO TO F80-ffss-RN.
```

```
MOVE 3 TO cobloc-MODE.
MOVE "set            " TO cobloc-SET.
CALL "DBCLOSE" USING cobloc-BASE ,
                     cobloc-SET  ,
                     cobloc-MODE ,
                     cobloc-STAT.
IF cobloc-RCODE NOT = ZERO
MOVE "DBCLO-P" TO S-WWSS-XFUNCT
MOVE "set             " TO S-WWSS-XFILE
GO TO F81ET.
F80-ffss-RN.
MOVE 2 TO cobloc-MODE.
MOVE "set            " TO cobloc-SET.
CALL "DBGET" using cobloc-BASE ,
                   cobloc-SET  ,
                   cobloc-MODE ,
                   cobloc-STAT ,
                   TIffss-LIST ,
                     ffss      ,
                   cobloc-NUARG.
IF cobloc-RCODE = 11 GO TO F80-KO.
IF cobloc-RCODE NOT = ZERO
MOVE "DBGET-RN" TO S-WWSS-XFUNCT
MOVE "set             " TO S-WWSS-XFILE
GO TO F81ET.
GO TO F80-OK.
```

NOTE:

The value of the key Data Element is ignored.
It is not possible to set a position from this value nor to get a sorted list.
For this reason, it is difficult to handle a repetitive category using a Master file.

- DETAIL SET:

In order to find the starting record, the entire path is covered. The test Data Elements are indicated in the -CS.
NB : A screen can only show files corresponding to the same value of the "path" data.

```
The following lines are generated:F80-ffss-P.
MOVE 1 TO cobloc-MODE.
MOVE "set            " TO cobloc-SET.
MOVE "item           " TO cobloc-ITEM.
MOVE ffss-datael TO TPffss-datael
CALL "DBFIND" USING cobloc-BASE ,
                    cobloc-SET  ,
                    cobloc-MODE ,
                    cobloc-STAT ,
                    cobloc-ITEM ,
                    TPffss-datael.
IF cobloc-RCODE = 17 GO TO F80-KO.
IF cobloc-RCODE NOT = ZERO
MOVE "DBFIND-P" TO S-WWSS-XFUNCT
MOVE "set             " TO S-WWSS-XFILE
GO TO F81ET.
F80-ffss-RN.
MOVE 5 TO cobloc-MODE.
CALL "DBGET" USING cobloc-BASE ,
                   cobloc-SET  ,
                   cobloc-MODE ,
                   cobloc-STAT ,
                   TIffss-LIST ,
                     ffss      ,
                  cobloc-NUARG.
IF cobloc-RCODE = 15 GO TO F80-KO.
IF cobloc-RCODE NOT = ZERO
MOVE "DBGET-P" TO S-WWSS-XFUNCT
MOVE "set             " TO S-WWSS-XFILE
GO TO F81ET.
IF    ffss-dataell <  K-Rffss-dataell (1)
OR  ( ffss-dataell =  K-Rffss-dataell (1)
AND   ffss-dataelk <  K-Rffss-dataelk (1) )
.etc...........................
GO TO F80-ffss-RC.
GO TO F80-OK.
```

5.5. TRANSACTION/LOCK

TURBO-IMAGE TRANSACTION/LOCK

The LOCK is generated in F0560. A control block is written for each updated file.

```
Generated lines for the LOCK:MOVE 5 TO cobloc-MODE.
MOVE nn TO cobloc-NUMEL.
MOVE ll TO TLffss-LENGTH.
MOVE "set            "  TO TLffss-SET.
MOVE "item           "  TO TLffss-ITEM.
MOVE " ="               TO TLffss-RELOP.
MOVE ffss-datael        TO TLffss-datael.   (if Detail)
MOVE cobloc-ARROB    "  TO TLffss-ITEM.     (if Master)
....... other LOCK .........................
CALL "DBLOCK" USING cobloc-BASE ,
                    cobloc-LOCK ,
                    cobloc-MODE ,
                    cobloc-STAT.
IF cobloc-RCODE NOT = ZERO
MOVE "DBLOCK" TO S-WWSS-XFUNCT
GO TO F81ET.
IF cobloc-LENGTH NOT = cobloc-NUMEL
MOVE "DBLOCK-I" TO S-WWSS-XFUNCT
GO TO F81ET.
```

A Master Set is locked at the Set level (@ in the item).
A Detail Set is locked at the path level (Key Data Element of the first line of the -CS).
This provides a solution to incomplete locks.

```
The beginning of a transaction is generated in F0570, in the
following way:MOVE 1 TO cobloc-MODE.
MOVE " pgm..... XBEGIN" TO cobloc-TEXT.
CALL "DBXBEGIN" USING cobloc-BASE ,
                      cobloc-TEXT ,
                      cobloc-MODE ,
                      cobloc-STAT ,
                      cobloc-TEXTL.
IF cobloc-RCODE NOT = ZERO
MOVE "DBXBEGIN" TO S-WWSS-XFUNCT
GO TO F81ET.
```

End of transaction lines and UNLOCK are generated in F4T with the following condition:
IF ICF = "1" AND (OPER = "A" OR OPER = "M" OR OPER = "O")
There is a test for every branching in F3999 between functions F0520 and F0560.

- The end of a transaction is generated in F4T60.

```
MOVE 1 TO cobloc-MODE.
MOVE " pgm.....   XEND" TO cobloc-TEXT
CALL "DBXEND" USING cobloc-BASE ,
                    cobloc-TEXT ,
                    cobloc-MODE ,
                    cobloc-STAT ,
                    cobloc-TEXTL.
IF cobloc-RCODE NOT = ZERO
MOVE "DBXEND" TO S-WWSS-XFUNCT
GO TO F81ET.
```

- The UNLOCK is generated in F4T70.

```
MOVE 1 TO cobloc-MODE.
CALL "DBUNLOCK" USING cobloc-BASE ,
                      cobloc-LOCK ,
                      cobloc-MODE ,
                      cobloc-STAT .
IF cobloc-RCODE NOT = ZERO
MOVE "DBUNLOCK" TO S-WWSS-XFUNCT
GO TO F81ET.
```

5.6. ERROR MANAGEMENT

MONITOR ERROR MANAGEMENT

```
In F81EA :IF S-WWSS-STATUS = "TI"  GO TO F81ET.


En F81ET :
MOVE "TI" TO S-WWSS-STATUS.


If the DATABASE open is performed in the monitor:
MOVE cobloc-RCODE TO HP30-MSGLEN.


If the DATABASE open is performed in the sub-
routines:
MOVE VPLUS-STATUS TO HP30-MSGLEN.
GO TO F81ER.


In F81ER :
IF S-WWSS-STATUS = "TI" DISPLAY HP30-MSGLEN.
```

SUB-ROUTINE ERROR MANAGEMENT

```
In F81ET :
MOVE "TI"  TO S-WWSS-STATUS.


If the DATABASE open is performed in the sub-
routine:
MOVE cobloc-RCODE TO VPLUS-STATUS.
GO TO F81ER.
```

6. 'HELP' FUNCTION

6.1. INTRODUCTION

INTRODUCTION

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

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

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

USING THE "HELP" FUNCTION PROGRAM

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

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

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

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

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

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

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

- For the Screen documentation:

. Screen-related documentation (texts and comments),

. Segment access error messages.

- For the Data Element documentation:

. Standard error messages generated by the System,

. Explicit manual error messages,

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

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

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

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

For use of the 'HELP' function in an HP3000 environment, only the "character" call is possible, since the call by function key is not operational.

6.2. GENERATED 'HELP' PROGRAM

```
--------------------------------------------------------------------------------
!                   HP3000 APPLICATION                       *PDLB.NDOC.AH3.251!
! WORK AREAS..........ENTITY TYPE O DO0030 ***  ORDER INPUT SCREEN  ***        !
!                                                                              !
! CODE FOR PLACEMENT..:      BB                                                !
! A LIN T LEVEL OR SECTION WORK AREA DESCRIPTION                           OCCU!
! . 200 I 01               WW10-QTMAR                                          !
! . 201                    VALUE ZERO.                                         !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
! O: C1 CH: Odo0030 W                                                          !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   HP3000 APPLICATION                       *PDLB.NDOC.AH3.251!
! WORK AREAS..........ENTITY TYPE O DO0030 ***  ORDER INPUT SCREEN  ***        !
!                                                                              !
! CODE FOR PLACEMENT..:      WP                                                !
! A LIN T LEVEL OR SECTION WORK AREA DESCRIPTION                           OCCU!
! * 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:                                                                    !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   HP3000 APPLICATION                       *PDLB.NDOC.AH3.251!
! WORK AREAS..........ENTITY TYPE O DO0030 ***  ORDER INPUT SCREEN  ***        !
!                                                                              !
! CODE FOR PLACEMENT..:      WP                                                !
! A LIN T LEVEL OR SECTION WORK AREA DESCRIPTION                           OCCU!
! * 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:                                                                    !
--------------------------------------------------------------------------------
```

```
 IDENTIFICATION DIVISION.
 PROGRAM-ID. DOP050.                                              DOHELP
 AUTHOR.     HELP FUNCTION SCREEN.                                DOHELP
 DATE-COMPILED. 08/06/92.                                         DOHELP
 ENVIRONMENT DIVISION.                                            DOHELP
 CONFIGURATION SECTION.                                           DOHELP
 SOURCE-COMPUTER. HP-3000.                                        DOHELP
 OBJECT-COMPUTER. HP-3000.                                        DOHELP
 SPECIAL-NAMES.                                                   DOHELP
      DECIMAL-POINT IS COMMA.                                     DOHELP
 INPUT-OUTPUT SECTION.                                            DOHELP
 FILE-CONTROL.                                                    DOHELP
      SELECT    EM-FILE                                           DOHELP
      ASSIGN TO             "DODOLE  "                            DOHELP
      ORGANIZATION INDEXED                                        DOHELP
      ACCESS IS DYNAMIC                                           DOHELP
      RECORD KEY IS EM00-EMKEY                                    DOHELP
      FILE STATUS 1-EM00-STATUS.                                  DOHELP
 DATA DIVISION.                                                   DOHELP
 FILE SECTION.                                                    DOHELP
 FD           EM-FILE                                             DOHELP
              LABEL RECORD STANDARD.                              DOHELP
 01                 EM00.                                         DOHELP
       05            EM00-EMKEY.                                  DOHELP
        10           EM00-LIBRA  PICTURE X(3).                    DOHELP
        10           EM00-ENTYP  PICTURE X.                       DOHELP
        10           EM00-XEMKY.                                  DOHELP
         15          EM00-PROGR  PICTURE X(6).                    DOHELP
         15          EM00-ERCOD.                                  DOHELP
          20        EM00-ERCOD9 PICTURE 9(3).                    DOHELP
         15          EM00-ERTYP  PICTURE X.                       DOHELP
        10           EM00-LINUM  PICTURE 9(3).                    DOHELP
       05            EM00-ERLVL  PICTURE X.                       DOHELP
       05            EM00-ERMSG  PICTURE X(66).                   DOHELP
       05            FILLER      PICTURE X(6).                    DOHELP
 WORKING-STORAGE SECTION.                                         DOHELP
 01   WSS-BEGIN.                                                  DOHELP
      05 FILLER PICTURE X(7) VALUE "WORKING".                     DOHELP
      05 IK     PICTURE X.                                        DOHELP
      05 BLANC  PICTURE X VALUE SPACE.                            DOHELP
      05 OPER   PICTURE X.                                        DOHELP
      05 OPERD  PICTURE X VALUE SPACE.                            DOHELP
      05 CATX   PICTURE X.                                        DOHELP
      05 CATM   PICTURE X.                                        DOHELP
      05 ICATR  PICTURE 99.                                       DOHELP
      05 SCR-ER PICTURE X.                                        DOHELP
      05 FT     PICTURE X.                                        DOHELP
      05 ICF    PICTURE X.                                        DOHELP
      05 OCF    PICTURE X.                                        DOHELP
      05 CAT-ER PICTURE X.                                        DOHELP
      05 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
      05 I-PFKEY.                                                 DOHELP
        10 I-PFKEY9 PICTURE 99.                                   DOHELP
 01   CONSTANTS.                                                  DOHELP
* OLSD DATES PACE30 : 26/06/92                                    DOHELP
*            PACE80 : 26/06/92   PAC7SG : 920325                  DOHELP
      05 SESSI  PICTURE X(5) VALUE "0251 ".                       DOHELP
      05 LIBRA  PICTURE X(3) VALUE "AH3".                         DOHELP
      05 DATGN  PICTURE X(8) VALUE "08/06/92".                    DOHELP
      05 PROGR  PICTURE X(6) VALUE "DOHELP".                      DOHELP
      05 PROGE  PICTURE X(8) VALUE "DOP050  ".                    DOHELP
      05 TIMGN  PICTURE X(8) VALUE "10:25:03".                    DOHELP
      05 USERCO PICTURE X(8) VALUE "PDLB    ".                    DOHELP
      05      5-HELP-PROGE  PICTURE X(8).                         DOHELP
 01  DATCE.                                                       DOHELP
   05  CENTUR   PICTURE XX VALUE "19".                            DOHELP
      05 DATOR.                                                   DOHELP
      10 DATOA  PICTURE XX.                                       DOHELP
      10 DATOM  PICTURE XX.                                       DOHELP
      10 DATOJ  PICTURE XX.                                       DOHELP
 01  DAT6.                                                        DOHELP
```

```
     10 DAT61.                                                   DOHELP
     15 DAT619 PICTURE 99.                                       DOHELP
     10 DAT62.                                                   DOHELP
     15 DAT629 PICTURE 99.                                       DOHELP
     10 DAT63  PICTURE XX.                                       DOHELP
01  DAT7.                                                        DOHELP
     10 DAT71  PICTURE XX.                                       DOHELP
     10 DAT72  PICTURE XX.                                       DOHELP
     10 DAT73  PICTURE XX.                                       DOHELP
01  DAT8.                                                        DOHELP
     10 DAT81  PICTURE XX.                                       DOHELP
     10 DAT8S1 PICTURE X.                                        DOHELP
     10 DAT82  PICTURE XX.                                       DOHELP
     10 DAT8S2 PICTURE X.                                        DOHELP
     10 DAT83  PICTURE XX.                                       DOHELP
01  DATSEP     PICTURE X VALUE "/".                              DOHELP
01  DATSET     PICTURE X VALUE "-".                              DOHELP
01  DATCTY.                                                      DOHELP
  05  DATCTY9  PICTURE 99.                                       DOHELP
01  DAT6C.                                                       DOHELP
  10  DAT61C   PICTURE XX.                                       DOHELP
  10  DAT62C   PICTURE XX.                                       DOHELP
  10  DAT63C   PICTURE XX.                                       DOHELP
  10  DAT64C   PICTURE XX.                                       DOHELP
01  DAT7C.                                                       DOHELP
  10  DAT71C   PICTURE XX.                                       DOHELP
  10  DAT72C   PICTURE XX.                                       DOHELP
  10  DAT73C   PICTURE XX.                                       DOHELP
  10  DAT74C   PICTURE XX.                                       DOHELP
01  DAT8C.                                                       DOHELP
  10  DAT81C   PICTURE XX.                                       DOHELP
  10  DAT8S1C  PICTURE X    VALUE "/".                           DOHELP
  10  DAT82C   PICTURE XX.                                       DOHELP
  10  DAT8S2C  PICTURE X    VALUE "/".                           DOHELP
  10  DAT83C   PICTURE XX.                                       DOHELP
  10  DAT84C   PICTURE XX.                                       DOHELP
01  DAT8G.                                                       DOHELP
  10  DAT81G   PICTURE XX.                                       DOHELP
  10  DAT82G   PICTURE XX.                                       DOHELP
  10  DAT8S1G  PICTURE X    VALUE "-".                           DOHELP
  10  DAT83G   PICTURE XX.                                       DOHELP
  10  DAT8S2G  PICTURE X    VALUE "-".                           DOHELP
  10  DAT84G   PICTURE XX.                                       DOHELP
01  TIMCO.                                                       DOHELP
 02  TIMCOG.                                                     DOHELP
   05  TIMCOH  PICTURE XX.                                       DOHELP
   05  TIMCOM  PICTURE XX.                                       DOHELP
   05  TIMCOS  PICTURE XX.                                       DOHELP
  02 TIMCOC    PICTURE XX.                                       DOHELP
01  TIMDAY.                                                      DOHELP
   05  TIMHOU  PICTURE XX.                                       DOHELP
   05  TIMS1   PICTURE X    VALUE ":".                           DOHELP
   05  TIMMIN  PICTURE XX.                                       DOHELP
   05  TIMS2   PICTURE X    VALUE ":".                           DOHELP
   05  TIMSEC  PICTURE XX.                                       DOHELP
01    CONFIGURATIONS.                                            DOHELP
     05      EM00-CF      PICTURE X.                             DOHELP
01     STATUS-AREA.                                              DOHELP
     05    1-EM00-STATUS PICTURE XX VALUE ZERO.                  DOHELP
01            HP30.                                              *AA010
    05        HP30-FLDNUM  PICTURE S9(4) COMP VALUE ZERO.        *AA010
    05        HP30-SPEBUF.                                       *AA010
        10      HP30-CHGLIN  OCCURS 001.                         *AA010
        20    HP30-CHGFNU  PICTURE S9(4) COMP.                   *AA010
        20    HP30-CHGTYP  PICTURE S9(4) COMP.                   *AA010
        20    HP30-CHGSPE.                                       *AA010
          30  HP30-CHGATT  PICTURE X   OCCURS 4.                 *AA010
    05        HP30-CHGNBE  PICTURE S9(4) COMP VALUE ZERO.        *AA010
01          HP30-ZONENV.                                         *AA010
   05       HP30-ENVIRO PICTURE S9(4) COMP.                      *AA010
   05       HP30-ENVIRR REDEFINES HP30-ENVIRO.                   *AA010
      10    HP30-TERMNO PICTURE X.                               *AA010
      10    FILLER      PICTURE X.                               *AA010
   05       HP30-TERMIL PICTURE  9(4) COMP VALUE ZERO.           *AA010
   05       HP30-TERMIR REDEFINES HP30-TERMIL.                   *AA010
      10    FILLER      PICTURE X.                               *AA010
      10    HP30-TERMNU PICTURE X.                               *AA010
```

```
01               K-HELP-CLE.                                      *AA010
     03          K-RHELP-LIGNE  OCCURS 1.                         *AA010
     10          K-REM00-EMKEY  PICTURE X(17).                    *AA010
01         HELP-MESSO.                                            *AA030
   02      HELP-MESSI.                                            *AA030
     05    S01002  PICTURE X(011).                                *AA030
     05    S03002  PICTURE X(030).                                *AA030
     05    S03033  PICTURE X(036).                                *AA030
     05    S05004  PICTURE X(074).                                *AA030
     05    S06004  PICTURE X(074).                                *AA030
     05    S07004  PICTURE X(074).                                *AA030
     05    S08004  PICTURE X(074).                                *AA030
     05    S09004  PICTURE X(074).                                *AA030
     05    S10004  PICTURE X(074).                                *AA030
     05    S11004  PICTURE X(074).                                *AA030
     05    S12004  PICTURE X(074).                                *AA030
     05    S13004  PICTURE X(074).                                *AA030
     05    S14004  PICTURE X(074).                                *AA030
     05    S15004  PICTURE X(074).                                *AA030
     05    S16004  PICTURE X(074).                                *AA030
     05    S17004  PICTURE X(074).                                *AA030
     05    S18004  PICTURE X(074).                                *AA030
     05    S19004  PICTURE X(074).                                *AA030
     05    S20004  PICTURE X(074).                                *AA030
     05    S21004  PICTURE X(074).                                *AA030
     05    S23002  PICTURE X(019).                                *AA030
     05    S23022  PICTURE X(001).                                *AA030
     05    S23028  PICTURE X(030).                                *AA030
     05    S24002  PICTURE X(072).                                *AA030
01        INPUT-HELP.                                             *AA042
     05    R23022  PICTURE X(1).                                  *AA042
01           INPUT-SCREEN-FIELDS  REDEFINES  INPUT-HELP.          *AA045
     02      I-HELP.                                              *AA045
     05      I-HELP-OPDOC  PICTURE X.                             *AA045
01       OUTPUT-HELP.                                             *AA049
     05    T03002  PICTURE X(30).                                 *AA049
     05    T03033  PICTURE X(36).                                 *AA049
     05    T05004  PICTURE X(74).                                 *AA049
     05    T06004  PICTURE X(74).                                 *AA049
     05    T07004  PICTURE X(74).                                 *AA049
     05    T08004  PICTURE X(74).                                 *AA049
     05    T09004  PICTURE X(74).                                 *AA049
     05    T10004  PICTURE X(74).                                 *AA049
     05    T11004  PICTURE X(74).                                 *AA049
     05    T12004  PICTURE X(74).                                 *AA049
     05    T13004  PICTURE X(74).                                 *AA049
     05    T14004  PICTURE X(74).                                 *AA049
     05    T15004  PICTURE X(74).                                 *AA049
     05    T16004  PICTURE X(74).                                 *AA049
     05    T17004  PICTURE X(74).                                 *AA049
     05    T18004  PICTURE X(74).                                 *AA049
     05    T19004  PICTURE X(74).                                 *AA049
     05    T20004  PICTURE X(74).                                 *AA049
     05    T21004  PICTURE X(74).                                 *AA049
     05    T23002  PICTURE X(19).                                 *AA049
     05    T23022  PICTURE X(1).                                  *AA049
     05    T23028  PICTURE X(30).                                 *AA049
     05    T24002  PICTURE X(72).                                 *AA049
01           OUTPUT-SCREEN-FIELDS REDEFINES OUTPUT-HELP.          *AA050
     02      O-HELP.                                              *AA050
     05      O-HELP-LIBEC  PICTURE X(30).                         *AA050
     05      O-HELP-LIENT  PICTURE X(36).                         *AA050
     05      P-HELP-LIGNE  OCCURS 17.                             *AA050
     10      FILLER        PICTURE X(74).                         *AA050
     05      O-HELP-LICHOI PICTURE X(19).                         *AA050
     05      O-HELP-OPDOC  PICTURE X.                             *AA050
     05      O-HELP-LIOPT  PICTURE X(30).                         *AA050
     05      O-HELP-ERMS.                                         *AA050
     10      FILLER OCCURS 1.                                     *AA050
     15      O-HELP-ERMSG  PICTURE X(72).                         *AA050
01           REPEAT-LINE.                                         *AA050
     02      O-HELP-LIGNE.                                        *AA050
     05      O-HELP-ERMSGD PICTURE X(74).                         *AA050
01           VALIDATION-TABLE-FIELDS.                             *AA150
     02      DE-ERR.                                              *AA150
     05       DE-ER        PICTURE X                              *AA150
                    OCCURS 001.                                   *AA150
     02      DE-E   REDEFINES DE-ERR.                            *AA150
     03     ER-HELP-ENDRE.                                       *AA150
     05          ER-HELP-OPDOC  PICTURE X.                       *AA150
01   TT-DAT.                                                     *AA200
     05 T-DAT      PICTURE X OCCURS 5.                           *AA200
01   USERS-ERROR.                                                *AA200
     05 XEMKY.                                                   *AA200
        10 XPROGR   PICTURE X(6).                                *AA200
        10 XERCD    PICTURE X(4).                                *AA200
     05 T-XEMKY     OCCURS       01.                             *AA200
        10 T-XPROGR PICTURE X(6).                                *AA200
        10 T-XERCD  PICTURE X(4).                                *AA200
01   INDEXES COMPUTATIONAL.                                      *AA200
     05  TALLI      PICTURE S9(4) VALUE ZERO.                    *AA200
     05 K01         PICTURE S9(4).                               *AA200
     05 K02         PICTURE S9(4).                               *AA200
     05 K03         PICTURE S9(4).                               *AA200
     05 K04         PICTURE S9(4).                               *AA200
     05 K50R        PICTURE S9(4) VALUE ZERO.                    *AA200
     05 K50L        PICTURE S9(4) VALUE ZERO.                    *AA200
     05 K50M        PICTURE S9(4)                                *AA200
                    VALUE       +01.                             *AA200
     05    5-CA00-LTH  PICTURE S9(4) VALUE +0142.                *AA200
     05    5-EM00-LTH  PICTURE S9(4) VALUE +0090.                *AA200
     05    LTH         PICTURE S9(4) VALUE ZERO.                 *AA200
     05      5-HELP-LENGTH PICTURE S9(4)                         *AA200
                         VALUE      +0879.                       *AA200
01           TABLE-OF-ATTRIBUTES.                                *AA250
     02      DE-ATT.                                             *AA250
     03      DE-ATT1           OCCURS 4.                         *AA250
     05      DE-AT   PICTURE X                                   *AA250
                    OCCURS 001.                                  *AA250
     02      DE-A    REDEFINES DE-ATT.                           *AA250
     03      DE-ATT2           OCCURS 4.                         *AA250
     04      A-HELP-ENDRE.                                       *AA250
     05      A-HELP-OPDOC  PICTURE X.                            *AA250
01      AT-SV.                                                   *AA260
      10   FILLER  PICTURE 999  VALUE 022.                       *AA260
01      TABLE-SV-AT REDEFINES AT-SV.                             *AA265
     05 SV-AT PICTURE 999 OCCURS 001.                            *AA265
01    FIRST-ON-SEGMENT.                                          *AA301
     05      EM00-FST    PICTURE X.                              *AA301
01           STOP-FIELDS-HELP.                                   *AA400
    02       C-HELP-LE.                                          *AA400
      05     C-HELP-LIBRA      PICTURE XXX.                      *AA400
      05     C-HELP-ERCOD      PICTURE XXX.                      *AA400
      05     C-HELP-PROGR      PICTURE X(6).                     *AA400
      05     C-HELP-ENTYP      PICTURE X.                        *AA400
     02       HELP-LIENT  PICTURE X(36) VALUE SPACE.             *AA400
     02       HELP-LIBEC  PICTURE X(30) VALUE SPACE.             *AA400
01           7-HELP-LIBEL.                                       *AA400
   05        7-HELP-ERMS.                                        *AA400
    10       7-HELP-ERMSG.                                       *AA400
     15      7-HELP-ERMSG1  PICTURE X(12).                       *AA400
     15      7-HELP-ERMSG2  PICTURE X(18).                       *AA400
    10       7-HELP-ERMSC   PICTURE X(36).                       *AA400
01           SCREEN-LIGNE.                                       *AA400
   05        7-HELP-ERMSGD  PICTURE X(74).                       *AA400
   05        7-HELP-CODIF   REDEFINES 7-HELP-ERMSGD.             *AA400
    10       7-HELP-VALRU   PICTURE X(12).                       *AA400
    10       FILLER         PICTURE X.                           *AA400
    10       7-HELP-SIGNI.                                       *AA400
     15      FILLER         PICTURE X(18).                       *AA400
     15      7-HELP-ERMSC1  PICTURE X(43).                       *AA400
   05        7-HELP-DOCUM   REDEFINES 7-HELP-ERMSGD.             *AA400
    10       7-HELP-XEMKY.                                       *AA400
     15      FILLER         PICTURE XXX.                         *AA400
     15      7-HELP-ERTYP   PICTURE X.                           *AA400
     15      FILLER         PICTURE X.                           *AA400
    10       7-HELP-LITAC   PICTURE X(69).                       *AA400
01             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   COMMON-AREA.                                                *00000
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     02     K-SHELP-PROGR PICTURE X(6).                          *00000
     02            CA00.                                         *00001
       10          CA00-CLECD.                                   *00001
        15         CA00-NUCOM  PICTURE S9(5)                     *00001
                        COMPUTATIONAL-3.                         *00001
       10          CA00-CLECL1.                                  *00001
        15         CA00-NUCLIE PICTURE S9(8)                     *00001
                        COMPUTATIONAL-3.                         *00001
       10          CA00-ME00.                                    *00001
        15         CA00-CLEME.                                   *00001
         20        CA00-COPERS PICTURE X(5).                     *00001
         20        CA00-NUMORD PICTURE XX.                       *00001
        15         CA00-MESSA  PICTURE X(75).                    *00001
       10          CA00-PREM   PICTURE X.                        *00001
       10          CA00-LANGU  PICTURE X.                        *00001
       10          CA00-RAISOC PICTURE X(50).                    *00001
     02     K-SHELP-CDOC  PICTURE X.                             *00002
     02     K-SHELP-PROGE PICTURE X(8).                          *00002
     02     K-SHELP-LIBRA PICTURE XXX.                           *00002
     02     K-SHELP-PROHE PICTURE X(8).                          *00002
     02     K-SHELP-ERCOD.                                       *00002
       05   K-SHELP-ERCOD9 PICTURE 999.                          *00002
     02     K-SHELP-ERTYP PICTURE X.                             *00002
     02     K-SHELP-NULIX.                                       *00002
       05   K-SHELP-LINUM  PICTURE 999.                          *00002
     02     K-SHELP-XTERM.                                       *00002
       05   K-SHELP-XTERM9  PICTURE 9(4).                        *00002
     02      FILLER        PICTURE X(0700).                      *00002
01           COMMUNICATION-MONITOR.                              *00010
     02    S-WWSS.                                               *00010
       10    S-WWSS-OPER   PICTURE X.                            *00010
       10    S-WWSS-PROGE  PICTURE X(8).                         *00010
       10    S-WWSS-XFILE  PICTURE X(8).                         *00010
       10    S-WWSS-XFUNCT PICTURE X(8).                         *00010
       10    S-WWSS-STATUS PICTURE XX.                           *00010
01     SQLCA  PICTURE X(16).                                     *00015
01     VPLUS-COMARE.                                             *00020
   05  VPLUS-STATUS PICTURE S9(4) COMP.                          *00020
   05  VPLUS-LANGUE PICTURE S9(4) COMP.                          *00020
   05  VPLUS-COMLEN PICTURE S9(4) COMP.                          *00020
   05  VPLUS-UBFLEN PICTURE S9(4) COMP.                          *00020
   05  VPLUS-CMODE  PICTURE S9(4) COMP.                          *00020
   05  VPLUS-LSTKEY PICTURE S9(4) COMP.                          *00020
   05  VPLUS-NUMERS PICTURE S9(4) COMP.                          *00020
   05  VPLUS-WINENH PICTURE S9(4) COMP.                          *00020
   05  VPLUS-MLTUSI PICTURE S9(4) COMP.                          *00020
   05  VPLUS-LABOPT PICTURE S9(4) COMP.                          *00020
   05  VPLUS-CFNAME PICTURE X(16).                               *00020
   05  VPLUS-NFNAME PICTURE X(16).                               *00020
   05  VPLUS-REPAPP PICTURE S9(4) COMP.                          *00020
   05  VPLUS-FREAPP PICTURE S9(4) COMP.                          *00020
   05  VPLUS-CFNUML PICTURE S9(4) COMP.                          *00020
   05  VPLUS-DBFLEN PICTURE S9(4) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
   05  VPLUS-LOOKAH PICTURE S9(4) COMP.                          *00020
   05  VPLUS-DELFLA PICTURE S9(4) COMP.                          *00020
   05  VPLUS-SHOCNT PICTURE S9(4) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
   05  VPLUS-PRFLNU PICTURE S9(4) COMP.                          *00020
   05  VPLUS-FLERNU PICTURE S9(4) COMP.                          *00020
   05  VPLUS-ERFLNU PICTURE S9(4) COMP.                          *00020
   05  VPLUS-FOSTSZ PICTURE S9(4) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
   05  VPLUS-NUMREC PICTURE S9(8) COMP.                          *00020
   05  VPLUS-RECNUM PICTURE S9(8) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
   05  VPLUS-TEFLEN PICTURE S9(4) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
   05  FILLER       PICTURE S9(4) COMP.                          *00020
   05  VPLUS-RETRIE PICTURE S9(4) COMP.                          *00020
   05  VPLUS-TERMOP PICTURE S9(4) COMP.                          *00020
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    05  VPLUS-ENVIRO PICTURE S9(4) COMP.                          *00020
    05  VPLUS-USTIME PICTURE S9(4) COMP.                          *00020
    05  VPLUS-IDENTI PICTURE S9(4) COMP.                          *00020
    05  VPLUS-LABINF PICTURE S9(4) COMP.                          *00020
 PROCEDURE DIVISION USING COMMON-AREA                             *99999
                          COMMUNICATION-MONITOR                   *99999
                          SQLCA VPLUS-COMARE.                     *99999
 DECLARATIVES.                                                    DOHELP
 SECEM SECTION.                                                   DOHELP
       USE AFTER ERROR PROCEDURE ON EM-FILE.                      DOHELP
 F0AEM.                                                           DOHELP
       MOVE 1-EM00-STATUS TO S-WWSS-STATUS                        DOHELP
       MOVE "DODOLE  " TO S-WWSS-XFILE                            DOHELP
       MOVE "1" TO IK.                                            DOHELP
 F0AEM-FN.    EXIT.                                               DOHELP
 END DECLARATIVES.                                                DOHELP
 MAIN SECTION.                                                    DOHELP
 F0A99-FN.    EXIT.                                               DOHELP
 F0A-FN.      EXIT.                                               DOHELP
*           *************************************                 DOHELP
*           *                                   *                 DOHELP
*           *  INITIALIZATIONS                  *                 DOHELP
*           *                                   *                 DOHELP
*           *************************************                 DOHELP
 F01.         EXIT.                                               DOHELP
 F0101.                                                           DOHELP
        MOVE VPLUS-ENVIRO TO HP30-ENVIRO.                         DOHELP
        MOVE HP30-TERMNO  TO HP30-TERMNU.                         DOHELP
        MOVE HP30-TERMIL  TO K-SHELP-XTERM9.                      DOHELP
        MOVE SPACE TO    HELP-MESSO.                              DOHELP
        MOVE SPACE TO  O-HELP.                                    DOHELP
        MOVE SPACE TO  I-HELP.                                    DOHELP
        MOVE "OPEN    " TO S-WWSS-XFUNCT MOVE "0" TO IK.          DOHELP
        OPEN INPUT  EM-FILE.                                      DOHELP
        IF IK = "1" GO TO F81ER.                                  DOHELP
 F0101-FN.    EXIT.                                               DOHELP
 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   K-SHELP-PROGR NOT = PROGR                            DOHELP
                       MOVE    ZERO  TO  ICF.                     DOHELP
        MOVE ZERO TO HP30-CHGNBE.                                 DOHELP
        MOVE ZERO TO HP30-FLDNUM.                                 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
        MOVE "1" TO OCF.                                          DOHELP
        IF K-SHELP-CDOC = "D" OR K-SHELP-CDOC = "R"               DOHELP
        MOVE "1" TO ICF     GO TO F0120-FN.                       DOHELP
        MOVE "A"  TO OPER                                         DOHELP
        MOVE SPACE TO K-SHELP-ERTYP                               DOHELP
        MOVE ZERO  TO K-SHELP-LINUM                               DOHELP
        MOVE "D" TO K-SHELP-CDOC   GO TO F3999-ITER-FT.           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
 F0501.                                                           DOHELP
        MOVE  "VREADFIE"   TO S-WWSS-XFUNCT.                      DOHELP
        CALL  "VREADFIELDS"  USING VPLUS-COMARE.                  DOHELP
        IF  VPLUS-STATUS NOT = 0                                  DOHELP
        PERFORM F81EV THRU F81EV-FN.                              DOHELP
        MOVE  VPLUS-LSTKEY TO I-PFKEY9.                           DOHELP
        IF  VPLUS-LSTKEY NOT = 0                                  DOHELP
          ADD  2  TO VPLUS-TERMOP                                 DOHELP
          CALL  "VREADFIELDS"  USING VPLUS-COMARE                 DOHELP
          SUBTRACT 2 FROM VPLUS-TERMOP                            DOHELP
          MOVE  "VREADFI2"   TO S-WWSS-XFUNCT                     DOHELP
          IF  VPLUS-STATUS NOT = 0                                DOHELP
          PERFORM F81EV THRU F81EV-FN.                            DOHELP
 F0501-FN.    EXIT.                                               DOHELP
 F0510.                                                           DOHELP
        MOVE  "VGETBUFF"   TO S-WWSS-XFUNCT.                      DOHELP
        CALL  "VGETBUFFER" USING VPLUS-COMARE                     DOHELP
                         HELP-MESSI VPLUS-DBFLEN.                 DOHELP
        IF  VPLUS-STATUS NOT = 0                                  DOHELP
        PERFORM F81EV THRU F81EV-FN.                              DOHELP
        PERFORM F8165 THRU F8165-FN.                              DOHELP
        MOVE "A" TO OPER  MOVE SPACE TO OPERD.                    DOHELP
 F0510-FN.    EXIT.                                               DOHELP
*           *************************************                 DOHELP
*           *                                   *                 DOHELP
*           *  VALIDATION OF OPERATION CODE     *                 DOHELP
*           *                                   *                 DOHELP
*           *************************************                 DOHELP
 F0520.                                                           DOHELP
           IF I-HELP-OPDOC   =  "E" OR "F"                        DOHELP
        MOVE  K-SHELP-PROGE  TO 5-HELP-PROGE                      DOHELP
        MOVE "O" TO OPER OPERD GO TO F0520-900.                   DOHELP
           IF I-HELP-OPDOC   =  "T" OR "D"                        DOHELP
        MOVE  SPACE TO K-SHELP-ERCOD K-SHELP-ERTYP                DOHELP
        MOVE  ZERO  TO K-SHELP-LINUM                              DOHELP
        MOVE  "A" TO OPER      GO TO F0520-900.                   DOHELP
           IF I-HELP-OPDOC   =  "S"                               DOHELP
        MOVE  "A" TO OPER      GO TO F0520-900.                   DOHELP
        MOVE "5" TO    ER-HELP-OPDOC  MOVE "4" TO SCR-ER          DOHELP
        GO TO F3999-ITER-FT.                                      DOHELP
 F0520-900.                                                       DOHELP
        IF OPER NOT = "A" AND OPER NOT = "O"                      DOHELP
        GO TO F3999-ITER-FT.                                      DOHELP
 F0520-FN.    EXIT.                                               DOHELP
 F05-FN.      EXIT.                                               DOHELP
*           *************************************                 DOHELP
*           *                                   *                 DOHELP
*           *  CATEGORY PROCESSING LOOP         *                 DOHELP
*           *                                   *                 DOHELP
*           *************************************                 DOHELP
 F10.         EXIT.                                               DOHELP
 F1010.     MOVE SPACE TO CATM.                                   DOHELP
       IF CAT-ER = "E" MOVE "4" TO SCR-ER GO TO F3999-ITER-FT.    DOHELP
        MOVE SPACE TO CAT-ER.                                     DOHELP
        IF CATX = "0" MOVE "Z" TO CATX GO TO F1010-FN.            DOHELP
 F1010-A.   GO TO F3999-ITER-FT.                                  DOHELP
 F1010-FN.    EXIT.                                               DOHELP
 F10-FN.      EXIT.                                               DOHELP
*           *************************************                 DOHELP
*           *                                   *                 DOHELP
*           *  DATA ELEMENT VALIDATION          *                 DOHELP
*           *                                   *                 DOHELP
*           *************************************                 DOHELP
 F20.         EXIT.                                               DOHELP
 F20Z.  IF CATX NOT = "Z" GO TO F20Z-FN.                          DOHELP
 F20A7.                                                           DOHELP
           IF I-HELP-OPDOC  NOT = SPACE                           DOHELP
        MOVE "1" TO    ER-HELP-OPDOC.                             DOHELP
 F20A7-FN.    EXIT.                                               DOHELP
 F20Z-FN.     EXIT.                                               DOHELP
 F20-FN.      EXIT.                                               DOHELP
 F3999-ITER-FI.  GO TO F10.                                       DOHELP
 F3999-ITER-FT.     EXIT.                                         DOHELP
 F3999-FN.    EXIT.                                               DOHELP
 F40.       IF SCR-ER > "1"  MOVE "A" TO OPER  GO TO F40-FN.      DOHELP
 F40-A.     IF OPERD NOT = SPACE   MOVE OPERD TO OPER.            DOHELP
 F4005. IF OPER NOT = "O"          GO TO F4005-FN.                DOHELP
        IF K-SHELP-CDOC = "D"                                     DOHELP
        MOVE "2" TO K-SHELP-CDOC.                                 DOHELP
        IF K-SHELP-CDOC = "R"                                     DOHELP
        MOVE "3" TO K-SHELP-CDOC.                                 DOHELP
        MOVE ZERO TO K-SHELP-LINUM.                               DOHELP
        IF K-SHELP-ERCOD = SPACE                                  DOHELP
        OR K-SHELP-ERCOD NOT NUMERIC                              DOHELP
        MOVE "001"  TO  K-SHELP-ERCOD.                            DOHELP
        IF K-SHELP-ERCOD > "001"                                  DOHELP
        SUBTRACT 1 FROM K-SHELP-ERCOD9.                           DOHELP
 F4005-FN.    EXIT.                                               DOHELP
 F4010.  IF OPER NOT = "A"    GO TO F4010-FN.                     DOHELP
        MOVE  SPACE          TO EM00-EMKEY                        DOHELP
        MOVE  K-SHELP-LIBRA  TO EM00-LIBRA                        DOHELP
        MOVE  "H"            TO EM00-ENTYP                        DOHELP
        MOVE  K-SHELP-PROGR  TO EM00-PROGR                        DOHELP
        MOVE  K-SHELP-ERCOD  TO EM00-ERCOD                        DOHELP
        MOVE  K-SHELP-ERTYP  TO EM00-ERTYP                        DOHELP
        MOVE  K-SHELP-LINUM  TO EM00-LINUM                        DOHELP
        MOVE  EM00-EMKEY     TO K-REM00-EMKEY (1).                DOHELP
 F4010-FN.    EXIT.                                               DOHELP
*           *************************************                 DOHELP
*           *                                   *                 DOHELP
*           *  END OF TRANSACTION               *                 DOHELP
*           *                                   *                 DOHELP
*           *************************************                 DOHELP
 F4030.     IF OPER NOT = "E" GO TO F4030-FN.                     DOHELP
        MOVE OPER         TO S-WWSS-OPER.                         DOHELP
        PERFORM F81FI  THRU F81FI-FN.                             DOHELP
 F4030-A.       EXIT PROGRAM.                                     DOHELP
 F4030-FN.    EXIT.                                               DOHELP
*           *************************************                 DOHELP
*           *                                   *                 DOHELP
*           *  TRANSFER TO ANOTHER SCREEN       *                 DOHELP
*           *                                   *                 DOHELP
*           *************************************                 DOHELP
 F4040.     IF OPER NOT = "O" GO TO F4040-FN.                     DOHELP
        MOVE 5-HELP-PROGE TO S-WWSS-PROGE.                        DOHELP
        MOVE OPER         TO S-WWSS-OPER.                         DOHELP
        PERFORM F81FI  THRU F81FI-FN.                             DOHELP
 F4040-A.       EXIT PROGRAM.                                     DOHELP
 F4040-FN.    EXIT.                                               DOHELP
 F40-FN.      EXIT.                                               DOHELP
 END-OF-RECEPTION.      EXIT.                                     DOHELP
*           *************************************                 DOHELP
*           *                                   *                 DOHELP
*           *  DISPLAY PREPARATION              *                 DOHELP
*           *                                   *                 DOHELP
*           *************************************                 DOHELP
 F50.      IF OCF = "0" GO TO END-OF-DISPLAY.                     DOHELP
 F5010.                                                           DOHELP
        MOVE ZERO TO CATX.                                        DOHELP
        MOVE ZERO TO CONFIGURATIONS.                              DOHELP
        MOVE ALL "1" TO FIRST-ON-SEGMENT.                         DOHELP
        IF SCR-ER > "1"  GO TO F6999-ITER-FT.                     DOHELP
        MOVE SPACE TO  O-HELP.                                    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
 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                         DOHELP
        "N" BY "H", "D" BY "S".                                   DOHELP
        INSPECT DE-ATT1 (2) REPLACING ALL                         DOHELP
        "N" BY "H", "B" BY " ", "R" BY "I".                       DOHELP
        INSPECT DE-ATT1 (3) REPLACING ALL                         DOHELP
        "W" BY " ", "G" BY "1", "Y" BY "2",                       DOHELP
        "B" BY "3", "P" BY "4", "T" BY "5",                       DOHELP
        "R" BY "8".                                               DOHELP
        MOVE ZERO TO TALLI  INSPECT DE-ATT1 (4)                   DOHELP
        TALLYING TALLI FOR CHARACTERS BEFORE "Y".                 DOHELP
        IF TALLI     NOT <       0001                             DOHELP
        MOVE ZERO TO TALLI  INSPECT DE-ATT1 (4)                   DOHELP
        TALLYING TALLI FOR CHARACTERS BEFORE "Z".                 DOHELP
        IF TALLI     NOT <       0001                             DOHELP
        MOVE ZERO TO TALLI  INSPECT DE-ATT1 (4)                   DOHELP
        TALLYING TALLI FOR CHARACTERS BEFORE "X".                 DOHELP
        IF TALLI     NOT <       0001                             DOHELP
        MOVE ZERO TO TALLI.                                       DOHELP
        ADD   1    TO TALLI.                                      DOHELP
        MOVE TALLI TO K01.                                        DOHELP
        MOVE SV-AT (K01) TO HP30-FLDNUM.                          DOHELP
        MOVE ZERO TO K01 K02.                                     DOHELP
 F7020-A.                                                         DOHELP
        ADD 1 TO K01.                                             DOHELP
        IF K01 > INT  GO TO F7020-1.                              DOHELP
        IF DE-AT (4, K01) = SPACE GO TO F7020-A.                  DOHELP
        ADD 1 TO K02.                                             DOHELP
        MOVE SV-AT (K01) TO HP30-CHGFNU(K02).                     DOHELP
        MOVE 4           TO HP30-CHGTYP(K02).                     DOHELP
        MOVE DE-AT (1, K01) TO HP30-CHGATT (K02, 1).              DOHELP
        MOVE DE-AT (2, K01) TO HP30-CHGATT (K02, 2).              DOHELP
        MOVE DE-AT (3, K01) TO HP30-CHGATT (K02, 3).              DOHELP
        MOVE SPACE          TO HP30-CHGATT (K02, 4).              DOHELP
        IF HP30-CHGSPE(K02) = SPACE                               DOHELP
        MOVE "NONE"      TO HP30-CHGSPE(K02).                     DOHELP
        GO TO F7020-A.                                            DOHELP
 F7020-1.                                                         DOHELP
        MOVE K02 TO HP30-CHGNBE.                                  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
 F8Z06.                                                           DOHELP
        MOVE  "DOM050  "   TO VPLUS-NFNAME.                       DOHELP
        MOVE  "VGETNEXT"   TO S-WWSS-XFUNCT.                      DOHELP
        CALL  "VGETNEXTFORM" USING VPLUS-COMARE.                  DOHELP
        IF  VPLUS-STATUS NOT = 0                                  DOHELP
        PERFORM F81EV THRU F81EV-FN.                              DOHELP
 F8Z06-FN.    EXIT.                                               DOHELP
 F8Z08.                                                           DOHELP
        PERFORM F8145 THRU F8145-FN.                              DOHELP
        MOVE  "VPUTBUFF"   TO S-WWSS-XFUNCT.                      DOHELP
        CALL  "VPUTBUFFER" USING VPLUS-COMARE                     DOHELP
                         HELP-MESSO VPLUS-DBFLEN.                 DOHELP
        IF  VPLUS-STATUS NOT = 0                                  DOHELP
        PERFORM F81EV THRU F81EV-FN.                              DOHELP
        IF HP30-CHGNBE > ZERO                                     DOHELP
        MOVE  "VCHANGEFIELD" TO S-WWSS-XFUNCT                     DOHELP
        CALL  "VCHANGEFIELD" USING VPLUS-COMARE                   DOHELP
                        HP30-SPEBUF HP30-CHGNBE                   DOHELP
        IF  VPLUS-STATUS NOT = 0                                  DOHELP
        PERFORM F81EV THRU F81EV-FN.                              DOHELP
 F8Z08-FN.    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
        MOVE  "VSHOWFOR"   TO S-WWSS-XFUNCT.                      DOHELP
        CALL  "VSHOWFORM"    USING VPLUS-COMARE.                  DOHELP
        IF  VPLUS-STATUS NOT = 0                                  DOHELP
        PERFORM F81EV THRU F81EV-FN.                              DOHELP
 F8Z10-FN.    EXIT.                                               DOHELP
 8Z11.                                                            DOHELP
        IF HP30-FLDNUM > ZERO                                     DOHELP
        MOVE  "VPLACECURSOR" TO S-WWSS-XFUNCT                     DOHELP
        CALL  "VPLACECURSOR" USING VPLUS-COMARE HP30-FLDNUM       DOHELP
        IF  VPLUS-STATUS NOT = 0                                  DOHELP
        PERFORM F81EV THRU F81EV-FN.                              DOHELP
 F8Z11-FN.    EXIT.                                               DOHELP
*           *************************************                 DOHELP
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      *           *                                    *                 DOHELP
      *           *  END OF PROGRAM                    *                 DOHELP
      *           *                                    *                 DOHELP
      *           *************************************                  DOHELP
       F8Z20.                                                            DOHELP
              GO TO F0110.                                               DOHELP
       F8Z20-FN.    EXIT.                                                DOHELP
       F8Z-FN.      EXIT.                                                DOHELP
      *           *************************************                  DOHELP
      *           *                                    *                 DOHELP
      *           *  PHYSICAL SEGMENT ACCESS ROUTINES *                  DOHELP
      *           *                                    *                 DOHELP
      *           *************************************                  DOHELP
       F80.         EXIT.                                                DOHELP
       F80-EM00-R.                                                       DOHELP
              MOVE "READ    " TO S-WWSS-XFUNCT MOVE ZERO TO IK.          DOHELP
              READ    EM-FILE    INVALID KEY GO TO F80-KO.               DOHELP
              IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                 DOHELP
       F80-EM00-P.                                                       DOHELP
              MOVE "START   " TO S-WWSS-XFUNCT MOVE ZERO TO IK.          DOHELP
              START   EM-FILE    KEY NOT <                               DOHELP
                         EM00-EMKEY  INVALID KEY GO TO F80-KO.           DOHELP
             IF IK = "1" GO TO F81ER.                                    DOHELP
       F80-EM00-RN.                                                      DOHELP
              MOVE "READNEXT" TO S-WWSS-XFUNCT MOVE ZERO TO IK.          DOHELP
              READ    EM-FILE    NEXT AT END GO TO F80-KO.               DOHELP
              IF IK = "1" GO TO F81ER ELSE GO TO F80-OK.                 DOHELP
       F80-EM00-UNOK.                                                    DOHELP
             UN-EXCLUSIVE EM-FILE.    GO TO F80-OK.                      DOHELP
       F80-EM00-UNKO.                                                    DOHELP
             UN-EXCLUSIVE EM-FILE.    GO TO F80-KO.                      DOHELP
       F8001-FN.    EXIT.                                                DOHELP
       F80-OK.  MOVE "0" TO IK MOVE PROGR TO XPROGR GO TO F80-FN.        DOHELP
       F80-KO.  MOVE "1" TO IK MOVE PROGR TO XPROGR.                     DOHELP
       F8099-FN.    EXIT.                                                DOHELP
       F80-FN.      EXIT.                                                DOHELP
       F81.         EXIT.                                                DOHELP
      *           *************************************                  DOHELP
      *           *                                    *                 DOHELP
      *           *  ABNORMAL END PROCEDURE            *                 DOHELP
      *           *                                    *                 DOHELP
      *           *************************************                  DOHELP
       F81ER.                                                            DOHELP
              MOVE  PROGE    TO  S-WWSS-PROGE.                           DOHELP
              MOVE  "X"      TO  S-WWSS-OPER.                            DOHELP
       F81ER-A.  EXIT PROGRAM.                                           DOHELP
       F81ER-FN.    EXIT.                                                DOHELP
           MOVE "SQ" TO S-WWSS-STATUS.                                   DOHELP
           GO TO F81ER.                                                  DOHELP
       F81ES-FN.    EXIT.                                                DOHELP
       F81EV.                                                            DOHELP
              MOVE  "VP" TO S-WWSS-STATUS.                               DOHELP
              GO TO F81ER.                                               DOHELP
       F81EV-FN.    EXIT.                                                DOHELP
       F81FI.                                                            DOHELP
              MOVE "CLOSE   " TO S-WWSS-XFUNCT MOVE "0" TO IK.           DOHELP
              CLOSE   EM-FILE.                                           DOHELP
              IF IK = "1" GO TO F81ER.                                   DOHELP
       F81FI-FN.    EXIT.                                                DOHELP
      *           *************************************                  DOHELP
      *           *                                    *                 DOHELP
      *           *  MEMORIZATION OF USER'S ERRORS    *                  DOHELP
      *           *                                    *                 DOHELP
      *           *************************************                  DOHELP
       F81UT.     IF K50L < K50M ADD 1 TO K50L                           DOHELP
              MOVE XEMKY TO T-XEMKY (K50L). MOVE "E" TO CAT-ER.          DOHELP
       F81UT-FN.    EXIT.                                                DOHELP
       F8115.       EXIT.                                                DOHELP
       F8115-FN.    EXIT.                                                DOHELP
       F8145.                                                            DOHELP
              MOVE  T03002 TO   S03002.                                  DOHELP
              MOVE  T03033 TO   S03033.                                  DOHELP
              MOVE  T05004 TO   S05004.                                  DOHELP
              MOVE  T06004 TO   S06004.                                  DOHELP
              MOVE  T07004 TO   S07004.                                  DOHELP
              MOVE  T08004 TO   S08004.                                  DOHELP
              MOVE  T09004 TO   S09004.                                  DOHELP
              MOVE  T10004 TO   S10004.                                  DOHELP
              MOVE  T11004 TO   S11004.                                  DOHELP
              MOVE  T12004 TO   S12004.                                  DOHELP
              MOVE  T13004 TO   S13004.                                  DOHELP
              MOVE  T14004 TO   S14004.                                  DOHELP
              MOVE  T15004 TO   S15004.                                  DOHELP
              MOVE  T16004 TO   S16004.                                  DOHELP
              MOVE  T17004 TO   S17004.                                  DOHELP
              MOVE  T18004 TO   S18004.                                  DOHELP
              MOVE  T19004 TO   S19004.                                  DOHELP
              MOVE  T20004 TO   S20004.                                  DOHELP
              MOVE  T21004 TO   S21004.                                  DOHELP
              MOVE  T23002 TO   S23002.                                  DOHELP
              MOVE  T23022 TO   S23022.                                  DOHELP
              MOVE  T23028 TO   S23028.                                  DOHELP
              MOVE  T24002 TO   S24002.                                  DOHELP
       F8145-FN.    EXIT.                                                DOHELP
       F8165.                                                            DOHELP
              MOVE  S23022 TO   R23022 T23022.                           DOHELP
       F8165-FN.    EXIT.                                                DOHELP
       F81-FN.      EXIT.                                                DOHELP
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