VisualAge Pacbase 2.5

AS/400 OLSD
REFERENCE MANUAL

DDO38000021A

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TABLE OF CONTENTS

1. INTRODUCTION

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 IBM 38 generation option allows users to generate on-line applications running on SYSTEM 38 hardware under the CPF operating system.

It is selected by entering the values 'Y' and '0' (zero) in the TYPE OF COBOL AND MAP TO GENERATE fields on the On-Line Screen or Dialogue Definition screen.

The AS/400 generation option allows users to generate on-line applications running on AS/400 hardware under the OS/400 operating system.

It is selected by entering the values 'O' and '0' (zero) in the TYPE OF COBOL AND MAP TO GENERATE fields on the On-Line Screen or Dialogue Definition screen.

Since the generated programs are identical, with the exception of the source and object computer clauses, only one generated program is commented for both variants.

1.2. ARCHITECTURE OF THE GENERATED TRANSACTIONS

CONVERSATIONAL MANAGEMENT

On IBM SYSTEM 38, the generated on-line programs are executed under the control of the C.P.F. Operating System (CONTROL PROGRAM FACILITIES).

On AS/400, the generated on-line programs are executed under the control of the OS/400 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 defined in PACBASE 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 PACBASE/PACLAN/PACLANX.

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".

MAP MANAGEMENT

For each screen of a dialogue defined in PACBASE-PACLAN- PACLAN/X, a description of a physical map with type "DISPLAY FILE" is generated according to the standards of the Data Description Specifications language.

The screen description is defined in the on-line program.

The link between the generated description of the physical screen map and the logical map managed by the on-line program is accomplished using the declaration of a WORKSTATION type file in the DATA DIVISION of the program.

1.3. POSITIONING OF CURSOR AND ATTRIBUTES

POSITIONING OF CURSOR AND ATTRIBUTES

This processing is generated in Function 7020.

Cursor positioning is achieved by the initialization of two fields, LINE and COLUMN, associated with the CRSLOC keyword declared in the Screen Call of Elements ('-CE') screen.

The dynamic positioning of the attributes associated with invalid fields is achieved using Boolean switches called INDICATORS declared in the physical screen map description.

The DDS language limits to 99 the number of INDICATORS that can be used in the physical map description. Therefore, only 99 variable fields can be managed in the dynamic attribute positioning.

The assignment of INDICATOR numbers and of the keywords associated with the variable fields attributes is automatic and fixed at the level of the physical screen map description.

```
INDICATOR numbers are entered on the Screen Call of Elements
('-CE') screen with OPERATION CODE 'O:C2' in the following
fields:

TYPE OF LITERAL: Value 'Y'.

LITERALS:
```

* On each data element's first line, the number of the indicator to be positioned in case of error on the data element, in the field's first three positions.

* On each data element's continuation lines, attributes and their corresponding indicator automatically generated and managed via a specific procedure ('-P' lines).

NOTE

It is not possible to assign an INDICATOR number to each repetition of a validated field. Therefore, when an error is found in a repetitive field, all repeated fields take on the same display attribute.

Additional INDICATORS can be positioned. They are automatically generated in the screen's DDS and managed by Procedural Code ('-P') lines.

Indicators are described as follows:

```
IIIOTLD IIIOTLD IIIOTLD

where:

III= INDICATOR number (the maximum number of indicators
     is 99).

O = IBM 38/AS 400: ON/OFF INDICATOR switch (N=OFF,SPACE=ON)
    IBM 36: This position must be left blank.

T = ATTRIBUTE TYPE

L = ATTRIBUTE FOR DATA ELEMENT LITERAL

D = ATTRIBUTE FOR DATA ELEMENT CONTENTS

With an indicator number:

ATTRIBUTE TYPE   CORRESPONDING ATTRIBUTE (L or D)

I: INTENSITY     B: BRIGHT
                 D: DARK (i.e. NO DISPLAY)

P: PRESENTATION  B: BLINK
                 R: REVERSE VIDEO
                 U: UNDERLINED

C: COLOR         W: DEFAULT COLOR OF THE TERMINAL
                 G: GREEN
                 R: RED
                 P: PINK
                 Y: YELLOW
                 T: TURQUOISE
                 B: BLUE

R: PROTECTION    P: PROTECTED CONTENTS
                   (in position D)
```

By default, the same indicator is assigned to all occurences of a data element that repeats (horizontally or vertically) or that appears in a repetitive section. However, for occurences of a data element in a repetitive section, the line in the repetitive section can be indicated in addition to the standard screen indicator. This additional line indicator is set to '1' in case of error. On the "Screen Commentary" screen of the dialog or the of the screen, Parameter 27 activates this option (see ON-LINE SYSTEMS DEVELOPMENT (OLSD) Reference Manual).

1.4. GENERATION OF NUMERIC FIELDS

GENERATION OF NUMERIC FIELDS

By default, numeric fields are generated in the DDS source as alphanumeric fields, the numericity validation being performed by the OLSD function.

However, it is possible to request the generation of "SIGNED NUMERIC" or "NUMERIC ONLY" fields: on the Screen Call of Elements ('-CE') screen, enter the following:

1. For a "SIGNED NUMERIC" field:

```
                LABEL
                T LITERALS
                - --------
                Y NUM*S
```

In the generated DDS:

COL. 30-34: Element length:

. The PACBASE data element has no conversational format: its length is its internal format.

The PACBASE data element has a conversational format: its length is its conversational format minus 1 byte if there is a decimal point also minus another byte for the sign mark at the beginning.

COL. 35 :'S'
COL. 36-37: 0 or nn, nn being the decimal part.

In the generated program:

. In I- and O- fields, the generated format is the internal format if there is no conversational format, otherwise it is calculated taking the conversational format into account. As a result, the length of the I- and O- fields is the length of the field in the generated DDS.

. The numeric validation of the data element is not automatically performed, it has to be specified via a specific procedure ('-P' lines).

IMPORTANT NOTE

In the Screen Layout ('-L'), Mapping ('-M') and Dialogue Simulation ('-SIM') screens, the length of SIGNED NUMERIC fields is the length found in the generated DDS and not the length used for display.

EXAMPLES:

A. A field format is 9(5):

It is 5-byte long in:
- The '-L', '-M', and '-SIM' screens,
- The generated DDS,
- The I- and O- fields.

However, 6 digits are reserved on the screen for the field display: one digit represents the the sign of the SIGNED NUMERIC field even though 5 digits only are sent to the program, the sign being contained in the last one.

B. A field format is S9(3)V99:
It is 7-byte long in the '-L', '-M', and '-SIM' screens.

It is 5-byte long in:

- The generated DDS,
- The I- and O- fields.

However, 6 digits are reserved on the screen for the field display: one digit represents the sign of the SIGNED NUMERIC field even though 5 digits only are sent to the program, the sign being contained in the last one. The comma is not displayed.

2. For a "NUMERIC ONLY" field:

```
                LABEL
                T LITERALS
                - --------
                Y NUM*Y
```

In the generated DDS:

```
 COL. 30-34: Element length:
```

. The PACBASE data element has no conversational format: its length is its internal format.

. The PACBASE data element has a conversational format: its length depends on its conversational format and is calculated according to rules indicated below.

```
 COL. 35   :'Y'
 COL. 36-37: 0 or nn, nn being the decimal part.
```

```
CALCULATION RULES:

. 'B'  not included (DISPLAY character)
. 'S'  not included (DISPLAY character)
. 'V'  not included (DISPLAY character)
. '$'  not included (DISPLAY character)
. ','  not included (DISPLAY character)
. '.'  not included (DISPLAY character)
. '-'  the first is not included but the following ones will
       not be considered as display characters
. 'CR' same as '-'
. 'A'  included
. 'DB' included
. 'O'  included
. 'P'  included
. 'Z'  included
. '9'  included
. '*'  included
. '/'  included
. '+'  included
```

EDTWRD EDIT ROUTINE:

Characters not taken into account in the calculation of the element's length are attached to the EDTWRD keyword according to the following rules:

'B' replaced by blank,
'S' replaced by '-',
'V' replaced by decimal point.

2. PRESENTATION OF THE EXAMPLE

2.1. THE 'DO' DIALOGUE

```
--------------------------------------------------------------------------------
!                   IBM SYSTEM 38                              *PDLB.NDOC.A38.1!
! 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:   10       11                          !
!                                                                              !
!                                    LABELS   DISPLAY  INPUT  ER.MESS.  ER.FL!
! INTENSITY ATTRIBUTE ...............:   N        N        N        N        N !
! PRESENTATION ATTRIBUTE ............:   N        N        N        N        N !
! COLOR ATTRIBUTE ...................:   W        W        W        W        W !
!                                                                              !
! TYPE OF COBOL AND MAP TO GENERATE..:   O   0     OS/400                     !
! CONTROL CARD OPTIONS FRONT & BACK..:            (PROGRAM)      $$       (MAP)!
! EXTERNAL NAMES ....................:            (PROGRAM)               (MAP)!
! TRANSACTION CODE...................:                                        !
!                                                                              !
!                                                                              !
! EXPLICIT KEYWORDS..: DOC                                                     !
! SESSION NUMBER.....: 0163        LIBRARY......: A38    LOCK....:             !
!                                                                              !
! O: C1 CH: Odo                         ACTION:                                !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                    IBM SYSTEM 38                              *PDLB.NDOC.A38.1!
! 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.............:                                       !
!                                                                               !
!                                                                               !
! OPTIONS : OCF F10                                                             !
!                                                                               !
!                                                                               !
!                                                                               !
! SESSION NUMBER     : 0109  LIBRARY      : DCC                                 !
!                                                                               !
! O: C1 CH: Odo O                       ACTION:                                 !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   IBM SYSTEM 38                                *PDLB.NDOC.A38.1!
! 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                                                                !
--------------------------------------------------------------------------------
```

2.2. THE 'DO0030' ON-LINE SCREEN

```
--------------------------------------------------------------------------------
!                  IBM SYSTEM 38                              *PDLB.NDOC.A38.1!
! ON-LINE SCREEN DEFINITION.....: DO0030                                       !
!                                                                              !
! SCREEN NAME.....................: ***  ORDER INPUT SCREEN  ***               !
!                                                                              !
! SCREEN SIZE (LINES, COLUMNS) ......:   24       080                         !
! LABEL TYPE, TABS, INITIALIZATION...:   L        01     * -                   !
! HELP CHARACTER SCREEN, DATA ELEMENT:   10       11                          !
!                                                                              !
!                                    LABELS   DISPLAY  INPUT  ER.MESS.  ER.FL!
! INTENSITY ATTRIBUTE ..............: * B        N        N        N        N !
! PRESENTATION ATTRIBUTE ...........:   N        N        N        N        N !
! COLOR ATTRIBUTE ..................:   W        W        W        W        W !
!                                                                              !
! TYPE OF COBOL AND MAP TO GENERATE..: * Y   0     IBM 38                     !
! CONTROL CARD OPTIONS FRONT & BACK..:            (PROGRAM)      $$       (MAP)!
! EXTERNAL NAMES ...................:            (PROGRAM)               (MAP)!
! TRANSACTION CODE..................:                                        !
!                                                                              !
!                                                                              !
! EXPLICIT KEYWORDS..:                                                         !
! SESSION NUMBER.....: 0166        LIBRARY......: A38    LOCK....:             !
!                                                                  C 1         !
! O: C1 CH: Odo0030                    ACTION:                                 !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   IBM SYSTEM 38                              *PDLB.NDOC.A38.1!
! ON-LINE SCREEN DEFINITION.....: DO0030                                       !
!                                                                              !
! SCREEN NAME.....................: ***  ORDER INPUT SCREEN  ***               !
!                                                                              !
! SCREEN SIZE (LINES, COLUMNS) ......:   24       080                         !
! LABEL TYPE, TABS, INITIALIZATION...:   L        01     * -                   !
! HELP CHARACTER SCREEN, DATA ELEMENT:   10       11                          !
!                                                                              !
!                                    LABELS   DISPLAY  INPUT  ER.MESS.  ER.FL!
! INTENSITY ATTRIBUTE ..............: * B        N        N        N        N !
! PRESENTATION ATTRIBUTE ...........:   N        N        N        N        N !
! COLOR ATTRIBUTE ..................:   W        W        W        W        W !
!                                                                              !
! TYPE OF COBOL AND MAP TO GENERATE..:   O   0     OS/400                     !
! CONTROL CARD OPTIONS FRONT & BACK..:            (PROGRAM)      $$       (MAP)!
! EXTERNAL NAMES ...................:            (PROGRAM)               (MAP)!
! TRANSACTION CODE..................:                                        !
!                                                                              !
!                                                                              !
! EXPLICIT KEYWORDS..:                                                         !
! SESSION NUMBER.....: 0166        LIBRARY......: A38    LOCK....:             !
!                                                                    M 1       !
! O: C1 CH: Odo0030                    ACTION:                                 !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   IBM SYSTEM 38                                *PDLB.NDOC.A38.1!
! ON-LINE SCREEN GENERAL DOC.     DO0030 ***  ORDER INPUT SCREEN  ***           !
!                                                                              !
! A LIN : T COMMENT                                                      LIB !
! . 020 : C      THIS SCREEN ALLOWS TO ENTER AN ORDER OF DOCUMENTATION     *ACC!
! . 030 : C      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                                                          !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   IBM SYSTEM 38                                *PDLB.NDOC.A38.1!
! 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.                  *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:                                                                !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   IBM SYSTEM 38                              *PDLB.NDOC.A38.1!
! 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                                                         !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   IBM SYSTEM 38                              *PDLB.NDOC.A38.1!
! 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:                                                                    !
--------------------------------------------------------------------------------
```

```
-------------------------------------------------------------------------------
!                   IBM SYSTEM 38                              *PDLB.NDOC.A38.1!
! 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:                                                                    !
-------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   IBM SYSTEM 38                                *PDLB.NDOC.A38.1!
! 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:                                                                     !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   IBM SYSTEM 38                                *PDLB.NDOC.A38.1!
! 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    : LIB!
! C CODE C LN : G R D SEGM SOURCE         KEY    B O T NAME     SEGM N LV :    !
! . CD05   00 :   M A      SPACES         KEYCD    V   DOCD00   CD05   12 :*ACC!
!   CD05   02 :            'B'            COCARA                          :0021!
!   CD05   04 :            CA00-NUCOM     NUCOM                           :0021!
! . CD10 R 00 :   T        'C'            KEYCD    V   DOCD00   CD10      :*ACC!
!   CD10 R 02 :            CA00-NUCOM     NUCOM                           :0021!
!   CD10 R 04 :            0030-FOURNI    FOURNI                          :0021!
!   CD10 R 06 :     A      SPACES         KEYCD                           :0021!
!   CD10 R 08 :            'C'            COCARA C                        :0021!
!   CD10 R 10 :            CA00-NUCOM     NUCOM  C                        :0021!
! . FO10 R 00 :   M N CD10 0030-FOURNI    CLEFO    V 1 DOFO00   FO10      :*DCC!
!   FO10 R 02 :            CA00-LANGU     LANGU                           :0021!
!   FO10 R 04 :            0030-RELEA     RELEA                           :0021!
!   FO10 R 06 :            0030-MATE      MATE                            :0021!
! . CD20 Z 00 :   X N      SPACES         KEYCD    V   DOCD00   CD20      :*ACC!
!   CD20 Z 02 :            'E'            COCARA                          :0021!
!   CD20 Z 04 :            CA00-NUCOM     NUCOM                           :0021!
! . ME00 Z 00 :   N A      CA00-CLEME     CLEME    V   DOME00   ME00      :*DCC!
!                                                                           !
! O: C1 CH: Odo0030 CS                                                      !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   IBM SYSTEM 38                                *PDLB.NDOC.A38.1!
! ON-LINE SCREEN CALL OF P.M.S.......:     DO0030 ***  ORDER INPUT SCREEN  *** !
!                                                                              !
! A   MACRO  LN C : COMMENTS OR PARAMETER VALUES                    D E        !
! .   AADOCP      : WP/                                                        !
! .   BBDEBR      :                                                            !
! .   BBINIT      :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                 :                                                            !
!                                                                              !
! O: C1 CH: Odo0030 CP                                                         !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   IBM SYSTEM 38                              *PDLB.NDOC.A38.1!
! 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                                                          !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   IBM SYSTEM 38                                *PDLB.NDOC.A38.1!
! 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:                                                                    !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!                   IBM SYSTEM 38                                *PDLB.NDOC.A38.1!
! 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:                                                                    !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!   XXXXXXXX - 0808      ***  ORDER INPUT SCREEN  ***       XXXXXXXXXX 14:45:36!
!                                                                              !
!   ORDER NUMBER: 02345   SYSTEM: IBM.V.OS            RELEASE:                 !
!   CUST.    BEST     D.P. MANAGEMENT                                          !
!        84, OLD TOWNLINE ROAD                      48016   CINCINNATI         !
!   CUST. REF.: LP-KCP  ORDER NUMBER: 05179      ORDER DATE: ..__..            !
!    COORDINATOR: MR. GUY DANCE               DISCOUNT RATE:    12.25         !
!                                                                              !
!  A   ITEM     ORDERED   DELIV.   OUTST. REMARKS                              !
!  C   DLG       3         1        2     REST TO BE DELIVERED : 05/03/91     !
!  .   ...      ..        ..       ..     ..................................  !
!  .   ...      ..        ..       ..     ..................................  !
!  .   ...      ..        ..       ..     ..................................  !
!  .   ...      ..        ..       ..     ..................................  !
!  .   ...      ..        ..       ..     ..................................  !
!  .   ...      ..        ..       ..     ..................................  !
!  .   ...      ..        ..       ..     ..................................  !
!  .   ...      ..        ..       ..     ..................................  !
!                                                                              !
! PRINTING OF FORM  : O            UPD : PF07, ORDERS (NEXT) : PF08,           !
! MENU : PF01, CUSTOMER LIST : PF02, CUST. HIST : PF03, ORDER LIST : PF04,     !
! END : PF12 SCREEN DOC : PF10,  DATA EL. DOC : PF11,                          !
! PLEASE CHECK YOUR MAILBOX, THANK YOU.                                        !
! XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX     !
--------------------------------------------------------------------------------
```

2.3. PROCEDURAL CODE

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

3. GENERATED MONITOR EXAMPLE

GENERATED MONITOR EXAMPLE

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.

PROCEDURE DIVISION

At the beginning of the conversation, initialization of the field containing the name of the next program to execute by the external name of the first screen of the dialogue.

Activation of the next program to execute using the CALL statement with transfer of the conversation area.

After execution of the sub-program called, total freeing of resources used by this sub-program using the CANCEL statement.

Return to second step if there is a next program to execute, else end of conversation ensured by "STOP RUN".

In case of INPUT/OUTPUT error, related information is displayed.

```
    IDENTIFICATION DIVISION.
    PROGRAM-ID. DO.                                                    DO
    AUTHOR.     DOCUMENTATION MANAG.                                   DO
    DATE-COMPILED. 04/01/94.                                           DO
    ENVIRONMENT DIVISION.                                              DO
    CONFIGURATION SECTION.                                             DO
    SOURCE-COMPUTER. IBM-AS400.                                        DO
    OBJECT-COMPUTER. IBM-AS400.                                        DO
    DATA DIVISION.                                                     DO
    WORKING-STORAGE SECTION.                                           DO
    01   WSS-BEGIN.                                                    DO
         05 FILLER PICTURE X(7) VALUE 'WORKING'.                        DO
         05 IK     PICTURE X.                                           DO
         05 BLANC  PICTURE X VALUE SPACE.                               DO
         05 PROGC  PICTURE X(8).                                        DO
    01   PACBASE-CONSTANTS.                                            DO
         05 SESSI  PICTURE X(5) VALUE '0163 '.                          DO
         05 LIBRA  PICTURE X(3) VALUE 'A38'.                            DO
         05 DATGN  PICTURE X(8) VALUE '01/13/92'.                       DO
         05 PROGR  PICTURE X(6) VALUE 'DO    '.                         DO
         05 PROGE  PICTURE X(8) VALUE 'DO      '.                       DO
         05 TIMGN  PICTURE X(8) VALUE '17:21:02'.                       DO
         05 USERCO PICTURE X(8) VALUE '        '.                       DO
    01      COMMON-AREA.                                               *AA000
         02 K-PROGR  PICTURE X(6).                                      *AA000
         02           CA00.                                            *AA001
           10         CA00-CLECD.                                      *AA001
            15        CA00-NUCOM  PICTURE 9(5).                        *AA001
           10         CA00-CLECL1.                                     *AA001
            15        CA00-NUCLIE PICTURE 9(8).                        *AA001
           10         CA00-ME00.                                       *AA001
            15        CA00-CLEME.                                      *AA001
             20       CA00-COPERS PICTURE X(5).                        *AA001
             20       CA00-NUMORD PICTURE XX.                          *AA001
            15        CA00-MESSA  PICTURE X(75).                       *AA001
           10         CA00-PREM   PICTURE X.                           *AA001
           10         CA00-LANGU  PICTURE X.                           *AA001
           10         CA00-RAISOC PICTURE X(50).                       *AA001
         02  K-SDOC PICTURE X.                                         *AA002
         02  FILLER PICTURE X(38).                                     *AA002
         02  FILLER      PICTURE X(0700).                              *AA002
    01    PACBASE-INDEXES COMPUTATIONAL-4.                             *AA200
         05 K01           PICTURE S9(4).                               *AA200
         05        TALLY PICTURE S9(4) VALUE ZERO.                    *AA200
         05    5-CA00-LTH  PICTURE S9(4) VALUE +0147.                 *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
    PROCEDURE DIVISION.                                               *99999
    *           ************************************                  DO
    *           *                                  *                  DO
    *           *  INITIALIZATIONS                 *                  DO
    *           *                                  *                  DO
    *           ************************************                  DO
    F01.                                                              DO
           MOVE 'DO0060  ' TO S-WWSS-PROGE.                           DO
           MOVE ZERO TO K-SDOC.                                       DO
    F01-FN.      EXIT.                                                DO
    F28.         EXIT.                                                DO
    F28AA.                                                            DO
           MOVE  'A'  TO  S-WWSS-OPER.                                DO
    F28AA-FN.    EXIT.                                                DO
    F2899.                                                            DO
           MOVE S-WWSS-PROGE TO    PROGC.                             DO
           CALL S-WWSS-PROGE USING COMMON-AREA                        DO
                                   COMMUNICATION-MONITOR.             DO
           CANCEL PROGC.                                              DO
    F2899-FN.    EXIT.                                                DO
    F28-FN.      EXIT.                                                DO
    F29.                                                              DO
           IF S-WWSS-OPER = 'X' GO TO F81ER.                          DO
    F2910.     IF S-WWSS-OPER = 'E'                                   DO
           STOP '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
   F81ER.                                                         DO
       DISPLAY 'I-O ERROR IN PROGRAM ' S-WWSS-PROGE ' : '         DO
                 S-WWSS-XFUNCT '.'                                DO
               S-WWSS-XFILE  '.'                                  DO
               S-WWSS-STATUS.                                     DO
       STOP 'ABNORMAL END OF CONVERSATION'.                       DO
       STOP RUN.                                                  DO
   F81ER-FN.    EXIT.                                             DO
```

4. GENERATED PROGRAM: DATA DIVISION

4.1. BEGINNING OF PROGRAM

BEGINNING OF PROGRAM

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

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

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

The OPEN-FEEDBACK IS SOPEN-FEEDBACK clause is generated only in the dialogue's first program and when there is a HELP function request entered on the screen Definition Screen. This clause stores the terminal code used as the key of the screen to memorize before branching to the HELP documentation screen.

The I-O-FEEDBACK IS SI-O-FEEDBACK clause is generated only when there is a Help function request entered on the screen Definition Screen. This is where the cursor position is stored in order to locate the data element on which the HELP is requested.

The INPUT-OUTPUT SECTION includes in the FILE-CONTROL the file SELECT clauses corresponding to accesses entered on the screen Call of Segments (-CS) screen. It also contains the SELECT clause of the screen's DISPLAY FILE.

Access management information is entered on the Call of Segments (-CS) screen in the ORGANIZATION OF THE SEGMENT field (column O):

```
Value 'V' for an indexed file generates:          ASSIGN TO DISK-
external.name.

Value 'Y' for a database generates:
          ASSIGN TO DATABASE-external.name.
```

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

All modifications to this part of the program must be done on the Beginning Insertions (-B) screen, or on Batch Form 'D'. For further details, see the STRUCTURED CODE Reference Manual, Chapter "MODIFYING THE ENVIRONMENT DIVISION", Sub-chapter "BEGINNING INSERTIONS SCREEN (-B)".

NOTE: In order to modify or delete the SELECT clause of the screen's DISPLAY FILE, the value '01' must be entered in the SECTION TO GENERATE field, and the value '0S' in the PARAGRAPH TO GENERATE field.

GENERATED PROGRAM: DATA DIVISION 4
BEGINNING OF PROGRAM 1

```
    IDENTIFICATION DIVISION.
    PROGRAM-ID. DO0030.                                          DO0030
    AUTHOR.     ***  ORDER INPUT SCREEN  ***.                    DO0030
    DATE-COMPILED. 04/01/94.                                     DO0030
    ENVIRONMENT DIVISION.                                        DO0030
    CONFIGURATION SECTION.                                       DO0030
    SOURCE-COMPUTER. IBM-AS400.                                  DO0030
    OBJECT-COMPUTER. IBM-AS400.                                  DO0030
    SPECIAL-NAMES.                                               DO0030
         I-O-FEEDBACK IS SI-O-FEEDBACK                           DO0030
         DECIMAL-POINT IS COMMA.                                 DO0030
    INPUT-OUTPUT SECTION.                                        DO0030
    FILE-CONTROL.                                                DO0030
         SELECT    CD-FILE                                       DO0030
         ASSIGN TO         DISK-DOCD00                         DO0030
         ORGANIZATION INDEXED                                    DO0030
         ACCESS IS DYNAMIC                                       DO0030
         RECORD KEY IS CD00-KEYCD                                DO0030
         FILE STATUS 1-CD00-STATUS.                              DO0030
         SELECT    EM-FILE                                       DO0030
         ASSIGN TO         DISK-DODOLE                         DO0030
         ORGANIZATION INDEXED                                    DO0030
         ACCESS IS DYNAMIC                                       DO0030
         RECORD KEY IS EM00-EMKEY                                DO0030
         FILE STATUS 1-EM00-STATUS.                              DO0030
         SELECT    FO-FILE                                       DO0030
         ASSIGN TO         DISK-DOFO00                         DO0030
         ORGANIZATION INDEXED                                    DO0030
         ACCESS IS DYNAMIC                                       DO0030
         RECORD KEY IS FO10-CLEFO                                DO0030
         FILE STATUS 1-FO00-STATUS.                              DO0030
         SELECT  HE-FILE    ASSIGN TO     DISK-SAVESCR           DO0030
         ORGANIZATION INDEXED                                    DO0030
         ACCESS IS DYNAMIC                                       DO0030
         RECORD KEY IS HE00-XTERM                                DO0030
         FILE STATUS 1-HE00-STATUS.                              DO0030
         SELECT    ME-FILE                                       DO0030
         ASSIGN TO         DISK-DOME00                         DO0030
         ORGANIZATION INDEXED                                    DO0030
         ACCESS IS DYNAMIC                                       DO0030
         RECORD KEY IS ME00-CLEME                                DO0030
         FILE STATUS 1-ME00-STATUS.                              DO0030
         SELECT    SCREEN-FILE                                   DO0030
         ASSIGN TO  WORKSTATION-SCRFILE-SI                       DO0030
         ORGANIZATION IS TRANSACTION                             DO0030
         ACCESS       IS SEQUENTIAL                              DO0030
         FILE STATUS  IS SCREEN-STATUS                           DO0030
         CONTROL-AREA IS WS-CONTROL.                             DO0030
```

4.2. SEGMENT DESCRIPTION

SEGMENT DESCRIPTION

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

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

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

. Specific part only;

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

Back-up file for the HELP Function

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

The structure of this file is as follows:

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

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

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

The FILE SECTION includes, in addition to the description of these files, the description of the DISPLAY FILE.

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

```
        10          ME00-MESSA  PICTURE X(75).                  DO0030
    FD          SCREEN-FILE                                     DO0030
                LABEL RECORD OMITTED.                           DO0030
    01          SCREEN-RECORD.                                  DO0030
        10          FILLER      PICTURE X(790).                 DO0030
```

4.3. BEGINNING OF WORKING-STORAGE SECTION

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.

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

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

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

IRR Number of repetitions in the repetitive category.

INT Number of input fields.

IER Number of error messages on the screen.

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

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

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

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

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

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

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

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

The WS-CONTROL level is also generated for all programs. It contains information related to the received screen:

I-PFKEY

Specifies which Function Key is used,

I-XTERM

Identification number of the terminal from which the program receives the screen,

I-FORMAT

Format of received screen.

The INDIC-AREA level is the table of indicators whose positioning changes the attribute of erroneous variable fields.

The IO-FEEDBACK, IO-CURPOSC, and IO-CURPOSR levels are used to process the cursor position. They are generated only when a documentation request is entered on the screen's Definition Screen.

The OP-FEEDBACK level is generated only for the first screen of the dialogue and when a documentation request is entered on the screen's Definition Screen. This level stores the terminal's identification number used as the screen memorization key before the branching to the HELP screen.

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.

The AT-0030-MESSO level includes the addresses of the input fields as well as the corresponding indicators. This level makes it possible to modify the indicators of the erroneous input fields and to position the cursor on the first erroneous field.

GENERATED PROGRAM: DATA DIVISION 4
BEGINNING OF WORKING-STORAGE SECTION 3

```
   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
   01   PACBASE-CONSTANTS.                                           DO0030
   * OLSD DATES PACE30 : 26/06/92                                    DO0030
   *            PACE80 : 26/06/92   PAC7SG : 920325                 DO0030
        05 SESSI  PICTURE X(5) VALUE '0247 '.                       DO0030
        05 LIBRA  PICTURE X(3) VALUE 'A38'.                         DO0030
        05 DATGN  PICTURE X(8) VALUE '07/29/92'.                    DO0030
        05 PROGR  PICTURE X(6) VALUE 'DO0030'.                      DO0030
        05 PROGE  PICTURE X(8) VALUE 'DO0030  '.                    DO0030
        05 TIMGN  PICTURE X(8) VALUE '17:26:04'.                    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  WS-CONTROL.                                                  DO0030
        05  I-PFKEY  PICTURE XX.                                    DO0030
        05  I-XTERM  PICTURE X(10).                                 DO0030
        05  I-FORMAT PICTURE X(10).                                 DO0030
   01  INDIC-AREA.                                                  DO0030
        05  INDIC-TABLE OCCURS 99 PICTURE 1 INDICATOR 1.            DO0030
   01  5-0030-FORM  PIC X(8) VALUE 'DO0030  '.                      DO0030
   01  IO-FEEDBACK.                                                 DO0030
        05  FILLER        PICTURE X(147).                           DO0030
        05  IO-CURPOSX.                                             DO0030
        10  IO-CPOSL      PICTURE X.                                DO0030
        10  IO-CPOSC      PICTURE X.                                DO0030
   01  IO-CURPOSC.                                                  DO0030
        05  FILLER        PICTURE X.                                DO0030
        05  IO-CPOSX      PICTURE X.                                DO0030
   01  IO-CURPOSR REDEFINES IO-CURPOSC.                             DO0030
        05  IO-CURPOS     PICTURE 9999 COMPUTATIONAL-4.             DO0030
   01  DATCE.                                                       DO0030
     05  CENTUR   PICTURE XX VALUE '19'.                            DO0030
        05 DATOR.                                                   DO0030
        10 DATOA  PICTURE XX.                                       DO0030
        10 DATOM  PICTURE XX.                                       DO0030
        10 DATOJ  PICTURE XX.                                       DO0030
   01  DAT6.                                                        DO0030
        10 DAT61.                                                   DO0030
        15 DAT619 PICTURE 99.                                       DO0030
        10 DAT62.                                                   DO0030
        15 DAT629 PICTURE 99.                                       DO0030
        10 DAT63  PICTURE XX.                                       DO0030
   01  DAT7.                                                        DO0030
        10 DAT71  PICTURE XX.                                       DO0030
        10 DAT72  PICTURE XX.                                       DO0030
        10 DAT73  PICTURE XX.                                       DO0030
   01  DAT8.                                                        DO0030
        10 DAT81  PICTURE XX.                                       DO0030
        10 DAT8S1 PICTURE X.                                        DO0030
        10 DAT82  PICTURE XX.                                       DO0030
        10 DAT8S2 PICTURE X.                                        DO0030
        10 DAT83  PICTURE XX.                                       DO0030
   01  DATSEP     PICTURE X VALUE '/'.                              DO0030
   01  DATSET     PICTURE X VALUE '-'.                              DO0030
   01  DATCTY.                                                      DO0030
     05  DATCTY9  PICTURE 99.                                       DO0030
```

```
01  DAT6C.                                                          DO0030
  10  DAT61C   PICTURE XX.                                          DO0030
  10  DAT62C   PICTURE XX.                                          DO0030
  10  DAT63C   PICTURE XX.                                          DO0030
  10  DAT64C   PICTURE XX.                                          DO0030
01  DAT7C.                                                          DO0030
  10  DAT71C   PICTURE XX.                                          DO0030
  10  DAT72C   PICTURE XX.                                          DO0030
  10  DAT73C   PICTURE XX.                                          DO0030
  10  DAT74C   PICTURE XX.                                          DO0030
01  DAT8C.                                                          DO0030
  10  DAT81C   PICTURE XX.                                          DO0030
  10  DAT8S1C  PICTURE X    VALUE '/'.                              DO0030
  10  DAT82C   PICTURE XX.                                          DO0030
  10  DAT8S2C  PICTURE X    VALUE '/'.                              DO0030
  10  DAT83C   PICTURE XX.                                          DO0030
  10  DAT84C   PICTURE XX.                                          DO0030
01  DAT8G.                                                          DO0030
  10  DAT81G   PICTURE XX.                                          DO0030
  10  DAT82G   PICTURE XX.                                          DO0030
  10  DAT8S1G  PICTURE X    VALUE '-'.                              DO0030
  10  DAT83G   PICTURE XX.                                          DO0030
  10  DAT8S2G  PICTURE X    VALUE '-'.                              DO0030
  10  DAT84G   PICTURE XX.                                          DO0030
01  TIMCO.                                                          DO0030
 02  TIMCOG.                                                        DO0030
   05  TIMCOH  PICTURE XX.                                         DO0030
   05  TIMCOM  PICTURE XX.                                         DO0030
   05  TIMCOS  PICTURE XX.                                         DO0030
  02 TIMCOC    PICTURE XX.                                         DO0030
01  TIMDAY.                                                         DO0030
   05  TIMHOU  PICTURE XX.                                         DO0030
   05  TIMS1   PICTURE X    VALUE ':'.                             DO0030
   05  TIMMIN  PICTURE XX.                                         DO0030
   05  TIMS2   PICTURE X    VALUE ':'.                             DO0030
   05  TIMSEC  PICTURE XX.                                         DO0030
01    CONFIGURATIONS.                                               DO0030
     05      CD05-CF      PICTURE X.                               DO0030
     05      CD10-CF      PICTURE X.                               DO0030
     05      CD20-CF      PICTURE X.                               DO0030
     05      FO10-CF      PICTURE X.                               DO0030
     05      ME00-CF      PICTURE X.                               DO0030
01     STATUS-AREA.                                                DO0030
     05    1-CD00-STATUS PICTURE XX VALUE ZERO.                    DO0030
     05    1-EM00-STATUS PICTURE XX VALUE ZERO.                    DO0030
     05    1-FO00-STATUS PICTURE XX VALUE ZERO.                    DO0030
     05    1-HE00-STATUS PICTURE XX VALUE ZERO.                    DO0030
     05    1-ME00-STATUS PICTURE XX VALUE ZERO.                    DO0030
     05    SCREEN-STATUS PICTURE XX VALUE ZERO.                    DO0030
01      AT-0030-MESSO.                                             *AA040
    05   FILLER    PICTURE X(9)  VALUE '03034    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '03063    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '05009    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '05052    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '06016    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '06061    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '07018    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '07061    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '10003    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '10007    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '10016    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '10042    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '11003    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '11007    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '11016    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '11042    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '12003    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '12007    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '12016    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '12042    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '13003    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '13007    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '13016    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '13042    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '14003    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '14007    '.               *AA040
    05   FILLER    PICTURE X(9)  VALUE '14016    '.               *AA040
```

```
      05   FILLER    PICTURE X(9)  VALUE '14042    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '15003    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '15007    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '15016    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '15042    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '16003    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '16007    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '16016    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '16042    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '17003    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '17007    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '17016    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '17042    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '18003    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '18007    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '18016    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '18042    '.             *AA040
      05   FILLER    PICTURE X(9)  VALUE '20022    '.             *AA040
  01      AT-0030-MESSA    REDEFINES  AT-0030-MESSO.              *AA040
       05 AT-0030-LINE   OCCURS  045.                             *AA040
       10 AT-0030-POSL   PICTURE 99.                             *AA040
       10 AT-0030-POSC   PICTURE 999.                            *AA040
       10 AT-0030-INDIX.                                         *AA040
       15 AT-0030-INDI   PICTURE 99.                             *AA040
       10 AT-0030-INDIC.                                         *AA040
       15 AT-0030-INDIR  PICTURE 99.                             *AA040
```

4.4. SCREEN DESCRIPTION

SCREEN DESCRIPTION

The fields of the screen are generated according to the following rules (scrn: last four characaters of the screen code):

I-scrn	Screen on reception.
O-scrn	Screen on display.
I-scrn-MATE	Alphanumeric reception field.
E-scrn-REMIS	Alphanumeric definition of an I-scrn-REMIS field, which is numeric on reception.
F-scrn-QTMAC	Alphanumeric definition of an O-scrn-QTMAC field, which is numeric on display.
X-scrn-MATE	Attributes of the fields.
Y-scrn-MATE	Attributes of the fields.

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

.J-scrn-LINE OCCURS 9 on reception,

.P-scrn-LINE occurs 9 on display,

containing a FILLER.

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.), except if the 'REPET' option is indicated.

GENERATED PROGRAM: DATA DIVISION 4
SCREEN DESCRIPTION 4

```
01          INPUT-SCREEN-FIELDS.                          *AA050
     02     I-0030.                                       *AA050
     05     I-CURPOS.                                     *AA050
     10     CPOSL         PICTURE 9(3).                   *AA050
     10     CPOSC         PICTURE 9(3).                   *AA050
     05     I-0030-MATE   PICTURE X(8).                   *AA050
     05     I-0030-RELEA  PICTURE X(3).                   *AA050
     05     I-0030-RUE    PICTURE X(40).                  *AA050
     05     I-0030-COPOS  PICTURE X(5).                   *AA050
     05     I-0030-VILLE  PICTURE X(20).                  *AA050
     05     I-0030-REFCLI PICTURE X(30).                  *AA050
     05     I-0030-DATE   PICTURE X(6).                   *AA050
     05     I-0030-CORRES PICTURE X(25).                  *AA050
     05     E-0030-REMIS.                                 *AA050
     10     I-0030-REMIS  PICTURE S9(4)V99.               *AA050
     10     FILLER        PICTURE X(2).                   *AA050
     05     J-0030-LINE   OCCURS 9.                       *AA050
     10     FILLER        PICTURE X(45).                  *AA050
     05     I-0030-EDIT   PICTURE X.                      *AA050
01          OUTPUT-SCREEN-FIELDS.                         *AA050
     02     O-0030.                                       *AA050
      05    O-CURPOS.                                     *AA050
      10    O-CPOSL       PICTURE 9(3).                   *AA050
      10    O-CPOSC       PICTURE 9(3).                   *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(45).                  *AA050
     05     O-0030-EDIT   PICTURE X.                      *AA050
     05     O-0030-MESSA  PICTURE X(75).                  *AA050
     05     O-0030-ERMS.                                  *AA050
     10     FILLER OCCURS 1.                              *AA050
     15     O-0030-ERMSG  PICTURE X(72).                  *AA050
01          REPEAT-LINE.                                  *AA050
     02     I-0030-LINE.                                  *AA050
     05     I-0030-CODMVT PICTURE X.                      *AA050
     05     I-0030-FOURNI PICTURE X(3).                   *AA050
     05     E-0030-QTMAC.                                 *AA050
     10     I-0030-QTMAC  PICTURE 99.                     *AA050
     05     I-0030-QTMAL  PICTURE 99.                     *AA050
     05     I-0030-QTMAR  PICTURE 99.                     *AA050
     05     I-0030-INFOR  PICTURE X(35).                  *AA050
     02     O-0030-LINE.                                  *AA050
     05     O-0030-CODMVT PICTURE X.                      *AA050
     05     O-0030-FOURNI PICTURE X(3).                   *AA050
     05     F-0030-QTMAC.                                 *AA050
     10     O-0030-QTMAC  PICTURE Z(01)9.                 *AA050
     05     O-0030-QTMAL  PICTURE 99.                     *AA050
     05     O-0030-QTMAR  PICTURE 99.                     *AA050
     05     O-0030-INFOR  PICTURE X(35).                  *AA050
```

4.5. DESCRIPTION OF VALIDATION AREAS

DESCRIPTION OF VALIDATION AREAS

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

NUMERIC FIELDS OF THE SCREEN

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

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

s = ' ' non-signed Data Element.

'+' signed Data Element.

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

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

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 4.                         *AA200
01   LEAP-YEAR.                                                *AA200
     05 LEAP-FLAG  PICTURE X.                                 *AA200
     05 LEAP-REM   PICTURE 99.                                *AA200
01   USERS-ERROR.                                              *AA200
     05 XEMKY.                                                *AA200
        10 XPROGR   PICTURE X(6).                             *AA200
        10 XERCD    PICTURE X(4).                             *AA200
     05 T-XEMKY     OCCURS       01.                          *AA200
        10 T-XPROGR PICTURE X(6).                             *AA200
        10 T-XERCD  PICTURE X(4).                             *AA200
01    PACBASE-INDEXES COMPUTATIONAL-4.                        *AA200
     05  TALLY      PICTURE S9(4) VALUE ZERO.                 *AA200
     05 K01         PICTURE S9(4).                            *AA200
     05 K02         PICTURE S9(4).                            *AA200
     05 K03         PICTURE S9(4).                            *AA200
     05 K04         PICTURE S9(4).                            *AA200
     05 K50R        PICTURE S9(4) VALUE ZERO.                 *AA200
     05 K50L        PICTURE S9(4) VALUE ZERO.                 *AA200
     05 K50M        PICTURE S9(4)                             *AA200
                    VALUE      +01.                           *AA200
     05 IWP20L      PICTURE S9(4) VALUE  ZERO.                *AA200
     05 IWP20R      PICTURE S9(4) VALUE  ZERO.                *AA200
     05 IWP20M      PICTURE S9(4) VALUE +0009.                *AA200
     05    5-CD00-LTH  PICTURE S9(4) VALUE +0166.             *AA200
     05    5-CD05-LTH  PICTURE S9(4) VALUE +0157.             *AA200
     05    5-CD10-LTH  PICTURE S9(4) VALUE +0139.             *AA200
     05    5-CD20-LTH  PICTURE S9(4) VALUE +0001.             *AA200
     05    5-FO10-LTH  PICTURE S9(4) VALUE +0057.             *AA200
     05    5-ME00-LTH  PICTURE S9(4) VALUE +0082.             *AA200
     05    5-CA00-LTH  PICTURE S9(4) VALUE +0147.             *AA200
     05    5-CD05-LTHV PICTURE S9(4) VALUE +0166.             *AA200
     05    5-CD10-LTHV PICTURE S9(4) VALUE +0148.             *AA200
     05    5-CD20-LTHV PICTURE S9(4) VALUE +0010.             *AA200
     05    5-FO10-LTHV PICTURE S9(4) VALUE +0057.             *AA200
     05    LTH         PICTURE S9(4) VALUE ZERO.              *AA200
     05      5-0030-LENGTH PICTURE S9(4)                      *AA200
                        VALUE      +0853.                     *AA200
01   NUMERIC-VALIDATION-FIELDS.                                *AA200
     05 ZONUM1.                                               *AA200
        10 C1       PICTURE X OCCURS 27.                      *AA200
     05 ZONUM2.                                               *AA200
        10 C2       OCCURS 18.                                *AA200
        15 C29      PICTURE S9.                               *AA200
     05 ZONUM9      REDEFINES ZONUM2 PICTURE 9(18).           *AA200
     05 NUMPIC.                                               *AA200
        10 SIGNE    PICTURE X.                                *AA200
        10 NBCHA    PICTURE 99.                               *AA200
        10 NBCHP    PICTURE 99.                               *AA200
     05 C9          PICTURE S9.                               *AA200
```

```
05 C91         PICTURE X.                              *AA200
05 TPOINT      PICTURE X.                              *AA200
05 ZONUM3.                                             *AA200
   10 C3       PICTURE X OCCURS 18.                    *AA200
05 ZONUM4      REDEFINES ZONUM3 PICTURE 9(18).         *AA200
05 ZONUM5      PICTURE S99   VALUE -10.                *AA200
05 ZONUM6      REDEFINES ZONUM5.                       *AA200
   10 FILLER   PICTURE X.                              *AA200
   10 C4       PICTURE X.                              *AA200
```

4.6. TABLE-OF-ATTRIBUTES AND SEGMENT VARIABLES

TABLE-OF-ATTRIBUTES AND SEGMENT VARIABLES

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

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

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

The coding for each Data Element is formatted as follows:

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

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

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

The table positions correspond to the attributes:

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

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

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

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

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

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

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

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

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

Example:

```
05  CD10-FST   PICTURE X.

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

```
01          TABLE-OF-ATTRIBUTES.
     02     DE-ATT.
     03     DE-ATT1 OCCURS 4.
     05     DE-AT   PICTURE X
                    OCCURS 045.
     02     DE-A    REDEFINES DE-ATT.
     03     DE-ATT2 OCCURS 4.
     04     A-0030-BEGIN.
     05     A-0030-MATE   PICTURE X.
     05     A-0030-RELEA  PICTURE X.
     05     A-0030-RUE    PICTURE X.
     05     A-0030-COPOS  PICTURE X.
     05     A-0030-REFCLI PICTURE X.
     05     A-0030-DATE   PICTURE X.
     05     A-0030-CORRES PICTURE X.
     05     A-0030-REMIS  PICTURE X.
     04     B-0030-LINE   OCCURS 9.
     05     FILLER        PICTURE X(0004).
     04     A-0030-END.
     05     A-0030-EDIT   PICTURE X.
     02     A-0030-LINE    OCCURS 4.
     05     A-0030-CODMVT PICTURE X.
     05     A-0030-FOURNI PICTURE X.
     05     A-0030-QTMAC  PICTURE X.
     05     A-0030-INFOR  PICTURE X.
01      AT-SV.
      10   FILLER  PICTURE 999  VALUE 001.
      10   FILLER  PICTURE 999  VALUE 002.
      10   FILLER  PICTURE 999  VALUE 003.
      10   FILLER  PICTURE 999  VALUE 004.
      10   FILLER  PICTURE 999  VALUE 005.
      10   FILLER  PICTURE 999  VALUE 006.
      10   FILLER  PICTURE 999  VALUE 007.
      10   FILLER  PICTURE 999  VALUE 008.
      10   FILLER  PICTURE 999  VALUE 009.
      10   FILLER  PICTURE 999  VALUE 010.
      10   FILLER  PICTURE 999  VALUE 011.
      10   FILLER  PICTURE 999  VALUE 012.
      10   FILLER  PICTURE 999  VALUE 013.
      10   FILLER  PICTURE 999  VALUE 014.
      10   FILLER  PICTURE 999  VALUE 015.
      10   FILLER  PICTURE 999  VALUE 016.
      10   FILLER  PICTURE 999  VALUE 017.
      10   FILLER  PICTURE 999  VALUE 018.
      10   FILLER  PICTURE 999  VALUE 019.
      10   FILLER  PICTURE 999  VALUE 020.
      10   FILLER  PICTURE 999  VALUE 021.
      10   FILLER  PICTURE 999  VALUE 022.
      10   FILLER  PICTURE 999  VALUE 023.
      10   FILLER  PICTURE 999  VALUE 024.
      10   FILLER  PICTURE 999  VALUE 025.
      10   FILLER  PICTURE 999  VALUE 026.
      10   FILLER  PICTURE 999  VALUE 027.
      10   FILLER  PICTURE 999  VALUE 028.
      10   FILLER  PICTURE 999  VALUE 029.
      10   FILLER  PICTURE 999  VALUE 030.
      10   FILLER  PICTURE 999  VALUE 031.
      10   FILLER  PICTURE 999  VALUE 032.
      10   FILLER  PICTURE 999  VALUE 033.
      10   FILLER  PICTURE 999  VALUE 034.
      10   FILLER  PICTURE 999  VALUE 035.
      10   FILLER  PICTURE 999  VALUE 036.
      10   FILLER  PICTURE 999  VALUE 037.
      10   FILLER  PICTURE 999  VALUE 038.
      10   FILLER  PICTURE 999  VALUE 039.
      10   FILLER  PICTURE 999  VALUE 040.
      10   FILLER  PICTURE 999  VALUE 041.
      10   FILLER  PICTURE 999  VALUE 042.
      10   FILLER  PICTURE 999  VALUE 043.
      10   FILLER  PICTURE 999  VALUE 044.
      10   FILLER  PICTURE 999  VALUE 045.
01      TABLE-SV-AT REDEFINES AT-SV.
     05 SV-AT PICTURE 999 OCCURS 045.
01          STOP-FIELDS.
    02      C-0030.
      05    C-0030-COCARA     PICTURE X.
      05    C-0030-NUCOM      PICTURE 9(5).
```

```
01    FIRST-ON-SEGMENT.
     05      CD10-FST    PICTURE X.
01               WW10-QTMAR
                              PICTURE 99
                 VALUE ZERO.
01                 WP00.
 02                WP10.
  05               FILLER PIC X(25) VALUE
                   '23400BRISBANE           '.
  05               FILLER PIC X(25) VALUE
                   '56400VICTORIA           '.
  05               FILLER PIC X(25) VALUE
                   '76500ALICE SPRINGS      '.
  05               FILLER PIC X(25) VALUE
                   '55300MELBOURNE          '.
  05               FILLER PIC X(25) VALUE
                   '11000CANBERRA           '.
  05               FILLER PIC X(25) VALUE
                   '34500PERTH              '.
  05               FILLER PIC X(25) VALUE
                   '85270DARWIN             '.
  05               FILLER PIC X(25) VALUE
                   '94000HOBART             '.
  05               FILLER PIC X(25) VALUE
                   '89300SYDNEY             '.
 02                WP20 REDEFINES WP10 OCCURS 9.
  05               WP20-COPOS
                              PICTURE X(5).
  05               WP20-VILLE
                              PICTURE X(20).
 02                WP30.
  05               WP30-COPOS
                              PICTURE X(5).
 02                WP40.
  05               WP40-VILLE
                              PICTURE X(20).
  05               WP40-VILLEL
                              PICTURE X(20).
```

4.7. COMMUNICATION 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.

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

5. GENERATED PROGRAM: PROCEDURE DIVISION

5.1. STRUCTURE OF THE PROCEDURE DIVISION

```
F0A       Declaratives
F0101     OPEN files
F0110     INITIALIZATION
-----------------------------------------------------
F05       RECEPTION     (ICF = '1')
F0510     Reception of the screen
F0512     Documentation call procedure
F0520     Determination of operation code
F1010     Positioning of ongoing category     <-------+
F15       Determination of the transaction code       !
F20       Data element validation                     !
F25       Access to segments in reception             !
F30       Transfer of data elements                   !
F35       Update writes                               !
F3999-ITER-FN. GO TO F10.  --------------------------+
F3999-ITER-FT. EXIT.

F4010     Filling in of display keys
F4020     Continuation screen
F4030     End of conversation
F4040     Call of another screen

END-OF-RECEPTION.  (F45-FN)
-----------------------------------------------------
F50       DISPLAY       (OCF = '1')
F5010     Initialization
F5510     Management of the category          <-------+
F60       Access to segments in display               !
F65       Filling in of data elements                 !
F6999-ITER-FN. GO TO F55.  --------------------------+
F6999-ITER-FT. EXIT.

F7010     Error processing
F7020     Setting of attributes

END-OF-DISPLAY.  (F78-FN)
-----------------------------------------------------
F8Z05     MEMORIZATION OF THE SCREEN
F8Z10     MESSAGE DISPLAY
F8Z20     END OF PROGRAM
```

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

F80	Physical access to files
F81ER	Abnormal end of procedure
F81FI	CLOSE files
F81UT	Memorization of errors for display
F8110	Numeric class validation
F8115	Initialization of the variable fields
F8120	Date format validation
F8125	Transfer to display
F8130	Help function procedure
F8135	Transfer to reception
F8150	HELP character search

5.2. F0A : DECLARATIVES

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.

```
PROCEDURE DIVISION USING COMMON-AREA                        *99999
                         COMMUNICATION-MONITOR.             *99999
DECLARATIVES.                                               DO0030
SECCD SECTION.                                              DO0030
      USE AFTER ERROR PROCEDURE ON CD-FILE.                 DO0030
F0ACD.                                                      DO0030
      MOVE 1-CD00-STATUS TO S-WWSS-STATUS                   DO0030
      MOVE 'DOCD00  ' TO S-WWSS-XFILE                       DO0030
      MOVE '1' TO IK.                                       DO0030
F0ACD-FN.    EXIT.                                          DO0030
SECEM SECTION.                                              DO0030
      USE AFTER ERROR PROCEDURE ON EM-FILE.                 DO0030
F0AEM.                                                      DO0030
      MOVE 1-EM00-STATUS TO S-WWSS-STATUS                   DO0030
      MOVE 'DODOLE  ' TO S-WWSS-XFILE                       DO0030
      MOVE '1' TO IK.                                       DO0030
F0AEM-FN.    EXIT.                                          DO0030
SECFO SECTION.                                              DO0030
      USE AFTER ERROR PROCEDURE ON FO-FILE.                 DO0030
F0AFO.                                                      DO0030
      MOVE 1-FO00-STATUS TO S-WWSS-STATUS                   DO0030
      MOVE 'DOFO00  ' TO S-WWSS-XFILE                       DO0030
      MOVE '1' TO IK.                                       DO0030
F0AFO-FN.    EXIT.                                          DO0030
SECHE SECTION.                                              DO0030
      USE AFTER ERROR PROCEDURE ON HE-FILE.                 DO0030
F0AHE.                                                      DO0030
      MOVE 1-HE00-STATUS TO S-WWSS-STATUS.                  DO0030
      MOVE 'SAVESCR ' TO S-WWSS-XFILE                       DO0030
      MOVE '1' TO IK.                                       DO0030
F0AHE-FN.    EXIT.                                          DO0030
SECME SECTION.                                              DO0030
      USE AFTER ERROR PROCEDURE ON ME-FILE.                 DO0030
F0AME.                                                      DO0030
      MOVE 1-ME00-STATUS TO S-WWSS-STATUS                   DO0030
      MOVE 'DOME00  ' TO S-WWSS-XFILE                       DO0030
      MOVE '1' TO IK.                                       DO0030
F0AME-FN.    EXIT.                                          DO0030
SCREEN SECTION.                                             DO0030
      USE AFTER ERROR PROCEDURE ON SCREEN-FILE.             DO0030
F0A98.                                                      DO0030
      MOVE SCREEN-STATUS TO S-WWSS-STATUS                   DO0030
      MOVE 'DO0030  '    TO S-WWSS-XFILE                    DO0030
      MOVE '1' TO IK.                                       DO0030
F0A98-FN.    EXIT.                                          DO0030
END DECLARATIVES.                                           DO0030
MAIN SECTION.                                               DO0030
F0A99-FN.    EXIT.                                          DO0030
F0A-FN.      EXIT.                                          DO0030
```

5.3. F01: INITIALIZATIONS

F01 : INITIALIZATIONS

The INITIALIZATIONS function (F01) is always generated.

It initializes the work areas.

OPEN of the files: This processing is generated in Function F0101 and is executed during the first call of the program.

This function positions the procedure to execute in case of error.

The F0110 function assures the branching to the logical display function after a consultation of documentation (if a documentation call is entered on the screen Definition Screen).

On the dialogue's first screen, the F01 function retrieves the terminal identification number. This number is used as the screen memorization key before branching to the HELP documentation screen when requested.

```
*           ************************************                DO0030
*           *                                  *                DO0030
*           *  INITIALIZATIONS                 *                DO0030
*           *                                  *                DO0030
*           ************************************                DO0030
 F01.         EXIT.                                             DO0030
 F0101.                                                         DO0030
       MOVE 'OPEN    ' TO S-WWSS-XFUNCT MOVE '0' TO IK.         DO0030
       OPEN I-O          CD-FILE.                               DO0030
       IF IK = '1' GO TO F81ER.                                 DO0030
       OPEN INPUT        EM-FILE.                               DO0030
       IF IK = '1' GO TO F81ER.                                 DO0030
       OPEN I-O          FO-FILE.                               DO0030
       IF IK = '1' GO TO F81ER.                                 DO0030
       OPEN I-O          HE-FILE.                               DO0030
       IF IK = '1' GO TO F81ER.                                 DO0030
       OPEN INPUT        ME-FILE.                               DO0030
       IF IK = '1' GO TO F81ER.                                 DO0030
       OPEN I-O          SCREEN-FILE.                           DO0030
       IF IK = '1' GO TO F81ER.                                 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
       IF ICF = ZERO AND OCF = ZERO                             DO0030
       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
       MOVE ALL B'0' TO INDIC-AREA.                             DO0030
 F0110-FN.    EXIT.                                             DO0030
 F0160.                                                         DO0030
       IF ICF = ZERO MOVE 'A' TO OPER                           DO0030
       GO TO F3999-ITER-FT.                                     DO0030
 F0160-FN.    EXIT.                                             DO0030
 F01-FN.      EXIT.                                             DO0030
*             +-----------------------------------+              P000
* LEVEL 10    I INIT. NUMBER OF LOADED ITEMS      I              P000
*             +-----------------------------------+              P000
 F02CP.                                                         P000
     MOVE        IWP20M TO IWP20L.                              P100
 F02CP-FN.    EXIT.                                             P000
```

5.4. F05: RECEPTION AND OPERATION CODE

F05 : RECEPTION AND OPERATION CODE

The 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).

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

Reception of the message: This processing is generated in Function F0510 using the statement: READ screen name RECORD.

The PFkey number in use is positioned in I-PFKEY.

If the initialization character is entered on the screen Definition Screen, it is set to blanks (except when a branch to a documentation screen is executed).

Sub-function F0510 also localizes the cursor position if a HELP function request is entered on the screen Definition Screen.

Sub-function F0510 calls the F8130 function via PERFORM if at least one variable data element is defined.

Sub-function F0512 is generated if a documentation call is entered in the fields that are necessary for branching to the documentation screen.

Sub-function F0520 is generated if a variable data element from the screen, or the PFKEY data element, is defined as an Operation Code in the screen description.

The internal operation code OPER is positioned according to the values of:

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

If an error is found in the value of the Operation Code, the following 'RECEPTION' procedures are not executed.

```
*           ************************************                DO0030
*           *                                  *                DO0030
*           *  RECEPTION                       *                DO0030
*           *                                  *                DO0030
*           ************************************                DO0030
 F05.   IF ICF = ZERO GO TO END-OF-RECEPTION.                    DO0030
 F0510.                                                          DO0030
        MOVE 'READ    ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DO0030
        READ SCREEN-FILE.                                        DO0030
        IF IK = '1' GO TO F81ER.                                 DO0030
        MOVE SCREEN-RECORD TO I-0030.                            DO0030
        PERFORM F8130 THRU F8130-FN.                             DO0030
        MOVE I-XTERM       TO K-S0030-XTERM.                     DO0030
        ACCEPT IO-FEEDBACK FROM SI-O-FEEDBACK FOR SCREEN-FILE.   DO0030
        MOVE LOW-VALUE TO IO-CURPOSC.                            DO0030
        MOVE IO-CPOSL TO IO-CPOSX  MOVE IO-CURPOS TO CPOSL.      DO0030
        MOVE IO-CPOSC TO IO-CPOSX  MOVE IO-CURPOS TO CPOSC.      DO0030
        MOVE 'A' TO OPER  MOVE SPACE TO OPERD.                   DO0030
           IF I-PFKEY NOT = '11'                                 DO0030
                         AND I-PFKEY NOT = '10'                  DO0030
        INSPECT I-0030 REPLACING ALL '-' BY SPACE.               DO0030
 F0510-FN.    EXIT.                                              DO0030
 F0512.     IF    I-PFKEY = '11'  OR  I-PFKEY = '10'            DO0030
            NEXT SENTENCE ELSE GO TO F0512-FN.                   DO0030
        MOVE '2'   TO K-S0030-DOC                                DO0030
        MOVE ZERO  TO K-S0030-CPOSL  K-S0030-LINUM               DO0030
        MOVE PROGE TO K-S0030-PROGE                              DO0030
        MOVE LIBRA TO K-S0030-LIBRA.                             DO0030
           IF    I-PFKEY = '11'                                  DO0030
        MOVE '3'  TO  K-S0030-DOC                                DO0030
        MOVE CPOSL TO K-S0030-CPOSL                              DO0030
        MOVE CPOSC TO K-S0030-LINUM.                             DO0030
        MOVE K-S0030-XTERM  TO HE00-XTERM                        DO0030
        PERFORM F80-HELP-R  THRU F80-FN                          DO0030
        MOVE HE00-SCREEN  TO  O-0030                             DO0030
        PERFORM F8130       THRU F8130-FN                        DO0030
        MOVE  O-0030    TO     HE00-SCREEN                       DO0030
        PERFORM F80-HELP-RW THRU F80-FN                          DO0030
        MOVE PRDOC TO  5-0030-PROGE  K-S0030-PROHE               DO0030
        MOVE 'O' TO OPER  GO TO F4040.                           DO0030
 F0512-FN.    EXIT.                                              DO0030
*           ************************************                DO0030
*           *                                  *                DO0030
*           *  VALIDATION OF OPERATION CODE    *                DO0030
*           *                                  *                DO0030
*           ************************************                DO0030
 F0520.                                                          DO0030
           IF      I-PFKEY      = '01'                           DO0030
            MOVE    'DO0000  '   TO   5-0030-PROGE               DO0030
        MOVE  'O'  TO  OPER       GO TO F40-A.                   DO0030
           IF      I-PFKEY      = '02'                           DO0030
            MOVE    'DO0010  '   TO   5-0030-PROGE               DO0030
        MOVE  'O'  TO  OPER       GO TO F40-A.                   DO0030
           IF      I-PFKEY      = '03'                           DO0030
            MOVE    'DO0020  '   TO   5-0030-PROGE               DO0030
        MOVE  'O'  TO  OPER       GO TO F40-A.                   DO0030
           IF      I-PFKEY      = '04'                           DO0030
            MOVE    'DO0040  '   TO   5-0030-PROGE               DO0030
        MOVE  'O'  TO  OPER       GO TO F40-A.                   DO0030
           IF      I-PFKEY      = '05'                           DO0030
            MOVE    'DO0050  '   TO   5-0030-PROGE               DO0030
        MOVE  'O'  TO  OPER       GO TO F40-A.                   DO0030
           IF      I-PFKEY      = '12'                           DO0030
            MOVE    'DO0070  '   TO   5-0030-PROGE               DO0030
        MOVE  'O'  TO  OPER       GO TO F40-A.                   DO0030
           IF      I-PFKEY      = '94'                           DO0030
        MOVE  'E'  TO  OPER       GO TO F40-A.                   DO0030
           IF      I-PFKEY      = '07'                           DO0030
        MOVE 'M' TO OPER GO TO F0520-900.                        DO0030
           IF      I-PFKEY      = '08'                           DO0030
        MOVE 'S' TO OPER GO TO F0520-900.                        DO0030
 F0520-900.                                                      DO0030
        IF OPER NOT = 'A' AND OPER NOT = 'M' AND OPER NOT = 'O'  DO0030
        GO TO F3999-ITER-FT.                                     DO0030
 F0520-FN.    EXIT.                                              DO0030
 F05-FN.      EXIT.                                              DO0030
*           +------------------------------------+               P000
```

```
* LEVEL 10    I NO UPDATE ==> END OF RECEIVE      I              P000
*            +-----------------------------------+              P000
 F08BB.    IF    OPER NOT = 'M'                                  P000
           NEXT SENTENCE ELSE GO TO     F08BB-FN.                P000
     GO TO F3999-ITER-FT.                                        P100
 F08BB-FN.    EXIT.                                             P000
```

5.5. F10: CATEGORY PROCESSING LOOP

F10 : CATEGORY POSITIONING

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

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

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

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

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

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

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

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

5.6. F15: VALIDATION OF TRANSACTION CODE

F15 : TRANSACTION CODE POSITIONING

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

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

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

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

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

.F15A for the screen-top category,

.F15R for the repetitive category,

.F15Z for the screen-bottom category.

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

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

5.7. F20: DATA ELEMENT VALIDATION

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
```

5.8. F25: SEGMENT ACCESS FOR VALIDATION

F25 : SEGMENT ACCESS FOR VALIDATION

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

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

. F25A for the screen-top category.

. F25R for the repetitive category.

. F25Z for the screen-bottom category.

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

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

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

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

. Error processing, if any.

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

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

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

Other types of reads are not conditioned.

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

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

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

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

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

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

5.9. F30: DATA ELEMENT TRANSFER

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
```

5.10. F35: SEGMENT ACCESS FOR UPDATE

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
```

5.11. F40: END OF RECEPTION

F40: END-OF-RECEPTION PROCESSING

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

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

SET-UP KEYS FOR NEW DISPLAY (F4010)

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

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

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

SET-UP KEYS FOR SCREEN PAGING (F4020)

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

END OF CONVERSATION (F4030)

- Memorized screen is cleared.

- All files are closed.

- Return to the monitor using the statement EXIT PROGRAM.

BRANCHING TO ANOTHER SCREEN (F4040)

- The external name of the next program to be executed is stored.

- All files are closed.

- Return to the monitor using the statement EXIT PROGRAM.

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

5.12. F50: DISPLAY PREPARATION

F50: DISPLAY PREPARATION

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

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

```
*           ************************************                DO0030
*           *                                  *                DO0030
*           *  DISPLAY PREPARATION             *                DO0030
*           *                                  *                DO0030
*           ************************************                DO0030
 F50.      IF OCF = '0' GO TO END-OF-DISPLAY.                   DO0030
 F5010.                                                         DO0030
       MOVE ZERO TO CATX.                                       DO0030
       MOVE ZERO TO CONFIGURATIONS.                             DO0030
       MOVE ALL '1' TO FIRST-ON-SEGMENT.                        DO0030
       IF SCR-ER > '1'  GO TO F6999-ITER-FT.                    DO0030
       MOVE SPACE     TO O-0030.                                DO0030
       PERFORM F8115 THRU F8115-FN.                             DO0030
       MOVE K-R0030-LINE   (1)  TO                              DO0030
            K-R0030-LINE   (2).                                 DO0030
 F5010-FN.    EXIT.                                             DO0030
 F50-FN.      EXIT.                                             DO0030
```

5.13. F55: CATEGORY PROCESSING LOOP

F55: CATEGORY PROCESSING LOOP

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

. '0' Beginning of display.

. ' ' Screen-top category.

. 'R' Repetitive category.

. 'Z' Screen-bottom category.

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

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

For the repetitive category this function includes:

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

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

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

5.14. F60: SEGMENT ACCESS FOR DISPLAY

F60: SEGMENT ACCESS FOR DISPLAY

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

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

. F60A for the screen-top category,

. F60R for the repetitive category,

. F60Z for the screen-bottom category.

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

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

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

- Direct read (F80-ddss-R),

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

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

. Error processing, if necessary.

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

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

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

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

5.15. F65: DATA ELEMENT TRANSFER

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
```

5.16. F70: ERROR PROCESSING

F70 : ERROR PROCESSING

This function is always generated.

Sub-function F7010 contains:

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

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

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

This sub-function positions the cursor on the first erroneous field and sets its indicators to 1.

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

5.17. F8Z: DISPLAY AND END OF PROGRAM

F8Z : DISPLAY AND END OF PROGRAM

The display and end-of-program function is always generated.

Sub-function F8Z05 is generated if a call for HELP documentation is entered on the Screen Definition screen.

It assures that the fields of the screen are memorized in the 'HE' file.

Display of the message:

This processing is generated in Function F8Z10 using the statement: WRITE SCREEN-RECORD FORMAT IS ...

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

End of program (Function F8Z20):

Since there is no option for freeing the resources after the display of the screen in Function F8Z10, the program ends in Function F8Z20 with a return to Function F01.

```
 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 CPOSL          TO O-CPOSL                             DO0030
        MOVE CPOSC          TO O-CPOSC                             DO0030
        MOVE '0' TO K-S0030-DOC      GO TO F8Z05-FN.               DO0030
          IF K-S0030-DOC NOT = ZERO      GO TO F8Z05-FN.           DO0030
        PERFORM F80-HELP-R  THRU F80-FN.                           DO0030
        MOVE K-S0030-XTERM  TO HE00-XTERM                          DO0030
        MOVE  O-0030    TO     HE00-SCREEN.                        DO0030
        IF IK = '1'                                                DO0030
        PERFORM F80-HELP-W  THRU F80-FN  ELSE                      DO0030
        PERFORM F80-HELP-RW THRU F80-FN.                           DO0030
 F8Z05-FN.    EXIT.                                                DO0030
*           ************************************                   DO0030
*           *                                  *                   DO0030
*           *  DISPLAY                         *                   DO0030
*           *                                  *                   DO0030
*           ************************************                   DO0030
 F8Z10.                                                            DO0030
        IF SCR-ER  NOT > '1'                                       DO0030
        AND DE-AT (4, 009) = 'X'                                   DO0030
        PERFORM F7020 THRU F7020-FN.                               DO0030
        MOVE PROGR     TO          K-S0030-PROGR                   DO0030
        MOVE O-0030        TO SCREEN-RECORD                        DO0030
        WRITE SCREEN-RECORD FORMAT IS      5-0030-FORM             DO0030
                            INDICATORS ARE INDIC-TABLE.            DO0030
 F8Z10-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
```

5.18. F80: PHYSICAL SEGMENT ACCESS ROUTINE

F80: PHYSICAL SEGMENT ACCESS ROUTINES

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

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

```
F80-CD10-R   Direct read.

F80-CD10-RU  Direct read with update.

F80-CD10-P   Positioning of a sequential read.

F80-CD10-RN  Sequential read.

F80-CD10-W   Write.

F80-CD10-RW  Rewrite.

F80-CD10-D   Deletion.

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

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

```
F80-HELP-W   Write.

F80-HELP-RW  Rewrite.

F80-HELP-R   Direct read.

F80-HELP-D   Deletion.
```

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

```
*           ************************************                DO0030
*           *                                  *                DO0030
*           *  PHYSICAL SEGMENT ACCESS ROUTINES *                DO0030
*           *                                  *                DO0030
*           ************************************                DO0030
 F80.         EXIT.                                             DO0030
 F80-CD05-R.                                                    DO0030
       MOVE 'READ    ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DO0030
       READ    CD-FILE    INVALID KEY GO TO F80-KO.            DO0030
       IF IK = '1' GO TO F81ER ELSE GO TO F80-OK.              DO0030
 F80-CD05-RU.                                                   DO0030
       MOVE 'READUPD ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DO0030
       READ    CD-FILE    INVALID KEY GO TO F80-KO.            DO0030
       IF IK = '1' GO TO F81ER ELSE GO TO F80-OK.              DO0030
 F80-CD05-RW.                                                   DO0030
       MOVE 'REWRITE ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DO0030
       REWRITE     CD05   INVALID KEY GO TO F80-KO.            DO0030
       IF IK = '1' GO TO F81ER ELSE GO TO F80-OK.              DO0030
 F80-CD05-UN.                                                   DO0030
       MOVE 'UNLOCK  ' TO S-WWSS-XFUNCT.                       DO0030
       GO TO F80-OK.                                           DO0030
 F8001-FN.    EXIT.                                             DO0030
 F80-CD10-R.                                                    DO0030
       MOVE 'READ    ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DO0030
       READ    CD-FILE    INVALID KEY GO TO F80-KO.            DO0030
       IF IK = '1' GO TO F81ER ELSE GO TO F80-OK.              DO0030
 F80-CD10-RU.                                                   DO0030
       MOVE 'READUPD ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DO0030
       READ    CD-FILE    INVALID KEY GO TO F80-KO.            DO0030
       IF IK = '1' GO TO F81ER ELSE GO TO F80-OK.              DO0030
 F80-CD10-P.                                                    DO0030
       MOVE 'START   ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DO0030
       START   CD-FILE    KEY NOT <                            DO0030
             CD00-KEYCD  INVALID KEY GO TO F80-KO.             DO0030
       IF IK = '1' GO TO F81ER.                                DO0030
 F80-CD10-RN.                                                   DO0030
       MOVE 'READNEXT' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DO0030
       READ    CD-FILE    NEXT AT END GO TO F80-KO.            DO0030
       IF IK = '1' GO TO F81ER ELSE GO TO F80-OK.              DO0030
 F80-CD10-W.                                                    DO0030
       MOVE 'WRITE   ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DO0030
       WRITE       CD10   INVALID KEY GO TO F80-KO.            DO0030
       IF IK = '1' GO TO F81ER ELSE GO TO F80-OK.              DO0030
 F80-CD10-RW.                                                   DO0030
       MOVE 'REWRITE ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DO0030
       REWRITE     CD10   INVALID KEY GO TO F80-KO.            DO0030
       IF IK = '1' GO TO F81ER ELSE GO TO F80-OK.              DO0030
 F80-CD10-D.                                                    DO0030
       MOVE 'DELETE  ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DO0030
       DELETE  CD-FILE    INVALID KEY GO TO F80-KO.            DO0030
       IF IK = '1' GO TO F81ER ELSE GO TO F80-OK.              DO0030
 F80-CD10-UN.                                                   DO0030
       MOVE 'UNLOCK  ' TO S-WWSS-XFUNCT.                       DO0030
       GO TO F80-OK.                                           DO0030
 F8002-FN.    EXIT.                                             DO0030
 F80-CD20-RU.                                                   DO0030
       MOVE 'READUPD ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DO0030
       READ    CD-FILE    INVALID KEY GO TO F80-KO.            DO0030
       IF IK = '1' GO TO F81ER ELSE GO TO F80-OK.              DO0030
 F80-CD20-W.                                                    DO0030
       MOVE 'WRITE   ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DO0030
       WRITE       CD20   INVALID KEY GO TO F80-KO.            DO0030
       IF IK = '1' GO TO F81ER ELSE GO TO F80-OK.              DO0030
 F80-CD20-RW.                                                   DO0030
       MOVE 'REWRITE ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DO0030
       REWRITE     CD20   INVALID KEY GO TO F80-KO.            DO0030
       IF IK = '1' GO TO F81ER ELSE GO TO F80-OK.              DO0030
 F80-CD20-UN.                                                   DO0030
       MOVE 'UNLOCK  ' TO S-WWSS-XFUNCT.                       DO0030
       GO TO F80-OK.                                           DO0030
 F8003-FN.    EXIT.                                             DO0030
 F80-FO10-RU.                                                   DO0030
       MOVE 'READUPD ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DO0030
       READ    FO-FILE    INVALID KEY GO TO F80-KO.            DO0030
       IF IK = '1' GO TO F81ER ELSE GO TO F80-OK.              DO0030
 F80-FO10-RW.                                                   DO0030
       MOVE 'REWRITE ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DO0030
```

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

5.19. F81: PERFORMED VALIDATION FUNCTIONS

F81 : PERFORMED VALIDATIONS FUNCTIONS

The PERFORMED VALIDATIONS FUNCTIONS (F81) are always generated.

F81ER contains the abnormal end routine.

F81FI closes the files. It is executed before returning to the monitor when the program ends

F81UT stores the user's errors.

F8110 is generated when there is a numeric field on the screen. It contains the procedures which format the field to be validated in the work area, the numeric class validation, and the positioning of error messages, if required.

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

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

It also contains date formatting and validations.

F8125 is generated if the DYNPRT option is selected.

Allows the backup of the screen variable fields.

F8130 is generated if there is a variable Data Element in the screen. fields received in I-0001 into the O-0001 fields for display and the field to be memorized into the 'HE' file.

F8135 is generated if the DYNPRT option is selected.

Allows the loading of the message received with the protected field which have been backed up before the sending out of the message.

F8150 checks the first character of each input field to detect either of the two documentation Help characters (screen-level or field-level documentation).

```
 F81.        EXIT.                                                DO0030
*            ************************************                 DO0030
*            *                                  *                 DO0030
*            *  ABNORMAL END PROCEDURE          *                 DO0030
*            *                                  *                 DO0030
*            ************************************                 DO0030
 F81ER.                                                           DO0030
       MOVE 'X'    TO S-WWSS-OPER                                 DO0030
       MOVE PROGE  TO S-WWSS-PROGE.                               DO0030
 F81ER-A.  EXIT PROGRAM.                                          DO0030
 F81ER-FN.    EXIT.                                               DO0030
 F81FI.                                                           DO0030
        MOVE 'CLOSE   ' TO S-WWSS-XFUNCT MOVE '0' TO IK.          DO0030
        CLOSE   CD-FILE.                                          DO0030
        IF IK = '1' GO TO F81ER.                                  DO0030
        CLOSE   EM-FILE.                                          DO0030
        IF IK = '1' GO TO F81ER.                                  DO0030
        CLOSE   FO-FILE.                                          DO0030
        IF IK = '1' GO TO F81ER.                                  DO0030
        CLOSE   HE-FILE.                                          DO0030
        IF IK = '1' GO TO F81ER.                                  DO0030
        CLOSE   ME-FILE.                                          DO0030
        IF IK = '1' GO TO F81ER.                                  DO0030
        CLOSE   SCREEN-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
*            ************************************                 DO0030
*            *                                  *                 DO0030
*            *  NUMERIC VALIDATION              *                 DO0030
*            *                                  *                 DO0030
*            ************************************                 DO0030
 F8110.   MOVE ZERO TO TPOINT K01 K02 K03 ZONUM3 ZONUM2           DO0030
                       C9 C91.                                    DO0030
 F8110-1.   IF K01 > 26 OR K02 > 17 GO TO F8110-5.                DO0030
        ADD 1 TO K01.                                             DO0030
        IF C1 (K01) = SPACE OR C1 (K01) = '.' GO TO F8110-1.      DO0030
      IF C1 (K01) NOT = '-' AND C1 (K01) NOT = '+' GO TO F8110-2. DO0030
        IF C9 NOT = ZERO                                          DO0030
        MOVE '5' TO DEL-ER GO TO F8110-FN.                        DO0030
        IF K02 = ZERO MOVE '1' TO C91.                            DO0030
        IF C1 (K01) = '+' MOVE 1 TO C9   GO TO F8110-1.           DO0030
        IF SIGNE = ' ' MOVE '5' TO DEL-ER GO TO F8110-FN.         DO0030
        MOVE -1 TO C9 GO TO F8110-1.                              DO0030
 F8110-2. IF C1 (K01) NOT = ',' GO TO F8110-4.                    DO0030
        IF TPOINT = '1' OR NBCHP = 0                              DO0030
        MOVE '5' TO DEL-ER GO TO F8110-FN.                        DO0030
 F8110-3. IF K02 > NBCHA MOVE '5' TO DEL-ER GO TO F8110-FN.       DO0030
        COMPUTE K04 = 18 - NBCHA + K02 MOVE 1 TO C3 (K04)         DO0030
        DIVIDE ZONUM4 INTO ZONUM9 MOVE NBCHA TO K02               DO0030
        MOVE '1' TO TPOINT GO TO F8110-1.                         DO0030
 F8110-4. IF C1 (K01) NOT NUMERIC MOVE '4' TO DEL-ER              DO0030
        GO TO F8110-FN.                                           DO0030
        IF C9 NOT = ZERO AND C91 = ZERO                           DO0030
        MOVE '5' TO DEL-ER  GO TO F8110-FN.                       DO0030
        IF C1 (K01) = '0' AND K02 = ZERO AND TPOINT = '0'         DO0030
        GO TO F8110-1. ADD 1 TO K02 MOVE C1 (K01) TO C2 (K02).    DO0030
        IF TPOINT = '1' ADD 1 TO K03. IF K03 > NBCHP MOVE '5'     DO0030
        TO DEL-ER GO TO F8110-FN. GO TO F8110-1.                  DO0030
 F8110-5. IF TPOINT = '0' AND K02 > ZERO GO TO F8110-3.           DO0030
        IF SIGNE NOT =  '+' GO TO F8110-FN.                       DO0030
        IF C9 = ZERO MOVE 1 TO C9.                                DO0030
        ADD NBCHA NBCHP GIVING K01 MULTIPLY C9 BY C29 (K01).      DO0030
        IF C29 (K01) = ZERO AND C9 = -1 MOVE C4 TO C2 (K01).      DO0030
 F8110-FN.    EXIT.                                               DO0030
 F8115.                                                           DO0030
        MOVE ALL '-'                                              DO0030
          TO  O-0030-MATE.                                        DO0030
        MOVE ALL '-'                                              DO0030
          TO  O-0030-RELEA.                                       DO0030
```

```
          MOVE ALL '-'                                                  DO0030
            TO  O-0030-RUE.                                             DO0030
          MOVE ALL '-'                                                  DO0030
            TO  O-0030-COPOS.                                           DO0030
          MOVE ALL '-'                                                  DO0030
            TO  O-0030-REFCLI.                                          DO0030
          MOVE '..__..'                                                 DO0030
            TO  O-0030-DATE.                                            DO0030
          MOVE ALL '-'                                                  DO0030
            TO  O-0030-CORRES.                                          DO0030
          MOVE ALL '-'                                                  DO0030
            TO  F-0030-REMIS.                                           DO0030
          MOVE  ZERO  TO  ICATR.                                        DO0030
   F8115-GRP.   ADD 1 TO  ICATR                                         DO0030
          MOVE  P-0030-LINE  (ICATR) TO O-0030-LINE                     DO0030
          MOVE ALL '-'                                                  DO0030
            TO  O-0030-CODMVT.                                          DO0030
          MOVE ALL '-'                                                  DO0030
            TO  O-0030-FOURNI.                                          DO0030
          MOVE ALL '-'                                                  DO0030
            TO  F-0030-QTMAC.                                           DO0030
          MOVE ALL '-'                                                  DO0030
            TO  O-0030-INFOR.                                           DO0030
          MOVE  O-0030-LINE          TO P-0030-LINE  (ICATR).           DO0030
       IF ICATR  < IRR GO TO F8115-GRP.                                 DO0030
          MOVE ALL '-'                                                  DO0030
            TO  O-0030-EDIT.                                            DO0030
   F8115-FN.    EXIT.                                                   DO0030
  *           ************************************                      DO0030
  *           *                                  *                      DO0030
  *           *  VALIDATION AND SETTING OF DATE  *                      DO0030
  *           *                                  *                      DO0030
  *           ************************************                      DO0030
    F8120.       EXIT.                                                  DO0030
    F8120-C. MOVE DAT73C TO DATCTY.                                     DO0030
             MOVE DAT71C TO DAT71.                                      DO0030
             MOVE DAT72C TO DAT72.                                      DO0030
             MOVE DAT74C TO DAT73.                                      DO0030
             MOVE '00111' TO TT-DAT GO TO F8120-T.                      DO0030
    F8120-D. MOVE CENTUR TO DATCTY DAT73C.                              DO0030
             MOVE DAT71 TO DAT71C.                                      DO0030
             MOVE DAT72 TO DAT72C                                       DO0030
             MOVE DAT73 TO DAT74C.                                      DO0030
             MOVE '00111' TO TT-DAT GO TO F8120-T.                      DO0030
    F8120-E. MOVE CENTUR TO DATCTY DAT83C.                              DO0030
             MOVE DAT81 TO DAT81C.                                      DO0030
             MOVE DAT82 TO DAT82C.                                      DO0030
             MOVE DAT83 TO DAT84C  MOVE DATSEP TO DAT8S1C DAT8S2C.      DO0030
             MOVE '01011' TO TT-DAT GO TO F8120-T.                      DO0030
    F8120-G. MOVE DAT81G TO DATCTY.                                     DO0030
             MOVE DAT82G TO DAT61.                                      DO0030
             MOVE DAT83G TO DAT62.                                      DO0030
             MOVE DAT84G TO DAT63.                                      DO0030
             MOVE '10110' TO TT-DAT GO TO F8120-T.                      DO0030
    F8120-I. MOVE CENTUR TO DATCTY DAT61C.                              DO0030
             MOVE DAT61 TO DAT62C.                                      DO0030
             MOVE DAT62 TO DAT63C.                                      DO0030
             MOVE DAT63 TO DAT64C.                                      DO0030
             MOVE '10101' TO TT-DAT GO TO F8120-T.                      DO0030
    F8120-M. MOVE DAT83C TO DATCTY.                                     DO0030
             MOVE DAT81C TO DAT81.                                      DO0030
             MOVE DAT82C TO DAT82.                                      DO0030
             MOVE DAT84C TO DAT83  MOVE DATSEP TO DAT8S1 DAT8S2.        DO0030
             MOVE '01011' TO TT-DAT GO TO F8120-T.                      DO0030
    F8120-S. MOVE DAT61C TO DATCTY.                                     DO0030
             MOVE DAT62C TO DAT61.                                      DO0030
             MOVE DAT63C TO DAT62.                                      DO0030
             MOVE DAT64C TO DAT63.                                      DO0030
             MOVE '10101' TO TT-DAT.                                    DO0030
    F8120-T. IF T-DAT (1) = '1'                                         DO0030
                MOVE DAT61 TO DAT73 DAT74C                              DO0030
                MOVE DAT62 TO DAT72 DAT72C                              DO0030
                MOVE DAT63 TO DAT71 DAT71C                              DO0030
                MOVE DATCTY TO DAT73C.                                  DO0030
             IF T-DAT (2) = '1'                                         DO0030
                MOVE DAT81 TO DAT71 DAT71C                              DO0030
                MOVE DAT82 TO DAT72 DAT72C                              DO0030
```

```
              MOVE DAT83 TO DAT73 DAT74C                          DO0030
              MOVE DATCTY TO  DAT73C.                             DO0030
           IF T-DAT (3) = '1'                                     DO0030
              MOVE DAT71 TO DAT81 DAT81C                          DO0030
              MOVE DAT72 TO DAT82 DAT82C                          DO0030
              MOVE DAT73 TO DAT83 DAT84C                          DO0030
              MOVE DATSEP TO DAT8S1 DAT8S2 DAT8S1C DAT8S2C        DO0030
              MOVE DATCTY TO DAT83C.                              DO0030
           IF T-DAT (4) = '1'                                     DO0030
              MOVE DAT71 TO DAT63 DAT64C                          DO0030
              MOVE DAT72 TO DAT62 DAT63C                          DO0030
              MOVE DAT73 TO DAT61 DAT62C                          DO0030
              MOVE DATCTY TO DAT61C.                              DO0030
           IF T-DAT (5) = '1'                                     DO0030
              MOVE DAT61 TO DAT82G                                DO0030
              MOVE DAT62 TO DAT83G                                DO0030
              MOVE DAT63 TO DAT84G                                DO0030
              MOVE DATSET TO DAT8S1G DAT8S2G                      DO0030
              MOVE DATCTY TO DAT81G.                              DO0030
   F8120-Z.     EXIT.                                             DO0030
   F8120-ER.   MOVE '1'   TO DEL-ER.                              DO0030
           IF DAT6 NOT NUMERIC               GO TO F8120-KO.      DO0030
           IF DATCTY NOT NUMERIC             GO TO F8120-KO.      DO0030
           IF DAT62 > '12' OR DAT62 = '00' OR                     DO0030
              DAT63 > '31' OR DAT63 = '00'    GO TO F8120-KO.     DO0030
           IF DAT63 > '30' AND                                    DO0030
             (DAT62 = '04' OR DAT62 = '06' OR                     DO0030
              DAT62 = '09' OR DAT62 = '11')   GO TO F8120-KO.     DO0030
           IF DAT62 NOT = '02'               GO TO F8120-FN.      DO0030
           IF DAT63 > '29'                   GO TO F8120-KO.      DO0030
           IF   DAT619  = ZERO                                    DO0030
           DIVIDE  DATCTY9    BY 4 GIVING  LEAP-REM               DO0030
           COMPUTE LEAP-REM = DATCTY9 - 4 * LEAP-REM              DO0030
           ELSE DIVIDE DAT619  BY 4 GIVING LEAP-REM               DO0030
           COMPUTE LEAP-REM = DAT619 - 4 * LEAP-REM.              DO0030
           IF DAT63 < '29' OR LEAP-REM = ZERO GO TO F8120-FN.     DO0030
   F8120-KO. MOVE '5' TO DEL-ER.                                  DO0030
   F8120-FN.    EXIT.                                             DO0030
  *           ************************************               DO0030
  *           *                                  *               DO0030
  *           *  HELP SUB-FUNCTION               *               DO0030
  *           *                                  *               DO0030
  *           ************************************               DO0030
   F8130.                                                         DO0030
          MOVE  I-0030-MATE          TO O-0030-MATE.             DO0030
          MOVE  I-0030-RELEA         TO O-0030-RELEA.            DO0030
          MOVE  I-0030-RUE           TO O-0030-RUE.              DO0030
          MOVE  I-0030-COPOS         TO O-0030-COPOS.            DO0030
          MOVE  I-0030-REFCLI        TO O-0030-REFCLI.           DO0030
          MOVE  I-0030-DATE          TO O-0030-DATE.             DO0030
          MOVE  I-0030-CORRES        TO O-0030-CORRES.           DO0030
          MOVE  E-0030-REMIS         TO F-0030-REMIS.            DO0030
          MOVE  ZERO  TO  ICATR.                                 DO0030
   F8130-GRP.   ADD 1 TO  ICATR                                  DO0030
          MOVE  J-0030-LINE  (ICATR) TO I-0030-LINE              DO0030
          MOVE  P-0030-LINE  (ICATR) TO O-0030-LINE              DO0030
          MOVE  I-0030-CODMVT        TO O-0030-CODMVT.           DO0030
          MOVE  I-0030-FOURNI        TO O-0030-FOURNI.           DO0030
          MOVE  E-0030-QTMAC         TO F-0030-QTMAC.            DO0030
          MOVE  I-0030-INFOR         TO O-0030-INFOR.            DO0030
          MOVE  O-0030-LINE          TO P-0030-LINE  (ICATR).    DO0030
       IF ICATR  < IRR GO TO F8130-GRP.                          DO0030
          MOVE  I-0030-EDIT          TO O-0030-EDIT.             DO0030
   F8130-FN.    EXIT.                                           DO0030
   F81-FN.      EXIT.                                           DO0030
```

5.20. F93: USER CALLED FUNCTIONS

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

6. 'HELP' FUNCTION

6.1. PRESENTATION

PRESENTATION

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

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

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

USING THE "HELP" PROGRAM

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

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

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

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

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.

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

User input on a screen is saved, before the "HELP" screen display, by the calling program in a file whose default name is HE (its length is 1,930 and the length of its key is 12); its default external name is SAVESCR, and the default name of its DISPLAY FILE is SCRFILE

The default file code and the default external name may be overridden on the Dialogue General Documentation ('-G') screen ('C2' option, 'G'-type line) as follows:

```
G  05              XX  EXTERNME
   (modification of file code and external name)

G  15              DISPHELP
   (modification of DISPLAY FILE external name)
```

'HELP' FUNCTION 6
PRESENTATION 1

```
--------------------------------------------------------------------------------
!                   IBM SYSTEM 38                              *PDLB.NDOC.A38.1!
! ON-LINE SCREEN DEFINITION.........: DOHELP                                    !
!                                                                              !
! SCREEN NAME.......................: HELP FUNCTION SCREEN                     !
!                                                                              !
! SCREEN SIZE (LINES, COLUMNS) .....:   24       080                           !
! LABEL TYPE, TABS, INITIALIZATION...:   L        01       _                    !
! HELP CHARACTER SCREEN, DATA ELEMENT:   10       11                            !
!                                                                              !
!                                    LABELS   DISPLAY  INPUT  ER.MESS.  ER.FL!
! INTENSITY ATTRIBUTE ..............:   N        N        N        N        N !
! PRESENTATION ATTRIBUTE ...........:   N        N        N        N        N !
! COLOR ATTRIBUTE ..................:   W        W        W        W        W !
!                                                                              !
! TYPE OF COBOL AND MAP TO GENERATE..:   O   0     OS/400                     !
! CONTROL CARD OPTIONS FRONT & BACK..:            (PROGRAM)      $$       (MAP)!
! EXTERNAL NAMES ...................:   DOP050   (PROGRAM)      DOM050   (MAP)!
! TRANSACTION CODE..................:                                          !
!                                                                              !
!                                                                              !
! EXPLICIT KEYWORDS..: DO                                                      !
! SESSION NUMBER.....: 0002        LIBRARY......: ACC    LOCK....:             !
! *** END ***                                                                  !
! O: C1 CH: Odohelp                    ACTION:                                 !
--------------------------------------------------------------------------------
```

'HELP' FUNCTION 6
PRESENTATION 1

```
--------------------------------------------------------------------------------
!                                                                              !
! DOCUMENTATION OF THE SCREEN :   ** ORDERS **     DO0030                      !
!                                                                              !
!        THIS SCREEN ALLOWS TO ENTER AN ORDER FOR DOCUMENTATION                !
!        PLACED BY ANY GIVEN CLIENT.                                           !
!        EACH ACCESSIBLE FIELD OF THIS SCREEN IS DOCUMENTED. IN                !
!        ORDER TO OBTAIN THIS DOCUMENTATION, PLACE THE CURSOR                  !
!        UNDER THE CHOSEN FIELD AND USE THE PROGRAMMABLE FUNC-                 !
!        TION KEY PF11.                                                        !
!        FROM THIS SCREEN, IT IS POSSIBLE TO ACCESS ANY SCREEN                 !
!        TRANSACTION BY USING THE OFFERED CHOICES DISPLAYED AT                 !
!        THE BOTTOM OF THE SCREEN.                                             !
!        THE UPDATE IS VALIDATED BY THE PROGRAMMABLE FUNCTION                  !
!        KEY PF07. IF THE SCREEN IS TOO SMALL, THE USER MAY TURN               !
!        THE PAGE (SCROLLING) WITH THE PF08 KEY.                               !
!                                                                              !
!   F019 UNKNOWN ZIP CODE.                                                     !
!                                                                              !
!   F028 TECHNICAL PROBLEM  CALL E.D.P. DEPT.(CODE 030-CD05 F8)                !
!                                                                              !
!                                                                              !
! CHOICE.............: S     (E: END - T: TOP - S: NEXT)                      !
!                                                                              !
--------------------------------------------------------------------------------
```

'HELP' FUNCTION 6
PRESENTATION 1

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

6.2. GENERATED 'HELP' PROGRAM

```
     IDENTIFICATION DIVISION.
     PROGRAM-ID. DOP050.                                                DOHELP
     AUTHOR.     HELP FUNCTION SCREEN.                                  DOHELP
     DATE-COMPILED. 01/13/92.                                           DOHELP
     ENVIRONMENT DIVISION.                                              DOHELP
     CONFIGURATION SECTION.                                             DOHELP
     SOURCE-COMPUTER. IBM-AS400.                                        DOHELP
     OBJECT-COMPUTER. IBM-AS400.                                        DOHELP
     SPECIAL-NAMES.                                                     DOHELP
          I-O-FEEDBACK IS SI-O-FEEDBACK                                 DOHELP
          DECIMAL-POINT IS COMMA.                                       DOHELP
     INPUT-OUTPUT SECTION.                                              DOHELP
     FILE-CONTROL.                                                      DOHELP
          SELECT    EM-FILE                                           DOHELP
          ASSIGN TO         DISK-DODOLE                               DOHELP
          ORGANIZATION INDEXED                                        DOHELP
          ACCESS IS DYNAMIC                                           DOHELP
          RECORD KEY IS EM00-EMKEY                                    DOHELP
          FILE STATUS 1-EM00-STATUS.                                  DOHELP
          SELECT    SCREEN-FILE                                       DOHELP
          ASSIGN TO  WORKSTATION-SCRFILE-SI                           DOHELP
          ORGANIZATION IS TRANSACTION                                 DOHELP
          ACCESS       IS SEQUENTIAL                                  DOHELP
          FILE STATUS  IS SCREEN-STATUS                               DOHELP
          CONTROL-AREA IS WS-CONTROL.                                 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
     FD           SCREEN-FILE                                           DOHELP
                  LABEL RECORD OMITTED.                                 DOHELP
     01           SCREEN-RECORD.                                        DOHELP
            10          FILLER      PICTURE X(1452).                   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
     01   PACBASE-CONSTANTS.                                           DOHELP
     * OLSD DATES PACE30 : 07/01/92                                     DOHELP
     *            PACE80 : 09/01/92   PAC7SG : 911031                   DOHELP
          05 SESSI  PICTURE X(5) VALUE '0163 '.                         DOHELP
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        05 LIBRA  PICTURE X(3) VALUE 'A38'.                        DOHELP
        05 DATGN  PICTURE X(8) VALUE '01/13/92'.                   DOHELP
        05 PROGR  PICTURE X(6) VALUE 'DOHELP'.                     DOHELP
        05 PROGE  PICTURE X(8) VALUE 'DOP050  '.                   DOHELP
        05 TIMGN  PICTURE X(8) VALUE '17:21:02'.                   DOHELP
        05 USERCO PICTURE X(8) VALUE '        '.                   DOHELP
        05      5-HELP-PROGE  PICTURE X(8).                        DOHELP
    01  WS-CONTROL.                                                DOHELP
        05  I-PFKEY  PICTURE XX.                                   DOHELP
        05  I-XTERM  PICTURE X(10).                                DOHELP
        05  I-FORMAT PICTURE X(10).                                DOHELP
    01  INDIC-AREA.                                                DOHELP
        05  INDIC-TABLE OCCURS 99 PICTURE 1 INDICATOR 1.           DOHELP
    01  5-HELP-FORM  PIC X(8) VALUE 'DOM050  '.                    DOHELP
    01  IO-FEEDBACK.                                               DOHELP
        05  FILLER        PICTURE X(147).                          DOHELP
        05  IO-CURPOSX.                                            DOHELP
        10  IO-CPOSL      PICTURE X.                               DOHELP
        10  IO-CPOSC      PICTURE X.                               DOHELP
    01  IO-CURPOSC.                                                DOHELP
        05  FILLER        PICTURE X.                               DOHELP
        05  IO-CPOSX      PICTURE X.                               DOHELP
    01  IO-CURPOSR REDEFINES IO-CURPOSC.                           DOHELP
        05  IO-CURPOS     PICTURE 9999 COMPUTATIONAL-4.            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  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  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
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   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
     05    SCREEN-STATUS PICTURE XX VALUE ZERO.              DOHELP
01             K-HELP-CLE.                                   *AA010
     03         K-RHELP-LIGNE  OCCURS 1.                     *AA010
     10         K-REM00-EMKEY  PICTURE X(17).                *AA010
01      AT-HELP-MESSO.                                       *AA040
    05   FILLER    PICTURE X(9)  VALUE '23022    '.         *AA040
01      AT-HELP-MESSA    REDEFINES  AT-HELP-MESSO.           *AA040
     05 AT-HELP-LINE   OCCURS  001.                          *AA040
     10 AT-HELP-POSL   PICTURE 99.                           *AA040
     10 AT-HELP-POSC   PICTURE 999.                          *AA040
     10 AT-HELP-INDIX.                                       *AA040
     15 AT-HELP-INDI   PICTURE 99.                           *AA040
     10 AT-HELP-INDIC.                                       *AA040
     15 AT-HELP-INDIR  PICTURE 99.                           *AA040
01          INPUT-SCREEN-FIELDS.                            *AA050
     02     I-HELP.                                         *AA050
     05     I-CURPOS.                                       *AA050
     10     CPOSL         PICTURE 9(3).                     *AA050
     10     CPOSC         PICTURE 9(3).                     *AA050
     05     I-HELP-OPDOC  PICTURE X.                        *AA050
01          OUTPUT-SCREEN-FIELDS.                           *AA050
     02     O-HELP.                                         *AA050
      05    O-CURPOS.                                       *AA050
      10    O-CPOSL       PICTURE 9(3).                     *AA050
      10    O-CPOSC       PICTURE 9(3).                     *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 4.                      *AA200
01   USERS-ERROR.                                           *AA200
     05 XEMKY.                                             *AA200
        10 XPROGR   PICTURE X(6).                           *AA200
        10 XERCD    PICTURE X(4).                           *AA200
     05 T-XEMKY     OCCURS       01.                       *AA200
        10 T-XPROGR PICTURE X(6).                           *AA200
        10 T-XERCD  PICTURE X(4).                           *AA200
01    PACBASE-INDEXES COMPUTATIONAL-4.                      *AA200
     05  TALLY      PICTURE S9(4) VALUE ZERO.               *AA200
     05 K01         PICTURE S9(4).                          *AA200
     05 K02         PICTURE S9(4).                          *AA200
     05 K03         PICTURE S9(4).                          *AA200
     05 K04         PICTURE S9(4).                          *AA200
     05 K50R        PICTURE S9(4) VALUE ZERO.               *AA200
     05 K50L        PICTURE S9(4) VALUE ZERO.               *AA200
     05 K50M        PICTURE S9(4)                           *AA200
                   VALUE       +01.                         *AA200
     05    5-CA00-LTH  PICTURE S9(4) VALUE +0147.           *AA200
     05    5-EM00-LTH  PICTURE S9(4) VALUE +0090.           *AA200
     05    LTH         PICTURE S9(4) VALUE ZERO.            *AA200
     05      5-HELP-LENGTH PICTURE S9(4)                     *AA200
                     VALUE      +0853.                      *AA200
01          TABLE-OF-ATTRIBUTES.                            *AA250
     02     DE-ATT.                                         *AA250
     03     DE-ATT1 OCCURS 4.                               *AA250
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      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 001.                     *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            7-HELP-POSIT.                                   *AA400
   05         7-HELP-POCEC.                                   *AA400
     10       7-HELP-POCEC9  PICTURE 999.                     *AA400
   05         7-HELP-POLEC.                                   *AA400
     10       7-HELP-POLEC9  PICTURE 99.                      *AA400
01              XZ00.                                         *AA400
    10          XZ00-EMKEY   PICTURE X(17).                   *AA400
    10          XZ00-ERLVL   PICTURE X.                       *AA400
    10          XZ00-ERMSG   PICTURE X(66).                   *AA400
    10          FILLER       PICTURE X(6).                    *AA400
LINKAGE SECTION.                                              DOHELP
01   COMMON-AREA.                                             *00000
     02     K-SHELP-PROGR PICTURE X(6).                       *00000
     02           CA00.                                       *00001
       10         CA00-CLECD.                                 *00001
        15        CA00-NUCOM  PICTURE 9(5).                   *00001
       10         CA00-CLECL1.                                *00001
        15        CA00-NUCLIE PICTURE 9(8).                   *00001
       10         CA00-ME00.                                  *00001
        15        CA00-CLEME.                                 *00001
         20       CA00-COPERS PICTURE X(5).                   *00001
         20       CA00-NUMORD PICTURE XX.                     *00001
        15        CA00-MESSA  PICTURE X(75).                  *00001
       10         CA00-PREM   PICTURE X.                      *00001
       10         CA00-LANGU  PICTURE X.                      *00001
       10         CA00-RAISOC PICTURE X(50).                  *00001
     02     K-SHELP-CDOC  PICTURE X.                          *00002
     02     K-SHELP-PROGE PICTURE X(8).                       *00002
     02     K-SHELP-CPOSL PICTURE S9(4) COMPUTATIONAL-4.      *00002
     02     K-SHELP-LIBRA PICTURE XXX.                        *00002
     02     K-SHELP-PROHE PICTURE X(8).                       *00002
     02     K-SHELP-ERCOD.                                    *00002
       05   K-SHELP-ERCOD9 PICTURE 999.                      *00002
     02     K-SHELP-ERTYP PICTURE X.                          *00002
     02     K-SHELP-NULIX.                                    *00002
       05   K-SHELP-LINUM  PICTURE 999.                      *00002
     02     K-SHELP-XTERM PICTURE X(10).                      *00002
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     02      FILLER        PICTURE X(0700).                    *00002
01           COMMUNICATION-MONITOR.                            *00010
     02    S-WWSS.                                             *00010
       10    S-WWSS-OPER   PICTURE X.                          *00010
       10    S-WWSS-PROGE  PICTURE X(8).                       *00010
       10    S-WWSS-XFILE  PICTURE X(8).                       *00010
       10    S-WWSS-XFUNCT PICTURE X(8).                       *00010
       10    S-WWSS-STATUS PICTURE XX.                         *00010
PROCEDURE DIVISION USING COMMON-AREA                           *99999
                         COMMUNICATION-MONITOR.                *99999
DECLARATIVES.                                                  DOHELP
SECEM SECTION.                                                 DOHELP
      USE AFTER ERROR PROCEDURE ON EM-FILE.                    DOHELP
F0AEM.                                                         DOHELP
      MOVE 1-EM00-STATUS TO S-WWSS-STATUS                      DOHELP
      MOVE 'DODOLE  ' TO S-WWSS-XFILE                          DOHELP
      MOVE '1' TO IK.                                          DOHELP
F0AEM-FN.    EXIT.                                             DOHELP
SCREEN SECTION.                                                DOHELP
      USE AFTER ERROR PROCEDURE ON SCREEN-FILE.                DOHELP
F0A98.                                                         DOHELP
      MOVE SCREEN-STATUS TO S-WWSS-STATUS                      DOHELP
      MOVE 'DOM050  '    TO S-WWSS-XFILE                       DOHELP
      MOVE '1' TO IK.                                          DOHELP
F0A98-FN.    EXIT.                                             DOHELP
END DECLARATIVES.                                              DOHELP
MAIN SECTION.                                                  DOHELP
F0A99-FN.    EXIT.                                             DOHELP
F0A-FN.      EXIT.                                             DOHELP
*          ************************************                DOHELP
*          *                                  *                DOHELP
*          *  INITIALIZATIONS                 *                DOHELP
*          *                                  *                DOHELP
*          ************************************                DOHELP
F01.         EXIT.                                             DOHELP
F0101.                                                         DOHELP
       MOVE 'OPEN    ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DOHELP
       OPEN INPUT        EM-FILE.                              DOHELP
       IF IK = '1' GO TO F81ER.                                DOHELP
       OPEN I-O          SCREEN-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
       IF   K-SHELP-PROGR NOT = PROGR                          DOHELP
                     MOVE    ZERO  TO  ICF.                    DOHELP
       IF ICF = ZERO AND OCF = ZERO                            DOHELP
       PERFORM F8115 THRU F8115-FN.                            DOHELP
       MOVE 'X' TO DE-AT (4, 001).                             DOHELP
       MOVE SPACE      TO            O-HELP-ERMSG (01).        DOHELP
       MOVE ALL B'0' TO INDIC-AREA.                            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 SPACE TO K-SHELP-ERCOD                             DOHELP
       IF K-SHELP-CDOC = '2'                                   DOHELP
       MOVE ZERO  TO K-SHELP-LINUM                             DOHELP
       MOVE 'D' TO K-SHELP-CDOC   GO TO F3999-ITER-FT.         DOHELP
       MOVE 'R'  TO K-SHELP-CDOC.                              DOHELP
       MOVE K-SHELP-CPOSL TO 7-HELP-POLEC9                     DOHELP
       MOVE K-SHELP-LINUM TO 7-HELP-POCEC9                     DOHELP
       MOVE ZERO         TO K-SHELP-LINUM.                     DOHELP
       MOVE SPACE          TO EM00-EMKEY                       DOHELP
       MOVE K-SHELP-LIBRA  TO EM00-LIBRA                       DOHELP
       MOVE  'I'           TO EM00-ENTYP                       DOHELP
       MOVE K-SHELP-PROGR  TO EM00-PROGR                       DOHELP
       MOVE 7-HELP-POLEC9  TO EM00-ERCOD                       DOHELP
       PERFORM F80-EM00-P THRU F80-FN.                         DOHELP
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         IF IK = '0'                                                DOHELP
           IF  EM00-LIBRA NOT = K-SHELP-LIBRA                       DOHELP
           OR  EM00-ENTYP NOT = 'I'                                 DOHELP
           OR  EM00-PROGR NOT = K-SHELP-PROGR                       DOHELP
         MOVE '1' TO IK.                                            DOHELP
         IF IK = '1'  MOVE 'D' TO K-SHELP-CDOC                      DOHELP
         MOVE SPACE TO EM00-EMKEY  GO TO F3999-ITER-FT.             DOHELP
         IF 7-HELP-POLEC  <  EM00-ERCOD                             DOHELP
         OR (7-HELP-POLEC =  EM00-ERCOD                             DOHELP
         AND 7-HELP-POCEC9 NOT > EM00-LINUM)                        DOHELP
         MOVE EM00-ERMSG TO K-SHELP-ERCOD                           DOHELP
         GO TO F3999-ITER-FT.                                       DOHELP
 F0120-A.                                                           DOHELP
         IF IK = '1'  MOVE SPACE TO EM00                            DOHELP
         MOVE 'D' TO K-SHELP-CDOC  GO TO F3999-ITER-FT.             DOHELP
         MOVE EM00  TO XZ00                                         DOHELP
         PERFORM F80-EM00-RN  THRU F80-FN.                          DOHELP
         IF IK = '0'                                                DOHELP
           IF  EM00-LIBRA NOT = K-SHELP-LIBRA                       DOHELP
           OR  EM00-ENTYP NOT = 'I'                                 DOHELP
           OR  EM00-PROGR NOT = K-SHELP-PROGR                       DOHELP
         MOVE '1' TO IK.                                            DOHELP
         IF IK = '1'                                                DOHELP
         OR 7-HELP-POLEC  < EM00-ERCOD                              DOHELP
         OR 7-HELP-POCEC9 < EM00-LINUM                              DOHELP
         MOVE XZ00-ERMSG TO K-SHELP-ERCOD                           DOHELP
         MOVE SPACE      TO EM00      GO TO F3999-ITER-FT.          DOHELP
         IF 7-HELP-POLEC  = EM00-ERCOD                              DOHELP
         AND 7-HELP-POCEC9 = EM00-LINUM                             DOHELP
         MOVE EM00-ERMSG TO K-SHELP-ERCOD                           DOHELP
         MOVE SPACE TO EM00           GO TO F3999-ITER-FT.          DOHELP
 F0120-B.   GO TO F0120-A.                                          DOHELP
 F0120-FN.    EXIT.                                                 DOHELP
 F01-FN.      EXIT.                                                 DOHELP
*           ************************************                   DOHELP
*           *                                  *                   DOHELP
*           *  RECEPTION                       *                   DOHELP
*           *                                  *                   DOHELP
*           ************************************                   DOHELP
 F05.   IF ICF = ZERO GO TO END-OF-RECEPTION.                       DOHELP
 F0510.                                                             DOHELP
         MOVE 'READ    ' TO S-WWSS-XFUNCT MOVE '0' TO IK.         DOHELP
         READ SCREEN-FILE.                                          DOHELP
         IF IK = '1' GO TO F81ER.                                   DOHELP
         MOVE SCREEN-RECORD TO I-HELP.                              DOHELP
         PERFORM F8130 THRU F8130-FN.                               DOHELP
         MOVE I-XTERM       TO K-SHELP-XTERM.                       DOHELP
         ACCEPT IO-FEEDBACK FROM SI-O-FEEDBACK FOR SCREEN-FILE.     DOHELP
         MOVE LOW-VALUE TO IO-CURPOSC.                              DOHELP
         MOVE IO-CPOSL TO IO-CPOSX  MOVE IO-CURPOS TO CPOSL.        DOHELP
         MOVE IO-CPOSC TO IO-CPOSX  MOVE IO-CURPOS TO CPOSC.        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
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*           *  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
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*           *                                   *                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
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          MOVE '1' TO IK.                                                DOHELP
          IF IK = '1' MOVE 'G109' TO XERCD MOVE '1' TO FT                DOHELP
          PERFORM F81UT THRU F81UT-FN      GO TO F6010-FN.               DOHELP
          MOVE '1' TO EM00-CF.                                           DOHELP
          MOVE  EM00-ERCOD  TO K-SHELP-ERCOD                             DOHELP
          MOVE  EM00-ERTYP  TO K-SHELP-ERTYP                             DOHELP
          MOVE  EM00-LINUM  TO K-SHELP-LINUM.                            DOHELP
          IF   EM00-ERCOD  NOT = C-HELP-ERCOD                            DOHELP
          AND  EM00-ERCOD  > '000'                                       DOHELP
          MOVE '1'  TO FT    GO TO F6010-FN.                             DOHELP
          IF   EM00-ERTYP  = SPACE                                       DOHELP
          NEXT SENTENCE ELSE GO TO F6010-FN.                             DOHELP
          IF   EM00-ERCOD  > ZERO                                        DOHELP
          MOVE EM00-ERMSG    TO 7-HELP-ERMS                              DOHELP
          MOVE 7-HELP-ERMSC  TO HELP-LIENT                               DOHELP
          MOVE  'DOCUMENTATION OF DATA ELEMENT '                         DOHELP
                  TO HELP-LIBEC                                          DOHELP
                 ELSE                                                    DOHELP
          MOVE  EM00-ERMSG     TO HELP-LIENT                             DOHELP
          MOVE  'DOCUMENTATION OF THE SCREEN   '                         DOHELP
                  TO HELP-LIBEC.                                         DOHELP
          GO TO F6010.                                                   DOHELP
   F6010-FN.    EXIT.                                                    DOHELP
   F60-FN.      EXIT.                                                    DOHELP
  *           ************************************                       DOHELP
  *           *                                  *                       DOHELP
  *           *  DATA ELEMENT TRANSFER           *                       DOHELP
  *           *                                  *                       DOHELP
  *           ************************************                       DOHELP
   F65.         EXIT.                                                    DOHELP
   F6520. IF FT = '1' OR EM00-ERTYP = ' ' GO TO F6520-FN.                DOHELP
          IF ICATR > IRR  GO TO F6520-FN.                                DOHELP
           MOVE SPACE TO 7-HELP-ERMSGD.                                  DOHELP
            IF  EM00-ERTYP = '1'                                         DOHELP
           MOVE   EM00-ERMSG  TO 7-HELP-ERMS                             DOHELP
           MOVE 7-HELP-ERMSG2 TO 7-HELP-SIGNI                            DOHELP
           MOVE 7-HELP-ERMSC  TO 7-HELP-ERMSC1                           DOHELP
           MOVE 7-HELP-ERMSG1 TO 7-HELP-VALRU                            DOHELP
           GO TO F6520-900.                                              DOHELP
           IF  EM00-ERTYP = '0'                                          DOHELP
           MOVE   SPACE       TO 7-HELP-XEMKY                            DOHELP
           MOVE   EM00-ERMSG  TO 7-HELP-LITAC                            DOHELP
           GO TO F6520-900.                                              DOHELP
           MOVE   EM00-ERMSG  TO 7-HELP-LITAC.                           DOHELP
           IF     EM00-LINUM  NOT = ZERO                                 DOHELP
           GO TO F6520-900.                                              DOHELP
           MOVE   EM00-ERCOD  TO 7-HELP-XEMKY                            DOHELP
           MOVE   EM00-ERTYP  TO 7-HELP-ERTYP.                           DOHELP
           MOVE   SPACE       TO O-HELP-ERMSGD.                          DOHELP
           IF  ICATR NOT < IRR ADD 1 TO ICATR  GO TO F55.                DOHELP
           MOVE O-HELP-LIGNE  TO P-HELP-LIGNE (ICATR)                    DOHELP
           ADD 1 TO ICATR                                                DOHELP
           MOVE P-HELP-LIGNE (ICATR) TO O-HELP-LIGNE.                    DOHELP
   F6520-900.                                                            DOHELP
           MOVE 7-HELP-ERMSGD TO O-HELP-ERMSGD.                          DOHELP
   F6520-FN.    EXIT.                                                    DOHELP
   F6530.   IF CATX NOT = 'Z'  GO TO F6530-FN.                           DOHELP
           MOVE  HELP-LIENT  TO O-HELP-LIENT                             DOHELP
           MOVE  HELP-LIBEC  TO O-HELP-LIBEC.                            DOHELP
           MOVE 'CHOICE.............:' TO O-HELP-LICHOI                  DOHELP
           MOVE '(E: END - T: TOP - S: NEXT)   '                         DOHELP
                 TO O-HELP-LIOPT.                                        DOHELP
            IF XERCD NOT = 'G109'                                        DOHELP
           MOVE 'S'  TO O-HELP-OPDOC  GO TO F6530-FN.                    DOHELP
           MOVE 'E'  TO O-HELP-OPDOC.                                    DOHELP
           IF K-SHELP-ERCOD NUMERIC AND K-SHELP-ERCOD > ZERO             DOHELP
           ADD 1 TO K-SHELP-ERCOD9.                                      DOHELP
   F6530-FN.    EXIT.                                                    DOHELP
   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
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*           *                                   *                DOHELP
*           ************************************                 DOHELP
 F7010.     MOVE ZERO TO K01 K02 K04 MOVE 1 TO K03.              DOHELP
        MOVE LIBRA TO EM00-LIBRA MOVE PROGR TO EM00-PROGR        DOHELP
        MOVE ZERO TO EM00-LINUM MOVE 'H' TO EM00-ENTYP.          DOHELP
 F7010-A.   IF K02 = INR AND K03 < IRR MOVE INA TO K02           DOHELP
        ADD 1 TO K03. ADD 1 TO K01 K02.                          DOHELP
        IF DE-ER (K01) > '1' OR < '0' MOVE 'Y' TO DE-AT (4, K01) DOHELP
        MOVE 'N' TO DE-AT (1, K01)                               DOHELP
        MOVE 'N' TO DE-AT (2, K01)                               DOHELP
        MOVE 'W' TO DE-AT (3, K01)                               DOHELP
           IF K04 < IER MOVE DE-ER (K01) TO EM00-ERTYP           DOHELP
        MOVE K02 TO EM00-ERCOD9 MOVE EM00-XEMKY TO EM00-ERMSG    DOHELP
        PERFORM F80-EM00-R THRU F80-FN ADD 1 TO K04               DOHELP
        MOVE  EM00-ERMSG  TO    O-HELP-ERMSG (K04).              DOHELP
        IF K01 < INT      GO TO F7010-A.                         DOHELP
        MOVE ZERO TO K50R.                                       DOHELP
 F7010-B.                                                        DOHELP
         ADD 1 TO K50R IF K50R > K50L OR K04 NOT < IER GO TO     DOHELP
         F7010-FN. MOVE T-XEMKY (K50R) TO EM00-XEMKY EM00-ERMSG  DOHELP
         PERFORM F80-EM00-R THRU F80-FN. ADD 1 TO K04            DOHELP
        MOVE  EM00-ERMSG  TO    O-HELP-ERMSG (K04)               DOHELP
        GO TO F7010-B.                                           DOHELP
 F7010-FN.    EXIT.                                              DOHELP
*           ************************************                 DOHELP
*           *                                   *                DOHELP
*           *  POSITIONING OF ATTRIBUTES        *                DOHELP
*           *                                   *                DOHELP
*           ************************************                 DOHELP
 F7020.                                                          DOHELP
        MOVE ZERO TO TALLY  INSPECT DE-ATT1 (4)                  DOHELP
        TALLYING TALLY FOR CHARACTERS BEFORE 'Y'.                DOHELP
        IF TALLY     NOT <       0001                            DOHELP
        MOVE ZERO TO TALLY  INSPECT DE-ATT1 (4)                  DOHELP
        TALLYING TALLY FOR CHARACTERS BEFORE 'Z'.                DOHELP
        IF TALLY     NOT <       0001                            DOHELP
        MOVE ZERO TO TALLY  INSPECT DE-ATT1 (4)                  DOHELP
        TALLYING TALLY FOR CHARACTERS BEFORE 'X'.                DOHELP
        IF TALLY     NOT <       0001                            DOHELP
        MOVE ZERO TO TALLY.                                      DOHELP
        ADD 1 TO TALLY.                                          DOHELP
        MOVE TALLY    TO K01.                                    DOHELP
        MOVE SV-AT (K01)    TO K02.                              DOHELP
        MOVE AT-HELP-POSL (K02) TO CPOSL O-CPOSL.                DOHELP
        MOVE AT-HELP-POSC (K02) TO CPOSC O-CPOSC.                DOHELP
        MOVE ZERO     TO K01.                                    DOHELP
 F7020-A.                                                        DOHELP
        ADD 1 TO K01. IF K01 > INT GO TO F7020-FN.               DOHELP
        IF DE-AT (1, K01) = SPACE GO TO F7020-A.                 DOHELP
        MOVE SV-AT (K01)    TO K02.                              DOHELP
        IF AT-HELP-INDIX (K02) NOT = SPACE                       DOHELP
        MOVE AT-HELP-INDI (K02) TO K03                           DOHELP
        MOVE B'1'    TO INDIC-TABLE (K03).                       DOHELP
        IF AT-HELP-INDIC (K02) NOT = SPACE                       DOHELP
        MOVE AT-HELP-INDIR (K02) TO K03                          DOHELP
        MOVE B'1' TO INDIC-TABLE (K03).                          DOHELP
        GO TO F7020-A.                                           DOHELP
 F7020-FN.    EXIT.                                              DOHELP
 F7030.                                                          DOHELP
            IF    ER-HELP-OPDOC = '5'                            DOHELP
        MOVE  'INVALID CHOICE' TO O-HELP-ERMSG (1).              DOHELP
        IF  XERCD = 'G109'                                       DOHELP
        MOVE  '*** END ***   ' TO O-HELP-ERMSG (1).              DOHELP
 F7030-FN.    EXIT.                                              DOHELP
 F70-FN.      EXIT.                                              DOHELP
 END-OF-DISPLAY.    EXIT.                                        DOHELP
 F8Z.         EXIT.                                              DOHELP
*           ************************************                 DOHELP
*           *                                   *                DOHELP
*           *  DISPLAY                          *                DOHELP
*           *                                   *                DOHELP
*           ************************************                 DOHELP
 F8Z10.                                                          DOHELP
        IF SCR-ER  NOT > '1'                                     DOHELP
        AND DE-AT (4, 001) = 'X'                                 DOHELP
        PERFORM F7020 THRU F7020-FN.                             DOHELP
        MOVE O-HELP        TO SCREEN-RECORD                      DOHELP
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          WRITE SCREEN-RECORD FORMAT IS      5-HELP-FORM           DOHELP
                              INDICATORS ARE INDIC-TABLE.          DOHELP
    F8Z10-FN.    EXIT.                                            DOHELP
   *           ************************************               DOHELP
   *           *                                  *               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 '0' TO IK.      DOHELP
          READ    EM-FILE    INVALID KEY GO TO F80-KO.          DOHELP
          IF IK = '1' GO TO F81ER ELSE GO TO F80-OK.            DOHELP
    F80-EM00-P.                                                   DOHELP
          MOVE 'START   ' TO S-WWSS-XFUNCT MOVE '0' TO IK.      DOHELP
          START   EM-FILE    KEY NOT <                          DOHELP
                   EM00-EMKEY  INVALID KEY GO TO F80-KO.        DOHELP
          IF IK = '1' GO TO F81ER.                              DOHELP
    F80-EM00-RN.                                                  DOHELP
          MOVE 'READNEXT' TO S-WWSS-XFUNCT MOVE '0' TO IK.      DOHELP
          READ    EM-FILE    NEXT AT END GO TO F80-KO.          DOHELP
          IF IK = '1' GO TO F81ER ELSE GO TO F80-OK.            DOHELP
    F8001-FN.    EXIT.                                            DOHELP
    F80-OK.  MOVE '0' TO IK MOVE PROGR TO XPROGR GO TO F80-FN.    DOHELP
    F80-KO.  MOVE '1' TO IK MOVE PROGR TO XPROGR.                 DOHELP
    F8099-FN.    EXIT.                                            DOHELP
    F80-FN.      EXIT.                                            DOHELP
    F81.         EXIT.                                            DOHELP
   *           ************************************               DOHELP
   *           *                                  *               DOHELP
   *           *  ABNORMAL END PROCEDURE          *               DOHELP
   *           *                                  *               DOHELP
   *           ************************************               DOHELP
    F81ER.                                                        DOHELP
         MOVE 'X'    TO S-WWSS-OPER                               DOHELP
         MOVE PROGE  TO S-WWSS-PROGE.                             DOHELP
    F81ER-A.  EXIT PROGRAM.                                       DOHELP
    F81ER-FN.    EXIT.                                            DOHELP
    F81FI.                                                        DOHELP
          MOVE 'CLOSE   ' TO S-WWSS-XFUNCT MOVE '0' TO IK.        DOHELP
          CLOSE   EM-FILE.                                        DOHELP
          IF IK = '1' GO TO F81ER.                                DOHELP
          CLOSE   SCREEN-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
    F8130.                                                        DOHELP
          MOVE  I-HELP-OPDOC         TO O-HELP-OPDOC.           DOHELP
    F8130-FN.    EXIT.                                            DOHELP
    F81-FN.      EXIT.                                            DOHELP
```

7. SCREEN GENERATED USING SQL 400

7.1. PROGRAM GENERATION

INTRODUCTION

This chapter presents the COBOL lines automatically generated when a screen accesses an SQL 400 relational database.

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

PROGRAM GENERATION

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

. Work Areas (-W),

. Call of Macro-structures (-CP).

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

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

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

SCREEN GENERATED USING SQL 400 7
PROGRAM GENERATION 1

```
--------------------------------------------------------------------------------
!                   IBM SYSTEM 38                            *PDLB.NDOC.A38.1!
! ON-LINE SCREEN CALL OF SEGM.                                                  !
! ..............................................................................!
! A SEGM      :   USE PREC ACCESS KEY     ACCESS     D EXTERNAL LIB. S    : LIB!
! C CODE C LN : G R D SEGM SOURCE         KEY    B O T NAME     SEGM N LV :    !
! . DZ05 R 00 :   X A                     COCARA   4 1 Q4BLOC   DZ05     : *DCC!
! . DZ05 R 02 :                           NUCOD                          : *DCC!
! . DZ05 R 04 :                           FOURNI                         : *DCC!
! . DZ10 R 00 :   X A                     COCARA   4 1 Q4BLOC   DZ10     : *DCC!
! . DZ10 R 02 :                           NUCOM                          : *DCC!
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
!             :                                                          :     !
! *** END ***                                                                   !
! O: C1 CH:                                                                     !
--------------------------------------------------------------------------------
```

7.2. WORKING-STORAGE SECTION

WORKING-STORAGE SECTION

The WORKING-STORAGE section includes:

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

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

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

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

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

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

  The descriptions of the presence validation keys are located between the SQL orders 'BEGIN DECLARE SECTION' and 'END DECLARE SECTION'.
  Those keys are generated separately on line AA351 and redefined in a table format.
  The SQLIND option, input by the user in Dialogue complement, allows for the management of those keys in update and display. The keys are initialized in function F30 and conditioned for transfer in DISPLAY by the column presence (for columns which can be null).

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

```
01               DZ05.                                      DOSQL4
     05          DZ05-COCARA PICTURE X.                     DOSQL4
     05          DZ05-NUCOD  PICTURE S9(3)                  DOSQL4
                      COMPUTATIONAL-4.                      DOSQL4
     05          DZ05-FOURNI PICTURE X(3).                  DOSQL4
     05          DZ05-NUCLIE PICTURE X(8).                  DOSQL4
     05          DZ05-DATE   PICTURE X(10).                 DOSQL4
     05          DZ05-RELEA  PICTURE X(3).                  DOSQL4
     05         VDZ05-REFCLI.                               DOSQL4
       49       LDZ05-REFCLI PICTURE S9(4) COMP-4.         DOSQL4
       49        DZ05-REFCLI PICTURE X(30).                DOSQL4
     05         VDZ05-RUE.                                  DOSQL4
       49       LDZ05-RUE    PICTURE S9(4) COMP-4.         DOSQL4
       49        DZ05-RUE    PICTURE X(40).                DOSQL4
     05          DZ05-COPOS  PICTURE X(5).                  DOSQL4
     05         VDZ05-VILLE.                                DOSQL4
       49       LDZ05-VILLE  PICTURE S9(4) COMP-4.         DOSQL4
       49        DZ05-VILLE  PICTURE X(20).                DOSQL4
     05         VDZ05-CORESP.                               DOSQL4
       49       LDZ05-CORESP PICTURE S9(4) COMP-4.         DOSQL4
       49        DZ05-CORESP PICTURE X(256).               DOSQL4
     05          DZ05-REMISE PICTURE S9(4)V99               DOSQL4
                      COMPUTATIONAL-3.                      DOSQL4
     05         VDZ05-MATE.                                 DOSQL4
       49       LDZ05-MATE   PICTURE S9(4) COMP-4.         DOSQL4
       49        DZ05-MATE   PICTURE X(8).                 DOSQL4
     05          DZ05-PRIX1                                 DOSQL4
                      COMPUTATIONAL-2.                      DOSQL4
     05          DZ05-HEURE  PICTURE X(8).                  DOSQL4
     05          DZ05-PRECIS PICTURE X(26).                 DOSQL4
01               DZ10.                                      DOSQL4
     05          DZ10-COCARA PICTURE X.                     DOSQL4
     05          DZ10-NUCOM  PICTURE X(5).                  DOSQL4
     05          DZ10-FOURNP PICTURE X(3).                  DOSQL4
     05          DZ10-QTMLI  PICTURE S9(2)                  DOSQL4
                      COMPUTATIONAL-4.                      DOSQL4
     05          DZ10-QTMCO  PICTURE S9(2)                  DOSQL4
                      COMPUTATIONAL-4.                      DOSQL4
     05         VDZ10-INFOR.                                DOSQL4
       49       LDZ10-INFOR  PICTURE S9(4) COMP-4.         DOSQL4
       49        DZ10-INFOR  PICTURE X(35).                DOSQL4
       EXEC SQL INCLUDE SQLCA         END-EXEC.           DOSQL4
01             V-DZ05.                                     *AA351
     05        V-DZ05-COCARA  PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ05-NUCOD   PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ05-FOURNI  PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ05-NUCLIE  PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ05-DATE    PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ05-RELEA   PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ05-REFCLI  PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ05-RUE     PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ05-COPOS   PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ05-VILLE   PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ05-CORESP  PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ05-REMISE  PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ05-MATE    PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ05-PRIX1   PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ05-HEURE   PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ05-PRECIS  PICTURE S9(4) COMP-4.        *AA351
01             V-DZ05-R REDEFINES  V-DZ05.                 *AA351
     05        V-DZ05-A PIC S9(4) COMP-4   OCCURS 0016.    *AA351
01             V-DZ10.                                     *AA351
     05        V-DZ10-COCARA  PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ10-NUCOM   PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ10-FOURNP  PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ10-QTMLI   PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ10-QTMCO   PICTURE S9(4) COMP-4.        *AA351
     05        V-DZ10-INFOR   PICTURE S9(4) COMP-4.        *AA351
01             V-DZ10-R REDEFINES  V-DZ10.                 *AA351
     05        V-DZ10-A PIC S9(4) COMP-4   OCCURS 0006.    *AA351
```

7.3. COMMUNICATION AREA

COMMUNICATION AREA

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

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

They are also independently input in the PROCEDURE DIVISION.

```
    LINKAGE SECTION.                                                    DOSQL4
    01   COMMON-AREA.                                                  *00000
         02     K-SSQL4-PROGR PICTURE X(6).                            *00000
         02            CA00.                                           *00001
           10          CA00-CLECD.                                     *00001
            15         CA00-NUCOM  PICTURE X(5).                       *00001
           10          CA00-CLECL1.                                    *00001
            15         CA00-NUCLIE PICTURE X(8).                       *00001
           10          CA00-ME00.                                      *00001
            15         CA00-CLEME.                                     *00001
             20        CA00-COPERS PICTURE X(5).                       *00001
             20        CA00-NUMORD PICTURE XX.                         *00001
            15         CA00-MESSA  PICTURE X(75).                      *00001
           10          CA00-PREM   PICTURE X.                          *00001
           10          CA00-LANGU  PICTURE X.                          *00001
           10          CA00-RAISOC PICTURE X(50).                      *00001
         02     K-SSQL4-DOC   PICTURE X.                               *00002
         02     K-SSQL4-PROGE PICTURE X(8).                            *00002
         02     K-SSQL4-CPOSL PICTURE S9(4) COMPUTATIONAL-4.           *00002
         02     K-SSQL4-LIBRA PICTURE XXX.                             *00002
         02     K-SSQL4-PROHE PICTURE X(8).                            *00002
         02     K-SSQL4-NUERR.                                         *00002
           05   K-SSQL4-NUERR9 PICTURE 999.                           *00002
         02     K-SSQL4-TYERR PICTURE X.                               *00002
         02     K-SSQL4-NULIG PICTURE 999.                             *00002
         02     K-SSQL4-XTERM PICTURE X(10).                           *00002
         02      K-SQL4.                                               *00002
          05        K-RDZ05-COCARA PICTURE X.                         *00002
          05        K-RDZ05-NUCOD  PICTURE S9(3)                      *00002
                           COMPUTATIONAL-4.                           *00002
          05        K-RDZ05-FOURNI PICTURE X(3).                      *00002
          05        K-RDZ10-COCARA PICTURE X.                         *00002
          05        K-RDZ10-NUCOM  PICTURE X(5).                      *00002
         02      FILLER        PICTURE X(0676).                       *00002
```

7.4. PROCEDURE DIVISION

CALLED SQL VALIDATION FUNCTIONS : F0B

PROCESSING OF THE ABNORMAL END

The F0B function processes SQL errors.

```
    F0B.                                                          DOSQL4
           EXEC SQL WHENEVER NOT FOUND GO TO F80-KO END-EXEC.     DOSQL4
           EXEC SQL WHENEVER SQLWARNING CONTINUE    END-EXEC.     DOSQL4
           EXEC SQL WHENEVER SQLERROR  GO TO F81ES  END-EXEC.     DOSQL4
    F0B-FN.      EXIT.                                            DOSQL4
```

DECLARE CURSOR : F0C

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

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

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

```
F0CDZ.                                                          DOSQL4
       EXEC SQL   DECLARE     DISPLAY_DZ05                      DOSQL4
           CURSOR FOR SELECT *                                  DOSQL4
                FROM DODZ05                                     DOSQL4
       WHERE COCARA >  :DZ05-COCARA                             DOSQL4
          OR (COCARA =  :DZ05-COCARA                            DOSQL4
         AND  NUCOD >  :DZ05-NUCOD)                             DOSQL4
          OR (COCARA =  :DZ05-COCARA                            DOSQL4
         AND  NUCOD =  :DZ05-NUCOD                              DOSQL4
         AND  FOURNI >= :DZ05-FOURNI)                           DOSQL4
         ORDER BY    COCARA,                                    DOSQL4
                     NUCOD,                                     DOSQL4
                     FOURNI                                     DOSQL4
       END-EXEC.                                                DOSQL4
       EXEC SQL   DECLARE     DISPLAY_DZ10                      DOSQL4
           CURSOR FOR SELECT *                                  DOSQL4
                FROM DODZ10                                     DOSQL4
       WHERE COCARA >  :DZ10-COCARA                             DOSQL4
          OR (COCARA =  :DZ10-COCARA                            DOSQL4
         AND  NUCOM >= :DZ10-NUCOM)                             DOSQL4
         ORDER BY    COCARA,                                    DOSQL4
                     NUCOM                                      DOSQL4
       END-EXEC.                                                DOSQL4
F0CDZ-FN.    EXIT.                                              DOSQL4
```

PHYSICAL ACCESS TO SEGMENTS : F80

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

The presence validation keys are shown with the commands:

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

```
*           ************************************                DOSQL4
*           *                                  *                DOSQL4
*           *   ACCES PHYSIQUES AUX FICHIERS   *                DOSQL4
*           *                                  *                DOSQL4
*           ************************************                DOSQL4
 F80.         EXIT.                                             DOSQL4
 F80-DZ05-R.                                                    DOSQL4
        EXEC SQL SELECT * INTO :DZ05:V-DZ05-A                   DOSQL4
                  FROM DODZ05                                   DOSQL4
       WHERE COCARA =  :DZ05-COCARA                             DOSQL4
         AND NUCOD =  :DZ05-NUCOD                               DOSQL4
         AND FOURNI =  :DZ05-FOURNI                             DOSQL4
        END-EXEC.                                               DOSQL4
        GO TO F80-OK.                                           DOSQL4
 F80-DZ05-RU.                                                   DOSQL4
        EXEC SQL SELECT * INTO :DZ05:V-DZ05-A                   DOSQL4
                  FROM DODZ05                                   DOSQL4
       WHERE COCARA =  :DZ05-COCARA                             DOSQL4
         AND NUCOD =  :DZ05-NUCOD                               DOSQL4
         AND FOURNI =  :DZ05-FOURNI                             DOSQL4
        END-EXEC.                                               DOSQL4
        GO TO F80-OK.                                           DOSQL4
 F80-DZ05-P.                                                    DOSQL4
        EXEC SQL     OPEN      DISPLAY_DZ05                     DOSQL4
        END-EXEC.                                               DOSQL4
 F80-DZ05-RN.                                                   DOSQL4
        EXEC SQL    FETCH      DISPLAY_DZ05                     DOSQL4
                             INTO :DZ05:V-DZ05-A                DOSQL4
        END-EXEC.                                               DOSQL4
        GO TO F80-OK.                                           DOSQL4
 F80-DZ05-W.                                                    DOSQL4
     EXEC SQL INSERT INTO DODZ05                                DOSQL4
           VALUES   (:DZ05:V-DZ05-A)                            DOSQL4
        END-EXEC.                                               DOSQL4
        GO TO F80-OK.                                           DOSQL4
 F80-DZ05-RW.                                                   DOSQL4
        EXEC SQL UPDATE     DODZ05                              DOSQL4
          SET NUCLIE =                                          DOSQL4
               :DZ05-NUCLIE:V-DZ05-NUCLIE,                      DOSQL4
              DATE =                                            DOSQL4
               :DZ05-DATE:V-DZ05-DATE,                          DOSQL4
              RELEA =                                           DOSQL4
               :DZ05-RELEA:V-DZ05-RELEA,                        DOSQL4
              REFERENCECLIENT =                                 DOSQL4
               :VDZ05-REFCLI:V-DZ05-REFCLI,                     DOSQL4
              RUE =                                             DOSQL4
               :VDZ05-RUE:V-DZ05-RUE,                           DOSQL4
              COPOS =                                           DOSQL4
               :DZ05-COPOS:V-DZ05-COPOS,                        DOSQL4
              VILLE =                                           DOSQL4
               :VDZ05-VILLE:V-DZ05-VILLE,                       DOSQL4
              CORESP =                                          DOSQL4
               :VDZ05-CORESP:V-DZ05-CORESP,                     DOSQL4
              REMISE =                                          DOSQL4
               :DZ05-REMISE:V-DZ05-REMISE,                      DOSQL4
              MATERIEL =                                        DOSQL4
               :VDZ05-MATE:V-DZ05-MATE,                         DOSQL4
              PRIX1 =                                           DOSQL4
               :DZ05-PRIX1:V-DZ05-PRIX1,                        DOSQL4
              HEURE =                                           DOSQL4
               :DZ05-HEURE:V-DZ05-HEURE,                        DOSQL4
              PRECIS =                                          DOSQL4
               :DZ05-PRECIS:V-DZ05-PRECIS                       DOSQL4
       WHERE COCARA =  :DZ05-COCARA                             DOSQL4
         AND NUCOD =  :DZ05-NUCOD                               DOSQL4
         AND FOURNI =  :DZ05-FOURNI                             DOSQL4
        END-EXEC.                                               DOSQL4
        GO TO F80-OK.                                           DOSQL4
 F80-DZ05-UN.                                                   DOSQL4
        GO TO F80-OK.                                           DOSQL4
 F80-DZ05-CL.                                                   DOSQL4
        EXEC SQL    CLOSE      DISPLAY_DZ05                     DOSQL4
        END-EXEC.                                               DOSQL4
        GO TO F80-OK.                                           DOSQL4
 F8001-FN.    EXIT.                                             DOSQL4
 F80-DZ10-R.                                                    DOSQL4
        EXEC SQL SELECT * INTO :DZ10:V-DZ10-A                   DOSQL4
```

```
                FROM DODZ10                                        DOSQL4
      WHERE COCARA =  :DZ10-COCARA                                 DOSQL4
        AND NUCOM =  :DZ10-NUCOM                                   DOSQL4
       END-EXEC.                                                   DOSQL4
       GO TO F80-OK.                                               DOSQL4
F80-DZ10-RU.                                                       DOSQL4
       EXEC SQL SELECT * INTO :DZ10:V-DZ10-A                       DOSQL4
                FROM DODZ10                                        DOSQL4
      WHERE COCARA =  :DZ10-COCARA                                 DOSQL4
        AND NUCOM =  :DZ10-NUCOM                                   DOSQL4
       END-EXEC.                                                   DOSQL4
       GO TO F80-OK.                                               DOSQL4
F80-DZ10-P.                                                        DOSQL4
       EXEC SQL     OPEN      DISPLAY_DZ10                        DOSQL4
       END-EXEC.                                                   DOSQL4
F80-DZ10-RN.                                                       DOSQL4
       EXEC SQL    FETCH      DISPLAY_DZ10                        DOSQL4
                         INTO :DZ10:V-DZ10-A                       DOSQL4
       END-EXEC.                                                   DOSQL4
       GO TO F80-OK.                                               DOSQL4
F80-DZ10-W.                                                        DOSQL4
     EXEC SQL INSERT INTO DODZ10                                   DOSQL4
          VALUES   (:DZ10:V-DZ10-A)                                DOSQL4
       END-EXEC.                                                   DOSQL4
       GO TO F80-OK.                                               DOSQL4
F80-DZ10-RW.                                                       DOSQL4
       EXEC SQL UPDATE     DODZ10                                  DOSQL4
         SET FOURNP =                                              DOSQL4
              :DZ10-FOURNP:V-DZ10-FOURNP,                          DOSQL4
             LIVRABLE =                                            DOSQL4
              :DZ10-QTMLI:V-DZ10-QTMLI,                            DOSQL4
             QUANTITE-COMMANDEE =                                  DOSQL4
              :DZ10-QTMCO:V-DZ10-QTMCO,                            DOSQL4
             INFOR =                                               DOSQL4
              :VDZ10-INFOR:V-DZ10-INFOR                            DOSQL4
      WHERE COCARA =  :DZ10-COCARA                                 DOSQL4
        AND NUCOM =  :DZ10-NUCOM                                   DOSQL4
       END-EXEC.                                                   DOSQL4
       GO TO F80-OK.                                               DOSQL4
F80-DZ10-UN.                                                       DOSQL4
       GO TO F80-OK.                                               DOSQL4
F80-DZ10-CL.                                                       DOSQL4
       EXEC SQL    CLOSE      DISPLAY_DZ10                        DOSQL4
       END-EXEC.                                                   DOSQL4
       GO TO F80-OK.                                               DOSQL4
F8002-FN.    EXIT.                                                 DOSQL4
```

8. TABLE OF VARIABLES AND CONSTANTS

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

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

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

CHART OF VALIDATION VARIABLES AND INDICATORS (CONT'D)		
IK	PHYSICAL FILE ACCESS ERROR INDICATOR	
	'0' NO ERROR	
	'1' ERROR	

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