VisualAge Pacbase

PACTABLES

Version 3.5

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Contents

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Chapter 1. General Introduction

Introduction to Pactables

INTRODUCTION

Pactables operates within VisualAge Pacbase.

However, it includes particular features which are directly related to its specific goals.

The purpose of Pactables is to manage tables defined and described by its users. The descriptions and validations of table contents are independent of the Specifications Dictionary. Pactables users can create and/or modify the description and contents of tables as needed.

Pactables operates on:
- Table descriptions,
- Table contents, i.e., data.

This is reflected in the physical organization of Pactables which uses two files:
- Table Description File (length, data element labels, validations, etc.),
- Table Data file.

The Table Description File is closely related to the Specifications Dictionary since all table descriptions are extracted from, and updated at, the Specifications Dictionary level.

Update of this file is the responsibility of the Pactables Manager.

The Table Contents file contains table data.

GENERAL DESCRIPTION

The logical description and documentation of a table is built in the VisualAge Pacbase Specifications Dictionary;

A logical table description is extracted, on request, with an interface utility which selects the elements necessary to build and manage a table; All tables are grouped into a single physical file, common to all systems of an installation and containing historical versions of tables.

Pactables also allows the user to:

- Consult the contents of a table or sub-groups of tables;
- Update the contents of a table (in on-line or batch mode);
- Ensure that descriptions and contents are consistent.

Upon request, Pactables stores historical versions of table descriptions and contents.

```
        +----------------------------+        +-----------+
        !  TABLE DESCRIPTION &       ! ----->! SPECIF.   I
        !  DOCUMENTATION IN THE      !       ! DATABASE  !
        !  SPECIFICATIONS DICTIONARY !       +-----------+
        +----------------------------+          !
                                                !
                                                !
TABLE GENERATION                                !
REQUESTS                                         !
    !                                           !
    !    +----------------------------+         !
    +--->!   BATCH INTERFACE FOR      !<--------+
         !   DESCRIPTION EXTRACTION   ! ------------+
         !                            ! --------+   !
         +----------------------------+         !   !
                       !                        !   !
                       !                        !   !
                       !                        !   !
                       V                        !   V
       +-----------+    +--------------+        !   PRINTED
       ! ERROR     !    ! TABLE        !        !   OUTPUT
       ! MESSAGE   !    ! DESCRIPTION  !        !
       ! FILE      !    ! FILE         !        !
       +-----------+    +--------------+        !
            !                  !                !
            !                  !                !
            V                  V                V
       +-----------------------+        +-----------+
       !                       !        !           !
       !                       !        ! TABLE     !
SCREEN --->!     Pactables     !<------- !  FILE     !
     <--- !                    ! ------->!           !
       !                       !        +-----------+
       !   BATCH/ON-LINE       !
       !     PACTABLES         !        +-----------+
BATCH  !                       !        !           !
INPUT ---->!                   !        ! TABLE     !
       !                       ! ------->! USER      !
       !                       !<------- ! FILE      !
       +-----------------------+        +-----------+
                  !
                  !
                  V
            UPDATE REPORT
            & DOCUMENTATION
```
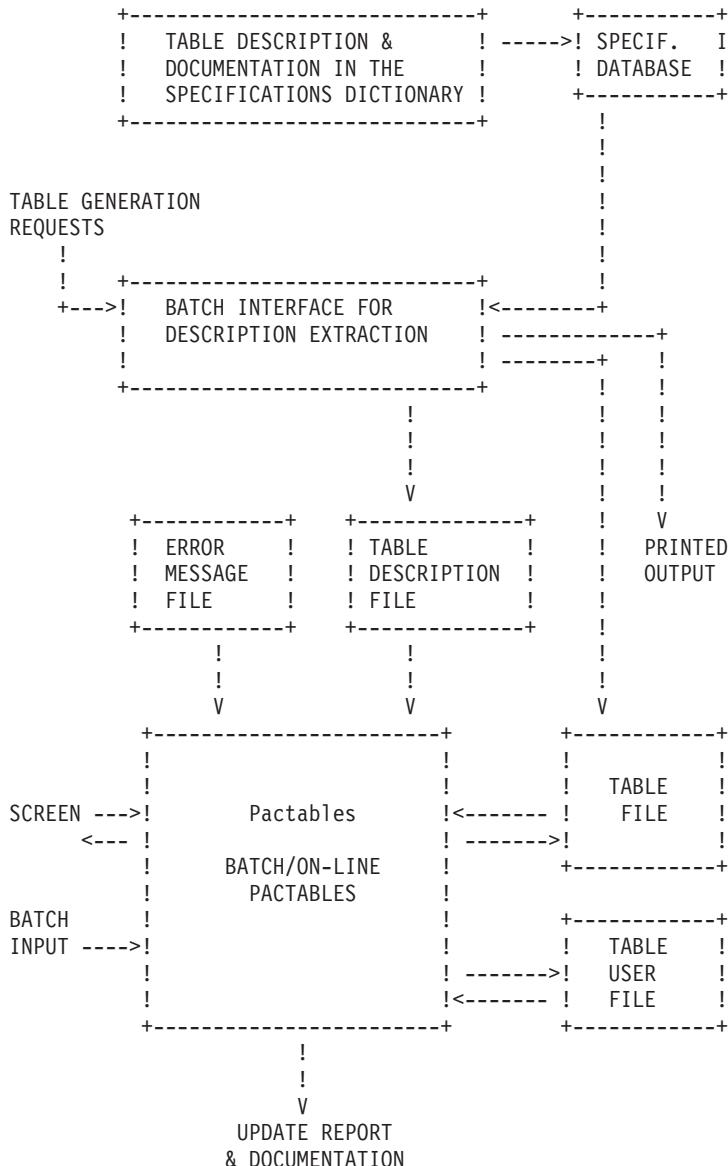
Introduction to Tables

A table is a set of 'n' occurrences of a Segment described in the Specifications Dictionary.

This segment contains a unique Data Element which constitutes the data access key.

Pactables distinguishes between two types of Data Elements used in Segment descriptions: 'information' or 'technological'.

'Information' Data Elements are managed by Pactables in the input, validation, update and consultation procedures. These are the elementary Data Elements of the description. Refer to Chapter "CREATION OF A TABLE", Subchapter "DESCRIPTION OF A TABLE".

Group Data Elements, called 'technological' Data Elements, can be introduced for programming needs and are ignored by Pactables.

The key Data Element can also be defined as a group. The input of the key for update is performed on the elementary Data Elements which compose it.

EXAMPLE OF A TABLE

```
<---------------- SEGMENT ------------------>
<-- KEY --><------------- DATA -------------->
   01     ALABAMA                    OCCURRENCE  1
   02     ARIZONA                    OCCURRENCE  2
   ..     .......                    .......... .
   28     MICHIGAN                   OCCURRENCE 28
   ..     ....... etc.               .......... .
```

Table Sub-groups

Two types of selection allow the user to access sub-sets of a Table.

SUB-SCHEMA

The sub-schema is used to perform a selection from the description Data Element of a Table item.

The use of sub-schemas provides a partial view of the Table data.

If a data element belongs to a sub-schema, this is indicated in the logical description of the table at the Specifications Dictionary level.

SUB-SYSTEM

A sub-system is a selection of Table items.

The user can define several sub-groups/sub-systems within a Table, each one being a different subset of the data.

If a Table item belongs to a sub-system, this is indicated during the update of this item.

EXAMPLE

An illustration of these concepts is presented in the following 'Table of states' example. It includes:
- A telephone sub-schema,
- Two sub-systems, one of 'eastern' states, the other of 'western' states.

The fact that the data elements belong to a sub-schema is indicated on the logical description in the Dictionary:

```
ELEMENT CODE          ELEMENT NAME          SUB-SCHEMA

   CITNO              City number              yes
   STATNA             State name
   AREACO             Area code                yes
   SUBSYS             Sub-system
```

The fact that the table items belong to a sub-system is specified for a table update.

```
    CITY       AREA       CITY          SUB-SYSTEMS
    NUMBER     CODE       NAME          (east-1) (west-2)
    (key)

    007        415        SAN FRANCISCO                  2
    001        212        NEW YORK           1
    031        703        McLEAN             1
    019        517        SEATTLE                        2
```

If the sub-system 'EAST' is selected, the table view would be:

```
    CITY       AREA       CITY          SUB-SYSTEMS
    NUMBER     CODE       NAME          (east-1) (west-2)

    001        212        NEW YORK           1
    031        703        McLEAN             1
```

The view of this table after selection of the 'WEST' sub-system and the 'Area Code' sub-schema would be:

```
    CITY       AREA
    NUMBER     CODE

    007        415
    019        517
```

Principles of Use

Tables can be accessed in several ways:

IN ON-LINE MODE

Three types of operations:

- Lists consultation (tables, historical accounts, etc.),

- Table consultation,

- Table update.

IN BATCH MODE

Six types of operations:

- Table description lists,

- Table generation,

- Table deletion,

- Table updating,

- Table printing,

- Table extraction.

IN USER PROGRAMS

Tables can be accessed by both on-line and batch programs.

Tables with historical accounts can only be consulted (whether sequentially or directly).

However, tables without historical accounts can be updated (without data validation).

Data Protection

Only users registered as Pactables users are authorized to work on Pactables.

Each authorized user is assigned a user code and a password (optional).

A user can modify his/her password on-line. (Refer to subchapter "ON-LINE UPDATING OF PASSWORDS" in chapter "DATABASE MANAGEMENT").

Each user is granted a general authorization for tables as a whole: read-write access, read-only access, or no access at all.

It is possible to restrict or broaden a user's general access authorization to selected tables or sub-schemas and/or sub-systems.

Additionally, a user not granted a general access authorization can still be granted a read-write access on specific tables and a read-only access on some sub-systems and/or sub-schemas.

User code and access authorization batch updating is detailed in chapter "PACTABLES: BATCH PROCEDURES", subchapter "USER PARAMETERS UPDATE".

TABLES ADMINISTRATOR

A pseudo user code ('********') is available for initialization purposes. It is to be used on-line or in batch mode by the Pactables Administrator to:
- Create user codes,
- Grant General and/or Specific Access Authorizations,
- Create and maintain the basic JCL necessary to execute on-line printing jobs (see chapter "PACTABLES ON-LINE USE", subchapter "ON-LINE PRINTING REQUESTS").
- Manage Pactables parameters (Function Keys, Language Option, etc.),
- Reorganize tables.

For further details, refer to chapter "DATABASE MANAGEMENT".

Chapter 2. Table Creation

Table Definition

Refer to the SPECIFICATIONS DICTIONARY Reference Manual for a complete description of the entities. In the subchapters which follow, the user will find a description of the characteristics of a table as they relate to Pactables.

The same is also true for the descriptions of input screens related to Pactables. There are complete descriptions of these screens in the Specifications Dictionary Reference Manual.

TABLE DEFINITION

All tables must be defined and described in the Specifications Dictionary. They make up one or several data structures defined in one or several libraries of the Specifications Database.

The following entities are used to define a table:
- The Data Structure entity, defined by a CODE, a CLEAR NAME, as well as a Table-specific TYPE.
- The Segment entity, defined by a CODE and a CLEAR NAME. This code is used for table access by Pactables.

```
 -----------------------------------------------------------------------
 |                Purchasing Management System            *DOC.PA03.PMS.930 |
 |                                                                        |
 | DATA STRUCTURE DEFINITION      1 TT                                     |
 |                                                                        |
 | NAME..............: 2 TABLE DESCRIPTION                                 |
 |                                                                        |
 | COMPLEMENT.........: 3                                                  |
 |                                                                        |
 | TYPE..............: 4 G TABLES                                          |
 |                                                                        |
 |                                                                        |
 |                                                                        |
 | EXPLICIT KEYWORDS..: 5                                                  |
 |                                                                        |
 |                                                                        |
 |                                                                        |
 |                                                                        |
 |                                                                        |
 | SESSION NUMBER.....: 0093       LIBRARY......: PMS    LOCK....:         |
 | *** END ***                                                            |
 | O: C1 CH: Dtt                          ACTION:                         |
 -----------------------------------------------------------------------
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	2		DATA STRUCTURE CODE (REQUIRED)
			This code is made up of two alphanumeric characters. This is a logical code internal to the Database and therefore independent of the names used in Database Blocks and Programs.
2	30		NAME OF DATA STRUCTURE (REQUIRED IN CREAT)
			This name should be as explicit as possible. Words used here become implicit keywords (subject to limitations specified in the Character-Mode User Interface Guide, chapter 'Search for Instances', subchapter 'Searching by Keywords').
3	44		COMPLEMENT OF DATA STRUCTURE NAME
			With the Batch Systems Development function only:
			Error messages corresponding to validation of a transaction file are coded in at most two programs. Those two program codes are indicated in this field, as follows: Blank in column 1, 'E' in column 2, then one or two program codes.
			Example: Eerrpg1errpg2
			Note: The 'E' is entered in column 36, in batch mode.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			For more information, refer to the Batch Applications Manual, chapter 'Error Messages', subchapter 'Coding of Error Messages'.
4	1		DATA STRUCTURE TYPE
			This code is required when defining a table-type data structure.
		G T	Tables with historical accounts. Tables without historical accounts.
		M	Table with historical account, with century
		N	Table without historical account, with century
5	55		Explicit keywords
			This field allows you to enter additional (explicit) keywords. By default, keywords are generated from the instance's name (implicit keywords).
			Keywords must be separated by at least one space. Keywords have a maximum length of 13 characters which must be alphanumeric. However, '=' and '*' are reserved for special usage and are therefore ignored in keywords.
			Keywords are not case-sensitive: uppercase and lower-case letters are equivalent.
			NOTE: Accented and special characters can be declared as equivalent to an internal value in order to optimize the search of instances by keywords (Administrator workbench, 'Window' menu, 'Parameters browser' choice, in 'Special Characters' tab).
			A maximum of ten explicit keywords can be assigned to one entity. For more details, refer to the 'Character Mode User Interface' guide, chapter 'Search for Instances', subchapter 'Searching by Keywords'.

```
--------------------------------------------------------------------------
|               Purchasing Management System              *DOC.PA03.PMS.930 |
|                           1 2                                             |
| SEGMENT DEFINITION........: TT20                                          |
|                                                                          |
| NAME....................: 3 AREA CODES                                    |
|                                                                          |
| OCCUR. OF SEGMENT IN TABLE: 4 5000                                        |
| EST. NUMBER OF INSTANCES..: 5                                             |
|                                                                          |
|                                                                          |
|                                                                          |
| END USER TABLE ID.........: 6 COMMON                                      |
| CODE OF ACTION CODE ELEM..: 7                                             |
| VALUES OF TRANSACTION CODE: CR:       MO:       DE:                       |
|                            M4:       M5:       M6:                        |
|                                                                          |
|                                                                          |
| EXPLICIT KEYWORDS..: 8                                                    |
|                                                                          |
|                                                                          |
| SESSION NUMBER.....: 0093      LIBRARY......: PMS   LOCK....:             |
|                                                                          |
| O: C1 CH: Stt20                        ACTION:                           |
--------------------------------------------------------------------------
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			DATA STRUCTURE / SEGMENT CODE
1	2		DATA STRUCTURE CODE (REQUIRED)
			This code is made up of two alphanumeric characters. This is a logical code internal to the Database and therefore independent of the names used in Database Blocks and Programs.
2	2		SEGMENT CODE FOR TABLE RECORD (REQUIRED)
			The first character must be numeric, the second either numeric or alphabetic. However, the second character can be alphabetic only if the first character is other than zero.
		00	This value is not allowed for a data structure defined as a table.
		01-99	Designates a specific record; each record corresponds to a table.
3	36		TABLE CLEAR NAME (REQUIRED IN CREAT)
			This name must be as explicit as possible as it allows for the automatic creation of keywords. This name will be the Table clear name for Pactables.
4	4	NUMER.	Occurrences of segment in table

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			PURE NUMERIC FIELD
			BATCH SYSTEMS DEVELOPMENT:
			This is the amount of space reserved for a Segment in memory (USAGE OF DATA STRUCTURE 'T' or 'X', or RECORD TYPE = 3, or 4.
			For tables (USAGE OF DATA STRUCTURE 'T' or 'X'), the default value at generation time is 100.
			Pactables:
			This field is strictly for documentation purposes.
			PACBENCH C/S:
			The value entered in this field indicates the repetitive read or update capacity of the server which calls the Logical View. This capacity is expressed by a maximum number of repetitions. The Logical View can then be used as a repeated structure.
			NOTE: The use of a Logical View in a card layout does not exclude its use in a row layout. It is therefore strongly recommended to systematically fill in this field. Moreover, the entered value must be high enough to limit the exchanges between the client and the server.
5			UNUSED FIELD
			Input in this field is not taken into account by Pactables.
			For a complete description of this field, refer to the SPECIFICATIONS DICTIONARY Reference Manual.
6	6		END USER TABLE ID / TABLE CODE
			This is the code used to access a table via Pactables. Pactables differentiates between lowercase and uppercase input in this field.
7			UNUSED FIELD
			Input in this field is not taken into account by Pactables.
			For a complete description of this field, refer to the SPECIFICATIONS DICTIONARY Reference Manual.
8	55		Explicit keywords
			This field allows you to enter additional (explicit) keywords. By default, keywords are generated from the instance's name (implicit keywords).

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			Keywords must be separated by at least one space. Keywords have a maximum length of 13 characters which must be alphanumeric. However, '=' and '*' are reserved for special usage and are therefore ignored in keywords.
			Keywords are not case-sensitive: uppercase and lower-case letters are equivalent.
			NOTE: Accented and special characters can be declared as equivalent to an internal value in order to optimize the search of instances by keywords (Administrator workbench, 'Window' menu, 'Parameters browser' choice, in 'Special Characters' tab).
			A maximum of ten explicit keywords can be assigned to one entity. For more details, refer to the 'Character Mode User Interface' guide, chapter 'Search for Instances', subchapter 'Searching by Keywords'.

Table Description

A table is described via the Segment Call of Elements (-CE) screen.

The different Data Elements called are:

- The key Data Element,

- The 'information' Data Elements,

- The Data Element specifying the sub-systems,

- The 'technological' Data Elements.

ACCESS KEY DATA ELEMENT

The access key Data Element is used to access a table item, an item being an individual location in the table.

The key is indicated on the Segment Call of Elements (-CE) by the value 'U' in the KEY INDICATOR FOR ACCESS OR SORT field.

The table access key can be defined as a group Data Element. However, the access key is updated via the elementary data elements which make it up.

By default, the access key of a table belongs to all of the sub-schemas defined for the table.

Once a table is generated, it is not possible to modify its structure or the length of the key.

'INFORMATION' DATA ELEMENTS

These Data Elements represent all of the information contained in a table. They correspond to all elementary Data Elements.

For every 'information' Data Element, it is possible to code a certain number of validations. The coding of these validations is explained in subchapter "VALIDATION CODING".

A Data Element specified with an OCCURS is considered a single 'information' data element with the following characteristics:
- Alphanumeric usage,
- The length of this information equals the length of the data element multiplied by the number of occurrences.

The elementary Data Elements in a group must belong to the same sub-schemas.

DATA ELEMENT SPECIFYING THE SUB-SYSTEMS

This 'information' Data Element is used during update to assign a table item to one or more sub-systems.

This Element is indicated on the Segment Call of Elements (-CE) screen with the value 'S' in the KEY INDICATOR FOR ACCESS OR SORT field.

It must have a length equal to at least the number of subsystems defined for the table (for potential assignment of the table item to all the sub-systems).

EXAMPLE:: If there are three sub-systems in a table, the Data Element specifying the sub-systems must be defined with PICTURE X(3).

'TECHNOLOGICAL' DATA ELEMENTS

These Data Elements correspond to group Data Elements; they are only entered in the description of a table for technological purposes (programming, etc.) and are not used by Pactables.

CONSTRAINTS

The Data Elements used in the description of a table must have a USAGE = DISPLAY.

The maximum length allowed for a table is 999 characters, keeping in mind that the length of the data file is variable.

The maximum length allowed for a table key is 20 characters.

The maximum number of Data Elements called in a table is 40.

ASSIGNING A DATA ELEMENT TO A SUB-SCHEMA

If a table contains sub-schemas, it is advisable to specify, for each Data Element, the sub-schema(s) to which it belongs.

Ten sub-schemas are authorized per description; they are numbered 1, 2, ... 9, 0, and correspond to the 10 positions in the VALUE/SUB-FUNCTION CODE (VALUE/SFC) field.

The TYPE: VALIDATION, UPDATE, VALUES and the VALUE/SUB-FUNCTION CODE fields must be used together to assign Data Elements to sub-schemas.

For Data Elements in a group, it is advisable to indicate, at the group level, to which sub-schemas they belong.

```
--------------------------------------------------------------------------
|                   Purchasing Management System              *DOC.PA03.PMS.930 |
|                              1 2                                          |
| SEGMENT CALL OF ELEMENTS TT20 AREA CODES                                 |
|                                                                          |
|                                     12 15  18 21                         |
|                                      13 16  19                           |
| 3 4     5     7         8 9    10 11  14 17  20 22         23             |
| A LIN : ELEM. INT.FORM. U OCC GR K CMD456 CONT VALUE/SFC UPD/TRGET DOC LIBR. |
|   100 : ARECO                 2 U                                   053   |
|   110 : DPTCO                    000                                054   |
|   120 : ARECO                    000                                053   |
|   130 : ARENM                     0        S 0                      053   |
|   140 : TWNSH                     0        S 0                      053   |
|   145 : ZDTAN                              P PGUT02                 053   |
|   150 : TELEP                     0        S  0                     053   |
|   160 : SSYST                 S 0                                   053   |
|       :                                                                  |
|       :                                                                  |
|       :                                                                  |
|       :                                                                  |
|       :                                                                  |
|       :                                                                  |
|       :                                                                  |
|       : NAME    : 6                                                      |
|                                                                          |
| O: C1 CH: Stt20CE                                                        |
--------------------------------------------------------------------------
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			DATA STRUCTURE / SEGMENT CODE
1	2		DATA STRUCTURE CODE (REQUIRED)
			This code is made up of two alphanumeric characters. This is a logical code internal to the Database and therefore independent of the names used in Database Blocks and Programs.
2	2		SEGMENT CODE FOR TABLE RECORD (REQUIRED)
			The first character must be numeric, the second either numeric or alphabetic. However, the second character can be alphabetic only if the first character is other than zero.
		00	This value is not allowed for a data structure defined as a table.
		01-99	Designates a specific record; each record corresponds to a table.
3	1		ACTION CODE
		'C'	Creation of the line
		M	Modification of the line

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		D or 'A'	Deletion of the line
		T	Transfer of the line
		B	Beginning of multiple deletion
		G	Multiple transfer
		?	Request for HELP documentation
		E or '-'	Inhibit implicit update
		X	Implicit update without upper/lowercase processing
4	3		Line number
			Numeric.
			It is advisable to begin with line number '100' and then number in intervals of 20. This facilitates subsequent line insertions, as necessary. Alphanumeric if you generate a customized SQL access.
			It is possible to enter letters in the 'NLG' field in this case. You are allowed to create more than the '1000' limited lines.
5	6		DATA ELEMENT CODE
			ELEMENTARY DATA ELEMENT DEFINED IN THE DICTIONARY ---
			The data element automatically assumes the character- istics defined at the Specifications Dictionary level.
			If the data element is used as a group, its format de- pends on the characteristics of the elementary ele- ments that make up the group.
			If the group is used as a key (sort or access key), the composite format of the elementary elements must be compatible with the format specified for the group.
			RESERVED DATA ELEMENT CODES ---------------------------
			It is forbidden in Pactables to create data elements that are not defined in the Dictionary.
			The Data Element code 'SUITE' is forbidden. It is used by VisualAge Pacbase when generating programs.
			The following data elements are also reserved and can- not be used with Pactables:
			FILLER, ENRP, GRPR, and ERUT.
			For additional information concerning these reserved data element codes, refer to the SPECIFICATIONS DICTIONARY Reference Manual.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			CONTINUATION LINES ------------------
			It is possible to create continuation lines. This may be necessary if there are many validations on a data element. In this case, leave the DATA ELEMENT CODE field blank, and use a LINE NUMBER value that sequen- tially follows that of the line where the data element code was entered. A sub-schema must always be entered on the first line of the data element.
6	18		NAME OF DATA ELEMENT
			It is not required for a Data Element which is not defined in the Data Dictionary.
			However, it is optional for a data aggregate or a FILLER.
			NOTE: For on-line entry of Data Elements that are not declared in the Dictionary, this field cannot be used to input more than one Data Element at a time. There is actually only one available field on this screen, whether for input or for display.
			To define an Element at the Segment level :
			- Enter the Element code (and possibly the format) on the -CE, line nnn,
			- On the 'name' line, repeat the line number (nnn), and indicate the name (18 characters maximum),
			- Use the C2 option to view the name and format.
			NOTE: If several undefined Data Elements have been defined in the Dictionary, only the name of the first Data Element will be displayed if the Choice 'CH:S.....CE' is used.
			To view the name of the Data Element CODEL, on line 130, for example, use the choice 'O: C2 CH: Sssss-CE130'. This will display the Data Elements called in the Segment 'ssss' from the line 130 on.
7	10		Data element internal format
			It is required only in the following cases :
			- For an elementary Data Element not defined in the Dictionary (COBOL format),
			- For a group Data Element that is or belongs to a key; its length must be the sum of the lengths of its elementary Data Elements,
			- For a FILLER-type field.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			It is the internal format; input and output formats will be the same (but with usage Display). It is defined as on a Data Element Definition screen.
8	1		INTERNAL USE
			For Data Elements not defined in the Specifications Dictionary when the INTERNAL FORMAT OF DATA ELEMENT field has been given a value, enter the appropriate USAGE (default : 'D' for DISPLAY).
			For valid values, see the USAGE field on the Data Element Definition Screen.
9	3		OCCURRENCES (COBOL "OCCURS" CLAUSE)
			PURE NUMBERIC FIELD
			This field represents the 'OCCURS' clause at an ele- mentary data element level, or at a group level (Max- imum of 3 levels).
10	2		NO. OF ELEMENTARY ELEMENTS IN GROUP
			PSEUDO NUMERIC FIELD
		'1 to 99'	For group data elements, enter the number of elemen- tary elements that belong to the group.
			Groups may contain up to 99 elementary elements. Group elements may contain embedded groups however the total number of elementary elements cannot exceed 99. (The group data element codes are not counted).
11	1		Access or sort key
			This field identifies all data elements that might be used as control break sort keys, or as access keys to a file, a database or a Pactables table.
			Note: It is highly recommended to dedicate a Segment to only one type of use.
			Each data element that may belong to a sort key must be referenced by a unique alphabetic or numeric character. It is recommended to reference the indicators by a series (1, 2, 3 ...).
			The actual sort sequence will be chosen at the program level (on the Call of Data Structures (-CD) screen) by sequencing the characters in the appropriate order.
			Reminder:
			The format of key group data elements must have been entered in the Dictionary or at the segment level.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			PACTABLES:
		'U'	References the access key for a VisualAge Pacbase table. This value must be indicated on the group data element if it is a group key.
		'S'	Indicates that the data element belongs to at least one sub-system.
			DL1 DBD (See the DL/1 DATABASE DESCRIPTION Reference Manual)
		'U'	References a unique key for an DL/1 database.
		'M'	References a multiple key for an DL/1 database.
		1 to 9	Secondary index
			All other values designate a search field.
			DBD AS400 physical file (See the corresponding DBD Reference Manual)
		0 to 9	AS400 physical file key.
			Relational databases (See the corresponding DBD Reference Manual)
		'V'	Variable length column
		'Blank'	Fixed length column
		'W'	For DB2 SQL, SQL/DS and ORACLE, generation of a variable length column (VARCHAR).
		'L'	For DB2 SQL, SQL/DS and ORACLE, generation of a LONG VARCHAR.
			NOTE: Sort keys are not allowed on data elements redefining other data elements (see VALIDATION and UPDATE FIELDS, below).
			DATA ELEMENT PRESENCE VALIDATION
12	1		CREATION : ELEMENT PRESENCE
		O	Required.
		F	Optional (Default option).
		I	Not allowed.
13	1		MODIFY : ELEMENT PRESENCE
		O	Required.
		F	Optional (Default option).
		I	Not allowed.
14	1		DELETION : ELEMENT PRESENCE

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		O	Required.
		F	Optional (Default option).
		I	Not allowed.
15	1		MOD-4 : ELEMENT PRESENCE
			This field is not used by Pactables.
16	1		MOD-5 : ELEMENT PRESENCE
			This field is not used by Pactables.
17	1		MOD-6 : ELEMENT PRESENCE
			This field is not used by Pactables.
			DATA ELEMENT CONTENTS VALIDATION
18	1		CLASS VALIDATION
			This validation must be indicated on the FIRST line for a data element.
		9	Numeric.
		A	Alphabetic.
		Z	Numeric or consists of spaces, which are replaced with zeros.
		'blank'	No class validation.
19	1		OPERATORS (AND / OR)
		' '	Must not appear on the first line for a data element.
		'E'	AND,
		'O'	OR.
20	1		Negation (NOT)
		'N'	Negation ('NOT' is generated).
		blank	No negation.
21	1		TYPE: VALIDATION, UPDATE, VALUES
			Numeric or alphanumeric literal.
		>	Greater than the value to be validated.
		<	Less than the value to be validated.
		=	Equal to the value to be validated.
		D	Date in DDMMYY format.
		I	Date in YYMMDD format.
		K	Date in DDMMCCYY format.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		L	Date in CCYYMMDD format.
		P	Call of a user's validation sub-program.
		S	This indicates that the data element belongs to one or more sub-schemas. The sub-schemas are entered in the VALUE/SUB-FUNCTION CODE field.
22	10		VALUE/SUB-FUNCTION CODE
			Numeric or alphanumeric literal.
			When a user validation sub-program is called, this field contains its external name.
			It is possible to insert asterisks ('*') into the ex- ternal name of the program. They will be interpreted as 'B's for batch or as 'O's for on-line.
			Example: PRG**1 will be interpreted as PRGBB1 for batch and as PRGOO1 for on-line.
		O	With value 'S' in the TYPE: VALIDATION, UPDATE, VALUES field, this value is entered in the position in this field that corresponds to the sub-schemas to which the element belongs.
			EXAMPLE:
			ELEM. CONT VALUE/SFC
			DELCO S O O
			In this example, the data element 'DELCO' belongs to sub-schemas 1 and 3.
23	10		UNUSED FIELD

Validation Coding

The validations to be performed during a table update are specified on the Segment Call of Elements (-CE) screen. The possible validations are:

- Presence validation during creation, modification, and deletion,
- Class validation (numericity),
- Value validations, limited to two operands on two segment description lines in the form:

```
         Negation Type Value
Relation Negation Type Value
```

- User validations, limited to one per elementary data element.

  User validations are written in sub-programs called by update programs (batch or on-line).

Sub-program calls are indicated by the value 'P' in the TYPE: VALIDATION, UPDATE, VALUES field. The called sub-program is entered in the VALUE/SUB-FUNCTION CODE field.

An example of a validation sub-program is presented in chapter "EXAMPLES OF USER VALIDATIONS".

NOTE:: If an error is detected during on-line updating, the table item is displayed from the Data Element on which the sub-program call was indicated on the Segment Call of Elements (-CE) screen.

Therefore, it is advisable to indicate the user validation sub-program call on the screen's first Data Element.

Definition of Sub-schemas and Sub-systems

The sub-schemas and sub-systems of a table are defined on the Segment Sub-schemas and Sub-systems (-SS) screen.

It is possible to define 10 sub-systems and 10 sub-schemas per table.

The sub-systems are referenced by numbers from 1 to 0 (the value '0' identifies sub-system 10).

The same principle is used for the sub-schemas.

Each sub-schema and sub-system must be given a clear name.

```
------------------------------------------------------------------------
|           Purchasing Management System            *DOC.PA03.PMS.930 |
|         1 2                                                          |
| TABLE  : TT20 AREACO AREA CODES                                     |
| SUB-SCHEMAS AND SUB-SYSTEMS                                         |
|                                                                     |
|   3 4   5                        6                                  |
| A T N : NAME                     ENT.                      LIBR.    |
|   S 1 : AREA GENERAL INFORMATION           SUB-SCHEMA   1   0093    |
|   S 2 : INDICATIVE                         SUB-SCHEMA   2   0093    |
|   Y 1 : COUNTIES                 0500      SUB-SYSTEM   1   0093    |
|   Y 2 : CITIES                   1500      SUB-SYSTEM   2   0093    |
|       :                                                             |
|       :                                                             |
|       :                                                             |
|       :                                                             |
|       :                                                             |
|       :                                                             |
|       :                                                             |
|       :                                                             |
|       :                                                             |
|       :                                                             |
|       :                                                             |
|       :                                                             |
|       :                                                             |
|       :                                                             |
| *** END ***                                                         |
| O: C1 CH: Stt20SS                                                   |
------------------------------------------------------------------------
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	2		DATA STRUCTURE CODE (REQUIRED)
			This code is made up of two alphanumeric characters. This is a logical code internal to the Database and therefore independent of the names used in Database Blocks and Programs.
2	2		SEGMENT CODE FOR TABLE RECORD (REQUIRED)
			The first character must be numeric, the second either numeric or alphabetic. However, the second character can be alphabetic only if the first character is other than zero.
		00	This value is not allowed for a data structure defined as a table.
		01-99	Designates a specific record; each record corresponds to a table.
3	1		Type of Segment definition line (REQUIRED)
		'S'	Sub-schema definition.
		'Y'	Sub-system definition.
4	1	NUMER.	NUMBER OF SUB-SCHEMA OR SUB-SYSTEM (REQUIRED)

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		1 - 0	Sub-schema or sub-system number associated with the clear name indicated on this line. The value '0' corresponds to number 10.
5	30		SUB-SCHEMA/SUB-SYSTEM NAME (REQUIRED IN CREAT)
			Standardized label in Pactables.
6	4	NUMER.	Occurrences of segment in table
			PURE NUMERIC FIELD
			BATCH SYSTEMS DEVELOPMENT:
			This is the amount of space reserved for a Segment in memory (USAGE OF DATA STRUCTURE 'T' or 'X', or RECORD TYPE = 3, or 4.
			For tables (USAGE OF DATA STRUCTURE 'T' or 'X'), the default value at generation time is 100.
			Pactables:
			This field is strictly for documentation purposes.
			PACBENCH C/S:
			The value entered in this field indicates the repetitive read or update capacity of the server which calls the Logical View. This capacity is expressed by a maximum number of repetitions. The Logical View can then be used as a repeated structure.
			NOTE: The use of a Logical View in a card layout does not exclude its use in a row layout. It is therefore strongly recommended to systematically fill in this field. Moreover, the entered value must be high enough to limit the exchanges between the client and the server.

Table Generation

Once a table is described in the Specifications Dictionary, the PACTABLE Manager can create or modify, either globally or partially, table descriptions through the generation of their descriptions.

The request for generation of a table description is executed table by table via generation request lines. These are preceded by a user identification ('*') line, which includes the library where the description of the table to be generated is located.

The Table Generation (GETT) procedure is described in chapter "PACTABLE FUNCTION: BATCH PROCEDURES", subchapter "TABLE GENERATION".

NOTE: The modification of a table key is not allowed; for this reason, any generation request involving the modification of a key will be rejected.

Historical Accounts of Tables

Pactables manages two types of historical accounts:

- Historical accounts of a Table's DESCRIPTION, which allow the Pactables user to manage the data of this table according to descriptions generated on different dates.
- Historical accounts of a Table's CONTENTS, which allow the Pactables user to manage several versions of the same table item.

A. GENERATION OF TABLE DATA HISTORICAL ACCOUNT

Pactables allows for the management of several versions (i.e., historical accounts) of an item's data for a given table description.

In order to create an item historical account, the Pactables user specifies the corresponding date when updating the item.

Updates made without a date will be performed in the most recent historical account.

NOTE:: When generating a table description, the Pactables user can specify a date after which NO item historical account can be created.

If this date is not specified, the date of the next table description historical account will apply.

B. GENERATION OF A HISTORICAL ACCOUNT OF A TABLE DESCRIPTION

1. The generation of a new table description automatically adjusts the data contained in historical account(s) dated AFTER this new table description.

   However, it may be useful to keep the previous version in order to avoid possible data loss (e.g., when an item's length is shortened).

   If the new table description is assigned an expiration date, historical accounts dated AFTER this date will be assigned this expiration date.

2. Data contained in historical account(s) dated BEFORE the new table description will not be adjusted to the new description.

In order to adjust this data, a reorganization must be run. As a result, this data can be managed with the general access module.

A historical account of a table description is managed on the Table Definition screen.

The date is required when generating a table with historical accounts (Table type 'G' or 'M').

Generation is rejected in the following cases:
- If the description already exists at this given date,
- If the date of the new table description precedes the expiration date of the previous table description.

GENERATION OF A TABLE DESCRIPTION WITHOUT A HISTORICAL ACCOUNT

When generating the description of a table without a historical account (Table type 'T' or 'N'), you must enter the DATE field with asterisks. Any other input is ignored by the system.

As each new description is a modification of the current description, table data is automatically adjusted to the new description.

Pactables User Help Documentation

TABLE USER DOCUMENTATION

Pactables users can generate documentation lines related to tables and their Data Elements. This documentation is accessed on-line.

A table is documented via the extraction of the corresponding segment's documentation lines from the S....GC sceen with a ' '-type line and the S....GE screen with the 'T'-type line.

Only ' ' (BLANK) or numeric type lines are extracted.

Also, text description lines ('T'-type lines only) can be extracted in order to document a table.

Table items can also be documented. Documentation lines are extracted from the corresponding data element's description lines ('E......D' screen, blank type lines only).

Documentation lines are extracted during table generation (refer to chapter "BATCH TABLE MANAGEMENT", subchapter "TABLE GENERATION").

ACCESS TO TABLE DOCUMENTATION

In order to access the documentation on a table (or table item) the user positions the cursor on the table number (or on the item field) and presses the assigned PFKey (standard PFKey is PF10). If function keys are not supported by the hardware in use, the user enters '?' on the table number (or item field) and '??' in the ACTION CODE field.

EXITING FROM DOCUMENTATION

In order to return to the documented table or item, the Pactables user enters "FT" in the OPERATION CODE field. This value is automatically displayed when the last documentation page is reached. Blanking out this value calls back the first page.

```
--------------------------------------------------------------------------------
|                                                                              |
|              DOCUMENTATION                           *DOC.PA03.PMS.930        |
| COMMENTS OF SEGMENT TT20  AREA CODES                                         |
|                                                                              |
| A NLG : T COMMENT                                                  LIBR.     |
|   100 : T     CLIINF22                                                        |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|                                                                              |
| *** END ***                                                                  |
| O: C1 CH: Stt20GE                                                            |
|                                                                              |
--------------------------------------------------------------------------------
```

```
 ------------------------------------------------------------------------------
|                                                                              |
|             DOCUMENTATION                            *DOC.PA03.PMS.930        |
| DOCUMENTATION OF THE DATA ELEMENT AREACO  AREA CODE                           |
|                                                                              |
| A NLG : T S VALEUR    EXTRA DESCRIPTION                                       |
|                                                                              |
|   100 :               IT MUST BE CONTROLED IN RELATION TO THE                 |
|   110 :               CLIENTS TABLE.                                          |
|   250 : C             NUMBER/CLIENT     *** COLUMN LABEL ***                  |
|   300 : P             11111                                                   |
|   500 :               NUMBER ATTRIBUTED IN THE CLIENT TABLE                   |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|       :                                                                      |
|                                                                              |
| O: C1 CH: Eareaco D                                                           |
|                                                                              |
 ------------------------------------------------------------------------------
```

Chapter 3. Database Management

Introduction

The xx90 transaction, where xx represents the Pactables transaction root, allows the user to update his/her password on-line and to look up the list of function keys with their assignment, as well as the system parameters (security system and class, language code, date inversion).

Only the Pactables Administrator (user code '********') can update the function keys and the system parameters. By entering his/her user code and password, and pressing the ENTER key, the previously locked fields can be entered.

The Pactables Administrator also updates user codes and passwords, and General and Specific Access Authorizations.

NOTE

On UNIX platform, user parameters are managed by the submission of the on-line PROCTAPA procedure. For information refer to the operations manual.

On-line Updating of Passwords

```
  --------------------------------------------------------------------------
 |                                                                          |
 |                                                                          |
 |             ****          PARAMETERS UPDATING          ****              |
 |                                                                          |
 |           USER'S CODE .................: -------- 1                       |
 |           PASSWORD ....................:2 --------                        |
 |                                                                          |
 |               ****   PARAMETERS AND PF FUNCTION  ****                     |
 |                                                                          |
 |           SECURITY, CLASS, TYPE AND LOCK..: 3 - 4 ---- 5 - 6 -            |
 |           LANGUAGE AND DATE REVERSAL .....: 7 - 8  -                      |
 |           LINES PER PAGE IN DOCUMENTATION.:  9 --                         |
 |           BACK TO 1ST MEMORIZED SCREEN....: PF01 --  10                   |
 |           BACK TO 2ND MEMORIZED SCREEN....: PF02 --  11                   |
 |           BACK TO 3RD MEMORIZED SCREEN....: PF03 --  12                   |
 |           1ST SCREEN MEMORIZATION ........: PF04 --  13                   |
 |           2ND SCREEN MEMORIZATION ........: PF05 --  14                   |
 |           3RD SCREEN MEMORIZATION .....:  : PF06 --  15                   |
 |           JUMP TO PRECEDING SCREEN ....:  : PF07 --  16                   |
 |           VALIDATION ...................:  : PF08 --  17                  |
 |           'HELP' FUNCTION .............:  : PF10 --  18                   |
 |           BACK TO INITIAL SCREEN ......:  : PF11 --  19                   |
 |           CONVERSATION EXIT ...........:  : PF12 --  20                   |
 |                                                                          |
 | O : U1 KEY :                                                             |
  --------------------------------------------------------------------------
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	8		PACTABLES USER CODE (REQUIRED)
			This code allows the user to access tables.
2	8		PACTABLES PASSWORD
			This is the password associated with the user code (alphanumeric, uppercase).
			SECURITY SYSTEM AND CLASS
			Can only be entered by the Pactables manager.
3	1		SECURITY SYSTEM
			The Pactables manager enters the value which identifies the Security System operating on-site.
		R A BLANK	RACF ACF2 No security system.
4	4		SECURITY CLASS
			The Pactables manager enters any four characters that will identify the Pactables Database to the Security System.
5	1		Security System - Resources

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		P BLANK	Definition of resources in VisualAge Pacbase Definition of resources in RACF or TOPSECRET tables
6	1		Security System - User
		BLANK N	Possible to enter another user code/password on the initial screen and on * lines. Not possible to enter another user code/password.
7	1		LANGUAGE CODE
		F E	This field can only be entered by the Pactables Manager French English
8	1		DATE INVERSION
		BLANK I	This field can only be entered by the Pactables Manager Machine date MM/DD/CCYY Inverted date DD/MM/CCYY
9	2	NUMER.	LINES PER PAGE IN DOCUMENTATION
			STRICTLY NUMERIC FIELD.
			Defines the number of lines printed on a page for documenting tables.
		60	Default value.
			FUNCTION KEYS
10	2		RECALL FIRST MEMORIZED SCREEN
			In this field the Pactables manager enters the number corresponding to the function key used to recall the first memorized screen.
11	2		RECALL SECOND MEMORIZED SCREEN
			In this field the Pactables manager enters the number corresponding to the function key used to recall the second memorized screen.
12	2		RECALL THIRD MEMORIZED SCREEN
			In this field the Pactables manager enters the number corresponding to the function key used to recall the third memorized screen.
13	2		MEMORIZATION OF SCREEN 1
			In this field the Pactables manager enters a number corresponding to the function key used for memoriza- tion of screen 1.
14	2		MEMORIZATION OF SCREEN 2

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			In this field the Pactables manager enters a number corresponding to the function key used for memoriza- tion of screen 2.
15	2		MEMORIZATION OF SCREEN 3
			In this field the Pactables manager enters a number corresponding to the function key used for memoriza- tion of screen 3.
16	2		JUMP TO PREVIOUS SCREEN
			In this field the Pactables manager enters the number corresponding to the function key used to recall the previous screen.
17	2		PACTABLE VALIDATION PFKEY
			In this field the Pactables Manager enters a Function Key number. This PFKey will allow for a validation on a consulted or updated mono-item screen without disp- laying the continuation screens if the item's contents exceeds one page.
18	2		HELP FUNCTION
			In this field the Pactables manager enters the number corresponding to the function key used to call user help documentation.
19	2		BACK TO INITIAL SCREEN
			In this field the Pactables manager enters the number corresponding to the function key used to recall the initial screen.
20	2		SIGN-OFF
			In this field the Pactables manager enters the number corresponding to the function key used for transaction exit.

Use of Function Keys

Inputting CHOICEs used frequently with Pactables is facilitated by the use of function keys.

A set of standard function keys is provided at installation time.

The xx90 transaction allows the user to change these standard assignments.

```
        STANDARD ASSIGNMENT OF FUNCTION KEYS
   +--------+-----------------------------------+
   ! PF1   ! Recall screen memorized in M1      !
```

```
           !  PF2   ! Recall screen memorized in M2      !
           !  PF3   ! Recall screen memorized in M3      !
           !  PF4   ! Memorization of a first screen     !
           !  PF5   ! Memorization of a second screen    !
           !  PF6   ! Memorization of a third screen     !
           !  PF7   ! Call of previous screen            !
           !  PF8   ! Validation                         !
           !  PF9   ! Not used                           !
  (*)      !  PF10  ! User-defined help documentation    !
           !  PF11  ! Return to initial screen           !
           !  PF12  ! End of conversation WITHOUT save   !
           +--------+------------------------------------+
```

(*): To request the documentation related to a table item (as opposed to a whole screen), position the cursor on this particular item before pressing the PF10 key. This function key calls the user-defined documention related to table data.

For more information, refer to Subchapter "PACTABLES USER HELP DOCUMENTATION", Chapter "TABLE CREATION".

Where hardware does not provide for function keys, the OPERATION field should be entered with the corresponding function key number. Documentation on a given field is obtained by entering '?' in this field and '??' or the PFKey number in the OPERATION field.

On-line Updating of User Parameters

User parameters are managed in a specific screen called by the value "U2" in the OPERATION CODE field (with access level '3').

This screen can be accessed by the Pactables Manager only (i.e., "********" user code).

It is used to define and update user codes, initialize passwords, and grant General Access Authorizations:

'3' : parameters updating authorized

'2' : consultation and updating

'1' : consultation only

'0' : no general access authorization

This authorization can be modified at the individual table level in the Access Authorization Updating screen specific to each Pactables user (See next subchapter).

When an item is updated, the first six characters of the user code are memorized.

```
--------------------------------------------------------------------------
|                                                                          |
|  USER CODES UPDATING                                                     |
|  1       2          3                           4                        |
|  A       CODE       PASSWORD             GLOBAL AUTHORIZATION            |
|          ********   MANA                        2                        |
|          AMIE       GEEZ                        2                        |
|          BEE        BUSY                        1                        |
|          BERNIE     HAT                         0                        |
|          CLARA0     A0                          0                        |
|          CLARA1     SWEET                       0                        |
|          CLARA2     NUTRA                       2                        |
|          DAISY      DAY                         2                        |
|          DEEDEE     WATER                       2                        |
|          DWAYNE     TAB                         2                        |
|          GOOD       GRIEF                       0                        |
|          JERRY      LEE                         1                        |
|          JPTOP      TOP                         2                        |
|          LEAPO      JUMP                        2                        |
|          LEROY      BROWN                       2                        |
|          MARY       WIDOW                       1                        |
|          MOWER      AP2                         1                        |
|          PINK       ELEPHANT                    2                        |
|                                                                          |
|  O : U2 KEY :                                                            |
--------------------------------------------------------------------------
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	1		ACTION CODE
		C	Creation.
		M	Modification.
		BLANK	Creation or modification.
		D	Deletion.
2	8		PACTABLES USER CODE
			This code allows the user to access tables.
3	8		PACTABLES PASSWORD
			This is the password associated with the user code (alphanumeric, uppercase).
4	1		GENERAL ACCESS AUTHORIZATION
			Indicates the type of general access authorization for a given Pactables user.
		0	Access prohibited.
		1	Consultation authorized.
		2	Consultation and updating authorized.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		3	Parameters updating authorized.

On-line Updating of Access Authorizations

Access authorizations are managed in a specific screen called by the value
″U3″ in the OPERATION CODE field.

This screen can be accessed by the Pactables Manager only (i.e., ″********″ user
code).

It is used to consult and update a Pactables user's table- specific access
authorizations.

A user code entered in the KEY field allows the Pactables Manager to directly
access the Specific Authorizations screen corresponding to that user.

NOTE:: Input in the KEY field need not be a defined user code. It may just
be used as a starting mark for searching purposes.

The ″U3″ screen can be called for any user. If no specific authorizations have
been granted to a user, only his/her user code and global authorization will
be displayed.

```
--------------------------------------------------------------------------
|                                                                        |
|           **** ACCESS AUTHORIZATION UPDATING ****                      |
|           USER CODE ...................: MOWER                         |
|           GLOBAL ACCESS AUTHORIZATION .: 1                             |
|   1  2        3       456                                              |
|   A  TABLE    LIN     ACCESS AUTHORIZATIONS                            |
|      ADRE     000     121                                              |
|                                                                        |
|      DISVAL   000     **1                                              |
|                                                                        |
|      DOMAIN   000     1*1                                              |
|                                                                        |
|      BOOKS    000     1*1   4*0   1*0   2*0   3*0                       |
|                                                                        |
|      BOOKS    001     1*0   110   120   130   140   150   2*0           |
|                                                                        |
|      BOOKS    002     2*0                                              |
|                                                                        |
|      BOOKS    003     1*0   110   120   130   140   150   2*0           |
|                                                                        |
|      BOOKS    004     **0   4*0   1*0   2*0   3*0                       |
|                                                                        |
|                                                                        |
|   O : U3 KEY : MOWER                                                   |
--------------------------------------------------------------------------
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	1		ACTION CODE
		C	Creation.
		M	Modification.
		BLANK	Creation or modification.
		D	Deletion.
2	6		END USER TABLE ID / TABLE CODE
			This is the code used to access a table via Pactables. Pactables differentiates between lowercase and uppercase input in this field.
3	3		LINE NUMBER
			TABLE ACCESS AUTHORIZATION
			NUMBER OF REPETITIONS : 20
			This field allows the Pactables Manager to grant an access authorization specific to a given table.
			This field is made up of three sub-fields described below.
4	1		SUB-SCHEMA NUMBER

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		0 to 9	Number of sub-schema to which the access authorization applies.
			The value '0' corresponds to sub-schema 10.
		*	All sub-schemas.
5	1		SUB-SYSTEM NUMBER
		0 to 9	Number of sub-system to which the access authorization applies.
			The value '0' corresponds to sub-system 10.
		*	All sub-systems.
6	1		SPECIFIC AUTHORIZATIONS
			Authorization applies to the sub-schema/sub-system couple defined in the preceding fields.
		0	Access prohibited.
		1	Consultation authorized.
		2	Consultation and updating authorized.

Chapter 4. Pactables: On-line Use

Introduction

Pactables allows the user to consult the contents of a table as a whole, or to consult a table sequentially, item by item. It also permits the update of a particular table item on-line.

The table description must have previously been entered in the Specifications Dictionary, and the batch table generation procedure must have previously been executed.

Once these descriptions and procedures are completed, the user can access the table.

LOWER AND UPPER CASE PROCESSING

Lower case input in the USER CODE, PASSWORD, and OPERATION fields entered in lower case is automatically changed into upper case. No such processing is performed for the other fields.

EXCEPTION:

Lower case is automatically changed into upper case in the JCL input screen accessed with 'LJ' in the OPERATION field, except if 'X' is entered in the ACTION CODE field.

Pactables Sign-on Screen

PACTABLES SIGN-ON SCREEN

In order to consult a table's contents the following input must be entered on the initial Pactables screen:

```
- USER code                            (Required)
- User PASSWORD                        (Required)
- TABLE code                           (Optional)
- Historical account DATE (MMDDYY)     (Optional)
  The system takes the current version by default which
  is the most recent historical account.
- SUB-SCHEMA number                    (Optional)
- SUB-SYSTEM number                    (Optional)
  (For both numbers, '0' = '10')
```

- Operation code   (Optional)

  By default, consultation (='LD'),

  If the Table code is entered, the Operation code
  default value is:

  'C2' if the contents of the item fit on one line,
  'C1' if they do not fit on one line.
- Key   (Optional)

  Beginning of consultation; item to be updated;
  first item displayed in lists.

The user may modify his/her password by entering 'M'
in the action code field and the new password
in the appropriate field. The new
password must be confirmed and lower case letters
are automatically transformed in upper case letters.

```
----------------------------------------------------------------------
| 00    00 0                0    00
| 00    00                  0  0000
| 00    00 0 000 0  0 000  0 00  00  000 000
| 00    00 0 0    0  0      0 0 000000 0  0 0  0
|  00 00   0  0   0  0 0000 0 00   00 0  0 0000
|   000    0   0 0  0 0  0 0 0 00   00 0  0 0      00000              0
|    0     0 000 0000 0000 0 00   00  000  00  00  00              0
|                             0     00  00 000  000 0000 000  000 000
|                            00     000000   0 0  0 0    0 0   0 0
|                            00     0000 0   0  0 0 0000  0  0000
| 00000          0      0    0      00      0 0 0   0  0 0 0   0 0
| 00  00         0      0    0      00      0000 000 0000 0000 000  00
| 00  00 000  000 000   000  0000 0 000  000
| 000000     0 0   0       0 0  0 0 0  0 0
| 00      0000 0   0    0000 0  0 0 0000  00
| 00      0 0 0   0     0  0 0  0 0 0 0      0
| 00      0000 000  000 0000 0000 0  00   000
|
|
|               USER      : 1 --------   PASSWORD  : 2
|               TABLE     : 3 ------     DATE      : 4 -- -- --
|               SUB-SCHEMA : 5 -         SUB-SYSTEM : 6 -
|
|  0 : 7  KEY : 8                      9- -------- 10
----------------------------------------------------------------------
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	8		PACTABLES USER CODE (REQUIRED)
			This code allows the user to access tables.
2	8		PACTABLES PASSWORD (REQUIRED)
			This is the password associated with the user code (alphanumeric, uppercase).
3	6		END USER TABLE ID / TABLE CODE
			This is the code used to access a table via Pactables. Pactables differentiates between lowercase and uppercase input in this field.
4	6		DATE OF HISTORICAL ACCOUNT
			This is the date in DDMMCCYY format of the Historical Account of the table to be accessed.
			If this field is not entered, the most recent date is taken into account.
5	1	NUMER.	SUB-SCHEMA NUMBER
			Number of sub-schema selected for consultation.
			Sub-schemas are defined and managed by the user when the corresponding tables are defined.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		'blank'	The whole table.
		'1,2..9,0'	Sub-schema number (1 to 10, the value 0 corresponds to sub-schema No. 10).
6	1		SUB-SYSTEM NUMBER
			Number of sub-group/sub-system selected for consultation.
			Sub-systems with their respective items are defined or updated by the user when the corresponding tables are defined or updated.
		BLANK	The whole table.
		1,2..9,0	Sub-group/sub-system number (1 to 10, the value 0 corresponds to sub-system 10).
7	2		OPERATION CODE
		LD C1 C2 C3 CR MO DE LT LS LH LE LJ FT	On-line documentation Single item consultation Multi-item consultation Consultation of an item's historical accounts Item creation Item modification Item deletion List of tables List of sub-schemas and sub-systems sorted by table List of table historical accounts List of Table Print requests sorted by user List of JCL for Table printing Return to Pactables Sign-On screen. End of Conversation when entered in that screen.
8	20		KEY
			Input in this field is related to the input in the OPERATION CODE field.
			With "C1", "CR", "CM", "MO", or "DE" in the OPERATION CODE field, input in the KEY field identifies the concerned item.
			With "C2" in the OPERATION CODE field, input in the KEY field identifies the item from which the table is to be consulted.
			With "C3" in the OPERATION CODE field, inputting the KEY field identifies the item from which historical accounts are displayed.
			For information regarding "LT", "LS", "LH", "LD", "LE", or "LJ" in the OPERATION CODE field, refer to chapter "PACTABLES: ON-LINE USE", subchapter "LISTS".
9	1		ACTION CODE
		M BLANK	Password modification. No modification of the password.
10	8		NEW PASSWORD

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			The user should enter his/her new password in this field. This password will only be taken into account if the value 'M' is entered in the preceding field.

Consultation/Update of Tables

On-line use of Pactables provides three display options:

- Single item display ('C1', 'CR', 'CM', 'DE', 'MO'),

- Multi-item display ('C2'),

- Display of an item's historical accounts ('C3').

Regarding the first two display options, consultation is possible:
- On all the table items, or on only a part of the items (selection of a sub-system);

  and/or
- On all the data of a table item, or on only a part of the data of an item (selection of a sub-schema).

No such selection is possible with the third display option.

Alphanumeric input fields are delimited by a period which allows the user to check the field's real length when entering changes. For creation, the field is underscored.

At any time during consultation, the user can access:
- Another table by overriding the displayed table code,
- Another sub-schema and/or sub-system,
- Another historical account by overriding the date.

SINGLE ITEM DISPLAY

The 'single item' screen is used to display an item or a part of an item if the whole item cannot be totally displayed on one screen.

This screen is called by different values in the OPERATION CODE field:

```
C1   : CONSULTATION
CR   : CREATION
DE   : DELETION
MO   : MODIFICATION
```

The KEY field is used for item selection. Its input is required when the item is to be deleted (except when the deletion is performed after the display of the item).

It is also possible to enter the key in the data elements making up the item's key (their label is followed by an asterisk).

This screen is divided into two parts:

LEFT:: Short title of the data element, or clear name of the data element truncated to 18 characters, if no title was defined on the General Documentation (-G) screen of the data element.

The data element titles are followed by a colon, except for the titles of data elements which make up a key, in which case they are followed by an asterisk.

RIGHT:: Contents of a data element limited by a period when alphanumeric. The decimal separator is also a period. Signed data elements are identified by the letter "S" in the "CR" single item screen.

The contents of a data element can be placed on one or more lines of the screen. For a numeric data element, the decimal point and sign are displayed if they are defined in the Specifications Dictionary.

If the contents of a table item cannot fit on one screen, '.../...' is displayed at the bottom right of the screen in order to indicate a continuation screen.

The date of the last update on a selected historical account of an item is displayed at the bottom right of the screen.

Alphanumeric input fields are marked off by a period '.' (displayed immediately after each input field), which indicates to the user the real length of the input field in case of a modification.

For numeric fields, the following may be displayed:
- The character '.' to indicate the location of the point,
- The character 'S' for signed fields.

CREATION AND MULTIPLE CREATION OF TABLE ITEMS
1.   ITEM CREATION:

The value "CR" in the OPERATION CODE field allows for the creation of an item by entering its code in the KEY field.

After the ENTER key is pressed, the new item is displayed and the value in the OPERATION CODE is changed to "C1".

1. MULTIPLE CREATION OF ITEMS:

The value "CM" in the OPERATION CODE field allows for the creation of an item by entering its code in the KEY field.

After the ENTER key is pressed, the new item is displayed and the value in the OPERATION CODE remains "CM", thus allowing the PACTABLE user to request another creation by entering the new item's key in the KEY field.

If no item key is entered, and the ENTER key is pressed, a blank item screen is displayed.

In order to stop the Multiple Creation, the Pactables user enters the OPERATION CODE with a value other than "CM".

1. NOTE:

An already existing item may be used to create another item. In this case, the Pactables user calls that first item, enters the new item's key in the KEY field.

All the values previously entered in the existing item's data elements are reproduced onto the new item unless modified by the Pactables user (with the new item's key in the KEY field).

```
--------------------------------------------------------------------------
|                     1 INFOS  CLIENTS INFOS DESCR 02 10 88   AT  22/10/2007 |
| S-SC: 3                                 S-SY: 4                            |
|                                                                           |
| CLIENT NUMBER 1     * 11111                                               |
| CLIENT NUMBER 2     * 22                                                  |
| CLIENT NAME         : AREND         .                                     |
| STREET              : CHEYENNE      .                                     |
| TOWN (L)            : NEW YORK      .                                     |
| ZIP CODE            : 10016                                               |
| TELEPHONE NUMBER    : (212) 555-1234                                      |
| STARTING DATE       : 790202                                             |
| PRECED. YEAR TOTAL  : +2000.00                                           |
| ORDER TOTAL         : +5000.00                                           |
| UNPAID INV. TOTAL   : +1000.00                                           |
| DISCOUNT RATE CODE  : AB.                                                 |
| SUB-SYSTEM TC10     : 13.                                                 |
|                                                                           |
|                                                                           |
|                                                                           |
|                                                                           |
|                                                                           |
|                                                                           |
|     5         6                                                           |
| O : C1 KEY :                        CLIENT N0 (L)                         |
--------------------------------------------------------------------------
```

```
--------------------------------------------------------------------
|                        1 INFOS  CLIENTS INFOS DESCR      AT 22/10/2007 |
| S-SC: 3                                    S-SY: 4                      |
|                                                                        |
| CLIENT NUMBER 1    * -----                                             |
| CLIENT NUMBER 2    * --                                                |
| CLIENT NAME        : --------------.                                   |
| STREET             : --------------.                                   |
| TOWN (L)           : --------------.                                   |
| ZIP CODE           : -----                                             |
| TELEPHONE NUMBER   : --------------                                    |
| INCEPTION DATE     : ------                                            |
| PRECED. YEAR TOTAL : S----.--                                          |
| ORDER TOTAL        : S----.--                                          |
| UNPAID INV. TOTAL  : S----.--                                          |
| REDUCT. RATE CODE  : --.                                               |
| SUB-SYSTEM TC10    : ---.                                              |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|      5          6                                                      |
| O : CR KEY :                            CLIENT N0 (L)                   |
--------------------------------------------------------------------
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	6		END USER TABLE ID / TABLE CODE
			This is the code used to access a table via Pactables. Pactables differentiates between lowercase and uppercase input in this field.
2	6		DATE OF HISTORICAL ACCOUNT
			This is the date in DDMMCCYY format of the Historical Account of the table to be accessed.
			If this field is not entered, the most recent date is taken into account.
3	1	NUMER.	SUB-SCHEMA NUMBER
			Number of sub-schema selected for consultation.
			Sub-schemas are defined and managed by the user when the corresponding tables are defined.
		'blank'	The whole table.
		'1,2..9,0'	Sub-schema number (1 to 10, the value 0 corresponds to sub-schema No. 10).
4	1		SUB-SYSTEM NUMBER
			Number of sub-group/sub-system selected for consultation.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			Sub-systems with their respective items are defined or updated by the user when the corresponding tables are defined or updated.
		BLANK	The whole table.
		1,2..9,0	Sub-group/sub-system number (1 to 10, the value 0 corresponds to sub-system 10).
5	2		OPERATION CODE
		LD C1 C2 C3 CR MO DE LT LS LH LE LJ FT	On-line documentation Single item consultation Multi-item consultation Consultation of an item's historical accounts Item creation Item modification Item deletion List of tables List of sub-schemas and sub-systems sorted by table List of table historical accounts List of Table Print requests sorted by user List of JCL for Table printing Return to Pactables Sign-On screen. End of Conversation when entered in that screen.
			On mono-item consultation screen:
		'CM'	Item multiple creation.
6	20		KEY
			Input in this field is related to the input in the OPERATION CODE field.
			With "C1", "CR", "CM", "MO", or "DE" in the OPERATION CODE field, input in the KEY field identifies the concerned item.
			With "C2" in the OPERATION CODE field, input in the KEY field identifies the item from which the table is to be consulted.
			With "C3" in the OPERATION CODE field, inputting the KEY field identifies the item from which historical accounts are displayed.
			For information regarding "LT", "LS", "LH", "LD", "LE", or "LJ" in the OPERATION CODE field, refer to chapter "PACTABLES: ON-LINE USE", subchapter "LISTS".

MULTI-ITEM SCREEN DISPLAY

The 'multi-item' screen allows the user to consult the contents of several subsequent items in a table. It is accessed with 'C2' in the OPERATION field.

This screen displays one to three lines of column titles defined in the Specifications Dictionary, and several lines of data contents, one item per line.

If no column title is indicated on the General Documentation screen of a data element, Pactables creates a column title directly from the clear name of the data element.

The column titles for the successive data elements are separated by a blank and their length depends on their description in the VisualAge Pacbase Specifications Dictionary.

As with the single item display screen, the decimal point and the sign for numeric data elements are indicated if they are defined in the VisualAge Pacbase Specifications Dictionary.

If the contents of the table item do not entirely fit onto one screen line, '.../...' will be displayed in the bottom right of the screen in order to indicate that there is a continuation screen. In order to access this screen, the RANK field should be entered with the horizontal rank of the data element which begins the continuation line.

If a data element is too large to fit on one screen line, the second part of the RANK field should be entered with the appropriate column number to obtain the rest of display. Note that this facility can only be used with alphanumeric data elements.

```
---------------------------------------------------------------------
|                    1 INFOS  CLIENTS INFOS DESCR      AT  02/10/2007 |
|  S-SC: 3                                 S-SY: 4                     |
|                                                                     |
|  CLIENT  NAME         STREET          TOWN (L)      CODE  TEL. NUMBER |
|  N0      OF                                                          |
|          CLIENT                                                     |
|  1111111 SMITH        Doctor NO       LYONS         36001 123 45 67  |
|  1111122 WESSON       Royale          CHAMPLAIN     37021 222 45 67  |
|  1111133 EWING        BLUE MOUNTAIN   DRYDEN        47033 456 45 67  |
|  2222211 Cesar        Maple           Greenwich     13098 009 00 01  |
|  2222222 O'HARA       LINDEN          GRAND GORGE   13098 077 00 01  |
|  2222233 McGRAER      MAIN            FULTON        54077 067 30 11  |
|  3333311 ALABAMA      LAKEWOOD        RIPLEY        65087 498 65 29  |
|  3333322 WHITE        GEORGE WASHING  WATERLOO      87043 438 57 81  |
|  3333333 Pureyfory    North           Horseheads    45894 222 01 03  |
|  4444411 ENGLISH      WYCKOFF         ONEIDA        72094 452 01 03  |
|  4444422 BROWN        McGILL          OWEGO         66084 785 64 87  |
|  4444433 McCRONKITE   HOT POINT       MARGARETVILLE 24704 434 51 93  |
|  5555511 Connaly      South           Saratoga Spring 75008 789 58 96 |
|  5555522 MARSHALL     SUN             POUGHKEEPSIE  75198 476 94 31  |
|  5555533 Ford         Magnolia        ADAMS         75008 555 88 99  |
|  6666611 JACKSON      HIGH            CARTHAGE      34018 565 99 99  |
|     5                                                        .../... |
|  O : C2 KEY : 6                          CLIENT N0 (L)   RANK 7 01 001 |
---------------------------------------------------------------------
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	6		END USER TABLE ID / TABLE CODE
			This is the code used to access a table via Pactables. Pactables differentiates between lowercase and uppercase input in this field.
2	6		DATE OF HISTORICAL ACCOUNT
			This is the date in DDMMCCYY format of the Historical Account of the table to be accessed.
			If this field is not entered, the most recent date is taken into account.
3	1	NUMER.	SUB-SCHEMA NUMBER
			Number of sub-schema selected for consultation.
			Sub-schemas are defined and managed by the user when the corresponding tables are defined.
		'blank'	The whole table.
		'1,2..9,0'	Sub-schema number (1 to 10, the value 0 corresponds to sub-schema No. 10).
4	1		SUB-SYSTEM NUMBER
			Number of sub-group/sub-system selected for consultation.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			Sub-systems with their respective items are defined or updated by the user when the corresponding tables are defined or updated.
		BLANK	The whole table.
		1,2..9,0	Sub-group/sub-system number (1 to 10, the value 0 corresponds to sub-system 10).
5	2		OPERATION CODE
		LD C1 C2 C3 CR MO DE LT LS LH LE LJ FT	On-line documentation Single item consultation Multi-item consultation Consultation of an item's historical accounts Item creation Item modification Item deletion List of tables List of sub-schemas and sub-systems sorted by table List of table historical accounts List of Table Print requests sorted by user List of JCL for Table printing Return to Pactables Sign-On screen. End of Conversation when entered in that screen.
6	20		KEY
			Input in this field is related to the input in the OPERATION CODE field.
			With "C1", "CR", "CM", "MO", or "DE" in the OPERATION CODE field, input in the KEY field identifies the concerned item.
			With "C2" in the OPERATION CODE field, input in the KEY field identifies the item from which the table is to be consulted.
			With "C3" in the OPERATION CODE field, inputting the KEY field identifies the item from which historical accounts are displayed.
			For information regarding "LT", "LS", "LH", "LD", "LE", or "LJ" in the OPERATION CODE field, refer to chapter "PACTABLES: ON-LINE USE", subchapter "LISTS".
7	5	NUMER.	RANK
			Input in this field allows the PACTABLE user to re- quest the display of the Multi-Item screen from a given data element by entering its rank in the first two positions and from a given position of this data element in the last three positions.
			EXAMPLE: With "04 008" in the RANK field, the Multi-Item screen display will start from the 8th character of the 4th data element.
			NOTE: The item's first data element, i.e., the item key, is always displayed.

DISPLAY OF HISTORICAL ACCOUNTS OF ITEMS

The user can consult historical accounts of a table's items by entering 'C3' in the OPERATION field.

The screen displays the following data for each item:
- The date of the historical account,
- The date of the last update, followed by 'D' if it was a deletion,
- The code of the user who performed this update. Only the first 6 characters are displayed.

The item's contents are not displayed.

Data displayed on this screen cannot be updated.

```
--------------------------------------------------------------------------
|               HISTORICAL ACCOUNTS OF TABLE ITEMS INFOS5                 |
|                                                                         |
| KEY                 HISTORICAL DATE    LAST UPDATE           USER        |
| 0000001             02/15/2006         01/01/2007    D     ******        |
| 0000001             01/15/2006         01/01/2007    D     ******        |
| 0000001             01/15/2006         01/01/2007    D     ******        |
| 0000001             01/15/2006         01/01/2007    D     ******        |
| 0000001             01/15/2006         01/01/2007    D     ******        |
| 0000001             01/15/2006         01/01/2007    D     BEE           |
| 0000002             01/15/2006         01/09/2007    D     MOWER         |
| 0000055             02/15/2006                                           |
| 0000066             02/15/2006                                           |
| 0000077             02/15/2006                                           |
| 1111111             01/15/2006                                           |
| 1111111             01/01/2006         03/27/2007          BEE           |
| 1111122             01/01/2006                                           |
| 1111133             01/01/2006                                           |
| 2222211             01/01/2006         03/27/2007          PINK          |
| 2222222             01/01/2006                                           |
| 2222233             01/01/2006                                           |
| 2300053             02/15/2006                                           |
| 3333311             01/01/2006                                           |
| 3333322             01/01/2006                                           |
| 3333333             01/01/2006                                           |
| 4444411             01/01/2006                                           |
| 4444422             01/01/2006                                           |
|                                                                         |
| O : C3 KEY :                                                            |
--------------------------------------------------------------------------
```

Lists

Table, Sub-schema, and Sub-system Lists are accessed via the following input in the OPERATION CODE field:

LT: List of tables. A table code specified in the KEY field indicates with which table the list begins.

LS: List of the sub-schemas and sub-systems by table. A table code specified in the KEY field indicates with which table the list begins.

LH: List of Historical Accounts of Tables. A table number specified in the KEY field indicates with which table the list begins.

LD: Documentation. In order to access documentation starting from a specific line number, enter that line number in the LINE field at the bottom of the screen.

LE: List of table data print requests sorted by user. The ACTION CODE is implicit in this screen. A table code entered in the KEY field specifies with which table the list begins.

LJ: List of JCL lines for table printing, sorted by user. The ACTION CODE is implicit in this screen. A line number entered in the KEY field specifies with which line the list begins.

```
--------------------------------------------------------------------------------
|                    LIST OF TABLES UP TO 05/11/2007                           |
|                                                                              |
| NUMBER           NAME           ARCHIVAL    LAST-UPDATE  DESCRIPTION         |
| INFUS1 GENERAL INFORMATION      03/10/2007  03/10/2007   03/10/2007          |
| INFUS2 INFORMATION ON ACTIVITIES 03/10/2007 03/10/2007   03/10/2007          |
| INFUS3 INFORMATION ON QUALITY   03/10/2007  03/10/2007   03/10/2007          |
| LIPAYS COUNTRY NAMES            03/10/2007  03/10/2007   03/10/2007          |
|                                                                              |
| MONNAI CURRENCY CODES           03/10/2007  03/10/2007   03/10/2007          |
| NATURE NATURE OF CUSTOMERS      03/10/2007  03/10/2007   03/10/2007          |
| SALLES LIST OF OFFICES          03/10/2007  03/10/2007   03/10/2007          |
| TUBES  DIAMETERS AND LENGTHS    03/10/2007  03/10/2007   03/10/2007          |
|                                                                              |
|                                                                              |
|                                                                              |
|                                                                              |
|                                                                              |
|                                                                              |
|                                                                              |
|                                                                              |
|                                                                              |
| 7  0 END OF DATA: TRANSMIT       TO RETURN TO BEGINNING                      |
| O : LT      KEY :                                                            |
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
|                  LIST OF SUB-SCHEMAS AND SUB-SYSTEMS UP TO  05/11/2007  |
|                                                                        |
|               TABLE INFOS2 CLIENTS INFOS2  DESC 05 10 2007             |
|                                                                        |
|                                                                        |
|  NO. NAME OF SUB-SCHEMA                  NO. NAME OF SUB-SYSTEM        |
|                                                                        |
|   1  CLIENT ADDRESSES                     1  CLIENTS-NEW YORK          |
|   2  ORDER-TOTAL                          2  CLIENTS-OTHER STATES      |
|   3  UNPAID INVOICES-TOTAL                3  CLIENTS-FOREIGN           |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
|                                                                        |
| O : LS      KEY :                                                      |
--------------------------------------------------------------------------------
```

```
-------------------------------------------------------------------------------
|                      LIST OF HISTORICAL ACCOUNTS OF TABLES                   |
|                                                                             |
| NUMBER          NAME        ARCHIVAL UPD.DATE ----- DESCRIPTION -----        |
| INFUS1 GENERAL INFORMATION   03/10/2007 03/10/2007 03/10/2007 TC21 TES 0533Z |
| INFUS2 INFORMATION ON ACTIVIT.03/10/2007 03/10/2007 03/10/2007 TC22 TES 0533Z |
| INFUS3 INFORMATION ON QUALIT. 03/10/2007 03/10/2007 03/10/2007 TC23 TES 0533Z |
| LIPAYS COUNTRY NAMES         03/10/2007 03/10/2007 03/10/2007 TC24 TES 0533Z |
| MONNAI CURRENCY CODES        03/10/2007 03/10/2007 03/10/2007 TC26 TES 0533Z |
| NATURE NATURE OF CUSTOMERS   03/10/2007 03/10/2007 03/10/2007 TC27 TES 0533Z |
| SALLES LIST OF OFFICES       03/10/2007 03/10/2007 03/10/2007 TC28 TES 0533Z |
| TUBES  DIAMETERS AND LENGTHS 03/10/2007 03/10/2007 03/10/2007 TC42 TES 0533Z |
|                                                                             |
|                                                                             |
|                                                                             |
|                                                                             |
|                                                                             |
|                                                                             |
|                                                                             |
|                                                                             |
|                                                                             |
|                                                                             |
|                                                                             |
| O : LH       KEY :                                                          |
-------------------------------------------------------------------------------
```

On-line Printing Requests

ON-LINE PRINTING REQUESTS

The List of Table Data Print Requests (O: LE) allows the Pactables user to submit the execution of a printing job via the following input:

- The table code,
- The sub-system number (by default, ALL sub-systems),
- The sub-schema number (by default, NO sub-schema),
- The historical account date (by default, the most recent historical account),
- The key print option.

On this screen, the action code is implicit.

Print requests can be submitted on-line if the JOB function is available. Once the print request is validated ('V' entered in the VALIDATION OF PRINT REQUEST field on the 'LE' screen), the user can submit the JCL by filling in the JOB field on the 'LE' or 'LJ' screen.

```
--------------------------------------------------------------------------
|                      PRINT REQUESTS                      USER: MOWER   |
| 1     2      3 4  5 6      7                                            |
| A CO TABLE  C Y  V YYMMDD 0                                             |
|    TZ INFOS  1 2  V                                                     |
|    TZ INFOS2            0                                               |
|    TZ LP0020     V 880208                                              |
|    TZ                                                                   |
|    TZ                                                                   |
|    TZ                                                                   |
|    TZ                                                                   |
|    TZ                                                                   |
|    TZ                                                                   |
|    TZ                                                                   |
|    TZ                                                                   |
|    TZ                                                                   |
|    TZ                                                                   |
|    TZ                                                                   |
|    TZ                                                                   |
|    TZ                                                                   |
|    TZ                                                                   |
|    TZ                                                                   |
|    TZ                                                                   |
|       8                                                                 |
| O : LE KEY : 9                                           JOB: 10       |
--------------------------------------------------------------------------
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	1		ACTION CODE
		C	Creation.
		M	Modification.
		BLANK	Creation or modification.
		D	Deletion.
2	6		END USER TABLE ID / TABLE CODE
			This is the code used to access a table via Pactables. Pactables differentiates between lowercase and uppercase input in this field.
3	1		SUB-SCHEMA NUMBER
			PRINTING OF TABLE CONTENTS
		'0 to 9'	Indicates the sub-schema to be processed. The value '0' corresponds to sub-schema '10'.
			This sub-schema number is entered only when requesting a print-out of the contents of a table.
			When entered with another procedure, input in this field is ignored.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
4	1		SUB-SYSTEM NUMBER
			Number of sub-group/sub-system selected for consultation.
			Sub-systems with their respective items are defined or updated by the user when the corresponding tables are defined or updated.
		BLANK	The whole table.
		1,2..9,0	Sub-group/sub-system number (1 to 10, the value 0 corresponds to sub-system 10).
5	1		Validation of command request
			This field does not appear on the "C2" screen format option.
		'blank'	The value in the COMMAND FOR PRINT REQUEST field is not to be taken into account.
		V	The COMMAND FOR PRINT REQUEST is validated.
			NOTE: These commands must be re-validated each time a request is made.
6	6		DATE OF HISTORICAL ACCOUNT
			If this field is not entered, the most recent date is taken into account.
7	1		PRINT OPTION
		BLANK O	This field is used when the key is a group data element. Print of the group data element, Print of elementary data elements.
8	2		OPERATION CODE
		LD C1 C2 C3 CR MO DE LT LS LH LE LJ FT	On-line documentation Single item consultation Multi-item consultation Consultation of an item's historical accounts Item creation Item modification Item deletion List of tables List of sub-schemas and sub-systems sorted by table List of table historical accounts List of Table Print requests sorted by user List of JCL for Table printing Return to Pactables Sign-On screen. End of Conversation when entered in that screen.
9	20		KEY
			Input in this field is related to the input in the OPERATION CODE field.
			With "C1", "CR", "CM", "MO", or "DE" in the OPERATION CODE field, input in the KEY field identifies the concerned item.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			With "C2" in the OPERATION CODE field, input in the KEY field identifies the item from which the table is to be consulted.
			With "C3" in the OPERATION CODE field, inputting the KEY field identifies the item from which historical accounts are displayed.
			For information regarding "LT", "LS", "LH", "LD", "LE", or "LJ" in the OPERATION CODE field, refer to chapter "PACTABLES: ON-LINE USE", subchapter "LISTS".
10	3		JOB SUBMISSION REQUEST
			Used to automatically submit the generation or print- ing job when the hardware and TP monitor allow for it. The job stream will contain only validated commands for print requests.
		BLANK	No job submission.
		JOB	Job submission.
		SUB	Job submission.

JCL OF TABLE PRINTING

The JCL of Print Requests screen (O: LJ) allows the Pactables user to consult and update the JCL for table printing and to submit the execution of a print job.

Each JCL line entered with the '********' user code is preceded by an asterisk (refer to chapter "PACTABLES: BATCH PROCEDURES", subchapter "USER PARAMETER UPDATING").

Each user may modify this standard JCL by overriding existing lines.

On this screen, the action code is implicit.

NOTE

On UNIX Pactables platform, the 'LJ' screen cannot be accessed, since the user does not have to input JCL lines to submit printing requests.

```
-----------------------------------------------------------------------
                          JCL OF PRINT REQUESTS                USER: MOWER
  1    2            3
  C CO LINE         CONTENT
     TJ 000100      //PSTEDTA JOB (632),'EDIT',CLASS=X,MSGCLASS=X
   * TJ 000200      //JOBCAT   DD DSN=PAC.VSAMCAT,DISP=SHR
     TJ 000210      //*        PROCEDURES IN TEST
   * TJ 000300      //BVPTA320 EXEC PGM=BVPTA320
   * TJ 000400      //*    ***   PRINT REQUESTS TABLES 3.5 ***
   * TJ 000500      //STEPLIB  DD DSN=PDV.LULU.SBVPMBR8,DISP=SHR
   * TJ 000600      //SYSUDUMP DD SYSOUT=X
   * TJ 000700      //SYSOUT   DD SYSOUT=X
   * TJ 000800      //SYSOUX   DD SYSOUT=X
   * TJ 000900      //PAC7TD   DD DSN=CICS.PAC.PG00TD,DISP=SHR
   * TJ 001000      //PAC7TV   DD DSN=CICS.PAC.PG00TV,DISP=SHR
   * TJ 001100      //PAC7TE   DD DSN=CICS.PAC.PG00TE,DISP=SHR
   * TJ 001200      //PAC7TG   DD DSN=CICS.PAC.PG00TG,DISP=SHR
   * TJ 001300      //PAC7ED   DD DSN=&&TABLE,DISP=(NEW,PASS),UNIT=SYSDA,
   * TJ 001400      //            DCB=(RECFM=FB,LRECL=80,BLKSIZE=800),
   * TJ 001500      //            SPACE=(TRK,5,,CONTIG)
   * TJ 001600      //PAC7XE   DD SYSOUT=X
   * TJ 001700      //PAC7CA   DD *
   * TJ 600100      //BVPTA350  EXEC PGM=BVPTA350
      4
  O : LJ KEY : 5                                                JOB: 6
-----------------------------------------------------------------------
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	1		LINE OWNERSHIP - ACTION CODE
			This field is used to differentiate JCL lines common to all Pactables users (i.e., to user '********') from those belonging to the connected user:
		* BLANK	JCL line commom to all users, User-specific JCL line.
			This field is also used for ACTION CODE input:
		BLANK X C M D	Creation or Modification Creation or Modification without transformation of lowercase into uppercase input. Creation Modification Deletion
2	6		LINE NUMBER FOR THE JCL (REQUIRED)
			This field contains the line number used to put the JCL lines in order.
		< 600000	Lines at the beginning of the stream.
		> 599999	Lines at the end of the stream.
3	65		CONTENTS OF THE JCL LINE
4	2		OPERATION CODE

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		LD C1 C2 C3 CR MO DE LT LS LH LE LJ FT	On-line documentation Single item consultation Multi-item consultation Consultation of an item's historical accounts Item creation Item modification Item deletion List of tables List of sub-schemas and sub-systems sorted by table List of table historical accounts List of Table Print requests sorted by user List of JCL for Table printing Return to Pactables Sign-On screen. End of Conversation when entered in that screen.
5	20		KEY
			Input in this field is related to the input in the OPERATION CODE field.
			With "C1", "CR", "CM", "MO", or "DE" in the OPERATION CODE field, input in the KEY field identifies the concerned item.
			With "C2" in the OPERATION CODE field, input in the KEY field identifies the item from which the table is to be consulted.
			With "C3" in the OPERATION CODE field, inputting the KEY field identifies the item from which historical accounts are displayed.
			For information regarding "LT", "LS", "LH", "LD", "LE", or "LJ" in the OPERATION CODE field, refer to chapter "PACTABLES: ON-LINE USE", subchapter "LISTS".
6	3		JOB SUBMISSION REQUEST
			Used to automatically submit the generation or print- ing job when the hardware and TP monitor allow for it. The job stream will contain only validated commands for print requests.
		BLANK	No job submission.
		JOB	Job submission.
		SUB	Job submission.

Chapter 5. Pactables: BATCH Procedures

Introduction

BATCH TABLE MANAGEMENT

In addition to table on-line processing, specific procedures allow the Pactables user to work on tables in batch mode.

The purpose of this chapter is to give the user information on each Pactables procedure.

This chapter does not contain the JCL description associated with each procedure since JCL lines vary with hardware and operating systems. JCL lines are found in the corresponding Pactables Operations Manuals.

The procedures described in this chapter are the following:

```
- User Parameter Update          PMTA
- Table Generation               GETA/GETT or GETD/GETT
- Table Update                   UPTA
- Incorporation of Existing Tables IMTA
- Table Printing                 PRTA
- Extraction of Data from
  a Table                        EXTA
- Direct Consultation of Tables  TUTA
- List of Table Descriptions     LDTA
- Table Reorganization           RETA
- Dispatched Table Management:
  Table Description Comparison   CDT1
  Table Description Update       CDT2
  Table Contents Comparison      CVTA
```

The forms needed to execute these procedures are described in chapter "DESCRIPTION OF BATCH FORMS".

User Parameters Update (PMTA)

This procedure updates:

- User codes,
- Access authorizations,
- Table printing request JCL lines via the JOB function.

During the execution of this procedure, the table files must be closed.

UPDATE OF USER CODES

All Pactables user codes are stored in the User Parameters File 'TG'. Batch Form 'TA' is used for updating user codes. Each user is identified by a code and a password which must be entered for each table access, whether in on-line or batch mode.

ACCESS AUTHORIZATIONS

For all or some tables a given user may have:

- No access authorization,
- Consultation only,
- Consultation and update.

There are two types of access authorizations entered in two different ways:

- A global authorization granting access to all tables, defined together with the user code (Batch Form 'TA');
- Specific authorization access by table, which can either broaden or restrict the global authorization. These specific table access authorizations are entered on Batch form 'TC'.

Batch form 'TC' includes the user code, the table number, a line number and a series of 20 triplets, each triplet containing:

- The number of the sub-schema affected by the authorization,
- The number of the sub-system affected by the authorization,
- The authorization level assigned to the sub-schema/subsystem couple.

No consistency validation is performed during update.

REMINDER:: Update applies to the item as a whole, it cannot be limited to one (or several) sub-schema(s).

USER CODE: '********'

The Pactables user code '********' has a specific purpose. It supports the initial JCL needed to print table contents (On-line submission via the JOB function). In addition, it is used in order to obtain the list of all user codes with their associated passwords, access authorization(s) and JCL cards.

A password may be assigned to this special user code for security purposes.

CONTROL CARDS

The JCL necessary for printing table contents may be updated in batch mode.

This update is done with Batch form 'TJ' for each user.

PRINTED REPORTS

This procedure prints:
- A procedure report including encountered errors,
- If the '********' user code was entered in the input transactions:
  - A list of all user parameters,
  - A list sorted by table of users granted access to that table including their access authorization level.

Table Generation (GETA-GETT)

The generation of a table description consists of:
- The extraction of table Segments from the Specifications Dictionary.
- The update of the table description file.
- The initialization of the table heading when a new description is created.

Two procedures are executed:
- The GETA procedure:

  Related to the Dictionary environment, it generates table descriptions in an intermediary file.
- The GETT procedure:

  Related to the Pactables environment, it physically updates table descriptions and contents according to the intermediary file obtained in GETA output.

REMINDERS ON GENERATION PRINCIPLES

GENERATION OF TABLES WITH HISTORICAL ACCOUNTS
1. The generation of a new table description automatically adjusts the data contained in historical account(s) dated AFTER this new table description.

If the new table description is assigned an expir_ ation date, historical accounts dated AFTER this date will be assigned the same expiration date.

2. Data contained in historical account(s) dated BEFORE the new table description will not be adjusted to the new description. In order to adjust this data, a reorganization must be run. As a result, this data can be managed with the general access module.

GENERATION OF TABLES WITHOUT HISTORICAL ACCOUNT

Since each new description is a modification of the current description, table data is automatically adjusted to the new description.

Possible actions on table descriptions are:
- Creation of a new description,
- Modification of a description (except key modifications)
- Physical deletion of all table descriptions & contents.

NOTE:: When a table WITH historical accounts is transformed into a table WITHOUT historical accounts, its description may be modified and only the historical account (description and data) with the most recent date is kept.

During the execution of these procedures, the Pactables files must be closed to on-line use.

USER INPUT

A user identification line ('*') must contain the user code and the associated password. Also needed is the code of the library where the table segments are described.

A request line for the printing generation ('Z') for each table on which the user must enter the segment code and, if needed, the table number with the operation to be carried out.

REPORT RESULTS

Two reports are generated:
- A report on generation, modification, deletion and print requests related to table descriptions as well as all encountered errors.
- A description of each table created or modified during the generation program run.

MULTI-SYSTEM SITES

Tables may be used in one (or several) environment(s) different from the one used by the Specifications Dictionary.

EXAMPLE:: If VisualAge Pacbase is running on CICS, then Pactables can run in an IMS environment.

Table descriptions must be centralized in the Specifications Dictionary environment, which means they must exist in both environments (VisualAge Pacbase Dictionary environment and Pactables environment).

Table descriptions may then be modified directly in their specific environment. As a result, table descriptions under the VisualAge Pacbase environment may differ from table descriptions in the Pactables environment. This may happen when tables are used at different sites, each site managing only its own tables.

Each site may decide to delete the tables that are no longer used, through its own table reorganization procedure which has no influence on the centralized table descriptions previously entered in the VisualAge Pacbase environment.

The procedure generating table descriptions is then broken down into two sub-procedures:

GETD:: A procedure running under the VisualAge Pacbase system generating table descriptions into an intermediary file, and updating the centralized descriptive file.

GETT:: A procedure running under the Pactables system which physically updates both table descriptions and contents. This procedure uses as input the intermediary file obtained as output of the GETD procedure.

Table Update (UPTA)

Tables must be closed when an update is executed in batch mode.

Updating requires user input on three different types of lines:
- A Pactables user identification line (form '*'),
- A table identification line (form 'A') for each table to be updated, which specifies the table number, the date of the historical account to be updated (optional) (the most recent historical account by default) and the possible Data Element separators ('/' by default).

  You may create an item historical account by indicating the date of a historical account which does not exist.

- Table data lines (form 'V') indicating the contents of the table. Each elementary Data Element of the table must be delimited by a separator defined on the table identification line (including the elementary Data Elements making up the key, if the key is a group Data Ele- ment).

User validations may be included in batch updating. Therefore, batch updating programs should have access to these user validation sub-programs.

ASSIGNMENT OF AN ITEM TO A SUB-SYSTEM

In order to assign an item to one (or several) sub-system(s) the SUB-SYSTEM field on the table identification line should be entered with the corresponding number(s). The item will then belong to the indicated sub-system(s).

USER INPUT

The user must provide:
- a Pactables user identification line
- one Table identification line ('A') per table to be updated, followed by 'V' lines for the update data.

REPORT RESULTS
- Report on update transactions with encountered errors.
- Printing of updated tables.

Printing of Table Contents (PRTA)

Table printing may be selective: the user has the option to request printing of sub-schemas, sub-systems, or a given historical account.

This procedure can be submitted on-line (JOB function) or in batch mode.

(For user parameters printing, see PMTA procedure).

USER INPUT

The user should enter the following parameters:
- A Pactables user identification line (form '*'),
- A table identification line (form 'A') for each table to be printed.

If the key data element is a group item there are two printing possibilities:

```
Grouped    : The key is printed as a single data element,
Separated  : The elementary data elements are printed se-
             parately.
```

REPORT RESULTS
- A report on table print requests, including encountered errors,
- Print-outs of selected tables with the same layout as the multi-item screen display (O: C2).

Extraction of Data from a Table (EXTA)

The purpose of this procedure is to extract data from a table's historical account. The output of the EXTA procedure is formatted batch transactions which can be retrieved for batch table updating.

USER INPUT

The user must enter:
- A Pactables user identification line (form '*'),
- A table identification line (form 'A') for each table to be extracted in the form of transactions.

REPORT RESULTS
- A report on extraction requests, including encountered errors.
- The list of extracted data.

GENERAL RESULTS

The result obtained is a sequential file containing data formatted as update transactions preceded by the user identification line (without password).

Incorporation of Existing Tables (IMPA)

This procedure is used to incorporate any external user table into the Pactables function. This operation can take place only if the tables have previously been closed.

The user must first describe the table in VisualAge Pacbase, generate the description, and convert the external table into a 999-byte long sequential file.

Work stations are validated before being updated.

USER INPUT

The user must enter:
- a Pactables user identification line ('*'),
- an identification line for the table to be incorporated ('A'),
- a sequential file corresponding to the table to be incorporated.

REPORT RESULTS

- A report on incorporation requests, including encountered errors.
- An update report including possible rejected transactions.

  When an error is detected, all of the item's contents is listed.
- Print-out of the update table.
- List of extracted data.

GENERAL RESULTS

The result obtained is a sequential file containing print commands for the table that has just been incorporated. This file can be used as input to the PRTA procedure.

Optimized Use (TUTA)

This procedure is used to extract one or several tables, for the current date or any other date, as a table without an historical account and not as a series of transactions. The output of this procedure is one or several tables with direct read-only access.

USER INPUT

The user must enter:

- A Pactables user identification line (form '*'),
- A table identification line (form 'A') for each table to be extracted. This line is optional. If it is not entered, it is understood that the user is requesting the extraction of all tables which exist for the current date and for which the user is granted sufficient access authorization. The date may be parameterized on a single 'A' line without the table number.

REPORT RESULTS

- A report on extraction requests with encountered errors.
- The list of input transactions.

GENERAL RESULTS

The output of this procedure is an indexed file containing the extracted data (with direct read-only access).

Printing of Table Descriptions (LDTA)

The purpose of this procedure is either to list all table descriptions or the description of a given table for a given historical account date.

USER INPUT

The user must enter the following data:
- A Pactables user identification line (form '*'),
- A print or list request line (form 'Z').

OUTPUT REPORT
- Description of each selected table or the list of all table descriptions.

  Also included in the reports are the tables which were logically deleted by the GETA procedure.

NOTE: Invalid requests are simply ignored.

Table Reorganization (RETA)

The role of the Table Reorganization Procedure is to physically delete records that have been deleted on-line or in batch mode, and to 'realign' historical accounts of table contents and descriptions according to the reorganization request.

This procedure purges the files by validating historical accounts that the user wishes to save and by physically deleting the non-validated historical accounts.

This procedure consults the Pactables files and descriptives to produce a backup file which is ready to be restored for use.

USER INPUT
- A '*' Pactables user identification line,
- One or several 'A' identification lines per table.

The ACTION CODE on these lines indicates if the historical accounts must be saved or purged.
- ACTION CODE = 'S':
  - = BLANK:

    The historical account identified in the TABLE HISTORICAL ACCOUNT DATE field is purged, all other accounts are saved.

> **NOTE::** For tables without historical account, the TABLE HISTORICAL ACCOUNT DATE field must be entered with the '******' value.

- = '<' or '>':

  Historical accounts dated BEFORE ('<') or AFTER ('>') the specified date are purged.

  > **NOTE::** Accounts dated that very date are purged with the '>' option only.

- ACTION CODE = 'G':
  - When no historical account date is specified, all historical accounts are saved.
  - With an historical account date:
    - = BLANK:

      The historical account (identified in the TABLE HISTORICAL ACCOUNT DATE field) is saved, all other accounts are purged.
    - = '<' or '>':

      Historical accounts dated BEFORE ('<') or AFTER ('>') the specified date are saved.

      > **NOTE::** Accounts dated that very date are saved with the '>' option only.

If the table code is not indicated in the transactions, this table is deleted after the reorganization.

All the transactions of a reorganization must contain only one value for the ACTION CODE, either 'S' or 'G', since these two values are incompatible in the same run.

REPORT RESULTS
- A list of user transactions.
- A list of the saved historical accounts.

GENERAL RESULTS

Pactables backup file.

Dispatched Table Management (CDT1-CDT2-CVTA)

The Dispatched Table Manager (DTM) Facility allows the Pactables user to compare two Table Description Files which may be located at two different sites.

Also, with the DTM facility, two images of the Table Data File can be compared, and extracted differences can be used for up_ dating purposes.

The Dispatched Table Manager Facility operates with two sets of procedures:

1. TABLE DESCRIPTION COMPARISON (CDT1/CDT2)

The CDT1 procedure compares two Table Description Files with or without table selections. The output of the CDT1 procedure is a file which contains extracted differences. This file is used as input in the CDT2 procedure, which updates the "outdated" Table Description File.

2. TABLE DATA COMPARISON (CVTA/UPTA)

The CVTA procedure compares two images of the Table Data File using the update date of each table item as the comparison criterion. Modified, created, or deleted items are extracted and formatted into batch transactions, which are used as input to the UPTA procedure.

CDT1 PROCEDURE

The CDT1 procedure allows the Pactables user to compare two Table Description Files, which may or may not be installed at different sites. All table descriptions can be taken into account by this procedure, or only those selected by the user.

Only created or modified descriptions are extracted.

USER INPUT
- An '*'-type user identification line,
- One 'A'-type line per selected table description, or just ONE 'A'-type line if all table descriptions are to be compared by the CDT1 procedure.

PRINTED REPORT
- Validation report on comparison requests including errors, if any.
- List of extracted table descriptions.

CDT1 OUTPUT

The CDT1 procedure creates a sequential file containing the table descriptions for which differences were found.

NOTE: Refer to the GETA or RETA procedures regarding deleted table descriptions.

CDT2 PROCEDURE

The CDT2 procedure updates the description(s) of one or several tables with the transactions contained in the output file of the CDT1 procedure.

Updating an "outdated" description is possible only if there is no historical account dated after the description extracted by the CDT1 procedure.

EXAMPLE:

```
     LAST HISTORICAL ACCOUNT OF TABLE: 01/15/87
TABLE DESCRIPTION 1        ....TABLE DESCRIPTION 2: 02/15/87
     DATEL1 DATEL2         ....DATEL1 DATEL2 DATEL3
ITEM1   A    B                   A      B
ITEM2   C    D                   C      D
ITEM3   E    F                   E      F
```

The last historical account is dated before the date of the description extracted by the CDT1 procedure: updating is allowed.

CDT2 INPUT

Results of the CDT1 procedure.

PRINTED REPORT

Update report, including encountered errors.

CVTA PROCEDURE

The CVTA procedure allows the Pactables user to compare two images of the Table Data File. Detected differences are extracted and formatted into batch transactions which will be used to update (via the UPTA procedure) the corresponding Table Data File(s) installed at other sites.

All tables or selected tables may be compared. The comparison may be for a specified period of time.

USER INPUT

- An '*'-type user identification line,
- One 'A'-type line per selected table, or just ONE 'A'-type line if all tables are to be compared by the CVTA procedure.

  The user may also specify a time interval within which the comparison should be made. When just one date is entered, the procedure will search for items updated on that particular date.

PRINTED REPORT

- Report on comparison requests including encountered errors, if any.
- List of extracted data.

CVTA OUTPUT

The output of the CVTA procedure is a sequential file which contains data formatted into batch update transactions.

Chapter 6. Description of BATCH Forms

User Identification (*)

The '*' line must be entered with all batch procedures (except with the GETA and GETD procedures).

It allows a check on whether the user is authorized or not to execute the requested procedure.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	1		ACTION CODE
			Unused
2	8		PACTABLES USER CODE
			This code allows the user to access tables.
3	8		PACTABLES PASSWORD
			This is the password associated with the user code (alphanumeric, uppercase).
4	1		DELETED DATA SAVING OPTION
			This option, used in the RETA reorganization procedure enables the user to save records logically deleted. By default, they are physically deleted.
		BLANK	Purging deleted records.
		O	Saving deleted records.

Table Access (A)

In the batch procedures, the 'A' lines indicate which tables are to be processed.

A validation of table access authorization is performed according to the user's code.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	1		ACTION CODE
			This code is only used in order to reorganize, print, or compare table data.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		'S' 'G'	REORGANIZATION Historical account to be purged, other accounts are saved. Historical account to be saved, other accounts are purged. For more information, please refer to chapter "PACTABLES", subchapter "TABLE REORGANIZATION PRIN- CIPLE".
		'E' 'L' 'H' 'S' 'X'	PRINTING OF TABLE CONTENTS Printing of a table. List of the tables (do not enter the table number). List of historical accounts (do not enter the table number). List of sub-schemas and sub-systems. List of items with their historical accounts.
		'S'	TABLE DATA COMPARISON Table selection
2	6		TABLE CODE
			This code is the code entered on the Segment Defini- tion line at the Specifications Dictionary level. It indicates which table is to be processed.
			BATCH TABLE UPDATE (UPTA) Identifies the table to be updated.
			PRINTING OF TABLE CONTENTS (PRTA) Identifies the table to be printed if the ACTION CODE is 'E'. Otherwise, the table number is not entered.
			EXTRACTION OF DATA FROM A TABLE (EXTA) Identifies the table from which transactions will be extracted.
			TABLE REORGANIZATION (RETA) Identifies the table to be reorganized.
			Otherwise, with action code 'G': all historical accounts are saved.
			TABLE DESCRIPTION COMPARISON (CDT1) Selected table number. Otherwise, all tables are selected.
			TABLE DATA COMPARISON (CVTA) Selected table number. Otherwise, all tables are selected.
3	8		TABLE HISTORICAL ACCOUNT DATE
			This date must be entered in DDMMCCYY format.
			UPDATE (UPTA)
		'BLANK'	Date of the historical account to be updated. Default option: the most recent historical account will be updated.
			PRINTING OF TABLE CONTENTS (PRTA)
		'BLANK'	Date of the historical account to be printed. Default option: the most recent historical account.
			EXTRACTION OF DATA FROM A TABLE (EXTA)

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		'BLANK'	Date of the historical account to be extracted. Default option: the most recent historical account.
			TABLE REORGANIZATION (RETA)
			WITH OPTION FIELD = BLANK:
			If a date is entered and the ACTION CODE = 'G': That table's historical account is saved, others are deleted if there are no other transactions with AC- TION CODE = 'G'.
		BLANK	If a date is not entered and the ACTION CODE = 'G': All historical accounts are saved.
			With ACTION CODE = S, this date is required: it indi- cates that the description is deleted.
		'******'	Tables without historical accounts.
			WITH OPTION FIELD = '<':
			With ACTION CODE = S, purge of historical accounts dated BEFORE the date entered in this field.
			With ACTION CODE = G, only historical accounts dated BEFORE the date entered in this field are saved.
			WITH OPTION FIELD = '>':
			With ACTION CODE = S, purge of historical accounts dated AFTER the date entered in this field. NOTE: Accounts dated that very date are also purged.
			With ACTION CODE = G, only historical accounts dated AFTER the date entered in this field are saved. NOTE: Accounts dated that very date are not purged either.
			TABLE DATA COMPARISON (CVTA)
			Date from which data should be compared and the diffe- rences extracted.
4	1		SUB-SCHEMA NUMBER
			PRINTING OF TABLE CONTENTS
		'0 to 9'	Indicates the sub-schema to be processed. The value '0' corresponds to sub-schema '10'.
			This sub-schema number is entered only when requesting a print-out of the contents of a table.
			When entered with another procedure, input in this field is ignored.
5	1		SUB-SYSTEM NUMBER

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			This number indicates the sub-system to be processed. The value '0' corresponds to sub-system '10'.
		'0 to 9' 'blank'	BATCH TABLE UPDATE (UPTA) ------------------------- Updating is only authorized on the sub-system indica- ted in this field. Updating is authorized on all sub-systems.
		'0 to 9' 'blank'	PRINTING OF TABLE CONTENTS (PRTA) -------------------------------- Only items belonging to the indicated sub-system are printed. Printing of all items without sub-system selection.
		'0 to 9' 'blank'	EXTRACTION OF DATA FROM A TABLE (EXTA) -------------------------------------- Only items belonging to the indicated sub-system are extracted. Extraction of all items without sub-system selection.
			TABLE REORGANIZATION (RETA) -------------------------- No sub-system number should be entered for this proce- dure. Any input is ignored by the system.
			TABLE COMPARISON (CDT1) ----------------------- No sub-system number should be entered for this proce- dure. Any input is ignored by the system.
6	1		DELIMITER OR PRINT OPTION
		/	BATCH TABLE UPDATE (UPTA) EXTRACTION OF DATA FROM A TABLE (EXTA) TABLE DATA COMPARISON (CVTA) This field is used to indicate the data separation character. Default value.
		'BLANK' O	PRINTING OF TABLE DATA (PRTA) Entered only when the table key is a group key. The key is printed as one data element. All the data elements in the key are printed separate- ly.
			TABLE REORGANIZATION (RETA)
			WITH ACTION CODE = G (Historical accounts to be saved)
		BLANK	If a date is entered in the TABLE HISTORICAL ACCOUNT DATE, the corresponding historical account is saved, all other accounts are purged.
			If no date is entered in the TABLE HISTORICAL ACCOUNT DATE, all historical accounts are saved.
		<	Only historical accounts dated BEFORE the date entered in this field are saved.
		>	Only historical accounts dated AFTER the date entered in this field are saved. NOTE: Accounts dated that very date are also saved.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			WITH ACTION CODE = S (Historical accounts to purge)
		BLANK	The historical account identified by the date entered in the TABLE HISTORICAL ACCOUNT DATE field is purged.
		<	Historical accounts dated BEFORE the date entered in this field are purged.
		>	Historical accounts dated AFTER the date entered in this field are purged. NOTE: Accounts dated that very date are also purged.
7	8		DATE OF END OF SELECTION
			TABLE DATA COMPARISON (CVTA)
			Input is formatted as follows: DDMMCCYY
			Input is entered in this field only if the TABLE HISTORICAL ACCOUNT DATE field has been entered. The ending date for comparison of table data is indi- cated in this field.
		BLANK	Only table items created, modified, or deleted on the date entered in the TABLE HISTORICAL ACCOUNT DATE field are taken into account.

Table Data (V)

These lines are only used for the update of table data.

Each elementary information item must be separated from the others by a delimiter specified on the table access line.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	1		ACTION CODE
		C	Creation.
		M	Modification.
		BLANK	Creation or modification.
		D	Deletion.
2	1		CONTINUATION OF DATA
		BLANK	First line of data.
		-	Continuation of data.
3	77		TABLE DATA

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			The data of different data elements is separated by the delimiter specified in table access form 'A'.
			An empty data element is located by two successive delimiters.

Generation Request (Z)

These lines must be used for all Batch procedures which consult the VisualAge Pacbase Database.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	2		PRINT ORDER CRITERION (UNUSED)
2	4		TABLE GENERATION PRINTING REQUEST
			In case of print, deletion or modification request, this field contains the table number.
			In case of generation request this field contains the segment code defined in the Specifications Dictionary and identifies the table to generate.
		'TLS'	List of all table descriptions.
		'TDS'	Description of table whose number is entered in the entity code field. When no entity code is entered: all table descriptions
		'TGS'	Generation of the table whose associated segment code (defined in the Specifications Dictionary) is indi- cated in the entity code field.
		'TGC'	Generation of PACTABLE user documentation only.
		'TAS'	Deletion of the whole table whose number is entered in the entity code field.
		'TMS'	Table with historical accounts changed into a table without historical accounts or modification of expi- ration date.
3	6		TABLE ENTITY CODE
			With print and deletion requests, this field should be entered with the table number.
			With generation requests, this field should be entered with the segment code identifying the table in the Specifications Dictionary.
4	2		PROCEDURE FUNCTION (UNUSED)

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
5	6		TABLE DESCRIPTION EXPIRATION DATE
		BLANK	DDMMCCYY formatted date indicating the point after which the table description is no longer valid. The table description is valid until the next descrip- tion generation.
6	6		DATE ASSOC. WITH TABLE DESCRIPTION
			TABLE WITH HISTORICAL ACCOUNT(S) Required when requesting the generation of a table description (in DDMMCCYY format).
		'********'	TABLE WITHOUT HISTORICAL ACCOUNT
7	1		TABLE FORMAT TYPE
			Indicates the format of the data elements when the table description is being generated ('TGS' request).
		BLANK	Internal format (Default value).
		E	Input format.
			The description generation programs take into account the table data elements' input format thus implying a DISPLAY usage. 'E' should be entered in this field if data elements are defined in the Specifications Dictionary with an internal format different than DISPLAY.
8	1		TYPE OF SELECTION (UNUSED)

Updating of User Parameters (TA)

These lines are only used for the update of user parameters (PMTA) procedure.

Each line allows the update of a user code and its corresponding general access authorizations.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	1		ACTION CODE
		C	Creation.
		M	Modification.
		BLANK	Creation or modification.
		D	Deletion.
2	8		PACTABLES USER CODE (REQUIRED)
			This code allows the user to access tables.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
3	2		BATCH CODE IDENTIFIER (REQUIRED)
		'TA'	Required value.
4	8		PACTABLES PASSWORD
			This is the password associated with the user code (alphanumeric, uppercase).
5	1		GENERAL ACCESS AUTHORIZATION
			Indicates the type of general access authorization for a given Pactables user.
		0	Access prohibited.
		1	Consultation authorized.
		2	Consultation and updating authorized.
		3	Parameters updating authorized.

Table Access Authorization (TC)

These lines are only used in the procedure for updating user parameters. Here, they are specifically used in order to update access authorizations restricted to one table.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	1		ACTION CODE
		C	Creation.
		M	Modification.
		BLANK	Creation or modification.
		D	Deletion.
2	8		PACTABLES USER CODE (REQUIRED)
			This code allows the user to access tables.
3	2		BATCH CODE IDENTIFIER (REQUIRED)
		'TC'	Required value.
4	6		TABLE CODE (REQUIRED)
5	3		LINE NUMBER (REQUIRED)
			TABLE ACCESS AUTHORIZATION
			NUMBER OF REPETITIONS : 20

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			This field allows the Pactables Manager to grant an access authorization specific to a given table.
			This field is made up of three sub-fields described below.
6	1		SUB-SCHEMA NUMBER
		0 to 9	Number of sub-schema to which the access authorization applies.
			The value '0' corresponds to sub-schema 10.
		*	All sub-schemas.
7	1		SUB-SYSTEM NUMBER
		0 to 9	Number of sub-system to which the access authorization applies.
			The value '0' corresponds to sub-system 10.
		*	All sub-systems.
8	1		SPECIFIC AUTHORIZATIONS
			Authorization applies to the sub-schema/sub-system couple defined in the preceding fields.
		0	Access prohibited.
		1	Consultation authorized.
		2	Consultation and updating authorized.

Validation Cards (TJ)

CONTROL CARDS UPDATE FORM

These lines are only used for the Update of User Parameters procedure.

The JCL entered with a user code of '********' is accessible by all users.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	1		ACTION CODE
		C	Creation.
		M	Modification.
		BLANK	Creation or modification.
		D	Deletion.
2	8		PACTABLES USER CODE (REQUIRED)

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			This code allows the user to access tables.
3	2		BATCH CODE IDENTIFIER (REQUIRED)
		′TJ′	Required value.
4	6		LINE NUMBER FOR THE JCL (REQUIRED)
			This field contains the line number used to put the JCL lines in order.
		< 600000	Lines at the beginning of the stream.
		> 599999	Lines at the end of the stream.
5	65		CONTENTS OF THE JCL LINE

Chapter 7. Table Access by Program

INTRODUCTION

INTRODUCTION

Two modules are provided in order to access tables:
- One access module for batch programs,
- One access module for on-line programs.

NOTE

With UNIX and WINDOWS, the same access module is used for batch and on-line programs.

	BATCH STANDARD	BATCH OPTIMIZED	ON-LINE STANDARD	ON-LINE OPTIMIZED
CICS	BVPTA900	BVPTA800	BVPP920	BVPP820
IMS	BVPTA920	BVPP820	BVPP920	BVPP820
UNIX	BVPTA900	BVPTA800	BVPTA900	BVPTA800
WIN	BVPTA900	BVPTA800	BVPTA900	BVPTA800

The user can access items belonging to one or more tables by calling the access module in the program.

Both modules allow access to tables with or without historical accounts.

Access to a table's historical account may be costly in terms of input/output because access is required to both Table Description and Data Files.

To access a table without historical account and with no selection of sub-system or sub-schema, access modules are much more efficient since they require access to the Table Data File only.

USAGE DIAGRAM:

```
+-----------------------------+
! USER PROGRAM                !
! -----------                 !
! DATA:                       !
! ...                         !
! COMMUNICATION AREA:         !
! .PARAMETERS,                !
! .TABLE DESCRIPTION.         !
```
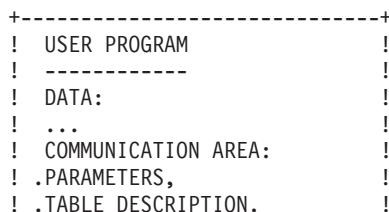
```
!  ...                        !
!  PROCEDURE:                 !
!  ...                        !  +--------+
!  .LOADING OF PARAMETERS     !  !        !
!  .CALL OF MODULE WITH PASSAGE !  !        !<--TABLE
!   FROM COMMUNICATION AREA   !-->! ACCESS !  DESCRIPTIONS
!  .RETURN CODE PROCEDURE     !<--! MODULE !
!  .DATA PROCEDURE            !  !        !<--TABLES
!  ...                        !  !        !
+----------------------------+  +--------+
```

Communication Area and Values

Both access modules use a common area allowing reception of the program's request and transmission of the corresponding data to the program.

Thre are two possible structures for this communication area. This depends on the nature of the structure defined in VisualAge Pacbase: a structure with century and a structure without century. To access data with the second structure, the access facilities the year '61' as the transition year to impact the century. If the year supplied is greater than '61', the year concerned is '19'. In the opposing case, the '20' century is concerned.

The access facilities accept the communication area's two different structures indifferently.

This common area is divided into two parts:
- A section containing access parameters,
- A section containing data from table item(s).

See below for description and coding.

The common area is generated in the program under the name G-FFEE.

Access modules use both the Table Data and Description Files.

The common area must be described in the LINKAGE section in a user validation sub-program. However, in a program accessing a table this area must be described in the WORKING-STORAGE SECTION.

USE OF COMMUNICATION AREA

The communication area must be described in the following situations:
- Table access through a program,
- Call of user validation sub-program.
  (Refer to subchapter "PROGRAMMING" in this chapter).

In the first case, the user must input the following data in the communication area:

- Consultation type,
- Table access key in the TABLE DESCRIPTION field.

In the latter case, the system uses the communication area description in order to send the following data to the subprogram before performing the call:

- Update type in G-FFEE-TABFO:
  - 'C': creation,
  - 'M': modification,
  - 'D': deletion.
- Table code in G-FFEE-NUTAB,
- Date of historical account in G-FFEE-DAHTA,
- User code in the 8 first positions of G-FFEE-FILSYS.

Communication Area with Century

STRUCTURE 1 COMMUNICATION AREA

This communication area is obtained with the tables described in the 'M' or 'N' Data Structures. The historic date for this structure 1 communication area gives the century. It is generated on option.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			TABLE CONSULTATION PARAMETERS
1	2	NUMER.	LENGTH OF PROCESSED AREA
			Length of table or table's sub-schema not including the length of the consultation parameters.
2	2	NUMER.	ADDRESS OF THE TABLE KEY
3	2	NUMER.	LENGTH OF THE USER KEY
4	1		COMMUNICATION AREA INDICATOR
			This indicator allows the access modules to recognize the communication area structure with dates that include the century.
			It must have a value equal to High-Value
5	2		CONSULTATION KEY
			The consultation key includes the following:
			- Table code, - Number of selected sub-schema (optional), - Date associated with historical account (optional).

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			In batch programs, this key is managed entirely by the system and therefore must not be modified by the user.
			In on-line programs, the user may have to enter the consultation key in order to specify a FIRST call for a consultation. This is the case, in particular, when consultation parameters are lost while being passed on to the access module.
		'00'	First call for consultation (initial value).
		'01'	Another call for an already defined consultation (automatically assigned value).
6	6		TABLE CODE
7	2		FUNCTION
			CONSULTATION FUNCTIONS
		'R1'	Direct read of a table item with transfer to the input output area.
		'R2'	Direct read of a table item without transfer to the input-output area.
			For tables without historical accounts, sub-schemas and sub-systems cannot be selected. Therefore, there will be a minimum number of input-output performed by the system (only one access).
		'L1'	Sequential read. The key given in the input-output area indicates the 'starting' key for this read, for the first 'L1' request. The input-output area must not be modified between two 'L1' operations.
		'L2'	Explicit reinitialization of a sequential read starting from the key indicated in the input-output area. The system automatically sends back the 'L1' code.
		'OP'	Initialization of a table consultation. This operation is reserved for batch programs. A consultation is defined by a table number, a sub-schema number and a date associated with the selected table's historical account.
			When this function is used for the first time, consultation files are physically opened.
			NOTE: If several tables are accessed for consultation AND if one of them is to be updated within the same program, then the function to use must be the "OU" function described below.
		'CL'	End of a table consultation. This function is reserved for batch programs.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			NOTE: 'OP' and 'CL' have no purpose under IMS.
			UPDATING FUNCTIONS: TABLES WITHOUT HISTORICAL ACCOUNTS
		RU	Read access for update. Equivalent to R1 with additional compatibility validations. The record is not blocked.
			The next three functions do not include validations:
		W	Write access (creation)
		RW	Re-Write access (modification)
		D	Deletion
		OU	Initialization for table update. Reserved for batch programs. When this function is used for the first time, files are physically opened for update.
			NOTE: If several tables are accessed for consultation AND if one of them is to be updated within the same program, then also use the "OU" function.
			USER SUB-PROGRAM CALL
			When a user validation sub-program is called, the system will automatically input one of the following values in this field:
		'C'	Creation
		'M'	Modification
		'D'	Deletion
8	2		RETURN CODE
			Once a consultation is requested, the system sends a return code:
		'00'	Request correctly executed.
		'09'	Error in communication area length.
		'10'	Key not found (direct read), end of table (sequential read), or already existing key (creation).
		'20'	Erroneous request: - Unknown type of consultation, - Non-numeric sub-schema or sub-system number, - Incorrect date of historical account, - Incorrect length of input-output area, - Update of a table with historical account(s), - Update of a table with sub-schema(s).
		'21'	Request to initialize an already initialized table.
		'22'	Consultation or closing of a non-initialized table.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		'23'	More than 50 tables consulted simultaneously (return code relevant only in batch mode).
		'24'	No table associated with requested historical account.
		'25'	No table description or sub-schema associated with requested historical account.
		'26'	Missing key for an update request
		'27'	Update incompatible with initialization request.
		'29'	Table item description does not exist (not generated) impossible read.
		OTHERS	Return code specific to access method. The non-accessed file code is entered in the FUNCTION field or in the CONSULTATION TYPE field ('TD' = TABLE DESCRIPTION file, 'TV' = TABLE CONTENTS file).
9	6		DATE OF HISTORICAL ACCOUNT
			TABLES WITH HISTORICAL ACOUNTS:
			The date of the table's historical account to be con- sulted should be formatted as follows: CCYYMMDD.
			If no date is entered, the access module looks for the 'current' historical account whose associated date is the closest to the current date.
			When a user validation sub-program is accessed, the system automatically inputs the date of the historical account in this field.
			TABLES WITHOUT HISTORICAL ACCOUNT:
			The date must be 8-characters long.
10	1		SUB-SCHEMA NUMBER
			'G' or 'H' organizations:
			For Tables defined in Pactables, this specifies the number of the Table sub-description (or sub-schema) to which the input-output area description corresponds. If the Segment called corresponds to a View and no sub-schema has been specified, the value will be that specified on the Block '-DR'.
		BLANK	All the Data Elements of the Segment.
		'0 to 9'	Sub-description (or sub-schema) number (1 to 10, where value 0 corresponds to sub-schema 10).
			V-type organizations: Secondary access keys to indexed files:

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		'2'	The secondary key is specified with the value '2' in the SUB-SCHEMA NUMBER field. The primary key must be indicated on line '00' of the Segment without use in display or reception, even if it is not used, in order to generate the RECORD KEY clause.
			If the secondary key is a group area, the number of the sub-schema must only be indicated for this group area.
		'3'	The value 3 indicates that the secondary key is DUPLICATE.
			NOTE: This specification is not implemented in the
			CICS variant because the declaration of the secondary keys is performed at the VSAM definition.
11	1		SUB-SYSTEM NUMBER
			Number of sub-group/sub-system selected for consultation.
			Sub-systems with their respective items are defined or updated by the user when the corresponding tables are defined or updated.
		BLANK	The whole table.
		1,2..9,0	Sub-group/sub-system number (1 to 10, the value 0 corresponds to sub-system 10).
12	4		TRANSACTION CODE
			Transaction code entered only in on-line programs which access the tables for consultation.
13	30		SYSTEM FILLER
			DO NOT MODIFY.
			When a user validation sub-program is accessed by the program, the system automatically inputs the user code in the first eight positions of this field.
14	999		TABLE DESCRIPTION AREA
			This area is named after the segment code which iden- tifies the table in the Specifications Dictionary. It is entered in the FFEE format.
			The Data Elements belonging to the table or table sub-schema requested in the program are described in this area.
			Its length is that of the table or sub-schema indica- ted in position 1 of the parameter area: 'length of processed area'.

Communication Area without Century

STRUCTURE 2 COMMUNICATION AREA

This communication area is obtained with the tables described in the 'T' or 'G' Data Structures. The historical date for this structure 2 communication area does not give the century. It is generated by default.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			TABLE CONSULTATION PARAMETERS
1	2	NUMER.	LENGTH OF PROCESSED AREA
			Length of table or table's sub-schema not including the length of the consultation parameters.
2	2	NUMER.	ADDRESS OF THE TABLE KEY
3	2	NUMER.	LENGTH OF THE USER KEY
4	2		CONSULTATION KEY
			The consultation key includes the following:
			- Table code, - Number of selected sub-schema (optional), - Date associated with historical account (optional).
			In batch programs, this key is managed entirely by the system and therefore must not be modified by the user.
			In on-line programs, the user may have to enter the consultation key in order to specify a FIRST call for a consultation. This is the case, in particular, when consultation parameters are lost while being passed on to the access module.
		'00'	First call for consultation (initial value).
		'01'	Another call for an already defined consultation (automatically assigned value).
5	6		TABLE CODE
6	2		FUNCTION
			CONSULTATION FUNCTIONS
		'R1'	Direct read of a table item with transfer to the input output area.
		'R2'	Direct read of a table item without transfer to the input-output area.
			For tables without historical accounts, sub-schemas and sub-systems cannot be selected. Therefore, there will be a minimum number of input-output performed by the system (only one access).

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		'L1'	Sequential read. The key given in the input-output area indicates the 'starting' key for this read, for the first 'L1' request. The input-output area must not be modified between two 'L1' operations.
		'L2'	Explicit reinitialization of a sequential read starting from the key indicated in the input-output area. The system automatically sends back the 'L1' code.
		'OP'	Initialization of a table consultation. This operation is reserved for batch programs. A consultation is defined by a table number, a sub-schema number and a date associated with the selected table's historical account.
			When this function is used for the first time, consultation files are physically opened.
			NOTE: If several tables are accessed for consultation AND if one of them is to be updated within the same program, then the function to use must be the "OU" function described below.
		'CL'	End of a table consultation. This function is reserved for batch programs.
			NOTE: 'OP' and 'CL' have no purpose under IMS.
			UPDATING FUNCTIONS: TABLES WITHOUT HISTORICAL ACCOUNTS
		RU	Read access for update. Equivalent to R1 with additional compatibility validations. The record is not blocked.
			The next three functions do not include validations:
		W	Write access (creation)
		RW	Re-Write access (modification)
		D	Deletion
		OU	Initialization for table update. Reserved for batch programs. When this function is used for the first time, files are physically opened for update.
			NOTE: If several tables are accessed for consultation AND if one of them is to be updated within the same program, then also use the "OU" function.
			USER SUB-PROGRAM CALL
			When a user validation sub-program is called, the system will automatically input one of the following values in this field:
		'C'	Creation

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		'M'	Modification
		'D'	Deletion
7	2		RETURN CODE
			Once a consultation is requested, the system sends a return code:
		'00'	Request correctly executed.
		'09'	Error in communication area length.
		'10'	Key not found (direct read), end of table (sequential read), or already existing key (creation).
		'20'	Erroneous request: - Unknown type of consultation, - Non-numeric sub-schema or sub-system number, - Incorrect date of historical account, - Incorrect length of input-output area, - Update of a table with historical account(s), - Update of a table with sub-schema(s).
		'21'	Request to initialize an already initialized table.
		'22'	Consultation or closing of a non-initialized table.
		'23'	More than 50 tables consulted simultaneously (return code relevant only in batch mode).
		'24'	No table associated with requested historical account.
		'25'	No table description or sub-schema associated with requested historical account.
		'26'	Missing key for an update request
		'27'	Update incompatible with initialization request.
		'29'	Table item description does not exist (not generated) impossible read.
		OTHERS	Return code specific to access method. The non-accessed file code is entered in the FUNCTION field or in the CONSULTATION TYPE field ('TD' = TABLE DESCRIPTION file, 'TV' = TABLE CONTENTS file).
8	6		DATE DE L'HISTORIQUE DE LA TABLE
			For tables with historic accounts:
			The historic of the date to be consulted in Year-Month-Day format.
			If there is no date, the access facility searches for the 'current' historic (i.e. the historic whose date is the same as the day's or the day before's date.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			If accessing a user control sub-program system communicates the Table's historic date in this area. For tables without historic accounts:
			In this case, the date must be 8-characters long.
9	1		SUB-SCHEMA NUMBER
			'G' or 'H' organizations:
			For Tables defined in Pactables, this specifies the number of the Table sub-description (or sub-schema) to which the input-output area description corresponds. If the Segment called corresponds to a View and no sub-schema has been specified, the value will be that specified on the Block '-DR'.
		BLANK	All the Data Elements of the Segment.
		'0 to 9'	Sub-description (or sub-schema) number (1 to 10, where value 0 corresponds to sub-schema 10).
			V-type organizations: Secondary access keys to indexed files:
		'2'	The secondary key is specified with the value '2' in the SUB-SCHEMA NUMBER field. The primary key must be indicated on line '00' of the Segment without use in display or reception, even if it is not used, in order to generate the RECORD KEY clause.
			If the secondary key is a group area, the number of the sub-schema must only be indicated for this group area.
		'3'	The value 3 indicates that the secondary key is DUPLICATE.
			NOTE: This specification is not implemented in the
			CICS variant because the declaration of the secondary keys is performed at the VSAM definition.
10	1		SUB-SYSTEM NUMBER
			Number of sub-group/sub-system selected for consultation.
			Sub-systems with their respective items are defined or updated by the user when the corresponding tables are defined or updated.
		BLANK	The whole table.
		1,2..9,0	Sub-group/sub-system number (1 to 10, the value 0 corresponds to sub-system 10).
11	4		TRANSACTION CODE

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			Transaction code entered only in on-line programs which access the tables for consultation.
12	30		FILLER SYSTEME
			Must not be modified.
			If accessing the user control sub-program, the system transfers the user code in the first six characters of the area.
13	999		TABLE DESCRIPTION AREA
			This area is named after the segment code which iden- tifies the table in the Specifications Dictionary. It is entered in the FFEE format.
			The Data Elements belonging to the table or table sub-schema requested in the program are described in this area.
			Its length is that of the table or sub-schema indica- ted in position 1 of the parameter area: 'length of processed area'.

Programming

Programs accessing tables are coded at two levels:

- Common area description,
- Input of parameters and access requests.

DESCRIPTION OF THE COMMON AREA

This description is automatically generated by the BATCH S.D. or the ON-LINE S.D. VisualAge Pacbase functions.

BATCH SYSTEMS DEVELOPMENT FUNCTION

Generation of the common area description requires a data structure call line (-CD) containing the following data:

- The data structure code of the table.
- 'G' in the ORGANIZATION field.
- The USAGE OF DATA STRUCTURE field (authorized values are 'C', 'D', 'T' or 'X').
- Selection of segments corresponding to the tables accessed by the program. 'T' or 'X' usage: ONE segment selected per table.
- OPTION: Table sub-schema selection with one-digit input (0 to 9, where 0 corresponds to sub-schema 10) in the SELECT field. If no selection is made, the whole table description will be generated.

The possible selection of a sub-system must be initialized di_ rectly in the program.

ON-LINE S.D.

Generation of the common area description requires a Call of Segments line (-CS) containing the following data:
- The segment code of the table,
- 'G' in the ORGANIZATION field,
- OPTION: Table sub-schema selection with one-digit input (0 to 9, where 0 corresponds to sub-schema 10) in the SUB-SCHEMA NUMBER field.
- OPTION: Table sub-system selection with NUSSY entered in the ACCESS KEY (DATA ELEMENT CODE) field and a 1-digit input (0 to 9) in the ACCESS KEY SOURCE field.
- Tables access transaction code in the EXTERNAL NAME OF THE FILE field.
- Type of description:
  I = Internal format (default value),
  E = Input Format.

BATCH OR ON-LINE S.D.

The common area can also be generated using a Work Area screen (-W) of the calling program 'Type of Line or Data Element Format' value 'F' (no access generated) by coding:
- The data structure code and the selection of segments corresponding to the tables,
- 'G' in the ORGANIZATION field,
- OPTION: selection of a table sub-schema with one-digit input (0 to 9, where 0 corresponds to sub-schema 10) in the SELECTED DESCRIPTION field.

NOTE:: These fields appear on a formatted line which appears after the 'F' is entered in the TYPE OF LINE field. (Refer to the STRUCTURED CODE Reference Manual.)

One common area per table is generated, that is, one per selected segment from a call line ('-CD' or '-CS' or 'W' of type 'F' with a 'G' in the ORGANIZATION field).

This common area is generated at the requested level by the data structure call line (01: level default value) under the code G-FFEE, with FFEE = table segment code.

- The field containing the access parameters is called 'G-FFEE-PARAM' (at level 04), and the parameterized data elements described in the preceding subchapter are in the form G-FFEE-DELCO (at level 05).
- The data area is in the standard format: FFEE (at level 04) with data in the format FFEE-DELCO.
- The parameter area of each table is automatically initialized if the user requests a description type with a 'value', with the exception of the "Function or Type of Consultation" (TABFO), the "Date of Historical Account" (DAHTA) and the "Sub-system Number" (NUSSY). In On-line, the description type always has a 'VALUE'.

INPUT OF PARAMETERS AND ACCESS REQUESTS

Refer to the preceding subchapter for instructions on inputting parameters.

BATCH S.D. FUNCTION

The table access commands must be written by the user, preferably using standard macro-structures that will be called into programs at specific locations.

For values of 'C', 'T', and 'X', the read statement generated is 'PERFORM F95FF' (FF being the "Data Structure Code in the Program"), which allows insertion of the access command in the sub-function F95FF.

An access command is broken down into three parts:
- Loading the parameters,
- Calling the access module and passing to it the G-FFEE field,
- The return code test (G-FFEE-TABCR), and branching based on its value.

(See P.M.S. examples on the following pages.)

ON-LINE S.D. FUNCTION

Access to tables called in programs is automatically generated. Loading parameters are either generated by the values in the programs or written by the user.

Physical access by the 'General Access Module' to each table is generated in F80:

. F80-FFEE-A

. F80-FFEE-1 to call the General Access Module.

```
"A" may have the following values:
```

```
+-------+------------------------------------+
! VALUE ! MEANING                            !
+-------+------------------------------------+
!   R   ! DIRECT ITEM READ ACCESS            !
!   P   ! POSITIONING & SEQUENTIAL READ ACCESS !
!   RU  ! READ ACCESS FOR UPDATE             !
!   W   ! WRITE ACCESS                       !
!   RW  ! RE-WRITE ACCESS                    !
!   D   ! DELETION                           !
!   1   ! GENERAL ACCESS MODULE CALL         !
+-------+------------------------------------+
```

The name of the General Access Module is 'Pactables' by default.

This name can be changed on the '-GO' screen at the dialogue level, with value 'C2' in the OPERATION field, '04' justified on the left margin in the DESCRIPTION field and the new name justified on the tabulation spot in the DESCRIPTION field,

<u>PROCESSING OF THE RETURN CODE</u>

The procedures to be executed based on the value of the return code can be as detailed as needed in order to satisfy user requirements. It is advisable to clearly distinguish between physical integrity errors on table files and command or table contents errors.

Refer to the preceding subchapter for the list of return code values (RETURN CODE field).

<u>CODING THE INTERNAL SUB-SYSTEM FIELD</u>

The assignment of an item to a sub-system during update is coded by a number ('1' ... '0') in the SUB-SYSTEM NUMBER field. A 10-character internal field corresponds to this sub-system coding, i.e., the numeric coding is translated into a 'O' in the corresponding position.

EXAMPLE:: DELCO belongs to the sub-systems 3, 5, and 6. The sub-system internal field is coded as follows:

```
POS.              1---5---90
    2             '  O OO   '
```

Any update in this field via access modules must take this coding into account.

Examples of Macro-structures

<u>BATCH TABLE ACCESS:</u>

    1. OPEN AND CLOSE

```
01 $1      N   OPENING $1$2      10BL
01 $1 010 M    'OP' G-$1$2-TABFO
01 $1 020 CAL 'BVPTA900'
01 $1 025      USING G-$1$2
01 $1 030 P    $3                99IT G-$1$2-TABCR NOT = '00'
```

with $1$2 = DDSS and $3 = return code processing function.

TABFO = Function or Type of Consultation

TABCR = Return Code

(Identical for closing in function 20 and with 'CL').

     2. DIRECT READ

```
FF SF nn1 M    'R1' G-$1$2-TABFO
FF SF nn2 M    xxxxx  $1$2-DELCO    (DELCO = item key)
FF SF nn3 CAL 'BVPTA900'
FF SF nn4      USING g-$1$2
FF SF nn5 P    $3                99IT G-$1$2-TABCR NOT = '00'
```

where FF SF and nn can also be parameterized.

     3. SEQUENTIAL READ (value 'T' or 'X')

```
95 $1      N   READ      $1$2     10BL
95 $1  2  COB GO TO F95$1-200    99IT I$1$2L NOT = ZERO
95 $1  4  M    'OP' G-$1$2-TABFO 99BL
95 $1  6  CAL 'BVPTA900'
95 $1  7      USING G-$1$2
95 $1  8  P    $3                99IT G-$1$2-TABCR not = '00'
95 $1 10  GT   10
95 $1 20  COA F95$1-200.
95 $1 22  M    'L1' G-$1$2-TABFO 99BL
95 $1 24  CAL 'BVPTA900'
95 $1 26      USING G-$1$2
95 $1 27  GT   10                99IT G-$1$2-TABCR='00'
95 $1 28  P    $3                99IT G-$1$2-TABCR NOT = '10'
95 $1 30  GT   10
95 $1 32  M    '1' $1-FT         99BL
95 $1 34  M    'CL' G-$1$2-TABFO
95 $1 36  CAL 'BVPTA900'
95 $1 38      USING G-$1$2
95 $1 40  P    $3                99IT G-$1$2-TABCR NOT = '00'
```

NOTES:

- With IMS and UNIX, batch access to Pactables is coded in the same way as on-line access.
- With UNIX (Microfocus COBOL), it is better to use ″ (double quote) instead of ′(quote).

ON-LINE ACCESS:

The ON-LINE S.D. function automatically generates table access. However, for specific purposes, the user may enter his own access to the general access

module. This is possible through the use of a macro-structure. The writing of this macro structure depends on which monitor is used.

An on-line access request is basically the same as a batch request. However, the table access transaction code should be transferred to the access module and, if desired, the consultation key number should be specified. (Refer to subchapter "COMMUNICATION AREA AND VALUES" in this chapter, where Consultation Key is covered.)

$1$2 = DDSS, $3 = Return Code Processing Function,

TRANID = "Transaction Code",

TABFO = "Function or Type of Consultation",

TABCR = "Return Code"

CICS example:
```
FF SF nn1 M   'PA01' G-$1$2-TRANID
FF SF nn2 M   'R1' G-$1$2-TABFO
FF SF nn3 M   xxxxx  $1$2-DELCO    (DELCO = table key)
FF SF nn4 EXC LINK PROGRAM ('BVPP920')
FF SF nn5     COMMAREA (G-$1$2)
FF SF nn6     LENGTH ($4)
FF SF nn7 P   $3                99IT G-$1$2-TABCR NOT = '00'
```
IMS example:
```
LINKAGE SECTION
01   $3-TD    PICTURE X(78).
01   $3-TV    PICTURE X(78).
PROCEDURE DIVISION USING
                        $3-TD
                        $3-TV
FF SF nn1 M   'PG00' G-$1$2-TRANID
FF SF nn2 M   'R1' G-$1$2-TABFO
FF SF nn3 M   TC11-ZCORED $1$2-ZCORED
FF SF nn4 CAL 'BVPP920' USING $3-TD
FF SF nn5                 $3-TV
FF SF nn6                 G-$1$2
FF SF nn7 M   'PGUT029921' EM00-XCLEF 99IT G-$1$2-TABCR='00'
```

NOTE:: -TD corresponds to the PCB of the TD Table Description file.

-TV corresponds to the PCB of the TV Table Data file.

Pactables BATCH Access Sub-programs Dynamic Call

A non-dynamic call of Pactables batch access sub-programs into many validation programs causes a significant amount of maintenance on the executable load-modules of the end-user applications when new versions of these sub-programs are implemented.

Depending on the Operating System and COBOL compiler in use, it is more or less simple to dynamically call a Pactables batch access sub-program, i.e., to load its last version from the library of executable load modules when the program is executed.

If this dynamic call can be implemented, the COBOL Reference Documentation provides the necessary information.

Chapter 8. Examples of User Validation Sub-programs

Introduction

The purpose of this chapter is to give an example of a user validation sub-program that may be called by Pactables during an update.

Two sub-programs performing the same validations are presented in this chapter:

- The first sub-program is written for on-line updating (CICS-OS variant).
- The second sub-program is written for batch updating (CICS-OS and Micro Focus variants).

VALIDATION PRINCIPLES

The validated table is defined in the Specifications Dictionary under the segment code 'TC11' with the table number being 'INFOS'. A certain number of validations are coded on the Call of Data Elements screen (-CE of TC11).

The call of the validation sub-program PGUT02 is coded at the 'ZDTANC' data element level. This sub-program performs compatibility validations between some of the data elements of the 'TC11' table. It also performs a validation in regard to another table's contents (segment TC20, CODTAU table).

THE COMMON AREA

This area is used as a link between Pactables and the user's program. Thus, it must be defined in the LINKAGE SECTION of a COBOL program.

It is made up of:

- A field of 90 characters corresponding to the description of the Error Message File ('EM'),
- A COMMUNICATION field identical to the one used in table access described in chapter "TABLE ACCESS BY PROGRAM", subchapter "COMMUNICATION AREA AND VALUES".

ERROR DETECTION

Pactables considers an error has been detected by the user's program when there is a value in the data elements 'ERCOD' and/or 'ERTYP' of the error message.

The data element 'ERCOD', with a length of three, is found in the 11th position of the common area.

The data element 'ERTYP', with a length of one, is found in the 14th position of the common area.

In a batch update, an error is considered severe if the data element 'ERLVL' (length 1, position 18) has been set to the value 'E'. Otherwise, the error is simply pointed out and updating takes place.

IBM-CICS On-line Example

ON-LINE VALIDATION SUB-PROGRAM

Such a program can be written:
- With the help of the Structured Code function if it has been installed at the user's site, or
- Directly in COBOL.

In the following example, the program is written in Structured Code. The sub-program is defined as the Program entity. The on-line type is specified on the definition screen.

For additional information on the Program entity, refer to the STRUCTURED CODE Reference Manual.

For information on the system constraints related to the call of user sub-programs, refer to the PACTABLE Operations Manual.

CALLING THE DATA STRUCTURES

The COMMUNICATION area belonging to the LINKAGE section is defined by the data structure 'EM' as well as by the table description 'TC11'.

The table description 'CODTAU' called in the program 'TD20' must appear in the WORKING-STORAGE SECTION.

DESCRIPTION OF THE F45 FUNCTION

This function corresponds to the validation in relation to the 'TD20' table. It is broken down into:
- Coding the request,
- Filling in the table key,
- Calling the program accessing the tables,

- Processing based on the return code with possible error positioning.

DESCRIPTION OF THE F50 FUNCTION

If the 'TD20' table is read without any errors, this function validates the compatibility of the data between the two tables.

DISPLAY AFTER VALIDATIONS

If any errors were detected after completing all validations, Pactables displays the contents of the following fields:
- Data element 'ERCOD' (Length 3, Position 11),
- Data element 'ERTYP' (Length 1, Position 14),
- Data element 'ERMSG' (Length 66, Position 19).

```
--------------------------------------------------------------------------------
|                    CENTRAL DOCUMENTATION                    *DOC.PBDO.DOC.337 |
| PROGRAM DEFINITION....... PGUT02                                              |
|                                                                              |
| PROGRAM NAME......................: 'INFOS' TABLE VALI TP SB-PROG            |
|                                                                              |
| CODE FOR SEQUENCE OF GENERATION....: PGUT02                                   |
|                                                                              |
| TYPE OF CODE TO GENERATE...........: 0                                        |
| COBOL NUMBERING AND ALIGNMENT OPT..:                                          |
| CONTROL CARDS IN FRONT OF PROGRAM..: C                                        |
| CONTROL CARDS IN BACK OF PROGRAM.. : C                                        |
| COBOL PROGRAM-ID...................: PGUT02                                   |
| MODE OF PROGRAMMING................: P                                        |
| TYPE AND STRUCTURE OF PROGRAM......: T                                        |
| PROGRAM CLASSIFICATION CODE........: P   PROGRAM                              |
| TYPE OF PRESENCE VALIDATION........:                                          |
| SQL INDICATORS GENERATION WITH '_'.:                                          |
|                                                                              |
|                                                                              |
| EXPLICIT KEYWORDS..:                                                          |
|                                                                              |
| SESSION NUMBER.....: 0337        LIBRARY......: DOC    LOCK....:              |
|                                                                              |
| O: C1 CH: Ppgut02                        ACTION:                             |
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
|                CENTRAL DOCUMENTATION                      *DOC.PBDO.DOC.337 |
| DATA STRUCTURES USED IN PROGRAM :   PGUT02 'INFOS' TABLE VALI TP SB-PROG    |
|                                                                            |
| A DP CO : DL EXTERN OARFU BLOCK T  B M U RE SE L UNIT C SELECTION F E R L PL|
|   EM   : EM EM    LSFOU   O R      D                          I    2 8      |
|        :    STAT.FLD:            ACC. KEY:         RECTYPEL                 |
|   TC   : TC TC    GSFOU   O R      D               *11        I  1 2 8      |
|        :    STAT.FLD:            ACC. KEY:         RECTYPEL                 |
|   TD   : TC TD    GSFOU   O R      D               *20        I  2 1 T      |
|        :    STAT.FLD:            ACC. KEY:         RECTYPEL                 |
|        :                                                                   |
|        :    STAT.FLD:            ACC. KEY:         RECTYPEL                 |
|        :                                                                   |
|        :    STAT.FLD:            ACC. KEY:         RECTYPEL                 |
|        :                                                                   |
|        :    STAT.FLD:            ACC. KEY:         RECTYPEL                 |
|        :                                                                   |
|        :    STAT.FLD:            ACC. KEY:         RECTYPEL                 |
|        :                                                                   |
|        :    STAT.FLD:            ACC. KEY:         RECTYPEL                 |
|        :                                                                   |
|        :    STAT.FLD:            ACC. KEY:         RECTYPEL                 |
|                                                                            |
| O: C1 CH: Ppgut02CD                                                        |
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
                    CENTRAL DOCUMENTATION                    *DOC.PBDO.DOC.337
WORK AREAS..........ENTITY TYPE P PGUT02 'INFOS' TABLE VALI TP SB-PROG

CODE FOR PLACEMENT..:      80
A LIN T LEVEL OR SECTION WORK AREA DESCRIPTION                       OCCURS
  000   LINKAGE SECTION.
  100   01              DFHCOMMAREA.




















 O: C1 CH: Ppgut02W80
--------------------------------------------------------------------------------


   PROCEDURAL CODE OF PGUT02 PROGRAM
   --------------------------------



   FF SF LIN OPE OPERANDS                         LVTY CONDITION
   45    000 N   ACCESS  TABLE 'CODTAU' (TD20)    05BL
   -- -- --- --- ------------------------------- ---- -------------------
   45 AL 000 N   READ                             10BL
   45 AL 020 M   'PG00' G-TD20-TRANID
   45 AL 040 M   'R1' G-TD20-TABFO
   45 AL 060 M   TC11-ZCORED TD20-ZCORED
   45 AL 080 EXC LINK PROGRAM ('BVPP920')
   45 AL 100     COMMAREA (G-TD20)
   45 AL 120     LENGTH (90)
   45 AL 140 M   'PGUT029921' EM00-EMKEY          99IT G-TD20-TABCR  ='10'
   45 AL 220 M   'DISCOUNT CODE NOT FOUND TC20'
   45 AL 240     EM00-ERMSG
   45 AL 260 GT  05
   45 AL 310 M   'PGUT029922' EM00-EMKEY          99IT G-TD20-TABCR  NOT =
   45 AL 315 M   'RETURN CODE TABCR : '                '00'
   45 AL 340     EM00-ERMSG1
   45 AL 345 M   G-TD20-TABCR
   45 AL 350     EM00-ERMSG2
   45 AL 360 GT  05
   -- -- --- --- ------------------------------- ---- -------------------
   50 CC 000 N   COMPATIBILITY ZCORED AND ZDTANC  10IT TC11-ZDTANC >
   50 CC 040                                           TD20-ZDTANC
```

```
50 CC 100 M   'PGUT029923' EM00-EMKEY
50 CC 120 M   'INSUF. SENIORITY FOR DISC. REQ'
50 CC 140     EM00-ERMSG
50 CC 200 GT  05
-- -- --- --- ------------------------------ ---- ------------------
50 DD 000 N   COMPATIBILITY ZCORED AND ZTOTAN  10IT TC11-ZTOTAN <
50 DD 040                                           TD20-ZTOTAN
50 DD 100 M   'PGUT029924' EM00-EMKEY
50 DD 120 M   'INSUF. TOTAL FOR DISC. REQUEST'
50 DD 140     EM00-ERMSG
50 DD 200 GT  05
-- -- --- --- ------------------------------ ---- ------------------
60    000 N   RETURN                          05BL
60    100     EXC RETURN
60    200 COB GOBACK.
-- -- --- --- ------------------------------ ---- ------------------
```

BATCH Validation Sub-Program

BATCH VALIDATION SUB-PROGRAM

A batch validation sub-program can be written:

- With the help of the Structured Code function if it is installed at the user's site.
- Directly in COBOL otherwise.

In the following example, the program is written with the Structured Code function. The sub-program is defined through the Program entity.

For additional information on the program entity, please refer to the STRUCTURED CODE Reference Manual.

CALLING THE DATA STRUCTURES

The communication area belonging to the LINKAGE section is defined by the data structure 'EM' as well as by the table description 'TC11'.

The table description 'CODTAU' called in the program 'TD20' must appear in the WORKING-STORAGE SECTION.

DESCRIPTION OF THE F45 FUNCTION

This function corresponds to the validation in relation to the 'TD20' table. It is broken down into:

- Table Files OPEN,
- Request coding,
- Filling in the table key,

- Calling the program accessing the tables,
- Processing depending on the return code with possible error positioning,
- Table Files CLOSE.

DESCRIPTION OF THE F50 FUNCTION

If the 'TD20' table is read without any errors, this function validates the compatibility of the data between the two tables.

DISPLAY AFTER VALIDATIONS

If any errors were detected after completing all validations, Pactables displays the contents of the following fields:
- Data element 'ERCOD' (Length 3, Position 11),
- Data element 'ERTYP' (Length 1, Position 14),
- Data element 'ERMSG' (Length 66, Position 19).

Notes about Micro Focus COBOL

Only the TYPE OF CODE TO GENERATE must be adapted (value 3) on the program definition screen of the example presented on the following pages.

The same validation programs can be used in a batch or an on-line mode.

```
--------------------------------------------------------------------------------
|               CENTRAL DOCUMENTATION                   *DOC.PBDO.DOC.337 |
| PROGRAM DEFINITION....... PGUT22                                         |
|                                                                         |
| PROGRAM NAME.......................: 'INFOS' TABLE BA VAL SB-PROGR       |
|                                                                         |
| CODE FOR SEQUENCE OF GENERATION....: PGUT22                             |
|                                                                         |
| TYPE OF CODE TO GENERATE...........: 0                                   |
| COBOL NUMBERING AND ALIGNMENT OPT..:                                     |
| CONTROL CARDS IN FRONT OF PROGRAM..: B                                   |
| CONTROL CARDS IN BACK OF PROGRAM.. : B                                   |
| COBOL PROGRAM-ID...................: PGUT02                             |
| MODE OF PROGRAMMING................: P                                   |
| TYPE AND STRUCTURE OF PROGRAM......: B                                   |
| PROGRAM CLASSIFICATION CODE........: P   PROGRAM                         |
| TYPE OF PRESENCE VALIDATION........:                                     |
| SQL INDICATORS GENERATION WITH '_'.:                                     |
|                                                                         |
|                                                                         |
| EXPLICIT KEYWORDS..:                                                     |
|                                                                         |
| SESSION NUMBER.....: 0337      LIBRARY......: DOC    LOCK....:           |
|                                                                         |
| O: C1 CH: Ppgut22                       ACTION:                         |
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
|                  CENTRAL DOCUMENTATION                    *DOC.PBDO.DOC.337 |
| DATA STRUCTURES USED IN PROGRAM :    PGUT22 'INFOS' TABLE BA VAL SB-PROGR   |
|                                                                            |
| A DP CO : DL EXTERN OARFU BLOCK T B M U RE SE L UNIT C  SELECTION F E R L PL |
|   EM   : EM EM    LSFOU    O R    D                               I    2  8 |
|        :    STAT.FLD:          ACC. KEY:          RECTYPEL                  |
|   TC   : TC TC    GSFOU    O R    D                      *11      I  1 2  8 |
|        :    STAT.FLD:          ACC. KEY:          RECTYPEL                  |
|   TD   : TD TC    GSFOU    O R    D                      *20      I  2 1  T |
|        :    STAT.FLD:          ACC. KEY:          RECTYPEL                  |
|        :                                                                   |
|        :    STAT.FLD:          ACC. KEY:          RECTYPEL                  |
|        :                                                                   |
|        :    STAT.FLD:          ACC. KEY:          RECTYPEL                  |
|        :                                                                   |
|        :    STAT.FLD:          ACC. KEY:          RECTYPEL                  |
|        :                                                                   |
|        :    STAT.FLD:          ACC. KEY:          RECTYPEL                  |
|        :                                                                   |
|        :    STAT.FLD:          ACC. KEY:          RECTYPEL                  |
|        :                                                                   |
|        :    STAT.FLD:          ACC. KEY:          RECTYPEL                  |
|                                                                            |
| O: C1 CH: Ppgut22CD                                                         |
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
                  CENTRAL DOCUMENTATION                      *DOC.PBDO.DOC.337
WORK AREAS..........ENTITY TYPE P PGUT22 'INFOS' TABLE O-L VAL SB-PROG

CODE FOR PLACEMENT..:      80
A LIN T LEVEL OR SECTION WORK AREA DESCRIPTION                          OCCURS
  000    LINKAGE SECTION.
  100    01              DFHCOMMAREA.
```

```
 O: C1 CH: Ppgut22W80
```

```
--------------------------------------------------------------------------------
|                  CENTRAL DOCUMENTATION                    *DOC.PBDO.DOC.337 |
| WORK AREAS..........ENTITY TYPE P PGUT22 'INFOS' TABLE VAL BA SB-PROGR      |
|                                                                            |
| CODE FOR PLACEMENT..:    99                                                |
| A LIN T LEVEL OR SECTION WORK AREA DESCRIPTION                     OCCURS  |
|   999   PROCEDURE DIVISION USING DFHCOMMAREA.                              |
|                                                                            |
|                                                                            |
|                                                                            |
|                                                                            |
|                                                                            |
|                                                                            |
|                                                                            |
|                                                                            |
|                                                                            |
|                                                                            |
|                                                                            |
|                                                                            |
|                                                                            |
|                                                                            |
|                                                                            |
| O: C1 CH: Ppgut22W99                                                       |
--------------------------------------------------------------------------------
```

PROCEDURAL CODE OF PGUT22 PROGRAM

```
FF SF LIN OPE OPERANDS                    LVTY CONDITION
45    000 N   ACCESS TABLE 'CODTAU' (TD20) 05BL
-- -- --- --- ------------------------------ ---- -------------------
45 AL 000 N   READ                         10BL
45 AL 020 M   'PG00' G-TD20-TRANID
45 AL 030 M   'OP' G-TD20-TABFO
45 AL 035 P   F90CA
45 AL 040 M   'R1' G-TD20-TABFO
45 AL 060 M   TC11-ZCORED TD20-ZCORED
45 AL 065 P   F90CA
45 AL 140 M   'PGUT229921' EM00-EMKEY      99IT G-TD20-TABCR  ='10'
45 AL 220 M   'DISCOUNT CODE NOT FOUND TC20'
45 AL 240     EM00-ERMSG
45 AL 250 M   'E' EM00-ERLVL
45 AL 260 GT  05
45 AL 310 M   'PGUT229922' EM00-EMKEY      99IT G-TD20-TABCR  NOT =
45 AL 320                                       '00'
45 AL 330 M   'RETURN CODE TABCR : '
45 AL 340     EM00-ERMSG1
45 AL 345 M   G-TD20-TABCR
45 AL 350     EM00-ERMSG2
45 AL 355 M   'E' EM00-ERLVL
45 AL 360 GT  05
-- -- --- --- ------------------------------ ---- -------------------
50 CC 000 N   COMPATIBILITY ZCORED AND ZDTANC 10IT TC11-ZDTANC >
50 CC 020                                          TD20-ZDTANC
50 CC 100 M   'PGUT229923' EM00-EMKEY
```

```
50 CC 120 M   'INSUF. SENIORITY FOR DIS. REQ.'
50 CC 140     EM00-ERMSG
50 CC 150 M   'E' EM00-ERLVL
50 CC 200 GT  05
-- -- --- --- ------------------------------ ---- ------------------
50 DD 000 N   COMPATIBILITY ZCORED AND ZTOTAN  10IT TC11-ZTOTAN <
50 DD 040                                          TD20-ZTOTAN
50 DD 100 M   'PGUT229924' EM00-EMKEY
50 DD 120 M   'INSUF. TOTAL FOR DISCOUNT REQ.'
50 DD 140     EM00-ERMSG
50 DD 150 M   'E' EM00-ERLVL
50 DD 200 GT  05
-- -- --- --- ------------------------------ ---- ------------------
60     0 N    CLOSE                            05BL
60     100 M  'CL'  G-TD20-TABFO
60     150 P  F90CA
60     200 COB GOBACK.
-- -- --- --- ------------------------------ ---- ------------------
90 CA 000 N   SP  PTA900                       10BL
90 CA 080 CAL 'BVPTA900'
90 CA 100     USING G-TD20
-- -- --- --- ------------------------------ ---- ------------------
```

Chapter 9. Direct Access from End-user Application

Introduction

An application end-user may directly access Pactables (with the option of calling a given Pactables screen) without having to quit his/her application.

This facility proves particularly useful when the end-user application accesses tables for update validation purposes.

When the update is not valid, the end-user calls the corresponding Pactables screen, consults and/or updates the table's item accordingly and returns to the application screen.

NOTE:: This is even more useful for tables with historical accounts as they cannot be updated with the General Access Modules.

This facility is available if the end-user application activates a Navigation Module by sending it a number of parameters via a specific Communication Area.

The dialog's Communication Area must be saved as well as, if necessary, the calling end-user screen.

Parameters are validated by the Navigation Module, which sends a return code to the user dialog in case of error, or passes control to the Pactables transaction.

WORKSTATIONS WITH WINDOWS and TERMINALS X

The navigation module is not available on these machines.

Multi-windowing allows the user to connect to the Pactables on-line server in a window while keeping its application in another window.

```
 --------------------------------------------------------------------------
|                                                                          |
|                                                                          |
|                                                                          |
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|                                                                          |
|                                                                          |
|    ------------------------------------------                            |
|   |                                          | <------                   |
|   |          U S E R   D I A L O G           |     | 4                   |
|   |                                          |     ---------   ----------|
|   | ...                                      |       x     |         |   |
|   | COMMUNICATION AREA WITH PARAMETERS       |             |         |   |
|   | ...                                      |       x     |         |   |
|   |                                          |          | <------ |   | ...
|   | PROCEDURE                                |          |         |   |
|   | .IF RETURN FROM PACTABLES, RELOAD OF     |          |         |   |
|   |  DIALOG COMMUNICATION AREA PREVIOUSLY    |       L  |         |   |
|   |  SAVED                                   |          ------>  |   | ...
|   |                                          |          |         |   |
|   | .BEFORE TRANSFER:                        |       K  |         |   |
|   |  SAVE OF DIALOG & SCREEN COMMUNICATION   |          |         |   | AREA
|   |  LOAD OF PARAMETERS                      |          |                |
|   |                                          |          |                |
|   | .CONTROL TRANSFER TO ACCESS MODULE       | >------ 1                 |
|   |                                          |                           |
|    ------------------------------------------                            |
|                                                                          |
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 --------------------------------------------------------------------------
```
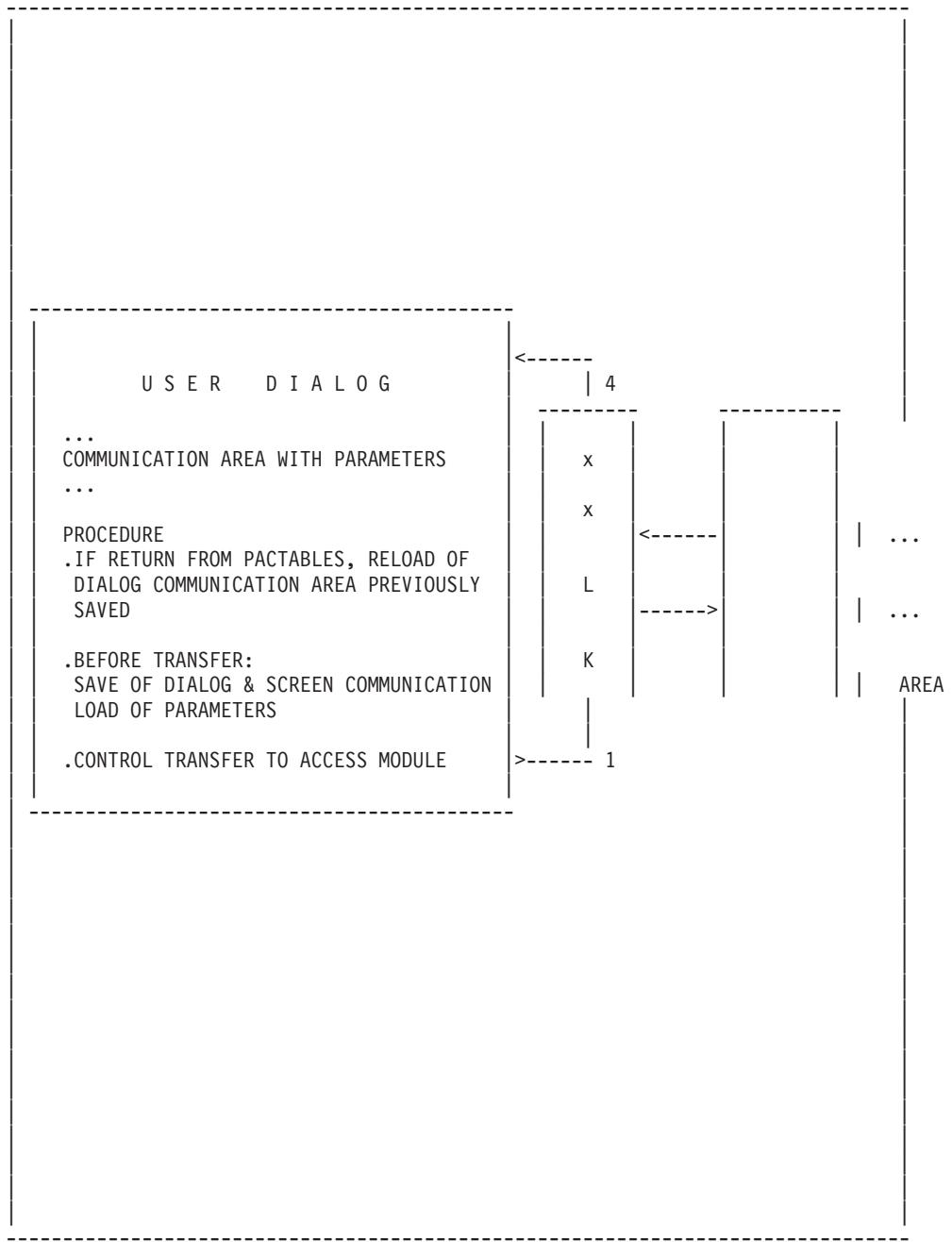
Conversation Area - Programming

IMPLEMENTATION

(For more details on entities and dialogues, refer to the SPECIFICATIONS DICTIONARY, STRUCTERED CODE and ON-LINE SYSTEMS DEVELOPMENT Reference Manuals.)

The Communication Area is defined as a Segment entity occurrence in the Specifications Dictionary.

This Segment occurrence is called on an "F"-Type line of the end-user screen's Work Areas (CH: O......W).

The Communication Area must include the code of the calling end-user screen. With CICS, it must also include the prefix of the Pactables files.

These parameters allow for branching to the Pactables Logon screen.

If a specific Pactables screen has to be accessed instead of the Logon screen, other fields must be entered.

For the complete description of the Communication Area, see the next pages.

The Communication Area must be saved as well as the calling end-user screen, if necessary.

Transferred parameters are validated by the Navigation Module, which either passes control to the Pactables transaction or sends a return code in case of error.

When going from the Pactables transaction to the user dialog, the field which contained the dialog program code is given the value 'BVPPLNK', a return code is set and the other parameters are erased.

There are two communication area structures: one which presents the century and one which does not.

IMPLEMENTATION (CONT'D)

Processing before control transfer

The user program must transfer the parameters to the communication area, back up the communication area and, if necessary, save the dialog screen.

Return to the user dialog

The user program must restore the communication area and, if necessary, the dialog screen when the Navigation Module passes control back (this is identified by the value 'BVPPLNK' in the Screen Code in the Dialogue field in

the Communication area). The processing to be executed may then be executed conditionally by the return code value.

Conversation Area with Century - Programming

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	6		CALLING END-USER SCREEN CODE
			When the external name exceeds six characters, it must be entered in the 'SCREEN EXTERNAL NAME' field.
2	1		COMMUNICATION AREA INDICATOR
			This indicator allows the access modules to recognize the communication area structure with dates that include the century.
			It must have a value equal to High-Value
3	4		PREFIX OF PACTABLES FILES (REQUIRED)
4	4		RETURN CODE
		0000	OK
		0101 0102 0103 0104 0105 0106 0107 0108 0109	Unknown user Unknown password Incorrect Operation Code Incorrect date Incorrect sub-schema number Incorrect sub-system number Unknown table Unknown sub-schema Unknown sub-system
			The Error Code is found in the SYSTEM ERROR CODE field for the following Return Code values:
		TD__ TV__	The third and fourth positions contain the last Operation Code performed.
		P5__	These two characters are followed by the number of the program not found.
5	10		SYSTEM ERROR CODE
			This field contains a return code specific to the access method in use.
6	8		PACTABLES USER CODE
			This code allows the user to access tables.
7	8		PACTABLES PASSWORD
			This is the password associated with the user code (alphanumeric, uppercase).
8	2		OPERATION CODE

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		LD C1 C2 C3 CR MO DE LT LS LH LE LJ	On-Line Documentation Single item consultation Multi-item consultation Consultation of an item's historical accounts Item creation Item modification Item deletion List of tables List of sub-schemas and sub-systems sorted by table List of table historical accounts List of Table Print requests sorted by user Table Print JCL lines sorted by user
9	6		END USER TABLE ID / TABLE CODE
			This is the code used to access a table via Pactables. Pactables differentiates between lowercase and uppercase input in this field.
10	6		HISTORICAL ACCOUNT DATE
			Historical date in CCYYMMDD format.
11	1	NUMER.	SUB-SCHEMA NUMBER
			Number of sub-schema selected for consultation.
			Sub-schemas are defined and managed by the user when the corresponding tables are defined.
		'blank'	The whole table.
		'1,2..9,0'	Sub-schema number (1 to 10, the value 0 corresponds to sub-schema No. 10).
12	1		SUB-SYSTEM NUMBER
			Number of sub-group/sub-system selected for consultation.
			Sub-systems with their respective items are defined or updated by the user when the corresponding tables are defined or updated.
		BLANK	The whole table.
		1,2..9,0	Sub-group/sub-system number (1 to 10, the value 0 corresponds to sub-system 10).
13	20		ITEM KEY
14	8		SCREEN EXTERNAL NAME (8 CHARACTERS)
			When the 'CALLING END-USER SCREEN CODE' field (first field of the communication area) is not used, this field is stored for the return from the navigation module.
			IMS: transaction code of the navigation module.
15	1		NOT USED

Conversation Area without Century - Programming

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	6		CALLING END-USER SCREEN CODE
			When the external name exceeds six characters, it must be entered in the 'SCREEN EXTERNAL NAME' field.
2	4		PREFIX OF PACTABLES FILES (REQUIRED)
3	4		RETURN CODE
		0000	OK
		0101 0102 0103 0104 0105 0106 0107 0108 0109	Unknown user Unknown password Incorrect Operation Code Incorrect date Incorrect sub-schema number Incorrect sub-system number Unknown table Unknown sub-schema Unknown sub-system
			The Error Code is found in the SYSTEM ERROR CODE field for the following Return Code values:
		TD__ TV__	The third and fourth positions contain the last Operation Code performed.
		P5__	These two characters are followed by the number of the program not found.
4	10		SYSTEM ERROR CODE
			This field contains a return code specific to the access method in use.
5	8		PACTABLES USER CODE
			This code allows the user to access tables.
6	8		PACTABLES PASSWORD
			This is the password associated with the user code (alphanumeric, uppercase).
7	2		OPERATION CODE
		LD C1 C2 C3 CR MO DE LT LS LH LE LJ	On-Line Documentation Single item consultation Multi-item consultation Consultation of an item's historical accounts Item creation Item modification Item deletion List of tables List of sub-schemas and sub-systems sorted by table List of table historical accounts List of Table Print requests sorted by user Table Print JCL lines sorted by user
8	6		END USER TABLE ID / TABLE CODE
			This is the code used to access a table via Pactables. Pactables differentiates between lowercase and uppercase input in this field.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
9	6		HISTORICAL DATE
			Historical date in YY/MM/DD format.
10	1	NUMER.	SUB-SCHEMA NUMBER
			Number of sub-schema selected for consultation.
			Sub-schemas are defined and managed by the user when the corresponding tables are defined.
		'blank'	The whole table.
		'1,2..9,0'	Sub-schema number (1 to 10, the value 0 corresponds to sub-schema No. 10).
11	1		SUB-SYSTEM NUMBER
			Number of sub-group/sub-system selected for consultation.
			Sub-systems with their respective items are defined or updated by the user when the corresponding tables are defined or updated.
		BLANK	The whole table.
		1,2..9,0	Sub-group/sub-system number (1 to 10, the value 0 corresponds to sub-system 10).
12	20		ITEM KEY
13	8		SCREEN EXTERNAL NAME (8 CHARACTERS)
			When the 'CALLING END-USER SCREEN CODE' field (first field of the communication area) is not used, this field is stored for the return from the navigation module.
			IMS: transaction code of the navigation module.
14	4		NOT USED

Chapter 10. Examples of Direct Accesses

Introduction

<u>EXAMPLE</u>

The example is a Dialogue which allows for data input.

The user may access the Pactables transaction, then return to the dialog.

The screen is divided into two parts :
- The top allows for data input,
- The bottom is used for branching to the Pactables transactions with several parameters.

The following sub-chapters include programs adapted to IBM-CICS and IBM-IMS.

```
        LAYOUT OF SCREEN  JMP003 CALL OF PACTABLE WITH DATA TRANSFER

        --------------------------------------------------------------------
        !D. ELEM.  ! POSITION ! N L !  ATTR.   ! HR HV ! O C DISPLAY  W S
        !CODE    T ! T LN  CL !     ! I-P-C-Z !       !   T M SOURCE S T
        !--------------------------------------------------------------------
        !PFKEY     !          ! V   !         !       !     G          15   !
        !          ! A  1  12 ! L   !         !       !                     !
        !          !        1 ! L   !         !       !                     !
        !          !        5 ! L   !         !       !                     !
        !          !     1 10 ! L   !         !       !                     !
        !          ! A  4   5 ! L   !         !       !                     !
        !LIBED     ! A  4  21 ! V F !         !   5 ! !      JM00    JM00 !
        !          ! A 10   5 ! L   !         !       !                     !
        !NUTAB     !        2 ! V U !         !       !      JM00    JM00 !
        !DAHTA     !        2 ! V U !         !       !      JM00    JM00 !
        !NUSSC     !     1 21 ! V U !         !     ! N    JM00    JM00 !
        !NUSSY     !        7 ! V U !         !     ! N    JM00    JM00 !
        !CODOP     !     1 21 ! V N !         !       !      JM00    JM00 !
        !CODUTI    !       10 ! V N !         !       !      JM00    JM00 !
        !PASUTI    !     1 21 ! V N !    D    !       !      JM00    JM00 !
        !CLETVV    !     1 21 ! V N !         !       !      JM00    JM00 !
        !          ! A 16   5 ! L   !         !       !                     !
        !TABCR     !        2 ! F N !         !       !              JM00 !
        !XOPER     !        2 ! F N !         !       !              JM00 !
        !FSTAT     !     1 21 ! F N !         !       !              JM00 !
        !          ! A 19  21 ! L   !    B    !       !                     !
        !          !        1 ! L   !         !       !                     !
        !          !     1 21 ! L   !    B    !       !                     !
        !          !        1 ! L   !         !       !                     !
```

```
!          !   1   5 ! L   !             !           !                          !
!TOPSDA    !       1 ! V   !          Y  !           !    G JMPLNK  D A          !
!          !         !     !             !           !    G JMP001  D B          !
!          !         !     !             !           !    G JMP002  D C          !
!          !       5 ! L   ! B           !           !                          !
!          !       1 ! L   !             !           !                          !
!          !       1 ! L   !             !           !                          !
!LIERR     ! A 23  2 ! P F ! B           !           !                          !
!          !       3 ! L   ! B           !           !                          !
!-----------------------------------------------------------------------
```

LAYOUT OF SCREEN   JMP003 PACTABLES CALL WITH DATA TRANSFER

.........1.........2.........3.........4.........5.........6.........7.
           P A C T A B L E S   C A L L

     COMMENTS.....: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
                     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

     TABLE INFOS : TABLE CODE   : XXXXXX HIST. DATE   : XX
                     SUB-SCHEMA NUMBER : X   SUB-SYSTEM NUMBER: X
                     OPERATION CODE   : XX   USER CODE   : UTI01
                     USER PASSWORD   : XXXXXXX
                     KEY OR CODE VALUE : XXXXXXXXXXXXXXXXXX

     FROM PACTABLES: RETURN CODE: XX TYPE OF ACCESS REQ./ FILE: : XX
                     GENERAL FILE STATUS: XXXXXXXXXX

                     A - ACCESS TO PACTABLES
                     B - BACK TO GENERAL MENU
     CHOICE..: X   C - SCREEN FOR BRANCHING WITHOUT DATA

   *** END ***   PF15 = END

.........1.........2.........3.........4.........5.........6.........7.
```

```
 ------------------------------------------------------------------------
|                 CENTRAL DOCUMENTATION                  *DOC.PBDO.DOC.837 |
| ON-LINE SCREEN CALL OF SEGM. AR0010 STOCK MANAGEMENT                     |
|  ...TA25...TE72.........................................................  |
| A SEGM      :  USE PREC ACCESS KEY    ACCESS      D EXTERNAL LIB. S  : LIBR. |
| C CODE C LN : G R D SEGM SOURCE       KEY     B O T NAME     SEGM N LV : |
|   TA25   00 :  L   TE72 0010-TNUFOU   TNUFOU   G 1 VT00      TA25     : 0607 |
|   TE72   00 :  T A                    TNUART   V 1 VT00AD    RE25     : 0607 |
|   TE72   10 :           0010-TNUREF   TNUREF                          : 0607 |
|   TE72   20 :           0010-TNUVER   TNUREV                          : 0607 |
|          :                                                           :    |
|          :                                                           :    |
|          :                                                           :    |
|          :                                                           :    |
|          :                                                           :    |
|          :                                                           :    |
|          :                                                           :    |
|          :                                                           :    |
|          :                                                           :    |
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|          :                                                           :    |
|          :                                                           :    |
|          :                                                           :    |
|          :                                                           :    |
|          :                                                           :    |
| O: C1 CH: Oar0010CS                                                      |
 ------------------------------------------------------------------------
```

CICS Example

IBM-CICS EXAMPLE

Branching preparation, access to Pactables and processing upon return from
the tables are executed by the program.

Work areas

The NN00 segment, which is called in the Work areas (-W) on an 'F'-type line,
describes the area used for communication between the 'JMP0030' screen and
the navigation module.

Function F01BB:

The screen receives the communication area, and restores it in a specific work
area.

Function F0115:

This function includes the processing required when control is returned, such
as restoration of the dialog communication area, which was saved before
calling the Navigation Module.

Procssing before transfer of control to the Navigation Module

Function F4035

This function includes:
- Preparing the area used for communication with the Module,
- Backing up the dialog communication area,
- Initializing the area used for communication with the Module.

```
     WORK AREAS
     ----------


 LINE  S LEVEL        DESCRIPTION
 ----- - -------------------------------------------------------------
 NN100 F DP: NN  DL: NN SEL: _____ PICT: I DESC: _ LEV: 1 ORG: _


     PROCEDURE
     ---------

 FU SF LIN OPE OPERAND                         LVTY CONDITION
 -- -- --- --- ------------------------------ ---- --------------------
 01 AN   0 N   INITIALIZATION                 10BL
 01 AN 100 M   SPACE NN00
 01 AN 200 M   SPACE JM00                     99IT EIBCALEN = ZERO
 -- -- --- --- ------------------------------ ---- --------------------
 01 BB   0 N   PACTABLE RETURN                10IT K-SP003-PROGR
 01 BB 100 M   DFHCOMMAREA NN00
 -- -- --- --- ------------------------------ ---- --------------------
 01 15   0 N   TS RESTORATION --> COMMAREA    10IT NN00-PROGR = '
 01 15 100 EXC READQ TS QUEUE('JM03')
 01 15 120     INTO (COMMON-AREA)
 01 15 130     LENGTH (5-P003-LENGTH)
 01 15 140     ITEM (1)
 01 15 200 *   DELETION OF TS                 99BL
 01 15 210 EXC DELETEQ TS QUEUE('JM03')
 01 15 300 *   RE-INITILIZE FIELDS
 01 15 310 M   NN00 JM00-NN00
 -- -- --- --- ------------------------------ ---- --------------------
 02 BB 000 N   DISPLAY FIRST TIME             10IT ICF = '0'
 02 BB 100 M   'A' OPER
 02 BB 120 M   '1' OCF
 02 BB 140 GFT
 -- -- --- --- ------------------------------ ---- --------------------
 20 BB   0 N   ADDITIONAL VALIDA. ON 'TOPSDA' 15*P TOPSDA
 20 BB 200 ERR 5  TOPSDA                       99IT PR-03-TOPSDA = '1'
 20 BB 210                                     AN OPERD = SPACE
 -- -- --- --- ------------------------------ ---- --------------------
 30 BB   0 N   SAVE 'PROGE'                   15*P A
 30 BB 100 M   PROGE    JM00-PROGE
 30 BB 140 M   SPACES   JM00-XUTPR            99IT I-P003-TOPSDA = 'B'
 -- -- --- --- ------------------------------ ---- --------------------
```

```
40 35   0 N   BRANCHING TO PACTABLE         10IT 5-P003-PROGE ='PACT'
40 35 100 M   SPACE       NN00
40 35 105 M   'JMP003'    NN00-PROGR
40 35 110 M   'DT00'      NN00-TRANID
40 35 120 M   JM00-TABCR  NN00-TABCR
40 35 130 M   JM00-XOPER  NN00-XOPER
40 35 140 M   JM00-CODUTI NN00-CODUTI
40 35 150 M   JM00-PASUTI NN00-PASUTI
40 35 160 M   JM00-CODOP  NN00-CODOP
40 35 170 M   JM00-NUTAB  NN00-NUTAB
40 35 180 M   JM00-DAHTA  NN00-DAHTA
40 35 190 M   JM00-NUSSC  NN00-NUSSC
40 35 200 M   JM00-NUSSY  NN00-NUSSY
40 35 210 M   JM00-CLETVV NN00-CLETVV
40 35 300 *   ***************************** 99BL
40 35 310 *   * SAVE COMMAREA --> TS       *
40 35 320 *   *****************************
40 35 330 EXC WRITEQ TS QUEUE ('JM03')
40 35 340     FROM (COMMON-AREA)
40 35 350     LENGTH (5-P003-LENGTH)
40 35 400 *   ***************************** 99BL
40 35 410 *   * RE-INITIALIZE COMMAREA     *
40 35 420 *   * FOR NAVIGATION MODULE      *
40 35 430 *   *****************************
40 35 440 M   100 5-P003-LENGTH
40 35 450 M   NN00 COMMON-AREA
-- -- --- --- ------------------------------ ---- --------------------
66 BB   0 N   ERROR IN RETURN FROM MODULE   10IT K-SP003-PROGR
66 BB  10 *   PACTABLE                      AN JM00-XUTPR > SPACES
66 BB 100 M   'A'    O-P003-TOPSDA
66 BB 110 ERR A CODUTI                      99IT JM00-XUTPR = '0101'
66 BB 120 ERR B PASUTI                      99IT JM00-XUTPR = '0102'
66 BB 130 ERR C CODOP                       99IT JM00-XUTPR = '0103'
66 BB 140 ERR D DAHTA                       99IT JM00-XUTPR = '0104'
66 BB 150 ERR E NUSSC                       99IT JM00-XUTPR = '0105'
66 BB 160 ERR F NUSSY                       99IT JM00-XUTPR = '0106'
66 BB 170 ERR G NUTAB                       99IT JM00-XUTPR = '0107'
66 BB 180 ERR H NUSSY                       99IT JM00-XUTPR = '0108'
66 BB 190 ERR I NUSSC                       99IT JM00-XUTPR = '0109'
66 BB 900 ERR ? TOPSDA                      99IT EN-PRR = ZEROS
-- -- --- --- ------------------------------ ---- --------------------
80 LE   0 N   LOADING OF ERROR MESSAGE      10BL
80 LE  10 YR  LE00
80 LE 100 M   'UNKNOWN NAME'    LE00-ERMSG
80 LE 110 M   'INVALID CHOICE'              99IT LE00-ERTYP = '8'
80 LE 111     LE00-ERMSG
80 LE 112 GT  05
80 LE 210 M   'UNKNOWN USER CODE'           99IT LE00-ERTYP = 'A'
80 LE 211     LE00-ERMSG
80 LE 220 M   'INVALID PASSWORD'            99IT LE00-ERTYP = 'B'
80 LE 221     LE00-ERMSG
80 LE 230 M   'INVALID OPERATION CODE'      99IT LE00-ERTYP = 'C'
80 LE 231     LE00-ERMSG
80 LE 240 M   'INVALID HIST. DATE'          99IT LE00-ERTYP = 'D'
80 LE 241     LE00-ERMSG
```

```
80 LE 250 M   'SUB-SCHEMA NOT NUMERIC'        99IT LE00-ERTYP = 'E'
80 LE 251     LE00-ERMSG
80 LE 260 M   'SUB-SYSTEM NOT NUMERIC'        99IT LE00-ERTYP = 'F'
80 LE 261     LE00-ERMSG
80 LE 270 M   'TABLE NOT FOUND'               99IT LE00-ERTYP = 'G'
80 LE 271     LE00-ERMSG
80 LE 280 M   'SUB-SYSTEM NOT FOUND'          99IT LE00-ERTYP = 'H'
80 LE 281     LE00-ERMSG
80 LE 290 M   'SUB-SYSTEM NOT FOUND'          99IT LE00-ERTYP = 'I'
80 LE 291     LE00-ERMSG
80 LE 900 M   'ERROR ON TABLE. NO ERROR MES.' 99IT LE00-ERTYP = '?'
80 LE 901     LE00-ERMSG
```

IMS Example

MONITOR

Function F28BB:

This function transfers the contents of the SPA (received in F0510) into the field which is to be used as the SPA during the Navigation Module call.

Return from the Navigation Module

Function F28EE:

The Navigation Module transfers its code (BVPPLNK) in the 'NN00-PROGR' field. The user program retrieves the SPA saved before the transfer of control (see F28MM). The record used to save the SPA is thus deleted.

Function F28FF:

The name of the Navigation Program is set into the 'K-PROGR' field, which involves resetting ICF and OCF to zero in function F0110 of the screen which calls the Navigation Module.

The '7-PROGE' field contains the name of the user program load module, so that it is re-executed before display.

Processing before Transfer of Control

Function F28MM: Call of Pactables via Navigation Module

This function tests the '7-PROGE' field, which was filled in function F0110 of the Monitor by the 'S-WWSS-PROGE' field. This field was given a value by the user program. In our example, it takes the value 'JMPTAB'.

This sub-function deletes the record used to save the SPA if it was not previously deleted (ABEND of the user program on a preceding access to Pactables), then it saves the current SPA.

Function F28PP: Preparing the SPA for Pactables

This SPA includes only the data structure needed by the Navigation Module (xxCLNK).

Its first field contains the transaction code of the Navigation module and (xxCLNK where xx corresponds to the parameter $ROOT which was chosen at intallation time) and the 'NN00-COTRAN' field contains the transaction code of the user dialogue ('JMTR' for example). Other fields include parameters entered before branching. Lastly, the function f28QQ is used for branching to the Navigation module.

```
SCREEN PROCESSING
The JMP003 screen is made up of:
```

• A comment field, which is the dialogue SPA,

• Information for Pactables,

• A review field, which is displayed after access to Pactables,

• A choice field.

The F30BB function fills in the 'JM00-PROGE' field with the code of the program which processes the screen. 'JM00-PROGE' is included in the dialog SPA and is used after access to Pactables for a new screen display (see F28BB in the Monitor).

NOTE: In the example, the 'JMPLNK' screen allows for branching to the Module through the CHOICE field (cf. TOPSA in the screen Layout). The external name of this screen is 'JMPTAB'. The F28MM function tests this value for branching to the Navigation Module.

```
-------------------------------------------------------------------
! SCREEN ! SCREEN NAME       ! LG  CL P AL DOCU  I I EXTERNAL NAMES!
!        !                   !              EC RU N IPROGR  TRANSAC !
!--------!-------------------!---------------------------------------!
! JM     ! (UTI. <--> TABLES) ! 24  80 F 01 04 08   IJM      JMTR    !
!-------------------------------------------------------------------!
! COMPLEMENT  CNV.A. LGTH ORG.EM EXT.NM.EM. DIA.MON  PSB     OPTIONS !
!             JM          U                 P001     PSBJM   REPET   !
-------------------------------------------------------------------

          JM SCREEN WORK AREAS

-------------------------------------------------------------------
! S ! LEVEL       DESCRIPTION                                       !
!---!---------------------------------------------------------------!
!   ! 01          S-PAC7SV-SSA.                                     !
```

```
! !   10        FILLER      PIC X(8) VALUE 'PAC7SV'.       !
! !   10        FILLER      PIC X    VALUE SPACE.          !
! ! 01          S-PAC7SV-SSAQ.                             !
! !   10        FILLER      PIC X(8) VALUE 'PAC7SV'.       !
! !   10        FILLER      PIC X(9) VALUE '(CLESV'.       !
! !   10        S-PAC7SV-OPER PIC XX  VALUE ' ='.          !
! !   10        S-PAC7SV-CLESV PIC X(13).                  !
! !   10        FILLER      PIC X    VALUE ')'.            !
! ! 01          SPA-TABLES.                                !
! ! 02          SPA-TABLES-LL   PIC S9(4) COMP.            !
! ! 02          SPA-TABLES-ZZ   PIC XX.                    !
! ! 02          SPA-TABLES-CI   PIC XX.                    !
! ! 02          SPA-TABLES-TRAN PIC X(8).                  !
! F ! DS: NN LIB: NN SEL: ___ FORM: I DESC: 1 LEV: 3 ORG: _ SS: _ !
-----------------------------------------------------------------


MONITOR PROCEDURAL CODE
-----------------------
FU SF LIN OPE OPERANDS                      LVTY CONDITION
-- -- --- --- ------------------------------ ---- -------------
28 BB    N   ACCESS FROM USER TRANSACTION   10BL
28 BB 10 *   TO TABLES
28 BB 100 M  SPA    SPA-TABLES
-- -- --- --- ------------------------------ ---- -------------
28 EE    N   RETURN FROM TABLES             15IT NN00-PROGR =
28 EE 100 M  S-IPCB-XNMTE    SV00-LTERM          'D3PLNK'
28 EE 110 M  'JM'            SV00-RADIC
28 EE 120 M  1               SV00-NPART
28 EE 130 M  '02'            SV00-TRSAC
28 EE 140 M  SV00-CLESV      S-PAC7SV-CLESV
28 EE 150 M  'GHU'           S-WPCB-XFONC
28 EE 200 CAL 'CBLTDLI' USING S-WPCB-XFONC
28 EE 210                   S-PCBSV
28 EE 220                   SV00
28 EE 230                   S-PAC7SV-SSAQ
28 EE 240 M  S-PCBSV         S-SPCB
28 EE 300 MES 'F28EE200'                    99IT S-SPCB-XCORET
28 EE 310 MES 'ERR. SPA BACKUP READING'          NOT = SPACES
28 EE 320 COB GO TO F81ER.
-- -- --- --- ------------------------------ ---- -------------
28 FF    N   RETRIEVAL PREVIOUS SPA         20BL
28 FF 100 M  SV00-3SPA    SPA
28 FF 110 M  NN00         JM00-NN00
28 FF 120 M  NN00-PROGR   K-PROGR
28 FF 130 M  JM00-PROGE   7-PROGE
28 FF 200 M  'DLET'          S-WPCB-XFONC
28 FF 210 CAL 'CBLTDLI' USING S-WPCB-XFONC
28 FF 220                   S-PCBSV
28 FF 230                   SV00
28 FF 240 M  S-PCBSV         S-SPCB
28 FF 300 MES 'F28FF210'                    99IT S-SPCB-XCORET
28 FF 310 MES 'ERR. DELETE SPA SAVED'            NOT = SPACES
28 FF 320 COB GO TO F81ER.
-- -- --- --- ------------------------------ ---- -------------
28 MM    N   ACCESS TO TABLES               15IT 7-PROGE =
```

```
28 MM 100 M   S-IPCB-XNMTE    SV00-LTERM          'JMPTAB  '
28 MM 105 M   'JM'            SV00-RADIC
28 MM 110 M   1               SV00-NPART
28 MM 115 M   '02'            SV00-TRSAC
28 MM 120 M   SV00-CLESV      S-PAC7SV-CLESV
28 MM 125 M   'GHU'           S-WPCB-XFONC
28 MM 130 CAL 'CBLTDLI' USING S-WPCB-XFONC
28 MM 135                     S-PCBSV
28 MM 140                     SV00
28 MM 145                     S-PAC7SV-SSAQ
28 MM 150 M   S-PCBSV         S-SPCB
28 MM 155 COB GO TO F28MM-300.            99IT S-SPCB-XCORET
28 MM 156                                      = 'GE'
28 MM 160 MES 'F28MM125'                   99IT S-SPCB-XCORET
28 MM 165 MES 'ERR. SAVED SPA READING'         NOT = SPACES
28 MM 170 COB GO TO F81ER.
28 MM 200 M   'DLET'          S-WPCB-XFONC 99BL
28 MM 205 CAL 'CBLTDLI' USING S-WPCB-XFONC
28 MM 210                     S-PCBSV
28 MM 215                     SV00
28 MM 220 M   S-PCBSV         S-SPCB
28 MM 225 MES 'F28FF210'                   99IT S-SPCB-XCORET
28 MM 230 MES 'ERR. DELETE SPA SAVED'          NOT = SPACES
28 MM 235 COB GO TO F81ER.
28 MM 299 COA F28MM-300.
28 MM 300 M   JM00-PROGE      7-PROGE      99BL
28 MM 310 M   SPA             SV00-3SPA
28 MM 320 M   'ISRT'          S-WPCB-XFONC
28 MM 330 CAL 'CBLTDLI' USING S-WPCB-XFONC
28 MM 340                     S-PCBSV
28 MM 350                     SV00
28 MM 360                     S-PAC7SV-SSA
28 MM 370 M   S-PCBSV         S-SPCB
28 MM 380 MES 'F28MM320'                   99IT S-SPCB-XCORET
28 MM 390 MES 'ERR. CREATE SPA'                NOT = SPACES   CES
28 MM 400 COB GO TO F81ER.
-- -- --- --- ------------------------------ ---- -------------
28 PP     N   PREPARE SPA FOR PACTABLE      20BL
28 PP 100 M   SPALG     SPA-TABLES-LL
28 PP 110 M   SPAZZ     SPA-TABLES-ZZ
28 PP 120 M   SPACI     SPA-TABLES-CI
28 PP 130 M   SPACES          NN00
28 PP 140 M   'JMTR    '      NN00-COTRAN
28 PP 150 M   JM00-TABCR      NN00-TABCR
28 PP 160 M   JM00-XOPER      NN00-XOPER
28 PP 170 M   JM00-CODUTI     NN00-CODUTI
28 PP 180 M   JM00-PASUTI     NN00-PASUTI
28 PP 190 M   JM00-CODOP      NN00-CODOP
28 PP 200 M   JM00-NUTAB      NN00-NUTAB
28 PP 210 M   JM00-DAHTA      NN00-DAHTA
28 PP 220 M   JM00-NUSSC      NN00-NUSSC
28 PP 230 M   JM00-NUSSY      NN00-NUSSY
28 PP 240 M   JM00-CLETVV     NN00-CLETVV
28 PP 300 M   'D3CLNK  '      SPA-TABLES-TRAN
28 PP 310 M   SPA-TABLES      SPA
```

```
-- -- --- --- ---------------------------- ---- -------------
28 QQ     N   CALL OF PACTABLE                 25BL
28 QQ 200 M   'CHNG'            S-WPCB-XFONC
28 QQ 210 CAL 'CBLTDLI' USING S-WPCB-XFONC
28 QQ 220                       S-ALTPCB
28 QQ 230                       SPA-TABLES-TRAN
28 QQ 240 M   S-ALTPCB          S-IPCB           99IT S-ALTPCB-XCOR
28 QQ 250 MES 'F28QQ210'                         NOT = SPACES
28 QQ 260 MES 'ERROR ON LINK CALL'
28 QQ 270 COB GO TO F81IO.
28 QQ 500 M   'ISRT'            S-WPCB-XFONC     99BL
28 QQ 510 CAL 'CBLTDLI' USING S-WPCB-XFONC
28 QQ 520                       S-ALTPCB
28 QQ 530                       SPA
28 QQ 540 M   S-ALTPCB          S-IPCB           99IT S-ALTPCB-XCOR
28 QQ 550 MES 'F28QQ510'                         NOT = SPACES
28 QQ 560 MES 'ERROR ON SPA ISRT'
28 QQ 570 COB GO TO F81IO.
28 QQ 999 COB GO TO F05.              99BL
```

    SCREEN WORK AREA   JMP003 PACTABLE CALL WITH DATA TRANS.

```
---------------------------------------------------------------------
! S ! LEVEL            DESCRIPTION                                   !
---------------------------------------------------------------------
! F ! DS: LE LIB: LF SEL: 00_ FORM: I DESC: _ LEV: 1 ORG: _ SS: _   !
---------------------------------------------------------------------
```

 PROCEDURAL CODE OF SCREEN   JMP003 PACTABLE CALL WITH DATA TRANSF

```
---------------------------------------------------------------------
!FUSFLIN ! OPE OPERANDS                   ! LEV TY ! CONDITION     !
!-------------------------------------------------------------------
!02BB    ! N   DISPLAY FIRST TIME         ! 10  IT ! ICF = '0'     !
!02BB100 ! M   'A' OPER                    !        !               !
!02BB120 ! M   '1' OCF                     !        !               !
!02BB140 ! GFT                            !        !               !
!-------------------------------------------------------------------
!20BB    ! N   ADDITIONAL VALID. OF TOPSDA ! 15 *P ! TOPSDA       !
!20BB200 ! ERR 5  TOPSDA                   ! 99 IT ! PR-03-TOPSDA !
!20BB201 !                                 !       ! = '1'        !
!20BB210 !                                 !    AN ! OPERD = SPACE !
!-------------------------------------------------------------------
!30BB    ! N   SAVE 'PROGE'               ! 15 *P ! A            !
!30BB100 ! M   PROGE    JM00-PROGE        !       !              !
!-------------------------------------------------------------------
!80LE    ! N   LOAD ERROR MESSAGE         ! 10  BL !              !
!80LE 10 ! YR  LE00                        !       !              !
---------------------------------------------------------------------
```

Chapter 11. Pactables Update Facility : TUF-TP

Introduction

On-line TUF is a tool enabling the customization of programs or the update of tables managed on site and in on-line mode. This may be performed in addition to the standard Pactables facility. The communication of data between on-line TUF facility and the user application is made via a communication area described below.

The three programs of on-line TUF facility are:

* BVPFT00: a data server program reaching the Pactables database and displaying the result of a request in a working file;
* BVPFT10: a data server program reaching the Pactables database and displaying the result of a request relating to user parameters in the communication area.
* BVPFT90: an interface access program with the user application. This program receives the user application request, runs it, browses the result supplied by the data server program (BVPFT00 or BVPFT10) and sends back the result of the request.

Principles Implemented

USER APPLICATION

The user application is a Dialogue generated by VisualAge Pacbase.

For more information, refer to the 'On-line System Development' Reference Manual.

ACCESS TO ON-LINE TUF

The access to On-line TUF facility is made via the call of BVPFT90 program and providing a communication area.

The following commands are used:

1. INITIALIZATION OF THE SESSION (IN)

This command must be the first of any operation received from the application program, and for a given identifier. The identifier may be the

physical number of the station or a logical address in the network. Confusions between requests from several stations are thus avoided.

2. LIST OR TABLE EXTRACTION:

The command may be a simple consultation or a consultation for an update in the event of an extraction in a table.

The commands for the extraction are:
- LT: List of tables
- LH: List of historical accounts of a table
- LC: List of sub-schemas by table
- LS: List of sub-systems by table
- EX: Extraction of a table for a possible update. Data extracted are stored in the working file by on-line TUF data server.
- L1: after 'EX', this command enables the consultation of the table data previously extracted and limited to the number indicated by the user program. The user may update these data by indicating the corresponding action in the table.

  These temporary updates are stored in the working file.
- UP: after 'L1', this command enables to pass along updates stored in the working file into Pactables database, once all temporary updates have been performed.

  ### 3. Consultation / Update of user parameters:

  The command may be a simple consultation or a consultation for an update in the event of an extraction of user parameters.

  The commands are:
- EX: Open cursor. This command is required. It must be set after the command 'IN' and before all other commands.
- CU: Extraction of all user parameters except the user password.
- UU: User parameters updating. User parameters may have been previously extracted for consultation ('CU') or not. Parameters that can be updated are the:
  - - password
  - - general access authorizations level
  - - table per table authorizations (360 items maxi.)

The commands 'CU' and 'UU' run the number of items indicated in the user program.

3. CLOSING THE SESSION (FT):

This command must be the last for a given identifier. It enables the resetting of the working file.

DESCRIPTION OF THE GENERATED PROGRAM

Four macros provided at the installation enable the user to describe the communication area to be used with On-line TUF in the application program:

- AATUFL: Describes the working area corresponding to the table list consultation functions ('LT' or 'LH').
- AATUFS : Describes the working area corresponding to the sub-schemas or sub-systems list consultation functions ('LC' or 'LS').
- AATUFX: Describes the working area corresponding to the table consultation functions for an eventual update. It is to be used with 'AATUFA' macro.
- AATUFA: Describes the data element characteristics of the table being consulted. It is to be used with 'AATUFX' macro.

  This macro is to be called as many times as there are elementary Data Element describing the table or a sub-schema table being consulted.

These macros are called in ON-LINE SCREEN CALL OF P.M.S. (CH: -CP), detailed in WORK AREAS / ENTITY TYPE (CH: -W).

DESCRIPTION OF AATUFL MACRO: list of tables 'LT' or 'LH' working file

```
01            G-$1-CURSOR.
 02           G-$1-LENGTH PICTURE S9(4) COMP.
 02           G-$1-CURID  PICTURE X(4) VALUE '$1'.
 02           G-$1-IDENT  PICTURE X(25).
 02           G-$1-USER   PICTURE X(8).
 02           G-$1-PASSW  PICTURE X(8).
 02           G-$1-CTRAN  PICTURE X(4).
 02           G-$1-CBASE  PICTURE X(4).
 02           G-$1-FUNCT  PICTURE XX   VALUE '$4'.
 02           G-$1-RETCOD PICTURE XX.
 02           G-$1-ERRCOD PICTURE X(5).
 02           G-$1-ERRLAB PICTURE X(66).
 02           G-$1-NUTAB  PICTURE X(6).
 02           G-$1-DATEC.
    03        G-$1-DATECC PICTURE XX.
    03        G-$1-DATECY PICTURE XX.
    03        G-$1-DATECM PICTURE XX.
    03        G-$1-DATECD PICTURE XX.
 02           G-$1-NBOCC  PICTURE 9(4) VALUE $3.
```

```
02              FILLER    PICTURE X(178).
02              G-$1-DESCR.
 03             G-$1-ELMNT  OCCURS  $3.
   04           G-$1-TABLE  PICTURE X(6).
   04           G-$1-LABTB  PICTURE X(36).
   04           G-$1-DATEH.
     05         G-$1-DATEHC PICTURE XX.
     05         G-$1-DATEHY PICTURE XX.
     05         G-$1-DATEHM PICTURE XX.
     05         G-$1-DATEHD PICTURE XX.
   04           G-$1-DATEM.
     05         G-$1-DATEMC PICTURE XX.
     05         G-$1-DATEMY PICTURE XX.
     05         G-$1-DATEMM PICTURE XX.
     05         G-$1-DATEMD PICTURE XX.
   04           G-$1-DATED.
     05         G-$1-DATEDC PICTURE XX.
     05         G-$1-DATEDY PICTURE XX.
     05         G-$1-DATEDM PICTURE XX.
     05         G-$1-DATEDD PICTURE XX.
   04           G-$1-LIB    PICTURE XXX.
   04           G-$1-SESSI  PICTURE X(5).
   04           G-$1-SEGM   PICTURE X(4).
```

Description of 'AATUFL' fields

- Data to be provided before call:
- CURID: Cursor code (required).
- IDENT: Identifier (required).

  This code, different for each item, enables on-line TUF to differenciate the classification of data being processed.
- USER: User code (required).
- PASSW: Password (required)
- CTRAN: Transaction code. Required for some platforms enabling the identification of the database to reach.
- CBASE: Database logical code. Unused for this release.
- FUNCT: On-line TUF command.
- DATEC: Consultation date (optional). It is partitioned in Century, Year, Month and Day. By default, it is the date of the day.

- NBOCC: Number of consultation lines to be received at each call to on-line TUF (required).
- NUTAB: Table number from which the list of Historical accounts is displayed (required). If 'blank', the list displayed starts with the first table.

- Data received after the call:
- RETCOD : Global return code.
  '00': OK
  '04': OK with warning message
  '10': Error detected on the command
  '12': Input/output error
- ERRCOD: Error number
- ERRLAB: Error label

By list occurrence, the following data are received:
- TABLE: Table number
- LABTB: Table label
- DATEH: Date of history
- DATEM: Date of last update
- DATED: Date of the description
- LIB: VA Pac library code, where the table is described
- SESSI: Session number
- SEGM: Corresponding VA Pac segment code

DESCRIPTION OF AATUFS MACRO: list of description 'LS' or 'LC' working file

```
01          G-$1-CURSOR.
 02         G-$1-LENGTH PICTURE S9(4) COMP.
 02         G-$1-CURID  PICTURE X(4) VALUE '$1'.
 02         G-$1-IDENT  PICTURE X(25).
 02         G-$1-USER   PICTURE X(8).
 02         G-$1-PASSW  PICTURE X(8).
 02         G-$1-CTRAN  PICTURE X(4).
 02         G-$1-CBASE  PICTURE X(4).
 02         G-$1-FUNCT  PICTURE XX   VALUE '$4'.
 02         G-$1-RETCOD PICTURE XX.
 02         G-$1-ERRCOD PICTURE X(5).
 02         G-$1-ERRLAB PICTURE X(66).
 02         G-$1-NUTAB  PICTURE X(6).
 02         G-$1-DATEC.
```

```
   03          G-$1-DATECC PICTURE XX.
   03          G-$1-DATECY PICTURE XX.
   03          G-$1-DATECM PICTURE XX.
   03          G-$1-DATECD PICTURE XX.
02            G-$1-NBOCC  PICTURE 9(4) VALUE $3.
02            FILLER      PICTURE X(178).
02            G-$1-DESCR.
   03          G-$1-ELMNT  OCCURS  $3.
      04        G-$1-TABLE  PICTURE X(6).
      04        G-$1-TABLB  PICTURE X(36).
      04        G-$1-NUSCY  PICTURE X.
      04        G-$1-LABSCY PICTURE X(36).
```

Description des champs de la macro AATUFS

- Données à fournir avant appel :
- LENGTH: Longueur de curseur (obligatoire)
- CURID : Code curseur (obligatoire)
- IDENT : Identifiant (obligatoire).

   Ce code unique, différent d'un poste à l'autre, permet à TUF-TP de différencier l'appartenance des données en cours de traîtement.
- USER : Code utilisateur (obligatoire).
- PASSW : Mot de passe (obligatoire)
- CTRAN : Code transaction. Obligatoire pour certains matériels permettant l'identification de la base à laquelle accéder.
- CBASE : Code logique de la base. Inutilisé pour cette version.
- FUNCT : Commande TUF-TP.
- DATEC : Date de consultation (facultatif). Elle est découpée en Siècle, Année, Mois et Jour. Par défaut, la date du jour est prise en compte.
- NBOCC : Nombre de lignes de consultation à recevoir à chaque appel à TUF-TP (obligatoire).
- NUTAB : Numéro de table pour laquelle on désire la liste des Sous-Schémas ou Sous-Systèmes. Cette zone doit être renseignée au premier appel du serveur et ne doit plus être modifiée par la suite pour ce curseur. (La gestion de la pagination n'est pas possible ni pour 'LC' ni pour 'LS'. Le retour en début de liste se fait à la détection de la fin de liste - voir ERRCOD -).

- Données obtenues au retour de l'appel :
- RETCOD : Code retour global.
   '00' : OK

'04' : OK avec message d'avertissement

'10' : Erreur détectée sur la commande

'12' : Erreur d'entrée/sortie

- ERRCOD : Numéro d'erreur

'0041W' : Utilisateur non autorisé en mise à jour.

(RETCOD='04' + ERRLAB)

'9046W' : Fin de liste.

(RETCOD='04' + ERRLAB)

- ERRLAB : Libellé d'erreur

Par occurrence de liste, on obtient les données suivantes :

- TABLE : Numéro de la table
- TABLB : Libellé de la table
- NUSCY : Numéro du sous-schéma ou du sous-système
- LABSCY : Libellé du sous-schéma ou sous-système

DESCRIPTION OF AATUFX MACRO: Tables consultation

```
01           G-$1-CURSOR.
 02          G-$1-LENGTH    PICTURE S9(4) COMP.
 02          G-$1-CURID     PICTURE X(4) VALUE '$1'.
 02          G-$1-IDENT     PICTURE X(25).
 02          G-$1-USER      PICTURE X(8).
 02          G-$1-PASSW     PICTURE X(8).
 02          G-$1-CTRAN     PICTURE X(4).
 02          G-$1-CURID   PICTURE X(4) VALUE '$1'.
 02          G-$1-CBASE     PICTURE X(4).
 02          G-$1-USER    PICTURE X(8).
 02          G-$1-FUNCT     PICTURE XX.
 02          G-$1-CTRAN   PICTURE X(4).
 02          G-$1-RETCOD    PICTURE XX.
 02          G-$1-FUNCT   PICTURE XX    VALUE '$4'.
 02          G-$1-ERRCOD    PICTURE X(5).
 02          G-$1-ERRCOD PICTURE X(5).
 02          G-$1-ERRLAB    PICTURE X(66).
 02          G-$1-NUTAB     PICTURE X(6) VALUE '$5'.
 02          G-$1-DATEC.
   03        G-$1-DATECC PICTURE XX.
   03        G-$1-DATECY PICTURE XX.
   03        G-$1-DATECM PICTURE XX.
```

```
   03          G-$1-DATECD PICTURE XX.
02          G-$1-NBOCC     PICTURE 9(4) VALUE $3.
02          G-$1-LITAB     PICTURE X(36).
02          G-$1-NUSSC     PICTURE X.
02          G-$1-LIBSC     PICTURE X(36).
02          G-$1-NUSSY     PICTURE X.
02          G-$1-LIBSY     PICTURE X(36).
02          G-$1-DAHTB.
   03          G-$1-DAHTBC PICTURE XX.
   03          G-$1-DAHTBY PICTURE XX.
   03          G-$1-DAHTBM PICTURE XX.
   03          G-$1-DAHTBD PICTURE XX.
02          G-$1-KEY       PICTURE X(20).
02          FILLER            PICTURE X(40).
02          G-$1-DESCR.
  03          G-$1-ELTNB     PICTURE 99 VALUE $4.
02          G-$1-ELTD.
  03          FILLER            PICTURE X(113)  OCCURS $4.
02          G-$1-ELTR      REDEFINES G-$1-ELTD.
02          G-$1           OCCURS $3.
  03          G-$1-CODMV     PICTURE X.
  03          G-$1-ERROR     PICTURE X(66).
```

Description of 'AATUFX' fields

- Data to be provided before call:
- CURID: Cursor code (required).
- IDENT: Identifier (required).
  This code, different for each item, enables on-line TUF to differenciate the classification of data being processed.
- USER: User code (required).
- PASSW: Password (required)
- CTRAN: Transaction code. Required for some platforms enabling the identification of the database to reach.
- CBASE: Database logical code. Unused for this release.
- FUNCT: On-line TUF command.
- DATEC: Consultation date (optional). It is partitioned in Century, Year, Month and Day. By default, it is the date of the day.
- NBOCC: Number of items to be received at each call to on-line TUF (required).

- NUSSC: Number of the sub-schemas (optional). It enables the consultation of the table limited to one sub-schema. The update is forbidden.
- NUSSY: Number of the sub-system (optional). It enables the consultation of the table limited to one sub-system.
- KEY: Key of the table item (optional)

- Data received after the call:
- RETCOD: Return code
  '00': OK
  '04': OK with warning message
  '10': Error detected on the command
  '12': Input/output error
- ERRCOD: Error number
  . ERRLAB: Error label
  . LITAB: Label of the table
  . LIBSC: Label of the sub-schema
  . LIBSY: Label of the sub-system
  . DAHTB: Date of the history account (current)

- By item occurrence, the following data are received:
- CODMV: Transaction code of the item
  . ERROR: Error detected on the item
  . Table item contents
  DESCRIPTION OF AATUFA MACRO: Data Element Description

```
03          G-$1-$4-I   PICTURE X(6).
03          G-$1-$4-L   PICTURE X(18).
03          G-$1-$4-C   PICTURE X(18) OCCURS 3.
03          G-$1-$4-X   PICTURE X.
03          G-$1-$4-T   PICTURE 999.
03          G-$1-$4-D   PICTURE 99.
03          G-$1-$4-B   PICTURE X.
03          G-$1-$4-S   PICTURE X.
03          G-$1-$4-V   OCCURS  2.
   04       G-$1-$4-VL  PICTURE X.
   04       G-$1-$4-VV  PICTURE X.
   04       G-$1-$4-VS  PICTURE X.
   04       G-$1-$4-VN  PICTURE X(10).
03          G-$1-$4-A   PICTURE X.
```

Description of 'AATUFA' fields:

Fields with characteristics or checks of each Data Element describing the table are the following:

- I: VisualAge Pacbase Data Element code
- L: Label of the Data Element
- C: Columns label of the Data Element
- X: Data Element class with value:

  'X': Alphanumeric Data Element

  '9': Numeric Data Element

- T: Data Element length in bytes
- D: Number of decimals for a numeric Data Element
- B: Class to check with value:

  '9': Numeric class

  'A': Alphabetical class

- S: Presence of a '+' or '-' sign for a numeric Data Element with value:

  ' ': No sign

  'S': Sign

- A: Check of a date Data Element format with value:

  'D': Date with DDMMYY format

  'I': Date with YYMMDD format

  'K': Date with DDMMCCYY format

  'L': Date with CCYYMMDD format

- V: Values to check composed with two bounds detailed below:

  - VL: Relation present on the second value bound with value:

    'O': 'OR' relation

    'E': 'AND' relation

  - VS: Direction of the comparison with:

    '<': Smaller than

    '>': Higher than

    '=': Equal to

  - VN: Negation in the relation

    'N': Negation

  - VV: Value to check

Description of 'AATUFS' fields

- Data to be provided before call:

- CURID: Cursor code (required)
- IDENT: Identifier (required).

  This code, different for each item, enables on-line TUF to differenciate the classification of the data being processed.
- USER: User code (required).
- PASSW: Password (required)
- CTRAN: Transaction code. Required for some platforms enabling the identification of the database to reach.
- CBASE: Database logical code. Unused for this release.
- FUNCT: On-line TUF command.
- DATEC: Consultation date (optional). It is partitioned in Century, Year, Month and Day. By default, it is the date of the day.
- NBOCC: Number of consultation lines to be received at each call to on-line TUF (required).
- NUTAB: Table number from which the list of Sub-Schemas or Sub-Systems is displayed. If 'blank', the list displayed starts with the first table.

- Data received after the call:
- RETCOD: Global return code.

  '00': OK

  '04': OK with warning message

  '10': Error detected on command

  '12': Input/output error
- ERRCOD: Error number
- ERRLAB: Error label

By list occurrence, the following data are received:
- TABLE: Table number
- LABTB: Table label
- NUSCY: Number of the sub-schema or the sub-system
- LABSCY: Label of the sub-schema or the sub-system

Description des champs de la macro AATUFU

- Données à fournir AVANT appel :
- LENGTH: Longueur du curseur (obligatoire).
- CURID : Code curseur (obligatoire).
- IDENT : Identifiant (obligatoire).

  Ce code unique, différent d'un poste à l'autre, permet à TUF-TP de différencier l'appartenance des données en cours de traitement.

- USER : Code ADMINISTRATEUR (obligatoire).
- PASSW : Mot de passe ADMINISTRATEUR (obligatoire)
- CTRAN : Code transaction Pactable. Obligatoire pour certains matériels permettant l'identification de la base à laquelle accéder (ex: CICS).
- CBASE : Code logique de la base. Inutilisé pour cette version.
- FUNCT : Commande TUF-TP.
- PARM : Paramètre à forcer systématiquement à la valeur '%PARM%' pour toutes les commandes relatives à ce Curseur.
- NBOCC : Nombre de postes à recevoir à chaque appel à TUF-TP (entre 1 et 360). (obligatoire).
- USERP : Code UTILISATEUR à mettre à jour (obligatoire).
- PASSWP : Mot de Passe UTILISATEUR (facultatif). S'il est renseigné, il remplacera l'ancien.
- ACCESG : Niveau d'accès général pour l' UTILISATEUR (facultatif). S'il est renseigné, il remplacera l'ancien.

Par occurrence de poste (NBOCC), on donne les données suivantes pour la commande 'UU' seule:

- PTRAN : Code mouvement du poste ('A' ou 'D', 'M', 'C') Les mises à jour implicites (code mouvement à blanc) sont reconnues.
- NUTAB : Nom de la table pour laquelle on désire créer ou modifier les autorisations (20 postes d'autorisations)
- LINE : Numéro de ligne. Les couples (NUTAB, LINE) peuvent être saisis dans n'importe quel ordre.
  Chacun des 20 postes comprend:
  – NUSSC : Sous-Schéma
  – NUSSY : Sous-Système
  – ACCESS : niveau d'accès

-Données obtenues au RETOUR de l'appel :
- RETCOD : Code retour global.
  '00' : OK
  '01' : OK avec message d'information
  '04' : OK avec message d'avertissement
  '10' : Erreur détectée sur la commande
  '12' : Erreur d'entrée/sortie
- ERRCOD : Numéro d'erreur
  '1101E' : Commande invalide.
  '1102E' : Curseur non déclaré (commande 'IN')

'1103E' : Curseur déjà ouvert

'1104E' : Curseur non ouvert (ou = 1102E)

'1105E' : Nombre de postes invalide (entre 1 et 360)

'1106E' : Code Administrateur absent ou erroné

'1107E' : Code Utilisateur absent ou erroné

'1108E' : (idem 1106E)

'1109E' : Code Administrateur non Gestionnaire

'1110E' : Mot de passe Administrateur erroné

'1111E' : (idem 1107E)

'1112E' : Nouveau mot de passe Utilisateur invalide

'1113E' : Niveau d'accès invalide (0,1,2)

'1114E' : Session inexistante. Fermeture impossible

'1199E' : Nombre de postes hors limites. Contacter IBM

- ERRLAB : Libellé d'erreur
- ACCESG : Niveau d'accès général Pactable en cours pour l'UTILISATEUR.

Par occurrence de poste (NBOCC), le système renvoie les données suivantes pour les commandes 'CU' et 'UU':

- PTRAN : Code mouvement du poste

  Pour la commande 'CU' valeur ' '

  Pour la commande 'UU' valeur ' ' ou 'E' (si erreur)
- NUTAB : Nom de la table
- LINE : Numéro de ligne

  Pour chaque table, les 20 postes d'autorisations suivants

  – NUSSC : Sous-Schéma

  – NUSSY : Sous-Système

  – ACCESS : niveau d'accès

Remarques:

- Lorsque la commande 'CU' est passée, la table G-$1-ELMNTG est effacée et réinitialisée par les valeurs Pactable en cours, quelque soit son état préalable.
- Lorsque la commande 'UU' est passée, les lignes valides de la table G-$1-ELMNTG sont remises à blanc après la mise à jour effectuée. Le traitement de mise à jour s'arrête sur la première ligne invalide en retournant un code mouvement (PTRAN) 'E' pour cette ligne.
- A l'issue de la commande 'UU', si TOUTES les lignes sont valides, la table G-$1-ELMNTG est réinitialisée, et les postes sont retournés dans l'ordre des clés (NUTAB, LINE)

Commands Chaining

<u>INITIALIZATION OF THE SESSION</u>

'IN': This command must be the first command. It is valid for one given
identifier and enables the setting of the working file.

Data to be provided before call:

```
. Function code 'IN'        (FUNCT)
. Identifier                (IDENT)
. Cursor                    (CURID)
Information of Pactables database
. Pactables transaction code (COTRAN)
. User Code                 (CODUTI)
. Password                  (PASSW)

Data received after the call:
. Return code               (RETCOD)
. Error Number              (ERRCOD)
. Error Label               (ERRLAB)
  (if RETCOD is not zero)
NOTE:
```

The cursors identifier for the other commands must be set by the one used for
'IN', before any process.

<u>CONSULTATION OF A TABLE</u>

1. 'EX': Data extraction.

Data to be provided before call:

```
. Function code 'EX'    (FUNCT)
. Identifier            (IDENT)

  (it must be the same as the one defined for 'IN')
. Cursor                (CURID)
   (Cursor unique for each table)
. Length of cursor      (LENGTH)
. Table number          (NUTAB: required)

  The number of table Data Elements defined for ELNTB

  (it must be equal to the number of call of 'AATUFA')
```

Data received in return of the call:

```
. Description of the table Data Element (ELTR group
  of 'AATUFX' macro)
. Return code   (RETCOD)
. Error number  (ERRCOD)
. Error label   (ERRLAB)
```

2. 'L1': consultation request of extracted data with 'EX'
command.

Data to be provided before call:

    . Function code 'L1'   (FUNCT)

    . Identifier   (IDENT)

      (it must be the same as the one defined for 'IN')

    . Cursor   (CURID)

      (it must be equal to the one for 'EX' command)

    . Number of items to return (NBOCC of 'AATUFX' macro)

      (it corresponds to the number of occurrences of the
      table to get)

    . Source key for the display (KEY)
      (if the key is forced to 'blank', the first item
      filled in will correspond to the first item of
      the table)

Data received in return to the call:

    . Function code 'L1' is switched into 'L2' with the
      internal system. The code is to be forced again to
      'L1' with the user program only if there is a new
      consultation with setting.

    . Table occurrences   (G-$1 occurs $3 of 'AATUFX')

    . Return code   (RETCOD)

    . Error number   (ERRCOD)

    . Error label   (ERRLAB)

      (if RETCOD is not zero)

CONSULTATION FOR AN UPDATE

1. 'EX': Same as 'Consultation of a table'

2. 'L1': Same as 'Consultation of a table'

A modification, deletion or creation of an item is expressed by a transaction code (C, M, D, A) of the CODMV Data Element of the item concerned by AATUFX macro. Updates requests are temporarily stored in the working file.

'UP': updates repercusions of Pactables database from modifications stored in the temporary file, when all temporary updates are performed.

Data to be provided before call:

    . Function code 'UP'   (FUNCT)

    . Identifier   (IDENT)

      (it must be the same as the one defined for 'IN')

    . Cursor   (CURID)

```
      (it must be the same as the one for 'EX' command)
Data provided in return of the call:
    . Return code          (RETCOD)
    . Error number         (ERRCOD)
    . Error label          (ERRLAB)
     (if RETCOD is not zero)
    . Item error code      (CODMV)
```

If an error is detected at the updating, the corresponding item transaction code (CODMV Data Element, 'AATUFX' macro) contains 'E' value.

If, at the following call to on-line TUF the transaction code was not corrected, the whole update previously performed on this item, is ignored.

```
    . Item error label  (ERROR)
     (for each item where an error was detected)
```

LIST OF TABLE REQUEST

'LT' : extraction of the list

See description of the 'AATUFL' macro

Data to be provided before call:
```
    . Function code 'LT'       (FUNCT)
    . Identifier               (IDENT)
      (it must be the same as the one defined for 'IN')
    . Cursor                   (CURID)
      (it must be unique)
    . Number of items to be received (NBOCC, macro AATUFL)
    . Code of the starting table     (NUTAB, macro AATUFL)
      (it is optional and is used for the edition)
```
Data received in return of the call:
```
    . Occurrences extracted    (DESCR, macro AATUFL)
      The number of occurrences supplied is indicated by the
      user program. The continuation sequence of data is sent
      again after a new call to on-line TUF. To set the list
      to a given table, complete the code of the table in
      NUTAB before a new call to the server.
    . Return code          (RETCOD)
    . Error numner         (ERRCOD)
    . Error label          (ERRLAB)
      (if RETCOD is not zero)
```

LIST OF HISTORICAL ACCOUNTS OF TABLES

. 'LH': extraction of list

Same as Chapter 'List of table request'.

See description of the 'AATUFL' macro.

LIST OF SUB-SCHEMAS BY TABLE

. 'LC': extraction of list

Same as Chapter 'List of tables request'.

See description of the 'AATUFS' macro.

LIST OF SUB-SYSTEMS BY TABLE

. 'LS': extraction of list

Same as Chapter 'List of table request'.

See description of 'AATUFS' macro.

CAS DE CONSULTATION DES PARAMETRES UTILISATEUR

Voir description de la macro 'AATUFU'.

1.'EX' : Ouverture du Curseur. (le paramètre PARM doit-être initialisé à la valeur '%PARM%').

2.'CU' : Demande de consultation des paramètres d'un utilisateur.

Données à fournir AVANT l'appel:

Rubrique	Signification	Remarque
LENGTH	Longueur du Curseur	
CURID	Code curseur	
IDENT	Identifiant	Doit-être identique que celui défini pour 'IN'
USER	Code Administrateur Pactable	doit-être défini en tant que Gestionnaire
PASSW	Mot de Passe de l'Administrateur	
USERP	Code Utilisateur	pour extraction de ses informations
FUNCT	Code fonction	Valeur: 'CU'
PARM	Paramètre spécifique	Valeur: '%PARM%'

Rubrique	Signification	Remarque
NBOCC	Nombre de Postes	Nb d'occurrences de la table G-$1-ELMNT (entre 1 et 360)

Données fournies APRES l'appel:

Rubrique	Signification	Remarque
ACCESG	Niveau accès Général	
ELMNT	table des postes retournée	fonction de la valeur de NBOCC
PTRAN	Code mouvement	(1 par poste de ELMNT)
NUTAB	Numéro de Table Pactable	(1 par poste de ELMNT)
LINE	Numéro de ligne	(1 par poste de ELMNT)
GROUP	Triplet : S-Schéma, S-Système, Autorisation	(20 par poste de ELMNT)
NUSSC	Numéro Sous-Schéma	(1 par poste de GROUP)
NUSSY	Numéro Sous-Système	(1 par poste de GROUP)
ACCESG	Niveau d'accès	(1 par poste de GROUP)
RETCOD	Code retour	(1)
ERRCOD	Numéro d'erreur	(2)
ERRLAB	Libellé d'erreur	

- (1) RETCOD peut prendre les valeurs suivantes:

  '00' : OK

  '01' : OK avec message d'information (voir ERRLAB)

  '04' : OK avec message d'avertissement (voir ERRLAB)

  '10' : Erreur détectée sur la commande (voir ERRLAB)

  '12' : Erreur d'entrée/sortie (voir ERRLAB)

- (2) ERRCOD peut prendre les valeurs suivantes:

  '1101E' : Commande invalide.

  '1102E' : Curseur non déclaré (commande 'IN')

  '1103E' : Curseur déjà ouvert

  '1104E' : Curseur non ouvert (ou = 1102E)

  '1105E' : Nombre de postes invalide (entre 1 et 360)

  '1106E' : Code Administrateur absent ou erroné

  '1107E' : Code Utilisateur absent ou erroné

'1108E' : (idem 1106E)

'1109E' : Code Administrateur non Gestionnaire

'1110E' : Mot de passe Administrateur erroné

'1111E' : (idem 1107E)

'1114E' : Session inexistante. Fermeture impossible

'1199E' : Nombre de postes hors limites. Contacter IBM

Remarque:

Lorsque la commande 'CU' est passée, la table G-$1-ELMNTG est effacée et réinitialisée par les valeurs Pactable en cours, quelque soit son état préalable.

CAS DE MISE A JOUR DES PARAMETRES UTILISATEUR

Voir description de la macro 'AATUFU'.

1.'EX' : Ouverture du Curseur. (le paramètre PARM doit-être initialisé à la valeur '%PARM%').

2.'UU' : Demande de mise à jour des paramètres d'un utilisateur.

Données à fournir AVANT l'appel:

Rubrique	Signification	Remarque
LENGTH	Longueur du Curseur	
CURID	Code curseur	
IDENT	Identifiant	Doit-être identique que celui défini pour 'IN'
USER	Code Administrateur Pactable	doit-être défini en tant que Gestionnaire
PASSW	Mot de Passe de l'Administrateur	
USERP	Code Utilisateur	pour mise à jour de ses informations
FUNCT	Code fonction	Valeur: 'UU'
PARM	Paramètre spécifique	Valeur: '%PARM%'
NBOCC	Nombre de Postes	Nb d'occurrences de la table G-$1-ELMNT (entre 1 et 360)
PASSWP	Mot de passe de l'Utilisateur	(facultatif) s'il est renseigné, il remplace l'ancien
ACCESG	Niveau d'accès général Utilisateur	(facultatif) s'il est renseigné, il remplace l'ancien

Rubrique	Signification	Remarque
ELMNT	table des postes retournée	fonction de la valeur de NBOCC
PTRAN	Code mouvement	(1 par poste de ELMNT) Valeurs: A,C,D,M (1)
NUTAB	Numéro de Table Pactable	(1 par poste de ELMNT)
LINE	Numéro de ligne	(blanc = '000')
GROUP	Triplet : S-Schéma, S-Système, autorisation	(20 par poste de ELMNT)
NUSSC	Numéro Sous-Schéma	(1 par poste de GROUP)
NUSSY	Numéro Sous-Système	(1 par poste de GROUP)
ACCESS	Niveau d'accès	(1 par poste de GROUP)

(1) Les mises à jour implicites (code mouvement PTRAN à blanc) sont reconnues.

Données fournies APRES l'appel:

Rubrique	Signification	Remarque
ACCESG	Niveau d'accès général Utilisateur	
ELMNT	table des postes retournée	fonction de la valeur de NBOCC
PTRAN	Code mouvement	(1 par poste de ELMNT) Valeurs: ' ' ou 'E'
NUTAB	Numéro de Table Pactable	(1 par poste de ELMNT)
LINE	Numéro de ligne	(1 par poste de ELMNT)
GROUP	Triplet : S-Schéma, S-Système, autorisation	(20 par poste de ELMNT)
NUSSC	Numéro Sous-Schéma	(1 par poste de GROUP)
NUSSY	Numéro Sous-Système	(1 par poste de GROUP)
ACCESS	Niveau d'accès	(1 par poste de GROUP)
RETCOD	Code retour	(1)
ERRCOD	Numéro d'erreur	(2)
ERRLAB	Libellé d'erreur	

- (1) RETCOD peut prendre les valeurs suivantes:
  '00' : OK

'01' : OK avec message d'information (voir ERRLAB)

'04' : OK avec message d'avertissement (voir ERRLAB)

'10' : Erreur détectée sur la commande (voir ERRLAB)

'12' : Erreur d'entrée/sortie (voir ERRLAB)

- (2) ERRCOD peut prendre les valeurs suivantes:

'1101E' : Commande invalide.

'1102E' : Curseur non déclaré (commande 'IN')

'1103E' : Curseur déjà ouvert

'1104E' : Curseur non ouvert (ou = 1102E)

'1105E' : Nombre de postes invalide (entre 1 et 360)

'1106E' : Code Administrateur absent ou erroné

'1107E' : Code Utilisateur absent ou erroné

'1108E' : (idem 1106E)

'1109E' : Code Administrateur non Gestionnaire

'1110E' : Mot de passe Administrateur erroné

'1111E' : (idem 1107E)

'1112E' : Nouveau mot de passe Utilisateur invalide

'1113E' : Niveau d'accès invalide (0,1,2)

'1114E' : Session inexistante. Fermeture impossible

'1199E' : Nombre de postes hors limites. Contacter IBM

autres : Erreurs Pactable sur les postes retournés.

Remarques:
- Lorsque la commande 'UU' est passée, les lignes valides de la table G-$1-ELMNTG sont remises à blanc après la mise à jour effectuée. Le traitement de mise à jour s'arrête sur la première ligne invalide en retournant un code mouvement (PTRAN) 'E' pour cette ligne.
- A l'issue de la commande 'UU', si TOUTES les lignes sont valides, la table G-$1-ELMNTG est réinitialisée, et les postes sont retournés dans l'ordre des clés (NUTAB, LINE)
- Les compteurs de mises à jour sont renvoyés à titre indicatif dans la zone Libellé d'Erreur (ERRLAB).

CLOSING THE SESSION

. 'FT': This command must be the last of any process. It is valid for one identifier only.

It enables the resetting of the working file.

Example of a User Application

Following this, you will find the screens for the update of Pactables Tables with T.U.F. application, in the 'Description of French Departments' example.

You will find the details of screens:

- Description of French Departments (sde10 and its -CE)
- General Menu of Tables Update with T.U.F. (ode0000)
- List of Tables (ode0010)
- Departments update (ode0030)

For each screen, you will find the DIALOGUE COMPLEMENT (CH: -O), their SCREEN CALL OF ELEMENT (CH: -CE), and the ON-LINE SCREEN CALL OF P.M.S. (CH: -CP) where the macro(s) is(are) called, and also the PROCEDURAL CODE lines (CH: -P).

```
-------------------------------------------------------------------------------
| VA Pac  3.5 V03   model entity dictionary                  *PT11.V100.CEN.491 |
| SEGMENT CALL OF ELEMENTS DE10 Description of french departments               |
|                                                                               |
| A LIN : ELEM.  INT.FORM.  U OCC GR K CMD456 CONT VALUE/SFC  UPD/TRGE DOC LIBR  |
| . 010 : DEPTSY                      S         S 000                      0450  |
| . 100 : DEPTNO                    U 0 0       S 000                      0458  |
| . 101 :                                       P JMTU01*    XXXXXXXXX     0462  |
| . 110 : DEPTLB                      0         S 000                      0450  |
| . 120 : DEPTCL                               S 00                       0462  |
| . 130 : DEPTRG                               S 00                       0462  |
| . 140 : DEPTPO                            9  S 0 0                       0450  |
| . 141 :                                      > ZEROS                     0450  |
| . 150 : DEPTAR                            9  S 0 0                       0450  |
| . 151 :                                    E > 1900                      0405  |
| . 152 :                                    EN> 1998                      0414  |
|         :                                                                      |
|         :                                                                      |
|         :                                                                      |
|         :                                                                      |
|         :                                                                      |
|         :                                                                      |
|         : NAME    :                                                            |
| *** END ***                                                                   |
| O: C1 CH: sde10 ce                                                            |
-------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.5 V03    model entity dictionary                 *PT11.V100.CEN.491|
| DIALOGUE COMPLEMENT....:  DE French Departments                              |
|                                                                             |
|                                                                             |
| COMMON AREA-DATA STRUCTURE CODE.......: CU                                   |
|                                                                             |
| ERROR MESSAGE FILE CHARACTERISTICS                                          |
|                        ORGANIZATION....:                                    |
|                        EXTERNAL NAME...:                                    |
|                                                                             |
| FIRST SCREEN CODE OF THE DIALOGUE.....: 0000                                |
|                                                                             |
| COMPLEMENTARY COMMON AREA LENGTH......:                                      |
|                                                                             |
| CODE OF PSB OR SUB-SCHEMA.............:                                      |
|                                                                             |
|                                                                             |
| OPTIONS : DYNPRT                                                            |
|                                                                             |
|                                                                             |
|                                                                             |
| SESSION NUMBER    : 5038  LIBRARY     : DOR                                  |
|                                                    EN    BLOCAGE :          |
| O: C1 CH: ode0000 o                   ACTION:                               |
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
|                     General Menu Tables Update with T.U.F.
|
| PACTABLES INFORMATION:
|
|             Transaction Code: W300
|
|             User Code: ********     Password:
|
| SELECTION LIST:                               Table      Hist.
|
|             1 - List  of  Tables         -> XXXXXX   -> XXXXXXXX
|
|             2 - List  of  Hist. accounts  -> ......   -> ........
|
|             3 - List  of  Sub-Systems     -> ......   -> ........
|
|             4 - List  of  Sub-Schemes     -> ......   -> ........
|
|             5 - User Parameters
|
|      Choice: X
|
|    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
|
--------------------------------------------------------------------------------
```

```
----------------------------------------------------------------------
| VA Pac  3.5 V03           DOCUMENTATION              *PT11.V100.CEN.491 |
| SCREEN CALL OF ELEM... DE0000 General Menu Tables Update               |
|                                                                        |
| 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 |
| ..................................................................... |
|   100 :         . A 01 022 L           .              .                |
|   110 :         .       001 L          .              .                |
|   200 :         . A 04 002 L           .              .                |
| . 210 : COTRAN .   02 015 V U Y        . R            .                |
| . 220 : USCODE .   02 015 V U          . R            .                |
| . 230 : PASUTI .      005 V U          . R            .                |
|   300 :         .   02 002 L           .              .                |
|   310 :         .   01 048 L           .              .                |
|   320 :         .   02 015 L           .              .                |
|   330 :         .   02 015 L           .              .                |
|   350 :         .   02 015 L           .              .                |
|   370 :         .   02 015 L           .              .                |
| . 390 : CHOIXX .   02 008 V N          . N   V 1      .                |
| . 391 :         .                      .     V 2      .                |
| . 392 :         .                      .     V 3                       |
| . 393 :         .                      .     V 4                       |
|                                                                        |
| O: C1 CH: ode0000 ce                                                   |
----------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.5 V03            DOCUMENTATION                 *PT11.V100.CEN.491   |
| SCREEN CALL OF ELEM... DE0000 General Menu Tables Update                      |
|                                                                               |
| 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  |
| ............................................................................. |
| . 400 : REPET  . A 12 044 R       04 .                    .                   |
| . 405 :        .    01     L          .                    .                   |
| . 410 : NUTAB  .       001 V F        .                    .                   |
| . 415 :        .       003 L          .                    .                   |
| . 420 : DAHTA  .       001 V F        .                    .                   |
| . 500 : END    . A 19 002 Z          .                    .                   |
| . 600 : LIERR  . A 23 005 P F        .                    .                   |
|       :        .                      .                    .                   |
|       :        .                      .                    .                   |
|       :        .                      .                    .                   |
|       :        .                      .                    .                   |
|       :        .                      .                    .                   |
|       :        .                      .                    .                   |
|       :        .                      .                    .                   |
|       :        .                      .                    .                   |
|       :        .                      .                    .                   |
|       :        .                      .                    .                   |
|                                                                               |
| O: C1 CH: ode0000 ce                                                          |
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.5 V03   ENGLISH DOCUMENTATION                   *PT11.V100.CEN.491 |
| SCREEN CALL OF ELEM... DE0000 General Menu Tables Update                     |
|                                                                              |
| A LIN : D.ELEM . PHYSICAL ATTRIBUTES         . LABEL                         |
|        :        . P LN COL N L HR VR IN PR CO . T LITERALS                   |
| ...............................................................................|
|   100 :        . A 01 022 L                   . General Menu Tables Update/  |
|   110 :        .      001 L                   . with T.U.F/                  |
|   200 :        . A 04 002 L          B        . Pactables INFORMATION: /     |
| . 210 : COTRAN .   02 015 V U        B        .                             |
| . 220 : USCODE .   02 015 V U        B        .                             |
| . 230 : PASUTI .      005 V U        D        .                             |
|   300 :        .   02 002 L          B        . LIST SELECTION:              |
|   310 :        .   01 048 L                   . Table      Hist. Account/    |
|   320 :        .   02 015 L                   . 1 - List of Tables  /        |
|   330 :        .   02 015 L                   . 2 - List of Hist. Account/   |
|   350 :        .   02 015 L                   . 3 - List of Sub-Systems    / |
|   370 :        .   02 015 L                   . 4 - List of Sub-Schemes    / |
| . 390 : CHOIXX .   02 008 V N        B        .                             |
| . 391 :        .                              .                             |
| . 392 :        .                                                            |
| . 393 :        .                                                            |
|                                                                              |
| O: C2 CH: ode0000 ce                                                         |
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.5 V03   ENGLISH DOCUMENTATION                    *PT11.V100.CEN.491 |
| SCREEN CALL OF ELEM... DE0000 General Menu Tables Update                      |
|                                                                              |
| A LIN : D.ELEM . PHYSICAL ATTRIBUTES          . LABEL                         |
|       :         . P LN COL N L HR VR IN PR CO . T LITERALS                    |
| ......................................................................        |
| . 400 : REPET  . A 12 044 R      04           .                              |
| . 405 :        .   01      L                  .    ->/                        |
| . 410 : NUTAB  .      001 V F                 .                              |
| . 415 :        .      003 L                   .    ->/                        |
| . 420 : DAHTA  .      001 V F                 .                              |
| . 500 : END    . A 19 002 Z                   .                              |
| . 600 : LIERR  . A 23 005 P F                 .                              |
|       :        .                              .                              |
|       :        .                              .                              |
|       :        .                              .                              |
|       :        .                              .                              |
|       :        .                              .                              |
|       :        .                              .                              |
|       :        .                              .                              |
|       :        .                              .                              |
|       :        .                              .                              |
|                                                                              |
| O: C2 CH: ode0000 ce                                                          |
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.5 V04        DOCUMENTATION              P.24202.*F055070.VD03.CEN.606
| PROCEDURAL CODE        O DE0000 General Menu Tables Update    FUNCTION: 00
|
| A SF LIN OPE OPERANDS                            LVTY CONDITION
|   BB    N   INITIALIZATIONS                      10BL
|   BB 100 M  'DDR980'      PRCGI
|   BB 200 M  SPACES        G-CUR1-CURSOR
|   BB 220 INS G-CUR1-CURSOR TALLYING TALLI
|   BB 230               FOR ALL SPACE
|   BB 240 M  TALLI         7-WW00-LENGTH
| - -- --- --- ------------------------------ ---- -------------------------
| PROCEDURAL CODE        O DE0000 General Menu Tables Update    FUNCTION: 02
|
| A SF LIN OPE OPERANDS                            LVTY CONDITION
|   BB    N   1ST TIME                             10IT ICF = '0'
|   BB 100 M  'A'     OPER
|   BB 110 M  '1'     OCF
|   BB 120 GFT
| - -- --- --- ------------------------------ ---- -------------------------
| PROCEDURAL CODE        O DE0000 General Menu Tables Update    FUNCTION: 05
|
| A SF LIN OPE OPERANDS                            LVTY CONDITION
|   15    N   END OF CONVERSATION IF 'CLEAR'       10IT I-PFKEY = '00'
|   15 100 M  'E'     OPER
|   15 110 COB GO TO F40.
| - -- --- --- ------------------------------ ---- -------------------------
| PROCEDURAL CODE        O DE0000 General Menu Tables Update    FUNCTION: 20
|
| A SF LIN OPE OPERANDS                            LVTY CONDITION
|   BB    N   SESSION AUTHORIZATION CHECK          10*P CHOIXX
| - -- --- --- ------------------------------ ---- -------------------------
|   CC    N   IF TRIPLET COTRAN/USCODE/PASUSE 15IT CATG = SPACE
|   CC  10 *  EST OK
|   CC 100 M  SPACES        G-CUR1-CURSOR
|   CC 105 M  7-WW00-LENGTH G-CUR1-LENGTH
|   CC 110 M  'IN'          G-CUR1-FUNCT
|   CC 120 M  'CUR1'        G-CUR1-CURID
|   CC 130 M  SPACES        7-WW00-IDENT
|   CC 140 M  'JMC'         7-WW00-TRMID
|   CC 150 M  PROGE         7-WW00-PROGE
|   CC 155 MA 'P'           7-WW00-SUITE       99IT I-0000-CHOIXX = '5'
|   CC 160 M  7-WW00-IDENT  G-CUR1-IDENT       99BL
|   CC 170 M  I-0000-COTRAN G-CUR1-CTRAN
|   CC 171                  7-WW00-YPREPG
|   CC 180 M  I-0000-USCODE G-CUR1-USER
|   CC 190 M  I-0000-PASUSE G-CUR1-PASSW
|   CC 195 *  MARK-UP 'IN'  99IT I-0000-CHOIXX = '5'
|   CC 196 *  OF USER PARAMETERS TO DIRECT
|   CC 197 *  TOWARDS TUF100 AND NOT TOWARDS TUF900
|   CC 198 M  '%PARM%'      G-CUR1-NUTAB
|   CC 200 EXC LINK PROGRAM   (7-WW00-PROGUT)   99BL
|   CC 210          COMMAREA  (G-CUR1-CURSOR)
```

```
  CC 220         LENGTH   (G-CUR1-LENGTH)
  CC 300 ERU IN                              99IT G-CUR1-RETCOD > '01'
--------------------------------------------------------------------------
```

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--------------------------------------------------------------------------------
VA Pac  3.5 V04         DOCUMENTATION     P.24202.*F055070.VDO3.CEN.6066
PROCEDURAL CODE O DE0000 General Menu Tables Update     FUNCTION: 30

A SF LIN OPE OPERANDS                           LVTY CONDITION
  BB     N   TRANSFER IN LINKAGE               10*P
  BB 230 M   I-0000-COTRAN  G-CUR1-CTRAN        99IT PR-00-COTRAN = '1'
  BB 235                    CU00-COTRAN
  BB 240 M   I-0000-USCODE  G-CUR1-USER         99IT PR-00-USCODE = '1'
  BB 245                    CU00-USCODE
  BB 250 M   I-0000-PASUSE  G-CUR1-PASSW        99IT PR-00-PASUSE = '1'
  BB 255                    CU00-PASUSE
- -- --- --- ------------------------------ ---- --------------------------
  MM     N   CALL OF LIST SCREEN               15IT PR-00-CHOIXX = '1'
  MM  10 *   *---- LISTS 'JMTU10'
  MM 100 M   'LT'           G-CUR1-FUNCT        99IT I-0000-CHOIXX = '1'
  MM 110 M   J-0000-REPET (1) I-0000-REPET
  MM 200 M   'LH'           G-CUR1-FUNCT        99IT I-0000-CHOIXX = '2'
  MM 210 M   J-0000-REPET (2) I-0000-REPET
  MM 300 M   'LS'           G-CUR1-FUNCT        99IT I-0000-CHOIXX = '3'
  MM 310 M   J-0000-REPET (3) I-0000-REPET
  MM 400 M   'LC'           G-CUR1-FUNCT        99IT I-0000-CHOIXX = '4'
  MM 410 M   J-0000-REPET (4) I-0000-REPET
  MM 500 M   I-0000-NUTAB   G-CUR1-NUTAB        99IT I-0000-CHOIXX NOT = '5'
  MM 510 M   I-0000-DAHTA   G-CUR1-DATEC
  MM 520 M   'JMTU10'       5-0000-PROGE
  MM 530 *   *---- USER PARAMETERS              99IT I-0000-CHOIXX = '5'
  MM 540 M   'JMTU40'       5-0000-PROGE
  MM 600 M   G-CUR1-CURSOR  CU00-CURSOR         99BL
  MM 610 M   'O'            OPER
- -- --- --- ------------------------------ ---- --------------------------
 PROCEDURAL CODE O DE0000 General Menu Tables Update     FUNCTION: 65

A SF LIN OPE OPERANDS                           LVTY CONDITION
  BB     N   BACK FROM A SCREEN (PF12)         10IT ICF = '0'
  BB 100 M   CU00-COTRAN    O-0000-COTRAN       AN EIBCALEN > ZEROS
  BB 110 M   CU00-USCODE    O-0000-USCODE
  BB 120 M   CU00-PASUSE    O-0000-PASUSE
  BB 200 *   CURSOR RESET
  BB 210 M   SPACE   EN-AT (4, 01)
  BB 220 M   'X'     EN-AT (4, 04)
- -- --- --- ------------------------------ ---- --------------------------
PROCEDURAL CODE O DE0000 General Menu Tables Update     FUNCTION: 80

A SF LIN OPE OPERANDS                           LVTY CONDITION
  LE     N   ERROR LABEL                       10BL
  LE 100 YR  LE00
  LE 200 M   'TRANSACTION CODE WRONGLY MISSIN  99IT LE00-XCLEF = 'DE00000012'
  LE 201     'G'
  LE 202     LE00-LIERR
  LE 210 M   'USER CODE WRONGLY MISSING'       99IT LE00-XCLEF = 'DE00000022'
  LE 211     ' '
  LE 212     LE00-LIERR
  LE 220 M   'USER PASSWORD WRONGLY MISSING'   99IT LE00-XCLEF = 'DE00000032'
  LE 222     LE00-LIERR
```

```
   LE 230 M  'CHOICE CODE WRONGLY MISSING OR  99IT LE00-XCLEF = 'DE00000045'
   LE 231    'ERRONEOUS                '
   LE 232    LE00-LIERR
   LE 250 M  G-CUR1-ERRLAB    LE00-LIERR      99IT LE00-XCLEF = 'DE    IN'
 - -- --- --- ------------------------------ ---- --------------------------
│
│
│
│ *** FIN ***
│ O: C1 CH:
 -------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
|                            List of TABLES                                    |
|                                                                              |
|                                                                              |
| Tab. Name            Label   TABLES                Histo Date     S-Sys S-Sch|
|                                                                              |
|   ARTICL     ARTICLES                              20070115                  |
|   CUSTOM     CLIENTS ADRESSES                       20070310                  |
|   DEPT       French Departments Description        20070601                  |
|   TEMPER     TEMPERATURES ALL OVER THE WORLD                        .      . |
|   ......     ..................................      ......         .      . |
|   ......     ..................................      ......         .      . |
|   ......     ..................................      ......         .      . |
|   ......     ..................................      ......         .      . |
|   ......     ..................................      ......         .      . |
|   ......     ..................................      ......         .      . |
|   ......     ..................................      ......         .      . |
|                                                                              |
|   XXXXXX <- Paging                                                           |
|                                                                              |
|                                                                              |
| ENTER=Next    PF05=Start  PF10(+Curs)=UPDT Display data    PF12=General Menu |
|                                                                              |
|    *** END ***                                                               |
--------------------------------------------------------------------------------
```

```
-------------------------------------------------------------------------------
| VA Pac  3.5 V03    model entity dictionary               *PT11.V100.CEN.491 |
| SCREEN CALL OF ELEM... DE0010 List display                                  |
|                                                                             |
| 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 |
| ............................................................................|
| . 010 : PFKEY .         V              . E O G DE0000      .  12             |
| . 015 :        .                       .       O           .  10             |
| . 020 :        .                       .       A           .  05             |
|   100 :        . A 01 030 L            .                   .                 |
| . 110 : X0015  .      001 P F          .                   .  * ALL '?'      |
|   200 :        . A 04 002 L            .                   .                 |
|   210 :        .      012 L            .                   .                 |
| . 220 : X0006  .      001 P F          .                   .  * ALL '?'      |
|   230 :        .      013 L            .                   .                 |
| . 240 :        .      003 L            .                   .                 |
| . 250 :        .      003 L            .                   .                 |
| . 400 : REPET  .  02 002 R        12   .                   .                 |
| . 410 : NUTAB  .      002 F F          .                   .                 |
| . 420 : LIBSEG .      003 F F          .                   .                 |
| . 430 : DAHTA  .      005 V F          .                   .  * SPACES       |
| . 440 : NUSSY  .      009 F F          .                   .                 |
|                                                                             |
| O: C1 CH: ode0010 ce                                                        |
-------------------------------------------------------------------------------
```

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-----------------------------------------------------------------------------
| VA Pac  3.5 V03    model entity dictionary                *PT11.V100.CEN.491 |
| SCREEN CALL OF ELEM... DE0010 List display                                   |
|                                                                              |
| 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  |
| ...........................................................................  |
| . 450 : NUSSC  .      007 F F          .                  .                  |
| . 500 : END    . 02 002 Z              .                  .                  |
| . 510 : NUTABS .     002 V F Y         .                  .                  |
|   520 :        .     001 L             .                  .                  |
|   600 :        . 02 003 L              .                  .                  |
|   610 :        .     002 L             .                  .                  |
|   620 :        .     001 L             .                  .                  |
|   630 :        .     002 L             .                  .                  |
| . 900 : LIERR  . A 23 005 P F          .                  .                  |
|       :        .        .              .                  .                  |
|       :        .        .              .                  .                  |
|       :        .        .              .                  .                  |
|       :        .        .              .                  .                  |
|       :        .        .              .                  .                  |
|                                                                              |
|                                                                              |
|                                                                              |
| O: C1 CH: ode0010 ce                                                         |
-----------------------------------------------------------------------------
```

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--------------------------------------------------------------------------------
| VA Pac  3.5 V03    model entity dictionary                 *PT11.V100.CEN.491 |
| SCREEN CALL OF ELEM... DE0010 List display                                    |
|                                                                               |
| A LIN : D.ELEM . PHYSICAL ATTRIBUTES           . LABEL                        |
|       :          . P LN COL N L HR VR IN PR CO . T LITERALS                   |
| ...............................................................................|
| . 010 : PFKEY  .           V                   .                              |
| . 015 :        .                               .                              |
| . 020 :        .                               .                              |
|   100 :        . A 01 030 L                     . List of  /                  |
| . 110 : X0015  .       001 P F        B         .                             |
|   200 :        . A 04 002 L           B         . Tab. Name/                   |
|   210 :        .       012 L          B         . Label  /                    |
| . 220 : X0006  .       001 P F        B         .                             |
|   230 :        .       013 L          B         . Historical Date/            |
| . 240 :        .       003 L          B         . S-Sys/                      |
| . 250 :        .       003 L          B         . S-Sch/                      |
| . 400 : REPET  .  02 002 R        12            .                             |
| . 410 : NUTAB  .       002 F F                  .                             |
| . 420 : LIBSEG .       003 F F                  .                             |
| . 430 : DAHTA  .       005 V F                  .                             |
| . 440 : NUSSY  .       009 F F                  .                             |
|                                                                               |
| O: C2 CH: ode0010 ce                                                          |
--------------------------------------------------------------------------------
```

```
-------------------------------------------------------------------------------
| VA Pac  3.5 V03    model entity dictionary              *PT11.V100.CEN.491 |
| SCREEN CALL OF ELEM... DE0010 List display                                 |
|                                                                            |
| A LIN : D.ELEM . PHYSICAL ATTRIBUTES         . LABEL                       |
|        :        . P LN COL N L HR VR IN PR CO . T LITERALS                 |
| ......................................................................     |
| . 450 : NUSSC  .      007 F F               .                             |
|   500 : END    . 02 002 Z                   .                             |
| . 510 : NUTABS .      002 V F               .                             |
|   520 :        .      001 L         B       . <- Paging    /              |
|   600 :        . 02 003 L                   . ENTER=Next   PF05=Start/     |
|   610 :        .      002 L                 . PF10(+Curs)=UPDT Display/    |
|   620 :        .      001 L                 . data   /                    |
|   630 :        .      002 L                 . PF12=General Menu/           |
| . 900 : LIERR  . A 23 005 P F               .                             |
|       :        .                            .                             |
|       :        .                            .                             |
|       :        .                            .                             |
|       :        .                            .                             |
|       :        .                            .                             |
|       :        .                            .                             |
|       :        .                            .                             |
|                                                                            |
| O: C2 CH: ode0010 ce                                                       |
-------------------------------------------------------------------------------
```

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--------------------------------------------------------------------------------
| VA Pac  3.5 V03    model entity dictionary                *PT11.V100.CEN.491 |
| ON-LINE SCREEN CALL OF P.M.S.......:    DE0010 List display                   |
|                                                                              |
| A   MACRO  LN C : COMMENTS OR PARAMETER VALUES                      D V       |
| .   AATUFL 10  : CUR1/C1/12/  /                                               |
| .   AATUFS 10  : CUR2/C2/12/  /                                               |
| .   AATUFX 10  : CUR3/C3/0000//    /                                          |
|                     :                                                         |
|                     :                                                         |
|                     :                                                         |
|                     :                                                         |
|                     :                                                         |
|                     :                                                         |
|                     :                                                         |
|                     :                                                         |
|                     :                                                         |
|                     :                                                         |
|                     :                                                         |
|                     :                                                         |
|                     :                                                         |
|                     :                                                         |
|                                                                              |
| O: C1 CH: ode0010 cp                                                          |
--------------------------------------------------------------------------------
```

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--------------------------------------------------------------------------------
| VA Pac  3.5 V04    DOCUMENTATION                    P.24202.*F055070.VD03.CEN.606
| PROCEDURAL CODE        O DE0010 Lst Display              FUNCTION: 00
|
| A SF LIN OPE OPERANDS                          LVTY CONDITION
|   BB     N   INITIALIZATIONS                   10BL
|   BB 100 M   'DDR980'       PRCGI
| - -- --- --- ------------------------------ ---- --------------------------
| SCREEN CALL OF ELEM... O DE0010 List Display             FUNCTION: 02
|
| A SF LIN OPE OPERANDS                          LVTY CONDITION
|   BB     N   IDENTIFICATION OF THE CURSOR      10BL
|   BB 100 M   SPACES  G-CUR1-CURSOR
|   BB 101             G-CUR2-CURSOR
|   BB 200 INS G-CUR1-CURSOR TALLYING TALLI     99IT CU00-FUNCT = 'LT' OR 'LH'
|   BB 210                  FOR ALL SPACE
|   BB 220 M   CU00-CURSOR   G-CUR1-CURSOR
|   BB 230 M   G-CUR1-CTRAN  7-WW00-YPREPG
|   BB 240 M   IRR           G-CUR1-NBOCC
|   BB 250 M   TALLI         G-CUR1-LENGTH
|   BB 255 EXC DELAY REQID('F02BB255')
|   BB 300 INS G-CUR2-CURSOR TALLYING TALLI     99IT CU00-FUNCT = 'LS' OR 'LC'
|   BB 310                  FOR ALL SPACE
|   BB 320 M   CU00-CURSOR   G-CUR2-CURSOR
|   BB 330 M   G-CUR2-CTRAN  7-WW00-YPREPG
|   BB 340 M   IRR           G-CUR2-NBOCC
|   BB 350 M   TALLI         G-CUR2-LENGTH
| - -- --- --- ------------------------------ ---- --------------------------
|   DD     N   EXTRACTION                        10IT ICF = '0'
| - -- --- --- ------------------------------ ---- --------------------------
|   EE     N   TABLES / HISTORICAL ACCOUNTS      15IT CU00-FUNCT = 'LT' OR 'LH'
|   EE 210 EXC LINK PROGRAM   (7-WW00-PROGUT)    99BL
|   EE 220         COMMAREA   (G-CUR1-CURSOR)
|   EE 230         LENGTH     (G-CUR1-LENGTH)
|   EE 500 ERU EX                                99IT G-CUR1-RETCOD > '04'
| - -- --- --- ------------------------------ ---- --------------------------
|   FF     N   SUB-SCHEMES / SOUS-SYSTEMS        15IT CU00-FUNCT = 'LC' OR 'LS'
|   FF 210 EXC LINK PROGRAM   (7-WW00-PROGUT)
|   FF 220         COMMAREA   (G-CUR2-CURSOR)
|   FF 230         LENGTH     (G-CUR2-LENGTH)
|   FF 500 ERU EY                                99IT G-CUR2-RETCOD > '04'
| - -- --- --- ------------------------------ ---- --------------------------
|   ZZ     N   DISPLAY                           15BL
|   ZZ 100 M   'A'     OPER
|   ZZ 110 M   '1'     OCF
|   ZZ 120 GFT
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
|VA Pac  3.5 V04   DOCUMENTATION                    P.24202.*F055070.VD03.CEN.606
|PROCEDURAL CODE        O DE0010 List Display         FUNCTION: 37
|
|A SF LIN OPE OPERANDS                        LVTY CONDITION
|  BB    N   CALL OF TABLE UPDATE             10IT OCF = '1'
|  BB  10                                      AN I-PFKEY = '10'
|  BB 100 M  'A'    OPER                       99IT CPOSL < 6 OR CPOSL > 17
|  BB 110 GT  10
|  BB 120 M  'JMTU30'        5-0010-PROGE
|  BB 130 M  SPACES          G-CUR3-CURSOR
|  BB 210 M  G-CUR1-IDENT    G-CUR3-IDENT     99IT CU00-FUNCT = 'LT' OR 'LH'
|  BB 220 M  G-CUR1-USER     G-CUR3-USER
|  BB 230 M  G-CUR1-PASSW    G-CUR3-PASSW
|  BB 240 M  G-CUR1-CTRAN    G-CUR3-CTRAN
|  BB 250 M  G-CUR1-CBASE    G-CUR3-CBASE
|  BB 310 M  G-CUR2-IDENT    G-CUR3-IDENT     99IT CU00-FUNCT = 'LS' OR 'LC'
|  BB 320 M  G-CUR2-USER     G-CUR3-USER
|  BB 330 M  G-CUR2-PASSW    G-CUR3-PASSW
|  BB 340 M  G-CUR2-CTRAN    G-CUR3-CTRAN
|  BB 350 M  G-CUR2-CBASE    G-CUR3-CBASE
|  BB 360 M  G-CUR2-LABSCY (CPOSL - 5)        99IT CU00-FUNCT = 'LS'
|  BB 365                    G-CUR3-LIBSY
|  BB 370 M  G-CUR2-LABSCY (CPOSL - 5)        99IT CU00-FUNCT = 'LC'
|  BB 375                    G-CUR3-LIBSC
|  BB 400 M  J-0010-REPET  (CPOSL - 5)        99BL
|  BB 401    I-0010-REPET
|  BB 410 M  I-0010-NUTAB    G-CUR3-NUTAB
|  BB 420 M  I-0010-LIBSEG   G-CUR3-LITAB
|  BB 430 M  I-0010-DAHTA    G-CUR3-DATEC
|  BB 440 M  I-0010-NUSSY    G-CUR3-NUSSY
|  BB 450 M  I-0010-NUSSC    G-CUR3-NUSSC
|  BB 490 M  G-CUR3-CURSOR   CU00-CURSOR
|  BB 900 GFT
|- -- --- --- ------------------------------ ---- --------------------------
|SCREEN CALL OF ELEM... O DE0010 List Display                 FONCTION: 38
|
|A SF LIN OPE OPERANDS                        NVTY CONDITION
|  NN    N   PAGINATION                       10IT OCF = '1'
|  NN  10                                      AN OPER = 'A'
|- -- --- --- ------------------------------ ---- --------------------------
|  PP    N   TABLES / HISTORICAL ACCOUNTS     15IT CU00-FUNCT = 'LT' OR 'LH'
|  PP  10 *  NO PAGING FOR'LH'                99IT CU00-FUNCT = 'LH'
|  PP  20 COB GO TO F38PP-200.
|  PP 100 M  I-0010-NUTABS   G-CUR1-NUTAB     99IT I-0010-NUTABS > SPACES
|  PP 120 M  LOW-VALUE       G-CUR1-NUTAB     99IT I-PFKEY = '05'
|  PP 130                                      OR I-PFKEY = 'EN'
|  PP 140                                      AN G-CUR1-ERRCOD = '9046W'
|  PP 150                                      AN I-0010-NUTABS = SPACES
|  PP 199 COA F38PP-200.
|  PP 200 EXC LINK PROGRAM   (7-WW00-PROGUT)  99BL
|  PP 210         COMMAREA  (G-CUR1-CURSOR)
|  PP 220         LENGTH    (G-CUR1-LENGTH)
|  PP 500 ERU PX                              99IT G-CUR1-RETCOD > '04'
|--------------------------------------------------------------------------------
```

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--------------------------------------------------------------------------------
| VA Pac  3.5 V04   DOCUMENTATION                    P.24202.*F055070.VDO3.CEN.606
| PROCEDURAL CODE        O DE0010 List Display                    FUNCTION: 38
|
| A SF LIN OPE OPERANDS                           LVTY CONDITION
|   QQ    N   SUB-SCHEMES / SUB-SYSTEMS           15IT CU00-FUNCT = 'LC' OR 'LS'
|   QQ 100 *   NO PAGING POSSIBLE
|   QQ 200 EXC LINK PROGRAM   (7-WW00-PROGUT)      99BL
|   QQ 210         COMMAREA  (G-CUR2-CURSOR)
|   QQ 220         LENGTH    (G-CUR2-LENGTH)
|   QQ 500 ERU PY                                  99IT G-CUR2-RETCOD > '04'
| - -- --- --- ------------------------------- ---- -------------------------
| PROCEDURAL CODE        O DE0010 List Display                    FUNCTION: 51
|
| A SF LIN OPE OPERANDS                           LVTY CONDITION
|   BB    N   COMMAREA BEING TRANSFERRED          10BL
|   BB 100 M   G-CUR1-CURSOR  CU00-CURSOR          99IT CU00-FUNCT = 'LT' OR 'LH'
|   BB 200 M   G-CUR2-CURSOR  CU00-CURSOR          99IT CU00-FUNCT = 'LS' OR 'LC'
|   BB 900 EXC DELAY REQID('F51BB900')             99BL
| - -- --- --- ------------------------------- ---- -------------------------
| PROCEDURAL CODE        O DE0010 List Display                    FUNCTION: 65
|
| A SF LIN OPE OPERANDS                           LVTY CONDITION
|   BB    N   TRANSFER IN TITLE OUTPUT            10*P A
|   BB  10 EXC DELAY REQID('F65BB010')             99BL
|   BB 120 M   'TABLE'          O-0010-X0006       99IT CU00-FUNCT = 'LT'
|   BB 130 M   'TABLES'         O-0010-X0015
|   BB 140 M   'TABLE'          O-0010-X0006       99IT CU00-FUNCT = 'LH'
|   BB 150 M   'HISTORIQUES'    O-0010-X0015
|   BB 160 M   'S-SCH'          O-0010-X0006       99IT CU00-FUNCT = 'LC'
|   BB 170 M   'SOUS-SCHEMAS'   O-0010-X0015
|   BB 180 M   'S-SYS'          O-0010-X0006       99IT CU00-FUNCT = 'LS'
|   BB 190 M   'SOUS-SYSTEMES'  O-0010-X0015
| - -- --- --- ------------------------------- ---- -------------------------
|   JJ    N    TRANSFER IN REPETITIVE OUTPUT   10*P R
| - -- --- --- ------------------------------- ---- -------------------------
|   KK    N   LIST OF TABLES OR HISTORICAL    20IT (CU00-FUNCT = 'LT' OR 'LH')
|   KK  10 *   ACCOUNTS                            AN G-CUR1-ELMNT (ICATR) > SPAC
|   KK 110 M   G-CUR1-TABLE (ICATR)
|   KK 111              O-0010-NUTAB
|   KK 120 M   G-CUR1-LABTB (ICATR)
|   KK 121              O-0010-LIBSEG
|   KK 130 M   G-CUR1-DATEH (ICATR)               99IT G-CUR1-DATEH (ICATR) > ZERO
|   KK 131              O-0010-DAHTA
|   KK 140 M   SPACES       O-0010-NUSSY          99BL
|   KK 150 M   SPACES       O-0010-NUSSC
| --------------------------------------------------------------------------------
```

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--------------------------------------------------------------------------------
| VA Pac  3.5 V04   DOCUMENTATION                     P.24202.*F055070.VDO3.CEN.606
| PROCEDURAL CODE       O DE0010 List Display                    FUNCTION: 65
|
| A SF LIN OPE OPERANDS                        LVTY CONDITION
|   MM    N   LIST OF SB-SYSTEMS / SB-SCHEME   20IT (CU00-FUNCT = 'LS' OR 'LC')
|   MM  10                                     AN G-CUR2-ELMNT (ICATR) > SPAC
|   MM 110 M   G-CUR2-TABLE  (ICATR)
|   MM 111                 O-0010-NUTAB
|   MM 120 M   G-CUR2-LABSCY (ICATR)
|   MM 121                 O-0010-LIBSEG
|   MM 130 M   SPACES       O-0010-DAHTA
|   MM 200 M   G-CUR2-NUSCY  (ICATR)           99IT CU00-FUNCT = 'LS'
|   MM 201                 O-0010-NUSSY
|   MM 210 M   SPACES       O-0010-NUSSC
|   MM 300 M   SPACES       O-0010-NUSSY       99IT CU00-FUNCT = 'LC'
|   MM 310 M   G-CUR2-NUSCY (ICATR)
|   MM 311                 O-0010-NUSSC
| - -- --- --- ------------------------------ ---- ---------------------------
|   NN    N   LOCK OF HISTORICAL DATES         20IT CU00-FUNCT = 'LC'
|   NN 100 M   'P'    A-0010-DAHTA (5)
|   NN 110 M   A-0010-REPET (5)
|   NN 111         B-0010-REPET (5, ICATR)
| - -- --- --- ------------------------------ ---- ---------------------------
|   PP    N   PREPARATION TO PAGING            20BL
|   PP 100 M   O-0010-NUTAB  G-CUR1-NUTAB      99IT (CU00-FUNCT = 'LT' OR 'LH')
|   PP 110                                     AN O-0010-NUTAB > SPACES
|   PP 200 M   O-0010-NUTAB  G-CUR2-NUTAB      99IT (CU00-FUNCT = 'LS' OR 'LC')
|   PP 210                                     AN O-0010-NUTAB > SPACES
| - -- --- --- ------------------------------ ---- ---------------------------
|   VV    N   TRANSFER IN END OF SCREEN OUTPUT 10*P Z
|   VV 100 M   G-CUR1-ERRLAB O-0010-LIERR (1)  99IT (CU00-FUNCT = 'LT' OR 'LH')
|   VV 110                                     AN G-CUR1-RETCOD = '04'
|   VV 200 M   G-CUR2-ERRLAB O-0010-LIERR (1)  99IT (CU00-FUNCT = 'LC' OR 'LS')
|   VV 210                                     AN G-CUR1-RETCOD = '04'
| - -- --- --- ------------------------------ ---- ---------------------------
| PROCEDURAL CODE       O DE0010 List Display                    FUNCTION:  80
|
| A SF LIN OPE OPERANDS                        LVTY CONDITION
|   LE    N   ERROR MESSAGES                   10BL
|   LE 100 YR LE00
|   LE 200 M   G-CUR1-ERRLAB     LE00-LIERR    99IT LE00-XCLEF = 'DE    EX'
|   LE 210                                     OR LE00-XCLEF = 'DE    PX'
|   LE 300 M   G-CUR2-ERRLAB     LE00-LIERR    99IT LE00-XCLEF = 'DE    EY'
|   LE 310                                     OR LE00-XCLEF = 'DE    PY'
```

```
*** END ***
O: C1 CH:
----------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
                    Description of French Departments

 S-Sys:                                  S-Sch:    Histo. Upd: 20070520

   A  NUM : DEPARTMNT  LABEL         COUNTY TOW        SUB-SYSTEMS
       009 : Ariège 'EX'      19980522 Foix           3
           : REGION: RhÊne Alpes            POPULATION:       YEAR:
       011 : Aude                   Carcassone         3
           : REGION: Midi-Pyrénées          POPULATION:       YEAR:
       013 : Bouches du Rhône       Marseille          4
           : REGION: Provence-Côte d'Azur   POPULATION:       YEAR:
       022 : CÊte de Nord           St Brieux          1
           : REGION: Bretagne               POPULATION:       YEAR:
       029 : Finist}re              Quimper            1
           : REGION: Bretagne               POPULATION:       YEAR:
       032 : Gers                   Auch               3
           : REGION:                        POPULATION:       YEAR:
       033 : Gironde                Bordeaux           3
           : REGION: Aquitaine              POPULATION:       YEAR:

 ENTER=Next  PF05=Start  PF07=Update Data  PF10(+Curs)=Error Display  PF12=End

 009
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.5 V03    model entity dictionary                *PT11.V100.CEN.491 |
| SCREEN CALL OF ELEM... DE0030 Departments update                             |
|                                                                              |
| 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   |
| ........................................................................     |
| . 010 : PFKEY  .          V            . E O G DE0000     .  12              |
| . 015 :        .                       .       P          .  10              |
| . 020 :        .                       .       A          .  05              |
| . 025 :        .                       .       A          .  07              |
| . 100 : LIBSEG . A 01 022 P F          .                  .                  |
| . 110 :        . A 03 002 L            .                  .                  |
| . 120 : NUSSY  .       001 P F         .                  .                  |
| . 130 : LIBSY  .       001 P F         .                  .                  |
| . 140 :        .       003 L           .                  .                  |
| . 150 : NUSSC  .       001 P F         .                  .                  |
| . 160 :        .       003 L           .                  .                  |
| . 170 : DAHTA  .       001 P F         .                  .                  |
| . 200 :        . A 05 005 L            .                  .                  |
| . 210 : DE0003 .       002 P F         .                  .  CUR1            |
| . 220 :        .       001 L           .                  .                  |
| . 230 : DE0025 .       001 P F         .                  .  CUR1            |
|                                                                              |
| O: C1 CH: ode0030 ce                                                         |
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.5 V03    model entity dictionary                 *PT11.V100.CEN.491 |
| SCREEN CALL OF ELEM... DE0030 Departments update                              |
|                                                                               |
| 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  |
| ....................................................................          |
| . 240 : DE0020 .    001 P F           .                   .  CUR1             |
| . 250 : DE0015 .    001 P F           .                   .  CUR1             |
| . 300 : REPET  . A 06 001 R       07  .                   .                   |
| . 310 : CODMV  .    005 V F Y         .                   .  CUR1             |
| . 320 : DEPTNO .    002 V F           . N                 .  CUR1             |
| . 330 :        .    001 L             .                   .                   |
| . 340 : DEPTLB .    001 V F           . N                 .  CUR1             |
| . 350 : DEPTCL .    001 V F           . N                 .  CUR1             |
| . 360 : DEPTSY .    001 V F           . N                 .  CUR1             |
| . 400 :        . 01 012 L             .                   .                   |
| . 410 : DE0007 .    001 P F           .                   .  CUR1             |
| . 420 : DEPTRG .    001 V F           . N                 .  CUR1             |
| . 430 : DE0011 .    001 P F           .                   .  CUR1             |
| . 440 : DEPTPO .    001 V F           . N                 .  CUR1             |
| . 450 : DE0006 .    001 P F           .                   .  CUR1             |
| . 460 : DEPTAR .    001 V F           . N                 .                   |
|                                                                               |
| O: C1 CH: ode0030 ce                                                          |
--------------------------------------------------------------------------------
```

```
----------------------------------------------------------------------
| VA Pac  3.5 V03    model entity dictionary            *PT11.V100.CEN.491 |
| SCREEN CALL OF ELEM... DE0030 Departments update                    |
|                                                                      |
| 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 |
| ...................................................................  |
|   500 : END   . A 21 001 Z           .                    .          |
| . 510 :       .      003 L           .                    .          |
| . 520 :       .      002 L           .                    .          |
| . 530 :       .      002 L           .                    .          |
| . 540 :       .      001 L           .                    .          |
| . 560 :       .      002 L           .                    .          |
| . 900 : DEPTN1 . A 23 003 P F        .                    .  CUR1    |
| . 910 : ERPOST .      002 P F        .                    .  CUR1    |
|       :       .                      .                    .          |
|       :       .                      .                    .          |
|       :       .                      .                    .          |
|       :       .                      .                    .          |
|       :       .                      .                    .          |
|       :       .                      .                    .          |
|       :       .                      .                    .          |
|       :       .                      .                    .          |
|                                                                      |
| O: C1 CH: ode0030 ce                                                 |
----------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.5 V03     model entity dictionary            *PT11.V100.CEN.491 |
| SCREEN CALL OF ELEM... DE0030 Departments update                          |
|                                                                           |
| A LIN : D.ELEM . PHYSICAL ATTRIBUTES          . LABEL                      |
|       :         . P LN COL N L HR VR IN PR CO . T LITERALS                 |
| .............................................................................|
| . 010 : PFKEY .           V                   .                           |
| . 015 :       .                               .                           |
| . 020 :       .                               .                           |
| . 025 :       .                               .                           |
| . 100 : LIBSEG . A 01 022 P F         B       .                           |
| . 110 :        . A 03 002 L                    .  S-Sys:/                  |
| . 120 : NUSSY .       001 P F         B        .                           |
| . 130 : LIBSY .       001 P F     B            .                           |
| . 140 :        .      003 L                    .  S-Sch:/                  |
| . 150 : NUSSC .       001 P F         B        .                           |
|   160 :        .      003 L                    .  Histo Date:/             |
| . 170 : DAHTA .       001 P F     B            .                           |
| . 200 :        . A 05 005 L                    .  A/                       |
| . 210 : DE0003 .      002 P F                  .                           |
| . 220 :        .      001 L                    .  :/                       |
| . 230 : DE0025 .      001 P F                  .                           |
|                                                                           |
| O: C2 CH: ode0030 ce                                                      |
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.5 V03       model entity dictionary           *PT11.V100.CEN.491 |
| SCREEN CALL OF ELEM... DE0030 Departments update                           |
|                                                                            |
| A LIN : D.ELEM . PHYSICAL ATTRIBUTES          . LABEL                      |
|       :         . P LN COL N L HR VR IN PR CO . T LITERALS                 |
| ...........................................................................|
| . 240 : DE0020 .     001 P F                  .                            |
| . 250 : DE0015 .     001 P F                  .                            |
| . 300 : REPET  . A 06 001 R       07          .                            |
| . 310 : CODMV  .     005 V F                  .                            |
| . 320 : DEPTNO .     002 V F                  .                            |
| . 330 :        .     001 L                    . :/                         |
| . 340 : DEPTLB .     001 V F                  .                            |
| . 350 : DEPTCL .     001 V F                  .                            |
| . 360 : DEPTSY .     001 V F                  .                            |
| . 400 :        .   01 012 L                   . :/                         |
| . 410 : DE0007 .     001 P F                  .                            |
| . 420 : DEPTRG .     001 V F                  .                            |
| . 430 : DE0011 .     001 P F                  .                            |
| . 440 : DEPTPO .     001 V F                  .                            |
| . 450 : DE0006 .     001 P F                  .                            |
| . 460 : DEPTAR .     001 V F                  .                            |
|                                                                            |
| O: C2 CH: ode0030 ce                                                       |
--------------------------------------------------------------------------------
```

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-------------------------------------------------------------------------------
| VA Pac  3.5 V03      model entity dictionary              *PT11.V1000.CEN.491|
| SCREEN CALL OF ELEM... DE0030 Departments update                             |
|                                                                              |
| A LIN : D.ELEM . PHYSICAL ATTRIBUTES          . LABEL                        |
|        :         . P LN COL N L HR VR IN PR CO . T LITERALS              NV   |
| .............................................................................|
|   500 : END    . A 21 001 Z                   .                              |
|   510 :        .      003 L                    .   ENTER=Next   PF05=Begin/   |
|   520 :        .      002 L                    .   PF07=UPDT /                |
|   530 :        .      002 L                    .   PF10(+Curs)=Error /        |
|   540 :        .      001 L                    .   Display/                   |
|   560 :        .      002 L                    .   PF12=End/                  |
| . 900 : DEPTN1 . A 23 003 P F                  .                             |
| . 910 : ERPOST .      002 P F                  .                             |
|       :        .                               .                             |
|       :        .                               .                             |
|       :        .                               .                             |
|       :        .                               .                             |
|       :        .                               .                             |
|       :        .                               .                             |
|       :        .                               .                             |
|       :        .                               .                             |
|                                                                              |
| O: C2 CH: ode0030 ce                                                         |
-------------------------------------------------------------------------------
```

```
-------------------------------------------------------------------------------
| VA Pac  3.5 V03     model entity dictionary              *PT11.V100.CEN.491 |
| ON-LINE SCREEN CALL OF P.M.S.......:    DE0030 Departments update           |
|                                                                             |
| A    MACRO  LN C : COMMENTS OR PARAMETER VALUES                             |
| .    AATUFA 10   : CUR1/C1/41/DEPTSY/                                       |
| .    AATUFA 20   : CUR1/C1/42/DEPTNO/                                       |
| .    AATUFA 30   : CUR1/C1/43/DEPTLB/                                       |
| .    AATUFA 40   : CUR1/C1/44/DEPTCL/                                       |
| .    AATUFA 50   : CUR1/C1/45/DEPTRG/                                       |
| .    AATUFA 60   : CUR1/C1/46/DEPTPO/                                       |
| .    AATUFA 70   : CUR1/C1/47/DEPTAR/                                       |
| .    AATUFX 10   : CUR1/C1/0007/07/DEPT/                                    |
|                  :                                                          |
|                  :                                                          |
|                  :                                                          |
|                  :                                                          |
|                  :                                                          |
|                  :                                                          |
|                  :                                                          |
|                  :                                                          |
|                  :                                                          |
|                  :                                                          |
|                                                                             |
| O: C1 CH: ode0030 cp                                                        |
-------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
VA Pac  3.5 V04   DOCUMENTATION                      P.24202.*F055070.VDO3.CEN.606
PROCEDURAL CODE        O DE0030 Departments Update          FUNCTION: 00

A SF LIN OPE OPERANDS                             LVTY CONDITION
  BB     N   INITIALIZATIONS                      10BL
  BB 100 M   'DDR980'   PRCGI
  BB 110 M   '1'        7-CURS-OK
- -- --- --- ------------------------------ ---- --------------------------
PROCEDURAL CODE        O DE0030 Departments Update          FUNCTION: 02

A SF LIN OPE OPERANDS                             LVTY CONDITION
  BB     N   SYSTEMATICALLY                       10BL
  BB 100 M   SPACES   G-CUR1-CURSOR
  BB 110 INS G-CUR1-CURSOR TALLYING TALLI
  BB 120                 FOR ALL SPACE
  BB 200 M   CU00-CURSOR   G-CUR1-CURSOR
  BB 210 M   TALLI         G-CUR1-LENGTH
  BB 220 M   G-CUR1-CTRAN  7-WW00-YPREPG
- -- --- --- ------------------------------ ---- --------------------------
  DD     N   1ST TIME                             10IT ICF = '0'
- -- --- --- ------------------------------ ---- --------------------------
  FF     N   CURSOR OPENING                       15BL
  FF 100 M   'CUR3'         G-CUR1-CURID
  FF 110 M   'EX'           G-CUR1-FUNCT
  FF 120 *   ** SPACES      G-CUR1-CLETVI
  FF 130 *   ** SPACES      G-CUR1-CLETVS
  FF 140 M   7              G-CUR1-ELTNB
  FF 150 M   IRR            G-CUR1-NBOCC
  FF 210 EXC LINK PROGRAM   (7-WW00-PROGUT)
  FF 220         COMMAREA   (G-CUR1-CURSOR)
  FF 230         LENGTH     (G-CUR1-LENGTH)
  FF 500 M   G-CUR1-ERRLAB  CUR1-ERPOST   99IT G-CUR1-RETCOD NOT = '00'
  FF 510 M   '0'            7-CURS-OK     99IT G-CUR1-RETCOD > '04'
- -- --- --- ------------------------------ ---- --------------------------
  MM     N   DISPLAY                              15BL
  MM 100 M   'L1'      G-CUR1-FUNCT       99IT 7-CURS-OK = '1'
  MM 110 M   LOW-VALUE G-CUR1-KEY
  MM 120 M   'A'       OPER               99BL
  MM 130 M   '1'       OCF
  MM 200 GFT
- -- --- --- ------------------------------ ---- --------------------------
PROCEDURAL CODE        O DE0030 Departments Update          FUNCTION: 05

A SF LIN OPE OPERANDS                             LVTY CONDITION
  15     N   END OF CONVERSATION IF 'CLEAR'  10IT I-PFKEY = '00'
  15 100 M   'E'     OPER
  15 110 COB GO TO F40.
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.5 V04    DOCUMENTATION                     P.24202.*F055070.VD03.CEN.606
| PROCEDURAL CODE        O DE0030 Departments Update             FUNCTION: 00
|
| A SF LIN OPE OPERANDS                             LVTY CONDITION
|   BB     N   INITIALIZATIONS                      10BL
|   BB 100 M   'DDR980'  PRCGI
|   BB 110 M   '1'        7-CURS-OK
| - -- --- --- ------------------------------ ---- ---------------------------
| PROCEDURAL CODE        O DE0030 Departments Update             FUNCTION: 02
|
| A SF LIN OPE OPERANDS                             LVTY CONDITION
|   BB     N   SYSTEMATICALLY                       10BL
|   BB 100 M   SPACES  G-CUR1-CURSOR
|   BB 110 INS G-CUR1-CURSOR TALLYING TALLI
|   BB 120                  FOR ALL SPACE
|   BB 200 M   CU00-CURSOR   G-CUR1-CURSOR
|   BB 210 M   TALLI         G-CUR1-LENGTH
|   BB 220 M   G-CUR1-CTRAN  7-WW00-YPREPG
| - -- --- --- ------------------------------ ---- ---------------------------
|   DD     N   1ST TIME                             10IT ICF = '0'
| - -- --- --- ------------------------------ ---- ---------------------------
|   FF     N   CURSOR OPENING                       15BL
|   FF 100 M   'CUR3'        G-CUR1-CURID
|   FF 110 M   'EX'          G-CUR1-FUNCT
|   FF 120 *   ** SPACES     G-CUR1-CLETVI
|   FF 130 *   ** SPACES     G-CUR1-CLETVS
|   FF 140 M   7             G-CUR1-ELTNB
|   FF 150 M   IRR           G-CUR1-NBOCC
|   FF 210 EXC LINK PROGRAM  (7-WW00-PROGUT)
|   FF 220          COMMAREA (G-CUR1-CURSOR)
|   FF 230          LENGTH   (G-CUR1-LENGTH)
|   FF 500 M   G-CUR1-ERRLAB  CUR1-ERPOST         99IT G-CUR1-RETCOD NOT = '00'
|   FF 510 M   '0'            7-CURS-OK            99IT G-CUR1-RETCOD > '04'
| - -- --- --- ------------------------------ ---- ---------------------------
|   MM     N   DISPLAY                              15BL
|   MM 100 M   'L1'     G-CUR1-FUNCT              99IT 7-CURS-OK = '1'
|   MM 110 M   LOW-VALUE G-CUR1-KEY
|   MM 120 M   'A'      OPER                      99BL
|   MM 130 M   '1'      OCF
|   MM 200 GFT
| - -- --- --- ------------------------------ ---- ---------------------------
| PROCEDURAL CODE        O DE0030 Departments Update             FUNCTION: 05
|
| A SF LIN OPE OPERANDS                             LVTY CONDITION
|   15     N   END OF CONVERSATION IF 'CLEAR'  10IT I-PFKEY = '00'
|   15 100 M   'E'    OPER
|   15 110 COB GO TO F40.
| --------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
PROCEDURAL CODE        O DE0030 Departments Update          FUNCTION: 65

A SF LIN OPE OPERANDS                         LVTY CONDITION
  VV 150 M   DE10-DEPTNO   (5)  O-0030-DEPTN1 99IT CPOSL = 14
  VV 155 M   G-CUR1-ERROR  (5)  O-0030-ERPOST
  VV 160 M   DE10-DEPTNO   (6)  O-0030-DEPTN1 99IT CPOSL = 16
  VV 165 M   G-CUR1-ERROR  (6)  O-0030-ERPOST
  VV 170 M   DE10-DEPTNO   (7)  O-0030-DEPTN1 99IT CPOSL = 18
  VV 175 M   G-CUR1-ERROR  (7)  O-0030-ERPOST
- -- --- --- ------------------------------ ---- --------------------------
PROCEDURAL CODE        O DE0030 Departments Update          FUNCTION: 8Z

A SF LIN OPE OPERANDS                         LVTY CONDITION
  15     N   COMMAREA BEING TRANSFERRED       10BL
  15 100 M   G-CUR1-CURSOR    CU00-CURSOR
- -- --- --- ------------------------------ ---- --------------------------
PROCEDURAL CODE        O DE0030 Departments Update          FUNCTION: 80

A SF LIN OPE OPERANDS                         LVTY CONDITION
  DD     N   ED10 SEGMENT ACCES              10*R ED10
  DD 100 *   ---- CALL TUF900 ----           99BL
  DD 200 YR  ED10
- -- --- --- ------------------------------ ---- --------------------------
  EE     N   START OF READ (YR)              15BL
- -- --- --- ------------------------------ ---- --------------------------
  HH     N   CALL TUF900                     20IT 7-CURS-OK = '1'
  HH  10                                       AN OPER NOT = 'P'
  HH 100 M   'L1'           G-CUR1-FUNCT     99IT I-PFKEY = '05'
  HH 110 M   J-0030-REPET (1) I-0030-REPET
  HH 120 M   I-0030-DEPTNO    G-CUR1-KEY
  HH 130 M   'L1'           G-CUR1-FUNCT     99IT I-PFKEY = 'EN'
  HH 140 M   LOW-VALUE      G-CUR1-KEY         AN G-CUR1-ERRCOD = '9046W'
  HH 150 M   'UP'           G-CUR1-FUNCT     99IT I-PFKEY = '07'
  HH 210 EXC LINK PROGRAM   (7-WW00-PROGUT)  99BL
  HH 220         COMMAREA   (G-CUR1-CURSOR)
  HH 230         LENGTH     (G-CUR1-LENGTH)
  HH 500 M   G-CUR1-ERRLAB  CUR1-ERPOST      99IT G-CUR1-RETCOD NOT = '00'
- -- --- --- ------------------------------ ---- --------------------------
  II     N   RECOVERY OF THE TABLE SHORT     20BL
  II  10 *   LABELS FOR DISPLAY
  II  30 *   (1ST STATION FOR EACH -D)
  II 100 M   G-CUR1-DEPTSY-C (01) CUR1-DE0015
  II 110 M   G-CUR1-DEPTNO-C (01) CUR1-DE0003
  II 120 M   G-CUR1-DEPTLB-C (01) CUR1-DE0025
  II 130 M   G-CUR1-DEPTCL-C (01) CUR1-DE0020
  II 140 M   G-CUR1-DEPTRG-C (01) CUR1-DE0007
  II 150 M   G-CUR1-DEPTPO-C (01) CUR1-DE0011
  II 160 M   G-CUR1-DEPTAR-C (01) CUR1-DE0006
- -- --- --- ------------------------------ ---- --------------------------
  JJ     N   END OF READ (YR)                20BL
  JJ 100 COB GO TO F80-OK.
- -- --- --- ------------------------------ ---- --------------------------
  KK     N   ITERATIVE CATEGORY              15BL
```

```
KK  10 YP  ED10
KK  20 YRN ED10
```

```
--------------------------------------------------------------------------------
| VA Pac  3.5 V07   DOCUMENTATION                        P.24202.*F055070.VDO3.CEN.606
| PROCEDURAL CODE        O DE0030 Departments Update           FUNCTION: 80
|
| A SF LIN OPE OPERANDS                          LVTY CONDITION
|   MM     N   RECOVERY OF DATA ELEMENTS FOR    20BL
|   MM  10 *   DISPLAY
|   MM 110 M   G-CUR1-TRCOD  (ICATR)
|   MM 111       CUR1-TRCOD
|   MM 120 M   DE10-DEPTSY (ICATR)
|   MM 121       CUR1-DEPTSY
|   MM 130 M   DE10-DEPTNO (ICATR)
|   MM 131       CUR1-DEPTNO
|   MM 140 M   DE10-DEPTLB (ICATR)
|   MM 141       CUR1-DEPTLB
|   MM 150 M   DE10-DEPTCL (ICATR)
|   MM 151       CUR1-DEPTCL
|   MM 160 M   DE10-DEPTRG (ICATR)
|   MM 161       CUR1-DEPTRG
|   MM 170 M   DE10-DEPTPO (ICATR)
|   MM 171       CUR1-DEPTPO
|   MM 180 M   DE10-DEPTAR (ICATR)
|   MM 181       CUR1-DEPTAR
| - -- --- --- ------------------------------ ---- --------------------------
|   NN     N   END START (P) OU READ-NEXT (RN)  20BL
|   NN 100 COB GO TO F80-OK.
| - -- --- --- ------------------------------ ---- --------------------------
|
|
|
|
|
|
|
|
|
|
| *** END ***
| O: C1 CH:
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
|                        ** User Parameters **
|
|         Administrator Code : ********
|
|         User Code      ...: USER02                 Password:
|         Global Access Level: 2
|
|             A   TABLE   LIN  <------- ACCES AUTHORIZATION------->
|
|                 ITEM    100  **1
|
|                 CUSTOM  000  111 112
|
|                 DEPT    100  111 121 131 141 151 161 211 221 231 241
|                              251 261 311 321 331 341 351 361
|                 DEPT    110  112 122 132 142 152 162 212 222 232 242
|                              252 262 312 322 332 342 352 362
|                 TEMPER  100  **1 **2
|
|
|       Action:  (R=Read only U=Update)       PF07=-1 - PF08=+1
|       *** END ***
|
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.0 V03   DOCUMENTATION                    P.24202.*F055070.VDO3.CEN.606
| SCREEN CALL OF ELEM....DE0040 User Parameters
|
| A LIN : D.ELEM . PHYSICAL ATTRIBUTES         . LABEL
|       :         . P LN COL N L HR VR IN PR CO . T LITERALS                    NV
| ..............................................................................
|   010 : PFKEY  .          V              . E O G DE0000    .  12
|   015 :        .                         .       A         .  07
|   020 :        .                         .       A         .  08
|   100 :        . A 01 027 L              .                 .
|   110 :        . A 03 009 L              .                 .
|   120 : USCOD  .      001 P F            .                 .  CUR4
|   130 :        .   02 009 L              .                 .
|   140 : USCODE .      001 V F            . R               .  CUR4
|   150 :        .      010 L              .                 .
|   160 : PASUTI .      001 V F            .                 .  CUR4
|   170 :        .   01 009 L              .                 .
|   180 : NIVUTI .      001 V F            .                 .  CUR4
|   200 :        .   02 013 L              .                 .
|   210 :        .      001 L              .                 .
|   220 :        .      001 L              .                 .
|   300 : REPET  . A 10 001 R        05    .                 .
|
| O: C1 CH: O DE0040 CE
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.0 V03          DOCUMENTATION    P.24202.*F055070.VD03.CEN.6066
| SCREEN CALL OF ELEM....DE0040 User Parameters
|
| A LIN : D.ELEM . PHYSICAL ATTRIBUTES         . LABEL
|       :        . P LN COL N L HR VR IN PR CO . T LITERALS                 NV
| ..............................................................................
|   310 : CODMV  .     013 V F Y        .                    .   CUR4
|   320 : NUTAB  .     002 V F          . N                  .   CUR4
|   330 : LINU   .     002 V F          .                    .   CUR4
|   340 : ACCGR  .     002 V F   10 02  .                    .   CUR4
|   500 : FIN    . A 21 001 Z           .                    .
|   510 :        .     005 L            .                    .
|   520 : ACTCOD .     001 V F          . N   V ' '          .   CUR4
|   521 :        .                      .     V 'C'          .
|   522 :        .                      .     V 'M'          .
|   530 :        .     001 L            .                    .
|   540 :        .     001 L            .                    .
|   550 :        .     001 L            .                    .
|   910 : LIERR  .  02 005 P F          .                    .
|     :  .    .        .                .                    .
|     :  .    .        .                .                    .
|     :  .    .        .                .                    .
|
| O: C1 CH: O DE0040 CE (End)
--------------------------------------------------------------------------------
```

```
----------------------------------------------------------------------
| VA Pac  3.0 V07   DOCUMENTATION                  P.24202.*F055070.VDO3.CEN.606
| SCREEN CALL OF ELEM....DE0040 User Parameters
|
| 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
| ...................................................................................
|   010 : PFKEY  .         V                      .
|   015 :        .                                .
|   020 :        .                                .
|   100 :        . A 01 027 L           B         . ** User Parameters **/
|   110 :        . A 03 009 L                      . Administrator Code :/
|   120 : USCOD  .      001 P F                    .
|   130 :        .   02 009 L                      . User Code...:/
|   140 : USCODE .      001 V F                    .
|   150 :        .      010 L                      . Password:/
|   160 : PASUSE .      001 V F                    .
|   170 :        .   01 009 L                      . Global Access Level:/
|   180 : NIVUTI .      001 V F                    .
|   200 :        .   02 013 L                      . A  TABLE   LIN <-------/
|   210 :        .      001 L                      . ACCESS AUTHORIZATION/
|   220 :        .      001 L                      . ------->/
|   300 : REPET  . A 10 001 R       05             .
|
| O: C2 CH: O DE0040 CE
----------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.0 V03   DOCUMENTATION                    P.24202.*F055070.VD03.CEN.606
| SCREEN CALL OF ELEM....DE0040 User Parameters
|
| 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
| ...............................................................................
|   310 : CODMV  .      013 V F                  .
|   320 : NUTAB  .      002 V F                  .
|   330 : LINU   .      002 V F                  .
|   340 : ACCGR  .      002 V F 10 02            .
|   500 : END    . A 21 001 Z                    .
|   510 :        .      005 L                    .  Action:/
|   520 : ACTCOD .      001 V F         B        .
|   521 :        .                               .
|   522 :        .                               .
|   530 :        .      001 L                    .  (C=Inquiry/
|   540 :        .      001 L                    .  M=Update)/
|   550 :        .      001 L                    .  PF07=-1 - PF08=+1/
|   910 : LIERR  .   02 005 P F                  .
|       :        .                               .
|       :        .                               .
|       :        .                               .
|
| O: C2 CH: O DE0040 CE (end)
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.5 V04   DOCUMENTATION                        P.24202.*F055070.VD03.CEN.606
| ON-LINE SCREEN CALL OF P.M.S.......:    DE0040 User Parameters
|
| A   MACRO  LN C : COMMENTS OR PARAMETER  VALUES                        D E
|     AATUFU 10   : CUR4/C4/15/??/
|                 :
|                 :
|                 :
|                 :
|                 :
|                 :
|                 :
|                 :
|                 :
|                 :
|                 :
|                 :
|                 :
|                 :
|                 :
|                 :
|                 :
|                 :
|
| O: C1 CH: O DE0040 CP
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------
VA Pac  3.5 V04   DOCUMENTATION                    P.24202.*F055070.VD03.CEN.606
PROCEDURAL CODE        O DE0040 User Parameters                 FUNCTION: 00

A SF LIN OPE OPERANDS                          LVTY CONDITION
  BB     N   INITIALIZATIONS                   10BL
  BB 100 M   'DDR980'   PRCGI
  BB 110 M   '1'        7-CURS-OK
  BB 120 MA  SPACES     CUR4
- -- --- --- ------------------------------ ---- --------------------------
TRAITEMENTS ECRAN     O DE0040 User Parameters                 FUNCTION: 02

A SF LIN OPE OPERANDS                          LVTY CONDITION
  BB     N   SYSTEMATICALLY                    10BL
  BB 100 M   SPACES   G-CUR4-CURSOR
  BB 110 INS G-CUR4-CURSOR TALLYING TALLI
  BB 120                 FOR ALL SPACE
  BB 200 M   CU00-CURSOR   G-CUR4-CURSOR
  BB 210 M   TALLI         G-CUR4-LENGTH
  BB 220 M   G-CUR4-CTRAN  7-WW00-YPREPG
  BB 300 M   '00'          G-CUR4-RETCOD
  BB 310 M   SPACES        G-CUR4-ERRLAB
- -- --- --- ------------------------------ ---- --------------------------
  DD     N   1ST TIME                          10IT ICF = '0'
  DD 100 M   ZEROS     L-INDX-DEBPAG
  DD 110 M   ZEROS     L-INDX-MAXI
  DD 120 M   ZEROS     L-INDX-COURANT
- -- --- --- ------------------------------ ---- --------------------------
  FF     N   CURSOR OPENING                    15BL
  FF 100 M   'CUR4'          G-CUR4-CURID
  FF 110 M   'EX'            G-CUR4-FUNCT
  FF 120 M   15              G-CUR4-NBOCC
  FF 210 EXC LINK PROGRAM  (7-WW00-PROGUT)
  FF 220         COMMAREA  (G-CUR4-CURSOR)
  FF 230         LENGTH    (G-CUR4-LENGTH)
  FF 500 ERU EX                               99IT G-CUR4-RETCOD > '04'
  FF 510 M   '0'             7-CURS-OK
- -- --- --- ------------------------------ ---- --------------------------
  MM     N   DISPLAY                           15BL
  MM 120 M   'A'        OPER                   99BL
  MM 130 M   '1'        OCF
  MM 200 GFT
- -- --- --- ------------------------------ ---- --------------------------
 PROCEDURAL CODE        O DE0040 User Parameters                FUNCTION: 05

A SF LIN OPE OPERANDS                          LVTY CONDITION
  15     N   END OF CONVERSATION               10IT I-PFKEY = '00'
  15 100 M   'E'     OPER
  15 110 GFT
- -- --- --- ------------------------------ ---- --------------------------
PROCEDURAL CODE        O DE0040 User Parameters                 FUNCTION: 30

A SF LIN OPE OPERANDS                          LVTY CONDITION
  BB     N   TRANSFER OF CURSOR                10*P
- -- --- --- ------------------------------ ---- --------------------------
```

```
CC     N   HEADER CATEGORY                   15IT CATX = ' '
CC 100 M   SPACES          G-CUR4-USERP
```

```
 -----------------------------------------------------------------------------
| VA Pac  3.5 V03   DOCUMENTATION                    P.24202.*F055070.VD03.CEN.606
| PROCEDURAL CODE        O DE0040 User Parameters                 FUNCTION: 30
|
| A SF LIN OPE OPERANDS                           LVTY CONDITION
|   CC 110 M   SPACES        G-CUR4-PASSWP
|   CC 120 M   SPACES        G-CUR4-ACCESG
|   CC 200 M   I-0040-USCODE G-CUR4-USERP    99IT PR-40-USCODE = '1'
|   CC 210 M   I-0040-PASUSE G-CUR4-PASSWP   99IT PR-40-PASUSE = '1'
|   CC 220 M   I-0040-NIVUTI G-CUR4-ACCESG   99IT PR-40-NIVUTI = '1'
| - -- --- --- ------------------------------- ---- ---------------------------
|   DD    N   REPETITIVE CATEGORY             15IT CATX = 'R'
| - -- --- --- ------------------------------- ---- ---------------------------
|   DG    N   INITIALIZATION        20IT ICATR = 1                          |
|   DG  10 *   ITERATIVE CATEGORY
|   DG 100 M   ZEROS     IGRP4R               99IT L-INDX-DEBPAG = ZEROS
|   DG 110 C   IGRP4R = L-INDX-DEBPAG - 1     99EL
| - -- --- --- ------------------------------- ---- ---------------------------
|   DM    N   INCREMENT COUNTER               20BL
|   DM 100 A   1    IGRP4R
|   DM 110 M   SPACES  G-CUR4-ELMNT (IGRP4R)
| - -- --- --- ------------------------------- ---- ---------------------------
|   EE    N   TRANSFER IN LINKAGE             20BL
|   EE 100 M   I-0040-TRCOD                   99IT PR-40-TRCOD NOT = '0'
|   EE 101     G-CUR4-PTRAN  (IGRP4R)
|   EE 110 M   I-0040-NUTAB                   99IT PR-40-NUTAB NOT = '0'
|   EE 111     G-CUR4-NUTAB  (IGRP4R)
|   EE 120 M   I-0040-LINU                    99IT PR-40-LINU  NOT = '0'
|   EE 121     G-CUR4-LINE   (IGRP4R)
|   EE 200 M   1    IGRP1R  IGRP2R            99BL
| - -- --- --- ------------------------------- ---- ---------------------------
|   FF    N   NEXT ...                        25DW IGRP1R NOT > IGRP1M
|   FF 100 M   1    IGRP2R
| - -- --- --- ------------------------------- ---- ---------------------------
|   GG    N   NEXT ...                        30DW IGRP2R NOT > IGRP2M
|   GG 100 C   IGRP3R = (IGRP1R - 1) * 10
|   GG 110           + IGRP2R
|   GG 200 COB MOVE I-0040-ACCGR              99IT PR-40-ACCGR (IGRP1R, IGRP2R
|   GG 201          (IGRP1R, IGRP2R)               NOT = '0'
|   GG 202     TO G-CUR4-GROUP (IGRP4R, IGRP3R)
|   GG 300 A   1    IGRP2R                    99BL
| - -- --- --- ------------------------------- ---- ---------------------------
|   HH    N   INCREMENT LINE SUBSCRIPT        30BL
|   HH 100 A   1    IGRP1R
| - -- --- --- ------------------------------- ---- ---------------------------
| PROCEDURAL CODE        O DE0040 User Parameters                 FUNCTION: 35
|
| A SF LIN OPE OPERANDS                           LVTY CONDITION
|         N   UPDATE OF DATA    (SERVOR)      05IT 7-CURS-OK = '1'
| - -- --- --- ------------------------------- ---- ---------------------------
|   BB    N   CATEGORY END                    10IT CATX = 'Z'
| - -- --- --- ------------------------------- ---- ---------------------------
|   CC    N   UPDATE REQUEST                  15IT I-0040-ACTCOD = 'M'
|   CC 100 M   'UU'          G-CUR4-FUNCT
|   CC 200 EXC LINK PROGRAM  (7-WW00-PROGUT)
```

```
CC 201          COMMAREA (G-CUR4-CURSOR)
CC 202          LENGTH   (G-CUR4-LENGTH)
---------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.5 V04   DOCUMENTATION                    P.24202.*F055070.VD03.CEN.606
| PROCEDURAL CODE       O DE0040 User Parameters              FUNCTION: 35
|
| A SF LIN OPE OPERANDS                              LVTY CONDITION
|   CC 300 M   ZEROS          L-INDX-DEBPAG          99BL
|   CC 310 M   G-CUR4-NBOCC   L-INDX-MAXI
|   CC 320 M   ZEROS          L-INDX-COURANT
| - -- --- --- ------------------------------ ---- --------------------------
|   DD     N   POSITIONING INDEX                     20BL
| - -- --- --- ------------------------------ ---- --------------------------
|   EE     N   MAXI INDEX                            25DW IK = IK
|   EE 100 GT  25                                    99IT G-CUR4-ELMNT (L-INDX-MAXI)
|   EE 110                                                > SPACES
|   EE 120 S   1    L-INDX-MAXI                       99BL
|   EE 130 GT  25                                    99IT L-INDX-MAXI = 1
| - -- --- --- ------------------------------ ---- --------------------------
|   FF     N   SERVOR ERROR DETECTED                 20IT G-CUR4-RETCOD > '04'
|   FF 100 M   ZEROS  IGRP4R
| - -- --- --- ------------------------------ ---- --------------------------
|   GG     N   CURRENT INDEX ON 1ST ERROR            25DW IGRP4R NOT > G-CUR4-NBOCC
|   GG 100 A   1    IGRP4R
|   GG 110 *   NO ERROR DETECTED. SET TO             99IT IGRP4R > G-CUR4-NBOCC
|   GG 120 *   THE 1ST PAGE
|   GG 130 M   ZEROS    L-INDX-COURANT
|   GG 140 GT  25
|   GG 200 C   L-INDX-CURRENT = IGRP4R - 1           99IT G-CUR4-PTRAN (IGRP4R) > ' '
|   GG 210 GT  25
| - -- --- --- ------------------------------ ---- --------------------------
| PROCEDURAL CODE              O DE0040 User Parameters        FUNCTION: 54
|
| A SF LIN OPE OPERANDS                              LVTY CONDITION
|   BB     N   INITIALIZATIONS                       10BL
|   BB 100 M   '1'      7-CUR4-CF
|   BB 110 M   '0'      7-CUR4-FT
| - -- --- --- ------------------------------ ---- --------------------------
|   CC     N   PAGING OUT OF UPDATE                  15IT I-0040-ACTCOD NOT = 'M'
| - -- --- --- ------------------------------ ---- --------------------------
|   DD     N   PAGING (PREVIOUS PAGE)                20IT I-PFKEY = '07'
|   DD 100 M   ZEROS    L-INDX-CURRENT               99IT L-INDX-DEBPAG < (IRR + 2)
|   DD 110 C   L-INDX-CURRENT =                      99EL
|   DD 111     L-INDX-BEGPAG - IRR - 1
| - -- --- --- ------------------------------ ---- --------------------------
|   EE     N   PAGING (SAME PAGE)                    20IT I-PFKEY = 'EN'
|   EE 100 C   L-INDX-CURRENT =
|   EE 101     L-INDX-BEGPAG - 1
| --------------------------------------------------------------------------------
```

```
 --------------------------------------------------------------------------------
| VA Pac  3.5 V04   DOCUMENTATION                      P.24202.*F055070.VDO3.CEN.606
| PROCEDURAL CODE              O DE0040 User Parameters           FUNCTION: 60
|
| A SF LIN OPE OPERANDS                         LVTY CONDITION
|         N    SEARCH FOR  (SERVOR)   05IT 7-CURS-OK = '1'
| - -- --- --- ------------------------------ ---- --------------------------
|  BB     N   HEADER CATEGORY                 10IT CATX = ' '
| - -- --- --- ------------------------------ ---- --------------------------
|  CC     N   ACCES REQUEST                   15IT I-0040-ACTCOD = 'C'
|  CC 100 M   'CU'          G-CUR4-FUNCT
|  CC 200 EXC LINK PROGRAM  (7-WW00-PROGUT)
|  CC 201         COMMAREA (G-CUR4-CURSOR)
|  CC 202         LENGTH   (G-CUR4-LENGTH)
|  CC 300 M   ZEROS         L-INDX-DEBPAG      99BL
|  CC 310 M   ZEROS         L-INDX-MAXI
|  CC 320 M   ZEROS         L-INDX-CURRENT
|  CC 330 ERU CU                               99IT G-CUR4-RETCOD > '04'
|  CC 340 M   '0'           7-CUR4-CF
| - -- --- --- ------------------------------ ---- --------------------------
|  CM     N   SAVE INDEX MAXI                 20DW 7-CUR4-CF = '1'
|  CM 100 A   1    L-INDX-MAXI
|  CM 200 S   1    L-INDX-MAXI                 99IT L-INDX-MAXI > G-CUR4-NBOCC
|  CM 210 GT  20
|  CM 220 S   1    L-INDX-MAXI                 99IT G-CUR4-ELMNT (L-INDX-MAXI)
|  CM 230 GT  20                                    SPACES
| - -- --- --- ------------------------------ ---- --------------------------
|  DD     N   INPUT OF SEGMENT SIMULATED      15BL
|  DD 100 M   G-CUR4-USER     CUR4-USCOD
|  DD 110 M   G-CUR4-USERP    CUR4-USCODE
|  DD 120 M   G-CUR4-PASSWP   CUR4-PASUSE
|  DD 130 M   G-CUR4-ACCESG   CUR4-NIVUTI
| - -- --- --- ------------------------------ ---- --------------------------
|  MM     N   INITIALIZATIONS REPETITIVE CAT. 10IT CATX = 'R'
|  MM 100 M   SPACES          CUR4-LIGNE       AN  ICATR NOT > IRR
|  MM 110                                      AN  (I-PFKEY = 'EN'
|  MM 120                                      OR  I-PFKEY = '07'
|  MM 130                                      OR  I-PFKEY = '08'
|  MM 140                                      OR  I-0040-ACTCOD = 'C'
|  MM 150                                      OR  I-0040-ACTCOD = 'M')
| - -- --- --- ------------------------------ ---- --------------------------
|  NN     N   PREPARATION OF DISPLAY          15IT 7-CUR4-CF = '1'
|  NN 100 A   1               L-INDX-CURRENT
| - -- --- --- ------------------------------ ---- --------------------------
|  PP     N   INPUT OF SEGMENT SIMULATED      20IT L-INDX-COURANT NOT >
|  PP  10                                          L-INDX-MAXI
|  PP  50 M   L-INDX-CURRENT L-INDX-DEBPAG     99IT ICATR = 1
|  PP 100 M   G-CUR4-PTRAN  (L-INDX-COURANT)   99BL
|  PP 101                    CUR4-TRCOD
|  PP 110 M   G-CUR4-NUTAB  (L-INDX-COURANT)
|  PP 111                    CUR4-NUTAB
|  PP 120 M   G-CUR4-LINE   (L-INDX-COURANT)
|  PP 121                    CUR4-LINU
|  PP 200 M   1  IGRP1R   IGRP2R
| --------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.5 V04   DOCUMENTATION                   P.24202.*F055070.VDO3.CEN.606
| PROCEDURAL CODE        O DE0040 User Parameters             FUNCTION: 60
|
| A SF LIN OPE OPERANDS                        LVTY CONDITION
|   PP 200 M   1  IGRP1R   IGRP2R
| - -- --- --- ------------------------------ ---- --------------------------
|   RR     N   NEXT ...                        25DW IGRP1R NOT > IGRP1M
|   RR 100 M   1  IGRP2R
| - -- --- --- ------------------------------ ---- --------------------------
|   SS     N   NEXT ...                        30DW IGRP2R NOT > IGRP2M
|   SS 100 C   IGRP3R = (IGRP1R - 1) * 10
|   SS 110         + IGRP2R
|   SS 200 COB MOVE G-CUR4-GROUP
|   SS 201       (L-INDX-CURRENT, IGRP3R)
|   SS 202    TO CUR4-ACCGR (IGRP1R, IGRP2R)
|   SS 300 A   1  IGRP2R
| - -- --- --- ------------------------------ ---- --------------------------
|   TT     N   INCREMENT LINE INDEX            30BL
|   TT 100 A   1  IGRP1R
| - -- --- --- ------------------------------ ---- --------------------------
|   UU     N   LAST STATION                    20IT L-INDX-CURRENT NOT <
|   UU 100 *                                        L-INDX-MAXI
|   UU 120 M   '1'           7-CUR4-FT
|   UU 130 M   '0'           7-CUR4-CF
|   UU 140 M   ZEROS         L-INDX-CURRENT
| - -- --- --- ------------------------------ ---- --------------------------
|   VV     N   CATEGORY END                    10IT CATX = 'Z'
| - -- --- --- ------------------------------ ---- --------------------------
|   WW     N   SET TO END OF LIST              15IT 7-CUR4-FT = '1'
|   WW 100 M   '01'          G-CUR4-RETCOD     99IT G-CUR4-RETCOD < '04'
|   WW 110 M   '*** END ***' G-CUR4-ERRLAB
| - -- --- --- ------------------------------ ---- --------------------------
| PROCEDURAL CODE        O DE0040 User Parameters             FUNCTION: 65
|
| A SF LIN OPE OPERANDS                        LVTY CONDITION
|   VV     N   TRANSFER WARNING IN INPUT       10*P Z
|   VV  10 *   OR ERROR(S) TABLES(S)
|   VV 100 M   G-CUR4-ERRLAB O-0040-LIERR (01) 99IT CATG NOT = 'E'
| - -- --- --- ------------------------------ ---- --------------------------
| PROCEDURAL CODE        O DE0040 User Parameters             FUNCTION: 8Z
|
| A SF LIN OPE OPERANDS                        LVTY CONDITION
|   15     N   TRANSFERT COMMAREA EN-COURS     10BL
|   15 100 M   G-CUR4-CURSOR    CU00-CURSOR
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
| VA Pac  3.5 V04   DOCUMENTATION                      P.24202.*F055070.VD03.CEN.606
| PROCEDURAL CODE       O DE0040 User Parameters                    FUNCTION: 80
|
| A SF LIN OPE OPERANDS                         LVTY CONDITION
|   LE     N   ERROR LABEL                      10BL
|   LE   1 YR  LE00
|   LE  10 M   LE00-XCLEF       LE00-LIERR      99IT LE00-XCLEF NOT = SPACES
|   LE 100 M   'NO USER CODE ERROR             99IT LE00-XCLEF = 'DE00400012'
|   LE 101     ' '
|   LE 102     LE00-LIERR
|   LE 900 M   G-CUR4-ERRLAB    LE00-LIERR      99IT LE00-XCLEF = 'DE    EX'
|   LE 910                                          OR LE00-XCLEF = 'DE    CU'
|  - -- --- --- ------------------------------ ---- --------------------------
|
|
|
|
|
|
|
|
|
|
|
|  *** END ***
|  O: C1 CH:
--------------------------------------------------------------------------------
```

MICROFOCUS SPECIFICITIES

In this part of the manual, you are presented the same user application
adapted to a Microfocus dialogue.

You can see only the lines which are dedicated exclusively to a
MICROFOCUS dialogue.

In this example, the view is set to option 'U1'.

Note that for a COBOL Microfocus, the program D8FT90 must be compiled
with the order 'VSC2' or 'OSVS'.

The following script is an example of procedure used to execute the
application under Unix.

#!/bin/sh

#

EXAMPLE OF EXECUTION PROCEDURE FOR A TUF PROGRAM

Assignment of COBOL compiler:

COBDIR=/usr/local/cobolse4.0

export COBDIR

Assignment of variable PATH:

PATH=.:$COBDIR/bin:$PATH

export PATH

Assignment of variable LIBPATH (AIX, OSF, SUN):

LIBPATH=/usr/lib:$COBDIR/lib

export LIBPATH

Assignment of variable LD_LIBRARY_PATH (HP) :

LD_LIBRARY_PATH=/usr/lib:$COBDIR/lib

export LD_LIBRARY_PATH

Assignment of installation directory PACTABLES/X:

TABDIR="/lv00/ll350/tablex"

export TABDIR

Assignment of COBPATH: current directory + TABLES program directory

COBPATH=.:$TABDIR/system/gnt

Name of database PACTABLES/X (mandatory):

TABBASE=PTST

. $TABDIR/config/$TABBASE/PAC7TD.ini

. $TABDIR/config/$TABBASE/PAC7TV.ini

. $TABDIR/config/$TABBASE/PAC7TE.ini

. $TABDIR/config/$TABBASE/PAC7TG.ini

```
SYSPAF=./PAC7TB export SYSPAF

# Assignments of user:

# Execution of TUF program:

# Deletion of temporary files:

if [ -r "$SYSPAF" ]

then

rm $SYSPAF*

fi

FPARAM='fparam'

export FPARAM

zar980 DE
```

```
--------------------------------------------------------------------------------
| VA Pac  3.5 V04   MICROFOCUS english   P.24202.*F055070.VDO3.MFA.6066        |
| PROCEDURAL CODE      O DE0000 Tables Update General Menu     FUNCTION: 00     |
|                                                                              |
| A SF LIN OPE OPERANDS                      LVTY CONDITION                     |
|   BB    N   INITIALIZATIONS                10BL                               |
|   BB 100 M  'ZAR980'      PRCGI                                              |
| - -- --- --- ------------------------------ ---- ------------------------- |
| PROCEDURAL CODE      O DE0000 Tables Update General Menu     FUNCTION: 20     |
|                                                                              |
| A SF LIN OPE OPERANDS                      LVTY CONDITION                     |
|   BB    N   CONTROLE AUTORISATION SESSION  10*P CHOIXX                        |
|   CC 171 *                                                                   |
|   CC 200 CAL            7-WW00-PROGUT       99BL                              |
|   CC 210         USING  G-CUR1-CURSOR                                         |
|   CC 220 *                                                                   |
|- -- --- --- ------------------------------ ---- ------------------------- |
| PROCEDURAL CODE      O DE0000 Tables Update General Menu     FUNCTION: 30     |
|                                                                              |
| A SF LIN OPE OPERANDS                      LVTY CONDITION                     |
|                                                                              |
|   MM 520 M  'DE0010'         5-0000-PROGE                                     |
|   MM 540 M  'DE0040'         5-0000-PROGE                                     |
| - -- --- --- ------------------------------ ---- ------------------------- |
| PROCEDURAL CODE      O DE0000 Tables Update General Menu     FUNCTION: 65     |
|                                                                              |
| A SF LIN OPE OPERANDS                      LVTY CONDITION                     |
|   BB 100 M  CU00-COTRAN   O-0000-COTRAN      AN CU00-USCODE NOT = SPACE       |
| ---------------------------------------------------------------------------- |
```

```
--------------------------------------------------------------------------
VA Pac  3.5 V04    Microfocus English    P.24202.*F055070.VD03.MFA.6066
PROCEDURAL CODE       O DE0010 List Display                 FUNCTION: 00

A SF LIN OPE OPERANDS                          LVTY CONDITION
  BB 100 M  'ZAR980'      PRCGI
- -- --- --- ------------------------------ ---- ------------------------
PROCEDURAL CODE       O DE0010 List Display                 FUNCTION: 02

A SF LIN OPE OPERANDS                          LVTY CONDITION
  BB 230 *
  BB 255 *
  BB 330 *
- -- --- --- ------------------------------ ---- ------------------------
  EE 210 CAL            7-WW00-PROGUT   99BL
  EE 220       USING    G-CUR1-CURSOR
  EE 230 *
- -- --- --- ------------------------------ ---- ------------------------
  FF 210 CAL            7-WW00-PROGUT
  FF 220       USING    G-CUR2-CURSOR
  FF 230 *
- -- --- --- ------------------------------ ---- ------------------------
PROCEDURAL CODE       O DE0010 List Display                 FUONCTION: 37

A SF LIN OPE OPERANDS                          LVTY CONDITION
  BB 120 M  'DE0030'      5-0010-PROGE
- -- --- --- ------------------------------ ---- ------------------------
PROCEDURAL CODE       O DE0010 List Display                 FUNCTION: 38

A SF LIN OPE OPERANDS                          LVTY CONDITION
  PP 200 CAL            7-WW00-PROGUT   99BL
  PP 210       USING    G-CUR1-CURSOR
  PP 220 *
- -- --- --- ------------------------------ ---- ------------------------
  QQ 200 CAL            7-WW00-PROGUT   99BL
  QQ 210       USING    G-CUR2-CURSOR
  QQ 220 *
- -- --- --- ------------------------------ ---- ------------------------
PROCEDURAL CODE    O DE0010 List Display                    FUNCTION: 51

A SF LIN OPE OPERANDS                          LVTY CONDITION
  BB 900 *                                     99BL
- -- --- --- ------------------------------ ---- ------------------------
PROCEDURAL CODE    O DE0010 List Display                    FUNCTION: 65

A SF LIN OPE OPERANDS                          LVTY CONDITION
  BB  10 *                                     99BL
--------------------------------------------------------------------------
```

```
-------------------------------------------------------------------------------
VA Pac  3.5 V04   Microfocus English  P.24202.*F055070.VDO3.MFA.6066
PROCEDURAL CODE    O DE0030 Departments Update                FUNCTION: 00

A SF LIN OPE OPERANDS                          LVTY CONDITION
 BB 100 M  'ZAR980'   PRCGI
- -- --- --- ------------------------------- ---- ------------------------
PROCEDURAL CODE    O DE0030 Departments Update                FUNCTION: 02

A SF LIN OPE OPERANDS                          LVTY CONDITION
  BB 220 *
- -- --- --- ------------------------------- ---- ------------------------
  FF 210 CAL               7-WW00-PROGUT
  FF 220         USING     G-CUR1-CURSOR
  FF 230 *
- -- --- --- ------------------------------- ---- ------------------------
PROCEDURAL CODE    O DE0030 Departments Update                FUNCTION: 80

A SF LIN OPE OPERANDS                          LVTY CONDITION
  HH 210 CAL               7-WW00-PROGUT      99BL
  HH 220         USING     G-CUR1-CURSOR
  HH 230 *
-------------------------------------------------------------------------------
```

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