VisualAge Pacbase 2.5

# VA PAC 2.5 : UNISYS 2200 SYSTEMS, HVTIP MCB
# OPERATIONS MANUAL VOLUME III : USER'S GUIDE

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# 1. GENERAL INTRODUCTION TO THE BATCH PROCEDURES

## *1.1. PRESENTATION OF THE BATCH PROCEDURES USER'S GUIDE*

FOREWORD

This manual documents the batch procedures that all VisualAge Pacbase users are likely to use.

These procedures first include all standard procedures dedicated to updating, generating, printing, and extracting.

They also include the procedures dedicated to the following functionalities:

. Personalized extraction and automated documentation,

. Quality analysis and control (PQC),

. Integrity checks on Methodology occurrences (associated with the VA Pac WorkStation's Pacdesign module for SSADM and YSM),

. Pac/Impact,

. VisualAge Java/Smalltalk <> VisualAge Pacbase bridge.

## *1.2. OVERVIEW OF THE PROCEDURES*

### PRESENTATION OF THE PROCEDURES

Batch processes are grouped into procedures. The objective of the following chapters is to present each of the procedures that are likely to be used, and to specify their execution conditions.

The following elements are included for each procedure:

- A general introduction including:
  - an Introduction,
  - the Execution conditions,
  - Abends.
- the description of the User Input, processes and Results obtained, as well as possible recommendation for use.
- the Description of Steps.

A user must have authorization to a procedure on a given database.

The user, for example, must have autorization 4 to manage the Database (MLIB, REST, etc.), and autorization 2 to extract elements from it (PACX, etc.).

Each user has:

- a general level of rights to the batch procedures,
- a right level per database (for the platforms allowing management of several user databases for a same system).

For more details, refer to the 'Batch Procedures' manual: Administrator's Guide'.

## *1.3. USER IDENTIFICATION (*)*

USER IDENTIFICATION '*' LINE

Batch procedures which access the Database require a user identification ('*'-type) line at the beginning of user input to identify the user as well as the library and session in which he/she wishes to work. (There may be several '*'-type lines if the procedure applies to several libraries; see the description of each procedure's user input.)

Some information entered on this screen is the same as that entered on the Sign-On screen. It is thus possible to check if the user's commands are compatible with his/her authorizations.

Before running any batch procedure, the user must make sure he/she has the adequate authorization level. Authorization levels are defined by the Database administrator, using the PARM (User Parameter Management) procedure.

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 1 | '*' | Line code |
| 3 | 8 | uuuuuuuu | User code |
| 11 | 8 | pppppppp | User password |
| 19 | 3 | bbb | Library code |
| 22 | 4 | ssss | Session number |
| 26 | 1 | 'T' | Test session |
| | | 'H' | Frozen session |
| 27 | 1 | | With the UPDT procedure, in case of multiple deletion: |
| | | 'N' | Print all transactions including implicit transactions (Default) |
| | | 'O' | Print entered transactions and erroneous transactions |
| | | 'E' | Print erroneous transactions only |

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 28 | 1 | | Language code (F or A) |
| 29 | 11 | | DO NOT USE |
| | | | The two following fields are to be entered for all procedures genera-ting update transactions which will modify a library or session under DSMS control. |
| | | | You may also enter them on the '*' line of UPDT. |
| 40 | 3 | | PRODUCT CODE (on 3 characters) |
| 43 | 6 | | CHANGE NUMBER (on 6 characters, the non-significant zeros must be entered). |
| | | | These two codes will be displayed in the Journal after the execution of UPDT. |
| | | | |
| 49 | 1 | | TRANSFER OF OCCURRENCE LOCK: |
| | | 'Blank' | Replacement of the code of the user who locked the entity with that found on the '*' line. |
| | | 1 | The new entities created from the extracted entities are not locked after UPDT |
| | | 2 | The code of the user who locked the entities is kept |
| | | | |
| 50 | 1 | | TRANSFER OF THE PASSWORD on the extraction prodedures, in the '*'-line at the top of the generated output transactions: |
| | | 'Blank' | Password is not transferred in the output file. |
| | | 1 | Password is transferred. |
| | | | NOTE: For EXTR, the '*' line is transferred in the output file on-ly if you input 'C' in position 1. |

Some of the information entered on a '*' line is entered on the Sign-on screen. For more details, refer to the VisualAge Pacbase Interface User's Guide, Chapter 'USING THE SYSTEM ON-LINE', Subchapter 'Conversation Initialization/ Sign-on'.

# *1.4. STRUCTURE OF PROCEDURES*

STRUCTURE OF PROCEDURES

All VisualAge Pacbase batch procedures use the SSG product. They are made up of:

. A call file which contains the user input and the call to SSG via the procedure parameters,

. An execution file (suffixed by /SKL) which contains the parameterized ECL of the procedure.

SSG PARAMETERS

There are two kinds of SSG parameters:

. the general parameters of the VisualAge Pacbase system,

. the specific parameters of the procedure, which are described in the chapter dedicated to each procedure.

| COMMON SSG PARAMETERS | |
|---|---|
| QUAL | QUALIFIER OF VA PAC SYSTEM |
| QUALR | QUALIFIER OF PRINT FILES |
| QUALT | QUALIFIER OF TEMPORARY FILES |
| QUALU | QUALIFIER OF USER FILES |
| DBMS | DATABASE TYPE |
| BFILE | BATCH PROGRAM FILES |
| NBCYC | NUMBER OF PRINT FILE CYCLES |
| PRINT | PROCESSING AND DESTINATION OF PRINT FILES<br>(Ex: PRINT ''SYM,U'' PRT01) |
| SPAWK | MAXIMUM SIZE OF WORK FILES |
| SRTWK | SIZE AND NAME OF SORT FILES<br>(Ex: SRTWK 1000,xa 250,r$core) |

GENERAL CHARACTERISTICS OF FILES

. Database files

They are not indicated in the procedures. In this manual, they are referenced under a logical format (PAC7AE, PAC7AR,...)

. Print files

Their name is made up of the procedure name, the last two characters of the file internal name, and the last three characters of the program name, qualified by the QUALR SSG parameter.
These are cycled files, whose maximum number of generations is specified by the NBCYC SSG parameter.
At the end of the program, they are printed via the command entered in the PRINT SSG parameter.

. Backup files

The five backup files are cycled disk files, with 5 generations maximum. Their name, qualified by the QUAL parameter, is specified by the SSG parameters FILExx (default value : savexx), where xx may equal PC, PE, PG, PJ or PP. Their maximum size depends on the SSG parameter SPAxx. It is possible to divide up the VA Pac Entities backup into 2 files (see REST procedure options). In this case, the second file is suffixed with an I (eg. SAVEPC. and SAVEPCI.).

. Temporary files

They are qualified by the QUALT parameter and are freed as soon as possible.

. User files

They are qualified by the QUALU parameter. They are permanent disk files.

CONTROL OF THE ECL FLOW

The ECL flow is managed by three switches.

. Program error (switch 24(11) of the condition-word)

If there is a program error, this switch is set, the flow is interrupted and no file is freed.

. File error (swith 25(10) of the condition-word)

If there is an error on a Database file, this swith is set, a branching is made at the end of the procedure, and an error report is printed. The other files are not freed.

. Logical branching (swith 26(09) of the condition-word)

If there is a user error or a special option, this switch is set, the printouts of the current program are processed and the rest of the procedure is not executed.

At the beginning of each procedure, the PACSWT program removes all the switches and an error print file is created. This file, which is printed only if there is a file error (swith 25(11)), is freed at the end of the procedure.

In the procedure sequences, you can test the setting of the switches of the preceding procedure.

```
@TEST TLE/07/S5 : No error, no logical branching
@JUMP LABEL

@TEST TLE/17/S5 : No procedure error, no file error
@JUMP LABEL
```

# *1.5. ABNORMAL EXECUTIONS*

ABNORMAL EXECUTIONS

Input-output errors on the Database or the System files can generate abnormal conditions in the execution of a program.

In most cases, you can find the cause of the abend (resources not available, file too small,...) by analyzing the return code and the error message.

If there is no message and if the ABORT type directly shows an abnormal operation of the the VisualAge Pacbase system, you must contact the IBM Technical Support and keep all the listings which may be necessary to solve the problem.

The PAC7EI print file is used in the case of an abend.

NOTE: The cobol switch 1 (bit 12(23) of the condition-word) is used for technical purposes. Its setting causes the sending of numerous messages. Its value must remain to zero, except if the IBM Technical Support explicitly asks you to change it.

Setting to 1 : @SETC OR/40/S3

Setting to 0 : @SETC AND/37/S3

Impacts on the Backup Files

In the procedures which create backup files (see the list in the ENVIRONMENT & INSTALLATION manual), the new backup generation is created and the old one is deleted just before the execution of the program which writes this backup. If an abend occurs in between the creation of the new backup generation and the end of the writing of this backup, the current backup will be invalid, or even empty.
You should then be extremely careful and, in case of a problem, possibly delete the new backup.

# 2. STANDARD PROCEDURES

# *2.1. UPDT: DATABASE UPDATE*

## 2.1.1. UPDT: INTRODUCTION

UPDT: INTRODUCTION

The Database update procedure (UPDT) executes a batch update of the database. It allows access to ALL libraries which make up the database according to the different user authorizations.

With the DSMS facility (DSM), this procedure reads the VisualAge Pacbase Entity file (DC).

EXECUTION CONDITIONS

This procedure updates the database. The AR, AN and AJ files must be closed to on-line use, except for those hardware environments that support concurrent on-line and batch access.

IMPORTANT NOTES

1. For very large updates (in terms of number of transactions, about 5000), it may be necessary to

   . Back up, archive and restore the database to increase file space or to physically reorganize the files in order to make all the free space initially provided available.

   . Temporarily suppress Journalization

   (See Chapter DATABASE MANAGEMENT, Subchapter 'Database Restoration', in the Administrator's Guide.)

2. This procedure updates the current session number in two cases:

   . When it is the first connection of the day to the Database, and

   . When it contains a Database Freeze request.

ABNORMAL EXECUTION

Refer to the Administrator's Guide, Chapter 'OVERVIEW', Subchapter 'ABNORMAL ENDINGS'.

There are two types of abnormal executions:

1) Abnormal execution occurring before the execution of the PACA15 program, or during the opening of files in this program. The procedure can be restarted after the problem is corrected.

2) Abnormal execution occurring during execution of the PACA15 program. The database is left in an inconsistent state. If the problem appeared during input-output on a database file, the printed error message and the file status will dictate the solution.

In either case, a restart can only take place after a restore using the Back-up file including the transactions archived subsequent to this back-up (REST procedure).

2.1.2. UPDT: UPDATE RULES - RESULTS

UPDT: UPDATE RULES - RESULTS

USER INPUT

Refer to the batch forms and to the description of the input corresponding to each entity.

The *-type line for user identification contains the user code, password and the corresponding library. It can also contain indications on the language used and the conversion.

If the update transactions correspond to an extraction, the * line generated by the extraction procedure has a language code in column 28 in order to effectively interpret the deletion action code (A in French, D in English).

A 'N' in column 67 suppresses the Lowercase-Uppercase conversion.

| Pos. | Length | Value | Meaning |
|---|---|---|---|
| 28 | 1 | | Language code, useful when transactions are not in the same language as the database. |
| | | 'A' | English |
| | | 'F' | French |
| 67 | 1 | 'N' | Uppercase/Lowercase conversion deactivation. |

UPDATE RULES

Each set of transactions for a library must be preceded by a *-type line.

Update transactions are not sorted.

- DATABASE FREEZE:

The 'X1HIST' specific request allows to freeze a session.

With the 'X1HIST' card, a comment can be inserted between columns 8 and 67. Note that only the first 54 characters of this label will be displayed and editable in the database. No other update should precede this transaction.

| Pos. | Length | Value | Meaning |
|---|---|---|---|
| 2 | 6 | 'X1HIST' | Line code for a session freeze |
| 8 | 60 | | Comment visible on LH screen |

For more details on the batch updating, refer to the corresponding chapter in the VisualAge Pacbase Interface User's Guide.

PRINTED OUTPUT

The two printed outputs generated by this procedure are:

. A global report on the update,

. A list of the rejected update transactions.

They are printed by the user, and the transaction groups are separated by a flag.

This procedure does not provide any generation or printing of data contained in the database. These are obtained via the Generation-Printing (GPRT) procedure.

RESULT

Output of the UPDT procedure is:

. A database ready to be used on-line or in batch mode.

. A Journal file of the transactions that have modified the database (as long as there was no inhibit request during the last restoration).

CHECKPOINT REQUEST

This facility allows you to request synchronization points during a batch update (UPDT procedure) or during a database restoration (REST or RESY procedures).
In case of ABEND, a ROLLBACK is performed, thus securing a coherent database.

Therefore, it is always possible, after an abnormal ending of the UPDT procedure, to restart the procedure without executing a restoration. However, it is recommended to delete transactions already taken into account.

Checkpoints are performed at a frequency rate defined by the user.

EXAMPLE: A '0100' frequency rate means that a checkpoint is performed every 100 transactions.

```
INPUT OF THE CHECKPOINT FREQUENCY RATE FOR A BATCH UPDATE

The checkpoint frequency rate is entered on a single 'Y'-
line located BEFORE the first '*'-line. The 'Y'-line is for-
matted as follows:

+---------+--------+-------+--------------------------------+
!POSITION ! LENGTH ! VALUE ! MEANING                        !
+---------+--------+-------+--------------------------------+
!   2     !   1    !   Y   ! LINE CODE                      !
!   4     !   4    ! nnnn  ! CHECKPOINT FREQUENCY RATE      !
!         !        !       ! (DEFAULT VALUE=0000)           !
+---------+--------+-------+--------------------------------+

For the REST and RESY procedures, the checkpoint frequency
is entered in the User Input.
```

## 2.1.3. UPDT: DESCRIPTION OF STEPS

### UPDT: DESCRIPTION OF STEPS

```
DATABASE CONSISTENCY CHECK:  PTUBAS

.Permanent input files:
 -Data file
  PAC7AR
 -Error message file
  PAC7AE
  PAC7LO

.Output report
 -Validity report (Length=079)
  PAC7DS

. Return code :
 - 0  OK.
 - 4  database inconsistency, STOP triggered.


TRANSACTION FORMATTING:  PACA05

.Permanent input files:
 -Data file
  PAC7AR
 -Index File
  PAC7AN
 -Error message file
  PAC7AE

.Input transaction file:
 -Update transactions
  PAC7MB

.Output files:
 -Formatted transactions
  PAC7MV
  (must have capacity to contain all transactions in their
  complete state, plus the elementary delete transactions
  generated by the multiple delete transactions)
 -Work file
  PAC7MW
```

DATABASE UPDATE: PACA15

.Permanent update files:
 -Data file
  PAC7AR
 -Index file
  PAC7AN
 -Journal file
  PAC7AJ
  PAC7LO

.Permanent input files:
 -Error message file
  PAC7AE
 -DSMS file of VA Pac elements
  PAC7DC
  (DSM variant only)

.Input transaction file:
 -Update transactions
  PAC7MV

.Output report(s):
 -Update report
  PAC7IE
 -Erroneous-transaction list
  PAC7IF
 (The list of transactions belonging to a user is preceded
 by a banner specifying the user code.)

.Return codes:
 - 0 : OK without error
 - 2 : warning error
 - 4 : serious error

## 2.1.4. UPDT: EXECUTION JCL

```
#QUAL              [QUAL,1,1,1]
# .
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C         [QUALR,1,1,1]*UPDTEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*UPDTEI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                PTUBAS
# .                ******
# .
#CYCLE,C          [QUALR,1,1,1]*UPDTDSBAS.,[NBCYC,1,1,1]
#USE               PAC7DS.,[QUALR,1,1,1]*UPDTDSBAS(+1).
#CAT,P             PAC7DS.,///10
#ASG,AX            PAC7DS.
#XQT               *[BFILE,1,1,1].PTUBAS
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#[PRINT,1,1,1]    PAC7DS.,,[PRINT,1,2,1],,UPDTDSBAS
#FREE              PAC7DS.
# .
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .                 PACA05
# .                 ******
# .
#USE               PAC7MB.,*UPDTMB.
#ASG,T             [QUALT,1,1,1]*PAC7MW.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7MV.,///[SPAWK,1,1,1]
#XQT              *[BFILE,1,1,1].PACA05
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE               PAC7MB.
# .
# .                 PACA15
# .                 ******
# .
#CYCLE,C          [QUALR,1,1,1]*UPDTIEA15.,[NBCYC,1,1,1]
#USE               PAC7IE.,[QUALR,1,1,1]*UPDTIEA15(+1).
#CAT,P             PAC7IE.,///[SPAWK,1,1,1]
#ASG,AX            PAC7IE.
#CYCLE,C          [QUALR,1,1,1]*UPDTIFA15.,[NBCYC,1,1,1]
#USE               PAC7IF.,[QUALR,1,1,1]*UPDTIFA15(+1).
#CAT,P             PAC7IF.,///[SPAWK,1,1,1]
#ASG,AX            PAC7IF.
#XQT              *[BFILE,1,1,1].PACA15
#FREE             [QUALT,1,1,1]*PAC7MV.
#FREE             [QUALT,1,1,1]*PAC7MW.
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#[PRINT,1,1,1]     PAC7IE.,,[PRINT,1,2,1],,UPDTIEA15
#FREE              PAC7IE.
#[PRINT,1,1,1]     PAC7IF.,,[PRINT,1,2,1],,UPDTIFA15
#FREE              PAC7IF.
# .
#JUMP        SAUT
# .
#ERRFAT:
# .
```

```
#MSG,N ****** FATAL ERROR IN PROCEDURE UPDT ******
# .
#TEST        TLE/37/S5
#JUMP        SAUT
# .
#[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,UPDTEI
# .
#SAUT:
# .
#FREE              PAC7EI.
# .
#FREE             *[BFILE,1,1,1].
```

## *2.2. UPDP: DATABASE UPDATE FROM PAF TABLES*

### 2.2.1. UPDP: INTRODUCTION

UPDP: INTRODUCTION

The UPDP procedure performs an update of the Database from a sequential file reflecting PAF tables.

The operating principle of UPDP is very similar to that of UPDT, with the exception that input transactions have a different format.

EXECUTION CONDITIONS

Refer to the 'EXECUTION CONDITIONS' section of the UPDT procedure.

ABNORMAL EXECUTION

Refer to the 'ABENDS' section of the UPDT procedure.

## 2.2.2. UPDP: INPUT - PROCESSING - RESULTS

### UPDP: INPUT-PROCESSING-RESULTS

#### USER INPUT

The sequential file of input transactions is produced by a PAF extractor program. Its records mirror the PAF tables (described in the Pactables Manual).

| Pos. | Length | Meaning |
|---|---|---|
| 1 | 1 | Transaction code (C, M, X, D or A, B) |
| 2 | 10 | PAF table code |
| 12 | 299 | PAF table contents (described in the Pactables Manual). |

#### UPDATE RULES

Update transactions are not sorted.

Each set of transactions impacting a library or session must be preceded by an ASSIGN table code line.

| Pos. | Length | Value | Meaning |
|---|---|---|---|
| 2 | 10 | 'ASSIGN' | Table code |
| 12 | 8 | uuuuuuuu | User code |
| 20 | 8 | pppppppp | Password |
| 28 | 3 | bbb | Library code |
| 31 | 4 | ssss | Session number |
| | | '  ' | current session |
| 35 | 1 | 'T' | Session status: Test session |
| 39 | 1 | 'A' or 'F' | Language code, useful if the transactions are not in the same language as the Database IN CASE OF A DSMS CONTROL OF THE DATABASE : |
| 40 | 3 | ppp | Product code |
| 43 | 6 | nnnnnn | Product number |

When the update is performed while the TP is active (on platforms that support this functionality), the input transaction flow must be preceded by a CHECKP table code line.

| Pos. | Length | Value | Meaning |
|---|---|---|---|
| 2 | 10 | 'CHECKP' | Table code |
| 12 | 4 | nnnn | Number of transactions processed between two pauses or checkpoints |
| 16 | 4 | 'UPDT' | Update procedure |
| 20 | 2 | nn | OS/2, UNIX, WINDOWS NT: Pause time, in seconds, between two update sets |

PRINTED OUTPUT

Refer to the description of the UPDT output.

RESULT

Refer to the description of the UPDT result.

## 2.2.3. UPDP: DESCRIPTION OF STEPS

### UPDP: DESCRIPTION OF STEPS

```
DATABASE CONSISTENCY CHECK:  PTUBAS

.Permanent input files:
 -Data file
  PAC7AR
 -Error message file
  PAC7AE
  PAC7LO

.Output report
 -Validity report (Length=079)
  PAC7DS

. Return code :
 - 0  OK.
 - 4  database inconsistency, STOP triggered.

TRANSACTION FORMATTING:  PAF900

.Permanent input files:
 -Data file
  PAC7AR
 -Index File
  PAC7AN
 -Error message file
  PAC7AE

.Input transaction file:
 -Update transactions
  PAC7GY

.Output files:
 -Formatted transactions
  PAC7MV
  (must have capacity to contain all transactions in their
  complete state, plus the elementary delete transactions
  generated by the multiple delete transactions)
 -Work file
  PAC7MW
```

DATABASE UPDATE: PACA15

.Permanent update files:
 -Data file
  PAC7AR
 -Index file
  PAC7AN
 -Journal file
  PAC7AJ
  PAC7LO

.Permanent input files:
 -Error message file
  PAC7AE
 -DSMS file of VA Pac elements
  PAC7DC
  (DSM variant only)

.Input transaction file:
 -Update transactions
  PAC7MV

.Output report(s):
 -Update report
  PAC7IE
 -Erroneous-transaction list
  PAC7IF
 (The list of transactions belonging to a user is preceded
 by a banner specifying the user code.)

.Return codes:
 - 0 : OK without error
 - 2 : warning error
 - 4 : serious error

## 2.2.4. UPDP: EXECUTION JCL

```
#QUAL              [QUAL,1,1,1]
# .
#XQT               *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*UPDPEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*UPDPEI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                PTUBAS
# .                ******
# .
#CYCLE,C          [QUALR,1,1,1]*UPDPDSBAS.,[NBCYC,1,1,1]
#USE               PAC7DS.,[QUALR,1,1,1]*UPDPDSBAS(+1).
#CAT,P             PAC7DS.,///10
#ASG,AX            PAC7DS.
#XQT               *[BFILE,1,1,1].PTUBAS
# .
#TEST         TLE/17/S5
#JUMP         ERRFAT
# .
#[PRINT,1,1,1]     PAC7DS.,,[PRINT,1,2,1],,UPDPDSBAS
#FREE              PAC7DS.
# .
#TEST         TEP/10/S5
#JUMP         SAUT
# .
# .                 PAF900
# .                 ******
# .
#USE                PAC7GY.,*UPDPMB.
#ASG,T              [QUALT,1,1,1]*PAC7MW.,///[SPAWK,1,1,1]
#ASG,T              [QUALT,1,1,1]*PAC7MV.,///[SPAWK,1,1,1]
#XQT               *[BFILE,1,1,1].PAF900
# .
#TEST         TLE/17/S5
#JUMP         ERRFAT
# .
#FREE                PAC7GY.
# .
# .                 PACA15
# .                 ******
# .
#CYCLE,C           [QUALR,1,1,1]*UPDPIEA15.,[NBCYC,1,1,1]
#USE                PAC7IE.,[QUALR,1,1,1]*UPDPIEA15(+1).
#CAT,P              PAC7IE.,///[SPAWK,1,1,1]
#ASG,AX             PAC7IE.
#CYCLE,C           [QUALR,1,1,1]*UPDPIFA15.,[NBCYC,1,1,1]
#USE                PAC7IF.,[QUALR,1,1,1]*UPDPIFA15(+1).
#CAT,P              PAC7IF.,///[SPAWK,1,1,1]
#ASG,AX             PAC7IF.
#XQT               *[BFILE,1,1,1].PACA15
#FREE              [QUALT,1,1,1]*PAC7MV.
#FREE              [QUALT,1,1,1]*PAC7MW.
# .
#TEST         TLE/17/S5
#JUMP         ERRFAT
# .
#[PRINT,1,1,1]      PAC7IE.,,[PRINT,1,2,1],,UPDPIEA15
#FREE               PAC7IE.
#[PRINT,1,1,1]      PAC7IF.,,[PRINT,1,2,1],,UPDPIFA15
#FREE               PAC7IF.
# .
#JUMP         SAUT
# .
#ERRFAT:
# .
```

```
#MSG,N ****** FATAL ERROR IN PROCEDURE UPDP ******
# .
#TEST        TLE/37/S5
#JUMP        SAUT
# .
#[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,UPDPEI
# .
#SAUT:
# .
#FREE              PAC7EI.
# .
#FREE             *[BFILE,1,1,1].
```

# *2.3. GPRT: GENERATION AND PRINTING*

## 2.3.1. GPRT: INTRODUCTION

GPRT: INTRODUCTION

The Generation and Printing procedure, GPRT, has a two-fold purpose:

. To print documentation using data contained in the database, and

. To generate Programs, Screens, Database descriptions, Data Structures, and error messages.

This procedure does not affect the database. Therefore, it may be executed while the files are open to on-line use.

However, if the on-line generation and print requests are to be included, then the Generation-Print Request (AG) file must be closed. (The procedure invalidates the printing requests entered on line, therefore the file must be accessible for update.)

It calls a unique program (PACBE), which is used as a monitor calling the different programs that make up the procedure.
All programs that make up the procedure are thus considered to be sub-programs of this monitor, with which they communicate by means of a communication area and certain return codes.

Since user requests are often diverse, this procedure is broken down into 'sub-chains' whose purpose is to process, in an integrated manner, the preparation of the generation-printing requests for the families they manage. They are identified by a one-position code as follows:

- A : Data elements
- B : Database blocks (DBD)
- C : COBOL programs (COB)
- D : Specifications Dictionary
- E : OLSD screens (OSD)
- G : Client/Server Screens (OCS)
- K : Error messages (OCS)
- L : Error messages (OSD)
- M : User manuals
- N : Personalized Documentation Manager (PDM)
- P : Batch programs (BSD)
- R : Production Environment Interface (PEI)
- Q : Relational-SQL Database blocks
- T : Revamping of Dialogs (PAW, Pacbase Web Connection)

This code is referenced again in the names given to the programs, files and reports that are generated in this procedure. For programs, this is the fourth character of the code. Examples:

- PACA10 : General program.
- PACB30 : Database block extractor.

For files or reports, this is the last character of their external name. Examples:

- PAC7IA : General printing of command chain.
- PAC7GP : Generated file of batch programs.

Following the execution of the two general programs that are common to all chains (PACA10 and PACA20), the sub-chains are activated, if appropriate, in the following order:

- Production Environment Interface,
- Database Blocks,
- COBOL programs (COB),
- On-line Screens (OLSD),
- Client Screens,
- Server Screens,
- Error Messages and Dialog Windowing,
- Volumes,
- Personalized Documentation Manager,
- Batch programs,
- Specifications Dictionary.

Each sub-chain is structured in the same manner:

- The 'extraction' programs (3x),
- The 'preparation' programs (4x),
- The 'generation' programs (8x),
- The 'print' programs (90).

These codes are found in the last two characters of the program codes of the procedure. Examples:

- PACB40 : Database block preparation,
- PACE80 : Screen generator.

Besides, a specific coding is used for file external names. It represents their use in the procedure:

- G : Generated code
- I : Reports
- J : Print requests
- K : Preparation for printing
- L : Error messages
- M : Transactions
- S : Skeletons
- W : Work

This code is found one character before last in the procedure files external name. Examples:

- PAC7GL : Generated error messages
- PAC7IN : Printing of Personalized Documentation

Files containing the 'generated source code' (ready to be compiled or to be stored in an Assembler or Source Library) are concatenated into a single physical file that will be used in the following step.

The Error Message file is updated using the file with a suffix of LG, and is retrieved into the file with a suffix of GL. The procedure does not include a name for the two versions of this file. Therefore, they must be specified when these messages are generated.

(The user error message file of the PAC700 6.2 type is retrieved into the file with a suffix of GM whose name must also be specified in a generation request.)

Standard printing of volumes is retrieved from the file with a suffix of IN. The file with a suffix of GN can also be used (record length = 265) with the 'ASA' skip character in the first position of each record when special print characteristics are needed.

The file containing the elements necessary for Dialog Windowing (PAF) is coded PAC7GT (record length is 180). Its name must be specified in the generation request.

## EXECUTION CONDITIONS

The files can remain open, except if the generation-print of on-line requests was requested via the ' +AG' command. In this case, the Generation-Printing Request file (AG) must be closed.

## ABNORMAL EXECUTION

Refer to chapter 'OVERVIEW', subchapter 'Abnormal Endings' in the 'Batch procedures Manual: the Administrator's Guide'.

2.3.2. GPRT: STRUCTURE OF REQUESTS

## GPRT: STRUCTURE OF THE REQUESTS

The GPRT requests are structured in three parts:

. The actual request, coded in a way similar to on-line selection,

. a report formatting option, coded in a way similar to the operation code,

. the code of the entity concerned, if relevant

In some cases, parameters may be necessary. Parameters can be specified in two places :

. in pre-formatted fields, with the input of the command code,

. on a continuation line, by placing the asterisk ('*') in the continuation line field (following the printout label on batch form Z).

Presentation options and all possible parameters are indicated for each GPRT command in section 'Generation/Printing commands' as well as for each entity in the corresponding manual.

STRUCTURE OF THE COMMAND

The Generation/Printing request of an entity breaks down in three parts :

The first part indicates the nature of the generation/printing :

. L : List of entities,

. D : Description of entities,

. G : Generation (of programs, screens, database Blocks, error messages..).

. P : Printout (User manuals or reports).

The second part specifies the printing criteria for example for lists, the ordering criteria (by code, by name, by type...).

The third part gives the name of the entity :

for a methodology entity, the (M) type is completed to specify if it is about Properties (P), 'Objects (O), Relations (R) ou Functional Integrity Constraints (C).

SPECIAL COMMANDS

. FLx : Flow control cards (x = type of entity) flow of compilations following the generation.

. JCL : Allows the user to set up JCL lines for the on-line GPRT start-up (see section 'Generation/ Printing commands' hereafter).

. UPC : transformation of lowercase characters into uppercase characters for printers which do not support lowercases.

To consult the complete list of the commands and their meaning, see section 'Generation/Printing commands' hereafter.

PRINTING BY KEYWORD

To obtain a printout by keyword, enter a 'K' as the second character of the command. In this case, after the line has been created, a 'continuation' line is automatically displayed. The user can enter on this line the keyword(s) for which a printout is requested.

Furthermore, the print name contains a selection field in which the user can specify whether the selection is to be made:

. On the whole set of keywords (SPACE),

. On the keywords automatically derived from the name (L),

. On explicit keywords (M).

## 2.3.3. GPRT: GENERATION/PRINTING COMMANDS

```
-------------------------------------------------------------------------------
! VA Pac               APPLICATION DEVELOPMENT        SG000008.LILI.CIV.1583  !
!GENERATION AND PRINT COMMANDS                              USER: 21 SG000008  !
!1 2  3   4        56 7 8 <-------------------- 9 AND 10 ------------------>   !
!A SO COM ENTITY : OP V C CONTINUATION OF REQUEST                               !
!     LKP        : C1   * LIST OF PROGRAMS RELATED BY KEYWORDS        SEL:_    !
!                :        ------------------------------------------------ 17  !
!     UPC        : C1     SHIFT TO UPPERCASE    MANUAL:_ DOC:_ ERROR MESS:_    !
!                :                                    13    14           15   !
!  90 FLP        : C1     PROGRAM JOB CARD / JOB DELIM  ENV: _ (CCF:_ CCB:_)   !
!                :                                                   13    15   !
!  90 GCP PA10FL : C1     SOURCE CODE FOR SELECTED PROGRAM     (CCF:_ CCB:_)   !
!                :                                                    13    15  !
!  90 GCP PA20PA : C1     SOURCE CODE FOR SELECTED PROGRAM     (CCF:_ CCB:_)   !
!  90 GCP PA30AR : C1     SOURCE CODE FOR SELECTED PROGRAM     (CCF:_ CCB:_)   !
!  91 FLO        : C1     SCREEN JOB CARD / JOB DELIM   ENV: _ (CCF:_ CCB:_)   !
!  91 GCO DO0000 : C1     SCREEN'S PGM AND MAP SOURCE CODE   (CCF:__ CCB:__)   !
!                :                                              13-14   15-16  !
!  96 PCV VOLUME : C1     PRINT VOLUMES BY CHAP / SUBCHAP AND CODE: _ __ __    !
!                :                                                 18 19 20    !
!                :                                                             !
!*** END ***                                                                    !
!O: C1 CH: GP                          JOB:           PASSWORD:                !
-------------------------------------------------------------------------------

-------------------------------------------------------------------------------
! VA Pac               APPLICATION DEVELOPMENT        SG000008.LILI.CIV.1583  !
!VALID GENERATION AND PRINT COMMANDS                        USER: SG000008     !
!                                                                              !
!A SO COM ENTITY : OP   C CONTINUATION OF REQUEST               : LIB SESSI   !
!     JCL 000000 :        //PSTSG8 JOB (634,CGI46808),SG8,CLASS= :             !
!     JCL 000020 :        //   EXEC ZA73GPRT,ROOT=LI,FILE=LI,OUT :             !
!     JCL 000030 :        //   LOADTP='PST.CICS.LINKLIB',OUTL=R, :             !
!     JCL 000040 :        //   INDUV='PST',INDSV='PST',INDSN='PS :             !
!     JCL 000045 :        //   STEPLIB='PST.PAC73.MBR7',         :             !
!     JCL 000050 :        //   LOADBA='PST.BATCH.LINKLIB'        :             !
!     JCL 600100 :        //PAC.PAC7SC DD DSN=PST.LILISCA,DISP=S :             !
!     JCL 600200 :        //PAC.PAC7SG DD DSN=PST.LILISGA,DISP=S :             !
!                :                                                             !
!                :                                                             !
!                :                                                             !
!                :                                                             !
!                :                                                             !
!                :                                                             !
!                :                                                             !
!                :                                                             !
!                :                                                             !
!UPDATE INHIBITED WITH THIS DISPLAY TYPE                                        !
!O: C2 CH: GP                          JOB:           PASSWORD:                !
-------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
! VA Pac               APPLICATION DEVELOPMENT        SG000008.LILI.CIV.1583  !
!GENERATION AND PRINT COMMANDS                            USER: SG000008     !
!                                                                             !
!A SO COM ENTITY : OP V C CONTINUATION OF REQUEST               : LIB SESSI   !
!     JCL 000000 :    V   //PSTSG8 JOB (634,CGI46808),SG8,CLASS= :             !
!     JCL 000020 :    V   //   EXEC ZA73GPRT,ROOT=LI,FILE=LI,OUT :             !
!     JCL 000030 :    V   //   LOADTP='PST.CICS.LINKLIB',OUTL=R, :             !
!     JCL 000040 :    V   //   INDUV='PST',INDSV='PST',INDSN='PS :             !
!     JCL 000045 :    V   //   STEPLIB='PST.PAC73.MBR7',         :             !
!     JCL 000050 :    V   //   LOADBA='PST.BATCH.LINKLIB'        :             !
!     JCL 600100 :    V   //PAC.PAC7SC DD DSN=PST.LILISCA,DISP=S :             !
!     JCL 600200 :    V   //PAC.PAC7SG DD DSN=PST.LILISGA,DISP=S :             !
!  90 FLP        : C1     PROGRAM JOB CARD / JOB DELIM  ENV: _ ( : ITF         !
!  90 GCP PA10FL : C1     SOURCE CODE FOR SELECTED PROGRAM     ( : ITF         !
!  90 GCP PA20PA : C1     SOURCE CODE FOR SELECTED PROGRAM     ( : ITF         !
!  90 GCP PA30AR : C1     SOURCE CODE FOR SELECTED PROGRAM     ( : ITF         !
!  91 FLO        : C1     SCREEN JOB CARD / JOB DELIM   ENV: _ ( : ITF         !
!  91 GCO DO0000 : C1     SCREEN'S PGM AND MAP SOURCE CODE   (CC : ITF         !
!  91 FLO        : C1     SCREEN JOB CARD / JOB DELIM   ENV: V ( : SG8         !
!  91 GCO PA0030 : C1     SCREEN'S PGM AND MAP SOURCE CODE   (CC : SG8         !
!  91 GCO PA8888 : C1     SCREEN'S PGM AND MAP SOURCE CODE   (CC : SG8         !
!               :                                                             !
!UPDATE INHIBITED WITH THIS DISPLAY TYPE                                       !
!O: C3 CH: GP                        JOB:          PASSWORD:                 !
--------------------------------------------------------------------------------

--------------------------------------------------------------------------------
! VA Pac               APPLICATION DEVELOPMENT        SG000008.LILI.CIV.1583  !
!JCL LINES FOR THE COMMANDS                               USER: SG000008     !
!                                                                             !
!A   COM  LINE   :    V C CONTINUATION OF REQUEST                              !
!    JCL  000000 :    V   //PSTSG8 JOB (634,CGI46808),SG8,CLASS=X,MSGCLASS=C   !
!    JCL  000020 :    V   //   EXEC ZA73GPRT,ROOT=LI,FILE=LI,OUTL=R,OUT=C,     !
!    JCL  000030 :    V   //   LOADTP='PST.CICS.LINKLIB',OUTL=R,UTI='SG8',     !
!    JCL  000040 :    V   //   INDUV='PST',INDSV='PST',INDSN='PST',             !
!    JCL  000045 :    V   //   STEPLIB='PST.PAC73.MBR7',                        !
!    JCL  000050 :    V   //   LOADBA='PST.BATCH.LINKLIB'                       !
!    JCL  600100 :    V   //PAC.PAC7SC DD DSN=PST.LILISCA,DISP=SHR             !
!    JCL  600200 :    V   //PAC.PAC7SG DD DSN=PST.LILISGA,DISP=SHR             !
!                :                                                            !
!                :                                                            !
!                :                                                            !
!                :                                                            !
!                :                                                            !
!                :                                                            !
!                :                                                            !
!                :                                                            !
!                :                                                            !
!*** END ***                                                                   !
!O: C4 CH: GP                        JOB:          PASSWORD:                 !
--------------------------------------------------------------------------------
```

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| 1 | 1 | | ACTION CODE |
| 2 | 2 | | PROCESSING SEQUENCE ORDER<br><br>This field is used to specify the sequence in which print requests are processed and printed.<br><br>If no value is entered in this field, the print requests are processed according to their position in the input sequence displayed on the screen.<br><br>If an alphanumeric value is entered, reports are printed and sorted on this value basis.<br><br>In case of generation request, this criterion is forced automatically by the system in order to sort the generations by entity types:<br><br>90 Programs<br>91 Screens<br>92 Database Blocks<br>93 User Manuals<br>94 Error messages<br>95 Data structures<br>96 Volumes (PDM)<br><br>The request criteria for a modification of the flow nanagement is also forced according to the entity to generate.<br><br>The ordering criteria assigned automatically cannot be modified by the user.<br><br>If the user tries to modify these values, the system retrieves automatically the values specified above without issuing an error message. |
| 3 | 4 | | GENERATION-PRINT COMMAND<br><br>NOTE: Input of the entity code is required or optional depending on the command.<br>The following indicators describe the various options:<br><br>(A) Required occurrence code input (Batch column 9).<br><br>(B) Optional occurrence code input. If omitted, all occurrences of the entity type are listed in the user's hierarchical view.<br><br>(C) Occurrence code input not allowed. All occurrences of the entity type are listed in the user's hierarchical view.<br><br>(D) A blank line may be requested by placing an asterisk in the CONTINUATION OF REQUEST INDICATOR(C) |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | | field and pressing the ENTER key. What may be entered on this line depends on the command; you will find below what options are possible. This corresponds to batch columns 31 to 80 incl.<br><br>NOTE: Each command has different requirements with respect to the type of additional information to be supplied. Values may be entered here, or left blank for the default. The following list identifies by code the information expected for each command:<br><br>(1) SEL: _<br>Limit the list by keyword type. Enter 'M' for explicit, 'L' for implicit, or blank for both. In batch mode, enter this value in column 30. See also SELECTION OF KEYWORD TYPE.<br><br>(2) Same as above plus a following line on which a user may enter one or several keywords. This appears as a continuation line in on-line mode, and corresponds to batch columns 31 to 80.<br><br>(3) FORMAT: _<br>A format may be specified by entering 'I' for internal, 'E' for input, or 'S' for output. Enter these values in column 17 in batch mode - a blank is also valid and means that the default value is desired. See also TYPE TO SELECT.<br><br>(4) CCF:_ CCB:_<br>The code of the control card in front of program and in back of program, respectively. Enter these codes in columns 19 to 22 in batch mode. The codes must be consistent with the codes displayed on the Dialogue Definition screen.<br><br>(5) CCF:__ CCB:__<br>The code of the control card in front of program and in front of map, and the code of the control card in back of program and in back of map, respectively. The user can override the default control cards. These codes should be consistent with the values on the Dialogue Definition. In batch mode, use columns 19 to 22.<br><br>(6) TYPE: __<br>The user enters the selected type which should be consistent with the corresponding field on the definition screen of that entity type. In batch mode enter the type in columns 17 and 18. |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | | (7) PRINT VOLUME BY CHAP/SUBCHAP AND CODE:_ __ __<br>Specify the chapter and/or subchapter. Enter 'C' for chapter followed by the chapter code, or 'S' for subchapter followed by the chapter and subchapter codes. In batch mode use columns 23 through 27.<br><br>(8) ENV.:__ (CCF:__ CCB:__)<br>For those sites that are using the PEI option: the environment may be specified. In batch mode enter the environment code in column 17, and the corresponding control cards in columns 19 through 22. |
| | | | THESAURUS<br>--------- |
| | | DCK | (C)<br>A complete description of keywords defined in the thesaurus which lists the SYNONYM OR DEFINITION field contents associated with each keyword.<br>NOTE: This data being specified in Inter-Library only, this command cannot be used with the U1 option. Use the C1 or I1 option which gives the same output. |
| | | LCK | (1) (C)<br>A listing of all keywords defined in the thesaurus, with their synonyms. It includes the number of uses of these keywords in the Database. |
| | | | TEXTS<br>----- |
| | | DCT | (A)<br>Description of selected Text.<br>NOTE: If you enter an "*" in the ENTITY CODE field, descriptions of all Text occurrences will be printed, sorted by code. |
| | | DTT | (B) (6)<br>Descriptions of Text occurrences, sorted by type. |
| | | L*T | List of Texts with their paragraphs titles, sorted by code. |
| | | LCT | (C)<br>List of Text occurrences, sorted by code. |
| | | LKT | (2)<br>List of Text occurrences whose names and/or explicit Keywords contain the Keyword(s) specified. |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | LTT | (6)<br>List of Text occurrences, sorted by type. |
| | | | VOLUMES<br>------- |
| | | FLV | (C) (D) (4)<br>This command is used to specify the job card and end-of-job delimiters: Flow control for volumes.<br><br>Use the continuation line to define user parameters on the control cards. |
| | | LCV | (C)<br>List of Volumes, sequenced by code. |
| | | LKV | (C) (2)<br>List of Volumes selected according to the keyword(s) entered on the continuation line. |
| | | DCV | (B)<br>Printing of the description of the Volume whose code is entered in the Entity field. When this code is not entered, the descriptions of all the Volumes are printed, sequenced by code. |
| | | PCV | (B) (D) (7)<br>Printing of the contents of the Volume whose code is entered in the Entity field. When this code is not entered, the contents of all the Volumes are printed, sequenced by code.<br>For local printing in RTF format, the Volume must be generated with the C2 option.<br>Partial printing is documented in the 'Personalized Documentation Manager' Reference Manual, Chapter 'Access Commands', Subchapter 'Generation-Print'. |
| | | | ELEMENTS AND PROPERTIES<br>---------- |
| | | DCE | (B)<br>A complete description of the defined element(s). The information is sequenced by element code.<br>To get assigned text, use print option "2". |
| | | DFE | (B)<br>A listing of the element(s) not defined in the Specifications Dictionary, with cross-references. |
| | | LACE | (C)<br>A list of elements and properties, by Cobol name. |
| | | LCE | (B) |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | | A list of defined elements, sequenced by element code. |
| | | LKE | (C) (2)<br>A list of elements and properties by keyword. |
| | | LNE | (C)<br>A list of elements and properties sequenced by element name. |
| | | LXE | (C)<br>A list of defined elements and properties which are not used. |
| | | | DATA STRUCTURES<br>---------- |
| | | DCD | (B)<br>A complete description of the data structure(s). This includes cross-references to programs and screens and a list of associated reports and segments.<br>The information is sequenced by data structure code.<br>Note: To get the associated text use print option "2". |
| | | FLD | (C) (D) (4)<br>This command is used to specify the job card and end-of-job delimiters: flow control of data structures.<br><br>Use the continuation line to define user parameters on the control cards. |
| | | GCD | (A)<br>Generate a COBOL description (COPY book) of the data structure.<br><br>For more details concerning generation, refer to the chapter corresponding to the 'DICTIONARY' reference manual. |
| | | LCD | (C)<br>A list of data structures sequenced by data structure Code. |
| | | LTD | (C)<br>A list of data structures sequenced by data structure type. |
| | | LPD | (C)<br>A list of data structures sequenced by external name. |
| | | LKD | (C) (2)<br>A list of the data structures whose names and/or explicit keywords contain the keyword(s) specified. |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | | SEGMENTS AND LOGICAL VIEWS<br>---------- |
| | | LCS | (C)<br>List of Segments sorted by Code. |
| | | LKS | (C) (2)<br>List of Segments whose names and/or explicit keywords contain the keyword(s) specified. |
| | | DCS | (B) (D: when entity code has been entered) (3)<br><br>NOTE: Enter the Data Structure code in the ENTITY CODE field, and the Segment code(s) on the continuation line(s).<br><br>A complete description of the Segment(s). This includes cross-references to Programs and Screens for the Data Structure and to all entities for the Segment(s) and a list of associated Reports and Segments. For Segments defined as tables with the Pactables function, a list of sub-schemas and sub-systems is printed.<br><br>NOTE: To get the associated text for both the Segment and the Data Structure, use print option "2". |
| | | | INPUT AIDS<br>---------- |
| | | DCI | (C)<br>A complete description of the input aid(s) including a list of uses of the input aid(s) in other entities. The information is sequenced by PIA code. |
| | | LCI | (C)<br>A list of input aids sequenced by the PIA code. |
| | | LKI | (C) (2)<br>A list of the input aids whose names and/or explicit keywords contain the keyword(s) specified. |
| | | LXI | (C)<br>List of all Cross-References (PIA Calls) as defined on the PIA description screen sequenced by the value of this field. |
| | | | DATABASE BLOCKS<br>---------- |
| | | DTB | (B) (6)<br>Description(s) of database blocks of the type specified including cross-references to other blocks and |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | | screens.<br><br>Note: To get the associated text, use print option "2" |
| | | FLB | (C) (D) (4) (8)<br>This command is used to specify the job card and end-of-job delimiters: Flow control of the block. |
| | | FLS | (C) (D) (4) (8)<br>Same as FLB for Relational/SQL blocks.<br><br>Use the continuation line to define user parameters on the control cards. |
| | | GCB | (A) (D) (4)<br>Generate a DDL description of the database block specified (including 'DB'-type blocks for DB2).<br><br>Use the continuation line to define the user parameters on the control cards. |
| | | GSQ | (A) (D) (4)<br>Generates the SQL DDL for the Relational/SQL database block specified. Use the continuation line to define the user parameters on the control cards. |
| | | LCB | (C)<br>List of database blocks sequenced by block code. |
| | | LEB | (C)<br>List of database blocks sequenced by external name. |
| | | LKB | (C) (2)<br>A list of the database blocks whose names and/or explicit keywords contain the keyword(s) specified. |
| | | LTB | (C) (6)<br>A list of database blocks whose block types have been defined with the specified value. |
| | | LTS | (C)<br>A list of SQL objects sequenced by code. |
| | | LES | (C)<br>List of SQL objects sequenced by external name.<br><br>BUSINESS COMPONENTS, FOLDERS, FOLDER VIEWS, C/S SCREENS, SCREENS, DIALOGUES<br>---------- |
| | | DCO | (A)<br>Complete Screen Description including Dialogue Complement and uses in other Screens.<br>For Screens, information is also provided on relevant |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | | Segments, Macro-structure calls, Beginning insertions modifications, Work Areas and Structured Code.<br><br>NOTE: To get the associated text, use print option "2" |
| | | FLO | (C) (D) (4) (8)<br>This command is used to specify the job card and end-of-job delimiters: Flow control for screens.<br><br>Use the continuation line to define user parameters on the control cards. |
| | | GCO | (A) (D) (5)<br>Generate a COBOL description of the Screen specified. Use the continuation line to define user parameters on the control cards. |
| | | LCO | (C)<br>List sorted by code. |
| | | LNO | (C)<br>List sorted by type. |
| | | LPO | (C)<br>List sorted by external program name. |
| | | LSO | (C)<br>List of (C/S) Screens sorted by external map name. |
| | | LKO | (C) (2)<br>List of occurrences whose names and/or explicit keywords contain the keyword(s) specified. |
| | | LTO | (C)<br>List of Screens sequenced by transaction code. |
| | | DGC | (A)<br>A complete description of a C/S Screen. |
| | | DGS | (A)<br>A complete description of a Business Component. |
| | | GGC | (A) (D) (5)<br>Generate a C/S Screen (TUI Client component). |
| | | GGS | (A) (D) (5)<br>Generation applicable to Business Component, Communication Monitor, Error Server, Folder. |
| | | GVC | (A) (D) (5)<br>Extract a Proxy object. Applicable to Folder View, Folder, Business Component. |
| | | FGC | (C) (D) (4) (8)<br>This command is used to specify the job card and end- |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | | of-job delimiters: Flow control for C/S Screen. |
| | | FGS | (C) (D) (4) (8)<br>This command is used to specify the job card and end-of-job delimiters: Flow control. |
| | | | REPORTS<br>------- |
| | | DCR | (B) (D: when the entity code has been entered)<br><br>NOTE: When requesting the description of a single Report, enter the Data Structure code in the ENTITY CODE field and the last character of the Report code on the continuation line.<br><br>A complete description of the Report(s). This includes Report layouts. The information is sequenced by the Report code.<br><br>Note: To get the associated text, use print option "2" |
| | | LCR | (C)<br>List of Reports sequenced by Report Code. |
| | | LTR | (C)<br>List of Reports sequenced by Type. |
| | | LKR | (2)<br>A list of the Reports whose names and/or explicit keywords contain the keyword(s) specified. |
| | | | PROGRAMS<br>-------- |
| | | DCP | (B)<br>A complete description of Program(s). The information is sequenced by the Program code.<br><br>NOTE: To get the associated text, use print option "2" |
| | | FLP | (C) (D) (4) (8)<br>This command is used to specify the job card and end-of-job delimiters: Flow control for Programs.<br><br>Use the continuation line to define user parameters on the control cards. |
| | | FSP | (C) (D) (4) (8)<br>This command is used to specify the job card and end-of-job delimiters: Flow control for "reverse engineered" programs. Use the continuation line to define user parameters on the control cards. |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | GCP | (A) (D) (4)<br>Generate a COBOL description of the Program specified. Use the continuation line to define user parameters on the control cards. |
| | | GSP | (A) (D) (4)<br>Generate a COBOL description of the "reverse engineered" Program specified. Use the continuation line to define user parameters on the control cards. |
| | | LCP | (C)<br>List of Programs sequenced by program code.<br>Note: To get keywords, use print option "2". |
| | | LTP | (C)<br>List of Programs sequenced by type. |
| | | LEP | (C)<br>List of Programs sequenced by external name. |
| | | LKP | (2)<br>A list of the Programs whose names and/or explicit keywords contain the keyword(s) specified. |
| | | DSP | (S)<br>Description of the selected Program produced by REVERSE ENGINEERING. |
| | | | METHOD ENTITIES<br>---------- |
| | | DCM | (A)<br>A complete description of the Method entity as specified. |
| | | DCMC | (C)<br>A complete description of Method Functional Integrity Constraint(s). |
| | | DCMO | (C)<br>A complete description of Method Object(s). |
| | | DCMR | (C)<br>A complete description of Method Relationship(s). |
| | | LCMC | (C)<br>List of Method Functional Integrity Constraints sequenced by F.I.C. code. |
| | | LCMO | (C)<br>List of Method Objects sequenced by Object code. |
| | | LCMP | (C) |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | | List of properties sequenced by Property code. |
| | | LCMR | (C)<br>List of Method Relationships with their Functional Integrity Constraints, sequenced by Relationship code. |
| | | LKM | (C) (2)<br>A list of the Method entities whose names and/or explicit keywords contain the keyword(s) specified.<br><br>USER ENTITIES<br>---------- |
| | | DCF | (B)<br>A complete description of the User Entity(s). The information is sequenced by User Entity code. |
| | | DCQ | (B)<br>A complete description of the User-Defined Relationship. The information is sequenced by Relationship code. |
| | | DC$ | (B)<br>A complete description of the User Entity Occurrence(s).<br>The information is sequenced by user entity type code. |
| | | LCF | (C)<br>List of User Entities sequenced by code. |
| | | LCQ | (C)<br>List of User-Defined Relationships sequenced by code. |
| | | LC$ | (C)<br>List of User Entity Occurrences sequenced by User Entity type code. |
| | | LK$ | (2) (A)<br>A list of the User Entity Occurrences whose names and/or explicit keywords contain the keyword(s) specified. |
| | | LKF | (2) (C)<br>A list of the User Entities whose names and/or explicit keywords contain the keyword(s) specified. |
| | | LKQ | (2) (C)<br>A list of the User-Defined Relationships whose names and/or explicit keywords contain the keyword(s) specified.<br><br>NOTE<br>----<br><br>For all printing by keyword, you can specify the type |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | | of selection (BLANK, L or M) on the print line. Keywords are indicated on the continuation line sent back by VisualAge Pacbase.<br><br>ERROR MESSAGES<br>---------- |
| | | FLE | (C) (D) (4)<br>This command is used to specify the job card and end-of-job delimiters: Flow control for error messages.<br><br>Use the continuation line to define user parameters on the control cards. |
| | | LEC | (A)<br>List the error messages defined for the client component and for each client screen. This list only includes messages that have already been generated. |
| | | LED | (A)<br>List the error messages defined for the data structure and for each segment. This list only includes messages that have already been generated. |
| | | LEO | (A)<br>List the error messages defined for the dialogue and for each screen. This list only includes messages that have already been generated. |
| | | GEC | (A) (D) Pacbench C/S:<br>C1 : Error messages defined for the Client or Server Dialog and for each component.<br>C2 : Error messages generated through option 1 plus documentary help messages.<br>C3 : Error messages defined for the Client Dialog only. |
| | | GED | (A) (D)<br>C1 : Error messages generated for a Data Dtructure and for each Segment.<br>C2 : Error messages generated through option 1 plus documentary help messages. |
| | | GEO | (A) (D) OLSD Function:<br>C1 : Error messages defined for the Dialog and for each Screen.<br>C2 : Error messages generated through option 1 plus documentary help messages.<br>C3 : Error messages for the Dialog only.<br>C4 : Creation of the file required by Pacbase Web Connection.<br>This command is applicable to the Dialogue. |
| | | | NOTE: |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | | If a Segment/Screen suffix is entered on the continuation line of one of the four preceding commands, error error messages are generated/printed only for the selected Segment/Screen. |
| | | | JCL INTRODUCTION<br>---------- |
| | | JCL | This indicates that the COMMAND LABEL/SYSTEM RESPONSE field will contain JCL.<br>The JCL command can only be entered in the 'C4' screen format option. |
| | | | SHIFT TO UPPERCASE<br>---------- |
| | | UPC | This command allows for the automatic transformation of lowercase into uppercase in the printed output of the GPRT procedure.<br><br>When the UPC command is entered, the following line is displayed:<br><br>SHIFT TO UPPERCASE MANUAL:_ DOC:_ ERROR MESS:_<br><br>The PACBASE user must specify to which type of GPRT output the UPC command will apply (even when only one GPRT command is validated).<br><br>In order to do this, the value '1' must be entered in one of the three fields displayed above: in the MANUAL field for User Manuals (U) or Volumes (V); in the DOC field for entity-related commands; in the ERROR MESS field for the generation of error messages.<br><br>NOTE: This also allows for the selective implementation of the UPC command when the execution of several GPRT jobs is requested and the SHIFT TO UPPERCASE must not apply to all of them, in which case the corresponding field(s) must be left blank. |
| | | | JOB STREAM CARDS<br>---------- |
| | | FGC | Stream check: C/S screen |
| | | FGS | Stream check: Business Component |
| | | FLO | Stream check: Screens |
| | | FLS | Stream check: SQL relational Database Blocks |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | FLB | Stream check: Database Blocks |
| | | FLD | Stream check: Data Structures |
| | | FLP | Stream check: Programs |
| | | FSP | Stream check: Programs from REVERSE ENGINEERING |
| | | FLV | Stream check: Report |
| | | FLE | Stream check: Error Messages |
| | | | PAF TABLES OF METHODOLOGY-SPECIFIC ENTITIES<br>---------- |
| | | PCM | Description of PAF Tables for entities specific<br>to a methodology.<br>This command necessarily followed by a Methodology<br>code (see next field). |
| 4 | 6 | | ENTITY CODE<br><br>This field is displayed with the label 'ENTITY' on<br>screen format options '1', '2' and '3' of the GP<br>screen.<br><br>When required, the user enters the entity code which<br>corresponds to the COMMAND FOR PRINT REQUEST.<br><br>'PCM' COMMAND:<br>You enter in this field the code of the selected<br>Methodology: |
| | | M | Merise |
| | | D | YSM |
| | | A | SSADM |
| | | O | OMT |
| | | F | IFW |
| | | | 'JCL' COMMAND:<br>The JCL lines will be sorted according to the number<br>entered in this field.<br>On the screen format option '4' of the GP screen, this<br>field is displayed with the label 'LINE'. |
| | | <600000 | JCL lines at the beginning of the job stream. |
| | | >599999 | JCL lines at the end of the job stream. |
| | | | OPERATION CODE |
| 5 | 1 | | LIBRARY VIEW SELECTION CODE<br><br>Used to select the libraries from which the entities<br>are to be generated and/or printed. |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | | This code has the same meaning as the first character of the OPERATION CODE field on all VisualAge Pacbase screens. |
| | | C | Default value:<br>Selected library and higher level libraries. In case of duplicates, the lines from the lower level library are taken into account.<br><br>NOTE: IN GENERATION THE VALUE 'C' IS AUTOMATICALLY ASSIGNED BY THE SYSTEM. |
| | | I | Selected library and lower and higher level libraries. |
| | | U | Selected library only. |
| | | A | Selected library and higher level libraries with display of duplicates. |
| | | > | Higher level libraries only. |
| | | < | Lower level libraries only. |
| | | Z | Selected library and lower level libraries. |
| 6 | 1 | | PRINT OPTION<br><br>This field does not appear on the "C4" screen format option.<br><br>Used to indicate that sub-reports be included. |
| | | 1 | Default |
| | | 2 | Add Associated Text to the output, depending upon the value entered in the COMMAND FOR PRINT REQUEST. See the specific Command for Print Request. |
| 7 | 1 | | VALIDATION OF COMMAND REQUEST<br><br>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.<br><br>NOTE: These commands must be re-validated each time a request is made. |
| 8 | 1 | | CONTINUATION OF REQUEST INDICATOR |
| | | blank | No continuation line is requested. |
| | | * | A continuation line is requested (or displayed) for this GP command. |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | | For some specific Generation-Print Requests, this field is automatically filled by VA Pac (for instance a Request by Keywords). You must then fill in the continuation line's input fields.<br><br>NOTE: A maximum of 5 continuation lines is authorized. |
| 9 | 50 | | COMMAND LABEL / SYSTEM RESPONSE<br><br>This field has three functions:<br><br>- With screen format option "1", the system uses this field to display a system response line which is the label for the COMMAND FOR PRINT REQUEST entered.<br><br>- With certain commands the user is asked to enter additional information.<br>Also see the SYSTEM RESPONSE REQUEST and CONTINUATION LINE fields.<br><br>- With the 'C4' screen format option, the user can enter JCL lines, which will or will not be taken into account, depending on the value entered in the VALIDATION OF COMMAND REQUEST field. |
| 10 | 50 | | CONTINUATION LINE<br><br>This line is displayed on-line. It represents columns 31 through 80 on Batch Form 'Z'.<br><br>This line serves many purposes, among them:<br><br>. To specify keywords. See COMMAND FOR PRINT REQUEST field, note (2).<br>. To generate error messages of one screen, the Dialogue code is entered in the ENTITY CODE field and the screen suffix in the CONTINUATION LINE field. |
| 11 | 3 | | JOB SUBMISSION REQUEST<br><br>Used to automatically submit the generation and/or printing job from the GP screen when the operating system and TP monitor in use allow for this. The job stream will contain only validated commands for generation and/or print requests and validated JCL lines, all libraries and sessions included. |
| | | blank | No job submission. Update the AG file. |
| | | JOB | Job submission.<br><br>NOTE: For IMS, system messages are displayed.<br>See USER'S MANUAL, chapter "CHOICE: ACCESS COMMANDS", subchapter "SPECIAL CHOICES: IMS VERSION". |
| | | SUB | Job submission. |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | | NOTE: For IMS, system messages are not displayed. |
| | | | SYSTEM RESPONSE REQUEST<br><br>The following fields appear in the COMMAND LABEL/ SYSTEM RESPONSE field only on the 'C4' screen format option for certain Commands for Print Request.<br>They prompt the user for additional input depending on the command entered. |
| 12 | 2 | | TYPE TO SELECT<br><br>A. TYPE TO SELECT (2-character field):<br>Used to specify an occurrence type when requesting a List or Description sorted by type.<br><br>B. FORMAT TO SELECT (1-character field):<br>Used to specify the Segment format when entering a DCS command. |
| | | blank<br>or C | Printing of data related to validations and updates performed by user programs on the Segment's Data Elements. In addition, internal and input formats are printed. |
| | | E | Input format only. |
| | | I | Internal format only. |
| | | R | Validations, updates, relational names. |
| | | S | Output format only. |
| 13 | 1 | | CARDS IN FRONT PGM/UPPERCASE SHIFT<br><br>GENERATION<br>---------<br><br>Enter the one-character code that identifies the job card to be inserted before the generated occurrence.<br>Default: Code entered in the Library Definition.<br><br>NOTE: This value may be overridden on the occurrence's Definition.<br><br>Also see Subchapter "OPTIONAL CONTROL CARDS UPDATING", Chapter "DATABASE MANAGEMENT", OPTION CODE field in the VA Pac TUI User Interface Guide (Ref. DD USE).<br><br>SHIFT TO UPPERCASE FOR VOLUMES<br>----------<br><br>Volumes ('V' entity) are printed in uppercase characters with the UPC command. |
| | | 1 | YES. |
| | | 0 | NO (Default option). |
| 14 | 1 | | CARDS IN FRONT MAP/UPPERCASE SHIFT<br><br>SCREEN GENERATION<br>---------- |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | | The one-character code that identifies the job card to be inserted before each generated screen map. This code is entered on the Dialogue or Screen Definition screen and may be overridden here.<br>Also see: OPTION CODE and INPUT PARAMETERS fields in the 'OPTIONAL CONTROL CARDS UPDATING' Subchapter, 'DATABASE MANAGEMENT' Chapter in the VA Pac TUI User Interface Guide (Ref. DD USE). |
| | | $ | No generation of map. (Use this value in conjunction with the CONTROL CARDS IN BACK OF MAP field.) |
| | | | SHIFT TO UPPERCASE FOR LIST/DESCRIPTION PRINT OUTPUT<br>---<br>Print output shifted to uppercase with UPC command. |
| | | 1 | YES. |
| | | 0 | NO (Default option). |
| 15 | 1 | | CARDS IN BACK / UPPERCASE SHIFT<br><br>GENERATION<br>---<br>Enter the one-character code that identifies the job card to be inserted after the generated occurrence.<br><br>Default: Code entered on the Library Definition.<br><br>NOTE: This value may be overridden on the occurrence Definition.<br><br>SHIFT TO UPPERCASE FOR PRINTED ERROR MESSAGES<br>---<br>Error messages are printed in uppercase characters with the UPC command. |
| | | 1 | YES. |
| | | 0 | NO (Default option). |
| 16 | 1 | | CONTROL CARDS AFTER MAP<br><br>Screen and C/S Screen entities:<br><br>The one-character code that identifies the job card to be inserted after each generated Screen or Screen c/s map. |
| | | $ | No generation of map.<br><br>NOTE: This field is not used in a Pacbench C/S development with the specification of Folder. |

| NUM | LEN | CLASS VALUE | DESCRIPTION OF FIELDS AND FILLING MODE |
|---|---|---|---|
| | | | Business Component / single-view (with no specification of Folder).<br><br>Option code which selects the JCL lines to be inserted after the Services Manager generated. |
| 17 | 1 | | SELECTION OF KEYWORD TYPE |
| | | blank | Selection on both implicit and explicit keywords. |
| | | L | Selection on implicit keywords only. |
| | | M | Selection on explicit keywords only. |
| 18 | 1 | | DOCUMENT SELECTIVE PRINT REQUEST<br><br>Field displayed with PCV command only.<br><br>NOTE: Applicable only when the Volume has a Chapter/ Subchapter Description Organization Mode (Value '0' in corresponding field in Volume Definition). |
| | | blank | Print the whole Volume (default value) |
| | | C | Print the selected chapter (see next field) |
| | | S | Print the selected subchapter (see next two fields) |
| 19 | 2 | | CODE OF THE CHAPTER TO BE PRINTED<br><br>Field displayed with PCV command only.<br><br>Code of the chapter to be printed, or the chapter that contains the subchapter to be printed. |
| 20 | 2 | | CODE OF THE SUBCHAPTER TO BE PRINTED<br><br>Field displayed with PCV command only.<br><br>Code of the subchapter to be printed. |
| 21 | 8 | | CODE OF RECIPIENT USER FOR JCL COPY<br><br>This field is reserved for on-line use.<br><br>If you have a 4-level authorization, this field allows you to initialize another user's JCL lines.<br>To do so, when the JCL lines are displayed, override your user code with that of the other user. Press the ENTER key. |

## 2.3.4. GPRT: USER INPUT AND RESULTS

### GPRT: INPUT-RESULTS

#### USER INPUT

The GPRT procedure requires the following input:

- . User identification line (required),
- . One line for each generation or print request,
- . An optional line (' +AG') which takes into account the on-line requests already entered.

Any other type of transaction is ignored.

For more details on the structure of generation-print commands, refer to the above sections.

#### RESULTS

There are two types of results:

- . A report listing the requests,
- . All printing requested.

Requests are sorted by user/library and are preceded by a 'banner' (title page).

The GPRT procedure sends a general return code:

| R.C. | MEANING |
|---|---|
| 4 | OK with generation of source code |
| 6 | OK with generation of source code and personalized documentation or error messages |
| 8 | OK with generation of personalized documentation or error messages |
| 10 | OK without generation |
| 12 | Input-Output error |
| 16 | Sort error |

NOTE: This procedure does not increment the session number.

## 2.3.5. GPRT : PROCESSING OF OUTPUT FILES

### PROCESSING OF OUTPUT FILES

Three types of files are produced in output of the GPRT procedure.

### TECHNICAL PRINT FILES

These are the print files PAC7IA, PAC7ID and PAC7IH, which are systematically printed at the end of the procedure, according to the PRINT SSG parameter.

### GENERATED COBOL FILES

These files are automatically submitted for execution by the PACB program, via the +ADD command (or any other command authorized by the CSF primitive), specified in the EXGEN SSG parameter. The PACB program replaces the FILEID value contained in the EXEGEN variable by the name of the file to be processed.
The processing operations included in control cards are then executed immediately after the end of the PACB program. Files PAC7GB (command GCB), PAC7GQ (GSQ), PAC7GE (GCO), PAC7GR (GSP), PAC7GP (GCP), PAC7GD (GCD), PAC7GG (GGC), PAC7GV (GGS) and PAC7GI (GCI) are processed this way. They are temporary files and are deleted at the end of the procedure.

```
    Example: When submitting a GCP command,

the command                        : @ADD,L $QUALT*FILEID.
will be automatically changed into: @ADD,L $QUALT*PAC7GP.

and the commands (output from the front/back cards) of
the temporary file are then executed before the file
is deleted.
```

USER PRINT FILES

These temporary files are processed by a command file, specified in the EXEPRT SSG parameter. The PACB program replaces the FILEID value contained in the EXEPRT value by the name of the file to be processed.

(ex: ''@ADD,L $QUAL*$LIBECL.EXEFILEID'' becomes
''@ADD,L $QUAL*$LIBECL.EXEPAC7IN'' for a manual)

This command file is not provided. It must contain commands to print the files, and possibly, to process other generated files.

| Command | Printout | Output files |
|---|---|---|
| GEC/LEC | PAC7IK | PAC7GK (C/S error messages) |
| GEO/LEO | PAC7IL | PAC7GL (user error messages) |
| | | PAC7GT (PAW documentation) |
| PCU | PAC7IM | PAC7GM |
| PCV | PAC7IN | PAC7GN |

EXAMPLES OF PROCESSING

User error messages:

The $QUAL*$LIBECL.EXEPAC7IL file can contain commands for the copy and printing of the PAC7IL file, as well as a copy of PAC7GL onto PAC7LG, if PAC7GL exists, and a command for the transfer of PAC7GT, if PAC7GT exists.

In the GPRT procedure, indicate the name of the current error message file in the ERRMSG SSG variable:

ERRMSG $QUALU*ERRMSG

When the error messages are generated for the first time, the file must have been created and initialized:

```
       @CAT,P     $QUALU*ERRMSG.,///10000
       @ED,IQ     $QUALU*ERRMSG.
       ZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ
       @EOF

File $QUAL*$LIBECL.EXEPAC7IL
       @SSG,L
       SKEL
       #COPY      $QUALT*PAC7GL.,PAC7LG.
       #CYCLE     $QUALU*[INFO$,1,4,1]IL,3
       #CAT,P     $QUALU*[INFO$,1,4,1]IL(+1).
       #COPY      $QUALT*PAC7IL.,$QUALU*[INFO$,1,4,1]IL
       #SYM,U     $QUALU*[INFO$,1,4,1]IL.,,$DEVICE
       @EOF
       @EOF
Generated Volumes:
File    $QUAL*$LIBECL.EXEPAC7IN
       @SSG,L
       SKEL
       #CYCLE     $QUALU*[INFO$,1,4,1]IN,3
       #CAT,P     $QUALU*[INFO$,1,4,1]IN(+1).
       #COPY      $QUALT*PAC7IN.,$QUALU*[INFO$,1,4,1]IN
       #SYM,U     $QUALU*[INFO$,1,4,1]IN.,,$DEVICE
       @EOF
       @EOF
```

## COMPATIBILIY WITH PREVIOUS RELEASES

The previous releases of VA Pac processed the generated COBOL files by the '@START' command, by creating a new batch job.

The current release operates a standard processing of these files via the '@ADD' command which only creates new steps in the generation procedure. The control cards in front/back of the program must then be modified in order to take this processing into account: suppress the line '@RUN', make sure that the other processing operations will be be executed in case of an error in the lines in front/back of the program (@SETC,I).

However, you may use the lines in front/back of the programs of the previous relesases, via the folowing method:

```
GPRT : EXEGEN ''@ADD,L $QUAL*$LIBECL.EXEFILEID''

GPRT will submit the file $QUAL*$LIBECL.EXEPAC7GP if there
is a GCP command.

Contents of the $QUAL*$LIBECL.EXEPAC7GP file to be written:
    @SSG,L
    @SKEL
    #DELETE,C $QUALU*[INFO$,1,4,1]PACGP.
    #CAT,P    $QUALU*[INFO$,1,4,1]PACGP.
    #ASG,AX   $QUALU*[INFO$,1,4,1]PACGP.
    #COPY     $QUALT*PAC7GP.,$QUALU*[INFO$,1,4,1]PACGP.
    #START    $QUALU*[INFO$,1,4,1]PACGP.
    #FREE     úQUALU*[INFO$,1,4,1]PACGP.
    @EOF
    @EOF
```

## SYMBOLICS IN USE

| SYMBOLICS | MEANING |
|---|---|
| USER | Suffix of technical reports |
| EXEGEN | Command for the processing of generated files<br>The string FILEID is replaced by the name of the file to be processed |
| EXEPRT | Command for the processing of print files<br>The string FILEID is replaced by the name of the file to be processed |
| ERRMSG | Input file of dialog messages |
| ERRCS | Input file of client/server messages |
| SPAGN | Size of generated files |
| SPAPR | Size of technical print files |
| USERLIB | Dynamic call files |

SPECIFIC COMMAND LINES

The user must enter four command lines on the Generation and Print Commands (GP) screen in the 'C4' option.

These command lines must have a line number lower than 600,000.

Line 1: *F* USER-FILE
Line 2: *** ACCOUNT/USERID
Line 3: *0*
Line 4: *I*

ACCOUNT/USERID is the user account number and userid in DEMAND mode.

USER-FILE is the file chosen by the user.

The first three characters of each of these lines (*F*,...) must be left-justified. The places of these two variables (USER-FILE, ...) are not fixed.

VALIDATED COMMAND LINES FILE: LINE 1

The USER-FILE contains, in the following order:

- Lines with line numbers lower than 600,000,

- GPRT request lines,

- JCL Lines with line numbers greater than 600,000.

(only if these lines have been validated).

If line 4 is validated, the lines of the follow-up procedure in the backlog are also included. The four command lines are not included in this file.

Line 1 allows the user to choose the file. The default value for the file is PACTP*USERX (USERX is the user code padded with X's up to eight characters).

NOTES: The file must be cataloged. Otherwise, the message 'FILE NOT AVAILABLE' is displayed.

It must be initialized when created, with +ED,IQ.

When the file is not available, the transaction waits until the file is free.

AUTOMATIC SUBMISSION: LINE 2

There are two submission modes:

ADD USER-FILE is built, user must submit the job in DEMAND mode,

SUB (or JOB) USER-FILE is automatically started. The job is normally executed if the user has entered and validated line 2.

FILE CHECK: LINE 3

The file is considered executed if the last line is not 'NOT AVAILABLE'.

When the command JOB, USE or ADD is transmitted, the tran- saction reads the last line of the USER-FILE before writing the validated requests.

If the last line is 'NOT AVAILABLE', the file is not modified. The error message 'FILE STILL IN THE BACKLOG' is displayed.

The user may validate line 3 in order to cancel this check.

BACKLOG FOLLOW-UP PROCEDURE: LINE 4

When line 4 is validated, the follow-up procedure is written in the USER-FILE after the validated JCL and GPRT request command lines.

This procedure includes

. 'NOT AVAILABLE' command line

. Command which deletes the line when the file is executed.

NOTE: In case of error on the file (non-existing file, or file not executed), requests are not executed but lines are still validated.

```
EXAMPLE OF GPRT SUBMISSION

FILES IN USE :

*$LIBECL.GPRT/SKL contains the parameterized skeleton for
 the GPRT procedure.

*GPRTMB. contains validated generation-print requests.
```

EXAMPLE OF JCL LINES

At the beginning of the job stream (line number < 600,000 GP screen, option C4)

```
@RUN,E/TR  GPRT,$COMPT,$QUAL,$TIME
@QUAL       $QUAL
@ .        FRONT/BACK CONTROL LINES
@ .        ------------------------
@ .
*F*         CGI.
***         123/CGI
*I*
@ .
@ .        CREATION OF TRANSACTION FILE
@ .        ---------------------------
@ .
@ASG,T     *GPRTMB.
@ED,IQ     *GPRTMB.
```

At the end of the job stream (Line number > 600,000 in GP screen, option C4):

```
@EOF
@ .
@ .        SSG SUBMISSION
@ .        --------------
@ .
@SSG,A     *$LIBECL.GPRT/SKL
SGS
USER        CGI
USERLIB     $QUAL*$LIBRELB
QUAL        $QUAL
QUALT       $QUALT
QUALR       $QUALR
QUALU       $QUALU
BFILE       $LIBABSB
PRINT       ''  .   ''     $DEVICE
NBCYC       $NBCYC
SPAWK       500
SRTWK       300,R$CORE
SPAXA       1000
SPAGN       1000
SPAPR       500
EXEGEN      @ADD,L $QUALT*FILEID''.''
EXEPRT      @ADD,L $LIBECL''.''EXEFILEID
ERRMSG      $QUALU*ERRMSG
ERRCS       $QUALU*ERRCS
@EOF
@EOF
```

2.3.6. GPRT: DESCRIPTION OF STEPS

## GPRT : DESCRIPTION OF STEPS

GENERATION AND PRINTING: PACB

The general characteristics of this step are described in the preceding subchapter.

The generated documentation depends on the generation-printing requests taken into account. Therefore, the volume of the generated documentation and of the temporaty files is extremely variable. Banners at the beginning and at the end of user documentation, which display the user code, facilitate the distribution of printouts back to their authors.

## 2.3.7. GPRT: PROCESSING OF JOB STREAMS

```
#QUAL              [QUAL,1,1,1]
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C         [QUALR,1,1,1]*[USER,1,1,1]GPRTEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*[USER,1,1,1]GPRTEI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                 PROGRAM PACB
# .                 ************
#ASG,A             *SG.
#USE               PAC7SG.,*SG.
#ASG,A             *SR.
#USE               PAC7SR.,*SR.
#ASG,A             *SC.
#USE               PAC7SC.,*SC.
#ASG,A             *SS.
#USE               PAC7SS.,*SS.
#USE               PAC7LG.,[ERRMSG,1,1,1].
#ASG               PAC7LG.
#USE               PAC7LK.,[ERRCS,1,1,1].
#ASG               PAC7LK.
#ASG,T             [QUALT,1,1,1]*PAC7GL.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GK.,///[SPAGN,1,1,1]
#USE               PAC7ME.,*GPRTMB.
#ASG,T             [QUALT,1,1,1]*PAC7MG.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7JG.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7LI.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7SO.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GB.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GD.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GE.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GI.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GG.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GM.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GN.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GO.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GP.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GQ.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GR.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GT.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GV.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7IK.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7IL.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7IM.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7IN.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7BM.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7EB.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7EE.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7EG.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7EN.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7EP.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7EQ.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7ER.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7EV.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7EY.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KB.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KD.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KE.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KF.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KG.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KM.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KN.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KP.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KQ.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KR.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KS.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KU.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KV.,///[SPAWK,1,1,1]
```

```
    #ASG,T             [QUALT,1,1,1]*PAC7WA.,///[SPAWK,1,1,1]
    #ASG,T             [QUALT,1,1,1]*PAC7W1.,///[SPAWK,1,1,1]
    #ASG,T             [QUALT,1,1,1]*PAC7W2.,///[SPAWK,1,1,1]
    #ASG,T             [QUALT,1,1,1]*PAC7W3.,///[SPAWK,1,1,1]
    #ASG,T             [QUALT,1,1,1]*PAC7W4.,///[SPAWK,1,1,1]
    #ASG,T             [QUALT,1,1,1]*PAC7W5.,///[SPAWK,1,1,1]
    #ASG,T             [QUALT,1,1,1]*PAC7W6.,///[SPAWK,1,1,1]
    #ASG,T             [QUALT,1,1,1]*PAC7W7.,///[SPAWK,1,1,1]
    #ASG,T             [QUALT,1,1,1]*PAC7W8.,///[SPAWK,1,1,1]
    #ASG,T             [QUALT,1,1,1]*PAC7W9.,///[SPAWK,1,1,1]
    *INCREMENT S TO [SRTWK,1]
    #ASG,T             [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
    *LOOP
    #CYCLE,C   [QUALR,1,1,1]*[USER,1,1,1]PAC7II.,[NBCYC,1,1,1]
    #USE        PAC7II.,[QUALR,1,1,1]*[USER,1,1,1]PAC7II(+1).
    #CAT,P      PAC7II.,///[SPAPR,1,1,1]
    #ASG,AX     PAC7II.
    #CYCLE,C   [QUALR,1,1,1]*[USER,1,1,1]PAC7IH.,[NBCYC,1,1,1]
    #USE        PAC7IH.,[QUALR,1,1,1]*[USER,1,1,1]PAC7IH(+1).
    #CAT,P      PAC7IH.,///[SPAPR,1,1,1]
    #ASG,AX     PAC7IH.
    #CYCLE,C   [QUALR,1,1,1]*[USER,1,1,1]PAC7ID.,[NBCYC,1,1,1]
    #USE        PAC7ID.,[QUALR,1,1,1]*[USER,1,1,1]PAC7ID(+1).
    #CAT,P      PAC7ID.,///[SPAPR,1,1,1]
    #ASG,AX     PAC7ID.
    #CYCLE,C   [QUALR,1,1,1]*[USER,1,1,1]PAC7IA.,[NBCYC,1,1,1]
    #USE        PAC7IA.,[QUALR,1,1,1]*[USER,1,1,1]PAC7IA(+1).
    #CAT,P      PAC7IA.,///[SPAPR,1,1,1]
    #ASG,AX     PAC7IA.
    # .
    *IF [USERLIB]
    #ASG               [QUALU,1,1,1]*GS.
    #USE               PAC7GS.,[QUALU,1,1,1]*GS.
    #ASG,T             [QUALT,1,1,1]*DYNLIB.
    #SSDP,S           ,[QUALT,1,1,1]*DYNLIB.SSDEF$
                DEFINE LSC $LOCAL
                SEARCH HOME$
    *INCREMENT N TO [USERLIB]
                SEARCH [USERLIB,N,1,1].
    *LOOP
    #USE        LINK$PF,[QUALT,1,1,1]*DYNLIB.
    *ENDIF
    # .
    #XQT              *[BFILE,1,1,1].PACB
    EXEGEN [EXEGEN,1,1,1,6,9,9]
    EXEPRT [EXEPRT,1,1,1,6,9,9]

    # .
    #TEST        TLE/17/S5
    #JUMP        ERRFAT
    # .
    #[PRINT,1,1,1]     PAC7IA.,,[PRINT,1,2,1]
    #FREE              PAC7IA.
    #[PRINT,1,1,1]     PAC7ID.,,[PRINT,1,2,1]
    #FREE              PAC7ID.
    #[PRINT,1,1,1]     PAC7IH.,,[PRINT,1,2,1]
    #FREE              PAC7IH.
    #[PRINT,1,1,1]     PAC7II.,,[PRINT,1,2,1]
    #FREE              PAC7II.
    # .
    #JUMP        SAUT
    # .
    #ERRFAT:
    # .
    #MSG,N ****** FATAL ERROR IN PROCEDURE GPRT ******
    # .
    #TEST        TLE/37/S5
    #JUMP        SAUT
    # .
    #[PRINT,1,1,1]    PAC7EI.,,[PRINT,1,2,1],,[USER,1,1,1]GPRTEI
    # .
    #SAUT:
    # .
```

```
    *IF [USERLIB]
    #FREE               LINK$PF.
    *INCREMENT N TO [USERLIB]
    #FREE             [USERLIB,N,1,1].
    *LOOP
    *ENDIF
    #FREE               PAC7EI.
    #FREE               PAC7SG.
    #FREE               PAC7SR.
    #FREE               PAC7SC.
    #FREE               PAC7SS.
    #FREE               PAC7GS.
    #FREE               PAC7LG.
    #FREE               PAC7LK.
    #FREE [QUALT,1,1,1]*PAC7GK.
    #FREE [QUALT,1,1,1]*PAC7GL.
    #FREE               PAC7ME.
    #FREE [QUALT,1,1,1]*PAC7MG.
    #FREE [QUALT,1,1,1]*PAC7JG.
    #FREE [QUALT,1,1,1]*PAC7LI.
    #FREE [QUALT,1,1,1]*PAC7SO.
    #FREE [QUALT,1,1,1]*PAC7GB.
    #FREE [QUALT,1,1,1]*PAC7GD.
    #FREE [QUALT,1,1,1]*PAC7GE.
    #FREE [QUALT,1,1,1]*PAC7GG.
    #FREE [QUALT,1,1,1]*PAC7GI.
    #FREE [QUALT,1,1,1]*PAC7GM.
    #FREE [QUALT,1,1,1]*PAC7GN.
    #FREE [QUALT,1,1,1]*PAC7GO.
    #FREE [QUALT,1,1,1]*PAC7GP.
    #FREE [QUALT,1,1,1]*PAC7GQ.
    #FREE [QUALT,1,1,1]*PAC7GR.
    #FREE [QUALT,1,1,1]*PAC7GT.
    #FREE [QUALT,1,1,1]*PAC7GV.
    #FREE [QUALT,1,1,1]*PAC7BM.
    #FREE [QUALT,1,1,1]*PAC7EB.
    #FREE [QUALT,1,1,1]*PAC7EE.
    #FREE [QUALT,1,1,1]*PAC7EG.
    #FREE [QUALT,1,1,1]*PAC7EN.
    #FREE [QUALT,1,1,1]*PAC7EP.
    #FREE [QUALT,1,1,1]*PAC7EQ.
    #FREE [QUALT,1,1,1]*PAC7ER.
    #FREE [QUALT,1,1,1]*PAC7EV.
    #FREE [QUALT,1,1,1]*PAC7EY.
    #FREE [QUALT,1,1,1]*PAC7KB.
    #FREE [QUALT,1,1,1]*PAC7KD.
    #FREE [QUALT,1,1,1]*PAC7KE.
    #FREE [QUALT,1,1,1]*PAC7KF.
    #FREE [QUALT,1,1,1]*PAC7KG.
    #FREE [QUALT,1,1,1]*PAC7KM.
    #FREE [QUALT,1,1,1]*PAC7KN.
    #FREE [QUALT,1,1,1]*PAC7KP.
    #FREE [QUALT,1,1,1]*PAC7KQ.
    #FREE [QUALT,1,1,1]*PAC7KR.
    #FREE [QUALT,1,1,1]*PAC7KS.
    #FREE [QUALT,1,1,1]*PAC7KU.
    #FREE [QUALT,1,1,1]*PAC7KV.
    #FREE [QUALT,1,1,1]*PAC7WA.
    #FREE [QUALT,1,1,1]*PAC7W1.
    #FREE [QUALT,1,1,1]*PAC7W2.
    #FREE [QUALT,1,1,1]*PAC7W3.
    #FREE [QUALT,1,1,1]*PAC7W4.
    #FREE [QUALT,1,1,1]*PAC7W5.
    #FREE [QUALT,1,1,1]*PAC7W6.
    #FREE [QUALT,1,1,1]*PAC7W7.
    #FREE [QUALT,1,1,1]*PAC7W8.
    #FREE [QUALT,1,1,1]*PAC7W9.
    *INCREMENT S TO [SRTWK,1]
    #FREE [QUALT,1,1,1]*[SRTWK,1,S,2].
    *LOOP
    #FREE [QUALT,1,1,1]*PAC7IK.
    #FREE [QUALT,1,1,1]*PAC7IL.
    #FREE [QUALT,1,1,1]*PAC7IM.
```

```
#FREE [QUALT,1,1,1]*PAC7IN.
#FREE             *[BFILE,1,1,1].
```

2.3.8. PPAF: PAF PRE-PROCESSOR
2.3.8.1. PPAF: INTRODUCTION

PPAF: PAF PRE-PROCESSOR OF GENERATED PROGRAMS

PPAF: INTRODUCTION

Using PAF operators, the PPAF procedure processes generated user programs containing SQL requests for access to the Database.

EXECUTION CONDITIONS

None.

IMPLEMENTATION

This procedure may be executed in different ways:

- Either after program generation using the GPRT procedure, whose output is retrieved and used as input to PPAF, before compilation or storage in a source program library,

- Or by requesting the procedure in the Optional Control Cards in front/in back of generated program; the appropriate JCL must have been previously entered in the selected options, which are updated via the user parameter update transaction or the PARM batch procedure.

## 2.3.9. PPAF: USER INPUT

### PPAF: USER INPUT

#### USER INPUT

User input is the COBOL source code of programs containing PAF operators to be processed by the pre-processor before compilation.

After the IDENTIFICATION DIVISION, each program contains a command line for the pre-processor. This line is automatically generated by the GPRT procedure. Its structure is as follows :

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 1 | 6 | nnnnnn | COBOL line number |
| 7 | 1 | '*' | Comment |
| 8 | 5 | 'TP ' | On-line program OR |
| | | 'BATCH' | Batch program |
| 13 | 6 | 'LIB:' | Fixed label |
| 19 | 3 | bbb | Library code |
| 22 | 1 | blank | Not used |
| 23 | 5 | nnnns | Session number - Session version |
| 28 | 1 | blank | Not used |
| 29 | 2 | -- | Generation variant(s) |
| 31 | 5 | 'AR:' | Fixed label |
| 36 | 1 | 1 | Database language code |
| 37 | 5 | 'SC:' | Batch Language program skeleton |
| | | 'SG:' | On-line program skeleton |
| | | 'SR:' | COBOL program skeleton |
| 42 | 1 | 1 | Skeleton language |
| 43 | 1 | blank ' | Not used |
| 44 | 6 | 'SINGLE' | Single quotes OR |
| | | 'DOUBLE' | Double quotes |

EXAMPLES

```
000020*TP    LIB: APP 2345   00 AR: F SG: F SINGLE

000020*BATCH LIB: APP 2300T  4  AR: F SC: F DOUBLE
```

This line is automatically generated by the GPRT procedure.

#### PRINTED OUTPUT

This procedure prints an error report.

#### RESULT

The result of the PPAF procedure is the COBOL source in which PAF operators have been processed and calls to PAF batch or on-line sub-programs have been generated.

## 2.3.10. PPAF: DESCRIPTION OF STEPS

### PPAF: DESCRIPTION OF STEPS

```
PREPROCESSOR: PAFP10

.Permanent input files:
 -Data file
  PAC7AR
 -Index file
  PAC7AN
 -Error message file
  PAC7AE

.Input file:
 -Generated programs
  PAF80

.Output files:
 -Generated programs to be compiled
  COB80

.Output report:
 -Execution report
  PAFREP
```

NOTES: If the generated flow contains compilation control lines, when the PPAF procedure is executed after a GPRT procedure, it is sufficient to run USE PAF80.,PAC7GP. for batch generated code, or USE PAF80.,PAC7GE. for on-line generated code.

### IMPLEMENTATION OF PAF PROGRAM

The program obtained via the PPAF procedure must be compiled with the UCOB compiler.
The user program uses specific PAF access sub-programs, and the VA Pac Database access sub-programs. So you must specify to the linker, either for a static link (clause RESOLVE USING of link) or for a dynamic link (clause SEARCH of SSDP), the files which contain these sub-programs, i.e.:

```
    For PAF sub-programs:
        PBBTST and/or PBBTWS in $QUAL*$LIBRELB
    For accesses to the VA Pac Database (DMS or SFS)
        PUINDX              in $QUAL*$LIBBASE
    For accesses to the Database (all  supports)
        PUACCESS            in $QUAL*$PACSSCH
```

## 2.3.11. PPAF: EXECUTION JCL

```
#QUAL              [QUAL,1,1,1]
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*PPAFEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*PPAFEI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                PAFP10
# .                ******
# .
#USE               PAF80.,*PPAFMB.
#CYCLE,C          [QUALR,1,1,1]*PPAFREP.,[NBCYC,1,1,1]
#USE               PAFREP.,[QUALR,1,1,1]*PPAFREP(+1).
#CAT,P             PAFREP.
#ASG,AX            PAFREP.
#ASG,T             COB80.,///[SPAWK,1,1,1]
#XQT              *[BFILE,1,1,1].PAFP10
# .
#TEST   TLE/17/S5
#JUMP   ERRFAT
# .
#[PRINT,1,1,1]     PAFREP.,,[PRINT,1,2,1],,PPAFREP
#FREE              PAFREP.
#FREE              PAF80.
# .
#JUMP   SAUT
# .
#ERRFAT:
# .
#MSG,N ****** FATAL ERROR IN PROCEDURE PPAF ******
# .
#TEST   TLE/37/S5
#JUMP   SAUT
# .
#[PRINT,1,1,1]   PAC7EI.,,[PRINT,1,2,1],,PPAFEI
# .
#SAUT:
# .
#FREE         PAC7EI.
#FREE             *[BFILE,1,1,1].
```

## *2.4. PACX: EXTRACTION FROM THE VA PAC DATABASE*

### 2.4.1. PACX: INTRODUCTION

PACX: INTRODUCTION

The PACX procedure extracts data from the VisualAge Pacbase Database in the form of transactions. These transactions can then be used as input to one of the following procedures:

```
. UPDT
. UPDP
. CPSN (If the optional LCU PARTITIONED DATABASE
        MANAGER utility is available.)
```

EXECUTION CONDITIONS

None, since the database is not directly updated by this procedure.

The authorization level is specified for each extractor.

## 2.4.2. PACX: USER INPUT COMMON TO ALL EXTRACTORS

PACX: USER INPUT COMMON TO ALL EXTRACTORS

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 2 | 1 | '*' | Line code |
| 3 | 8 | uuuuuuuu | User code |
| 11 | 8 | pppppppp | Password |
| 19 | 3 | bbb | Extraction-library code, or target-library code if RMEN with upload |
| 22 | 4 | nnnn | Session number (blank=current ses.) |
| 26 | 1 | T | Session status if Test session |
| 28 | 1 | l | Language code (A=english, F=french) |
| 29 | 4 | cccc | Extractor code |
| 33 | 1 | '1' | Formatting for UPDT |
| | | ' ' | No formatting for UPDT |
| 34 | 1 | '1' | Formatting for UPDP (PAF) |
| | | ' ' | No formatting for UPDP (PAF) |
| 35 | 1 | '1' | Formatting for CPSN |
| | | ' ' | No formatting for CPSN |
| 40 | 3 | ppp | DSMS Product Code |
| 43 | 6 | nnnnnn | DSMS Change number |
| | | | (DSMS Function only) |
| 49 | 1 | | Lock processing |
| | | ' ' | Lock extraction: user code |
| | | | = '*'-line user code |
| | | '1' | No lock extraction |
| | | '2' | Lock extraction: user code |
| | | | = original user code |
| 50 | 1 | ' ' | No transfer of password |
| | | '1' | Password transfer |
| 69 | 3 | bbb | Library code for the '*'-line of the output file(s) |
| | | | (For EXTR,EXLI, and EXUE only) |
| 76 | 5 | nnnnT | Session number for the '*'-line of the output file(s) |
| | | | (For EXTR,EXLI, and EXUE only) |

Possible values for the extractor code include:

- EXLI: Extraction of libraries or library sub-networks
- EXTR: Extraction of entities
- EXTA: Extraction of entities (extracted transactions are sorted, according to the input identification lines order. Each request is thus preceded by a '*' line, extracted transactions will be sorted in the request order).
- EXPJ: Extraction of Journal (formatting for CPSN is not possible)
- EXPU: Extraction of entities to be purged (formatting for CPSN is not possible)
- EXUE: Extraction of UEO's.
- RMEN: Extraction of entitites for upload/replacement/ recoding (formatting for CPSN is not possible). RMEN is subject to a separate purchase agreement.

I M P O R T A N T:

- One extractor type only for each run: If the procedure detects more than one type of extractors, it will take only the first one into account.

- One formatting type only for each run: If the procedure detects more than one type of formatting, it will take only the first one into account.

- Formatting for CPSN: This procedure is part of the LCU Partitioned Database Manager optional utility. Its use is therefore subject to a special licence contract.

- Maximum number of input '*' cards : 99

PRINTED RESULT:

The PACX procedure produces:

. A report containing the list of executed programs and the number of generated transactions.
. A list of requests with possible associated errors.
. One or several execution reports depending on the type of extractor.

2.4.3. EXLI: LIBRARY EXTRACTION
2.4.3.1. EXLI: INTRODUCTION

## EXLI: LIBRARY EXTRACTION

### EXLI: INTRODUCTION

The EXLI procedure extracts a complete library from the database and transforms it in transactions which are used in the update or comparison procedures.

The file obtained --according to its formatting-- can be used as input to the UPDT, UPDP or CPSN procedures.

#### EXECUTION CONDITIONS

None, since the database is not directly updated.

However, if DESIGN entities are used, then locked, they must be reloaded in the database before the extraction.

Batch-procedure access authorization option: level 2 is required.

2.4.4. EXLI: USER INPUT

EXLI: USER INPUT

No specific line, but as many '*'-lines as there are libraries to be extracted in the sub-network.

PRINTED OUTPUT

The extractor prints:

. A list of extracted libraries with the number of records for each library,

. The details of records extracted for each library.

2.4.5. EXTR: ENTITY EXTRACTION
2.4.5.1. EXTR: INTRODUCTION

## EXTR / EXTA : ENTITY EXTRACTION

### EXTR / EXTA : INTRODUCTION

The EXTR extractor type allows for selection of the whole entities or parts of entities.

If the request is of the 'ALL' type, the whole entity is extracted, i.e. the entity itself but also all the entities it uses, as well as entities used by those, and so on. Used entities that are not cross-referenced are not extracted.

Depending on the type of formatting requested, the resulting file can be used as input to the UPDT, UPDP or CPSN procedures (if the request is of the 'ALL', 'ONLY' or 'EXPT' type; the formatting for CPSN is not allowed). For EXTA, the formatting is forced to UPDT. It is therefore possible to compare entities.

#### EXECUTION CONDITIONS

None, since the database is not directly updated.

Batch-procedure access authorization option: level 2 is required.

## 2.4.6. EXTR: USER INPUT

EXTR / EXTA : USER INPUT

USER INPUT
One or two command lines per entity to be extracted.

First line :

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 2 | 1 | 'W' | Line code |
| 3 | 1 | '1' | Line number |
| 4 | 2 | 'EX' | |
| 6 | 1 | | Library selection code: |
| | | 'U' | Library alone |
| | | 'C' | Library and its upper-level libraries |
| | | '+' | Library and its upper-level libraries with identification lines ('*' lines) generation |
| 7 | 25 | Choice | Entity to be extracted, coded in the same way as the 'Choice' field in TP. |
| 32 | 4 | | Extraction type: |
| | | '  ' | Entity alone (required for EXTA) |
| | | 'ALL ' | Entity and used entities |
| | | 'ONLY' | Entity and only used entities whose types are specified in the following part of the line |
| | | 'EXPT' | Entity and used entities, except those whose types are specified in the following part of the line |
| 36 | | | 15-position table (3 char./position) containing exceptions or selections |
| | | | 'DEL': Data Element |
| | | | 'DBD': Database Block |
| | | | 'DST': Data Structure |
| | | | 'SEG': Segment |
| | | | 'RPT': Report |
| | | | 'TXT': Text |
| | | | 'VOL': PDM Volume |
| | | | 'MAN': User Manual |
| | | | 'PGM': Program |
| | | | 'DLG': Dialog |
| | | | 'SCR': Screen |
| | | | 'PIA': P.I.A. |
| | | | 'MET': Methodology |

First line (continued)

| | | | | | |
|---|---|---|---|---|---|
| ! | ! | ! | ! | 'UEN': | User Entity ! |
| ! | ! | ! | ! | 'URE': | User-defined Relationship ! |
| ! | ! | ! | ! | '$tt': | User Entity Occurrence ! |
| ! | ! | ! | ! | | ( tt = occurr. type code) ! |

Second line (continuation line for selections and exceptions):

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 2 | 1 | 'W' | Line code |
| 3 | 1 | '2' | Line number |
| 36 | | | 15-position table (3 characters per position) containing the exceptions or selections |

(*) The EXTR procedure also works with choices that are specific to the WorkStation. These choices must be entered from the eigth position, in the following way:

_W1EX_U//A_CCCXXXXXX

where A is the methodology code and CCC the entity local code.

The use of the 'multi-layered extractor' option ('ALL', 'EXPT' or 'ONLY' extraction type is subject to a purchase agreement. For EXTA, this field value must be blank.

If the extraction type is not specified, the extraction of a Data Structure extracts the Data Structure only. This field must therefore be completed if Segments (or Reports) for that Data Element are to be extracted also. Similarly, for a Dialog and its Screens, or a User Entity and its Occurrences, this field must be completed.

The extraction stops at the first selection or exclusion level.

Example: Extraction of a Program with 'EXTPSEG' - The Data Elements used by Segments used by the Program are not extracted since the extractor does not consider those segments.

PRINTED OUTPUT

The procedure produces:

. A list of extracted entities:
- Sorted for EXTR,
- In the order of the requests for EXTA.

2.4.7. EXPJ: TRANSACTION EXTRACTION FROM THE JOURNAL
2.4.7.1. EXPJ: INTRODUCTION

EXPJ: INTRODUCTION

The EXPJ procedure has a two-fold action:

. It converts the Journal file into update transactions with possible selection from a range of dates, sessions, libraries, etc.

. It prints out a listing of the contents of the archived Journal file, using the same criteria.

Its main purpose is to retrieve transactions associated with one database in order to update another database.

It is executed on the archived Journal file (PJ).

EXECUTION CONDITIONS

Batch procedure access authorization option:
. level 2 is required.

Password transfer option ('*'-line col. 50 = 1):
. database access authorization level 4 is required.

2.4.8. EXPJ: USER INPUT

EXPJ: USER INPUT

USER INPUT

User entry specific to this procedure and specifying the extraction characteristics.

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 1 | 'J' | Line code |
| 3 | 1 | 'S' | Selection on session number |
| | | 'D' | Selection on date |
| 4 | 1 | ' ' | Chronological sort |
| | | 'N' | No chronological sort |
| 5 | 1 | ' ' | Sort by user |
| | | 'N' | No sort by user |
| 6 | 1 | ' ' | Sort by Library |
| | | 'N' | No sort by library |
| 7 | 8 | uuuuuuuu | User code for batch update |
| 15 | 8 | pppppppp | User password |
| 23 | 4 | dddd | Session number: beginning (if 'S') |
| 27 | 4 | ffff | Session number: end (if 'S') |
| 31 | 8 | CCYYMMDD | Date of beginning of select.(if 'D') |
| 39 | 8 | CCYYMMDD | Date of end of selection (if 'D') |
| 47 | 1 | | Version of selected transactions |
| | | ' ' | Selection of all sessions |
| | | 'Z' | Selection of current session |
| | | 'T' | Selection of frozen session |
| 48 | 3 | 'bbb' | Code of selected library |
| 51 | 5 | 'ssssT' | Selection of T-type session (test version of frozen session:'ssssT') |
| 56 | 3 | ppp | DSMS Product Code |
| 59 | 6 | nnnnnn | DSMS Change number (Selection by change number-DSMS) |
| 65 | 6 | HHMMSS | Starting time |
| 71 | 6 | HHMMSS | Ending time |

REPORTS

.The list of selection options used,
.The list of selected transactions, if requested.

RESULT

In the case of a request for conversion of the Journal entries into transactions, the result of the EXPJ procedure is a sequential file containing all selected transactions.

2.4.9. EXPU: EXTRACTION OF UNUSED ENTITIES FOR PURGE
2.4.9.1. EXPU: INTRODUCTION

EXPU: INTRODUCTION

The EXPU utility purges unused entities from a database.

Two types of purges are possible:

-'Logical' purge of entities which have become obsolete;

-'Physical' purge of entities which have never been used.

TERMINOLOGY

FINAL ENTITIES:

These entities, which are not used by other entities, include:

. Programs ('P' entity);

. Screens, C/S Screens, Business Components, etc., ('O' entity);

. User manuals ('U' entity);

. Volumes ('V' entity);

. User Entity Occurrences ('$' entity);

. Database blocks ('B' entity).

FREE-TYPE CROSS-REFERENCE:

Reference whose existence does not prevent deletion of the Definition screen of the Entity on which it is dependent.

PRINCIPLES

LOGICAL PURGE:

The EXPU procedure shows the list of entities which have not been used since an indicated frozen session and in a given context.

For these entities, the procedure generates logical deletion transactions of definition and description lines. These transactions can be used as input to the UPDT procedure.

For free-type entities, no deletion transaction is generated: only a message is printed in the report.

PHYSICAL PURGE:

The EXPU procedure informs the user of the entities which have never had any cross-references since their creation in a given context. For these entities, physical purge transactions are generated. These transactions can be used as input to the REOR procedure.

NOTE: THE LIBRARY ENTITY IS NOT PROCESSED.

EXECUTION CONDITIONS

Batch procedure access authorization option:
. Authorization level 3 is required.

## 2.4.10. EXPU: USER INPUT

EXPU: USER INPUT

USER INPUT

One line with the extraction characteristics:

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 2 | 'P ' | Line code |
| 4 | 1 | | Type of purge: |
| | | 'P' | Physical (via the REOR procedure) |
| | | 'L' | Logical (via the UPDT procedure) |
| 5 | 1 | | Search option for the entity defini-tion screens: |
| | | 'U' | In the indicated library only |
| | | 'Z' | In the indicated library and corres-ponding sub-network |
| 6 | 4 | ssss | Session number (type 'L' only) from which the entities must not be used in order to be purged |
| 10 | 3 | ttt | Entity type |
| 13 | 6 | pppppp | Program code (program processing only) |
| 19 | 1 | 1 | Allows the removal of purge transactions which are not cross-referenced in the sub-network nor in the next higher network. |

COMMENTS

Each 'ENTITY TYPE' may be processed separately. If the 'EN- TITY TYPE' field is not entered, all entities are processed EXCEPT the FINAL ENTITIES.

Command Examples:

```
*user    passwordBIB
P PZ    E
```

Command for physical purge transactions for the data elements in the BIB library sub-network.

```
*user    passwordBIB
P LU2222P  PROGR
```

Command for logical deletion transactions for the programs in the BIB library whose codes are less than or equal to PROGR, starting from session number 2222.

```
*user    passwordBIB
P PU
```

Command for physical purge transactions for all entities in the BIB library (except the FINAL ENTITIES).

PRINTED OUTPUT

This procedure prints out:

- A list of the entities to be purged logically,

- A list of the entities to be purged physically.

RESULT

The result of this procedure is:

- In the case of a logical purge, a sequential file containing entity deletion transactions to be used as input in the Database updating (UPDT) procedure.

These transactions are sorted as follows:

. By decreasing hierarchical library level

. By library

. By record type: descriptions, definition screens.

- In the case of a physical purge, a sequential file containing entity purge transactions to be used as input to the Reorganization (REOR) procedure.

Each transaction contains a maximum of six entities to be purged.

For each entity, the following information is included:

. The entity type

. The entity code

. The library code. (See Chapter "REOR: Database Reorganization", Subchapter 'INPUT-RECOMMENDATIONS', in the Administrator's Guide.)

2.4.11. EXUE: EXTRACTION OF USER ENTITIES
2.4.11.1. EXUE: INTRODUCTION

## EXUE: INTRODUCTION

The EXUE procedure extracts user entity occurrences according to their type code, formatted as simple records in a sequential file.

The EXUE procedure is part of the Dictionary Extensibility Function which is an optional component and whose use depends upon the corresponding purchase agreement.

### EXECUTION CONDITIONS

Batch-procedure access authorization option:
. Level 2 is required.

2.4.12. EXUE: USER INPUT

EXUE: USER INPUT

USER INPUT

One command line per user entity:

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 4 | W1EX | Line code |
| 6 | 1 | $ | UEO Extraction identifier |
| 7 | 1 | | Library selection code: |
| | | U | Selected library |
| | | C | Selected library + higher level libr. |
| 8 | 2 | CC | User Entity type code |

REPORT

The EXUE procedure prints a list of the extracted UEOs.

RESULT

The output of the EXUE procedure is a sequential file with a fixed format in which the contents of the selected user entity occurrences are recorded.

The length of each record is 112 characters.

Each record includes:

. A common part containing all the characteristics necessary to identify each extracted line.

. A specific part whose format depends on the user entity description.

2.4.13. RMEN: RENAME/MOVE OF ENTITIES
2.4.13.1. RMEN: INTRODUCTION

RMEN: ENTITY RENAMING / MOVING

RMEN: INTRODUCTION

The RMEN procedure is an optional utility. It is subject to a separate purchase agreement.

Through the RMEN procedure you can:

1. Rename an entity
2. Replace an entity with another
3. Move an entity to a higher-level library
4. Rename and move up an entity simultaneously.

This procedure may be applied to Dictionary and entities.

Its output is a file containing update transactions, which will be used as input for the batch update procedure (UPDT or UPDP).

EXECUTION CONDITIONS

None, since the Database is not directly updated.

Batch procedure access authorization option:
. Level 3 is required.

Only users with a authorization level 4 on the database can use this procedure.

To rename (RN) or replace (RP) entities, an authorization level 4 on the library in which the entity is found is sufficient.

## 2.4.14. RMEN: USER INPUT

RMEN: USER INPUT

Batch procedure access authorization:

One or more command lines per entity to be processed:

First line

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 2 | W2 | Line code |
| 4 | 2 | | Processing option: |
| | | MV | Entity move (UP) |
| | | RN | Entity rename |
| | | RP | Entity replace |
| | | MR | Upward move and rename |
| 6 | 3 | ttt | Entity type or local code of a WorkStation entity: D, E, I, O, P, R, S, T, $nn, F, M, Q, B, V, or SDO, RUB ... |
| 9 | 6 | elemt1 | Code of entity to be extracted |
| 15 | 1 | | Separator blank |
| 16 | 3 | sss | Source library code (for MOVE) |
| 19 | 1 | | Separator blank |
| 20 | 6 | elemt2 | Entity code after RENAME, or code of replacing entity in case of REPLACE |
| 26 | 6 | elemtP | Parent Data Element code |
| 32 | 3 | 'ALL' | for 'MV' and 'MR': Selects all occurrences of a UE or all Segments or Reports of a Data Structure (implicit option for 'RN' and 'RP') |
| 35 | 3 | | For extraction of WorkStation entities: methodology code |
| | | '//A' | SSADM |
| | | '//M' | MERISE |
| | | '//D' | YSM |
| | | '//O' | OMT |
| | | '//F' | IFW |

First line (continued):

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 38 | 3 | | REPLACE: Selection of the types of the entities to be modified |
| | | | 'DEL': Data Element |
| | | | 'DBD': Database Block |
| | | | 'DST': Data Structure |
| | | | 'SEG': Segment |
| | | | 'RPT': Report |
| | | | 'TXT': Text |
| | | | 'VOL': PDM volume |
| | | | 'MAN': User Manual |
| | | | 'PGM': Program |
| | | | 'SCR': Screen |
| | | | 'PIA': P.I.A. |
| | | | 'MET': Methodology |
| | | | 'UEN': User Entity |
| | | | 'URE': User-defined Relationship |
| | | | '$tt': User Entity Occurrence |
| | | | : (tt = occurrence type code) |
| | | | '$**': All UEOs |
| 41 | 6 | | REPLACE: Codes of entities to be modified (* may be used if you want to specify only the beginning of a code. |

Lines for REPLACE (continuation lines for selection):

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 2 | 'W2' | Line code |
| 4 | 2 | 'RP' | 'REPLACE' |
| 6 | 3 | '*' | 'continuation line' |
| 38 | 3 | | Selection of types of entities to be modified |
| 41 | 6 | | Codes of entities to be modified |

REQUEST-SEQUENCING REQUIREMENTS

A parent Data Element must be moved to the higher-level library BEFORE its child data element(s).

When a segment is called by another segment, the called segment must be moved to the higher-level library BEFORE the segment that is calling it.

When a macro-structure is called by a batch program or on-line screen, it must be moved into the higher-level library BEFORE this program or screen.

REQUEST-INPUT REQUIREMENTS

All input is required except:

- The source library code in case of entity renaming (RN) or replacing (RP),
- The new entity code in case of upward move (MV),
- The code of the parent data element (except when a child data element is to be associated with it).

The processing type 'RP' is incompatible with the other processing types.

EXECUTION RULES

The source library must belong to the sub-network of the target library.

When an upward move is requested for an entity which already exists in the target library, a warning message appears in the report, but the transaction is still generated.

PRINTED OUTPUT

This procedure prints out the following:

. The list of entities processed by RMEN.

. The number of lines extracted for each request.

RESULT

The output is a sequential file which contains update transactions:

. Creation or modification transactions sorted by:

- Ascending library hierarchical level,
- Library,
- Record type (uses, definition, or description).

. Deletion transactions sorted by:

- Descending library hierarchical level,
- Library,
- Record type (uses, description, definition).

NOTES:

The replacement of entities (RP) does not ensure data consistency. Thus, if you replace a Data Element with another one in a Segment, RMEN does not modify the program lines where this Data Element is used by this Segment, except if you have requested the replacement in programs.

New occurrence codes longer than the initial ones may sometimes cause update transactions to be truncated. However, they will still belong to the flow of update transactions, but will also appear in the validation report with a warning message.

If not correctly managed, the RMEN procedure may have undesired effects on the Database. Caution is highly recommended when requesting its execution.

## 2.4.15. RMEN: RECOMMENDATIONS AND RESTRICTIONS

### RECOMMENDATIONS AND RESTRICTIONS

Processing in a frozen session is possible. The number of the session is indicated on the '*' line.

When an error is detected on the '*' line, the request flow is not processed.

### ALL ENTITY TYPES

. The MOVE & RENAME (MR) command first moves and then renames. The consequence is that all the entities bearing the same code within the sub-network of libraries equal or lower than the target library are renamed by the RMEN procedure.

If this result is not satisfactory, it is advised to first run a RMEN/RENAME followed by a UPDT, then a RMEN/MOVE followed by another UPDT execution.

. When an occurrence's General Documentation contains PIA or User Relation calls, its cross-referenced occurrences must be in a library whose level is greater or equal to that of the target library.

. When an occurrence is renamed, if it is called on Assigned Text (-AT) lines, it is changed on I-type lines, but not on J-type lines.

### DATA STRUCTURES

Renaming a Data Structure causes the renaming of all its Segments and Reports.

CAUTION :

An upward move of a Data Structure involves the upward move of all of its Segments and Reports contained in the source library in cases where the GLOBAL UPWARD MOVE field contains 'ALL'. If this field is blank, the Segments and Reports remain in the source library.

The existence of the Data Structure in an upper-level library is checked.

SEGMENTS AND REPORTS

These entities can only be moved upward. Their Data Structure must exist in a library whose level is higher than or equal to that of the target library.

The existence of a Segment in a library whose level is higher than or equal to that of the target library is checked, as is that of called Segments, Data Elements, and PacModel Objects and Relationships.

For Reports, the existence validation is performed for called Data Elements only.

DATA ELEMENTS

The indication of a parent Data Element code affects only the Data Element Definition in the source library. By default, a child Data Element remains attached to its parent. However, it is possible to suppress this link by entering the code '&&&&&&' in the parent Data Element field.
A child Data Element can be turned into a parent Data Element or may be assigned another parent by specifying a parent Data Element code. This parent Data Element must be defined in a library upper or equal to the target library.

A parent Data Element contained in a request must not have been previously processed as a source Element.

The format of the Data Element being moved remains the same, whatever the modification in relation to a parent Data Element.

If the target Data Element is used as an undefined Data Element, the format of its uses (on Segment or Report '-CE' screens) must correspond to the format specified in the Definition.

The renaming of a key Data Element of a Data Structure (indicated as an argument on the Call of Data Structures '-CD' screen) is not allowed.

PROGRAMS

Their processing goes through a check on libraries whose level is higher than or equal to that of the target library of :

. Macro-Structures,
. Data Structures,
. Segments or Data Elements (called in WORKING-STORAGE).

SCREENS

Screens are processed individually. RMEN does not process the whole Dialogue. The Dialogue must therefore exist in a library whose level is higher than or equal to that of the target library.

USER ENTITIES

A User Entity can be processed only if there is no other User Entity bearing the same call code in the sub-network of the target library.

CAUTION :

When the GLOBAL UPWARD MOVE field contains 'ALL', an upward move of a User Entity involves the upward move of all of its occurrences contained in the source library. If this field is blank, the occurrences remain in the source library.

The existence of all Data Elements and User Relations called in the Definition lines is checked in a library higher or equal to the target library.

USER ENTITY OCCURRENCES (UEOs)

The existence of the User Entity in a library higher or equal to that of the target library is checked, as is that of occurrences linked to the UEO via User Relations.

PACMODEL ENTITIES

For PACMODEL Objects and Elements/Properties called in description screens ('-CM' and '-CE'), an existence check is performed in the library whose level is higher than or equal to that of the target library.

DATABASE BLOCKS

The existence of PACMODEL Objects or Called Segments is checked.

VOLUMES

The existence of Reports called in the Volume Definition screen is checked.

OCCURRENCES MANAGED VIA THE WORKSTATION

Calls of the '//M', '//Y' and '//D' type are used to extract all the WorkStation entities. The local entity type -- 3-character code -- must be entered (in the ENTITY TYPE field) as well as the code of entity before processing, the library code and the code of the entity after processing. The WorkStation methodology (MERISE, IFW, OMT, YSM) is entered in a special field at position 35 in the 'W2' user input line.

NOTE: One RMEN execution can process occurrences related to only one Methodology.

## 2.4.16. PACX: DESCRIPTION OF STEPS

### PACX: DESCRIPTION OF STEPS

EXTRACTION: PACX

This step extracts transactions according to user input.

.Permanent input files:
 -Data file
  PAC7AR
 -Index file
  PAC7AN
 -Error-message file
  PAC7AE
 -Archived transactions
  PAC7PJ

.Input transaction file:
 -User input
  PAC7MB

.Work files:
 -User input
  PAC7BM
 -EXPU work file
  PAC7MM
 -EXPJ work file
  PAC7MJ
 -RMEN work file
  PAC7TE
 -RMEN work file
  PAC7RE
 -RMEN work file
  PAC7RM

 -Extracted transactions
  PAC7WD
 -Multi-layered Extractor work file
  SYSEXT

```
.Output files:
 -Extracted transactions for UPDT
  PAC7MV
 -Extracted transactions for REOR (EXPU)
  PAC7MR


 -Extracted transactions for UPDP
  PAC7GY
 -Extracted transactions for CPSN
  PAC7TD
 -Extracted transactions for EXUE
  PAC7UE

.Output reports:
 -General printout of the program stream
  PAC7IA
 -List of errors on input transactions
  PAC7DD
 -Summary reports on extractions
  PAC7EE
  PAC7EP
  PAC7EQ
  PAC7EZ

.Sort file(s):

.Return codes :
   0 : no error
   8 : serious error (specified in PAC7DD).
```

## 2.4.17. PACX: EXECUTION JCL

```
#QUAL              [QUAL,1,1,1]
#XQT               *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*[USER,1,1,1]PACXEI.,[NBCYC,1,1,1]
#USE                PAC7EI.,[QUALR,1,1,1]*[USER,1,1,1]PACXEI(+1).
#CAT,P              PAC7EI.
#ASG,AX             PAC7EI.
# .
# .                 PROGRAM PACX
# .                 ************
#USE                PAC7MB.,*PACXMB.
#USE                PAC7JP.,*[FILEPJ,1,1,1].
#ASG,AX             PAC7JP.
#ASG,T              [QUALT,1,1,1]*PACXWD.,///[SPAWK,1,1,1]
#USE                PAC7WD.,[QUALT,1,1,1]*PACXWD.
#ASG,T              [QUALT,1,1,1]*PACXBM.,///[SPAWK,1,1,1]
#USE                PAC7BM.,[QUALT,1,1,1]*PACXBM.
#ASG,T              [QUALT,1,1,1]*PACXMV.,///[SPAWK,1,1,1]
#USE                PAC7MV.,[QUALT,1,1,1]*PACXMV.
#ASG,T              [QUALT,1,1,1]*PACXGY.,///[SPAWK,1,1,1]
#USE                PAC7GY.,[QUALT,1,1,1]*PACXGY.
#ASG,T              [QUALT,1,1,1]*PACXTD.,///[SPAWK,1,1,1]
#USE                PAC7TD.,[QUALT,1,1,1]*PACXTD.
#ASG,T              [QUALT,1,1,1]*PACXMR.,///[SPAWK,1,1,1]
#USE                PAC7MR.,[QUALT,1,1,1]*PACXMR.
#ASG,T              [QUALT,1,1,1]*PACXUE.,///[SPAWK,1,1,1]
#USE                PAC7UE.,[QUALT,1,1,1]*PACXUE.
#ASG,T              [QUALT,1,1,1]*SYSSEQ.
#ED,IQ              [QUALT,1,1,1]*SYSSEQ.
ZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ
#EOF
#ASG,T              [QUALT,1,1,1]*SYSIND.,///5000
#USE                SEQ.,[QUALT,1,1,1]*SYSSEQ.
#USE                IND.,[QUALT,1,1,1]*SYSIND.
#SORT,S
COPY
FILEIN=SEQ    MODE=SDF  BLOCK=7168,CHARACTERS LABEL=STANDARD
FILEOUT=IND   MODE=MSAM BLOCK=7168,CHARACTERS LABEL=STANDARD
KEY=1,12,S,A
MSKEY=1,12
RSZ=112,CHARACTERS
#EOF
#FREE               [QUALT,1,1,1]*SYSSEQ.
#USE                SYSEXT.,[QUALT,1,1,1]*SYSIND.
# .
*INCREMENT S TO [SRTWK,1]
#ASG,T              [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#CYCLE,C   [QUALR,1,1,1]*[USER,1,1,1]PAC7DD.,[NBCYC,1,1,1]
#USE        PAC7DD.,[QUALR,1,1,1]*[USER,1,1,1]PAC7DD(+1).
#CAT,P      PAC7DD.,///[SPAPR,1,1,1]
#ASG,AX     PAC7DD.
#CYCLE,C   [QUALR,1,1,1]*[USER,1,1,1]PAC7EE.,[NBCYC,1,1,1]
#USE        PAC7EE.,[QUALR,1,1,1]*[USER,1,1,1]PAC7EE(+1).
#CAT,P      PAC7EE.,///[SPAPR,1,1,1]
#ASG,AX     PAC7EE.
#CYCLE,C   [QUALR,1,1,1]*[USER,1,1,1]PAC7EQ.,[NBCYC,1,1,1]
#USE        PAC7EQ.,[QUALR,1,1,1]*[USER,1,1,1]PAC7EQ(+1).
#CAT,P      PAC7EQ.,///[SPAPR,1,1,1]
#ASG,AX     PAC7EQ.
#CYCLE,C   [QUALR,1,1,1]*[USER,1,1,1]PAC7EZ.,[NBCYC,1,1,1]
#USE        PAC7EZ.,[QUALR,1,1,1]*[USER,1,1,1]PAC7EZ(+1).
#CAT,P      PAC7EZ.,///[SPAPR,1,1,1]
#ASG,AX     PAC7EZ.
#CYCLE,C   [QUALR,1,1,1]*[USER,1,1,1]PAC7IA.,[NBCYC,1,1,1]
#USE        PAC7IA.,[QUALR,1,1,1]*[USER,1,1,1]PAC7IA(+1).
#CAT,P      PAC7IA.,///[SPAPR,1,1,1]
#ASG,AX     PAC7IA.
#CYCLE,C   [QUALR,1,1,1]*[USER,1,1,1]PAC7ED.,[NBCYC,1,1,1]
```

```
    #USE        PAC7ED.,[QUALR,1,1,1]*[USER,1,1,1]PAC7ED(+1).
    #CAT,P      PAC7ED.,///[SPAPR,1,1,1]
    #ASG,AX     PAC7EP.
    #CYCLE,C   [QUALR,1,1,1]*[USER,1,1,1]PAC7EP.,[NBCYC,1,1,1]
    #USE        PAC7EP.,[QUALR,1,1,1]*[USER,1,1,1]PAC7EP(+1).
    #CAT,P      PAC7EP.,///[SPAPR,1,1,1]
    #ASG,AX     PAC7EP.
    # .
    *IF [USERLIB]
    #ASG,T             [QUALT,1,1,1]*DYNLIB.
    #SSDP,S           ,[QUALT,1,1,1]*DYNLIB.SSDEF$
                DEFINE LSC $LOCAL
                SEARCH HOME$
    *INCREMENT N TO [USERLIB]
                SEARCH [USERLIB,N,1,1].
    *LOOP
    #USE        LINK$PF,[QUALT,1,1,1]*DYNLIB.
    *ENDIF
    # .
    #XQT              *[BFILE,1,1,1].PACX
    EXEPRT [EXEPRT,1,1,1,6,9,9]

    # .
    #TEST        TLE/17/S5
    #JUMP        ERRFAT
    # .
    #[PRINT,1,1,1]     PAC7DD.,,[PRINT,1,2,1]
    #FREE              PAC7DD.
    #[PRINT,1,1,1]     PAC7EE.,,[PRINT,1,2,1]
    #FREE              PAC7EE.
    #[PRINT,1,1,1]     PAC7EQ.,,[PRINT,1,2,1]
    #FREE              PAC7EQ.
    #[PRINT,1,1,1]     PAC7EZ.,,[PRINT,1,2,1]
    #FREE              PAC7EZ.
    #[PRINT,1,1,1]     PAC7IA.,,[PRINT,1,2,1]
    #FREE              PAC7IA.
    #[PRINT,1,1,1]     PAC7ED.,,[PRINT,1,2,1]
    #FREE              PAC7ED.
    #[PRINT,1,1,1]     PAC7EP.,,[PRINT,1,2,1]
    #FREE              PAC7EP.
    # .
    #JUMP        SAUT
    # .
    #ERRFAT:
    # .
    #MSG,N ****** FATAL ERROR IN PROCEDURE PACX ******
    # .
    #TEST        TLE/37/S5
    #JUMP        SAUT
    # .
    #[PRINT,1,1,1]    PAC7EI.,,[PRINT,1,2,1],,[USER,1,1,1]PACXEI
    # .
    #SAUT:
    # .
    *IF [USERLIB]
    #FREE               LINK$PF.
    *INCREMENT N TO [USERLIB]
    #FREE              [USERLIB,N,1,1].
    *LOOP
    *ENDIF
    #FREE               PAC7EI.
    #FREE               PAC7MB.
    #FREE               PAC7MR.
    #FREE               PAC7BM.
    #FREE               PAC7UE.
    #FREE               PAC7WD.
    #FREE               PAC7GY.
    #FREE               PAC7MV.
    #FREE               PAC7TD.
    #FREE               SYSEXT.
    *INCREMENT S TO [SRTWK,1]
    #FREE [QUALT,1,1,1]*[SRTWK,1,S,2].
    *LOOP
```

```
    #FREE             *[BFILE,1,1,1].
```

# 3. PERSONALIZED EXTRACTION & AUTOMATED DOCUMENTATION

# *3.1. XPAF: EXTRACTION MASTER PATH*

## 3.1.1. XPAF: INTRODUCTION

XPAF: INTRODUCTION

PRINCIPLES

The Extraction Master Path validation procedure, XPAF, allows for the simulation of specific extractions that the standard procedures are not able to perform.

RESULTS

The type of result depends on whether or not the extracted domain is to be integrated into a report : Macro-Command or User Extraction program.

Macro-Command: a subroutine to be activated during a printing request by GPRT (choice: PCV).

User Extraction program: a Source Program to be compiled and executed.

PREREQUISITE

In order to use this procedure, the system manager must update the Database with the transaction file supplied for installation which contains the .PPTEX User Entity, whose call code is 7E.

IMPLEMENTATION

Before the procedure can be executed, the user must define an occurrence of this user entity ($7E). Its definition file and description determine the characteristics and format of the general extraction program.

EXECUTION CONDITIONS

Extraction Master Path users must have at least a level 2 authorization on the Database.

ABNORMAL EXECUTION

For any type of abnormal end the procedure can be re-executed once the problem has been solved.

PRINTED OUTPUT

This procedure prints a validation report and a simulation of the Extraction Master Path.

3.1.2. XPAF: USER INPUT

XPAF: USER INPUT

One '*' line per library and session to be consulted

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 1 | '*' | Line code |
| 3 | 8 | uuuuuuuu | User code |
| 11 | 8 | pppppppp | User password |
| 19 | 3 | bbb | Library code |
| 22 | 4 | nnnn | Session number |
| 26 | 1 | T | Session version |
| 68 | 1 | ' ' | Standard print |
| | | '1' | Uppercase print |

One command line 'EX' for the following elements:

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 2 | 'EX' | Line code |
| 4 | 2 | | Call code (7E by default) |
| 6 | 6 | eeeeee | User Entity occurrence code |

| |
|---|
| Warning: Specify library and session if the UEs whose UEs whose occurrences are to be extracted in a parallel sub-network (UEOs extractions managed by WorkStation for example) |

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 12 | 3 | bbb | Library code |
| 15 | 4 | nnnn | Session number |
| 19 | 1 | T | Session version |
| 20 | 6 | 'UPDATE' | Update of GS |
| | | or | |
| | | SPACE | Check of the presence of the master path in GS. Check of the user entity occurence's use in the sub-network. No update of GS if presence or use. |

EXAMPLES

```
*user    passwordBIB
EX7EEXT001        UPDATE
*user    passwordBIB
EX7EEXT002
```

3.1.3. XPAF: DESCRIPTION OF STEPS

## XPAF: DESCRIPTION OF STEPS

EXTRACTION MASTER PATH FILE

The GS file (PAC7GS), which is an indexed file, stores the extraction master paths. It must be initialized before the procedure is run for the first time.

Example of initialization:

```
  @ASG,T     TEMPGS.
  @ED,IQ     TEMPGS.
  ZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ
  @USE       INFILE.,TEMPGS.
  @USE       OUTFILE.,$QUALU*GS.
  @CAT,P     OUTFILE.,///10000
  @ASG,AX    OUTFILE.
  @SORT,S
  COPY
  FILEIN=IF  MODE=SDF  BLOCK=7168,CHARACTERS label=STANDARD
  FILEOUT=OF MODE=MSAM BLOCK=7168,CHARACTERS LABEL=STANDARD
  KEY=1,25,S,A
  MSKEY=1,25
  RSZ=203,CHARACTERS
  @EOF
  @FREE INFILE.
  @FREE OUTFILE.
```

```
ACCESS AND VALIDATION:  PTEX30

.Input files:
 -VA Pac error-message file
  PAC7AE
 -Index file
  PAC7AN
 -Data file
  PAC7AR

.Input transaction file:
 -User input
  PAC7MB

.Permanent input file:
 -Variable skeleton-file
  PAC7SP

.Permanent input/output file:
 -Extraction Paths
  PAC7GS

.Output file:
 -Summary passed on to printing program
  PAC7ED
 -Temporary generated source
  PAC7GP

.Output report:
 -Execution report
  PAC7DD

.Sort file(s):
```

```
EXTRACTION GENERATION:  PTEX80

.Permenant input file:
 -Fixed skeleton file
  PAC7SF

.Input file:
 -Source file generated by PTEX30
  PAC7GP

.Output file:
 -Generated source to be translated
  PAC7ST


PREPROCESSOR: PAFP10

.Permanent input files:
 -Data file
  PAC7AR
 -Index file
  PAC7AN
 -Error message file
  PAC7AE

.Input file:
 -Generated programs
  PAF80

.Output files:
 -Generated programs to be compiled
  COB80

.Output report:
 -Execution report
  PAFREP



PTEX PRINTING: PTEXD0

.Input files:
 -VA Pac error messages
  PAC7AE
 -PTEX30 report
  PAC7ED

.Permanent input/output file:
 -Extraction Paths
  PAC7GS

.Output report:
 -Validation report
  PAC7RD

.Sort file(s):


GENERATED PROGRAM COMPILING

The program, generated in the $QUALT*COB80 temporary file,
must be compiled using the UCOB compiler.
The object-module created by the compiler can be used in
two ways:
```

. If it is a User Extractor, it must be linked using (SEARCH) the VA Pac libraries ($QUAL*$BASE, $QUAL*PACSSCH, $QUAL*$LIBRELB).

The execution of a User Extractor requires user inputs which are described in the PAF Reference Manual, chapter "EXECUTION OF A USER EXTRACTOR /

E-Type PTEx".

. If it is a Macro-Command, the object-module is automatically called during the execution of the GPRT procedure. The PBBTST and PBBTWS objects must then be explicitely integrated into the PACB program.

Parameters of the INS-LNKG procedure to integrate into PACB:
INCLUDE PBBTST
INCLUDE PBBTWS

In the generation (GPRT), add one or more USERLIB parameters to indicate the files which contain the macro-commands-objects.
Example: USERLIB $QUALU*XPAFOBJLIB

. Specific files used in the program :

PAC7GS : Extraction Master Path ($QUALU*GS)
PAC7DB : report (printing)
PAC7SO : extraction results

### 3.1.4. XPAF: EXECUTION JCL

```
#QUAL              [QUAL,1,1,1]
#XQT               *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C           [QUALR,1,1,1]*XPAFEI.,[NBCYC,1,1,1]
#USE                PAC7EI.,[QUALR,1,1,1]*XPAFEI(+1).
#CAT,P              PAC7EI.
#ASG,AX             PAC7EI.
# .
# .                 PTEX30
# .                 ******
# .
#USE                PAC7MB.,*XPAFMB.
#ASG,A             [QUAL,1,1,1]*SP.
#USE                PAC7SP.,[QUAL,1,1,1]*SP.
#ASG,A             [QUALU,1,1,1]*GS.
#USE                PAC7GS.,[QUALU,1,1,1]*GS.
#ASG,T             [QUALT,1,1,1]*PAC7ED.,///[SPAWK,1,1,1]
#USE                PAC7ED.,[QUALT,1,1,1]*PAC7ED.
#ASG,T             [QUALT,1,1,1]*PAC7GP.,///[SPAWK,1,1,1]
#USE                PAC7GP.,[QUALT,1,1,1]*PAC7GP.
#CYCLE,C           [QUALR,1,1,1]*XPAFDDX30.,[NBCYC,1,1,1]
#USE                PAC7DD.,[QUALR,1,1,1]*XPAFDDX30(+1).
#CAT,P              PAC7DD.
#ASG,AX             PAC7DD.
*INCREMENT S TO [SRTWK,1]
#ASG,T             [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#XQT               *[BFILE,1,1,1].PTEX30
# .
#TEST          TLE/17/S5
#JUMP          ERRFAT
# .
#[PRINT,1,1,1]      PAC7DD.,,[PRINT,1,2,1],,XPAFDDX30
#FREE               PAC7DD.
#FREE               PAC7MB.
#FREE               PAC7SP.
# .
#TEST          TEP/10/S5
#JUMP          DRUCK
# .
# .                 PTEX80
# .                 ******
# .
#ASG,A             [QUAL,1,1,1]*SF.
#USE                PAC7SF.,[QUAL,1,1,1]*SF.
#ASG,T             [QUALT,1,1,1]*PAC7ST.,///[SPAWK,1,1,1]
#USE                PAC7ST.,[QUALT,1,1,1]*PAC7ST.
#XQT               *[BFILE,1,1,1].PTEX80
# .
#TEST          TLE/17/S5
#JUMP          ERRFAT
# .
#FREE               PAC7SF.
#FREE               PAC7GP.
# .
# .                 PAFP10
# .                 ******
# .
#USE                PAF80.,[QUALT,1,1,1]*PAC7ST.
#ASG,T             [QUALT,1,1,1]*COB80.,///[SPAWK,1,1,1]
#CYCLE,C           [QUALR,1,1,1]*XPAFEPP10.,[NBCYC,1,1,1]
#USE                PAFREP.,[QUALR,1,1,1]*XPAFEPP10(+1).
#CAT,P              PAFREP.
#ASG,AX             PAFREP.
#XQT               *[BFILE,1,1,1].PAFP10
# .
#TEST          TLE/17/S5
```

```
    #JUMP         ERRFAT
    # .
    #[PRINT,1,1,1]     PAFREP.,,[PRINT,1,2,1],,XPAFEPP10
    #FREE              PAFREP.
    #FREE              PAF80.
    # .
    #DRUCK:
    # .
    # .                PTEXD0
    # .                ******
    # .
    #CYCLE,C          [QUALR,1,1,1]*XPAFRDXD0.,[NBCYC,1,1,1]
    #USE               PAC7RD.,[QUALR,1,1,1]*XPAFRDXD0(+1).
    #CAT,P             PAC7RD.
    #ASG,AX            PAC7RD.
    #XQT              *[BFILE,1,1,1].PTEXD0
    # .
    #TEST         TLE/17/S5
    #JUMP         ERRFAT
    # .
    #[PRINT,1,1,1]     PAC7RD.,,[PRINT,1,2,1],,XPAFRDXD0
    #FREE              PAC7RD.
    #FREE              PAC7ED.
    #FREE              PAC7GS.
    *INCREMENT S TO [SRTWK,1]
    #FREE             [QUALT,1,1,1]*[SRTWK,1,S,2].
    *LOOP
    # .
    #JUMP         SAUT
    # .
    #ERRFAT:
    # .
    #MSG,N ****** FATAL ERROR IN PROCEDURE XPAF ******
    # .
    #TEST         TLE/37/S5
    #JUMP         SAUT
    # .
    #[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,XPAFEI
    # .
    #SAUT:
    # .
    #FREE              PAC7EI.
    #FREE             *[BFILE,1,1,1].
```

## *3.2. XPDM: MASTER OUTLINE*

### 3.2.1. XPDM: INTRODUCTION

XPDM: INTRODUCTION

PRINCIPLES

A Master Outline is a P-type Volume ('V' entity) designed to be called in another PDM Volume. Its functions are to:

- Memorize general descriptions (print option, for example) so that they do not have to be redefined in each Volume.

- Print the information extracted via an Extraction Master Path. This function may be recursive.

If no serious error is detected, the XPDM procedure updates the Extraction Master Path file (GS). It can also be used without updating the GS file.

EXECUTION CONDITIONS

In order to define a Master Outline, the user must have at least a level 2 authorization.

ABNORMAL EXECUTION

For any type of abnormal end the procedure can be re-executed once the problem has been solved.

PRINTED OUTPUT

This procedure prints the description of a Master Outline, as well as the comments, and a list of the anomalies found, if any.

3.2.2. XPDM: USER INPUT

XPDM: USER INPUT

One '*' line to define the context.

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 1 | '*' | Line code |
| 3 | 8 | uuuuuuuu | User code |
| 11 | 8 | pppppppp | User password |
| 19 | 3 | bbb | Library code |
| 22 | 4 | nnnn | Session number |
| 26 | 1 | T | Session version |
| 68 | 1 | ' ' | Standard print |
| | | '1' | Uppercase print |

One 'EP' command line for the following elements:

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 2 | 'EP' | Line code |
| 4 | 6 | rrrrrr | Report code |
| 10 | 6 | 'UPDATE' | GS file update |
| | | or | |
| | | SPACE | Check of the volume's presence in GS |
| | | | Check of the volume's use in the sub-network. |
| | | | No GS file update if presence or use. |

EXAMPLES

```
*user    passwordBIB
EPMANUELUPDATE

*user    passwordBIB
EPMANUEL
```

3.2.3. XPDM: DESCRIPTION OF STEPS

## XPDM: DESCRIPTION OF STEPS

```
EXTRACTION OF MASTER OUTLINE:  PTED30

.Input files:
 -Error-message file
  PAC7AE
 -Index file
  PAC7AN
 -Data file
  PAC7AR

.Input transaction file:
 -User input
  PAC7MB

.Permanent input/output file:
 -Extraction paths
  PAC7GS

.Output files:
 -Report passed on to printing program
  PAC7ED
 -GS-update preparation
  PAC7SG

.Output report:
 -Execution report
  PAC7DD

GS UPDATE AND PRINTING OF THE MASTER OUTLINE:  PTED60

.Input files:
 -VA Pac error messages
  PAC7AE
 -Print file
  PAC7ED
 -GS-update preparation
  PAC7SG

.Permanent output file:
 -Extraction Paths
  PAC7GS

.Output report:
 -Execution report

.Sort file(s):
```

### 3.2.4. XPDM: EXECUTION JCL

```
#QUAL              [QUAL,1,1,1]
#XQT               *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C           [QUALR,1,1,1]*XPDMEI.,[NBCYC,1,1,1]
#USE                PAC7EI.,[QUALR,1,1,1]*XPDMEI(+1).
#CAT,P              PAC7EI.
#ASG,AX             PAC7EI.
# .
# .                 PTED30
# .                 ******
# .
#USE                PAC7MB.,*XPDMMB.
#ASG,A             [QUALU,1,1,1]*GS.
#USE                PAC7GS.,[QUALU,1,1,1]*GS.
#ASG,T             [QUALT,1,1,1]*PAC7ED.,///[SPAWK,1,1,1]
#USE                PAC7ED.,[QUALT,1,1,1]*PAC7ED.
#ASG,T             [QUALT,1,1,1]*PAC7SG.,///[SPAWK,1,1,1]
#USE                PAC7SG.,[QUALT,1,1,1]*PAC7SG.
#CYCLE,C           [QUALR,1,1,1]*XPDMDDD30.,[NBCYC,1,1,1]
#USE                PAC7DD.,[QUALR,1,1,1]*XPDMDDD30(+1).
#CAT,P              PAC7DD.
#ASG,AX             PAC7DD.
#XQT               *[BFILE,1,1,1].PTED30
# .
#TEST         TLE/17/S5
#JUMP         ERRFAT
# .
#[PRINT,1,1,1]      PAC7DD.,,[PRINT,1,2,1],,XPDMDDD30
#FREE               PAC7DD.
#FREE               PAC7MB.
# .
#TEST         TEP/10/S5
#JUMP         SAUT
# .
# .
# .                 PTED60
# .                 ******
# .
#CYCLE,C           [QUALR,1,1,1]*XPDMGPD60.,[NBCYC,1,1,1]
#USE                ETATGP.,[QUALR,1,1,1]*XPDMGPD60(+1).
#CAT,P              ETATGP.
#ASG,AX             ETATGP.
*INCREMENT S TO [SRTWK,1]
#ASG,T             [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#XQT               *[BFILE,1,1,1].PTED60
# .
#TEST         TLE/17/S5
#JUMP         ERRFAT
# .
#[PRINT,1,1,1]      ETATGP.,,[PRINT,1,2,1],,XPDMGPD60
#FREE               ETATGP.
#FREE               PAC7ED.
#FREE               PAC7SG.
#FREE               PAC7GS.
*INCREMENT S TO [SRTWK,1]
#FREE              [QUALT,1,1,1]*[SRTWK,1,S,2].
*LOOP
# .
#JUMP         SAUT
# .
#ERRFAT:
# .
#MSG,N ****** FATAL ERROR IN PROCEDURE XPDM ******
# .
#TEST         TLE/37/S5
#JUMP         SAUT
```

```
# .
#[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,XPDMEI
# .
#SAUT:
# .
#FREE              PAC7EI.
#FREE             *[BFILE,1,1,1].
```

# *3.3. PRGS: PRINTING OF MASTER PATH / OUTLINE FILE*

## 3.3.1. PRGS: INTRODUCTION

PRGS: INTRODUCTION

PRINCIPLE

The PRGS procedure prints the contents of the PAC7GS file, where Master Outlines and Extraction Master Paths are stored.

PREREQUISITE

To request the printing of the Master Outline and Extraction Master Path file, the user must have at least the authorization level 2.

RESULT

A printout showing the Extraction Master Path and the associated Master Outlines.

3.3.2. PRGS: USER INPUT

PRGS: USER INPUT

One '*' line to identify the user.

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 1 | '*' | Line code |
| 3 | 8 | uuuuuuuu | User code |
| 11 | 8 | pppppppp | User password |

3.3.3. PRGS: DESCRIPTION OF STEPS

## PRGS: DESCRIPTION OF STEPS

```
PRINTING OF THE MASTER PATH AND OUTLINE FILE:

.Input files:
 -Error-message file
  PAC7AE
 -Extraction paths
  PAC7GS

.Input transaction file:
 -User input
  PAC7MB

.Output report:
 -Execution report
  PAC7DD
 -Master Path and Outline file report
  ETATGS

.Sort file(s):
```

## 3.3.4. PRGS: EXECUTION JCL

```
# .
# .
# .
#QUAL              [QUAL,1,1,1]
# .
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*PRGSEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*PRGSEI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                 PTEP90
# .                 ******
# .
#USE               PAC7MB.,*PRGSMB.
#USE               PAC7GS.,[QUALU,1,1,1]*GS.
#ASG,AX            PAC7GS.
# .
#CYCLE,C          [QUALR,1,1,1]*PRGSDDP90.,[NBCYC,1,1,1]
#USE               PAC7DD.,[QUALR,1,1,1]*PRGSDDP90(+1).
#CAT,P             PAC7DD.
# .
# .
#CYCLE,C          [QUALR,1,1,1]*ETATGSP90.,[NBCYC,1,1,1]
#USE               ETATGS.,[QUALR,1,1,1]*ETATGSP90(+1).
#CAT,P             ETATGS.
# .
*INCREMENT S TO [SRTWK,1]
#ASG,T            [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#XQT              *[BFILE,1,1,1].PTEP90
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE              PAC7GS.
#[PRINT,1,1,1]     PAC7DD.,,[PRINT,1,2,1],,PRGSDDP90
#[PRINT,1,1,1]     ETATGS.,,[PRINT,1,2,1],,ETATGSP90
#FREE              PAC7DD.
#FREE              ETATGS.
# .
*INCREMENT S TO [SRTWK,1]
#FREE             [QUALT,1,1,1]*[SRTWK,1,S,2].
*LOOP
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .
#JUMP              SAUT
# .
#ERRFAT:
# .
#MSG,N ****** FATAL ERROR IN PROCEDURE PRGS   ******
# .
#TEST         TLE/37/S5
#JUMP         SAUT
# .
#[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,PRGSEI
# .
#SAUT:
# .
#FREE              PAC7EI.
#FREE             *[BFILE,1,1,1].
```

# 4. QUALITY ANALYSIS AND CONTROL

# *4.1. ACTI: JOURNAL STATISTICS UTILITY*

## 4.1.1. ACTI: INTRODUCTION

ACTI: INTRODUCTION

The ACTI procedure is an optional utility, and its use depends on the corresponding purchase agreement.

The Specifications Dictionary manages all the data related to the various applications being developed or maintained at the site.

The Journal file contains all the database update transactions. As such, it reflects user activity.

With the Journal Statistics Utility (ACTI), this activity can be monitored and presented in the form of charts.

The Journal Statistics Utility allows the Database Manager to query the Journal backup file based on various parameters:

- LIBRARY CODE
- USER CODE
- ENTITY TYPE
- ENTITY CODE
- LINE CODE
- TRANSACTION TYPE (C,M,D)
- DATE OF UPDATE
- SESSION NUMBER OF UPDATE

These criteria are used to specify the REQUEST AREA.

Results are obtained in the form of three types of charts, i.e., statistical reports, curve-type graphs, or lists of transactions.

This output will be printed according to the selected PAGE LAYOUT. Statistics and graphs are sorted and calculated according to the user request.

- Output Report Type,
- page layout criteria,
- Request Area,
- Data sequencing mode,
- Activity calculation mode.

EXECUTION CONDITIONS

None.

Batch procedure access authorization:
. Level 3 is required.

4.1.2. ACTI: COMMAND LANGUAGE

COMMAND LANGUAGE

COMMAND LANGUAGE

A Journal Statistics Request consists of five different types of lines, identified by the following KEYWORDS:

```
- OUTPUT    :   Output Report Type,
- PAGE      :   Page Layout (page breaks),
- AREA      :   Request Area,
- LINE      :   Statistical Report Lines,
- COLUMN    :   Statistical Report Columns,
- ABSCISSA  :   Curve-type graph Abscissas,
- ORDINATE  :   Curve-type graph Ordinates.
```

The meaning of the keywords, the parameters which define them, as well as their compatibility are explained in paragraph 'KEYWORDS DEFINITION AND VALUES'.

The OUTPUT line is required; the PAGE and AREA lines are op- tional. The LINE, COLUMN, ABSCISSA, and ORDINATE lines are either required or prohibited, depending on the requested output report type.

Only the first three characters of a keyword are used to identify a line type.

On the printed report, each request line is explicitly stated on the first page and an explicit error message is generated in case of a rejected line.

Request lines must be entered in the following order:

OUTPUT PAGE AREA LINE COLUMN ABSCISSA ORDINATE

Any error in this sequence will be considered as the beginning of another request.

The user may enter up to 10 requests at the same time.

The purpose of the ':' character is to mark the end of the keyword.

The rest of the line contains the parameters of each characteristic.

PARAMETERS

Parameters are used to define page layouts, lines and abscissas. These are called 'Presentation Criteria'.

Parameters followed by '=' and a value are called 'Selection Criteria'.

Parameters which define calculations are called 'Calculations'.

The coding, meaning and compatibility of the parameters are described in paragraph 'PARAMETERS: DEFINITON AND COMMENTS'.

SEPARATORS

The data entered on request lines are separated and grouped together using the following characters:

```
:       End of keyword,
=       Link between a parameter and its value,
(   )   Set of parameters for calculations,
,       Parameter or calculation separator,
/       Calculation combination,
*       Generic selection,
Blank   End of line (subsequent data is entered  for
        documentary purposes).
```

KEYWORDS MEANING AND FILLING MODES

OUT(put) OUTPUT REPORT TYPE

This type of line is required at the beginning of each request.

The parameters used to define the output report type are:

- STA for statistics
- GRA for graph
- LIS for list

PAG(es) PAGE LAYOUT

This type of line is used to indicate at which level a page skip is to be inserted.
The PAGE LAYOUT line is optional.

Headings are printed for each level, as well as totals for the statistical reports.

The page layout is defined by a series of parameters (three maximum separated by the ',' character) identifying data from the Journal, and called 'presentation criteria'.

Example: A page skip may be requested for each user and for each library.

ARE(a) REQUEST AREA

This type of line is used to define the transactions to be taken into account.

The REQUEST AREA line is optional.

The Request Area is defined by parameters (separated by the ',' character) followed by the '=' character and the selected value.

Example: The request applies to only some users and for a given period of time.

LIN(es) or ABS(cissa) DATA SORTING MODE

This type of line is used to define either the lines of a statistical report or the X-axis of a curve-type graph.

It is required for both statistical reports and curve-type graphs. However, it is not permitted for transaction lists.

There may be several lines of this type for statistical report.

The Data Sorting Mode may be defined by Presentation Criteria, as well as Selection Criteria. Parameters and values are separated by the ',' character.

Example: Data is sorted by entity type for a statistical report, or by week for for a curve-type graph.

COL(umns)
or
ORD(inate)

ACTIVITY CALCULATION MODE

This type of line defines the columns of a statistical report or the ordinates of a curve-type graph (maximum of seven columns_ or curves).

It is required for both statistical reports and curve-type graphs. However, it is not permitted for transaction lists.

Each column or curve is determined by a calculation, followed by bracketed Selection Criteria. Columns or curves, parameters and values, are all separated by the ',' character.

A printing character (&CHAR='X') must be specified for each curve.

A statistical report column may be defined by the relationship between two calculations; these calculations are separated by the '/' character.

Example: A first column or a first curve may be a calculation of the transactions entered on-line, while a second one may show the ratio between the input transactions and the real transactions.

PARAMETERS: DEFINITION AND COMMENTS

&LIB LIBRARY CODE

This parameter is used as a Selection Criterion to define the Page Layout, the Request Area, the Data Sorting Mode, and the Activity Calculation Mode.

A generic selection may be requested by simply replacing every appropriate character by the '*' character.

&USER USER CODE

This parameter is used as a Presentation and Selection Criterion to define the Page Layout, the Request Area, the Data Sorting Mode, and the Activity Calculation Mode.

A generic selection may be requested by simply replacing every appropriate character by the '*' character.

&ENTG ENTITY TYPE

This parameter is used as a Presentation and Selection Criterion to define the Page Layout, the Request Area, the Data Sorting Mode, and the Activity Calculation Mode.

&ENTD LINE CODE / ENTITY TYPE

This parameter is used as a Presentation and Selection Criterion to define the Data Sorting Mode.

Values are selected according to the entity type entered in the preceding parameter.

&LICO LINE CODE

This parameter is used as a Presentation and Selection Criterion to define the Page Layout, the Request Area, the Data Sorting Mode, and Activity Calculation Mode.

Values are selected according to the batch line codes.

&ENT ENTITY CODE

This parameter is used as a Presentation and Selection Criterion to define the Page Layout, the Request Area, the Data Sorting Mode, and the Activity Calculation Mode.

A generic selection may be requested by simply replacing every appropriate character by the '*' character.

Values are selected according to the entity type and code.

&INPT INPUT TYPE

This parameter is used as a Presentation and Selection Criterion to define the Page Layout, the Request Area, the Data Sorting Mode, and the Activity Calculation Mode.

The value 'B' corresponds to batch input mode; any other value corresponds to on-line input mode.

&D1 STARTING DATE

This parameter is used as a Selection Criterion to define the Request Area, the Data Sorting Mode, and the Activity Calculation Mode.

This parameter has to be followed by a date (MMDDCCYY). If this parameter is missing, the starting date coincides with the beginning of the Journal.

&D2 END DATE

This parameter is used as a Selection Criterion to define the Request Area, the Data Sorting Mode, and the Activity Calculation Mode.

This parameter has to be followed by a MMDDCCYY date format.

If this parameter is missing, the end date coincides with the end of the Journal.

&S1 STARTING SESSION

This parameter is used as a Selection Criterion to define the Request Area, the Data Sorting Mode, and the Activity Calculation Mode.

This parameter has to be followed by a four-character session number. If this parameter is missing, the starting session coincides with the beginning of the Journal.

&S2 FINAL SESSION

This parameter is used as a Selection Criterion to define the Request Area, the Data Sorting Mode, and the Activity Calculation mode.

This parameter has to be followed by a four-character session number. If this parameter is missing, the final session coincides with the end of the Journal.

&DAY DAY-BY-DAY PRESENTATION

Used as a Presentation Criterion to define the page layout and the data sorting mode.

To define an X-axis, this parameter must be followed by the '=' character and the number of characters corresponding to the curve step (its default value is one character).

&WEEK WEEK-BY-WEEK PRESENTATION

Used as a presentation criterion to define the page layout and the data sorting mode.

To define an X-axis, this parameter must be followed by the '=' character and the number of characters corresponding to the curve step (its default value is one character).

&MON MONTH-BY-MONTH PRESENTATION

Used as a presentation criterion to define the page layout and the data sorting mode.
To define an X-axis, this parameter must be followed by the '=' character and the number of characters corresponding to the curve step (its default value is one character).

&YEAR YEAR-BY-YEAR PRESENTATION

Used as a presentation criterion to define the page layout and the data sorting mode.
To define an X-axis, this parameter must be followed by the '=' character and the number of characters corresponding to the curve step (its default value is one character).

&SESS PRESENTATION BY SESSION

Used as a presentation criterion to define the page layout and the data sorting mode.
The user cannot use it to select sessions (the '=' character is therefore unnecessary).

&CHAR PRINTING CURVE CHARACTER

May only be used to define the activity calculation mode relative to the curve-type graphs.
It must follow (within parentheses) the calculation defining a curve.

&INTR NUMBER OF INPUT TRANSACTIONS

May only be used to define the activity calculation mode. Each Journal transaction is an input transaction.

&RETR NUMBER OF REAL TRANSACTIONS

May only be used to define the activity calculation mode.
A Journal transaction is effective, provided it is not modified by another transaction and it is not itself a deletion transaction. This concept is linked to the presentation criteria, i.e. a transaction which is modified once a day is effective every day with a day-by-day presentation; it is effective only once with another presentation.

| PARAMETER | AREa | PAGe | OUTput | |
|---|---|---|---|---|
| | | | STA | GRA |
| | | | LIN COL | ABS ORD |
| &LIB | YES | YES | YES | YES |
| &USER | YES | YES | YES | YES |
| &ENTG | YES | YES | YES | YES |
| &ENTD | | YES | YES | |
| &LICO | YES | YES | YES | YES |
| &ENT | YES | YES | YES | YES |
| &INPT | YES | YES | YES | YES |
| &D1= | | | | |
| MMDDCCYY | YES | | YES | YES |
| &D2= | | | | |
| MMDDCCYY | YES | | YES | YES |
| &S1=SESS | YES | | YES | YES |
| &S2=SESS | YES | | YES | YES |
| &DAY | YES | YES | YES | = |
| &WEEK | YES | YES | YES | = |
| &MON | YES | YES | YES | = |
| &YEAR | YES | YES | YES | = |
| &SESS | | YES | YES | |
| &CHAR | | | | CALCULATION |
| &INTR | | | | CALCULATION |
| &RETR | | | | CALCULATION |

= : the parameter must be followed by the separator
character '=' and the curve step;

CALCULATION : only used in the Activity Calculation Mode.

The following paragraphs present some of the restrictions concerning the way requests for Journal statistics may be formulated.

GRAPHS

Page layout:

Only one parameter corresponding to a period of time may be selected (&DAY, &WEEK, &MON, &YEAR).

Data sorting mode:

Only the parameters corresponding to a Presentation period (&DAY, &WEEK, &MON, &YEAR) or to a Selection period (&D1, &D2) may be selected.

Curves:

The '*' character is used to represent the intersection point of different curves. It is therefore not desirable to use this character as a printing character for a curve. Although the user may describe up to seven curves on the same graph, it might be difficult to read the graph because of the numerous intersection points.

STATISTICAL REPORTS

Page layout:

Parameters used at this level cannot be used again to define the Data Sorting Mode.

Data sorting mode:

A selection by date following several criteria only applies to the criterion entered just before the selection. It is not possible to indicate more than one interval of the same type for a selection.

TRANSACTION LISTS

Page layout:

In the absence of page layout criteria, the transactions are presented by:

- library,
- input date,
- session number,
- user code.

The following paragraphs list the error messages going with the translation of the request in current language.

```
ERROR MESSAGES: COMMENTS

UNIDENTIFIED LINE
    The keyword identifying the line is invalid.

ABSENCE OF OUTPUT IDENTIFICATION
    The line identifying the requested report is missing.

TOO MANY REQUESTS, THE FIRST TEN ARE PROCESSED

LINES-COLUMNS INVALID WITH LISTS
    Lines, columns,  abscissas and ordinates must not appear
    on a list request.

UNKNOWN KEYWORD
    A keyword can only  be used to specify the output report
    type.

INVALID OUTPUT IDENTIFICATION

UNKNOWN PARAMETER

INVALID USE OF THE PARAMETER

NO SELECTION ALLOWED FOR THIS PARAMETER

NO SELECTION ALLOWED ON THIS LINE

TOO MANY SELECTIONS - LIMITED TO THE MAXIMUM

STEP OF THE ABSCISSA NON-NUMERIC

END DATE PRECEDES STARTING DATE

FINAL SESSION PRECEDES STARTING SESSION

INVALID OR INCOMPLETE STRUCTURE OF THE REQUEST
    Absence of lines or columns for a statistical report, or
    of abscissas or ordinates for a curve-type graph.


ONLY ONE ABSCISSA POSSIBLE
    All the curves  of the same graph must have the same ab-
    scissa.

TOO MANY COLUMNS (OR CURVES), 7 ARE PROCESSED

INVALID AGGREGATE OF TRANSACTIONS
    The ordinate of a curve must be defined by a single cal-
    culation.

INVALID GRAPHIC LINE
    The X-axis must be defined by a parameter  corresponding
    to a period of time.

INVALID GRAPHIC LINE WITH PAGINATION
    The period used  to define  the X-axis  must be  shorter
    than the one used for the page layout.

ABSENCE OF THE PRINTING CHARACTER OF THE CURVE
```

ONE TIME PERIOD LIMITATION FOR GRAPH PRESENTATION
The combination of several time periods is impossible for the graph page layout.

INVALID DATE

TOO MANY PRESENTATION PARAMETERS
Only 3 page layout criteria are taken into account.

PARAMETER ALSO USED AS PAGINATION
The same parameter cannot be used to define both the page layout and the data sorting mode.

4.1.3. ACTI: USER INPUT

## ACTI: USER INPUT

Batch procedure authorization option: one '*' line with user code and password.

Specific input needed for this procedure is described in the OPTIONAL UTILITIES Reference Manual, in the chapter dedicated to this procedure.

4.1.4. ACTI: DESCRIPTION OF STEPS

ACTI: DESCRIPTION OF STEPS

```
EXTRACTION: PTU630

.Permanent input files:
 -Error message file
  PAC7AE
 -Journal Backup File
  PAC7PJ

.Transaction file:
 -Update transactions
  PAC7MB

.Output file
 -Transactions for selected reports
  PAC7ST

.Output report:
 -Batch-procedure authorization option
  PAC7DD

.Return codes :
   0 : OK
   8 : no batch procedure authorization
  12 : system error

PRINTING OF RESULTS:  PTU640

.Permanent input file:
 -Error Messages
  PAC7AE

.Input file:
 -Transactions for selected reports
  PAC7ST

.Output report:
 -Selected reports
  PAC7IV

.Sort file(s):
```

4.1.5. ACTI: EXECUTION JCL

```
#QUAL              [QUAL,1,1,1]
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*ACTIEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*ACTIEI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                PTU630
# .                ******
@ .
#USE               PAC7MB.,*ACTIMB.
#CYCLE,C          [QUALR,1,1,1]*ACTIDD630.,[NBCYC,1,1,1]
#USE               PAC7DD.,[QUALR,1,1,1]*ACTIDD630(+1).
#CAT,P             PAC7DD.
#ASG,AX            PAC7DD.
#USE               PAC7PJ.,*[FILEPJ,1,1,1].
#ASG,A             PAC7PJ.
#ASG,T             [QUALT,1,1,1]*PAC7ST.,///[SPAWK,1,1,1]
#XQT              *[BFILE,1,1,1].PTU630
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#[PRINT,1,1,1]     PAC7DD.,,[PRINT,1,2,1],,ACTIDD630
#FREE              PAC7DD.
#FREE              PAC7MB.
#FREE              PAC7PJ.
# .
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .                PTU640
# .                ******
# .
#CYCLE,C          [QUALR,1,1,1]*ACTIIV640.,[NBCYC,1,1,1]
#USE               PAC7IV.,[QUALR,1,1,1]*ACTIIV640(+1).
#CAT,P             PAC7IV.,///[SPAWK,1,1,1]
#ASG,AX            PAC7IV.
*INCREMENT S TO [SRTWK,1]
#ASG,T            [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#XQT              *[BFILE,1,1,1].PTU640
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#[PRINT,1,1,1]     PAC7IV.,,[PRINT,1,2,1],,ACTIIV640
#FREE              PAC7IV.
*INCREMENT S TO [SRTWK,1]
#FREE             [QUALT,1,1,1]*[SRTWK,1,S,2].
*LOOP
#FREE             [QUALT,1,1,1]*PAC7ST.
# .
#JUMP        SAUT
# .
#ERRFAT:
# .
#MSG,N ****** FATAL ERROR IN PROCEDURE ACTI ******
# .
#TEST        TLE/37/S5
#JUMP        SAUT
# .
#[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,ACTIEI
# .
#SAUT:
# .
```

```
#FREE             PAC7EI.
#FREE            *[BFILE,1,1,1].
```

## *4.2. PQC-: PACBENCH QUALITY CONTROL*

### 4.2.1. PQC: INTRODUCTION

PQC: INTRODUCTION

The Pacbench Quality Control (PQC) facility is optional, and its use depends on the corresponding purchase agreement.

The Pacbench Quality Control facility is divided into two components:

- The Analysis component, to evaluate the quality of applications in use. This is based either on standard rules or on rules customized by the user.

- The Quality rule extraction component, customized by the user.

Two purchase options are therefore available:

- A basic option providing standard rules for quality control;

- A quality rule CUSTOMIZATION option.

The components supplied on the installation tape are:

- For both purchase options:

  . A Batch Quality Analysis procedure (PQCA);

  . A set of 'compiled' standard quality rules, in the form of a sequential file (see the Environment & Installation manual).

- For the CUSTOMIZATION option:

  . A batch procedure for the extraction and 'compilation' of the customized rules (PQCE);

  . A data element dictionary and the user entity needed for the customization of the rules, in the form of Batch transactions that the user enters in his/her own dictionary via a Batch update (UPDT). (See the Environment & Installation manual.)

4.2.2. PQCA: QUALITY ANALYSIS
4.2.2.1. PQCA: INTRODUCTION

PQCA: PACBENCH QUALITY CONTROL - ANALYSIS

PQCA: INTRODUCTION

The PQCA procedure carries out an analysis of the quality of the applications, according to either standard rules or user-defined rules.

CHARACTERISTICS

The procedure invokes a unique program (PACQ), which serves as a base for links to the various programs used by the procedure.

Its operation is identical to that of the standard GPRT generation-print procedure.

All the programs called during the procedure are therefore considered to be sub-programs of PACQ, with which they communicate via a Communication Area and special return codes.

The procedure is split up into 'sub-chains', identified by a 1-position code:

- D for Dictionary
- E for Dialogue Screens (OSD)
- G PACBENCH/CS Screens (OSC)
- P for Batch Language Programs (BSD)

After two general programs (PACA10 and PACA20), common to all the chains, have been executed, the sub-chains are activated, according to the generation-print requests, in the following order:

- Screens
- Programs
- Dictionary

Each sub-chain performs an extraction (followed by a printing for GCP or GCO commands).

Once these sub-chains have been activated for the extraction of the entities to be analyzed, the PTUQ20 program performs the analysis according to the rules that it has been assigned and to the analysis parameters.

Results are printed by the PTUQ24, PTUQ25 and PTUQ30 programs.

The processing of the generated flow in the case of generation requests is identical to that of the GPRT procedure.

EXECUTION CONDITIONS

None. The files can remain available for on-line use.

USER INPUT

Please refer to the PQC Reference Manual.

OUTPUT REPORT

The user can choose between two types of reports:

. A global report showing the general results;

. A detailed report including:

- Results by entity
- Results by entity type.

The information contained in this report may also be gathered in files that will be processed by user programs. These files are:

- PACQMK for results by entity,
- PACQMJ for results by entity type.

These files are described in the PQC Reference Manual.

The procedure also prints the descriptions of the Quality-Controlled occurrences and an execution report.

PROCESSING OF THE GENERATED FLOW

This processing is identical to that of the GPRT procedure (See the corresponding chapter in this manual).

## 4.2.3. PQCA: DESCRIPTION OF STEPS

### PQCA: DESCRIPTION OF STEPS

QUALITY ANALYSIS: PACQ

The general characteristics of this step are described in the previous sub-chapter.

.Permanent input files:
- Data file
  PAC7AR
- Index file
  PAC7AN
- Printing command file
  PAC7AG
- PEI environment file ('Batch')
  PAC7AB
- PEI environment file ('on-line')
  PAC7AC
- Error-message file
  PAC7AE
- User parameters
  PAC7AP
- QUALITY RULES file
  PACQMF
- Batch-language generation skeleton
  PAC7SC
- Dialog generation skeleton
  PAC7SG
- Map skeleton
  PAC7SS

.Transaction files:
- Entities to be analyzed (input)
  PAC7ME
- Selection parameters (input)
  PACQMC

.Output reports:
- PACQ execution report
  PAC7IA
- VisualAge Pacbase documentation
  PAC7ID
- Selection-parameter check
  PACQIB
- Results by entity type
  PACQIE
- Results by entity
  PACQIF
- List of VA Pac identifiers which exceed the limits of the quality identificators
  PACQIG
- Generation report (PEI)
  PAC7IH

.Output generated flow, made of the following output:
- DBD generated-program file
  PAC7GB
- OLSD generated-program file
  PAC7GE
- C/S-OLSD generated-program file
  PAC7GG
- Batch-language generated-program file
  PAC7GP
- PDM generated-program file

```
  PAC7GV
  concatenated in the following file:
```

Other files mentioned in the procedure are temporary files used in the chains (see details in the flowcharts).

```
.Sort file(s):
```

PAC7GE (GCO command) and PAC7GP generated files (GCP command) are dynamically processed by the command indicated in the EXEGEN parameter. The operating principles of this processing are described in the paragraph 'PROCESSING OF OUTPUT FILES' in the Chapter 'GENERATION- PRINT (GPRT)'.

The other files of the procedure are temporary files used in the flowcharts.

## 4.2.4. PQCA: EXECUTION JCL

```
#ASG,A              *SC.
#USE                PAC7SC.,*SC.
#ASG,A              *SG.
#USE                PAC7SG.,*SG.
#ASG,A              *SS.
#USE                PAC7SS.,*SS.
#USE                PACQMF.,[QUALU,1,1,1]*PQCF.
#ASG,A              PAC7HF.
#CAT,P             PAC7IA.,///[SPAPR,1,1,1]
#ASG,AX            PAC7IA.
#CYCLE,C          [QUALR,1,1,1]*[USER,1,1,1]PQCAIB.,[NBCYC,1,1,1]
#USE               PACQIB.,[QUALR,1,1,1]*[USER,1,1,1]PQCAIB(+1).
#CAT,P             PACQIB.,///[SPAPR,1,1,1]
#ASG,AX            PACQIB.
#CYCLE,C          [QUALR,1,1,1]*[USER,1,1,1]PQCAID.,[NBCYC,1,1,1]
#USE               PAC7ID.,[QUALR,1,1,1]*[USER,1,1,1]PQCAID(+1).
#CAT,P             PAC7ID.,///[SPAPR,1,1,1]
#ASG,AX            PAC7ID.
#CYCLE,C          [QUALR,1,1,1]*[USER,1,1,1]PQCAIE.,[NBCYC,1,1,1]
#CYCLE,C          [QUALR,1,1,1]*[USER,1,1,1]PQCAIG.,[NBCYC,1,1,1]
#USE               PACQIG.,[QUALR,1,1,1]*[USER,1,1,1]PQCAIG(+1).
#CAT,P             PACQIG.,///[SPAPR,1,1,1]
#ASG,AX            PACQIG.
#CYCLE,C          [QUALR,1,1,1]*[USER,1,1,1]PQCAIH.,[NBCYC,1,1,1]
#USE               PACQIH.,[QUALR,1,1,1]*[USER,1,1,1]PQCAIH(+1).
#CAT,P             PACQIH.,///[SPAPR,1,1,1]
#ASG,AX            PACQIH.
#ASG,T             [QUALT,1,1,1]*PACQMJ.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PACQMM.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PACQMN.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PACQMO.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PACQMZ.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7EE.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7EG.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7EP.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7EV.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GE.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GG.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GI.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GP.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7GV.,///[SPAGN,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7JG.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KD.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KE.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KF.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KG.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KP.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KS.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KU.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7KV.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7MG.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7W1.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7W2.,///[SPAWK,1,1,1]
#FREE               PAC7HF.
#JUMP        SAUT
*INCREMENT S TO [SRTWK,1]
#ASG,T            [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*IF [USERLIB]
#ASG,T             [QUALT,1,1,1]*DYNLIB.
#SSDP,S           ,[QUALT,1,1,1]*DYNLIB.SSDEF$
            DEFINE LSC $LOCAL
            SEARCH HOME$
*INCREMENT N TO [USERLIB]
            SEARCH [USERLIB,N,1,1].
*LOOP
#USE        LINK$PF,[QUALT,1,1,1]*DYNLIB.
# .
#XQT              *[BFILE,1,1,1].PACQ
EXEGEN [EXEGEN,1,1,1,6,9,9]
```

```
#FREE              PACQIE.
#[PRINT,1,1,1]     PACQIF.,,[PRINT,1,2,1],,PQCAIFACQ
#FREE              PACQIF.
#[PRINT,1,1,1]     PACQIG.,,[PRINT,1,2,1],,PQCAIGACQ
#FREE              PACQIG.
#[PRINT,1,1,1]     PACQIH.,,[PRINT,1,2,1],,PQCAIHACQ
#FREE              PACQIH.
# .
*IF [USERLIB]
#FREE               LINK$PF.
*INCREMENT N TO [USERLIB]
#FREE              [USERLIB,N,1,1].
*LOOP
*ENDIF
#FREE              PACQMC.
#FREE              PACQMF.
#FREE             [QUALT,1,1,1]*PACQMJ.
#FREE             [QUALT,1,1,1]*PACQMK.
#FREE             [QUALT,1,1,1]*PACQMN.
#FREE             [QUALT,1,1,1]*PACQMM.
#FREE             [QUALT,1,1,1]*PACQMO.
#FREE             [QUALT,1,1,1]*PACQMZ.
#FREE             [QUALT,1,1,1]*PAC7EE.
#FREE             [QUALT,1,1,1]*PAC7EG.
#FREE             [QUALT,1,1,1]*PAC7EP.
#FREE             [QUALT,1,1,1]*PAC7EV.
#FREE             [QUALT,1,1,1]*PAC7GE.
#FREE             [QUALT,1,1,1]*PAC7GI.
#FREE             [QUALT,1,1,1]*PAC7GG.
#FREE             [QUALT,1,1,1]*PAC7GP.
#FREE             [QUALT,1,1,1]*PAC7GV.
#FREE             [QUALT,1,1,1]*PAC7JG.
#FREE             [QUALT,1,1,1]*PAC7KD.
#FREE             [QUALT,1,1,1]*PAC7KE.
#FREE             [QUALT,1,1,1]*PAC7KF.
#FREE             [QUALT,1,1,1]*PAC7KG.
#FREE             [QUALT,1,1,1]*PAC7KP.
#FREE             [QUALT,1,1,1]*PAC7KS.
#FREE             [QUALT,1,1,1]*PAC7KU.
#FREE             [QUALT,1,1,1]*PAC7KV.
#FREE              PAC7ME.
#FREE             [QUALT,1,1,1]*PAC7MG.
#FREE             [QUALT,1,1,1]*PAC7W1.
#FREE             [QUALT,1,1,1]*PAC7W2.
#FREE             [QUALT,1,1,1]*PAC7W3.
#FREE             [QUALT,1,1,1]*PAC7W4.
#FREE             PAC7SC.
#FREE             PAC7SG.
#FREE             PAC7SS.
*INCREMENT S TO [SRTWK,1]
#FREE             [QUALT,1,1,1]*[SRTWK,1,S,2].
*LOOP
# .
#JUMP        SAUT
# .
#ERRFAT:
# .
#MSG,N ****** FATAL ERROR IN PROCEDURE PQCA ******
# .
#TEST        TLE/37/S5
#JUMP        SAUT
# .
#[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,PQCAEI
# .
#SAUT:
# .
#FREE              PAC7EI.
```

4.2.5. PQCE: EXTRACTION OF USER-DEFINED QUALITY RULES
4.2.5.1. PQCE: INTRODUCTION

## PQCE: EXTRACTION OF USER-DEFINED QUALITY RULES

### PQCE: INTRODUCTION

The PQCE procedure performs the extraction of quality rules created by the user in his/her database via the user entity supplied with the CUSTOMIZATION option of the Pacbench Quality Control Facility.

It extracts the user entity occurrences that make up the customized quality rule dictionary, checks the information, and builds a file with the 'compiled' quality rules required by the Analysis of application quality (PQCA).

For further details, see the Pacbench Quality Control Reference Manual.

### EXECUTION CONDITIONS

None. The files can remain available for on-line use.

Batch-procedure access authorization option:
. Level 2 is required.

4.2.6. PQCE: USER INPUT

PQCE: USER INPUT

The user input of the PQCE procedure is similar to that of the EXUE extractor (PACX procedure).

One '*' line per library to be consulted for extraction:

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 1 | * | Line code |
| 3 | 8 | uuuuuuuu | User code |
| 11 | 8 | pppppppp | User password |
| 19 | 3 | bbb | Library code |
| 22 | 4 | nnnn | Session number (Blank=current session) |
| 26 | 1 | T | Session status if Tests session |
| 28 | 1 | l | Language code (F=French, A=English) |
| 29 | 4 | EXUE | Extractor code |

For further details, see Chapter 'PACX: EXTRACTION FROM VA PAC DATABASE' in this manual.

One command line:

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 2 | 4 | W1EX | Line code |
| 6 | 1 | $ | Identifier of UEOs extraction |
| 7 | 1 | | Library selection code: |
| | | U | Selected library |
| | | C | Selected library + higher level lib. |
| 8 | 2 | 5Q | Type code of user entity dedicated to Quality Control |

RESULT

The output of the PQCE procedure is a file containing the 'compiled' customized quality rules, which can be processed by the PQCA procedure.

PRINTED OUTPUT

This procedure prints:

1. An occurrence-extraction report

2. A check report on the validity and usage of quality indicators

3. Descriptive reports on quality rules:

- List of quality factors and criteria

- Definition and description of each indicator/metric

- Quality Control Dictionary.

## 4.2.7. PQCE: DESCRIPTION OF STEPS

PQCE: DESCRIPTION OF STEPS

EXTRACTION: PACX

This step extracts transactions according to user input.

.Permanent input files:
 -Data file
  PAC7AR
 -Index file
  PAC7AN
 -Error-message file
  PAC7AE
 -Archived transactions
  PAC7PJ

.Input transaction file:
 -User input
  PAC7MB

.Work files:
 -User input
  PAC7BM
 -EXPU work file
  PAC7MM
 -EXPJ work file
  PAC7MJ
 -RMEN work file
  PAC7TE
 -RMEN work file
  PAC7RE
 -RMEN work file
  PAC7RM

 -Extracted transactions
  PAC7WD
 -Multi-layered Extractor work file
  SYSEXT

.Output files:
 -Extracted transactions for UPDT
  PAC7MV
 -Extracted transactions for REOR (EXPU)
  PAC7MR

 -Extracted transactions for UPDP
  PAC7GY
 -Extracted transactions for CPSN
  PAC7TD
 -Extracted transactions for EXUE
  PAC7UE

.Output reports:
 -General printout of the program stream
  PAC7IA
 -List of errors on input transactions
  PAC7DD
 -Summary reports on extractions
  PAC7EE
  PAC7EP
  PAC7EQ
  PAC7EZ

.Sort file(s):

.Return codes :
   0 : no error
   8 : serious error (specified in PAC7DD).

COMPILATION OF QUALITY RULES: PTUQ10

This step creates the customized quality rule file that
will be used by the PQCA analysis procedure.

.Permanent input file:
 -Error messages
  PAC7AE
 -Data file
  PAC7AR

.Permanent output file:
-'Compiled' Quality Rules
PACQMI

.Transaction files:
-User input
PAC7MB
-User entity occurrences
PACQMC

.Output file:
-Preparation for printing
PACQML

.Output report(s):
-Rule-validity report
PACQIC
-Batch-procedure authorization option
PAC7DD

.Sort file(s):

PRINTING OF QUALITY RULES: PTUQ15

.Permanent input file:
-Error message file
PAC7AE

.Input file:
-Preparation for printing

.Output reports:
-List of quality factors and criteria,
and description by indicator

-Dictionary of Quality rules

.Sort file(s):

### 4.2.8. PQCE: EXECUTION JCL

```
#QUAL              [QUAL,1,1,1]
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*PQCEEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*PQCEEI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                PACX
# .                ******
# .
#USE               PAC7MB.,*PQCEMB.
#ASG,T            [QUALT,1,1,1]*PAC7MV.,///[SPAWK,1,1,1]
#CYCLE,C          [QUALR,1,1,1]*PQCEEEUSE.,[NBCYC,1,1,1]
#USE               PAC7EE.,[QUALR,1,1,1]*PQCEEEUSE(+1).
#CAT,P             PAC7EE.
#ASG,AX            PAC7EE.
#CYCLE,C          [QUALR,1,1,1]*PQCEDDUSE.,[NBCYC,1,1,1]
#USE               PAC7DD.,[QUALR,1,1,1]*PQCEDDUSE(+1).
#CAT,P             PAC7DD.
#ASG,AX            PAC7DD.
#XQT              *[BFILE,1,1,1].PACX
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
#[PRINT,1,1,1]     PAC7EE.,,[PRINT,1,2,1],,PQCEEEUSE
#FREE              PAC7EE.
#[PRINT,1,1,1]     PAC7DD.,,[PRINT,1,2,1],,PQCEDDUSE
#FREE              PAC7DD.
# .
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .                PTUQ10
# .                ******
# .
#USE               PACQMC.,[QUALT,1,1,1]*PAC7MV.
#ASG,T            [QUALT,1,1,1]*PACQML.,///[SPAWK,1,1,1]
#CYCLE,C          [QUALU,1,1,1]*PQCF.,[NBCYC,1,1,1]
#USE               PACQMI.,[QUALU,1,1,1]*PQCF(+1).
#CAT,P             PACQMI.,///[SPAWK,1,1,1]
#ASG,AX            PACQMI.
#CYCLE,C          [QUALR,1,1,1]*PQCEICQ10.,[NBCYC,1,1,1]
#USE               PACQIC.,[QUALR,1,1,1]*PQCEICQ10(+1).
#CAT,P             PACQIC.
#ASG,AX            PACQIC.
#CYCLE,C          [QUALR,1,1,1]*PQCEDDQ10.,[NBCYC,1,1,1]
#USE               PAC7DD.,[QUALR,1,1,1]*PQCEDDQ10(+1).
#CAT,P             PAC7DD.
#ASG,AX            PAC7DD.
*INCREMENT S TO [SRTWK,1]
#ASG,T            [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#XQT              *[BFILE,1,1,1].PTUQ10
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#[PRINT,1,1,1]     PACQIC.,,[PRINT,1,2,1],,PQCEICQ10
#FREE              PACQIC.
#[PRINT,1,1,1]     PAC7DD.,,[PRINT,1,2,1],,PQCEDDQ10
#FREE              PAC7DD.
#FREE              PACQMI.
#FREE              PAC7MB.
#FREE              PACQMC.
# .
#TEST        TEP/10/S5
#JUMP        SAUT
# .
```

```
    # .                PTUQ15
    # .                ******
    # .
    #CYCLE,C          [QUALR,1,1,1]*PQCEIIQ15.,[NBCYC,1,1,1]
    #USE               PACQII.,[QUALR,1,1,1]*PQCEIIQ15(+1).
    #CAT,P             PACQII.
    #ASG,AX            PACQII.
    #CYCLE,C          [QUALR,1,1,1]*PQCEIJQ15.,[NBCYC,1,1,1]
    #USE               PACQIJ.,[QUALR,1,1,1]*PQCEIJQ15(+1).
    #CAT,P             PACQIJ.
    #ASG,AX            PACQIJ.
    #XQT              *[BFILE,1,1,1].PTUQ15
    # .
    #TEST        TLE/17/S5
    #JUMP        ERRFAT
    # .
    #[PRINT,1,1,1]     PACQII.,,[PRINT,1,2,1],,PQCEIIQ15
    #FREE              PACQII.
    #[PRINT,1,1,1]     PACQIJ.,,[PRINT,1,2,1],,PQCEIJQ15
    #FREE              PACQIJ.
    #FREE             [QUALT,1,1,1]*PACQML.
    *INCREMENT S TO [SRTWK,1]
    #FREE             [QUALT,1,1,1]*[SRTWK,1,S,2].
    *LOOP
    # .
    #JUMP        SAUT
    # .
    #ERRFAT:
    # .
    #MSG,N ****** FATAL ERROR IN PROCEDURE PQCE ******
    # .
    #TEST        TLE/37/S5
    #JUMP        SAUT
    # .
    #[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,PQCEEI
    # .
    #SAUT:
    # .
    #FREE              PAC7EI.
    #FREE             *[BFILE,1,1,1].
```

# 5. METHODOLOGY INTEGRITY CHECK

# *5.1. ADM: SSADM PACDESIGN METHODOLOGY*

5.1.1. SADM: INTRODUCTION

SADM: INTRODUCTION

This procedure is supplied for users of the WorkStation and the SSADM PACDESIGN application Design Methodology.

It checks the validity and the consistency of the entities that have been uploaded by the user from his/her workstation to the specifications database.

NOTE:

The SSADM methodology and the features of the SADM procedure are available only in English.

For further information, refer to the PACDESIGN Reference Manual.

EXECUTION CONDITIONS

None.

5.1.2. SADM: USER INPUT

SADM: USER INPUT

USER INPUT

One '*' line for library access:

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 1 | * | LINE CODE |
| 3 | 8 | uuuuuuuu | USER CODE |
| 11 | 8 | pppppppp | USER PASSWORD |
| 19 | 3 | bbb | LIBRARY CODE |
| 22 | 4 | nnnn | SESSION NUMBER (BLANK=CURRENT SESSION) |
| 26 | 1 | T | SESSION VERSION IF TEST SESSION |
| 37 | 25 | ..... | RESERVED IMS: REQUEST IDENTIFIER (cf. IMS BATCH PAF) |

Print request lines:

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 1 | 'T' | LINE CODE |
| 3 | 1 | | CODE FOR REPORT TO BE PRINTED |
| | | 'V' | VALIDATION OF SSADM ENTITIES |
| | | '1' | CROSS-BOUNDARIES DATA FLOWS WITHIN A DFD |
| | | '2' | OPERATIONAL MASTERS WITHIN A DSD |
| | | '3' | ALL ENTITIES WITH THEIR ATTRIBUTES |
| 4 | 6 | eeeeee | ENTITY CODE (required for '1' or '2') |

PRINTED OUTPUT

This procedure prints the following, based on print requests:

. A validation of SSADM entities report

. List of cross-boundaries data flows within a DFD

. List of operational masters within a DSD

. List of all entities with their attributes.

## 5.1.3. SADM: DESCRIPTION OF STEPS

### SADM: DESCRIPTION OF STEPS

```
SSADM-ENTITY CONSISTENCY CHECK:  PADM10

.Permanent input files:
 -Data file
  PAC7AR
 -Index file
  PAC7AN
 -Error-message file
  PAC7AE

.Transaction file:
 -User input
  PAC7MB

.Work file(s):
 -Standard PAF KSDS file
  SYSPAF

.Output report:
 -List of checked SSADM entities
  PAC7EJ
```

### 5.1.4. SADM: EXECUTION JCL

```
#QUAL              [QUAL,1,1,1]
#XQT               *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C           [QUALR,1,1,1]*SADMEI.,[NBCYC,1,1,1]
#USE                PAC7EI.,[QUALR,1,1,1]*SADMEI(+1).
#CAT,P              PAC7EI.
#ASG,AX             PAC7EI.
# .
# .                 PADM10
# .                 ******
# .
#USE                PAC7MB.,*SADMMB.
#CYCLE,C           [QUALR,1,1,1]*SADMEJM10.,[NBCYC,1,1,1]
#USE                PAC7EJ.,[QUALR,1,1,1]*SADMEJM10(+1).
#CAT,P              PAC7EJ.,///[SPAWK,1,1,1]
#ASG,AX             PAC7EJ.
#XQT               *[BFILE,1,1,1].PADM10
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#[PRINT,1,1,1]     PAC7EJ.,,[PRINT,1,2,1],,SADMEJM10
#FREE               PAC7EJ.
#FREE               PAC7MB.
# .
#JUMP        SAUT
# .
#ERRFAT:
# .
#MSG,N ****** FATAL ERROR IN PROCEDURE SADM ******
# .
#TEST        TLE/37/S5
#JUMP        SAUT
# .
#[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,SADMEI
# .
#SAUT:
# .
#FREE               PAC7EI.
#FREE              *[BFILE,1,1,1].
```

## *5.2. YSM: WORKSTATION / YSM METHODOLOGY*

### 5.2.1. YSMC: INTRODUCTION

YSMC: INTRODUCTION

This procedure is supplied for users of the WorkStation and the YSM Pacdesign application Methodology.

. It checks the validity and the integrity of the entities uploaded from the WorkStation to the Host Specifications Dictionary by the user.

. It checks the consistency between a Data flow Diagram and its parent diagram.

. It establishes different hierarchical lists of certain entities of the Database.

NOTE: The YSM Methodology and the procedure functionalities exist only in English.

For complete details, refer to the Pacdesign Reference Manual YSM Methodology.

EXECUTION CONDITIONS

None.

5.2.2. YSMC: USER INPUT

YSMC: USER INPUT

USER INPUT

One '*'-line for library access (required):

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 1 | '*' | Line code |
| 3 | 8 | uuuuuuuu | User code |
| 11 | 8 | pppppppp | User password |
| 19 | 3 | bbb | Code of the selected library |
| 22 | 4 | nnnn | Session number (space = current) |
| 26 | 1 | T | Session status if Test session |
| 37 | 25 | ..... | Only for IMS : Request identifier (cf. PAF batch IMS) |

Entity validation request line (optional):

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 1 | 'T' | Line code |
| 3 | 1 | | Code of report to be printed |
| | | 'W' | 'Validation of YSM entities' |

PRC entity control request lines (optional):

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 1 | 'T' | Line code |
| 3 | 1 | | Code of report to be printed |
| | | 'Y' | 'Inter process consistency checking' |
| 4 | 6 | eeeeee | Entity code (PRC) |

Printing-request lines (optional):

| POS. | LEN. | VALUE | MEANING |
|---|---|---|---|
| 2 | 1 | 'T' | Line code |
| 3 | 1 | | Code of report to be printed |
| | | '0' | 'List of Relationships' |
| | | '4' | 'Process Decomposition list (CTX)' |
| | | '5' | 'Process Decomposition list (DFD)' |
| | | '6' | 'Datastore Decomposition list' |
| | | '7' | 'Event flow Decomposition list' |
| | | '8' | 'Group Data flow Decomposition list' |
| | | '9' | 'Multiple Data flow Decomposition list' |
| 4 | 6 | eeeeee | Entity code (REL/CTX/PRC/DST/EFL/DFL) |

PRINTED REPORT

This procedure prints:

. A 'Validation of YSM entities' report.

. An 'Inter-process consistency check' report.

. The reports:

  . 'List of relationships'.

  . 'Process decomposition list (CTX)'.

  . 'Process decomposition list (DFD)'.

  . 'Data store decomposition list'.

  . 'Event flow decomposition list'.

  . 'Group Data flow Decomposition list'.

  . 'Multiple Data flow Decomposition list'.

5.2.3. YSMC: DESCRIPTION OF STEPS

YSMC: DESCRIPTION OF STEPS

```
YSM METHOD INTEGRITY CHECKING:  PYSMCC

.Permanent input files:
 -Data file
  PAC7AR
 -Index file
  PAC7AN
 -Error-message file
  PAC7AE

.Transaction file:
 -User input
  PAC7MB

.Work file(s):
 -PAF standard KSDS file
  SYSPAF

.Output reports:
 -Integrity checking lists
  PAC7EJ
 -Validation reports
  PAC7EI


INTER-PROCESS CONSISTENCY:  PYSMC3

.Permanent input files:
 -Data file
  PAC7AR
 -Index file
  PAC7AN
 -Error-message file
  PAC7AE

.Transaction file:
 -User input
  PAC7MB

.Work file(s):
 -PAF standard KSDS file

.Output report:
 -Integrity-check lists
  PAC7EJ
LIST OF RELATIONSHIPS AND REPORTS:  PYSMC2

.Permanent input files:
 -Data file
  PAC7AR
 -Index file
  PAC7AN
 -Error messages
  PAC7AE

.Transaction file:
 -User input
  PAC7MB

.Work file(s):
```

-PAF standard KSDS file

.Output report:
-Integrity-check lists
PAC7EJ

5.2.4. YSMC: EXECUTION JCL

```
#QUAL              [QUAL,1,1,1]
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*YSMCEI.,[NBCYC,1,1,1]
#USE                PAC7EI.,[QUALR,1,1,1]*YSMCEI(+1).
#CAT,P              PAC7EI.
#ASG,AX             PAC7EI.
# .
# .                 PYSMCC
# .                 ******
# .
#USE                PAC7MB.,*YSMCMB.
#CYCLE,C           [QUALR,1,1,1]*YSMCEJMCC.,[NBCYC,1,1,1]
#USE                PAC7EJ.,[QUALR,1,1,1]*YSMCEJMCC(+1).
#CAT,P              PAC7EJ.,///[SPAWK,1,1,1]
#ASG,AX             PAC7EJ.
#XQT               *[BFILE,1,1,1].PYSMCC
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#[PRINT,1,1,1]      PAC7EJ.,,[PRINT,1,2,1],,YSMCEJMCC
#FREE               PAC7EJ.
# .
# .                 PYSMC3
# .                 ******
# .
#CYCLE,C           [QUALR,1,1,1]*YSMCEJMC3.,[NBCYC,1,1,1]
#USE                PAC7EJ.,[QUALR,1,1,1]*YSMCEJMC3(+1).
#CAT,P              PAC7EJ.,///[SPAWK,1,1,1]
#ASG,AX             PAC7EJ.
#XQT               *[BFILE,1,1,1].PYSMC3
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#[PRINT,1,1,1]      PAC7EJ.,,[PRINT,1,2,1],,YSMCEJMC3
#FREE               PAC7EJ.
# .
# .                 PYSMC2
# .                 ******
# .
#CYCLE,C           [QUALR,1,1,1]*YSMCEJMC2.,[NBCYC,1,1,1]
#USE                PAC7EJ.,[QUALR,1,1,1]*YSMCEJMC2(+1).
#CAT,P              PAC7EJ.,///[SPAWK,1,1,1]
#ASG,AX             PAC7EJ.
#XQT               *[BFILE,1,1,1].PYSMC2
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#[PRINT,1,1,1]      PAC7EJ.,,[PRINT,1,2,1],,YSMCEJMC2
#FREE               PAC7EJ.
#FREE               PAC7MB.
# .
#JUMP        SAUT
# .
#ERRFAT:
# .
#MSG,N ****** FATAL ERROR IN PROCEDURE YSMC ******
# .
#TEST        TLE/37/S5
#JUMP        SAUT
# .
#[PRINT,1,1,1]      PAC7EI.,,[PRINT,1,2,1],,YSMCEI
# .
#SAUT:
```

**METHODOLOGY INTEGRITY CHECK 5**
**YSM: WORKSTATION / YSM METHODOLOGY 2**
**YSMC: EXECUTION JCL 4**

```
# .
#FREE             PAC7EI.
#FREE            *[BFILE,1,1,1].
```

# 6. PAC/IMPACT

# FOREWORD

```
------------------------------------------------------------
NOTE:  Pac/Impact users may also refer to the 'Pac/Impact
       for VA Pac' Reference Manual.
------------------------------------------------------------
```

Impact analysis requires a very large amount of machine-time. It is therefore recommended to limit the scope of the analysis.

You can limit your analysis to two distinct levels. You can also combine two levels, to define a more precise analysis domain.

1. The UXSR procedure, documented in Sub-Chapter 'UXSR: Partial Sub-Network Extraction', Chapter 'MANAGER'S UTILITIES' of the Batch Procedures: Administrator's Guide, allows you to create a new image of the VA Pac Database, by zooming on a given sub-network. This creates a new database which is a subset (restructured and/or renamed) of the initial database. The analysis is then performed on this subset.

   NOTE: Extraction of a session is also possible.

   Furthermore, the REOR procedure (which must always be run after a UXSR) allows you to cancel those occurrences which are not relevant to the analysis.

2. You may also choose to limit your analysis to certain occurrences of the Program, Screen or Database Block entities. Additional selection options are available to this effect.

   This analysis limitation is performed by the INFP utility, documented in the ENVIRONMENT AND INSTALLATION Manual, Chapter 'INSTALLATION', Sub-Chapter 'Initialization of the FP file', as well as in the Pac/Impact for VA Pac Reference Manual.

3. The procedures in this Function do not impact the database files. However, it is recommended to close the on-line files for better performance.

# *6.1. ISEP: SELECTION OF ENTRY POINTS*

## 6.1.1. ISEP: INTRODUCTION

ISEP: INTRODUCTION

The ISEP procedure is designed to select the entry points -- Data Elements and/or character strings -- which will be used as criteria by the impact analysis (IANA procedure).

The identification line of the selection context (* line) is required. It allows you to specify the session and the sub-network (view Z1) from which the selection will be made.

Data Elements and character strings are considered as entry points when they meet selection criteria entered in ISEP user input lines (or command lines).

Three types of criteria may be used (see below) and at least one selection criterion is required, knowing that no particular criterion type is required.

A selection may combine several types of criteria, and several command lines for each type.

. The E-type line allows you to extract Data Elements by selecting a code (generic code authorized) and/or one or several format(s).

. The S-type line allows you to extract character strings by selecting a code (generic code authorized) and/or one or several format(s).

. The W-type line allows you to select Data Elements via a keyword. You may also indicate the keyword type, Data Element formats and code.

EXECUTION CONDITIONS

None.

ABNORMAL EXECUTION

Whatever the cause of the abend, the procedure can be re-run as it is, after correction of the problem.

6.1.2. ISEP: USER INPUT

ISEP: USER INPUT

Only one '*' line (required, placed at the beginning of the stream):

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 2 | 1 | '*' | Line code |
| 3 | 8 | uuuuuuuu | User code |
| 11 | 8 | pppppppp | Password |
| 19 | 3 | bbb | Code of the highest library in the sub-network |
| 22 | 4 | ssss | Session number (blank if current session) |
| 26 | 1 | | Session status (' ' or 'T') |
| 28 | 1 | F or E | Language code if different from that of the site (bilingual sites only) |
| 69 | 3 | iii | Code of the lowest library in the sub-network (optional) |

One E-type line: Selection of Data Elements (optional)

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 2 | 1 | 'E' | Line code |
| 3 | 6 | | Data Element code (generic code possible with the '*' character, at beginning or end of code: ***XXX or XXX***, or with the '?' character followed by the string to be inc- luded in the code (?XXX). |
| 9 | 10 | | Data Element input format |
| 19 | 10 | | Data Element internal format |
| 29 | 1 | | Internal usage (default: D) |
| 30 | 27 | | Data Element output format |
| 57 | 1 | 'N' | Child Data Elements not impacted |
| | | ' ' | Child Data Elements impacted |

One S-type line: Selection of character strings (optional)

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 2 | 1 | 'S' | Line code |
| 3 | 30 | | String code (generic code possible with the '*' character anywhere in the code), or ?xx where xx is a string located anywhere in the sequence of char. |
| 33 | 10 | | Internal format of the string |
| 43 | 1 | | Internal usage (Default: D) |

One W-type line: Selection on keyword (optional)

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 2 | 1 | 'W' | Line code |
| 3 | 1 | | Keyword type (implicit 'L', explicit 'M', or both ' ') |
| 4 | 13 | | Keyword code (no generic code) |
| 17 | 10 | | Data Element input format |
| 27 | 10 | | Data Element internal format |
| 37 | 1 | | Internal usage (Default: D) |
| 38 | 27 | | Data Element output format |
| 65 | 6 | | Data Element code (generic code possible with the '*' character anywhere in the code) |
| 71 | 1 | 'N' | Child Data Elements not impacted |
| | | ' ' | Child Data Elements impacted |

## 6.1.3. ISEP: DESCRIPTION OF STEPS

### ISEP: DESCRIPTION OF STEPS

```
SELECTION OF ENTRY POINTS:  PAN210

.Permanent input files:
 -Error messages
  PAC7AE
 -Data file
  PAC7AR
 -Index file
  PAC7AN
 -File of entities to be analyzed
  PAC7FP

.Transactions file:
 -User input
  PAC7MB

.Output file:
 -Selected entry points
  PAC7FH

.Output report(s):
 -Validation report
  PAC7IE

.Return Codes :
   0 : OK.
  12 : System error


REMOVAL OF DUPLICATE ENTRY POINTS:  PAN215

.Transactions file:
 -Selected entry points
  PAC7FH

.Permanent output files:
 -Sorted selected entry points
  PAC7HF
 -Reduced entry points to be purged
  PAC7FR

.Sort file(s):

.Return codes:
```

### 6.1.4. ISEP: EXECUTION JCL

```
#QUAL              [QUAL,1,1,1]
#XQT               *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C           [QUALR,1,1,1]*ISEPEI.,[NBCYC,1,1,1]
#USE                PAC7EI.,[QUALR,1,1,1]*ISEPEI(+1).
#CAT,P              PAC7EI.
#ASG,AX             PAC7EI.
# .
# .                 PAN210
# .                 ******
# .
#USE                PAC7MB.,*ISEPMB.
#CYCLE,C           [QUALR,1,1,1]*ISEPIE210.,[NBCYC,1,1,1]
#USE                PAC7FP.,[QUALU,1,1,1]*[FILEFP,1,1,1].
#ASG,A              PAC7FP.
# .
#USE                PAC7IE.,[QUALR,1,1,1]*ISEPIE210(+1).
#CAT,P              PAC7IE.
#ASG,AX             PAC7IE.
#ASG,T              [QUALT,1,1,1]*PAC7FH.,///[SPAWK,1,1,1]
#XQT               *[BFILE,1,1,1].PAN210
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#[PRINT,1,1,1]     PAC7IE.,,[PRINT,1,2,1],,ISEPIE210
#FREE               PAC7IE.
#FREE               PAC7MB.
# .
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .                 PAN215
# .                 ******
# .
#USE                PAC7FH.,[QUALT,1,1,1]*PAC7FH.
# .
#CYCLE,C           [QUALU,1,1,1]*[FILEFH,1,1,1].,5
#USE                PAC7HF.,[QUALU,1,1,1]*[FILEFH,1,1,1](+1).
#CAT,P              PAC7HF.,///[SPAWK,1,1,1]
#ASG,AX             PAC7HF.
#CYCLE,C           [QUALU,1,1,1]*[FILEFR,1,1,1].,5
#USE                PAC7FR.,[QUALU,1,1,1]*[FILEFR,1,1,1](+1).
#CAT,P              PAC7FR.,///[SPAWK,1,1,1]
#ASG,AX             PAC7FR.
#XQT               *[BFILE,1,1,1].PAN215
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE               [QUALT,1,1,1]*PAC7FH.
#FREE               PAC7HF.
#FREE               PAC7FR.
# .
#JUMP        SAUT
# .
#ERRFAT:
# .
#MSG,N ****** FATAL ERROR IN PROCEDURE ISEP ******
# .
#TEST        TLE/37/S5
#JUMP        SAUT
# .
#[PRINT,1,1,1]    PAC7EI.,,[PRINT,1,2,1],,ISEPEI
# .
#SAUT:
# .
```

```
    #FREE            PAC7EI.
    # .
    #FREE            *[BFILE,1,1,1].
```

## *6.2. IPEP: ENTRY-POINT PRINTOUT*

### 6.2.1. IPEP: INTRODUCTION

IPEP: INTRODUCTION

The IPEP procedure produces two types of printouts.

1. List of entry points:

   This list is obtained after the ISEP procedure, since this procedure selects the entry points.

2. List of impact search criteria:

   This list is obtained after the IANA procedure, since this procedure selects the impact search criteria.

In the printout, the criteria or entry points are sorted by alphabetical order (Data Elements and character strings altogether) for each definition library of these criteria.

The order of printing of the categories is:

-character string
-Data Element defined in Dictionary
-Data Element defined in Segment Description
-Data Element defined in Report Structure
-Data Element defined in the Screen or Program Working Section.

EXECUTION CONDITIONS

None, but the FH file must exist.

ABNORMAL EXECUTION

Whatever the cause of the abend, the procedure can be run again as it is, after the problem has been solved.

USER INPUT

No user input is required for the execution of the IPEP procedure.

6.2.2. IPEP: DESCRIPTION OF STEPS

## IPEP: DESCRIPTION OF STEPS

```
PRINTING OUT ENTRY POINTS:  PAN220

.Permanent input files:
 -Error messages
  PAC7AE
 -Entry points
  PAC7HF

.Output report:
 -List of entry points
  PAC7IL

.Sort file(s):

.Return Codes :
   0 : OK
  12 : System error
```

6.2.3. IPEP: EXECUTION JCL

```
#QUAL              [QUAL,1,1,1]
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*IPEPEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*IPEPEI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                PAN220
# .                ******
# .
#CYCLE,C          [QUALR,1,1,1]*IPEPIL220.,[NBCYC,1,1,1]
#USE               PAC7IL.,[QUALR,1,1,1]*IPEPIL220(+1).
#CAT,P             PAC7IL.
#ASG,AX            PAC7IL.
#USE               PAC7HF.,[QUALU,1,1,1]*[FILEFH,1,1,1].
#ASG,A             PAC7HF.
#XQT              *[BFILE,1,1,1].PAN220
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#[PRINT,1,1,1]     PAC7IL.,,[PRINT,1,2,1],,IPEPIL220
#FREE              PAC7IL.
#FREE              PAC7MB.
#FREE              PAC7HF.
# .
#JUMP        SAUT
# .
#ERRFAT:
# .
#MSG,N ****** FATAL ERROR IN PROCEDURE IPEP ******
# .
#TEST        TLE/37/S5
#JUMP        SAUT
# .
#[PRINT,1,1,1]    PAC7EI.,,[PRINT,1,2,1],,IPEPEI
# .
#SAUT:
# .
#FREE             PAC7EI.
# .
#FREE             *[BFILE,1,1,1].
```

## *6.3. ISOS: SELECTION OF STRINGS AND OPERATORS*

### 6.3.1. ISOS: INTRODUCTION

ISOS: INTRODUCTION

ISOS is a complement to the ISEP procedure. Its purpose is to select the following items:

. VA Pac-processed dates, such as DATOR and DAT8, that will be used as entry points to perform the impact analysis from the first iteration (IANA procedure),

. Character-strings, without considering them as entry points (such as ORDER BY). For the strings which provide entry points, see the description of the 'S'-type line in the ISEP procedure's USER INPUT section,

. Operators used in procedural code (-P) lines, such as ADT. Some of these operators trigger the generation of date-type entry points (such as DATOR for ADT),

. Lines that use constant values, either defined (VALUE), moved (MOVE), or conditionned ('IF').

Reports on entities using these operators and character-strings can be produced on request (IPAI procedure).

NARROWING THE SELECTION SCOPE

For better performance, it is advisable to narrow the scope of the selection. This can be done at two different levels, and should always be done before running the procedure.

. Via the UXSR procedure, documented in sub-chapter 'Partial Sub-Network Extraction', you can create another VA Pac Database. The new Database is a subset (restructured and/or renamed) of the initial Database. The analysis will be performed on this subset.

. Via the INFP utility, documented in sub-chapter 'INFP : FP File Initialization (Impact Analysis)', you can decide to restrict the scope of the selection to entities of a particular type or types, or to particular entities of a given type. Further selection options are also available.

The selection context's identification line (*-line) is required. It allows you to specify, besides the session, the library from which you want to build the sub-network that will be analyzed (view Z1).

Three types of selection may be used (see below). At least one type of selection is required, no particular type being requested.

The selection may include more than one type of selection, and more than one command line for each type.

. The 'D'-type line allows you to request the extraction of date-type Data Elements handled by VisualAge Pacbase.

The maximum number of 'D'-lines is 40.

. The 'C'-type line allows you to extract character-strings that are likely to include one or more blanks. In this case, the separator must be specified, and the number of blanks is significant. These strings are not entry points.

The maximum number of 'C'-lines is 50 characters for each one of the three search domains.

. The 'O'-type line allows you to select operators processed in -P lines.

The maximum number of 'O'-lines is 50.

## EXECUTION CONDITIONS

None.

## ABNORMAL EXECUTION

Whatever the cause of an abnormal ending, the procedure may be re-run as it is after correction of the problem.

6.3.2. ISOS: USER INPUT

ISOS: USER INPUT

Only one '*'-line (required, placed at the beginning of the stream):

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 2 | 1 | '*' | Line code |
| 3 | 8 | uuuuuuuu | User code |
| 11 | 8 | pppppppp | Password |
| 19 | 3 | bbb | Code of the highest library in the sub-network |
| 22 | 4 | ssss | Session number (blank if current session) |
| 26 | 1 | | Session status (' ' or 'T') |
| 28 | 1 | F or E | Language code if different from that of the site (bilingual sites only) |
| 69 | 3 | iii | Code of the lowest library in the sub-network (optional) |

One 'D'-line for the selection of generated dates (optional):

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 2 | 1 | 'D' | Line code |
| 3 | 9 | | Code of generated date Data-Element to be extracted (which must be recognized by the system) |

One 'O'-line for the selection of operators (optional):

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 2 | 1 | 'O' | Line code |
| 3 | 3 | | Code of wanted operator (which must be recognized by the system) |

One 'C'-line for the selection of character strings (optional):

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 2 | 1 | 'C' | Line code |
| 3 | 1 | | End-of-string separator (Required if the string contains at least one blank) |
| 4 | 31 | | Code of searched string. (Must be ended by the separator if a separator is specified) |
| 35 | 1 | | Where the string is to be searched: |
| | | 'D' | Search in the Definition part (-W of programs and/or screens, and -9 of programs) |
| | | 'T' | Search in Procedural Code part (-P of programs and/or screens, -8, -9, -SC of programs, -CE and -CS of screens) |
| | | 'R' | Search in Report-specific Procedural code part: .Category condition and Structure .Source Data-Element code (Struct.) |
| | | ' ' | Search in the three above mentioned parts |

One 'V'-line for the selection of constant values (optional):

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 2 | 1 | 'V' | Line code |
| 3 | 1 | | Beginning-of-value separator Required (either ' or ") |
| 4 | 31 | | Code of searched value Required, ending with the separator (either ' or ") |
| 35 | 1 | | Where the constant is to be searched |
| | | 'D' | Search in the Definition part (-W of programs and/or screens, and -9 of programs) |
| | | 'T' | Search in the Procedural Code part (-P of programs and/or screens, -8, -9, -SC of programs, -CE and -CS of screens) |
| | | 'R' | Search in Report-specific Procedural code part: .Category condition and Structure .Source Data-Element code (Struct.) |
| | | ' ' | Search in the three above mentioned parts |

## 6.3.3. ISOS: DESCRIPTION OF STEPS

### ISOS: DESCRIPTION OF STEPS

```
SELECTION OF STRINGS AND OPERATORS:  PAN212

.Permanent input files:
 -Error messages
  PAC7AE
 -Data file
  PAC7AR
 -Index file
  PAC7AN
 -Entities in production
  PAC7FP

.Transaction file:
 -User input
  PAC7MB

.Output file(s):
 -Selected entry points
  PAC7FH
 -Impact analysis results
  PAC7MF

.Output report(s):
 -Validation report
  PAC7IE

.Return Codes :
   0 : OK
  12 : System error

DELETION OF DUPLICATE ENTRY POINTS:  PAN215

.Transaction file:
 -Selected entry points
  PAC7FH

.Permanent output files:
 -Sorted selected entry points
  PAC7HF
 -Reduced entry points to be purged
  PAC7FR

.Sort file(s):

.Return Codes :


UPDATE OF IMPACT ANALYSIS RESULTS:  PAN260

.Transaction file:
 -Impact analysis result (for that iteration)
  PAC7MF

.Permanent input file:
 -Results from preceding analysis

.Permanent output file:
 -Sorted impact-analysis results
  PAC7FO

.Sort file(s):

.Return codes:
```

## 6.3.4. ISOS: EXECUTION JCL

```
 VISUALAGE_PACBASE    2.5

 ********** PROCEDURE : ISOS **********

#QUAL              [QUAL,1,1,1]
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*ISOSEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*ISOSEI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                PAN212
# .                ******
# .
#USE               PAC7MB.,*ISOSMB.
#CYCLE,C          [QUALR,1,1,1]*ISOSIE212.,[NBCYC,1,1,1]
#USE               PAC7IE.,[QUALR,1,1,1]*ISOSIE212(+1).
#CAT,P             PAC7IE.
#ASG,AX            PAC7IE.
#USE               PAC7FP.,[QUALU,1,1,1]*[FILEFP,1,1,1].
#ASG,A             PAC7FP.
#ASG,T             [QUALT,1,1,1]*PAC7MF.,///[SPAWK,1,1,1]
#ASG,T             [QUALT,1,1,1]*PAC7FH.,///[SPAWK,1,1,1]
#XQT              *[BFILE,1,1,1].PAN212
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#[PRINT,1,1,1]     PAC7IE.,,[PRINT,1,2,1],,ISOSIE212
#FREE              PAC7IE.
#FREE              PAC7MB.
# .
#TEST        TEP/10/S5
#JUMP        SAUT
# .                PAN215
# .                ******
# .
#USE               PAC7FH.,[QUALT,1,1,1]*PAC7FH.
#CYCLE,C          *[FILEFH,1,1,1].,5
#USE               PAC7HF.,*[FILEFH,1,1,1](+1).
#CAT,P             PAC7HF.,///[SPAWK,1,1,1]
#ASG,A             PAC7HF.
#CYCLE,C          *[FILEFR,1,1,1].,5
#USE               PAC7FR.,*[FILEFR,1,1,1](+1).
#CAT,P             PAC7FR.,///[SPAWK,1,1,1]
#ASG,A             PAC7FR.
*INCREMENT S TO [SRTWK,1]
#ASG,T             [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#XQT              *[BFILE,1,1,1].PAN215
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE              PAC7FH.
*INCREMENT S TO [SRTWK,1]
#FREE              [QUALT,1,1,1]*[SRTWK,1,S,2].
*LOOP
# .
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .                PAN260
# .                ******
# .
#USE               PAC7MF.,[QUALT,1,1,1]*PAC7MF.
```

```
#USE               PAC7OF.,[QUALU,1,1,1]*[FILEFO,1,1,1].
#ASG,AX            PAC7OF.
#ASG,T             [QUALT,1,1,1]*PAC7FO.,///[SPAWK,1,1,1]
*INCREMENT S TO [SRTWK,1]
#ASG,T            [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#XQT              *[BFILE,1,1,1].PAN260
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE              PAC7MF.
#FREE              PAC7OF.
*INCREMENT S TO [SRTWK,1]
#FREE             [QUALT,1,1,1]*[SRTWK,1,S,2].
*LOOP
#CYCLE,C          [QUALU,1,1,1]*[FILEFO,1,1,1].,5
#USE               NEWFO.,[QUALU,1,1,1]*[FILEFO,1,1,1](+1).
#CAT,P             NEWFO.,///[SPAWK,1,1,1]
#COPY              PAC7FO.,NEWFO.
#FREE              PAC7FO.
#FREE              NEWFO.
# .
#TEST        TEP/10/S5
```

# *6.4. IMFH: MERGE OF FH FILES - CREATION OF FH AND FR*

## 6.4.1. IMFH: INTRODUCTION

IMFH: INTRODUCTION

The IMFH procedure allows you to merge two or more FH files so as to:

- Have only one FH file, after eliminating possible duplicates;

- Obtain a FR file synchronized with the created FH file.

This procedure should be used when you want to merge the FH file produced by the ISEP procedure with that issued by the ISOS procedure.

A subsidiary use of this procedure is to recreate the FR file from a FH file.

## 6.4.2. IMFH: DESCRIPTION OF STEPS

### IMFH: DESCRIPTION OF STEPS

```
DELETION OF DUPLICATE ENTRY POINTS:  PAN215

.Transaction file:
 -Selected entry points
  PAC7FH  :  Physical Name = $XW..W$MODUL..FH
             Physical Name = $XW..W$MODUL..FH

.Permanent output files:
 -Sorted selected entry points
  PAC7HF  :  Physical Name = $XW..W$MODUL..HF
 -Reduced entry points to be purged
  PAC7FR  :  Physical Name = $XW..W$MODUL..FR

.Sort file(s):

.Return codes:
```

### 6.4.3. IMFH: EXECUTION JCL

```
# . VISUALAGE_PACBASE    2.5
# .
# . ********** PROCEDURE : IMFH/SKL **********
# .
#QUAL              [QUAL,1,1,1]
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*IMFHEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*IMFHEI(@@@).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                 PAN215
# .                 ******
#USE               PAC7FH0.,[QUALU,1,1,1]*[FILEFH,1,1,1].
#USE              PAC7FH-1.,[QUALU,1,1,1]*[FILEFH,1,1,1](-1).
#USE               PAC7FHC.,[QUALT,1,1,1]*PAC7FHC.
#ASG               PAC7FH0.
#ASG              PAC7FH-1.
#ASG               PAC7FHC.
#SORT,S
COPY
FILESIN=PAC7FH0,PAC7FH-1
FILEOUT=PAC7FHC
#EOF
# .
#USE               PAC7FH.,*[QUALT,1,1,1]*PAC7FHC.
# .
#CYCLE,C          [QUALU,1,1,1]*[FILEFH,1,1,1].,5
#USE               PAC7HF.,[QUALU,1,1,1]*[FILEFH,1,1,1](@@@).
#CAT,P             PAC7HF.,///[SPAWK,1,1,1]
#ASG               PAC7HF.
#CYCLE,C          [QUALU,1,1,1]*[FILEFR,1,1,1].,5
#USE               PAC7FR.,[QUALU,1,1,1]*[FILEFR,1,1,1](@@@).
#CAT,P             PAC7FR.,///[SPAWK,1,1,1]
#ASG,              PAC7FR.
#XQT              *[BFILE,1,1,1].PAN215
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE               [QUALT,1,1,1]*PAC7FH.
#FREE               PAC7HF.
#FREE               PAC7FR.
# .
#JUMP        SAUT
# .
#ERRFAT:
# .
#MSG,N ****** FATAL ERROR IN PROCEDURE IMFH ******
# .
#TEST        TLE/37/S5
#JUMP        SAUT
# .
#[PRINT,1,1,1]    PAC7EI.,,[PRINT,1,2,1],,IMFHEI
# .
#SAUT:
# .
#FREE              PAC7EI.
# .
#FREE              *[BFILE,1,1,1].
```

# *6.5. IANA: IMPACT SEARCH CRITERIA*

## 6.5.1. IANA: INTRODUCTION

IANA: INTRODUCTION

The IANA procedure is used to search Data Elements and character-strings according to:

1. The entry points provided by the ISEP procedure when IANA is run for the first time,
2. The impact search criteria produced by a preceding execution of IANA.

IANA is therefore an iterative process, which runs until no more impact search criteria are found.

Prior to an IANA execution, you have the choice to inhibit unwanted:

1. Entry points, after an execution of the ISEP procedure,
2. Impact search criteria, after a preceding execution of the IANA procedure.

In both cases, deletions are made in the FR file, (under an editor) either by physical deletion, or by inhibition (value 'E' in the action code of the corresponding lines).

The entry points (first iteration) or impact search criteria (further iterations) are printed once the purged criteria have been taken into account. This printout sorts criteria into 'accepted' and 'rejected' criteria. The file which contains the already impacted criteria may be reinitialized if you do not need to save them.

However, it is recommended to reinitialize this file before the first execution of IANA which follows a new execution of ISEP. To reinitialize the FQ file, run the INFQ procedure documented thereafter.

The impact analysis file may either be empty or contain the results of different execution contexts. It allows to compound the results of all iterations of the impact analysis for a given context.

The FP file used as input for the analysis procedures, contains the list of entities or entity types to be analyzed. If no user input is entered in this file before it is initialized by the INFP procedure, all analyzable entities will be analyzed.

Entities which are to be analyzed are specified in the FP file via the following coding: type coded on 3 characters, entity coded on 6 characters (****** being the generic entity code).

EXECUTION CONDITIONS

The FH file -- entry points or impact search criteria -- must exist and must not be empty.

ABNORMAL EXECUTION

Whatever the cause of the abend, you can run the procedure again as it is, after the problem has been solved.

However, the status of the FH, FR, and FO generation files should be checked.

USER INPUT

The IANA procedure does not require any specific user input.

This procedure is iterative as long as the FH file (impact search criteria) is not empty (return code set to value 4 if empty, and to value 0 otherwise).

6.5.2. IANA: DESCRIPTION OF STEPS

IANA: DESCRIPTION OF STEPS

```
RECOGNITION OF CRITERIA AFTER THE PURGE:  PAN230

.Permanent input files:
 -Search criteria
  PAC7FH
 -Criteria after purge (reduced file)
  PAC7FR

.Output file:
 -Search criteria
  PAC7HF


PRINTING OF ENTRY POINTS:  PAN220

.Permanent input files:
 -Error messages
  PAC7AE
 -Sorted criteria
  PAC7HF

.Output report(s):
 -List of accepted / rejected criteria
  PAC7IL

.Sort file(s):


IMPACT ANALYSIS:  PAN250

.Permanent input files:
 -Error messages
  PAC7AE
 -Data file
  PAC7AR
 -Index file
  PAC7AN
 -File of entities to be analyzed
  PAC7FP


.Transaction file:
 -Impacted criteria
  PAC7FH

.Input-output file:
 -Impacted criteria already processed
  PAC7FQ

.Output files:
 -New impacted criteria
  PAC7HF
 -Impact analysis results
  PAC7MF

.Return codes:


UPDATE OF IMPACT ANALYSIS RESULTS:  PAN260
```

.Transaction file:
 -Impact analysis results (level)
  PAC7MF

.Permanent input file:
 -Results of previous analysis
  PAC7OF

.Permanent output file:
 -Sorted results of impact analysis
  PAC7FO

.Sort file(s):

.Return codes:

REMOVAL OF DUPLICATE ENTRY POINTS: PAN215

.Transaction file:
 -Selected entry points
  PAC7FH

.Permanent output file:
 -Sorted selected entry points
  PAC7HF
 -Reduced entry points to be purged
  PAC7FR

.Sort file(s):

.Return codes:

### 6.5.3. IANA: EXECUTION JCL

```
#QUAL              [QUAL,1,1,1]
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*IANAEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*IANAEI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                PAN230
# .                ******
# .
#USE               PAC7FH.,[QUALU,1,1,1]*[FILEFH,1,1,1].
#ASG,A             PAC7FH.
#USE               PAC7FR.,[QUALU,1,1,1]*[FILEFR,1,1,1].
#ASG,A             PAC7FR.
#USE               PAC7HF.,[QUALT,1,1,1]*PAC7HF1.
#ASG,T             PAC7HF.,///[SPAWK,1,1,1]
#XQT              *[BFILE,1,1,1].PAN230
# .
# .
#TEST        TLE/17/S5
# .
#FREE              PAC7FH.
#FREE              PAC7FR.
# .
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .                PANFQI
# .                ******
# .
#USE               PAC7FQ.,[QUALT,1,1,1]*PAC7FQI.
#USE               PAC7IN.,[QUALU,1,1,1]*[FILEFQ,1,1,1].
#ASG,A             PAC7IN.
#XQT              *[BFILE,1,1,1].PANFQI
# .
# .                PAN250
# .                ******
# .
#USE               PAC7FH.,[QUALT,1,1,1]*PAC7HF1.
#USE               PAC7FQ.,[QUALT,1,1,1]*PAC7FQI.
#ASG,A             PAC7FQ.
#USE               PAC7FP.,[QUALU,1,1,1]*[FILEFP,1,1,1].
#ASG,A             PAC7FP.
#USE               PAC7HF.,[QUALT,1,1,1]*PAC7HF2.
#ASG,T             PAC7HF.,///[SPAWK,1,1,1]
#USE               PAC7MF.,[QUALT,1,1,1]*PAC7FO1.
#ASG,T             PAC7MF.,///[SPAWK,1,1,1]
#XQT              *[BFILE,1,1,1].PAN250
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE              PAC7FH.
#FREE              PAC7FQ.
# .                PANFQS
# .                ******
# .
#USE               PAC7FQ.,[QUALT,1,1,1]*PAC7FQI.
#USE               PAC7OU.,[QUALT,1,1,1]*PAC7FQS.
#ASG,A             PAC7OU.
#XQT              *[BFILE,1,1,1].PANFQS
# .
#FREE              PAC7FQ.
# .
#CYCLE,C          [QUALU,1,1,1]*[FILEFQ,1,1,1].,5
#USE               NEWFQ.,[QUALU,1,1,1]*[FILEFQ,1,1,1](+1).
```

```
#CAT,P             NEWFQ.,///[SPAWK,1,1,1]
#COPY              PAC7OU.,NEWFQ.
#FREE              PAC7OU.
#FREE              NEWFQ.
# .
# .
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .                PAN260
# .                ******
# .
#USE               PAC7OF.,[QUALU,1,1,1]*[FILEFO,1,1,1].
#ASG,AX            PAC7OF.
#USE               PAC7FO.,[QUALT,1,1,1]*PAC7FO2.
#ASG,T             PAC7FO.,///[SPAWK,1,1,1]
*INCREMENT S TO [SRTWK,1]
#ASG,T            [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#XQT              *[BFILE,1,1,1].PAN260
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE              PAC7MF.
#FREE              PAC7OF.
*INCREMENT S TO [SRTWK,1]
#FREE            [QUALT,1,1,1]*[SRTWK,1,S,2].
*LOOP
#CYCLE,C         [QUALU,1,1,1]*[FILEFO,1,1,1].,5
#USE               NEWFO.,[QUALU,1,1,1]*[FILEFO,1,1,1](+1).
#CAT,P             NEWFO.,///[SPAWK,1,1,1]
#COPY              PAC7FO.,NEWFO.
#FREE              PAC7FO.
#FREE              NEWFO.
# .
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .                PAN215
# .                ******
# .
#USE               PAC7FH.,[QUALT,1,1,1]*PAC7HF2.
#USE               PAC7HF.,[QUALT,1,1,1]*PAC7HF3.
#ASG,T             PAC7HF.,///[SPAWK,1,1,1]
#USE               PAC7FR.,[QUALT,1,1,1]*PAC7FR1.
#ASG,T             PAC7FR.,///[SPAWK,1,1,1]
*INCREMENT S TO [SRTWK,1]
#ASG,T            [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#XQT              *[BFILE,1,1,1].PAN215
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE              PAC7FH.
*INCREMENT S TO [SRTWK,1]
#FREE            [QUALT,1,1,1]*[SRTWK,1,S,2].
*LOOP
#CYCLE,C         [QUALU,1,1,1]*[FILEFH,1,1,1].,5
#USE               NEWFH.,[QUALU,1,1,1]*[FILEFH,1,1,1](+1).
#CAT,P             NEWFH.,///[SPAWK,1,1,1]
#COPY              PAC7HF.,NEWFH.
#FREE              PAC7HF.
#FREE              NEWFH.
#CYCLE,C          [QUALU,1,1,1]*[FILEFR,1,1,1].,5
#USE               NEWFR.,[QUALU,1,1,1]*[FILEFR,1,1,1](+1).
#CAT,P             NEWFR.,///[SPAWK,1,1,1]
#COPY              PAC7FR.,NEWFR.
#FREE              PAC7FR.
#FREE              NEWFR.
# .
#JUMP        SAUT
```

```
    # .
    #ERRFAT:
    # .
    #MSG,N ****** FATAL ERROR IN PROCEDURE IANA ******
    # .
    #TEST        TLE/37/S5
    #JUMP        SAUT
    # .
    #[PRINT,1,1,1]    PAC7EI.,,[PRINT,1,2,1],,IANAEI
    # .
    #SAUT:
    # .
    #FREE             PAC7EI.
    # .
    #FREE             *[BFILE,1,1,1].
```

# *6.6. IPIA: PRINTING OF THE IMPACT ANALYSIS RESULTS*

## 6.6.1. IPIA: INTRODUCTION

IPIA: INTRODUCTION

The IPIA procedure is used to print Reports on the analysis results and to format these results in batch update transactions.

Possible reports produced by IPIA are the following:

1. Analysis results by entry point:

   Analysis follow-up of the subsequent iterations.

   >>> Report requested by value '1' in Position 7 of the P-type user input line.

2. List of impact search criteria by entry point:

   Valid when the IANA iteration is completed.

   >>> Report requested by value '1' in Position 8 of the P-type user input line.

3. Analysis results by Library:

   Results are formatted in batch update transactions (print or file output).

   >>> Report requested by value '1' in Position 9 of the P-type user input line.

   Additional option (page and line skips) requested by value '2' in Position 9.

   >>> File requested by value '1' in Position 12.

4. Impacted-occurrences summary:

   List of all impacted occurrences with the number of impacted lines, for each type of line, not sorted by entry points.

   >>> Report requested by value '1' in Position 10 of the P-type user input line.

5. List of entry points by impacted search criterion for each impacted field: list of entry points and impact search criteria which originated the impact, after each iteration.

>>> Report requested by value '1' in Position 14 of the P-type user input line.

6. Statistics:

   Number of impacted lines sorted by library and by entity type, all lines considered.

   >>> Report requested by value '1' in Position 11 of the P-type user input line.

7. Character-string analysis:

   List of uses of each of the character strings searched by the ISOS procedure.

   >>> Report requested by value '1' in Position 19 of the P-type user input line.

8. Operator analysis:

   List of uses of each of the operators searched by the ISOS procedure.

   >>> Report requested by value '1' in Position 20 of the P-type user input line.

9. List of entities impacted by entry point:

   List of entities impacted by Data-Element type entry points, all search criteria considered.

   >>> Report requested by value '1' in Position 21 of the P-type user input line.

10. Number of modified lines, dispatched by Description for each entity:

    This summary report allows for finer statistics by line types, compounded by library.

    >>> Report requested by value '1' in Position 22 of the P-type user input line.

11. Constant analysis:

    List of uses of each constant searched by the ISOS procedure.

    >>> Report requested by value '1' in Position 23 of the P-type user input line.

EXECUTION CONDITIONS

None, but the FO file must exist and must not be empty.

ABNORMAL EXECUTION

Whatever the cause of the abend, you can run the procedure as it is, after the problem has been solved.

6.6.2. IPIA: USER INPUT

IPIA: USER INPUT

A line identifying the context (* line) is required. It must be inserted at the beginning of the generated stream.

If you specified a lowest library for the ISEP procedure, it must be repeated in this line.

The *-type line must be followed by one P-type, formatted as follows:

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 2 | 1 | 'P' | Line code |
| 3 | 1 | | NOTHING TO ENTER,EXCEPT FOR DOS/VSE |
| | | 'I' | Default option for all hardware |
| | | 'N' | If CURRENT-DATE = DD/MM/YY |
| 4 | 3 | bbb | Library code (this selection is available with requests entered in Positions 9 and 10 only) |
| 7 | 1 | ' ' '1' | Result of impact analysis by entry point |
| 8 | 1 | ' ' '1' | List of impacted criteria by entry point |
| 9 | 1 | ' ' '1' | Printing of results formatted as batch update transactions, sorted per Library |
| | | '2' | Same list with page and line skips |
| 10 | 1 | ' ' '1' | Summary of impacted occurrences |
| 11 | 1 | ' ' '1' | Statistics, sorted per Library |
| 12 | 1 | ' ' '1' | Identical to '1' in Position 9 but output is a file instead of print |
| 13 | 1 | ' ' '1' | General option: Inhibits the lines indirectly impacted (e.g. -CD) |
| 14 | 1 | ' ' '1' | List of entry points by impact search criterion |
| 15 | 2 | nn | Number of the wanted level (IANA iteration) |
| 17 | 2 | pp | Number of lines printed per page |
| 19 | 1 | ' ' '1' | Result of character-string analysis |
| 20 | 1 | ' ' '1' | Result of operator analysis |
| 21 | 1 | ' ' '1' | Impacted entities by entry point |
| 22 | 1 | ' ' '1' | Number of lines per description |
| 23 | 1 | ' ' '1' | Constant-analysis result |

USER INPUT (CONTINUED)

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 24 | 1 | ' ' '1' | Result of group fields |
| 25 | 10 | | Selection of generated transactions |
| | | Blank | Selection of all entities |
| | | other | Requested selection, where possible |
| | | | values (compoundable) are: |
| | | 'B' | Database blocks |
| | | 'E' | Data-Elements |
| | | 'F' | User Entities |
| | | 'O' | Screens, C/S Screens... |
| | | 'P' | Programs |
| | | 'R' | Reports |
| | | 'S' | Segments and Data-Structures |
| | | 'T' | Texts |
| | | 'V' | Volumes |
| | | '$' | User Entity Occurrences |
| 35 | 1 | ' ' '1' | Result with ISOS transactions |

## 6.6.3. IPIA: DESCRIPTION OF STEPS

### IPIA: DESCRIPTION OF STEPS

```
PRINTING OF IMPACT RESULTS:  PAN270

.Permanent input files:
 -Error messages
  PAC7AE
 -Impact results
  PAC7FO

.Transaction file:
 -User input
  PAC7MB

.Output file:
 -Generated batch transactions
   PAC7MV

.Output report:
 -Analysis results
  PAC7IF

.Sort file(s):

.Return codes:


PRINTING OF GENERATED TRANSACTIONS:  PAN280

.Permanent input files:
 -Error messages
  PAC7AE

.Transaction file:
 -User input
  PAC7MB
 -Generated batch transactions
  PAC7MV

.Output files:
 -Selected batch transactions
  PAC7VM

.Output report
 -List of transactions by library
  PAC7IT

.Return codes:
```

## 6.6.4. IPIA: EXECUTION JCL

```
# .
# .
# .
#QUAL              [QUAL,1,1,1]
# .
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*IPIAEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*IPIAEI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                 PAN270
# .                 ******
# .
#USE               PAC7MB.,*IPIAMB.
#USE               PAC7FO.,[QUALU,1,1,1]*[FILEFO,1,1,1].
#ASG,A             PAC7FO.
# .
#CYCLE,C          [QUALR,1,1,1]*IPIAIF270.,[NBCYC,1,1,1]
#USE               PAC7IF.,[QUALR,1,1,1]*IPIAIF270(+1).
#CAT,P             PAC7IF.
# .
#ASG,T             [QUALT,1,1,1]*PAC7MV.,///[SPAWK,1,1,1]
*INCREMENT S TO [SRTWK,1]
#ASG,T            [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#XQT              *[BFILE,1,1,1].PAN270
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE              PAC7FO.
#[PRINT,1,1,1]     PAC7IF.,,[PRINT,1,2,1],,IPIAIF270
#FREE              PAC7IF.
# .
*INCREMENT S TO [SRTWK,1]
#FREE             [QUALT,1,1,1]*[SRTWK,1,S,2].
*LOOP
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .
# .                 PAN280
# .                 ******
# .
#USE               PAC7MV.,[QUALT,1,1,1]*PAC7MV.
#USE               PAC7MB.,*IPIAMB.
# .
#CYCLE,C          [QUALR,1,1,1]*IPIAIT280.,[NBCYC,1,1,1]
#USE               PAC7IT.,[QUALR,1,1,1]*IPIAIT280(+1).
#CAT,P             PAC7IT.
# .
#ASG,T             [QUALT,1,1,1]*PAC7VM.,///[SPAWK,1,1,1]
#XQT              *[BFILE,1,1,1].PAN280
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#[PRINT,1,1,1]     PAC7IT.,,[PRINT,1,2,1],,IPIAIT280
#FREE              PAC7IT.
# .
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .
#JUMP              SAUT
```

```
    # .
    #ERRFAT:
    # .
    #MSG,N ****** FATAL ERROR IN PROCEDURE IPIA   ******
    # .
    #TEST         TLE/37/S5
    #JUMP         SAUT
    # .
    #[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,IPIAEI
    # .
    #SAUT:
    # .
    #FREE              PAC7EI.
    #FREE             *[BFILE,1,1,1].
    #FREE              PAC7MV.
    #FREE              PAC7VM.
    #FREE              PAC7MB.
```

# *6.7. IGRA: BREAKING DOWN OF GROUP FIELDS*

## 6.7.1. IGRA: INTRODUCTION

IGRA - OVERVIEW

The IGRA procedure breaks down group fields into Elementary Fields:

1. Entry points detected by the ISEP procedure, if they are of the Group type.
2. Impact search criteria obtained by running the IANA procedure, if they are of the Group type.

The IGRA procedure is optional and does not generate any impact search criterion.

Before running the IGRA procedure, you may purge:

1. Entry points --after execution of the ISEP procedure.
2. Impact search criteria --after execution of the IANA procedure.

In both cases, deletions are made in the FR file under an editor) by inhibiting them (value 'E' in the action code of the corresponding lines), in order to save them for future executions of IANA.

It is not necessary to eliminate non-Group fields since they will simply be ignored by the procedure.

The notions of 'level' and 'iterations' are not relevant for the IGRA procedure.

Entry points (first iteration) or impact search criteria (further iterations) are printed once the purged criteria have been taken into account. This printout sorts criteria into 'accepted' and 'rejected' criteria'.

The impact results file may either be empty or contain the results of other IANA, ISOS, or IGRA executions, either in the same execution context or in different contexts. This allows you to compound the results of all iterations of the impact analysis for one or several contexts.

Restitution of all the information for a given context may be customized (parameter setting) when printing with the IPIA procedure.

The file of Entities to be analyzed (FP) is used as input to this procedure. It contains a list of Entities or Entity Types which should be analyzed. If no user input is entered in this file before its initialization by the INFP procedure, all analyzable Entities will be analyzed.

Entities to be analyzed are specified as follows: 3-character Type, and 6-character code (****** being the Entity generic code).

## EXECUTION CONDITIONS

None, except that the FH file (entry points or impact search criteria) must exist and must not be empty.

## ABNORMAL EXECUTION

Whatever the reason for the abnormal ending, the procedure may be resumed as it is after correcting the problem. However, the status of generation files (FH, FR, and FO) should be checked.

## USER INPUT

The IGRA procedure requires no specific user input for its execution.

## 6.7.2. IGRA: DESCRIPTION OF STEPS

### IGRA: DESCRIPTION OF STEPS

```
RECOGNITION OF PURGED CRITERIA:  PAN230

.Permanent input files:
 -Search criteria file
  PAC7FH
 -Reduced file of purged criteria
  PAC7FR

.Output file:
 -Search criteria file
  PAC7HF


PRINTING ENTRY POINTS:  PAN220

.Permanent input files:
 -Error messages
  PAC7AE
 -Sorted criteria
  PAC7HF

.Output reports:
 -List of accepted/rejected criteria
  PAC7IL

.Sort files:


GROUP FIELD BREAKING-DOWN:  PAN255

.Permanent input files:
 -Error messages
  PAC7AE
 -Data file
  PAC7AR
 -Index file
  PAC7AN
 -Entities to be analyzed
  PAC7FP

.Transaction file:
 -Impacted criteria
  PAC7FH

.Output file:
 -Impact analysis results
  PAC7MF

.Return codes:


UPDATE OF IMPACT ANALYSIS RESULTS:  PAN260

.Transaction file:
 -Impact analysis result (by level)
  PAC7MF

.Permanent input file:
 -Results of previous analysis
  PAC7OF
```

.Permanent output file:
 -Sorted results of the impact analysis
  PAC7FO

.Sort files:
  not assigned

.Return codes:

## 6.7.3. IGRA: EXECUTION JCL

```
# .
# .
 VISUALAGE_PACBASE    2.5

 ********** PROCEDURE : IGRA **********

#QUAL              [QUAL,1,1,1]
# .
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*IGRAEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*IGRAEI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                PAN230
# .                ******
# .
# .
#USE               PAC7FH.,[QUALU,1,1,1]*[FILEFH,1,1,1].
#ASG,AX            PAC7FH.
#USE               PAC7FR.,*[FILEFR,1,1,1].
#ASG,AX            PAC7FR.
#ASG,T             [QUALT,1,1,1]*PAC7HF.,///[SPAWK,1,1,1]
#XQT              *[BFILE,1,1,1].PAN230
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
# .
# .
# .
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .
# .                PAN220
# .                ******
# .
#USE               PAC7HF.,[QUALT,1,1,1]*PAC7HF.
# .
#CYCLE,C          [QUALR,1,1,1]*IGRAIL220.,[NBCYC,1,1,1]
#USE               PAC7IL.,[QUALR,1,1,1]*IGRAIL220(+1).
#CAT,P             PAC7IL.
# .
*INCREMENT S TO [SRTWK,1]
#ASG,T             [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#XQT              *[BFILE,1,1,1].PAN220
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#[PRINT,1,1,1]     PAC7IL.,,[PRINT,1,2,1],,IGRAIL220
#FREE              PAC7IL.
# .
*INCREMENT S TO [SRTWK,1]
#FREE               [QUALT,1,1,1]*[SRTWK,1,S,2].
*LOOP
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .
# .                PAN255
# .                ******
# .
#USE               PAC7FH.,[QUALT,1,1,1]*PAC7HF.
```

```
    #USE               PAC7FP.,[QUALU,1,1,1]*[FILEFP,1,1,1].
    #ASG,A             PAC7FP.
    #USE               PAC7MF.,[QUALT,1,1,1]*PAC7FO.
    #ASG,T             PAC7MF.,///[SPAWK,1,1,1]
    #XQT              *[BFILE,1,1,1].PAN255
    # .
    #TEST        TLE/17/S5
    #JUMP        ERRFAT
    # .
    # .
    # .
    # .
    #TEST        TEP/10/S5
    #JUMP        SAUT
    # .
    # .
    # .                 PAN260
    # .                 ******
    # .
    #USE               PAC7OF.,[QUALU,1,1,1]*[FILEFO,1,1,1].
    #ASG,AX            PAC7OF.
    #USE               PAC7MF.,[QUALT,1,1,1]*PAC7FO.
    #USE               PAC7FO.,[QUALT,1,1,1]*PAC7FO2.
    #ASG,T             PAC7FO.,///[SPAWK,1,1,1]
    *INCREMENT S TO [SRTWK,1]
    #ASG,T           [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
    *LOOP
    #XQT             *[BFILE,1,1,1].PAN260
    # .
    #TEST        TLE/17/S5
    #JUMP        ERRFAT
    # .
    # .
    # .
    # .
    *INCREMENT S TO [SRTWK,1]
    #FREE             [QUALT,1,1,1]*[SRTWK,1,S,2].
    *LOOP
    #TEST        TEP/10/S5
    #JUMP        SAUT
    # .
    #CYCLE,C          [QUALU,1,1,1]*[FILEFO,1,1,1].,[NBCYC,1,1,1]
    #USE               NEWFO.,[QUALU,1,1,1]*[FILEFO,1,1,1](+1).
    #CAT,P             NEWFO.,///[SPAWK,1,1,1]
    #ASG,AX            NEWFO.
    #COPY              PAC7FO.,NEWFO.
    #FREE              PAC7FO.
    #FREE              NEWFO.
    # .
    # .
    #JUMP              SAUT
    # .
    #ERRFAT:
    # .
    #MSG,N ****** FATAL ERROR IN PROCEDURE IGRA   ******
    # .
    #TEST         TLE/37/S5
    #JUMP         SAUT
    # .
    #[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,IGRAEI
    # .
    #SAUT:
    # .
    #FREE              PAC7EI.
    #FREE             *[BFILE,1,1,1].
```

# *6.8. IPFQ: FQ FILE PRINTOUT (IMPACT ANALYSIS)*

## 6.8.1. IPFQ: INTRODUCTION

IPFQ: INTRODUCTION

The IPFQ procedure prints all the entry points and impact search criteria used (accepted or rejected) during a thorough impact analysis.

All the criteria and entry points are stored in the FQ file.

IPFQ offers four types of printouts:

. List of accepted entry points
. List of rejected entry points
. List of accepted impact search criteria
. List of rejected impact search criteria.

The printout shows criteria and entry points sorted by alphabetical order within each category, and by definition library of the criteria.

The printing order for the categories are:

. Character strings
. Data-Element defined in the Dictionary,
. Data-Element defined in Segment Descriptions,
. Data-Element defined in Report Structures,
. Data-Element defined in Screen- or Program-Working sections.

The IPFQ procedure can be used to select the entry points and impact search criteria of one or more categories.
In case of selection, only the selected criteria are printed.

EXECUTION CONDITIONS

None, but the FQ file must exist.

ABNORMAL EXECUTION

Whatever the cause of the abnormal ending, the procedure may be re-run as it is, after correction of the problem.

6.8.2. IPFQ: USER INPUT

IPFQ: USER INPUT

One 'S' line per criteria selection (optional):

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 2 | 1 | 'S' | Line code |
| 3 | 1 | | Type of criterion |
| | | 'E' | Data-Element defined in the Dictionary |
| | | 'C' | Character string |
| | | 'X' | Group-type Data-Element or Data-Element not defined |
| | | '*' | All types of criteria |
| 4 | 1 | | Source code |
| | | '3' | Line from Segment's -CE |
| | | '6' | Line from Report's -CE |
| | | '7' | -W line of a Screen or Program |
| | | '*' | All sources |
| 6 | 1 | | For the type of field |
| | | 'G' | For a Group field |
| | | ' ' | For an elementary field |
| | | '*' | For all types of fields |

## 6.8.3. IPFQ: DESCRIPTION OF STEPS

### IPFQ: DESCRIPTION OF STEPS

```
EXTRACTION OF CRITERIA:  PAN240

.Permanent input files:
 -Error messages


 -Data file
  PAC7AR
 -Index file
  PAC7AN
 -Criteria impacted during analysis
  PAC7FQ

.Transaction file:
 -Input

.Output files:
 -Search criteria
  PAC7FH

.Output report:
 -Control report


PRINTING OF IMPACTED CRITERIA:  PAN220

.Permanent input files:
 -Error messages
  PAC7AE
 -Sorted entry points or criteria
  PAC7HF

.Output report:
 -List of entry points or criteria
  PAC7IL

.Sort file(s):

.Return codes:
```

## 6.8.4. IPFQ: EXECUTION JCL

```
# .
# .
 VISUALAGE_PACBASE    2.5

 ********** PROCEDURE : IPFQ **********

#QUAL              [QUAL,1,1,1]
# .
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*IPFQEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*IPFQEI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                PAN240
# .                ******
# .
# .
#USE               PAC7FQ.,[QUALU,1,1,1]*IAIAFQ.
#ASG,AX            PAC7FQ.
#USE               PAC7FH.,[QUALT,1,1,1]*PAC7FH.
#ASG,T             PAC7FH.,///[SPAWK,1,1,1]
#XQT              *[BFILE,1,1,1].PAN240
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
# .
# .
# .
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .
# .                PAN220
# .                ******
# .
#USE               PAC7HF.,[QUALT,1,1,1]*PAC7FH.
# .
#CYCLE,C          [QUALR,1,1,1]*IPFQIL220.,[NBCYC,1,1,1]
#USE               PAC7IL.,[QUALR,1,1,1]*IPFQIL220(+1).
#CAT,P             PAC7IL.
# .
*INCREMENT S TO [SRTWK,1]
#ASG,T            [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#XQT              *[BFILE,1,1,1].PAN220
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE              PAC7FH.
#FREE              PAC7HF.
#FREE              PAC7FQ.
#[PRINT,1,1,1]     PAC7IL.,,[PRINT,1,2,1],,IPFQIL220
#FREE              PAC7IL.
# .
*INCREMENT S TO [SRTWK,1]
#FREE            [QUALT,1,1,1]*[SRTWK,1,S,2].
*LOOP
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .
#JUMP              SAUT
# .
```

```
#ERRFAT:
# .
#MSG,N ****** FATAL ERROR IN PROCEDURE IPFQ   ******
# .
#TEST         TLE/37/S5
#JUMP         SAUT
# .
#[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,IPFQEI
# .
#SAUT:
# .
#FREE              PAC7EI.
#FREE             *[BFILE,1,1,1].
```

# *6.9. INFQ: FQ FILE REINITIALIZATION (IMPACT ANALYSIS)*

## 6.9.1. INFQ: INTRODUCTION

INFQ: INTRODUCTION

The INFQ procedure reinitializes the FQ file, which accumulates all the search criteria that have already been impacted by the analysis. This accumulation prevents these criteria from being analyzed again in future analyses.

This action should be performed before a new impact analysis either because the entry points have changed or because the analysis context has changed.

However, it must not be used between two iterations of the same impact analysis.

6.9.2. INFQ: DESCRIPTION OF STEPS

INFQ: DESCRIPTION OF STEPS

```
REINITIALIZATION OF THE FQ FILE:  PAN200

.Output file:
 -Reinitialized impactd criteria file (sequential)
  PAC7FQ
```

### 6.9.3. INFQ: EXECUTION JCL

```
# . VISUALAGE_PACBASE    2.5
# .
# . ********** PROCEDURE : INFQ/SKL **********
# .
#QUAL              [QUAL,1,1,1]
# .
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*INFQEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*INFQEI(@@@).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                 PAN200
# .                 ******
# .
# .
#CYCLE,C          [QUALU,1,1,1]*[FILEFQ,1,1,1].,[NBCYC,1,1,1]
#USE               PAC7FQ.,[QUALU,1,1,1]*[FILEFQ,1,1,1](@@@).
#CAT,P             PAC7FQ.,///[SPAWK,1,1,1]
#ASG,AX            PAC7FQ.
#XQT              *[BFILE,1,1,1].PAN200
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE              PAC7FQ.
# .
# .
# .
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .
#JUMP              SAUT
# .
#ERRFAT:
# .
#MSG,N ****** FATAL ERROR IN PROCEDURE INFQ   ******
# .
#TEST         TLE/37/S5
#JUMP         SAUT
# .
#[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,INFQEI
# .
#SAUT:
# .
#FREE              PAC7EI.
#FREE             *[BFILE,1,1,1].
```

# *6.10. INFP: FP FILE INITIALIZATION (IMPACT ANALYSIS)*

6.10.1. INFP: INTRODUCTION

INFP: INTRODUCTION

The INFP procedure initializes the FP file. It allows to specify the entities which are to be analyzed and thus to narrow the scope of the impact analysis to some (or all) occurrences of the entities.

For the FP file to be updated by INFP, you must re-state in the procedure's input all the lines previously introduced. You always start with an empty file, i.e. a file containing no particular selection.

Operating principles of the FP file's input:

If an entity type is specified (whether its specific occurrences are specified or not), and if you wish the analysis to take into account other types as well, you must explicitly specify those types (there again, with the ****** generic code if all entities of a type are required, or specific entity codes for a narrower selection).

If an entity type is coded for all its occurrences -- with the ***** code-- you cannot specify a particular entity of this type.

6.10.2. INFP: USER INPUT

INFP: USER INPUT

Input is optional for the INFP procedure knowing that if no input is provided, all entities of all entity types will be searched for the impact analysis.

If all existing entities of a given entity type are specified (code = ******), particular entities specified for the same type will be refused.

| Pos. | Len. | Value | Meaning |
|---|---|---|---|
| 1 | 3 | | Entity type |
| | | | Possible values are: |
| | | 'B ' | Database Blocks |
| | | 'F ' | User Entities |
| | | 'O ' | Screens |
| | | 'P ' | Programs |
| | | 'T ' | Texts |
| | | 'V ' | Volumes |
| | | '$nn' | User Entity Occurrence of type code 'nn' |
| | | '$**' | All UEOs |
| 4 | 6 | | Entity code (generic selection through code ******) (This code may not exist in the Database) |

6.10.3. INFP: DESCRIPTION OF STEPS

INFP: DESCRIPTION OF STEPS

```
CHECK ON TRANSACTIONS AND FP UPDATE:  PAN205

.Permanent input file:
 -Error messages
  PAC7AE

.Transaction file:
 -User input
  PAC7MB

.Output file:
 -Entities in production
  PAC7FP

.Output report:
 -Check report
  PAC7IP

.Sort file(s):

.Return Codes :
   0 : OK
  12 : System error
```

## 6.10.4. INFP: EXECUTION JCL

```
# .
# .
# .
 VISUALAGE_PACBASE    2.5

 ********** PROCEDURE : INFP **********

#QUAL              [QUAL,1,1,1]
# .
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*INFPEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*INFPEI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                PAN205
# .                ******
# .
#USE               PAC7MB.,*INFPMB.
#CYCLE,C          [QUALU,1,1,1]*[FILEFP,1,1,1].,[NBCYC,1,1,1]
#USE               PAC7FP.,[QUALU,1,1,1]*[FILEFP,1,1,1](+1).
#CAT,P             PAC7FP.,///[SPAWK,1,1,1]
#ASG,AX            PAC7FP.
# .
#CYCLE,C          [QUALR,1,1,1]*INFPIP205.,[NBCYC,1,1,1]
#USE               PAC7IP.,[QUALR,1,1,1]*IPFPIP205(+1).
#CAT,P             PAC7IP.
# .
*INCREMENT S TO [SRTWK,1]
#ASG,T            [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#XQT              *[BFILE,1,1,1].PAN205
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE              PAC7FP.
#[PRINT,1,1,1]     PAC7IP.,,[PRINT,1,2,1],,INFPIP205
#FREE              PAC7IP.
# .
*INCREMENT S TO [SRTWK,1]
#FREE             [QUALT,1,1,1]*[SRTWK,1,S,2].
*LOOP
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .
#JUMP              SAUT
# .
#ERRFAT:
# .
#MSG,N ****** FATAL ERROR IN PROCEDURE INFP   ******
# .
#TEST         TLE/37/S5
#JUMP         SAUT
# .
#[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,INFPEI
# .
#SAUT:
# .
#FREE              PAC7EI.
#FREE             *[BFILE,1,1,1].
```

# 7. VISUALAGE SMALLTALK/JAVA - VA PAC INTERFACE

# *7.1. VDWN: RESTORATION*

7.1.1. VDWN: INTRODUCTION

## VDWN: INTRODUCTION

This procedure restores the VisualAge Smalltalk objects whose sources, produced by the VisualAge Smalltalk Export function, have been previously backed up in VisualAge Pacbase.

The procedure produces two files:

1. The restoration file of the objects extracted from VisualAge Pacbase. This file must be transferred onto the VisualAge Smalltalk WorkStation. It is then processed again by the local restoration procedure step, to produce a source file which will be recognized by the VisualAge Smalltalk Import function.

2. The command file for the generation of the Logical View Proxys used in the extracted objects. It can be used to re-generate the Logical View Proxys if needed.

### EXECUTION CONDITIONS

None.

### ABNORMAL EXECUTION

Refer to chapter 'OVERVIEW', subchapter 'Abnormal Endings' in the 'Batch procedures Manual: the Administrator's Guide'.

7.1.2. VDWN: USER INPUT

VDWN: USER INPUT

1. Line defining the VisualAge Pacbase library-session to be processed.

| Pos. | Len. | Value | Meaning | (*) |
|---|---|---|---|---|
| 2 | 1 | '*' | Line code | R |
| 3 | 8 | | User code | R |
| 11 | 8 | | Password | R |
| 19 | 3 | | VA Pac library code | R |
| 22 | 5 | | Session number and status | O |
| | | SPACE | Current session | |

(*) R = Required, O = Optional

2. Extraction command line (one line per object)

| Pos. | Len. | Value | Meaning | (*) |
|---|---|---|---|---|
| 2 | 2 | 'Y3' | Line code | R |
| 4 | 2 | | Object's class | R |
| | | '77' | VisualAge Smltlk. application | |
| 6 | 6 | | VA Pac identifier of the VisualAge Smalltalk object | R |

## 7.1.3. VDWN: DESCRIPTION OF STEPS

VDWN: DESCRIPTION OF STEPS

```
CHECK AND EXTRACTION PREPARATION:  PVA100

.Input files:
 -Index file
  PAC7AN
 -Data file
  PAC7AR
 -Error messages
  PAC7AE
 -User input
  PAC7MB

.Output reports and files:
 -Check report
  PAC7ET
 -'*'-line check report
  PAC7DD
 -Proxy-generation requests (GPRT)
   (Length= 80)
```

This file is used to store the requests for the generation of Logical View Proxies, Folder View Proxies, and Elementary Proxies in case these Proxies are used in the objects to be extracted. These requests can be used as input to the GPRT procedure.

```
 -Elementary-extraction requests
  PAC7MV

EXTRACTION:  PVA110

.Input files:
 -Index file
  PAC7AN
 -Data file
  PAC7AR
 -Error messages
  PAC7AE
 -Elementary extraction requests
  PAC7MV

.Output file:
 -Result of host restoration
   (Length= 100)
```

This file stores the unformatted sources of extracted objects. It should be transferred onto the local workstation, in order to terminate the process with the local restoration step which is performed in the same environment as VisualAge Smalltalk.

## 7.1.4. VDWN: EXECUTION JCL

```
# .
# .
# .
#QUAL              [QUAL,1,1,1]
# .
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*VDWNEI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*VDWNEI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                 PVA100
# .                 ******
# .
#USE               PAC7MV.,[QUALT,1,1,1]*PAC7MV.
# .
#CYCLE,C          [QUALR,1,1,1]*VDWNDD100.,[NBCYC,1,1,1]
#USE               PAC7DD.,[QUALR,1,1,1]*VDWNDD100(+1).
# .
# .
#CYCLE,C          [QUALR,1,1,1]*VDWNET100.,[NBCYC,1,1,1]
#USE               PAC7ET.,[QUALR,1,1,1]*VDWNET100(+1).
#CAT,P             PAC7ET.
# .
#ASG,T             [QUALT,1,1,1]*PAC7MV.,///[SPAWK,1,1,1]
#USE               PAC7ME.,[QUALT,1,1,1]*PAC7GPRT.
#ASG,T             PAC7ME.,///[SPAWK,1,1,1]
#XQT              *[BFILE,1,1,1].PVA100
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE              PAC7MB.
#[PRINT,1,1,1]     PAC7DD.,,[PRINT,1,2,1],,VDWNDD100
#[PRINT,1,1,1]     PAC7ET.,,[PRINT,1,2,1],,VDWNET100
#FREE              PAC7DD.
#FREE              PAC7ET.
# .
#TEST        TEP/10/S5
#JUMP        SAUT
# .
#USE               PAC7MX.,[QUALT,1,1,1]*PAC7VISU.
#ASG,T             PAC7MX.,///[SPAWK,1,1,1]
#XQT              *[BFILE,1,1,1].PVA110
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE              PAC7MV.
# .
# .
# .
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .
#JUMP              SAUT
# .
#ERRFAT:
# .
#MSG,N ****** FATAL ERROR IN PROCEDURE VDWN   ******
# .
#TEST         TLE/37/S5
#JUMP         SAUT
# .
#[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,VDWNEI
```

```
# .
#SAUT:
# .
#FREE             PAC7EI.
#FREE            *[BFILE,1,1,1].
```

## *7.2. VUP1: BACKUP - CODE CALCULATION*

### 7.2.1. VUP1: INTRODUCTION

VUP1: INTRODUCTION

This procedure creates the elements which will be used in input to the VUP2 procedure to generate the backup transactions in VisualAge Pacbase. These transactions will be used in input to the UPDT procedure.

The VUP1 procedure creates three files:

1. a correspondence file: correspondences between the VisualAge Pacbase codes and the VisualAge Smalltalk/Java identifiers for the entities already backed up in VisualAge Pacbase.

2. New-code file: contains the VisualAge Pacbase codes computed for the new VisualAge Smalltalk/Java entities to be created during the processing with their identifiers. These computed codes may be modified if they do not meet the site's standards.

3. Transaction file: similar to the file resulting from the local backup procedure step, but with the duplicates removed.

It prints 3 reports:

1. One report showing the correspondences between VisualAge Pacbase and VisualAge Smalltalk/Java codes for entities already uploaded in the VisualAge Pacbase database.

2. One report showing the correspondence between VisualAge Pacbase and VisualAge Smalltalk/Java codes for entities currently being processed.

3. One check report, showing:

   - A list of entities extracted more than once by the current process,

   - Any fatal error likely to prevent the correct execution of procedures VUP1 and VUP2.

These errors are 'contents' errors in the file provided by the 'local' system. Any error of this type suggests a problem was encountered while transferring the file from the local computer to the host. In this case, the processing is stopped.

EXECUTION CONDITIONS

None.

ABNORMAL EXECUTION

Refer to chapter 'OVERVIEW', subchapter 'Abnormal Endings' in the 'Batch procedures Manual: the Administrator's Guide'.

7.2.2. VUP1: USER INPUT

## VUP1: USER INPUT

The procedure's input file comes from the 'local' step of the backup procedure, performed in the same environment as VisualAge Smalltalk. It is a file coming from a local microcomputer.

Before executing the VUP1 procedure, you must complete the first line of this file (i.e. the 'I*' line) with:

. The user password
. The Product code and the Change number, if the VisualAge Pacbase Database is under DSMS control.

| Pos. | Len. | Value | Meaning | (*) |
|---|---|---|---|---|
| 2 | 2 | 'I*' | Line code | R |
| 4 | 8 | | User code | R |
| 12 | 8 | | Password | R |
| 20 | 3 | | VA Pac library code | R |
| 23 | 5 | | Session number and status | O |
| | | SPACE | Current session | |
| 58 | 9 | | Product + Change number if database under DSMS control | O |

(*) R = Required, O = Optional.

CHARACTER-CORRESPONDENCE TABLE

This table is used to replace special characters in the VisualAge Smalltalk/Java identifiers with other characters --which may be stored in the Referential before calculation of the VisualAge Pacbase codes-- or, more typically, to replace a particular character with one contained in the VisualAge Smalltalk/Java identifier.

It contains as many positions as there are characters to be replaced.

| Pos. | Len. | Meaning |
|---|---|---|
| 1 | 1 | Character to be replaced |
| 2 | 1 | Substitution character |

Example of a table:

| col 1 | col 2 |
|---|---|
| - | a |
| / | b |
| 1 | c |
| 2 | d |

## 7.2.3. VUP1: DESCRIPTION OF STEPS

### VUP1: DESCRIPTION OF STEPS

```
EXTRACTION OF VISUALAGE SMALLTALK/JAVA ENTITY CODES FROM
VISUALAGE PACBASE: PVA300

.Input files:
 -Index file
  PAC7AN
 -Data file
  PAC7AR
 -Error messages
  PAC7AE
 -VisualAge Smalltalk/Java file produced by workstation
  PAC7VA

.Output reports and files:
 -Check report
  PAC7ET
 -'*'-line check report
  PAC7DD
 -Extracted codes
  PAC7VC

.Sort file(s):

COMPARISON OF ENTITIES EXTRACTED FROM VA PAC
AND NEW ENTITIES TO BE CREATED IN VA PAC:  PVA305

.Input files:
 -Index file
  PAC7AN
 -Data file
  PAC7AR
 -Error message file
  PAC7AE
 -VisualAge Smalltalk/Java file produced by the workstation
  PAC7VA
 -VisualAge Pacbase codes of VisualAge Smalltalk/Java
  entities already saved
  PAC7VC
  PAC7CA

.Output reports and file:
 -List of new codes created
  PAC7ET
 -'*'-line check report
  PAC7DD
 -Printing of any fatal error and of the list of
  duplicate entity extractions
  PAC7ED
 -List of codes assigned to new VisualAge Smalltalk/Java
  entities
  PAC7VN
 -Useful VisualAge Smalltalk/Java transactions
  PAC7VG

.Sort file(s):
```

CALCULATION OF VA PAC CODES FOR NEW VA SMALLTALK/JAVA
ENTITIES: PVA310

.Input files:
-Index file
PAC7AN
-Data file
PAC7AR
-Error message file
PAC7AE
-VisualAge Smalltalk/Java file produced by the workstation
PAC7VA
-VisualAge Pacbase codes of VisualAge Smalltalk/Java
entities already saved
PAC7VC

-Character-correspondence table
for substitution in the code calculation
PAC7CA

.Output reports and file:
-List of new codes created
PAC7ET
-'*'-line check report
PAC7DD
-List of codes assigned to new VisualAge Smalltalk/Java
entities
PAC7VN

-List of VisualAge Pacbase codes of VisualAge Smalltalk/
Java entities already saved
PAC7VC
-List of codes assigned to the new VisualAge Smalltalk/Java
entities
PAC7VV
-File of codes assigned to entities already stored in
VisualAge Pacbase
PAC7VP

.Sort files:

## 7.2.4. VUP1: EXECUTION JCL

```
#QUAL              [QUAL,1,1,1]
# .
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*VUP1EI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*VUP1EI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                PVA300
# .                ******
# .
# .
#USE               PAC7VA.,[QUALU,1,1,1]*FICVIS.
#ASG,AX            PAC7VA.
# .
#CYCLE,C          [QUALR,1,1,1]*VUP1DD300.,[NBCYC,1,1,1]
#USE               PAC7DD.,[QUALR,1,1,1]*VUP1DD300(+1).
#CAT,P             PAC7DD.
# .
# .
#CYCLE,C          [QUALR,1,1,1]*VUP1ET300.,[NBCYC,1,1,1]
#USE               PAC7ET.,[QUALR,1,1,1]*VUP1ET300(+1).
#CAT,P             PAC7ET.
# .
#USE               PAC7VC.,[QUALT,1,1,1]*PAC7VUP1.
#ASG,T             PAC7VC.,///[SPAWK,1,1,1]
*INCREMENT S TO [SRTWK,1]
#ASG,T            [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#XQT              *[BFILE,1,1,1].PVA300
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#[PRINT,1,1,1]     PAC7DD.,,[PRINT,1,2,1],,VUP1DD300
#[PRINT,1,1,1]     PAC7ET.,,[PRINT,1,2,1],,VUP1ET300
#FREE              PAC7DD.
#FREE              PAC7ET.
# .
*INCREMENT S TO [SRTWK,1]
#FREE             [QUALT,1,1,1]*[SRTWK,1,S,2].
*LOOP
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .
# .                PAN305
# .                ******
# .
#USE               PAC7VC.,[QUALT,1,1,1]*PAC7VC.
#USE               PAC7VA.,[QUALU,1,1,1]*FICVIS.
#ASG,AX            PAC7VA.
# .
#CYCLE,C          [QUALR,1,1,1]*VUP1DD305.,[NBCYC,1,1,1]
#USE               PAC7DD.,[QUALR,1,1,1]*VUP1DD305(+1).
#CAT,P             PAC7DD.
# .
# .
#CYCLE,C          [QUALR,1,1,1]*VUP1ET305.,[NBCYC,1,1,1]
#USE               PAC7ET.,[QUALR,1,1,1]*VUP1ET305(+1).
#CAT,P             PAC7ET.
# .
# .
#CYCLE,C          [QUALR,1,1,1]*VUP1ED305.,[NBCYC,1,1,1]
#USE               PAC7ED.,[QUALR,1,1,1]*VUP1ED305(+1).
#CAT,P             PAC7ED.
```

```
    # .
    #USE               PAC7VN.,[QUALT,1,1,1]*PAC7VUP1.
    #ASG,T             PAC7VN.,///[SPAWK,1,1,1]
    #CYCLE,C          [QUALU,1,1,1]*VISUTIL.,[NBCYC,1,1,1]
    #USE               PAC7VG.,[QUALU,1,1,1]*VISUTIL(+1).
    #CAT,P             PAC7VG.,///[SPAWK,1,1,1]
    #ASG,AX            PAC7VG.
    *INCREMENT S TO [SRTWK,1]
    #ASG,T            [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
    *LOOP
    #XQT              *[BFILE,1,1,1].PVA305
    # .
    #TEST        TLE/17/S5
    #JUMP        ERRFAT
    # .
    #[PRINT,1,1,1]     PAC7DD.,,[PRINT,1,2,1],,VUP1DD305
    #[PRINT,1,1,1]     PAC7ET.,,[PRINT,1,2,1],,VUP1ET305
    #[PRINT,1,1,1]     PAC7ED.,,[PRINT,1,2,1],,VUP1ED305
    #FREE              PAC7DD.
    #FREE              PAC7ET.
    #FREE              PAC7ED.
    # .
    *INCREMENT S TO [SRTWK,1]
    #FREE             [QUALT,1,1,1]*[SRTWK,1,S,2].
    *LOOP
    #TEST        TEP/10/S5
    #JUMP        SAUT
    # .
    # .
    # .                PAN310
    # .                ******
    # .
    #USE               PAC7VA.,[QUALU,1,1,1]*FICVIS.
    #ASG,AX            PAC7VA.
    #USE               PAC7VC.,[QUALT,1,1,1]*PAC7VC.
    #USE               PAC7CA.,[QUALT,1,1,1]*PAC7CA.
    # .
    #CYCLE,C          [QUALR,1,1,1]*VUP1DD310.,[NBCYC,1,1,1]
    #USE               PAC7DD.,[QUALR,1,1,1]*VUP1DD310(+1).
    #CAT,P             PAC7DD.
    # .
    # .
    #CYCLE,C          [QUALR,1,1,1]*VUP1ET310.,[NBCYC,1,1,1]
    #USE               PAC7ET.,[QUALR,1,1,1]*VUP1ET310(+1).
    #CAT,P             PAC7ET.
    # .
    #ASG,T             [QUALT,1,1,1]*PAC7VN.,///[SPAWK,1,1,1]
    #ASG,T             [QUALT,1,1,1]*PAC7VC.,///[SPAWK,1,1,1]
    #USE               PAC7VV.,[QUALU,1,1,1]*PBCOD.
    #ASG,AX            PAC7VV.
    #USE               PAC7VP.,[QUALU,1,1,1]*VUP1VP.
    #ASG,AX            PAC7VP.
    *INCREMENT S TO [SRTWK,1]
    #ASG,T            [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
    *LOOP
    #XQT              *[BFILE,1,1,1].PVA310
    # .
    #TEST        TLE/17/S5
    #JUMP        ERRFAT
    # .
    #FREE               PAC7VA.
    #FREE               PAC7VC.
    #FREE               PAC7VN.
    #FREE               PAC7VP.
    #FREE               PAC7VV.
    #FREE               PAC7VG.
    #FREE               PAC7CA.
    #[PRINT,1,1,1]     PAC7DD.,,[PRINT,1,2,1],,VUP1DD310
    #[PRINT,1,1,1]     PAC7ET.,,[PRINT,1,2,1],,VUP1ET310
    #[PRINT,1,1,1]     PAC7ED.,,[PRINT,1,2,1],,VUP1ED310
    #FREE               PAC7DD.
    #FREE               PAC7ET.
    # .
```

```
    *INCREMENT S TO [SRTWK,1]
    #FREE             [QUALT,1,1,1]*[SRTWK,1,S,2].
    *LOOP
    #TEST        TEP/10/S5
    #JUMP        SAUT
    # .
    # .
    #JUMP              SAUT
    # .
    #ERRFAT:
    # .
    #MSG,N ****** FATAL ERROR IN PROCEDURE VUP1   ******
    # .
    #TEST         TLE/37/S5
    #JUMP         SAUT
    # .
    #[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,VUP1EI
    # .
    #SAUT:
    # .
    #FREE              PAC7EI.
    #FREE             *[BFILE,1,1,1].
```

## *7.3. VUP2: GENERATION OF UPDT TRANSACTIONS*

### 7.3.1. VUP2: INTRODUCTION

VUP2: INTRODUCTION

This procedure creates the VisualAge Pacbase backup transactions processed by the UPDT procedure.

It processes the 3 files produced by the VUP1 procedure, and integrates any modification made on codes by the user.

EXECUTION CONDITIONS

The VUP1 procedure must have been previously executed.

ABNORMAL EXECUTION

Refer to chapter 'OVERVIEW', subchapter 'Abnormal Endings' in the 'Batch procedures Manual: the Administrator's Guide'.

7.3.2. VUP2: USER INPUT

## VUP2: USER INPUT

The VUP2 procedure includes two types of user input:

1. The USEFUL TRANSACTIONS file (output from VUP1)

This file is made up of a '*' line and lines used to generate the VisualAge Pacbase Database update transactions.

The '*' line must be completed before executing the VUP2 procedure:

. with the user password

. with the Product code and the Change number if the VisualAge Pacbase Database is under DSMS control, if this has not already been indicated in input to the VUP1 procedure.

| Pos. | Len. | Value | Meaning | (*) |
|---|---|---|---|---|
| 2 | 1 | '*' | Line code | R |
| 12 | 8 | | Password | R |
| 58 | 9 | | Product + Change number if Database under DSMS control | O |

(*) R = Required, O = Optional

2. The file of MODIFIED VisualAge Pacbase CODES resulting from the VUP1 procedure.

You can modify this file to assign the VisualAge Smalltalk entities a VisualAge Pacbase code different from the one automatically computed by the VUP1 procedure.

Use a text editor to perform the modification.

| Pos. | Len. | Value | Meaning | (*) |
|---|---|---|---|---|
| 55 | 6 | | New code chosen for the entity | R |

(*) R = Required, O = Optional

## 7.3.3. VUP2: DESCRIPTION OF STEPS

### VUP2: DESCRIPTION OF STEPS

```
GENERATION OF VA PAC TRANSACTIONS FOR UPDT:  PVA320

.Input files:
 -Index file
  PAC7AN
 -Data file
  PAC7AR
 -Error messages
  PAC7AE
 -Useful transactions produced by VisualAge Smalltalk
  (from the workstation)
  PAC7VA
  (&VISUTIL file produced by VUP1)
 -Codes of new VisualAge Smalltalk/Java entities taken into
  account
  PAC7VN
  (&PBCOD file produced by VUP1)
 -Codes of VisualAge Smalltalk/Java entities already saved
  in VisualAge Pacbase
  PAC7VC

.Output reports:
 -List of VisualAge Pacbase codes taken into account
  PAC7ET
 -'*'-line check report
  PAC7DD


 -List of input transactions
  PAC7EM
 -List of erroneous transactions
  PAC7ER

.Output files:


 -Transactions for UPDT that include only definitions
  PAC7MY
 -Transactions for UPDT other than definitions
  PAC7MX

.Sort file(s):
```

### 7.3.4. VUP2: EXECUTION JCL

```
# .
# .
#QUAL              [QUAL,1,1,1]
# .
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*VUP2EI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*VUP2EI(+1).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                PVA320
# .                ******
# .
# .
#USE               PAC7VA.,[QUALU,1,1,1]*VISUTIL.
#ASG,AX            PAC7VA.
#USE               PAC7VV.,[QUALU,1,1,1]*PBCOD.
#ASG,AX            PAC7VV.
#USE               PAC7VP.,[QUALU,1,1,1]*VUP1VP.
#ASG,AX            PAC7VP.
# .
#CYCLE,C          [QUALR,1,1,1]*VUP2DD320.,[NBCYC,1,1,1]
#USE               PAC7DD.,[QUALR,1,1,1]*VUP2DD320(+1).
#CAT,P             PAC7DD.
# .
# .
#CYCLE,C          [QUALR,1,1,1]*VUP2ET320.,[NBCYC,1,1,1]
#USE               PAC7ET.,[QUALR,1,1,1]*VUP2ET320(+1).
#CAT,P             PAC7ET.
# .
# .
#CYCLE,C          [QUALR,1,1,1]*VUP2EM320.,[NBCYC,1,1,1]
#USE               PAC7EM.,[QUALR,1,1,1]*VUP2EM320(+1).
#CAT,P             PAC7EM.
# .
# .
#CYCLE,C          [QUALR,1,1,1]*VUP2ER320.,[NBCYC,1,1,1]
#USE               PAC7ER.,[QUALR,1,1,1]*VUP2ER320(+1).
#CAT,P             PAC7ER.
# .
#USE               PAC7MY.,[QUALT,1,1,1]*VUP2MY.
#ASG,T             PAC7MY.,///[SPAWK,1,1,1]
#USE               PAC7MX.,[QUALT,1,1,1]*VUP2MX.
#ASG,T             PAC7MX.,///[SPAWK,1,1,1]
*INCREMENT S TO [SRTWK,1]
#ASG,T            [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#XQT              *[BFILE,1,1,1].PVA320
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE              PAC7VA.
#FREE              PAC7VP.
#FREE              PAC7VV.
#[PRINT,1,1,1]     PAC7DD.,,[PRINT,1,2,1],,VUP2DD320
#[PRINT,1,1,1]     PAC7ET.,,[PRINT,1,2,1],,VUP2ET320
#[PRINT,1,1,1]     PAC7EM.,,[PRINT,1,2,1],,VUP2EM320
#[PRINT,1,1,1]     PAC7ER.,,[PRINT,1,2,1],,VUP2ER320
#FREE              PAC7DD.
#FREE              PAC7ET.
#FREE              PAC7EM.
#FREE              PAC7ER.
# .
*INCREMENT S TO [SRTWK,1]
```

```
#FREE             [QUALT,1,1,1]*[SRTWK,1,S,2].
*LOOP
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .
#JUMP              SAUT
# .
#ERRFAT:
# .
#MSG,N ****** FATAL ERROR IN PROCEDURE VUP2   ******
# .
#TEST         TLE/37/S5
#JUMP         SAUT
# .
#[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,VUP2EI
# .
#SAUT:
# .
#FREE              PAC7EI.
#FREE             *[BFILE,1,1,1].
```

## *7.4. VPUR: PURGE*

### 7.4.1. VPUR: INTRODUCTION

VPUR: INTRODUCTION

The VPUR procedure allows the Database Manager to purge the Database from unused VisualAge Smalltalk/Java entities.

It operates in the following way: it reads the VisualAge Pacbase Database to find out VisualAge Smalltalk/Java entities that are not used, then it suggests a multiple-delete on these entities, sorted in reverse order from the VisualAge Pacbase Database order.

Entities for which deletion is suggested are the following:

1. Free Parts that do not belong to any application

2. Free Applications that do not contain any:
   -Archived Application
   -Child Application
   -Parent Application

You may specify a list of Library codes and Session numbers in order to restrict the research domain.

EXECUTION CONDITIONS

None.

ABNORMAL EXECUTION

Refer to chapter 'OVERVIEW', subchapter 'Abnormal Endings' in the 'Batch procedures Manual: the Administrator's Guide'.

7.4.2. VPUR: USER INPUT

VPUR: USER INPUT

1. User identification line (VisualAge Pacbase Manager):

| Pos. | Len. | Value | Meaning | (*) |
|---|---|---|---|---|
| 2 | 1 | '*' | Line code | O |
| 3 | 8 | | User code | O |
| 11 | 8 | | Password | |

2. Library- and Session- selection lines:

2.1. Selection of libraries (one line for each selected library).
If no line of this type is entered, all libraries are selected.

| Pos. | Len. | Value | Meaning | (*) |
|---|---|---|---|---|
| 2 | 2 | 'SL' | Line code | O |
| 4 | 3 | | Code of selected library | O |

2.2. Selection of Sessions (one line for each selected session).
If no line of this type is entered, all sessions are selected, including the current session.

| Pos. | Len. | Value | Meaning | (*) |
|---|---|---|---|---|
| 2 | 2 | 'SS' | Line code | O |
| 4 | 5 | | Session code and status (current session: 9999Z) | O |

(*) O = Required

7.4.3. VPUR: DESCRIPTION OF STEPS

## VPUR: DESCRIPTION OF STEPS

```
GENERATION OF PURGE TRANSACTIONS:  PVA400

.Input files:
 -Index file
  PAC7AN
 -Data file
  PAC7AR
 -Error messages
  PAC7AE
 -User input
  PAC7MB

.Output reports and file:
 -List of user input
  PAC7ET
 -'*'-line check report
  PAC7DD
 -Generated purge-transactions
  PAC7MX

.Sort file(s):
```

### 7.4.4. VPUR: EXECUTION JCL

```
# . VISUALAGE_PACBASE    2.5
# .
# . ********** PROCEDURE : VPUR/SKL **********
# .
#QUAL              [QUAL,1,1,1]
# .
#XQT              *[BFILE,1,1,1].PACSWT
# .
#CYCLE,C          [QUALR,1,1,1]*VPUREI.,[NBCYC,1,1,1]
#USE               PAC7EI.,[QUALR,1,1,1]*VPUREI(@@@).
#CAT,P             PAC7EI.
#ASG,AX            PAC7EI.
# .
# .                PVA400
# .                ******
# .
#USE               PAC7MB.,*VPURMB.
# .
#CYCLE,C          [QUALR,1,1,1]*VPURDD400.,[NBCYC,1,1,1]
#USE               PAC7DD.,[QUALR,1,1,1]*VPURDD400(@@@).
#CAT,P             PAC7DD.
# .
# .
#CYCLE,C          [QUALR,1,1,1]*VPURET400.,[NBCYC,1,1,1]
#USE               PAC7ET.,[QUALR,1,1,1]*VPURET400(@@@).
#CAT,P             PAC7ET.
# .
#CYCLE,C          [QUALU,1,1,1]*VPURMB.,[NBCYC,1,1,1]
#USE               PAC7MX.,[QUALU,1,1,1]*VPURMB(@@@).
#CAT,P             PAC7MX.,///[SPAWK,1,1,1]
#ASG,AX            PAC7MX.
*INCREMENT S TO [SRTWK,1]
#ASG,T            [QUALT,1,1,1]*[SRTWK,1,S,2].,///[SRTWK,1,S,1]
*LOOP
#XQT              *[BFILE,1,1,1].PVA400
# .
#TEST        TLE/17/S5
#JUMP        ERRFAT
# .
#FREE              PAC7MB.
#FREE              PAC7MX.
#[PRINT,1,1,1]     PAC7DD.,,[PRINT,1,2,1],,VPURDD400
#[PRINT,1,1,1]     PAC7ET.,,[PRINT,1,2,1],,VPURET400
#FREE              PAC7DD.
#FREE              PAC7ET.
# .
*INCREMENT S TO [SRTWK,1]
#FREE             [QUALT,1,1,1]*[SRTWK,1,S,2].
*LOOP
#TEST        TEP/10/S5
#JUMP        SAUT
# .
# .
#JUMP              SAUT
# .
#ERRFAT:
# .
#MSG,N ****** FATAL ERROR IN PROCEDURE VPUR   ******
# .
#TEST         TLE/37/S5
#JUMP         SAUT
# .
#[PRINT,1,1,1]     PAC7EI.,,[PRINT,1,2,1],,VPUREI
# .
#SAUT:
# .
#FREE              PAC7EI.
 #FREE             *[BFILE,1,1,1].
```