VisualAge Pacbase 2.5

**VA PAC – TEAM CONNECTION BRIDGE
REFERENCE MANUAL**

DDPTC000201A

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TABLE OF CONTENTS

1. GENERAL PRESENTATION

1.1. INTRODUCTION

INTRODUCTION

TeamConnection is an integrated configuration management product which manages source programs, load modules, JCL, etc. It provides control functions and development guidelines for applications and for their operational implementation.

The VA Pac/TeamConnection Interface allows you to integrate VA Pac generated objects into the TeamConnection management environment.

The Interface enables the user to know:

- in VA Pac, the TeamConnection "target" contexts where the generated objects are managed: Family, Component, Release and WorkArea;

- in TeamConnection, the "source" context of these objects in VA Pac: Library Code, Session Number, User Code, Generation Date and Time. The "source" context is defined in the "Configurable Fields" specific to the Interface.

2. DESCRIPTION OF THE INTERFACE ELEMENTS

2.1. VA Pac ELEMENT

GENERATED VISUALAGE PACBASE OBJECT

The VisualAge Pacbase/TeamConnection interface manages objects generated from the following VisualAge Pacbase entity occurrences:

. Program entity (P)

. Screen entity (O)

. Database Block entity (B)

. the Copy clauses of the Data Structure entity (D)

Each generated VisualAge Pacbase object becomes a VisualAge Pacbase Part in TeamConnection.

The generated VisualAge Pacbase object is managed in TeamConnection as a generated source, or as a Load Program.

A VisualAge Pacbase entity can correspond to several generated objects, stored in several TeamConnection contexts. It can then correspond to several VisualAge Parts in TeamConnection.

The specificity of a generated VisualAge Pacbase object in TeamConnection is the presence of the following "Configurable Fields":

. "PacbaseProductReference", which contains the name of the product which originated the object;

. "PacbaseLogicalName", which contains the internal code of the VisualAge Pacbase database,

. "PacbaseElementContext", which contains the VisualAge Pacbase context in which the object was generated. This context is constituted of the following parts:

. Nature of the VA Pac object (=Entity code: P, O, B, D)

. Code of the generated VA Pac Entity occurrence

. VA Pac object code (external VA Pac name)

. Internal code of the VA Pac database

. Library code

. Generation session number

. Generation date

. Generation time

. User code

2.2. PREDEFINED USER ENTITIES OF THE INTERFACE

THE PREDEFINED USER ENTITIES OF THE INTERFACE

The TeamConnection context of the generated VisualAge Pacbase objects is memorized in the VisualAge Pacbase dictionary. So the VisualAge Pacbase user can spot each generated object in TeamConnection environment.

The default TeamConnection target environments, where VisualAge Pacbase elements are imported, can be defined in the .TCENV predefined User Entity. A default TeamConnection target environment corresponds to an occurrence of this User Entity. Each default Teamconnection target environment can present a list of VisualAge Pacbase entities to be generated. A description of this User Entity is reserved for each entity type.

The information related to the TeamConnection context of ONE VisualAge Pacbase entity occurrence is stored in ONE occurence of the .TCELM predefined User Entity.

The VisualAge Pacbase entity is linked with the occurrence of the .TCELM or .TCENV User Entity via the .TCREL predefined relationship.

Before the first generation, the user must define the TeamConnection target environment where the Visualage Pacbase element is to be imported. This target environment must be defined:

  . either on the definition of the occurrence of the .TCENV User Entity. The
    generated object must be present in one of the entity descriptions.

  . or on the definition of the occurrence of the .TCELM User Entity.

The default TeamConnection target environment is taken into account in the following priority order:

  . definition of the occurrence of the .TCELM User Entity,

  . definition of the occurrence of the .TCENV User Entity.

2.3. .TCENV PREDEFINED USER ENTITY

<u>THE .TCENV USER ENTITY</u>

The .TCENV User Entity supplied at installation enables the user to define the default TeamConnection environments and the VisualAge Pacbase elements which will be imported into them at the time of generation. The call type of .TCVENV is 7A. Its structure is constituted of the following parts:

. the definition of the default TeamConnection target environment for the generation of the VisualAge Pacbase element (definition),

. the list of Programs to be generated in this environment (description -D1),

. the list of Screens to be generated in this environment (description -D2),

. the list of DBD Blocks to be generated in this environment (description -D3),

. the list of Copy Data to be generated in this environment (description -D4).

DEFINITION OF THE DEFAULT TARGET TEAMCONNECTION ENVIRONMENT

An occurrence of the .TCENV User Entity corresponds to a target TeamConnection environment into which the VisualAge Pacbase ELEMENTs are imported. It must be defined in the VisualAge Pacbase Library and Session where the information related to the Teamconnection environments is stored, in the VisualAge Pacbase element which corresponds to an occurrence of the .TCELM User Entity (see TARGET LIBRARY/SESSION TABLE).

The TeamConnection target environment comprises the following information:

   . the FAMILY code

   . the COMPONENT code

   . the RELEASE code

   . the WORKAREA code

The call type of the .TCENV User Entity is 7A.

--> VA Pac choice: $7Aeeeeee (with eeeeee: UEO code).

DESCRIPTION OF THE INTERFACE ELEMENTS   2
.TCENV PREDEFINED USER ENTITY   3

```
--------------------------------------------------------------------------------
!                                                                              !
!                       DOCUMENTATION                  *PTXX.PDEV.BMS.651 !
!                                                                              !
! TYPE             : 7A           USER ENTITY........: .TCENV                  !
! ------------------------------------------------------------------------------!
! TeamC Env.         ENVIR1                                                     !
! U.E ITEM NAME    : Development Environment                                    !
!                                                                              !
! Family           : FAMILY1                                                    !
! Component         : COMPONENT1                                                !
! Release           : RELEASE1                                                  !
! Workarea          : WORKAREA1                                                 !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
! EXPLICIT KEYWORDS..:                                                          !
!                                                                              !
! SESSION NUMBER.....: 0721        LIBRARY......: BMS    LOCK....:              !
!                                                                              !
! O: C1 CH: $7Aenvir1                      ACTION:                             !
--------------------------------------------------------------------------------
```

<u>LIST OF VisualAge Pacbase ENTITIES TO BE GENERATED</u>

Several VisualAge Pacbase entities can be generated in the same
TeamConnection Environment. At this level the user indicates the list of
VisualAge Pacbase entities to be generated into this same TeamConnection
Environment.

The .TCENV User Entity has 4 descriptions. Each corresponds to the list of an
entity type to be generated. These are:

   . the list of Programs (-D1 description)

   . the list of Screens (-D2 description)

   . the list of DBDs (-D3 description)

   . the list of Copy Data (-D4 desription)

   -->VA Pac choice: $7BeeeeeeDn (with eeeeee = UEO code and n = description
   number)

DESCRIPTION OF THE INTERFACE ELEMENTS   2
.TCENV PREDEFINED USER ENTITY   3

```
--------------------------------------------------------------------------------
!                                                                              !
!                        DOCUMENTATION                  *PTXX.PDEV.BMS.651 !
! Program List                       7A ENVIR1 1 Development Environment        !
!                                                                              !
! A LIN : Progra Label                                                         !
!   001 : PROGR1 Management of clients                                         !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
! *** END ***                                                                  !
! O: C1 CH: $7Aenvir1 D1                                                       !
--------------------------------------------------------------------------------
```

DESCRIPTION OF THE INTERFACE ELEMENTS   2
.TCENV PREDEFINED USER ENTITY   3

```
--------------------------------------------------------------------------------
!                                                                              !
!                        DOCUMENTATION                 *PTXX.PDEV.BMS.651 !
! Dialog List                        7A ENVIR1 2 Development Environment       !
!                                                                              !
! A LIN : Dialog Label                                                         !
!   001 : SCREN1 Client Dialog                                                 !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
! *** END ***                                                                  !
! O: C1 CH: $7Aenvir1 D2                                                       !
--------------------------------------------------------------------------------
```

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DESCRIPTION OF THE INTERFACE ELEMENTS   2
.TCENV PREDEFINED USER ENTITY   3

```
--------------------------------------------------------------------------------
!                                                                              !
!                       DOCUMENTATION                   *PTXX.PDEV.BMS.651 !
! DBD List                         7A ENVIR1 3 Development Environment       !
!                                                                              !
! A LIN : DBD   Label                                                          !
!   001 : DBD1   Database Block                                                !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
!       : _____                                                               !
! *** END ***                                                                  !
! O: C1 CH: $7Aenvir1 D3                                                       !
--------------------------------------------------------------------------------
```

DDPTC000201A

```
--------------------------------------------------------------------------------
!                                                                              !
!                      DOCUMENTATION                      *PTXX.PDEV.BMS.651 !
! Data List                           7A ENVIR1 4 Development Environment      !
!                                                                              !
! A LIN : Data   Label                                                         !
!   001 : DATA1  Copy Data                                                     !
!       : _____                                                              !
!       : _____                                                              !
!       : _____                                                              !
!       : _____                                                              !
!       : _____                                                              !
!       : _____                                                              !
!       : _____                                                              !
!       : _____                                                              !
!       : _____                                                              !
!       : _____                                                              !
!       : _____                                                              !
!       : _____                                                              !
!       : _____                                                              !
!       : _____                                                              !
!       : _____                                                              !
! *** END ***                                                                  !
! O: C1 CH: $7Aenvir1 D4                                                       !
--------------------------------------------------------------------------------
```

2.4. .TCELM PREDEFINED USER ENTITY

<u>THE .TCELM USER ENTITY</u>

The .TCELM User Entity supplied at the time of installation supports the
Teamconnection information of a VA Pac ELEMENT. The call type of .TCELM
is 7B. Its structure is constituted of the following parts:

- the definition of the default TeamConnection target environment for the
  generation of the VA Pac element (definition),

- the description of the TeamConnection environments where the objects
  generated from the VA Pac element are managed (-D1 description),

- the charactersitics of the last action carried out on the objects of the VA Pac
  element (-D2 description);

- the characteristics of the different versions of the VA Pac element in
  TeamConnection (-D3 description).

If there is no occurrence of the .TCELM User Entity corresponding to the
occurrence of the VA Pac entity, the Interface creates it when updating the
TeamConnection contexts of the entity in VA Pac. Subsequently it updates the
contents of this UEO after the successive generations.

<u>DEFINITION OF THE DEFAULT TEAMCONNECTION TARGET
ENVIRONMENT IN THE ENTITY</u>

Before the first generation, if the VisualAge Pacbase ELEMENT is not defined
in the list of the entities to be generated in an occurrence of the .TCENV User
Entity, the user must create an occurrence of the .TCELM User Entity to indicate
the TeamConnection target environment where the generated VA Pac
ELEMENT will be imported. The occurrence must be defined in the VisualAge
Pacbase library and session where the information related to the
TeamConnection environments is stored.

Rule: The User Entity Occurrence code that is created must be identical to the
VA Pac entity code to be generated.

The Teamconnection target environment includes the following information:

   . FAMILY code

   . COMPONENT code

   . RELEASE code

   . WORKAREA code

   . VisualAge Pacbase ELEMENT (Program) code or

   . VisualAge Pacbase ELEMENT (Screen) code or

   . VisualAge Pacbase ELEMENT (Database Block) code or

   . VisualAge Pacbase ELEMENT (Copy Data) code

The VA Pac ELEMENT code links the User Entity Occurrence with the Va Pac
Entity. To make it possible, the VA Pac entity must be defined in a library whose
level is equal to or higher than the definition library of the User Entity
Ocurrence.

The call type of the .TCELM User Entity is 7B.

--> VA Pac choice: $7Beeeeee (with eeeeee = UEO code).

```
--------------------------------------------------------------------------------
!                                                                              !
!                       DOCUMENTATION                  *PTXX.PDEV.BMS.651 !
!                                                                              !
! TYPE              : 7B           USER ENTITY........: .TCELM              !
! ---------------------------------------------------------------------------!
! TeamC Part          PROGR1                                                !
! U.E ITEM NAME     : ORDER CHECK                                           !
!                                                                              !
! Family           :                                                        !
! Component         :                                                        !
! Release           :                                                        !
! Workarea          :                                                        !
! Product           : PACBASE                                               !
! Program  Code     : PROGR1                                                !
! Dialog   Code     :                                                        !
! DBD      Code     :                                                        !
! Data     Code     :                                                        !
!                                                                              !
!                                                                              !
!                                                                              !
! EXPLICIT KEYWORDS..:                                                      !
!                                                                              !
! SESSION NUMBER.....: 0721       LIBRARY......: BMS    LOCK....:           !
!                                                                              !
! O: C1 CH: $7Bprogr1                      ACTION:                          !
--------------------------------------------------------------------------------
```

<u>DESCRIPTION OF THE TEAMCONNECTION ENVIRONMENTS OF THE
ENTITY</u>

A VisualAge Pacbase entity may originate several generated objects managed in
several different TeamConnection environments. This description enables the
user to view the list of the TeamConnection environments for this entity.

The description of the TeamConnection environments for this entity includes the
following information:

  . The type and code of the entity

  . The TeamConnection context of the entity.

--> VA Pac choice: $7B eeeeee D1 (with eeeeee = UEO code)

```
-------------------------------------------------------------------------------
!                                                                             !
!                       DOCUMENTATION                    *PTXX.PDEV.BMS.651 !
! Environnement                 7B PROGR1 1 ORDER CHECK                       !
!                                                                             !
! A LIN : Nat.+Elem+ TeamC Environment                                       !
!   001 : PPROGR1    FAMILY1        COMPONENT1    RELEASE1      WORKAREA1     !
!       : _____ _____!
!       : _____ _____!
!       : _____ _____!
!       : _____ _____!
!       : _____ _____!
!       : _____ _____!
!       : _____ _____!
!       : _____ _____!
!       : _____ _____!
!       : _____ _____!
!       : _____ _____!
!       : _____ _____!
!       : _____ _____!
!       : _____ _____!
!       : _____ _____!
!       : _____ _____!
!       : _____ _____!
! *** END ***                                                                !
! O: C1 CH: $7Bprogr1 D1                                                      !
-------------------------------------------------------------------------------
```

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DESCRIPTION OF THE LAST ACTION ON THE ENTITY OBJECTS

This description is updated when TeamConnection contexts are updated in
VisualAge Pacbase. So it is in read-only mode. It memorizes the characteristics
of the last action carried out on the entity's generated objects.

It comprises the following information:
```
                    . the code of the last action

                    . the date of the last action

                    . the time of the last action

                    . the user code carrying out the last action
```

To each description line of the displayed TeamConnection target environment
corresponds a description line, with the same line number, for the VisualAge
Pacbase entity in TeamConnection.

--> VA Pac Choice: $7B eeeeee D2 (with eeeeee = UEO code).

DESCRIPTION OF THE INTERFACE ELEMENTS   2
.TCELM PREDEFINED USER ENTITY   4

```
-------------------------------------------------------------------------------
!                                                                             !
!                       DOCUMENTATION                      *PTXX.PDEV.BMS.651 !
! Last Action                   7B PROGR1 2 ORDER CHECK                       !
!                                                                             !
! A NLG : Action      Date       Time      User                              !
!   001 : Create      17/07/1997 11:23:42 PTXX                               !
!       :  _____  _____  _____  _____                          !
!       :  _____  _____  _____  _____                          !
!       :  _____  _____  _____  _____                          !
!       :  _____  _____  _____  _____                          !
!       :  _____  _____  _____  _____                          !
!       :  _____  _____  _____  _____                          !
!       :  _____  _____  _____  _____                          !
!       :  _____  _____  _____  _____                          !
!       :  _____  _____  _____  _____                          !
!       :  _____  _____  _____  _____                          !
!       :  _____  _____  _____  _____                          !
!       :  _____  _____  _____  _____                          !
!       :  _____  _____  _____  _____                          !
!       :  _____  _____  _____  _____                          !
!       :  _____  _____  _____  _____                          !
! *** END ***                                                                !
! O: C1 CH: $7Bprogr1 D2                                                      !
-------------------------------------------------------------------------------
```

DESCRIPTION OF THE VA Pac ENTITY IN TEAMCONNECTION

This description is updated when TeamConnection contexts are updated in
VisualAge Pacbase. So it is in read-only mode. It memorizes the characteristics
of the generated VisualAge Pacbase entity in TeamConnection.

The description contains the following information:

  . Entity generation date

  . Entity generation time

  . VisualAge Pacbase User Code

  . Library code and session number of generation.

The library code is useful if the generation library is different from the library in
which the information on TeamConnection contexts is stored.

To each description line of the displayed TeamConnection target environment
corresponds a description line, with the same line number, for the VisualAge
Pacbase entity in TeamConnection.

--> VA Pac choice: $7B eeeeee D3 (with eeeeee = UEO code)

DESCRIPTION OF THE INTERFACE ELEMENTS   2
.TCELM PREDEFINED USER ENTITY   4

```
-------------------------------------------------------------------------------
!                                                                             !
!                   DOCUMENTATION                   *PTXX.PDEV.BMS.651 !
! Pacbase Context            7B PROGR1 3 ORDER CHECK                          !
!                                                                             !
! A NLG : Gen.Date    Gen.Time  User     Lib Sessi                           !
!   001 : _____  _____  _____  _____                           !
!       : _____  _____  _____  _____                           !
!       : _____  _____  _____  _____                           !
!       : _____  _____  _____  _____                           !
!       : _____  _____  _____  _____                           !
!       : _____  _____  _____  _____                           !
!       : _____  _____  _____  _____                           !
!       : _____  _____  _____  _____                           !
!       : _____  _____  _____  _____                           !
!       : _____  _____  _____  _____                           !
!       : _____  _____  _____  _____                           !
!       : _____  _____  _____  _____                           !
!       : _____  _____  _____  _____                           !
!       : _____  _____  _____  _____                           !
!       : _____  _____  _____  _____                           !
!       : _____  _____  _____  _____                           !
!       : _____  _____  _____  _____                           !
! *** END ***                                                                !
! O: C1 CH: $7Bprogr1 D3                                                      !
-------------------------------------------------------------------------------
```

2.5. .TCREL PREDEFINED USER RELATIONSHIP

<u>.TCREL RELATIONSHIP</u>

The .TCREL predefined User Relationship which is supplied at installation allows to link the VisualAge Pacbase entity with the occurrence of the .TCENV User Entity or the .TCELM User Entity.

The existence of these links at the entity level allows the user to know if the generated objects are managed in TeamConnection.

By default, this relationship is created by the presence of the entity code in the description of the default environment when the Occurrence of the .TCENV User Entity or of the .TCELM User Entity is created.

The VisualAge Pacbase entity must be defined in a library whose level is equal to or higher than that of the UEO and it must be in the same session (see TARGET LIBRARY/SESSION TABLE).

```
--> VA Pac choice:  P pppppp XQ  (pppppp = Program code)
                    O oooooo XQ  (oooooo = Screen code)
                    ...
```

2.6. TARGET SESSION/LIBRARY TABLE

TARGET LIBRARY/SESSION TABLE

The TeamConnection environments which manage the generated Objects are
stored in VA Pac in the form of occurrences of the predefined .TCELM or
.TCENV User Entities.

As for all entities in the VA Pac Specifications Dictionary, these occurrences
(UEO) can be found in different libraries and sessions. By default,
TeamConnection information is uploaded to the library/session environment
from which it was generated.

The TARGET LIBRARY/SESSION TABLE allows the administrator to
customize the library/session environments which are used to manage
TeamConnection information in VA Pac. The table enables him/her to choose a
target library for one or more generation libraries and a target session for one or
more ranges of generation sessions. The target session can be the current session
or a frozen session.

Example: Target library

A VA Pac database can be represented as follows:

```
              CEN
               :
     -----------------
     :               :
   A00             B00
    :               :
    :          -----------
    :          :         :
   A01        B01       B02
```

Let us suppose that the administrator wants to store the TeamConnection data of
the generated objects from all libraries in CEN, and to keep TeamConnection
data from the A00 library in A00.

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In this example, the administrator will have to write the following parameters in
the Target Library/Session Table:

Target Library	Line Number	Generation Library	Comment
CEN	100	B00	
CEN	110	B01	
CEN	120	B02	
CEN	130	A01	
CEN	140	CEN	
A00	100	A00	

Example: Target session

In this example, the administrator decides that:

. the TeamConnection information of the VA Pac Objects generated in a
session older than or equal to session 1200T must be brought forward into the
1200T session;

. the information between session 1300T and session 1400T must remain in the
generation session;

. the information between sessions 1501T and 2100T must be be brought
forward into the 2100T session;

. the information from a session higher than session 2100T must be brought
forward into the current session.

For this example, the administrator will have to write the following parameters in
the TARGET LIBRARY/SESSION TABLE:

Target Session	Line Number	Generation Session (Start)	Generation Session (End)
1200T	100	0001T	1200T
1300T	110	1300T	1300T
1400T	120	1400T	1400T
2100T	130	1501T	2100T
9999Z	140	2101T	9999Z

3. FUNCTIONS

3.1. PRESENTATION

<u>INTRODUCTION</u>

The VisualAge Pacbase/TeamConnection Interface permits:

  - the automatic recognition in TeamConnection of the VisualAge objects, as
    soon as they are generated,

  - the standard management of these objects in TeamConnection,

  - On-line consultation in VisualAge Pacbase of the TeamConnection
    environments in which the objects are managed.

  - consultation in TeamConnection of the VisualAge Pacbase "source"
    environments of these objects.

The interface has two phases:

  - Generation of VA Pac entities and import of the VA Pac generated objects in
    TeamConnection

  - Update of the Teamconnection contexts for the generated objects in
    VisualAge Pacbase.

3.2. GENERATION AND IMPORT OF A VA Pac ELEMENT

<u>GENERATION AND IMPORT OF A VisualAge Pacbase ELEMENT</u>

VA Pac objects are imported or manipulated in TeamConnection via the "Create" Action. They are then handled in TeamConnection as any other object via the other available TeamConnection commands.

VA Pac objects can be imported into TeamConnection directly at the time of VA Pac generation via the GPRT generation procedure which outputs a generated source. The source is preceded and followed by JCL lines which come from the VA Pac Before/After card options (see the USER INTERFACE GUIDE).

The execution of the GPRT procedure must be followed by the execution of the TCGP procedure which analyzes the result of the generated source and generates the import command of the generated object in Teamconnection. The user must then enter, in the before/after cards, the following JCL line via which he/she obtains the import commands of the generated object in TeamConnection:
//* $PACINF=-

The generated object and TeamConnection commands are then transferred to the TeamConnection environement. These commands are executed in local mode to import the generated object itself.

The coding of these Before/After cards depends on the operating system where VA Pac is installed, as well as the transfer software and comunication protocol available on site.

If there is no transfer software on site, the user has to transfer manually the generation results to the TeamConnection environment and execute them in the TeamConnection environment.

3.3. UPDATE OF TEAMCONNECTION CONTEXTS IN VA Pac

<u>UPDATE OF TEAMCONNECTION CONTEXTS IN VA Pac</u>

To update the TeamConnection contexts of the generated objects in VisualAge Pacbase, the user must perform the following operations, successively:

- Search for VisualAge Pacbase objects managed in TeamConnection by executing the PTC_CITC command on TeamConnection host with the following parameters:

  . the file including the list of Teamconnection environments to be searched for is constitued of the FAMILY, RELEASE and WORKAREA codes,

  . the internal code of the VA Pac database,

  . the result file including the list of selected VA Pac elements.

- Transfer of the result file into VisualAge Pacbase environment,

- Execution on the host of the TCCI procedure which generates update transactions as input to the VA Pac UPDT procedure.

4. EXAMPLES OF BEFORE/AFTER IMPORT CARDS

4.1. MVS EXAMPLE

<u>Example of Before/After Cards</u>

The following is an example of the use of Before/After cards in a batch program (see the Operations Manual, Adminstrator's Guide, Chapter Database Management Utilities, Subchapter PARM: Updating User Parameters for details on the type of 'x' options and examples of 'y' option codes defined below).

Files are transferred between environments by FTP, via TCP/IP communication protocol. Jobs are managed remotely via REMOTE SHELL. If these tools are not available, the user performs these operations manually.

The parameters are the following:

.1 partitioned work file

.2 TCP/IP destination address of the transfer

.3 and 4: FTP user code and password defined in the TRUSERS table

.5 interface directory

.GENERATED PROGRAM BEFORE CARDS

These cards enable you to allocate a temporary storage PDS before any generation.

```
            1         2         3         4        7    7    8
(x) (y) 8-0---------0---------0---------0----//--0----5----0

A   E  //- JOB (-),-,CLASS=-,MSGCLASS=-,            12U34-
A   E  // NOTIFY=-                                  U    -
A   E  //*
A   E  //*--- TEMPORARY PDS CREATION ---
A   E  //*
A   E  //STEP01   EXEC PGM=IEFBR14
A   E  //DD1      DD   DSN=-,DISP=(,CATLG,DELETE),   5    -
A   E  //              UNIT=3390,VOL=SER=STM480,
A   E  //              DCB=(RECFM=FB,LRECL=80,
A   E  //                 BLKSIZE=9440,DSORG=PO),
A   E  //              SPACE=(TRK,(20,05,05),RLSE)
```

.GENERATED PROGRAM BEFORE CARDS

They enable the user to store the generated source in the allocated temporary
PDS.

```
         1         2         3         4      7   7   8
(x) (y) 8-0---------0---------0---------0----//--0----5----0

 D   E  //*
 D   E  //*--- SOURCE BACKUP ---
 D   E  //*
 D   E  //STEP02   EXEC PGM=IEBUPDTE,PARM=NEW
 D   E  //SYSUT1   DD   DSN=-,DISP=SHR                    1   -
 D   E  //SYSUT2   DD   DSN=-,DISP=SHR                    1   -
 D   E  //SYSPRINT DD SYSOUT=*
 D   E  //SYSIN    DD *
 D   E  ./ADD NAME=-                                      P   -
```

.GENERATED PROGRAM AFTER CARDS

They enable the user to:

. store the result of generated import actions,

. store the formatting command of these generated actions,

. transfer these files locally by FTP via TCP/IP,

. Execute remotely (via REMOTE SHELL) the formatting command of these
actions and their execution.

```
                 1         2         3         4     7    7    8
(x) (y) 8-0---------0---------0---------0----//--0----5----0

 F   G  //*
 F   G  //*--- UPDATE OF GENERATED ACTIONS --*
 F   G  //*
 F   G  //STEP03   EXEC PGM=IEBUPDTE,PARM=NEW
 F   G  //SYSUT1    DD DSN=-,DISP=SHR               1    -
 F   G  //SYSUT2    DD DSN=-,DISP=SHR               1    -
 F   G  //SYSPRINT  DD SYSOUT=*
 F   G  //SYSIN     DD *
 F   G  ./ ADD NAME=ACTION
 F   G  $PACINF=-                                   L    -
 F   G  /*
 F   G  //*
 F   G  //*--- BACKUP OF FORMATTING COMMAND ---*
 F   G  //*
 F   G  //STEP04   EXEC PGM=IEBUPDTE,PARM=NEW
 F   G  //SYSUT1    DD DSN=-,DISP=SHR               1    -
 F   G  //SYSUT2    DD DSN=-,DISP=SHR               1    -
 F   G  //SYSPRINT  DD SYSOUT=*
 F   G  //SYSIN     DD *
 F   G  ./ ADD NAME=PTCCMD
 F   G  PTC_CMD -.TXT                               P    -
 F   G  /*
 F   G  //*--FILE TRANSFER BY FTP----*
 F   G  //*
 F   G  //STEP05   EXEC PGM=FTP,REGION=4096K
 F   G  //SYSTSPRT  DD SYSOUT=*
 F   G  //OUTPUT    DD SYSOUT=*
 F   G  //SYSPRINT  DD SYSOUT=*
 F   G  //INPUT     DD *
 F   G  -                                           2    -
 F   G  - -                                         34   -
 F   G  AS
 F   G  PUT '-(-)'     -.SRC                         1PP  -
 F   G  PUT '-(ACTION)' -.TXT                        1P   -
 F   G  PUT '-(PTCCMD)' -.CMD                        1P   -
 F   G  QUIT
 F   G  /*
 F   G  //*
 F   G  //*EXECUTION OF MEF CMD BY REMOTE SHELL*
 F   G  //*
 F   G  //STEP06   EXEC PGM=IKJEFT01,REGION=4096K
 F   G  //SYSTSPRT  DD SYSOUT=*
 F   G  //OUTPUT    DD SYSOUT=*
 F   G  //SYSPRINT  DD SYSOUT=*
 F   G  //SYSTSIN   DD *
 F   G   REXEC -l $ -p $ -n $ CD $ & $.CMD           3425P$
 F   G  /*
 F   G  //*
```

.GENERATED PROGRAM QUEUE CARDS

They enable the user to clear temporary storage.

```
                1         2         3         4     7    7    8
(x) (y) 8-0---------0---------0---------0----//--0----5----0

 Z   G  //*
 Z   G  //*--- CLEAR TEMPORARY STORAGE ----*
 Z   G  //*
 Z   G  //STEP07   EXEC PGM=IEHPROGM,COND=EVEN
 Z   G  //DD1      DD   UNIT=3390,VOL=SER=STM480,DISP=SHR
 Z   G  //SYSPRINT DD   SYSOUT=*
 Z   G  //SYSIN    DD   *
 Z   G   UNCATLG DSNAME=-                            5    -
 Z   G   SCRATCH DSNAME=-,VOL=3390=STM480            5    -
 Z   G  /*
 Z   G  //*
 Z   G  //
```

If FTP and REMOTE SHELL are not available, the user first transfers the
generated object and the import command file to the TeamConnection
environment and runs, on TeamConnection host, the PTC_CMD command with
the import command file as parameter.

EXAMPLE: Job generation submit screens

1. Validated JCL lines for the execution of the generation procedure (operation code 'C4'),

2. Generation and print command lines corresponding to the screen obtained with the 'GP' choice (operation code 'C1').

See the 'USER INTERFACE GUIDE', Chapter 'GENERATION PRINT' for more details on job generation submit screens.

GPRT (see below the JCL lines) initiates the generation of the VA Pac element. TCGP (see same JCL) submits a job which imports the generated VA Pac element in TeamConnection.

EXAMPLES OF BEFORE/AFTER IMPORT CARDS   4
MVS EXAMPLE   1

```
--------------------------------------------------------------------------------
!                                                                              !
!                       DOCUMENTATION                 *PTXX.PDEV.BMS.651 !
! JCL LINES FOR THE COMMANDS                          USER: PTXX           !
!                                                                              !
! A    COM  LIGNE  :    V C CONTINUATION OF THE REQUEST                        !
!      JCL  000001 :    V   //PTXXGPRT JOB (111,1111,XX,CLASS=X,MSGCLASS=X,    !
!      JCL  000002 :    V   //       NOTIFY=PTXX                               !
!      JCL  000003 :    V   /*JOBPARM LINES=100                                !
!      JCL  000004 :    V   //GPRT    EXEC D280GPRT,ROOT=D2,FILE=80,OUT=*,     !
!      JCL  000005 :    V   //       INDUV='PT$PDV.PAC802',                    !
!      JCL  000006 :    V   //       COND.LNK=(00,LE,PAC)                      !
!      JCL  700000 :    V   //*                                               !
!      JCL  700010 :    V   //TCGP   EXEC D280TCGP,USER=PTXX,                  !
!      JCL  700020 :    V   //       PAC7GB=PAC7GB                             !
!      JCL  700030 :    V   //PTC100.PAC7JB DD DSN=*.GPRT.PAC.PAC7GB,          !
!      JCL  700040 :    V   //       DISP=(OLD,PASS)                          !
!                   :                                                          !
!                   :                                                          !
!                   :                                                          !
!                   :                                                          !
!                   :                                                          !
!                   :                                                          !
! *** END ***                                                                  !
! O: C4 CH:                              JOB:                                  !
!                                                                              !
--------------------------------------------------------------------------------
```

```
--------------------------------------------------------------------------
!                                                                        !
!                       DOCUMENTATION               *PTXX.PDEV.BMS.651 !
! GENERATION AND PRINT COMMANDS                        USER: PTXX        !
!                                                                        !
! A SO COM  ENTITY : OP V S CONTINUATION OF THE REQUEST                  !
!   90 FLP        : C1 V * PROGRAM JOB CARD / JOB DELIM  ENV: _ (CCF:G CCB:G) !
!                  :       1=PTXXTEAM_2=111,1111_3=X_4=X_5=PTXX.TC200.TEMP    !
!   90 GCP  PTU001 : C1 V * SOURCE CODE FOR SELECTED PROGRAM    (CCF:G CCB:G) !
!                  :       1=PTXX.TC200.TEMP_2=9.134.5.179_3=PONT_4=PONT      !
!   90 GCP  PTU002 : C1   * SOURCE CODE FOR SELECTED PROGRAM    (CCF:G CCB:G) !
!                  :       1=PTXX.TC200.TEMP_2=9.134.5.179_3=PONT_4=PONT      !
!                  :                                                      !
!                  :                                                      !
!                  :                                                      !
!                  :                                                      !
!                  :                                                      !
!                  :                                                      !
!                  :                                                      !
!                  :                                                      !
!                  :                                                      !
!                  :                                                      !
!                  :                                                      !
! *** END ***                                                            !
! O: C1 CH:                             JOB:                             !
!                                                                        !
--------------------------------------------------------------------------
```

DDPTC000201A