

VisualAge Pacbase



# Personalized Documentation Manager

*Version 3.5*





VisualAge Pacbase



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*Version 3.5*

## Note

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## Chapter 1. Introduction to the P.D.M. Extension

The PERSONALIZED DOCUMENTATION MANAGER (P.D.M.) is an extension to the SPECIFICATIONS DICTIONARY function.

The PDM extension is an all-purpose and powerful documentation tool as it is used by analysts, application designers, and developers.

As a result, a wide range of documentation types can be produced: long-range plans, analysis reports, functional and technical specifications, and end-user manuals.

PDM is supported by a specific entity type, the Volume entity.

The contents of a Volume is described by calling instances of almost any entity types (Text, Program, Screen, Segment, etc.) managed in the Specifications Database.

**NOTE:** A Volume build facility is also available.

For complete details, refer to Chapter PAF-PDM FUNCTIONALITIES.

You have complete control over all design elements, such as layout, margins, page breaks, page numbers, automatic generation of titles, table of contents, index table, etc.

### GENERAL CHARACTERISTICS

The PERSONALIZED DOCUMENTATION MANAGER operates according to the following principles:

The structure of a Volume allows for up to nine embedded sections, automatically reflected in the Table of Contents by up to nine subentry levels.

A section's contents is built by calling instances of entities (at least) defined in the Specifications Database.

Print options may be used to request that additional data be printed (for example codes of Data Element instances called in a Segment Description).

A variety of presentation options are available, such as the automatic printing of title pages, text alignment, etc.

Page layout settings which control the overall appearance of a Volume are made in the Layout screen of a dedicated Report instance, the Volume Print Layout.

Another Report instance -- the Specific Layout -- enables you to define specific layout characteristics for titles and title-pages, the Table of Contents and the Index Table.

You may customize your layout design thanks to a wide range of parameters.

The functionalities of the Personalized Documentation Manager module are also available in Developer workbench and they are documented in the online help.

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## Chapter 2. Structure and Contents of a Volume

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### Volume Definition

A Volume Definition is accessed by entering the following in the CHOICE field:

CH: Vaaaaaa

where aaaaaa is replaced by the Volume code.

A Volume is defined by this 6-character code and by its name.

The Volume Definition enables you to specify the following information:

--: TYPE OF VOLUME:

Method Manual, Specifications Manual, Technical Manual, User Manual, Screen Documentation, Operations Manual or Master Outline (PDM+).

A type is given for documentary purposes only, save for the last type (Master Outline).

--: PRINT CHARACTERISTICS:

- . Title pages (by level),
- . Table of Contents (Source and Placement),
- . Text Code for Index Table entries,
- . Report code for Volume Print Layout,
- . Report code for Specific Layout,
- . Report code for Character Fonts,
- . Description Organization Mode.

Keywords may also be assigned to Volumes.

```

-----
USER DOCUMENTATION                                *DOC.PBDO.DOA.2847
VOLUME DEFINITION..: 1 ROBOT
NAME.....: 2 ROBOT MANAGEMENT
TYPE (M C T U E X P).....: 3 U          USER'S MANUAL
PRINT CHARACTERISTICS
-TITLE PAGE (0 TO 9).....: 4 2          LEVEL 0, 1, 2
-TABLE OF CONTENTS
  .SOURCE (1 TO 9).....: 5 2          LEVEL 1, 2
  .PLACEMENT (0 1).....: 6 0          BEGINNING OF MANUAL
-INDEX TABLE TEXT CODE.....: 7 XROBO  ROBOT VOLUME INDEX
-REPORT CODE FOR PRINT LAYOUT..: 8 XM1   ROBOT VOLUME PRINT LAYOUT
-SPECIFIC LAYOUT REPORT CODE...: 9 XM2   ROBOT VOLUME SPECIFIC LAYOUT
-REPORT CODE FOR FONT TYPE.....: 10 XM9  ROBOT VOLUME FONTS
-DESCRIPTION ORGANIZATION MODE.: 11 1    BY TITLE OF DESCRIPTION

EXPLICIT KEYWORDS..: 12 DOC
SESSION NUMBER.....: 140          LIBRARY.....: DOA    LOCK.....:

0: C1 CH: Vrobot                                ACTION:
-----

```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	6		VOLUME CODE (REQUIRED)
			This code must contain at least one, non-blank character. Only alphanumeric characters should be used.
			This code appears in the Volume when it is called by the \$CMA parameter in the Volume Print Layout.
2	36		VOLUME NAME (REQUIRED)
			This name should be as explicit as possible.
			It facilitates automatic creation of keywords (See The SPECIFICATIONS DICTIONARY Reference Manual Chapter KEYWORDS, Subchapter Building the Thesaurus.
			This name appears in the Volume when it is called by the \$NMA parameter in the Volume Print Layout.
3	1		VOLUME TYPE (REQUIRED)
			The TYPE code is for documentary purposes only (except for the type "P").
			A label corresponding to the TYPE code entered is automatically displayed.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		'M' 'C' 'T' 'U' 'E' 'X' 'P'	Method Manual. Specifications Manual. Technical Manual. User's Manual (default value). Screen Documentation. Operations Manual. Master Outline (PDM+ Functionality).
			PRINT CHARACTERISTICS
4	1		TITLE PAGE
			NOTE: This field is not used for a Master Outline (Volume Type = P).
			This field is used to request the automatic insertion of title pages.
			Title pages are always odd-numbered pages. Where necessary, a blank page is generated (even- numbered page) so that all title pages be odd- numbered. NOTE: The \$BP parameter can be used to modify title- page management.
		blank 0 1 2 to 9	No title page (default). Generation of the Volume title page only. Inserts a title page at the beginning of the Volume and before all level-1 sections (including Table of Contents, Index, and Appendix). Inserts a title page at the beginning of the Volume and before all sections of level 1 to n. EXAMPLE: The value '2' will have a title page generated for the Volume and for level-1 and level-2 sections.
			NOTE: If you choose a title-page level equal to or greater than 3, the \$GT parameter value must be "0" or "1".
			NOTE: If you are also using the Automated Generation of Titles, the value entered in this field must take one more level into account. >>> For details, refer to Subchapter Automated Generation of Titles.
			See Chapter ADDITIONAL FACILITIES, Subchapter Title Pages, for information on title page layout design.
			TABLE OF CONTENTS
5	1		TABLE OF CONTENTS SOURCE
			NOTE: This field is not used for a Master Outline (Volume Type = P).
			FOR VOLUMES WITH PARAMETER \$GT=0 OR \$GT=1:
			Entries in the Table of Contents (ToC) are automatic- ally built from the titles of sections (i.e. Tn lines in the Volume Description).
		1 to 9	Titles printed in the Table of Contents are those of all level-1 to level n sections (n = 1 to 9).
		blank	No Table of Contents (default).

NUMLEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		EXAMPLE: If the TABLE OF CONTENTS SOURCE value is 3, the Table of Contents is built from titles of level 1, 2, and 3 sections.
		NOTE: If you are also using the Automated Generation of Titles, and/or the Generated Text Title option, the value entered in this field must take one more level into account. >>> For details, refer to Subchapter Automated Generation of Titles.
		See Chapter ADDITIONAL FACILITIES, Subchapter Table of Contents, for information on ToC layout design.
	blank 1 2	FOR VOLUMES WITH PARAMETER \$GT ABSENT: No Table of Contents (default). Level-1 section titles are printed in the ToC. Level-1 and -2 section titles are printed in the ToC, plus generated titles and Text title lines, provided they pertain to calls made within level-2 sections.
6	1	TABLE OF CONTENTS PLACEMENT
		NOTE: This field is not used for a Master Outline (Volume Type = P).
	'0'	Table of Contents printed at the beginning of the Volume.
	'1'	Table of Contents printed at the end of the Volume.
		NOTE: Input in this field is required if a Table of Contents is requested (value 1 to 9 in the TABLE OF CONTENTS/SOURCE field).
7	6	INDEX TABLE TEXT CODE
		NOTE: This field is not used for a Master Outline (Volume type = P).
		This field contains the code of the Text instance containing Index entries, references, and comments.
		. The INDEX TABLE TEXT CODE must be entered, otherwise the Volume Index cannot be generated.
		. If the value of the \$SIT parameter is set to '0', the Index compile is inhibited whether or not an Index Table Text Code has been entered in this field.
		For complete information on Index building, please refer to Chapter ADDITIONAL FACILITIES: SPECIFIC LAYOUT AND FONT TYPES, Subchapter Index.
8	3	REPORT CODE : DOCUMENT PRINT LAYOUT
		NOTE: This field is not used for a Master Outline (Volume Type = P).



NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			A Volume's layout is designed in the Layout Description of a dedicated instance of the Report entity.
			This field must be entered with the code of that
			instance. For complete information, refer to Chapter LAYOUT AND CUSTOMIZATION OF A VOLUME, Subchapter The Volume Layout.
			NOTE: By default, text lines uploaded from the VA Pac WorkStation are printed according to formats defined within the VA Pac WorkStation. However, the -TW print option makes the Volume Print Layout effective for uploaded Text lines.
		BLANK	Standard layout. See in the APPENDIX Chapter, Standard Volume Layout.
			The Report instance used as the Volume Print Layout may also be specified in the PCV Volume Generation-Print command via the \$LAY parameter. It will override the value entered in this field.
9	3		REPORT CODE FOR SPECIFIC LAYOUT
			NOTE: This field is not used for a Master Outline (Volume Type = P).
			The Volume's Title-Pages, Table of Contents, Index, Generated Section Titles and Generated Titles are designed in the Layout screen of a dedicated instance of the Report entity.
			This field should be entered with the code of that instance. For complete information, refer to Chapter ADDITIONAL FACILITIES: SPECIFIC LAYOUT AND FONT TYPES.
		BLANK	The Report code entered in the REPORT CODE FOR PRINT LAYOUT field is implemented. In this case, refer to the APPENDIX Chapter, ToC/Index Described in the Volume Layout subchapter.
			The Report instance used as Specific Layout may also be specified in the PCV Volume Generation-Print command via the \$SLAY parameter. It will override the value entered in this field.
			NOTE: The use of a Specific Layout requires that the \$GT parameter value be "0" or "1".
10	3		REPORT CODE : FONT TYPE
			NOTE: This field is not used for a Master Outline (Volume Type = P).

NUMLEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		A Volume can be printed with different character fonts. These fonts have to be declared, i.e. identified by their code in a dedicated instance of the Report entity. This field should be entered with the code of that instance.
		The Report instance used as Font Type Catalog may also be specified in the PCV Volume Generation-Print command via the \$FT parameter. It will override the value entered in this field.
		NOTE: Such font type definition requires that the \$GT parameter value be "0" or "1".
	BLANK	All calls for character fonts are ignored.
		>>>> For complete information, refer to Subchapter Additional Descriptive Elements, Section Character Font Types. See also Chapter ADDITIONAL FACILITIES, Subchapter Font Type Specification.
11	1	DESCRIPTION ORGANIZATION MODE (REQUIRED)
		This field offers two options regarding a Volume's organization.
	1	ORGANIZATION INTO LEVELS - UP TO 9 LEVELS (default):
		The Volume Description and therefore its Table of Contents is based on all Tn Description lines.
		NOTES: . With this Description Organization Mode, it is HIGHLY RECOMMENDED that the \$GT parameter value be set to "0" or "1". If not, the generated Table of Contents may be inconsistent. . The Description Organization Mode must be set to "1" for Master Outlines (Volume type=P) and for Volumes calling Master Outline(s).
	0	ORGANIZATION INTO CHAPTERS/SUBCHAPTERS:
		The Volume Description and therefore its Table of Contents is based on T1 (and T2) Description lines only. In these lines, the LEVEL 1 CODE (and LEVEL 2 CODE) fields must be entered accordingly since both fields Chapter and Subchapter codes, respectively.
		NOTE: With this Description Organization Mode, it is HIGHLY RECOMMENDED that the \$GT parameter be absent. If not, the generated Table of Contents may be inconsistent.
12	55	EXPLICIT KEYWORDS

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

---

## Volume Structure

### PRELIMINARY REMARK:

All topics discussed in this subchapter refer to the Volume Description. A field-by-field description is located in the last subchapter.

### EMBEDDED SECTIONS

Volumes are structured by levels, i.e. embedded sections.

EXAMPLE: A Volume has the following structure:

1. LEVEL 1
  - 1.1 LEVEL 2
  - 1.2 LEVEL 2
2. LEVEL 1
  - 2.1 LEVEL 2
    - 2.1.1 LEVEL 3
    - 2.1.2 LEVEL 3
  - 2.2 LEVEL 2
  - 2.3 LEVEL 2
    - 2.3.1 LEVEL 3

- 2.3.2 LEVEL 3
  - 2.3.2.1 LEVEL 4
  - 2.3.2.2 LEVEL 4
- 3. LEVEL 1

You have the possibility to define up to 9 levels in a Volume Description.

A level is specified in the TY-labeled column by the value Tn, n equals 0 to nine, 0 for the Volume level.

A TITLE MUST BE ASSIGNED TO EACH SECTION SINCE THE TABLE OF CONTENTS IS AUTOMATICALLY BUILT FROM THE DESCRIPTION'S Tn-TYPE LINES.

**NOTE::** Each level may be assigned a label, such as Part, Chapter, Subchapter, Paragraph, etc., via the \$Ln parameter.

Refer to Chapter LAYOUT AND CUSTOMIZATION OF A VOLUME, Subchapter Parameters.

---

## Volume Contents: Instance and List Calls

### Introduction

PRELIMINARY REMARK:

All topics discussed in this subchapter refer to the Volume Description. A field-by-field description is located in the last subchapter.

The contents of a Volume is described by calling instances and/or lists of instances defined (and described) in the Database.

A Volume may call instance elements of virtually all entity types -- Definition, Comments (-GC), Descriptions, Assigned Texts (-AT) -- and Lists of instances of specified entity types.

- Text,
- Screen,
- Report,
- Data structure,
- Segment,
- Data element,
- Program,
- Meta-entity,
- User entity,
- Model entities (F.I.C., Object, Property, Relationship).

Calls are entered in S-type lines in the Volume Description.

### INSTANCES SPECIFIC TO A DESIGN METHODOLOGY

Such instances -- managed via the VisualAge Pacbase WorkStation -- can also be called and printed in a Volume (provided they have been uploaded).

#### IMPORTANT NOTE:

All of these entities benefit from a special Non-Formatted Description window dedicated to textual input. When this type of Description is called in a Volume (Description No. = D8), it is processed identically to Descriptions of Text instances.

As a result, whenever a reference is made to Text Description lines in this manual's pages, it implicitly also applies to text lines originating in D8 Descriptions.

Non-Formatted Descriptions are called Textual Description with the IFW Methodology and Detailed Description with the OMT Methodology.

Instances of the following entity types have limited calling possibilities:

- Database Block :  
Lists by Code, by Type, and by Keyword.
- Parameterized Input Aid:  
Lists by Code and by Keyword.
- Volume:  
Definition, Comments, Texts Assigned, Lists, and Master Outline Documents.
- User Entity Relation:  
Definition, Comments, Texts Assigned, and Lists by Code and by Keyword.
- Library:  
List by Code.
- User Manual ("U" entity, not maintained) and Keyword:  
No calls available.

### INTRODUCTION TO THE DIFFERENT CALL TYPES

There are two basic call types:

- Instances-type call allowing Definition, Descriptions, Comments lines (-GC), and Assigned Text (-AT) to be printed.
- List-type call, printing at least instances names and codes.

Both call types exist in two modes; a selection using the instances code as criterion and a selection using a keyword as criterion.

**NOTE:** For List-type calls, there is an additional mode; a selection using an entity (sub-)Type as criterion.

Both call types may be qualified according to the following criteria (which can also be combined):

- Generic Call,
- Call using limits.

Also, the following calls may be used to qualify instance-type calls:

- Multiple call,
- Limited call of Comments lines (-GC) and of Data Element Description lines (E.....D).

Calls of instances of entities specific to a Methodology (e.g. Merise, YSM, etc.) have a special format but benefit from the same possibilities.

**NOTE:** If you are only using the VisualAge Pacbase WorkStation, you may not make a distinction between the standard VA Pac entities and those specific to the Methodology you are implementing. In this case, you may specify all calls according to that special format.

Check first in the Instance-Type Call Section below which calls are available for each VA Pac entity and use the call formats as described in Section Calls of Instances Specific to a Methodology.

All topics mentioned in this page are discussed below in this subchapter in dedicated sections.

## **Instance-type Call**

Instance-type calls exist in two modes, a mode using the instance code as criterion and a mode using a keyword as criterion.

For each entity type which can be called in a Volume, the following calls (either by Code or by Keyword) are available:

- DEFINITION: Data found in the instance Definition is printed.
- COMMENTS (-GC) (See also EG print option).
- TEXT ASSIGNMENT (-AT).

### INSTANCE-TYPE CALLS BY CODE

A selection by code is entered in the following format:

S tocccoddid

t = entity type (required) occcod = instance code (required) did = Description identifier (see details next two pages)

**EXAMPLES:** S PPROG00G

S OSCR001CE

S SSG00CE

S TTEXT1 DBB

**NOTE:** If an instance code is less than the maximum length (usually 6 characters), at least one blank must be entered between the instance code and the Description identifier.

AVAILABLE CALLS BY CODE -- SPECIFIC TO THE ENTITY TYPE

Entity Type	Available Calls
Text	T.....Dnn T.....D**
Screen	O.....CE O.....L (1) or O.....M
Report	R...CE R...L (1)
Segment	S...CE
Data Element	E.....D
Program	P.....9 P.....XP for comment lines only
Meta-entity	F.....CE
User Entity	\$nn.....Dnn *
Model F.I.C.	M.....CM
Model Object	M.....CE
Model Property/ Attribute	E.....D
Model Relationship	M.....CE M.....CM

Layouts are printed without page frame and footer.

This call produces the following printed output: For the User Entity Definition and each Description, the layout precedes the Data Elements called.

\* User entity: the description consists of two characters and the length of the code is 30 characters maximum.

INSTANCE-TYPE CALLS BY KEYWORD

A selection by keyword is entered as follows:

S Ktkeyword.....did

t = entity type keyword..... = keyword - required, 13 characters maximum did  
 = Description identifier (see chart below)

AVAILABLE CALLS BY KEYWORD -- SPECIFIC TO THE ENTITY TYPE

Entity Type	Available Calls
Text	KT.....Dnn KT.....D**
Screen	KO.....CE KO.....L or KO.....M
Report	KR.....CE KR.....L
Segment	KS.....CE
Data Element	KE.....D
Program	KP.....9 KP.....XP for comment lines only
Meta-entity	KF.....CE
User Entity	K\$nn.....D1 to
	K\$nn.....D9
Model F.I.C.	KM.....CM
Model Object	KM.....CE
Model Property/ Attribute	KE.....D
Model Relationship	KM.....CE KM.....CM

If you are directly calling Descriptions of instances assigned a given keyword whose length is less than 13 characters, make sure to position at least one blank character between this keyword and the Description identifier.

**Example:**

KSkeyword CE



This does not apply when an instance Definition is called first (see the Multiple Call section).

**Example:**

KSkeyword,-CE

**NOTE:** Selections by keyword may be qualified by the choice of a specific Print Option:

WA: all keywords (default option),

WL: implicit keywords,

WM: explicit keywords.

All instance type calls may include the '\*' wildcard character to enlarge the selection scope. Such calls -- Generic Calls -- are discussed further on in a specific section.

**List-type Call**

Lists of instances may be printed in a Volume. At least, the code and name of each listed instance get printed.

There are three different types of lists, those sorted by code, those sorted by type, and those sorted by keyword(s):

Entity type	List/Code	List/Type t	List/Keyword (*)
Data Element	LCE		LKE.....
Segment	LCS	LTSt	LKS.....
Data Structure	LCD	LTDt	LKD.....
Database Block	LCB	LTBtt	LKB.....
Screen	LCO	LTOtt	LKO.....
Report	LCR	LTRt	LKR.....
Program	LCP	LTPt	LKP.....
Text	LCT	LTTtt	LKT.....
P.I.A.	LCI		LKI.....
Meta-entity	LCF		LKF.....
U.E. Relation	LCQ		LKQ.....
U.E.	LC\$xx		LK\$xx...
Volume	LCV	LTVt	LKV.....

Entity type	List/Code	List/Type t	List/Keyword (*)
Library	LC*		
F.I.C.	LMC		LKMC....
Object	LMO		LKMO....
Property	LMP		LKMP....
Relationship	LMR		LKMR....

The keyword is required, its length cannot be longer than 13 characters.

**NOTE:** Selections by keyword may be qualified by the choice of a specific Print Option:

WA: all keywords (default option),

WL: implicit keywords,

WM: explicit keywords.

- CALL VARIANTS FOR LISTS BY CODE:
  - You may request that a List by Code starts with a given code. In this case, complete the list call as follows:  
 LCt.....  
 t = entity type  
 ..... = instance code used as starting key
  - A List by Code is exhaustive unless you specify a code including one (or more) '\*' wildcard character(s).  
 As a result, instances with matching codes only get listed.  
 Such calls -- Generic Calls -- are discussed in the next section.
- CALL VARIANT FOR LISTS BY KEYWORD:

You may include the '\*' wildcard character to enlarge the list domain.

Such calls -- Generic Calls -- are discussed in the next section.

## Generic Call

A generic call is a call including one or more '\*' wildcard characters.

Generic calls may be used in all types of calls.

INSTANCE-TYPE CALL

**NOTE:** Generic instance-type calls may be combined with multiple calls (see corresponding Section).

Selection by Code:

Several instances of the same entity type may be selected using the '\*' wildcard, which can be placed anywhere in the instance code.

EXAMPLES

O\*\*0020L : layout of all Screens ending with '0020'

R\*\*\*L : layout of all Reports

Selection by Keyword:

Several instances of the same entity type may be selected using the '\*' wildcard, which can be placed anywhere in the keyword.

EXAMPLE

KSAPPL2\*\*\*\*\*CE

All Segments assigned keywords starting with the APPL2 letters will have their Data Elements Calls printed.

**NOTES:** The total length of a generic keyword being 13 characters; complete with the appropriate number of '\*' wildcard characters if you wish to have all keywords searched. If the total length (\* included) is for instance 10 characters, the search will not take keywords longer than 10 characters into account.

Instances may be printed several times if several of their keywords meet the selection criterion.

LIST-TYPE CALL

Selection by code:

You may use a generic call in a List by Code in order to limit the list according to a code format criterion.

EXAMPLE

LCVSPEC\*\*

V = Volume entity type

SPEC\*\*= instance code used as criterion, i.e. all Volumes whose codes start with the letters SPEC get listed.

Selection by keyword:

You may use a generic call in a List by Keyword in order to qualify the list domain according to a keyword format criterion.

EXAMPLE

LKOSTOCK\*\*\*\*\*

O = Screen entity type

STOCK\*\*\*\*\* = keyword used as criterion, i.e. all Screens assigned a keyword starting with 'STOCK' get listed.

**NOTES:** The total length of a generic keyword being 13 characters; complete with the appropriate number of '\*' wildcard characters if you wish to have all keywords searched. If the total length (\* included) is for instance 10 characters, the search will not take keywords longer than 10 characters into account.

Instances may be printed several times if several of their keywords meet the selection criterion.

### Call Using Limit(s)

Calls using spanning limits are used to qualify the selection domain.

They are available with all generic call types.

**ALSO::** Such calls may be specified for non-generic list-type calls sorted by code or type.

One of the following limits is entered after the call:

- a lower (beginning with) limit (,B=),
- an upper (ending with) limit (,E=),
- an interval (,B= and ,E=).
  - Limits are inclusive.
- EXAMPLES OF INSTANCE-TYPE CALLS USING LIMITS:  
E\*\*\*COD,-D,B=CLA,E=CLU

Definition and Description of all Data Element instances whose code ends with the letters 'COD' (and starts with 'CL'), its third letter being comprised between A and U included.

KSMAN\*\*\*\*\*CE,E=MANAGEMENT

Description of all Segment instances assigned keywords starting with the letters "MAN", until the keyword "MANAGEMENT". For instance, if there are instances assigned the keyword "MANAGER", they will not be listed.

- EXAMPLES OF LIST-TYPE CALLS USING LIMITS:

LCE\*\*\*\*\*E,B=CLICO,E=CLIRE

List of Data Element instances whose code ends with the letter 'E' (and starts with 'CLI'), and is comprised between 'CLICO' and 'CLIRE'.

LTT,B=SP

List of Text instances starting with instances of the 'SP' type.

LKO\*\*\*\*\* , B=NUMBER,E=NUMERIC

List of Screen instances assigned keywords from "NUMBER" to "NUMERIC".

The '\*' wildcard is not allowed in beginning and ending limits ('B=' and 'E=').

However, they may be incomplete, e.g.:

LCO\*\*\*\*10,E=MV,B=MW9999

List of Screen instances of the MV and MW Dialogs whose code ends with the characters '10'.

**REMINDER::** Selections by keyword may be qualified by the choice of a specific Print Option:

WA: all keywords (default option),

WL: implicit keywords,

WM: explicit keywords.

### **Instance-type Multiple Call**

When several elements (Definition, Descriptions, Comments, etc.) of a given instance must be printed in a Volume, they can be called in one S-type line only, using dashes and commas.

Multiple calls are available with instance-type calls only, using either one of the selection modes; by code or by keyword.

Multiple calls may be combined with generic calls as well with calls using limits.

**EXAMPLES:** Selection of all information pertaining to the DATAEL \_ instance of the Data Element entity:

EDATAEL,-D,-GC,-AT

The Definition is called first.

If another order is desired, the Definition is called with the '-' followed by a 'blank':

EDATAELD,- , -GC,-AT

Selection of the Definition, Comments, Call of Elements and Assigned Text of the Segments having PACBENCH as keyword:

KSPACBENCH,-GC,-CE,-AT

Two blank lines are generated between the calls made on one S-type line.

**EXCEPTION:** When a Screen, Report or User Entity Layout call is entered before another call in one Multiple Call line, an automatic page skip -- before and after the Layout -- is generated.

See Paragraph Line Skips & Page Breaks in Subchapter Additional Descriptive Elements, for complete details.

**NOTE:** MULTIPLE CALLS ARE NOT ALLOWED WITH DESCRIPTIONS OF TEXT INSTANCES.

Each section call must be entered on a separate S-type line.

### **Limited Call for E.....D and Comments Lines (-GC)**

LIMITED CALLS OF:

- DATA ELEMENT DESCRIPTION LINES (E.....D)

- COMMENTS (-GC)

Description lines of Data Element instances and Comments (-GC) may be marked out so as NOT to get printed in Volume(s):

In the Data Element Description or in Comments (-GC), a blank-type line must be created with the '\$OFF' mention only, left-justified in the SIGNIFICANCE-DESCRIPTION or COMMENT field, respectively.

All following lines will not get printed in the Volume until a '\$ON' line is found (its format identical to the '\$OFF' line).

- When used on Data Element Description lines implicitly called via an entity '-CE' call, this facility REQUIRES that the EO option be selected.

Otherwise, with the -EO default option, lines between the \$OFF and \$ON lines would still get printed.

- When used on Data Element Description lines explicitly called via the E.....D or KE.....D calls, this facility REQUIRES that the EF option be selected.

Otherwise, with the -EF default option, lines between the \$OFF and \$ON lines would still get printed.

- When used with -GC lines, this facility is implemented by default provided that the -EG default option is on.

In order to have ALL -GC lines printed, the opposite print option EG must be specified.

**NOTES:** Lines between \$OFF and \$ON lines always appear in the OLSD-generated online help.

Both \$OFF and \$ON lines NEVER get printed nor do they appear in the OLSD-generated online help.

### **Call of Instances Specific to a Methodology**

Instances specific to a Methodology -- implemented by the VisualAge WorkStation -- may be called and printed in a Volume, provided they have been uploaded.

>>>>: Consult the VisualAge Pacbase WorkStation online help for the lists of available calls; for each entity, see topic Coding in a Volume.

Also, the list of calls is available in print via the GPRT 'PCM' command, see the CORRESPONDENCE TABLE at the end of the obtained document.

Although formats used to enter such instances calls are slightly different from those of the standard VA Pac instances, they benefit from exactly the same calling variants and options, which are not systematically repeated in this section.

This is why it is RECOMMENDED to first refer to the preceding sections for complete information.

**NOTE:** Some standard VA Pac entity types have additional descriptions -- specific to a given Methodology -- which can be called in a Volume following the specific call formats described in this section (see EXAMPLE 2 below).

#### INSTANCE CALLS BY CODE:

```
//m _ _ lty occcod did
```

//m \_ \_ = methodology code followed by 2 blank spaces

lty = entity local code (specific to the Methodology in use)

occcod = instance code on 6 character if shorter, complete with blank characters.

did = Description identifier

#### EXAMPLE 1 SSADM

```
//A DFD***COD,-D1,B=CLA,E=CLU
```

Definition and Graphic Description of all Data Flow Diagram (DFD) instances whose code ends with the letters 'COD' (and starts with 'CL'), its third letter being comprised between A and U.

#### EXAMPLE 2 MERISE

```
//M ECRocccodDE
```

"Tasks Performed" Description of the occcod Screen (ECR) instance.

#### INSTANCE CALLS BY KEYWORD:

The command used to call instances selected by keyword is 'DK' instead of 'K':

```
//mDKltykeyword.....did
```

m = methodology code

lty = entity type local code



keyword = keyword used as criterion (required)

did = Description identifier

**NOTE:** If you select a Description and if the keyword is less than 13 characters (required length) complement with the appropriate number of BLANK characters.

In the same context, if you wish to request an exhaustive generic call, complement with the appropriate number of "\*" characters.

EXAMPLE:

```
//mDKltykey*****did
```

If the overall keyword length is for instance 10 characters, instances assigned keywords starting with "key" but longer than 10 characters will not get printed.

LIST CALLS BY CODE / BY KEYWORD / BY TYPE:

The same list call possibilities as that used for standard VA Pac entities apply.

**NOTE:** All list calls must begin with '/m' (m = methodology code).

EXAMPLES

```
//DLCERD*****E,B=CLICO,E=CLIRE
```

List of Entity Relationship Diagram (ERD) instances whose code ends with the letter 'E' in the 6th position and is comprised between 'CLICO' and 'CLIRE' (YSM).

```
//MLKMCCLI*****
```

List of Conceptual Data Model (MCD) instances which have been assigned a keyword starting with the letters 'CLI' (MERISE).

```
//OLTDBDQY
```

List of Database Block (DBD) instances of type QY (SYBASE) (OMT).

GENERIC CALL OF TEXT SECTIONS

When a Text instance is edited with the VisualAge Pacbase Workstation (and uploaded), you have the possibility to call all of its sections and have them printed according to the order in which they are listed in the Table of Sections window.

To do so, enter the following call:

```
//m _ _ TXT txcodes D1 _ _ _ **
```

**NOTE:** If the generic call is written in standard form, i.e.:

```
TxcodesD**
```

sections will be printed according to their alphabetical order.

### PRINTING OF GRAPHIC DESCRIPTIONS

Graphic Descriptions can be directly printed within the Volume which calls them. To do this, you need use the Volume Local Print facility available via the VisualAge Pacbase WorkStation.

For details, please refer to the WorkStation Reference Manual, Chapter "The WorkStation Manager Window", Subchapter "Document Local Print".

#### GRAPHIC DESCRIPTIONS IN HOST-PRINTED VOLUME:

- For each Graphic Description call, a blank page is generated in the Volume, containing the page header and footer, and stating the entity type local code and the instance code.

Graphic Descriptions -- which are locally printed -- can then be inserted manually into the Volume.

- Another solution is to provide for the printing of Graphic Descriptions at the end of the Volume, i.e. in an Appendix (A-type line in the Volume Description).

These descriptions will be referenced as such in the Volume where they are originally called (the message 'See Appendix No. ' is automatically printed as well as the corresponding Appendix pages).

Graphic Descriptions can then be inserted manually into the Appendix.

---

## **Automated Generation of Titles**

PRELIMINARY REMARK:

All topics discussed in this subchapter refer to the Volume Description. A field-by-field description is located in the last subchapter.

### AUTOMATED GENERATION OF TITLES (\$GT=1 + OPTION)

List labels and names of instances (save Text instances) may be automatically printed in:

- The Table of Contents (ToC) as entries,
- title-pages automatically generated,
- the Volume body, just before the call's printed contents.

TY

```
-----  
0          GT  
T1         FUNCTIONAL SPECIFICATIONS  
S          LCE  
S          OSCR001  
S          OSCR001CE  
S          TTEXT01DBB  
T2         EXTERNAL SPECIFICATIONS
```

Resulting Table of Contents:

```
1 FUNCTIONAL SPECIFICATIONS  
  1 LIST OF ELEMENTS BY CODE  
  2 PASSENGER RESERVATION  
  3 EXTERNAL SPECIFICATIONS
```

- The label corresponding to the LCE call, i.e. "LIST OF ELEMENTS BY CODE" will be generated as a Level-2 subentry in the Table of Contents, although the selection is made under the Level-1.
- The name of the Screen instances SCR001 ("PASSENGER RESERVATION") is generated as an entry in the Table of Contents.
- The name of the Text instance TEXT01 does not get printed as the Text entity is excluded from the Automated Generation of Titles. However, Text title lines may get printed in the ToC, see Paragraph Generated Text Titles below.

### IMPLEMENTATION:

The Automated Generation of Titles requires that the \$GT parameter value be set to "1" and that one specific Print Option be selected, to qualify the impact of the \$GT parameter.

All combinations of the \$GT parameter with each Print Option are given in the chart below:

Values of \$GT	Options	Call's first page and title-pages	Table of contents
\$GT=1	GT	NO	YES
\$GT=1		GV	YES
\$GT=1	GA	YES	YES
\$GT=1	-GA*	NO	NO
\$GT=0		NO whatever print option	NO

\*: Default option

When the GV or GA option is selected, instance names or list labels will be printed in:

1. A title page if:

- the title-page generation level is lesser or equal to the level specified in the TITLE PAGE OPTION field on the Volume Definition.

**EXAMPLE:**

A Volume has T1 to T5 titles;

- If you enter the value "6" in the TITLE PAGE OPTION field, such title pages are generated for all calls, including those pertaining to level-5 sections.
- If you enter the value "5", such title pages are generated for calls made within level-1 to level-4 sections.
- the 25-labeled line is defined in the Volume Specific Layout since this line supports titles in title-pages.

2. A call's first page if:

- its level+1 is included in the values set by the '\$VT=nm' parameter.

**EXAMPLE:** If the Volume has T1 to T3 titles, \$VT=14.

- the relevant 7n-labeled line is defined in the Volume Specific Layout since 7n-labeled lines support titles printed before calls contents.

**EXAMPLE:**

If the Volume has T1 to T3 titles, also define the 74-labeled line; a generated title will be printed before each call's printed contents.

When the GT or GA option is selected, instance names or list labels are entries in the Table of Contents if:

- the additional Table of Contents level -- in relation to the Volume Tn Description lines -- has been taken into account in the ToC level request (Document Definition, TABLE OF CONTENTS/SOURCE field).
- the relevant 4n-labeled line is defined in the Volume Specific Layout since 4n-labeled lines support level n ToC entries.

**NOTE:** For details on how to use parameters, refer to Chapter LAYOUT AND CUSTOMIZATION OF A VOLUME, Subchapter Parameters.

For complete details on Print Options, refer to Subchapter PRINT OPTIONS, Section Title-Related Options.

>>>>: Generated titles are printed according to layout characteristics defined in the Volume Specific Layout.

For complete details, please refer to Chapter ADDITIONAL FACILITIES: SPECIFIC LAYOUT & FONT TYPES.

FOR VOLUMES WHERE PARAMETER \$GT ABSENT:

With the value "2" in the TABLE OF CONTENTS SOURCE field (Volume Definition), generated titles are automatically printed in the Table of Contents.

The 83-labeled line of the Volume Print Layout must be defined.

**NOTE:** This facility is available for calls made within level-2 sections ONLY.

#### GENERATED TEXT TITLES (TT PRINT OPTION)

Text title lines (line type value = "K", "-", "\_", "+", or "=") may also be automatically generated in the Table of Contents. This is obtained by using the TT Print Option.

The TT option creates an additional Table of Contents level -- in relation to the Volume Tn Description lines -- which must be taken into account in:

- the ToC level request (Volume Definition, TABLE OF CONTENTS/SOURCE field).
- the corresponding 4n-labeled line in the Volume Specific Layout.

FOR VOLUMES WHERE PARAMETER \$GT ABSENT:

With the value "2" in the TABLE OF CONTENTS SOURCE field (Volume Definition), Text titles are automatically printed in the Table of Contents.

The 83-labeled line of the Volume Print Layout must be defined.

**NOTE:** This facility is available for calls made within level-2 sections ONLY.

---

## Additional Descriptive Elements

PRELIMINARY REMARK:

All topics discussed in this subchapter refer to the Volume Description. A field-by-field description is located in the last subchapter.

### ADDITIONAL DESCRIPTIVE ELEMENTS

A number of layout settings can be made with Volume Description lines:

- Line skips and page breaks,
- Automatic title underlining,
- Comments (R- and C-type lines),
- Appendix (A-type lines),
- Print window (for A-, G-, H-, and S-type lines) and alignment option for comment lines (for C-type lines),
- Choice of character font types (F-type lines).

### Line Skips and Page Breaks

Line skips and page breaks are controlled at four different levels:

1. Default line skips and page breaks for each one of the nine title levels, set via the \$ST parameter positioned in the 01-labeled line of the Volume Print Layout.
2. Individual title (Tn) and call (S) lines, using the S-labeled field in the Volume Description.
3. Print windows -- for Text instances -- defined in the Volume Print Layout (71- to 79-labeled lines).
4. Instance Description level when available, i.e. Text and Data Element Descriptions, and Report Layout.

Also, for instances managed via the VisualAge Pacbase WorkStation: Non-Formatted Description and Chart Facility.

**NOTE:** A Screen, Report or User Entity Layout is always printed after an automatically generated page skip.

Since layouts are printed without page frame and footer, if the Layout call line is directly followed by another call line, this other call's contents may get printed on the same page, i.e. without a frame and footer.

To avoid this, enter a page skip in the call line following the Layout call line ("\*" in the S-labeled field, in the Volume Description).

However, when a Screen, Report or User Entity Layout call is entered before another call in one Multiple Call line, an automatic page skip -- after the Layout -- is also generated.

#### LINE SKIPS & PAGE BREAKS ON GENERATED TITLES:

Line skips/page breaks applied to Generated Titles (\$GT=1, with GV or GA option) are controlled by the \$ST parameter (see next page).

The skip applied to a call following a Generated Title is documented in ° 2.b).

For information on Generated Titles, please refer to Subchapter AUTOMATED GENERATION OF TITLES.

#### 1. THE \$ST PARAMETER:

The \$ST parameter is used to set the default line skips and page breaks for each one of the nine Volume levels. It is therefore made of 9 values, the first applies to level 1, the second to level 2, etc. Allowed values are listed in the following chart:

Value	Results
*	Page break
1	New line
2	One blank line + new line
3 to 9	Two to eight blank lines + new line
blank	Two blank lines + new line
	Not authorized for Level 1

The default value of the \$ST parameter is:

`$ST=**3332211`

This means that a page break is generated for the levels 1 to 2, two blank lines are generated for the levels 3 to 5, one blank line is generated for levels 6 and 7, and levels 8 and 9 start on a new line.

The level-1 value cannot be blank. If other level values are set to blank, or if they are erroneous, they are automatically replaced by the value '3'.

**NOTE:** If title-pages are generated until the level n included (specified in the Volume Definition, TITLE PAGE field), \$ST parameter values set for levels 1 to n will be inhibited since a title-page implies a page break.

## IMPACT OF THE \$VT PARAMETER ON \$ST:

The \$VT=nm parameter is used to request the automatic printing of titles in the first page of all sections of levels n to m.

1. If \$VT=00 (default option), the line skip or page break set via the \$ST parameter applies to each call made in the section pertaining to the corresponding level.
2. If \$VT=nm, the line skip or page break specified via the \$ST parameter applies to the printed title and to the following line (i.e. the first call in the section).

When two section titles are entered in two subsequent lines, i.e. without calls in-between:

Tn Title n

Tn+1 Title n+1

S .....

'Title n+1' is always printed in the same page as 'Title n', even when a title-page has been requested for the n+1 level (which would otherwise imply a page break before 'Title n+1').

'Title n+1' will be printed with the corresponding \$ST skip value. If this value is the page break, the skip applied is set according to the following rule:

3 if n=1

2 if n=2

1 if n>2

**NOTE:** This is also true when three or more section titles are entered in subsequent lines, without calls in-between.

## 2. LINE SKIP/PAGE BREAKS SET IN VOLUME DESCRIPTION:

The S-labeled field in the Volume Description allows to set line skips and page breaks at the section and call level, i.e. to override default options set via the \$ST parameter.

This field may be entered in the following line types:

- a) "Tn": section title,
- b) "S ": call (in Volume section),
- c) "A ": call (in Appendix),
- d) "C ": comment line.



Authorized values for this field are:

Value	Results
*	Page break
1	New line
2	One blank line + new line
3 to 9	Two to eight blank lines + new line
blank	controled by \$ST

#### IMPLEMENTATION:

##### 1. On Section Title lines (Tn-type):

- When \$VT=00, i.e. section titles do not get printed, a line skip/page break specified on a Section Title line is just irrelevant.
- When \$VT=nm, such skip/break is effective.
  - When two (or more) section titles are entered in two subsequent lines, i.e. without calls in-between,

Tn Title n

Tn+1 Title n+1

S .....

'Title n+1' is always printed in the same page as 'Title n' with a line skip specified:

- In the corresponding S-labeled field, or if this field is blank:
- By the \$ST value for level n+1.

In both cases, if the value is the page break (\*), the rule described above in Paragraph "IMPACT OF THE \$VT PARAMETER ON \$ST" will apply.

- Titles of sections of Levels 1 and 2 may have two continuation lines which -- quite logically -- cannot get printed on another page. Therefore, if the value "\*" is specified, the continuation line is automatically printed on the following line.

##### 2. On section call lines (S-type):

- The first call line:
  - When \$VT=00: Input in the S-labeled field is irrelevant since the skip applied to the section's first call is the skip set via the \$ST parameter.
  - When \$VT=nm, the skip may be specified:
    - In the corresponding S-labeled field, or if this field is blank:
    - By the \$ST value.

In both cases, if the value is the page break (\*), the skip effectively applied to the section's first call is '3'. Therefore, the section's first call will be printed in the same page as its title.

- The following call lines:

The skip may be specified in the corresponding S-labeled field, or if this field is blank:

- By the \$ST value,
- By an internal line skip/page break for those entity types which have their own line skip and page break management (See ° 4.).

### 3. On Appendix call lines (A-type):

Calls of instances and/or Lists may get printed at the end of the Volume, i.e. in an Appendix, via calls made on A-type lines in the Volume Description.

These calls will be:

- Referenced as such in the Volume where they are originally called by the message 'See Appendix No. '.
- The skip/break applied to this message is the same as discussed in ° b).
- In the Appendix, a page break is automatically generated for each call.

### 4. On Comment lines (C-type):

Line skips and page breaks on comment lines are controlled by the U-labeled field only.

If this field's value is left blank:

- The skip assigned is '3' on the first comment line,
- If other comment lines follow, the skip is '1'.

## 3. LINE SKIP OR PAGE BREAK SET IN VOLUME PRINT LAYOUT:

Refer to Chapter LAYOUT & CUSTOMIZATION OF A VOLUME, Subchapter The Volume Layout, Section Layout Description.

## 4. INTERNAL LINE SKIPS AND PAGE BREAKS:

Refer to the Reference Manuals specific to the entity types which have their own internal skip/break management.

Text Description : Specifications Dictionary

Data Element Description : Specifications Dictionary

Report Layout : Batch Systems Development

Chart Facility (Free entity): WorkStation Reference Manual

## **Title Automatic Underlining**

The following titles can be automatically underlined:

- Section Titles printed in title-pages,
- Section Titles requested in the TITLE PAGE field in the Volume Definition,
- Generated Section Titles (\$VT=nm),
- Generated Titles (\$GT=1).

This function is controled at two different levels:

1. Sections' level through the U-labeled field in the Volume Description,
2. Volume levels through the \$UT (and \$UP) parameter(s).

### 1. TITLE UNDERLINING SET IN VOLUME DESCRIPTION:

The U-labeled field in the Volume Description allows to:

- Specify the underlining character for each Section title when printed in its title-page,
- Set DEFAULT options for Generated Section Titles printed in the sections' first page.

**NOTE:** Comment lines (C-type lines) may also be assigned an underlining character in this field.

Any character entered in this field will be used as the underlining character.

**NOTE:** In order to have ALL titles (including those Generated with \$GT=1) underlined when printed in title-pages, the \$FTT parameter should be used. \$FTT sets the character font type for ALL titles printed in ALL title-pages. In this case, the selected font type must include an underlining feature.

Font types are declared in the Layout lines of the associated Report for Font Types.

For further information on title pages (and on font type specification), refer to Chapter ADDITIONAL FACILITIES: SPECIFIC LAYOUT & FONT TYPES, Subchapter Title-Pages.

### 2. THE \$UT AND \$UP PARAMETERS:

The \$UT parameter is used to:

- Set or modify the underlining option for Generated Section Titles when printed in the sections' first page,

- Set the underlining character for Generated Titles (\$GT=1, with GV or GA print option) when printed in the calls' first page.

The \$UT parameter is specified for each one of the nine Volume levels; its first digit applies to level 1, the second to level 2, etc. Allowed values are:

Value	Results
x	The 'x' value (i.e. any character other than 'I' and 'D') will be used as the underlining character, even if another character has been specified in the U-labeled field in the Volume Description.
I	No underlining: the character specified in the U-labeled field is ignored.
D	The character specified in the U-labeled field is taken into account (default value for all levels, i.e. \$UT=DDDDDDDDDD)

The scope of the \$UP parameter is identical to the one of the \$UT parameter.

It is used to qualify underlining when the section number is printed (\$LN=nnnnnnnnn) before the title.

\$UP includes nine values, the first applies to level 1, the second to level 2, etc. Allowed values are listed in the following chart:

Value	Results
A	The title and its preceding number are underlined
T	The title only is underlined (default value for all levels, i.e. \$UP=TTTTTTTTT)

#### IMPORTANT NOTE:

Underlining set via the U-labeled field or via the \$UP (and \$UT) parameter(s) is inhibited whenever a character font type has been specified.

However, underlining remains possible in this case if the font type includes an underlining feature.

**NOTE:** The \$UT and \$UP parameters have no influence on title-pages.

### **Comments in Volume Description**

COMMENT LINES: R- & C-TYPE LINES

R- and C-type Description lines enable you to add comments on the Volume, on a section, or on a particular call, depending on where they are positioned in the Volume Description.

R-type lines are not printed; they appear only in the Volume Description.

C-type lines are printed in the Volume.

Skip/break management of these lines is described above, in the Line Skips and Page Breaks Section.

You may set an alignment option for the C-type lines, see Section Print Window and Alignment Option (WA columns).

## Appendix

### APPENDIX: A-TYPE LINES

It is possible to specify the printing of one or more Appendices at the end of the Volume.

This is done on specific A-type call lines in the Volume Description.

These calls will be:

- Referenced as such in the Volume -- where they are originally called -- by the message:  
"See Appendix No. ".
- In the Appendix, a page break is automatically generated for each new call.

The Appendix is a level-1 entry in the Table of Contents.

## Print Window & Alignment Option (WA columns)

PRINT WINDOW:

The Print Window specified in the W-labeled field is used in relation to A-, G-, H-, and all S-type lines.

The Print Window specified in this field overrides the Print Window set by the \$DL parameter, for the concerned line only.

This W-labeled field and the \$DL parameter both default in Print Window No.0, i.e. when they are not specified or if the specified Print Window is not defined in the Volume Print Layout.

**NOTE:** When the Standard Volume Print Layout is being used, its No.0 Print Window automatically applies.

For information on the Volume Print Layout, refer to Chapter LAYOUT AND CUSTOMIZATION OF A VOLUME, Subchapter The Volume Layout, Section Layout Description.

#### ALIGNMENT OPTION:

The alignment option applies to Comment lines only (C-type line). It is specified in the line's A-labeled field.

Value	Results
' '	No alignment
L	Left justified
C	Centered
R	Right justified

**NOTE:** If blank characters have been entered before the first word, they will not be taken into account when the L, C, or R alignment option is requested.

## Character Font Types

### CHARACTER FONT SPECIFICATION: F-TYPE LINES

F-type Volume Description lines enable you to specify a character font which will be effective for all the following calls until a new F-type line is encountered.

The character font code must be entered flush left in the TITLE, COMMENT, etc. field. This field must not contain any other information.

Character font codes must have been listed in the Layout of a dedicated Report instance whose code must be specified in the Volume Definition, or on the PCV line (Volume Generation-Print command) via the \$FT parameter.

**NOTE:** This facility will prove particularly useful when the Volume calls large Report layouts, by using a character font which produces a landscape format.

For complete details on font type management, refer to Chapter ADDITIONAL FACILITIES: SPECIFIC LAYOUT & FONT TYPES, Subchapter Font Type Specification.

---

## Print Options

### PRELIMINARY REMARK:

All topics discussed in this subchapter refer to the Volume Description. A field-by-field description is located in the last subchapter.

## PRINT OPTIONS

Print options enable you to customize your Volume with a variety of print variants.

They are entered in the Volume Description, in O-type lines.

A print option may be specified for the largest to the smallest level, i.e. Volume Level (0) to Level-9.

A print option specified for a level-n section is also effective for all embedded sections (levels greater than n), unless explicitly specified via the opposite option.

In other words, a print option specified for a level-n section is valid until the end of the level-n section (including all embedded sections, if any).

**NOTE:** A print option may be entered anywhere within a Document section, depending on where it should take effect within that section.

For instance, an option may be requested for one call only, provided that this option is turned off on the Volume Description line following that call.

Several print options may be entered on one O-type line, provided that the first one is entered flush left in the TITLE/COMMENT/OPTION/FONT/SELECTION field, and that they are separated by any character used as a delimiter (blank, comma, etc. The dash character is not allowed as a delimiter).

All available print options are listed in the following charts, an asterisk indicates the option used by default.

### **General Options**

<b>Value</b>	<b>Result</b>
	Page header / Report, Screen and U.E. layouts:
EM	Yes
-EM *	No
	Character font type also applied to page header for Report, Screen and U.E. layouts:
EE	Yes NOTE: The EM option must also be selected.

Value	Result
-EE *	No (header printed w/ standard character font)
	Exclusion of -GC lines :
-EG *	Lines between \$OFF - \$ON lines are NOT printed
EG	ALL (blank-type) -GC lines are printed. NOTE: -GC lines must be called explicitly in the Volume Description (save -CEnnnGC lines which by default are automatically printed with all -CE calls)

#### OPTIONS REGARDING SELECTIONS BY KEYWORD

Value	Result
WA *	All keywords
WL	Implicit keywords (from occurrence's name)
WM	Explicit keywords

### Title-related Options

Valeur	Résultat
	Option to be used with the Automated Generation of Titles (\$GT=1) allowing instance names and list labels to be printed in:
GA	Table of Contents, Title-Pages, Calls' first page
-GA *	not generated
GT	Table of Contents only
GV	Title-Pages and Calls' first page
	Text Title-type lines in Table of Contents (K, -, _, +, =):
TT	Yes
-TT *	No

>>>>: For details, see Subchapter Automated Generation of Titles.

### Options for Lists

Value	Result
LI	List printed with the I1 OPERATION CODE value, i.e. the complete branch of Libraries is taken into account.
LU	List printed with the U1 OPERATION CODE value, i.e. the selected Library only is taken into account.



Value	Result
LR *	The OPERATION CODE value found in the PCV command is effective. The LR print option is used when the LI or LU option has been specified in a preceding Volume Description line in the considered section (Level 0 to 9) in order to have the OPERATION CODE value set on the PCV command to be effective again.

>>>>: See additional information in Chapter ACCESS COMMANDS, Subchapter Generation-Print Commands, Paragraph Database Network View & Related Print Options.

## Text-processing Options

>>>>: For complete details on text processing, refer to Chapter LAYOUT AND CUSTOMIZATION OF A VOLUME, Subchapter Text Processing Facilities.

Value	Result
	Justification:
TA *	Yes
-TA	No
	Option relevant on JUSTIFIED Text lines. Processing mode of blank characters entered in Text Description lines:
TB	Blank characters are not removed (including blanks positioned at the beginning of a line). NOTE: This option is the default option in: . Print Preview, . OLSD online help, . Non-formatted Descriptions (uploaded from the VisualAge Pacbase WorkStation).
-TB *	Only blanks positioned at the beginning of a line are not removed.
	Option relevant on NON-JUSTIFIED Text lines used in a Print Window longer than 60 char. (length of Text Description input lines in the VA Pac character mode interface). This option specifically allows to print charts with rows longer than 60 characters.
TS	This option allows a pseudo justification within a large print window: with an under- score '_' character entered at the end of a line, this line's contents, when printed, will include at least the beginning of the following line, depending both on the Print Window length and on the exact contents of both input lines. NOTE: Ending underscores do NOT get printed.
-TS *	Option used to inhibit the TS option, identical to the -TA non-justification option: Lines are 100% non-justified; printed exactly as entered, with a maximum line length of 60 characters.

Cont'd next page.

Value	Result
	Choice of Print Windows for Text instances uploaded from the VA Pac WorkStation:
TW *	Those defined through the WorkStation
-TW	Those defined in the Volume Print Layout
	Text Title-type lines in Table of Contents (K, -, _, +, =):
TT	Yes
-TT *	No

## Options for Data Elements

Value	Result
	-CEnnnGC lines:
EC *	Yes
-EC	No
	Data Element Description lines called via S....CE, O.....CE, M.....CE, F.....CE:
ED *	Yes
-ED	No
	Exclusion of Data Element Description lines . called via E.....D or KE.....D :
EF	Lines between \$OFF - \$ON are NOT printed
-EF *	Lines between \$OFF - \$ON lines are also printed . called via S....CE, O.....CE, M.....CE, or F.....CE:
EO	Lines between \$OFF - \$ON lines are NOT printed
-EO *	Lines between \$OFF - \$ON lines are also printed In both cases, the ED print option must be active.
	When the Data Element occurrence is a child Data Element:
EP *	Description lines of the parent Data Element are also printed. NOTE: (-)EF and (-)EO options are also applicable to these parent Data Element Description lines.
-EP	Description lines of the child Data Element only are printed. NOTE: If the child Data Element Description lines are called via a S....CE, O.....CE, M.....CE, or F.....CE call, the ED print option (default) must be active.
	Data Element Code (S....CE, M.....CE, O.....CE, F.....CE):
SH	Yes
-SH *	No

## Options for Screens and Programs

### OPTIONS FOR SCREENS

Value	Result
	Screen Line/Column ruler O.....L or O.....M:
OC	Yes
-OC *	No However, when the '-CE' call is made on the same line, the Line/Column ruler gets printed.
	Selection of Elements depending on Nature O.....CE:
OE	V, F and P Data Element instances
OF	V and F Data Element instances
OP	V and P Data Element instances
OV *	V Data Element instances
	Screen Field Presentation Value O.....L or O.....M:
OI *	Yes
-OI	No
	Format of called Data Elements (O.....CE): O.....L or O.....M:
OR	Yes
-OR *	No

### OPTION FOR PROGRAMS

Value	Result
	Line Numbers on a Program's -9 lines:
PN *	Yes
-PN	No

## Options for Reports

Value	Result
	Data Element position (R...CE):
RB *	Yes
-RB	No
	Report column ruler (R.....L):
RC	Yes
-RC *	No. However, when the '-CE' call is made on the same line, the Column ruler is automatically printed.

Value	Result
	Data Element code (R...CE):
RE	Yes
-RE *	No
	Data Element format (R...CE):
RF *	Yes
-RF	No
	Data Element length (R...CE):
RL *	Yes
-RL	No
	Structure number (R...CE):
RS *	Yes
-RS	No

## Options for Segments

Value	Result
	Format used to set Data Element length:
SA *	Input
SB	Internal
SC	Output
SE *	Rank of Data Element called in Segment
SL	Same as SE but Group Data Elements are not taken into account
SF	Data Element position is NOT printed
SK	Data Element address in Data Structure
SO	Data Element address in Segment
	Data Element internal format
ST	Yes
-ST *	No
	Data Element input format
SU	Yes
-SU *	No
	Data Element output format
SV	Yes

Value	Result
-SV *	No
	Data Element length:
SG *	Yes
-SG	No
	Data Element Code (S...CE, M.....CE, O.....CE, F.....CE):
SH	Yes
-SH *	No
	Label characterizing Data Element presence
SI	Yes
-SI *	No
	Unique or multiple key indication
SJ	Yes
-SJ *	No

Cont'd next page.

Value	Result
	FILLERs
SD	Yes
-SD *	No
	Called Segments
SS	Yes
-SS *	No

## Master Outline-related Options

>>>>: For complete details on Master Outlines, refer to Chapter PAF-PDM FUNCTIONALITIES.

**NOTE:** Should you need one or several of the following options, enter them just BEFORE the call line of the Master Outline to which they apply.

Parameter	Result
VE	Descriptions of both Master Outline and its calling Volume are included in the GPRT execution report. The expanded Master Outline Description (which includes the codes of extracted instances) helps to the correct finalization of its writing.

Parameter	Result
-VE *	The calling Volume Description only is included in the GPRT execution report.
	Master Outline positioning:
VR *	Relative positioning. EXAMPLE: For an N-level title in a Master Outline which is called in a Volume after an n-level title, the Master Outline title level will be (N+n) in the calling Volume. NOTE: If $N + n = 0$ then title level will be 1 If $N + n > 9$ then title level will be 9 This option also allows to nest a Master Outline in another Master Outline, thus allowing a further customization of a Master Outline final output.
-VR	Absolute positioning. NOTE: level 0 in the Master Outline will be level 1 in the calling Volume.
-VT *	Titles defined in the Master Outline which have empty contents are NOT printed.
VT	All titles defined in the Master Outline are printed even those with empty contents.

## Index Options

Parameter	Result
IN *	Index compiled from Descriptions of Text instances and from names of instances whose Definition is called.
-IN	Index compiled from Descriptions of Text instances only.
ID	Index also compiled from : Data Element Description lines and Comments lines.
-ID *	Above-mentioned line types are not taken into account by the Index compilation.

>>>>: For complete details on Indexing, refer to Chapter ADDITIONAL FACILITIES, Subchapter Index.

---

## The Volume Description Fields

### INTRODUCTION TO THE VOLUME DESCRIPTION FIELDS

The purpose of this subchapter is to describe the Volume Description fields.

The Option C2 can be used in the "O:" field to display for each Volume Description line, its session number and Library.

```

-----
                                USER DOCUMENTATION                                *DOC.PBD0.D0A.2847
VOLUME DESCRIPTION....: ROBOT 1  ROBOT MANAGEMENT
2 3 4 5      67 8 91011<----->12 ----->13
A L1L2 LIN : TY S U WA TITLE, COMMENT, OPTION, FONT TYPE, ENTITY SELECT.REF
      100 : T0      ***** THE ROBOTS *****
      120 : 0       SI
      BB 120 : T1      *****
      BB 140 : T1      * HISTORY *
      BB 160 : T1      *****
      BB 300 : S       TROB01 D**
      BB 340 : S       RMR2L
      CC 120 : T1      *****
      CC 140 : T1      * ROBOT MANAGEMENT *
      CC 160 : T1      *****
      CCBB 300 : T2    - ROBOT IDENTIFICATION SCREEN
      CCBB 310 : T2    PART I
      CCBB 320 : T2    INTRODUCTION
      CCBB 400 : F     3D110
      CCBB 420 : S     0R00001L,-CE,-G
      CCBB 440 : S     EIDRO ,-D
      CCBB 450 : A     TROB02 DDD
      CCBB 460 : 0     -EC

O: C1 CH: -D
-----

```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	6		VOLUME CODE
			This code must contain at least one, non-blank character. Only alphanumeric characters should be used.
			This code appears in the Volume when it is called by the \$CMA parameter in the Volume Print Layout.
2	1		ACTION CODE
		'C'	Creation of the line
		'M'	Modification of the line
		'D' or 'A'	Deletion of the line
		'T'	Transfer of the line
		'B'	Beginning of multiple deletion
		'G'	Multiple transfer
		'?'	Request for HELP documentation
		'E' or '-'	Inhibit implicit update
		'X'	Implicit update without upper/lowercase processing
			LEVEL 1 - LEVEL 2

NUMLEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
3	2	LEVEL 1 CODE
		1. When DOCUMENT ORGANIZATION MODE = 1 Although input in this field is not required, it is recommended to enter a 2-character code identifying the current level-1 section on all corresponding lines: . You will be able to enter more than 999 Document Description lines. . Direct access via its code to a level-1 section, instead of having to memorize the corresponding line's number.
		2. When DOCUMENT ORGANIZATION MODE = 0 This 2-character code identifies a Chapter. WARNING: To one Chapter code must correspond only one Chapter title (maximum of three adjacent T1-type lines).
		NOTE: This field has no impact on the organization of a Master Outline.
4	2	LEVEL 2 CODE
		1. When DOCUMENT ORGANIZATION MODE = 1 Although input in this field is not required, it is recommended to enter a 2-character code identifying the current level-2 section on all corresponding lines: . You will be able to enter a greater number of Document Description lines. . Direct access via its code to a level-2 section, instead of having to memorize the corresponding line's number.
		2. When DOCUMENT ORGANIZATION MODE = 0 This 2-character code identifies a Subchapter. WARNING: To one Subchapter code must correspond only one Subchapter title (maximum of three adjacent T2-type lines).
		NOTE: This field has no impact on the organization of a Master Outline.
5	3	LINE NUMBER (REQUIRED)
		NUMERIC FIELD
		This field is used to assign a number to Document Description lines.
		It is advisable to begin with line number '100' and then number in intervals of 20. This facilitates subsequent line insertions, as necessary.
		NOTE: This field has no impact on the organization of a Master Outline.
		TYPE OF DESCRIPTION LINE & LEVEL No.
6	1	TYPE OF VOLUME DESCRIPTION LINE (REQUIRED)



NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			This field indicates the function of the Volume Description line.
		A	Instance or list call assigned to the Appendix. Refer to Subchapter Additional Descriptive Elements, Section Appendix.
		C R	Comment line printed in the Volume, Comment line -- not printed. Refer to Subchapter Additional Descriptive Elements, Section Comments in Volume Description.
		F	Specification of a character font code. Refer to Subchapter Additional Descriptive Elements, Section Character Font Types.
		O	Print option. Refer to Subchapter Print Options.
		S	Instances or list call. Refer to Subchapter Volume Contents: Instance and List Calls.
		T0 Tn	Volume title. Level-n section title. Refer to Subchapter Volume Structure.
		P	Calls a Master Outline. This type can only be used in standard Volumes (i.e. Volume type is NOT = P).
			Refer to Chapter PAF-PDM FUNCTIONALITIES, Subchapter Operating Mode, Section Calling the Master Outline in a Volume.
			TYPES OF MASTER OUTLINE DESCRIPTION LINES:
			The following types are relevant for P-type Volumes only, i.e. Master Outlines that call an Extraction Master Path.
			For complete information on each of these types, refer to Chapter PAF-PDM FUNCTIONALITIES, Subchapter Operating Mode, Section The Master Outline.
		M	Extraction Master Path call. This type of line must be the first line in the Volume Description. NOTE: Only one Extraction Master Path may be called in a Master Outline.
		Ln	Beginning of loop.
		En	End of loop.
		H	List header. You may define up to three H-type line, each H-type line may in turn have one or two continuation lines.
		G	Print presentation for data extracted by the Extraction Master Path.
7	1		SECTION LEVEL NUMBER
			This field can only be used for Tn-, Ln- and En-type lines.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			A Tn-type line may have the following values:
		0	This value indicates a Volume title which may be entered on up to three lines. NOTE: A T0 line must be entered in the Volume Description's first line.
		1 or 2	These values indicate a level-1 or level-2 section title. NOTE: These sections may have a 2- or 3-line title.
		3 to 9	These values indicate a level-3 to level-9 section title. NOTE: These values require that \$GT=0 or \$GT=1.
			The following types are relevant for P-type Volumes only, i.e. Master Outlines that call an Extraction Master Path.
		1 to 9	An Ln-type line may have the following values: These values indicate the beginning of a loop (level-1 to level-9). You must begin with 1 (L1) which can only be used once in a Description.
		1 to 9	An En-type line may have the following values: These values indicate the end of a loop (level-1 to level-9).
8	1		PAGE BREAK - LINE SKIP
		* 1 2 3 to 9 blank	Page break New line One blank line + new line Two to eight blank lines + new line Break/skip controlled by the \$ST parameter
			Refer to Section Page Break and Line Skip in Subchapter Additional Descriptive Elements.
		S	Continuation of Master Outline page header (H-type line).
9	1		CHARACTER FOR TITLE UNDERLINING
			Used only for Tn-, C- and H- type lines to specify the character used for underlining.
			Underlining also depends on the \$UT parameter.
			Refer to Section Title Automatic Underlining in Subchapter Additional Descriptive Elements.
			PRINT WINDOW & ALIGNMENT OPTION
10	1		PRINT WINDOW/LINE TYPES: A G H S
			This field applies to an A-, G-, H-, or S-type line. It defines the default Print Window to apply on these lines.
		0 to 9	Number of the default Print Window, as defined in the corresponding 7n-labeled line in the Volume Print Layout.
			NOTE: The Print Window specified in this field will override the Print Window set by the \$DL parameter -- if defined -- for the concerned line only.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			This W-labeled field and the \$DL parameter both default in Print Window No.0, i.e. when they are not specified or if the specified Print Window is not defined in the Volume Print Layout. Also, when the Standard Volume Print Layout is being used, its No.0 Print Window automatically applies.
11	1		ALIGNMENT OPTION/COMMENTS
			This field is used only with C-type lines; it allows you to specify an alignment option for Comment lines.
		blank L C R	No alignment Left justified Centered Right justified
			NOTE: If blank characters have been entered before the first word of the Comment line, they will not be taken into account with the L, C, or R alignment options.
			Refer to Section Comments in Volume Description in Subchapter Additional Descriptive Elements.
12	50		TITLE/COMMENT/OPTION/FONT/SELECTION (REQUIRED)
			This field's contents depends on the Description line type.
			>>>> See field TYPE OF DOCUMENT DESCRIPTION LINE for details.
13	4		REFERENCE CURSOR
			This field is used for a Master Outline only (Volume type = P).
			A Reference Cursor is required in all L-type lines to specify the path of the loop.
			The possible values for this field are indicated in the CODE OF THE REFERENCE CURSOR field in the Extraction Master Path Description.
			>>>> See the PACBASE ACCESS FACILITY Reference Manual, Chapter EXTRACTION MASTER PATH: DEFINITION/ DESCRIPTION.
			If this field is left empty, the preceding Reference Cursor specified within that same loop will be taken into account in the Volume calling this Master Outline.
			>>>> For complete details on the Master Outline Description, please refer to Chapter PAF-PDM FUNCTIONALITIES, Subchapter Operating Mode, Section The Master Outline.



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## Chapter 3. Layout and Customization of a Volume

---

### Introduction

This chapter discusses the layout and customization of a Volume, involving the following topics:

- Report Layout,
- Parameters,
- Text processing.

#### INTRODUCTION TO THE REPORT LAYOUT

The Report Layout describes the page layout, i.e. its header, repetitive lines (or page contents), and the page footer.

The Report Layout also supports the parameters used for Volume customization. For information on this topic, refer to Subchapter Parameters.

A dedicated instance of the Report entity supports the description of the Volume Layout.

**NOTE:** Layout design regarding Generated Section Titles (\$VT=nm), title-pages, the Table of Contents, and the Index is specified in another dedicated Volume instance. Refer to Chapter ADDITIONAL FACILITIES: SPECIFIC LAYOUT & FONT TYPES.

The code of this Report instance must be entered in the Volume Definition or in the PCV Generation-Print command line via the \$LAY parameter.

When no Report instance code is specified as the Volume Layout, a standard layout is used instead. This layout is presented in the Appendix, Subchapter Standard Volume Layout.

When a Volume Layout is to be modified, it may prove useful to know which Volumes use that Report instance. You may check this in the screen called by the following input in the CHOICE field:

CH: R...XV

---

## The Volume Layout

### Layout Definition

#### REPORT DEFINITION

The Report Definition is accessed by entering the following in the CHOICE field:

- CH: Rnnn  
where nnn is replaced by 3 characters which completes the Report instance code.
- Input of the Report instances code and name suffice for the Definition of the Report instance.

The value in the LINE LENGTH field must be from 1 to 264 (132 being the default value).

**NOTE:** If the Volume Print Layout is larger than 132 characters, print the PAC7GN sequential output file instead of the PAC7IN print file in order to obtain a complete print-out.

```

-----
                        USER DOCUMENTATION                                *DOC.PBDO.DOA.2847
REPORT DEFINITION.....: XM1

NAME.....: ROBOT Volume Layout

COMMENTS.....:

NATURE.....: E REPORT
PRINTER TYPE.....: L

LINE LENGTH.....: 132
FORMAT FOR TOTALS   : INTEGER.....: 11
                    : DECIMAL PLACES.: 07

EXPLICIT KEYWORDS...:

SESSION NUMBER.....: 150          LIBRARY.....: DOA      LOCK :

O: C1 CH: Rxm1          ACTION:
-----

```

## Layout Description

### Description Principles

Document Layout Description Principles

#### PAGE HEADER & FOOTER

The page header and footer are designed on 10-labeled lines (See a Layout example in subchapter Documented Example).

**NOTE:** A page layout must start in column 1.

#### REPETITIVE LINES

Repetitive lines describe the part of the Layout where the body of text of the Volume is printed, as opposed to the page header and footer.

These lines are formatted by Print Windows. It is possible to define up to 10 Print Windows per Report Layout in order to have margins of varying widths.

A Print Window's length and position is defined by two '\$' signs; as a result text is printed inside the space delimited by the two '\$' signs.

Print Windows No.0 to No.9 are described on 70- to 79-labeled lines.

Each window must have a minimum length of 30 characters.

The page break or line skip specified for each Print Window is performed for each new paragraph, provided that no page break/line skip is specified in the called Text Description; if this is the case, it is the page break/line skip specified in the Text Description which will apply.

**NOTE:** Parameters cannot be positioned within the repetitive lines Print Windows (inside the '\$' characters).

**NOTE FOR TEXT LINES UPLOADED FROM THE WORKSTATION:**

Print Windows designed in the Volume Print Layout are not taken into account when Text lines have been uploaded from the WorkStation, unless the -TW print option is explicitly selected.

**RIGHT-INDENTS:**

A period '.' is used in a Print Window to indent the first line of paragraphs to the right. Its position within the Print Window indicates where the first line of the paragraph should start. This feature is used in conjunction with the \$ALI parameter.

If \$ALI=0 (default value) paragraphs (starting with a text processing command) and sub-paragraphs (which only include a line skip -- without a text processing command) are right indented.

If \$ALI=1, sub-paragraphs (line skip only) are NOT right- indented.

**NOTE:** Right-indents are incompatible with '\$\$' text processing commands, and with those \$-J, \$-L, \$-C, \$-R commands which include a character string used for left-indentation.

See the Text Processing Facilities Subchapter for the description of all available text processing commands.

**PAGE FRAME:**

Literals entered outside of a Print Window -- before the first '\$' and(/or) after the second '\$' -- will be printed on each line which uses that Print Window. As a result, it is possible to design a page frame by entering the same literal at the same position on each Print Window. All examples given in this manual include a page frame.

PRINT WINDOW No.0 : THE 70-LABELED LINE



This is the required default Print Window. It is used in relation to A-, G-, H-, and all S-type Volume Description lines.

For instance, when a Text paragraph/section does not specify a Print Window, or if the Print Window is not defined in the Print Layout, the default Print Window applies.

**NOTE:** You can select another default Print Window via the \$DL parameter and/or at the Volume Description line level (in the W-labeled field).

Print Windows specified in Text lines necessarily override these defaults.

Since the default Print Window applies to all selections (Volume S-type Description lines), it is recommended to set a short right margin so as to avoid possible truncations, and/or to set this Print Window's length to at least 78 characters.

Whether the No.0 Print Window is the default window or not, the number of repetitive lines per page must be specified within this window. By default, a maximum of 48 repetitive lines per page are printed.

Also, parameters \$M, \$SPAC, \$CPAC, and \$RUBT, are entered outside of the No.0 Print Window. In the Volume, their corresponding values are printed where these parameters are positioned in the Print Window.

It is recommended to position the \$M parameter in the right margin of the No.0 Print Window so as to avoid overprinting.

**NOTE:** These parameters are ignored if they are positioned in lines other than the 70-labeled line.

The Table of Contents and Index may be described through the VOLUME Print Layout.

For information, refer to the Appendix at the end of this manual.

## **The Layout Fields**

### Volume Layout Description Fields

The Report Layout (CH: R...L) is used to describe the Volume Print Layout.

The Layout contains the following fields:

- An identifier line with the Report instance code, its name, and the layout line maximum length,
- The ACTION CODE field,

- The line number,
- The line label; a 2-digit numeral,
- The line skip,
- The layout line, headed by a column ruler.

**NOTE:** The layout must not contain the alphanumeric literal delimiter specific to the hardware in use.

A Layout has a maximum of 264 columns. Thus, to access the different parts of the Layout (scrolling right or left, up or down), enter the following in the CHOICE field:

CH: RddeLllCccc

where dde is replaced by the REPORT CODE, ll the line number and cc the column number.

Scrolling right or left is possible by simply entering in the CHOICE field:

CH: >nnn or CH: <nnn

Scrolling will move the display right or left by nnn columns.

Other possibilities:

CH: > or CH: <

Scrolling will move the display right or left by 66 columns.

CH: =n

Display will start from column n. If column n is empty, the display will start from column 001.

CH: =

Display will start from column 001.

```

-----
                        USER DOCUMENTATION                                *DOC.PBDO.DOA.2847
REPORT LAYOUT :          1 XM1 ROBOT VOLUME PRINT LAYOUT                LENGTH= 132

2 3 4 5 6
A LN CP S                1 1 2 2 3 3 4 4 5 5 6
1...5...0...5...0...5...0...5...0...5...0...5...0...
$VT=19,$GT=1,$LN=11111111,$BP=2,
$L1=SECTION,$L2=CHAPTER,$P0=ROBOT FOLLOW-UP,$M=*, $NT=1
-----
12 10 | $NMA                                $N          $NM
14 10 | $L1      $TN1
16 10 | $L2      $TN2
-----
70 70 3 | $ 48                                $ $M
71 71 | $
72 72 2 | $
73 73 | $
74 74 | $
75 75 | $
76 76 | $
77 77 | $
78 78 | $
79 79 | $

0: C1 CH: -L
-----

```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	3		Report code (REQUIRED)
			The Report code consists in three numeric or alphabetic characters.
2	1		ACTION CODE
		'C'	Creation of the line
		'M'	Modification of the line
		'D' or 'A'	Deletion of the line
		'T'	Transfer of the line
		'B'	Beginning of multiple deletion
		'G'	Multiple transfer
		'?'	Request for HELP documentation
		'E' or '-'	Inhibit implicit update
		'X'	Implicit update without upper/lowercase processing
3	2		LINE NUMBER (REQUIRED)
			PURE NUMERIC FIELD

NUMLEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
	'00-99'	It is advisable to leave gaps in the numbering sequence to allow for future line insertions as necessary.
4	2	NUMER.
		LINE LABEL NUMBER (REQUIRED)
		PURE NUMERIC FIELD
		This value identifies lines that contains labels to be printed in the actual Report. The label number is to be indicated on the first part of the line, and it is automatically set to the next parts.
		BATCH SYSTEMS DEVELOPMENT
	'blank'	Lines without constant parts.
	'01-99'	Lines with constant parts.
		Lines with constants are stored in a table. This number is the subscript. Therefore, begin with '01' and number the lines consecutively. ('00' is not valid).
		In Batch mode, this value need not be repeated for lines that are described using more than one part.
		A constant line cannot be deleted unless it is the last one of the report. To delete a line, either renumber the lines, or delete the line and renumber the lines, or delete the line and renumber the last constant line with the deleted line value. Note that the Description (-D) screen field must also be updated to reflect the change.
		CONSTANT PART NUMBERS are not necessarily in the same sequence as Line Numbers.
		The value entered here can only be used once per layout.
		P.D.M. EXTENSION
		The Line Label Number identifies the Layout component. In some cases, it may be necessary to create several lines of the same label number.
		NOTE: ALL print windows must have a minimum length of 30 characters.
		1. DOCUMENT PRINT LAYOUT:
		For detailed information, refer to Paragraph Volume Layout Description Principles.
	1	Line for setting parameters' values.
	10	Line for page header or footer.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		70	No.0 Print Window (required). Default Print Window used in relation to A-, G-, H-, and all S-type Volume Description lines.
			NOTE: This default value may be modified by the \$DL parameter and at the Volume Description line level, in the W-labeled field. Print Windows specified in Text lines necessarily override these defaults.
			Enter between the "\$" delimiters the number of repetitive lines per page (default=48).
			It is recommended that the No.0 Print Window's length be at least 78 characters.
			The No.0 Print Window's framing characteristics also apply to: . Section Titles generated with \$VT=nm and printed in the section's title-page. . Title lines generated with \$GT=1 using the GV or GA print option, and printed in the call's first page.
		71 to 79	Print window No.1 to print window No.9.
			NOTE: Line labels are not necessarily entered in increasing order. A 10-labeled line which describes a page footer must be entered after the 7n-labeled lines.
			2. SPECIFIC LAYOUT:
			Line labels must be entered in increasing order.
			*** TITLE LAYOUT
		20	Title-page header
		25	. When used for titles printed in title-pages: - Print window - Framing characteristics
			. If used for the Table of Contents and Index titles when printed in their title-page: - Print window only
			Framing characteristics are those specified in the 35-labeled line for the Table of Contents, in the 55-labeled line for the Index.
			. This line also includes the number of lines in a title-page (header and footer lines excluded), followed by the number of the line where the title is printed.
			Default: number specified in the 70-labeled line of the Volume Print Layout.
			. Also used for title-page blank lines to specify framing characteristics.
		29	Title-page footer

NUMLEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		*** TABLE OF CONTENTS LAYOUT
	30	Table of Contents header
	35	Number of lines in a Table of Contents page (header and footer lines excluded).
		Also used for Table of Contents blank lines & Table of Contents title line when printed in its title- page (See also 25-labeled line) to specify framing characteristics. This line is required.
	39	Table of Contents footer
	40	Title for the Table of Contents
	41 to 49	Print windows for (sub)entries in the Table of Contents and framing characteristics
		*** INDEX LAYOUT
	50	Index header
	55	Number of lines in an Index page (header and footer lines excluded). Also used for Index blank lines & Index title line when printed in its title-page (See also 25-labeled line) to specify framing characteristics. This line is required.
	59	Index footer
	60	Index title
	61	Print window & framing characteristics for Index Entries
	62	Print window & framing characteristics for Index Comments
	63	Print window & framing characteristics for Index references, i.e. Index lines where page numbers are printed.
		*** GENERATED TITLES LAYOUT
	71 to 79	Print windows for Level-1 to Level-9:
		. Generated Section Titles printed in sections' first pages (\$VT=nm),
		. Generated Titles printed in calls' first pages (\$GT=1, GV or GA print option).
5	1	PAGE BREAK - LINE SKIP
		BATCH SYSTEMS DEVELOPMENT

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			The value entered in this field is used for paging and line spacing when generating the Report Layout, i.e. with the DCR Generation-Print request, or an R...L call in a Document Description. Paging and line spacing for the actual printed Report is specified in the SKP-labeled fields in the Report Description (-D).
		' *'	Page break.
			NOTE: A page break is automatically generated on the first line of a Volume Layout.
		'1 to 9'	Line spacing from single spacing (1) to 9x spacing (9) (1 is the default value).
		' 0'	Overprinting. This value is reserved for type 3800 layouts. It is interpreted as single line spacing in the Layout Description with formatting.
			P.D.M. EXTENSION
			Page break or line skip associated with the Print Window unless specified otherwise in the called Text Description.
		' *'	Page break.
		'1 to 9'	Line spacing from single spacing (1) to 9x spacing (9) (1 is the default value).
6	132		PRINT LITERAL/DOCUMENT PRINT LAYOUT
			Simple or double quotes are replaced by blank characters in this field IF the same quote is the delimiter chosen on the Library Definition. This replacement prevents COBOL compilation errors due to the presence of this delimiter in the 'values'.

---

## Parameters

### Introduction

Parameters are used to request the printing of variable data in the Volume and to set various customization options.

There are two types of parameters:

1. Parameters whose value is automatically calculated,
2. User-defined Parameters.

All parameters are listed in the following sections, with their default value when applicable.

## >>>>: 1. AUTOMATIC PARAMETERS:

The value of automatic parameters is calculated automatically.

- A number of parameters control Level-n titles (\$TNn), page numbers (\$NM), date (\$DATE), etc., printed in the Volume pages.

Such parameters are entered in the Volume Print Layout on 10-labeled lines.

**NOTE:** The 70-labeled line is used to enter the \$CPAC, \$SPAC, \$RUBT parameters.

- Automatic parameters may also be positioned in the Specific Layout used to design title-pages, the Table of Contents, the Index, and titles.

For complete information, refer to Chapter ADDITIONAL FACILITIES: SPECIFIC LAYOUT & FONT TYPES.

The printing of a parameter's value starts where the '\$' of the parameter's name is positioned on the layout line, in its entirety or up to the next '\$', in which case you should see that the value fits in the defined limit.

## 2. USER-DEFINED PARAMETERS

Such parameters allow a variety of data to be printed and a number of generation options to be set, both being user-defined.

### IMPLEMENTATION OF USER-DEFINED PARAMETERS:

The values of user-defined parameters may be assigned in two ways:

--: On the Volume layout lines:

All user-defined parameter values are entered on 1-labeled lines in the Volume Print Layout.

EXAMPLE:

```
LN CP  
05 1    $L1=BOOK,$L2=SECTION,$GT=1
```

When the parameter value is printed in the Volume, e.g. \$Pn, \$Ln, etc. -- as opposed to parameters setting a generation option (\$VT, \$BP, etc.) -- the parameter must also be included in a 10-labeled line, in order to specify where the parameter value must be printed.

The \$ sign position indicates exactly where the value starts.

**NOTE:** The \$M parameter must be entered in the 70-labeled line of the Volume Print Layout.



TWO EXCEPTIONS : \$TT AND \$IT

The ToC title and the Index title are directly entered in the Specific Layout in the 40-labeled and 60-labeled lines, respectively.

They get printed in ToC or Index headers/footers through the \$TT and \$IT parameters, respectively, also entered in the Specific Layout.

--: On the PCV Generation-Print request:

See Chapter ACCESS COMMANDS, Subchapter Generation-Print Commands.

Parameter values entered with the PCV command have priority over those entered in Layout lines.

## Library and Volume Names - Titles

LIBRARY AND VOLUME NAMES - TITLES

Parameter	Meaning	Maximum length
\$NAP	Name of Library from which a Volume is generated	36
\$NMA	Volume name, entered in Definition	36
\$TMA	First Title line of Volume (entered in a T0 Description line)	50
\$TMA <sub>n</sub>	nth line of Volume title (n = 1, 2 or 3) NOTE: \$TMA1 = \$TMA	
\$TN1	First Title line of Level-1 sections	50
\$TN1 <sub>n</sub>	nth Title line of Level-1 sections (n = 1, 2 or 3) NOTE: \$TN11 = \$TN1	
\$TN2	First Title line of Level-2 sections	50
\$TN2 <sub>n</sub>	nth Title line of Level-2 sections (n = 1, 2 or 3) NOTE: \$TN21 = \$TN2	
\$TN <sub>n</sub>	Title of Level-n sections (n= 3 to 9)	50
\$TNC	Title line of current section	50
\$TNC <sub>n</sub>	nth Title line of current section (n = 1, 2, or 3) NOTE: \$TNC1 = \$TNC \$TNC2 and \$TNC3 irrelevant when level of current section > 2	

**NOTE:** Text Titles generated by the TT print option and Generated Titles (\$GT=1) are taken into account by the \$TN1<sub>n</sub>, \$TN2<sub>n</sub>, \$TN<sub>n</sub>, \$TNC<sub>n</sub> parameters.

## Internal Data and Dates

### DATABASE-RELATED DATA, DATE FORMATS

Parameter	Meaning	Maximum length
\$CMA	Volume code	6
\$CA	Library code	3
\$CUTL	User code	6
\$SESS	Volume generation session number	5
\$CBA	Database code	4
\$DACE	Default date, equivalent to '\$DACA' or '\$DACF', depending on the Database language option	10
\$DACA	American format: MM/DD/CCYY	10
\$DACF	European format: DD/MM/CCYY	10
\$DATE	Equivalent to '\$DATA' or '\$DATF', depending on the Database language option	8
\$DATA	American format: MM/DD/YY	8
\$DATF	European format: DD/MM/YY	8
\$CPAC	Identifier of printed line	24
\$SPAC	Session number when printed line was created or modified	5
\$RUBT	For Text Description lines: Code of Data Element instance referenced in ELEM. field or in the TEXT CONTENTS field (preceded by '\$.E=') if the Text instance has been uploaded from theWorkStation.	6

The last three parameters, \$CPAC, \$SPAC, and \$RUBT, can only be positioned in the 70-labeled line of the Volume Print Layout, outside the margins set by this referential print window.

For more details, refer to Subchapter The Volume Layout, Section Layout Description.

**NOTE ON \$R:** In justified texts, several lines may be concatenated into one line when printed in a Volume. In this case only the Data Element referenced in the first line will be printed by the \$RUBT parameter.

## Page Numbers - Titles in ToC/Title Pages

### PAGE NUMBERS - TITLES IN TABLE OF CONTENTS AND TITLE PAGES

Parameter	Meaning	Maximum length
\$GT	WARNING: If the Volume has level-3 or finer-level titles, \$GT is a REQUIRED parameter.	
	\$GT=1: Instance names and list labels are automatically printed as titles in the ToC.	
	NOTE: The GT or GA print option must be selected.	
	\$GT=0: No generated title.	
\$n *	Section number within the current level	3
\$Nn *	Page number in the Level-n section	4
\$N	Current section embedded number Example: 6.3.4 4th level-3 section in the 3rd level-2 section of the 6th level-1 section.	35
\$nN *	Current section embedded number + page number in the Level-n section	8 to 40
\$NM	Page number in Volume	5

- Numbers are left-justified and leading zeros are not printed.
- Table of Contents, Index, and Appendices have their own page numbering sequence.
- The Volume body page sequence always starts with page number 1.

## Titles in Volume Body

### TITLES IN VOLUME BODY

Parameter	Meaning	Maximum length
\$VT	\$VT=nm : Automatic printing of Titles of Level-n to Level-m sections at the beginning of their first page. Default value: \$VT=00	2
\$GT	WARNING: If the Volume has level-3 or finer-level titles, \$GT is a REQUIRED parameter. This parameter controls the Automated Generation of Titles.	1
	\$GT=1: Instance names and list labels may be automatically printed as titles in the corresponding calls' first page, sections' title-page. NOTE: The GV or GA print option must be selected and the \$VT value must be compatible. \$GT=0: No generated title.	

THE FOLLOWING PARAMETERS (until \$ST included) APPLY TO TITLES PRINTED IN THE SECTIONS' (AND CALLS') FIRST PAGE; THEY ARE DEFINED FOR EACH LEVEL.

Parameter	Meaning	Maximum length
\$LN	Current section (embedded) numbers printed before titles \$LN=nnnnnnnnn	9
	.if n=0 : Sections of the considered level are NOT numbered	
	.if n=current level Level-n sections are numbered	
	.if n<current level Embedded number of sections of the considered level starting with Level-n	
	EXAMPLE: For the 2nd level-4 section in the 4th level-3 section in the 3rd level-2 section of the 6th level-1 section,	
	if \$LN=1110: no number printed	
	if \$LN=1114: 2	
	if \$LN=1113: 4.2	
	if \$LN=1112: 3.4.2	
	if \$LN=1111: 6.3.4.2 NOTE: If \$LN=11111111 complete embedded numbers are always printed, in this case it is equivalent to \$N used for page header/footer and title-pages.	
	Default value: \$LN=000000000	
\$PL	Number format for \$LN output, i.e. current section (embedded) number printed before titles \$PL=nnnnnnnnn	9
	.if n=0 : Arabic numerals	
	.if n=1 : Roman numerals, upper-case	
	.if n=2 : Roman numerals, lower-case	
	.if n=3 : Letters, upper-case	
	.if n=4 : Letters, lower-case	
	Default value: \$PL=000000000	
	EXAMPLE: If \$PL=103200000, with the above example given for \$LN: VI.3.D.ii	
\$TC	Character printed between the current section (embedded) number (\$LN) and the title Ex.: 3.2.1 - Title Default : no character	9

Parameter	Meaning	Maximum length
\$UT	Character for title underlining Default value: \$UT=DDDDDDDDDD D: Character entered in the Volume Description. I: No underlining x: 'x' is the effective underlining character, even if another character is specified in the Volume Description.	9
\$UP	Qualifies title underlining when the section number is printed (\$LN): A: Underlining of both title & section number T: Title only is underlined Default value: \$UP=TTTTTTTTT	9
\$AT	Title alignment within Print Window assigned in 71- to 79-labeled lines of Specific Layout. L: left-justified, C: centered, R: right-justified. Default value: \$AT=LLLLLLLLL	9
\$ST	Specifies a page break or line skip for each level. Default value: \$ST=**3332211	9
\$FTn	Code of font type used for Level-n Generated Section Titles (\$VT=nm), (including Generated Titles if \$GT=1) printed in section's (and call's) first page.	5

## Other Parameters

### ADDITIONAL PARAMETERS

Parameter	Meaning	Maximum length
\$P0 to	Free parameters, their values will	50
\$P9	be printed where the corresponding parameter is positioned in a 10-labeled line.	
\$SSRF	Referential session number (zeros must be entered on the left)	4
\$M	Marks lines created or modified after the referential session number Default value: blank	1
\$Ln	Printed label for Level n \$L1 default = CHAPTER \$L2 default = SUB-CHAPTER NOTE: \$L3 to \$L9 do not default.	20
\$PAGE	Prints the label 'PAGE' (default value) before a page number.	20
\$NT	Page number format in Table of Contents Three values available: 0: Arabic numerals (Default value) 1: Roman numerals, upper-case 2: Roman numerals, lower-case	1 1
\$HF	Indicates a character to be repeated across a horizontal line (for example, in S...CE, O.....CE) Default value: blank	1

Parameter	Meaning	Maximum length
\$VF	Indicates a character to be repeated vertically. Default value: blank	1

Parameter	Meaning	Maximum length
\$BP	Face page management: 0: no generation of face pages 1: title page on an odd-num. page, possibly preceded by, and always followed by, a page without a frame (default value). 2: title page on an odd-num. page, possibly preceded by, and always followed by, a page with a frame. 3: title page on an odd-num. page, possibly preceded by a page without a frame. 4: title page on an odd-num. page, possibly preceded by a page with a frame. Default value: 1	1
\$ALI	1: Paragraphs starting with a Text Processing command associated with a print window including a right indent are right-indented. 0: Default value Same as \$ALI=1 and also each sub- paragraph is right-indented (a sub-paragraph is specified by a line skip).	1
\$	Delimiter character used to set the margins of a Print Window (left and right).	
\$BNI	With left-indentation, sets the number of blanks which separates the left- indented character string from the rest of the text. Default value: 1	2 2

Parameter	Meaning	Maximum length
\$DL	Default Print Window for A-, G-, H-, and all S-type lines. Default : Print Window No.0 1 to 9 : Print Window No.1 to 9 NOTE: At the Volume Description line level, you may choose another Print Window which will therefore override the \$DL parameter.	1
\$PID	For IMS only, identifies the PAF+ user.	25

Parameter	Meaning	Maximum length
\$TP	Positioning of Table of Contents page number in header or footer	5
\$TT	Positioning of Table of Contents title in header or footer	50
\$IP	Positioning of Index page number	5

Parameter	Meaning	Maximum length
\$IT	Positioning of Index title	50
\$PIT	Index compilation variant: \$PIT=0 all entries (& comments) (Default value) \$PIT=1 entries with comments and/or at least one reference \$PIT=2 entries with at least one reference	1
\$SIT	\$SIT=0 Index printing inhibition \$SIT=1 Index printing (default) The Text/Index code must be specified (Volume Definition) and described.	1

Parameter	Meaning	Maximum length
\$FTS	Code of default font type	5
\$FTT \$FT0 \$FTn	Code of font type used for titles in title pages Code of font-type for Volume Title in Volume title-page Code of font type used for Level-n Generated Section Titles (\$VT=nm), (including Generated Titles if \$GT=1) printed in section's (and call's) first page	5 5 5
\$FT	Code of Report instance for Font Type codes	3
\$LAY	Code of Report instance for the Volume Print Layout	3
\$SLAY	Code of Report instance for the Specific Layout	3

---

## Documented Example

CP	S	1	1	2	2	3	3	4	4	5	5	6	6	7
		1...5...0...5...0...5...0...5...0...5...0...5...0...5...0...5...0												
01		\$VT=19,\$GT=1,\$LN=111111111,\$BP=2,												
01		\$L1=SECTION,\$L2=CHAPTER,\$P0=ROBOT FOLLOW-UP,\$M=*, \$NT=1												
10	*	-----												
10		\$NMA								\$N				
10		\$L1	\$1	\$TN1										
10		\$L2	\$2	\$TN2										
10		-----												
70	3	\$	48											\$ \$M
71		\$												\$
72			\$											\$
73			\$									\$		\$
74				\$										\$
75					\$									\$
76						\$								\$
77							\$							\$
10								\$	\$NM	-				
10		-----												
10		\$P0												\$DATE
10		-----												

### 1. ASSIGNING PARAMETER VALUES:

01-labeled lines on the layout description are used to assign values to parameters.

In our example, the \$VT parameter value is set to 19; this means that titles of Level-1 to Level-9 sections are printed in the section's first page.

With \$GT=1, names of instances and list labels are printed in the corresponding call's first page and title-page and/or in the Table of Contents (depending on the associated print option).

With \$LN=111111111, section titles automatically printed in the section's first pages are preceded by the section's complete embedded number.

With \$BP=2, title-pages are possibly preceded by, and always followed by a blank page with a frame.

For the \$L1 parameter, SECTION replaces the default value CHAPTER and for the \$L2 parameter CHAPTER replaces the default value, i.e. SUB-CHAPTER.

The user-defined parameter \$P0 is assigned the value ROBOT FOLLOW-UP. The \$M parameter is set to \* (text lines modified after the Referential session number will contain an \*), the Referential session number parameter (\$SRF) being specified in the Generation-Print command.



Uppercase Roman numerals will be used to paginate the Table of Contents (parameter \$NT=1).

## 2. HEADER AND FOOTER:

Header and footer lines are entered on 10-labeled lines.

The composition of the header is as follows: the Volume name (\$NMA), the current section embedded number (\$N), the labels SECTION and CHAPTER (\$L1, \$L2) followed by the section numbers (\$1, \$2), and the SECTION and CHAPTER titles (\$TN1, \$TN2).

The composition of the footer is as follows: the Volume page number (\$NM), the label ROBOT FOLLOW-UP (\$P0) and the Volume generation date (\$DATE).

## 3. REPETITIVE LINES:

Repetitive lines are described with Print Windows No.70 to No.77.

The number 48 entered in Print Window No.0 is the maximum number of repetitive lines per page.

On the same line, the \$M parameter is used to mark lines which have been modified after the referential session number, whatever Print Window is used to print these lines.

Print Windows No.0 and No.1 have the same width, but the contents of the No.0 Print Window is printed after 2 blank lines.

---

## Text Processing Facilities

### Introduction to Text Processing Commands

#### PRELIMINARY REMARKS

This subchapter is dedicated to users of the VA Pac character mode interface only.

Users of the VA Pac Workstation should refer to the VA Pac WorkStation Reference Manual.

For a complete documentation, see also the TEXTS Chapter in the SPECIFICATIONS DICTIONARY Reference Manual and the TEXT EDITING FACILITIES Chapter in the USER INTERFACE GUIDE.

## TEXT PROCESSING COMMANDS

- Text alignment according to requested margins, i.e. Print Windows defined in the Volume Print Layout,
- Justification (by redistribution of spaces between words),
- Processing of text "as is" without justification.

## IMPLEMENTATION OF TEXT PROCESSING COMMANDS

A text processing command begins by at least one dollar sign (Two dollar signs indicate a non-justification command), possibly followed by the alignment option (-J for justified, -C for centered, -R for flush right, and -L for flush Left), and by the number of the Print Window within which the paragraph will be simulated and/or printed.

When this number is not specified in the text processing command, the command is used to denote a new paragraph which uses the Print Window set by the prior command.

Each command is entered in the TEXT CONTENTS field starting from the first position, and must be followed by at least one blank character.

A text processing command is effective until the end of the Text paragraph/section or until the next text processing command.

Text processing commands are not displayed in the Text Simulation, nor printed in the Volume.

If a line only contains a text processing command, the line skip indicated applies to the next line of text unless that line already has a line skip indicated.

In justified texts, the length of a word is limited to 30 characters (subsequent characters are truncated).

### **Justification and non-justification Commands**

#### 1. JUSTIFICATION COMMANDS:

$\$n\&\&\&$  Text is justified within Print Window No.n

$\$-Jn\&$  Text is justified within Print Window No.n

$(\$-Jn = \$n)$ .

$\$-Ln\&$  Flush left justification within Print Window No.n:

Words are run-up to the preceding line if possible. All remaining space is inserted at the end of the line.

`-$-Cn`& Centered justification within Print Window No.n:

Words are run-up to the preceding line if possible. Remaining space is evenly distributed at the beginning and at the end of the line.

`-$-Rn`& Flush right justification within Print Window No.n:

Words are run-up to the preceding line if possible. All remaining space is inserted at the beginning of the line.

## 2. NON-JUSTIFICATION COMMANDS:

`$$n`&& Text is printed exactly as entered in the Text Description line within the No.n Print Window. NOTE: In the Volume output, the `$$n` command is replaced by blank characters.

`$$-Jn` Text is printed within the No.n Print Window, not justified but aligned with its left margin: the `$$-Jn` command and all spaces between the beginning of the line and the first word are deleted when simulated or printed.

`$$-Ln` Text is printed within the No.n Print Window, not justified but aligned with its left margin: the `$$-Ln` command and all spaces between the beginning of the line and the first word are deleted when simulated or printed.

(NOTE: `$$-Ln = $$-Jn`)

`$$-Cn` Text is printed centered within the No.n Print Window but not justified.

`$$-Rn` Text is printed within the No.n Print Window, not justified but aligned with its right margin: the `$$-Rn` command and all spaces between the last word and the end of the line are deleted when simulated or printed.

- All text processing commands (`$` and `$$`) may include a left-indentation. Refer to the following section, entitled Left-Indentation.
- Text entered in a non-justified paragraph (`$$`) may be truncated if the Print Window is shorter than 60 characters (length of the TEXT CONTENTS field).

## IMPACT OF THE `-TA` PRINT OPTION:

The `'-TA'` print option is used to inhibit justification for commands `$(n)` and `-$-L(n)`, `-$-J(n)`, `-$-C(n)`, `-$-R(n)`, entered in Text Description lines.

As a result, text is still printed within the associated Print Window, left aligned with  $\$-L(n)$  and  $\$-J(n)$ , centered with  $\$-Cn$ , right-aligned with  $\$-R(n)$ , not aligned at all with  $\$(n)$ , but is NOT justified: to one line's input corresponds a printed line, blank characters are not removed, and an underscore at a line's end gets printed as ... an underscore.

In comparison to the  $\$-Xn$  commands, the  $-TA$  print option has a stronger non-justification impact.

Additional (non-)justification options are available through different print options, see next page.

Value	Result
	Justification:
TA *	Yes
-TA	No
	Option relevant on JUSTIFIED Text lines. Processing mode of blank characters entered in Text Description lines:
TB	Blank characters are not removed (including blanks positioned at the beginning of a line). NOTE: This option is the default option in: . Print Preview, . OLSD online help, . Non-formatted Descriptions (uploaded from the VisualAge Pacbase WorkStation).
-TB *	Only blanks positioned at the beginning of a line are not removed.
	Option relevant on NON-JUSTIFIED Text lines used in a Print Window longer than 60 char. (length of Text Description input lines in the VA Pac character mode interface). This option specifically allows to print charts with rows longer than 60 characters.
TS	This option allows a pseudo justification within a large print window: with an under- score ' _ ' character entered at the end of a line, this line's contents, when printed, will include at least the beginning of the following line, depending both on the Print Window length and on the exact contents of both input lines. NOTE: Ending underscores do NOT get printed.
-TS *	Option used to inhibit the TS option, identical to the -TA non-justification option: Lines are 100% non-justified; printed exactly as entered, with a maximum line length of 60 characters.

Cont'd next page.

Value	Result
	Choice of Print Windows for Text instances uploaded from the VA Pac WorkStation:
TW *	Those defined through the WorkStation

Value	Result
-TW	Those defined in the Volume Print Layout
	Text Title-type lines in Table of Contents (K, -, _, +, =):
TT	Yes
-TT *	No

## Left Indentation

A left-indentation is a character string displayed or printed in the left margin of a designated Print Window.

This character string must be entered next to the text processing command, without a separating blank.

**EXAMPLE 1:** Numbering a list with left-indented numbers in print window No.7.

```
A LIN : T TEXT CONTENTS
  100 : $71. Paragraph describing the first list item,
  120 : this is the item's description continued.
  150 : $72. Paragraph describing the second list item,
  154 : this is the item's description continued.
```

### RESULT:

1. Paragraph describing the first list item, this is the item's description continued.
2. Paragraph describing the second list item, this is the item's description continued.

<-----WINDOW 7----->

**EXAMPLE 2:** Printing a note with the word "NOTE" in the left margin and the text in Print Window No.5.

```
A LIN : T TEXT CONTENTS
  250 : $5NOTE: A comment, explanation, or elucidation;
  260 : annotation. Notice; heed; observation (worthy
  270 : of note).
  280 : $5 Any of certain commercial papers, some of which
```

### RESULT:

**NOTE:** A comment, explanation, or elucidation; annotation. Notice; heed; observation (worthy of note).

Any of certain commercial papers, some of which

<-----WINDOW 5----->

When displayed or printed, the character string is separated by one blank character from the paragraph's first word (default option).

It is possible however to modify the number of blanks following a left-indented string by:

- Using the '\$BNI' parameter which sets the default number of blanks positioned after a left indent.

For more details on this parameter, see Chapter LAYOUT AND CUSTOMIZATION OF A DOCUMENT, Subchapter Parameters, Section Other Parameters.

- Inserting an ampersand ('&') for each blank needed (for example, NOTE:&&&) as ampersand characters ('&') are replaced by blanks.

Also, to left-indent a character string including two or more words separated by blanks, replace spaces with ampersands.

For example, to ensure the left-indentation of the whole character string "NOTE TO STAFF", it is input as "NOTE&TO&STAFF".

#### MORE THINGS TO KNOW ABOUT LEFT-INDENTS:

- Make sure that the character string to be left-indented can fit in the left margin, otherwise it will be truncated.
- Left-indentation cannot be used with a Print Window which begins before column 5 (in the Volume Print Layout).
- A left-indented character string cannot be longer than 15 characters.
- The Print Window must always be identified, i.e. a numbered text processing command is needed:  
\$-JIndent is erroneous, whereas \$-J5Indent is correct.
- It is possible to underline a left-indented character string by keying in an underlying character in the TYPE OF LINE field.

## Word Hyphenation

### WORD HYPHENATION

A word which cannot fit completely on one line is usually hyphenated. With the PDM extension, the underscore ('\_') should be used instead, along with a justification command (for example '\$-Jn').

Thus, depending on the length of the print window in comparison with the entered text line, the word will be:

- Printed in its entirety at the end of the first line;
- Printed in its entirety at the beginning of the following line;

- Hyphenated and printed on two lines according to the under\_ score which is replaced by a hyphen ('-') when the text is printed.

Keeping this in mind, the underscore should not be entered haphazardly, but between syllables. Furthermore, it is possible to anticipate the need to hyphenate a long word by inserting an underscore followed by a space in between syllables.

#### EXAMPLES:

Text Description lines:

```
line 100 : $-J1 An affordable new technology revoluline 120 : tionizes Euro_ pean
```

Result: After text processing, depending on the width of the print window,

An affordable new technology revolutionizes Euro\_ pean business communications.

**or:**

```
An affordable new technology revolutionizes
European business communications.
```

**or:**

An affordable new technology revolutionizes European business communications.

BUT, note the following:

Text Description lines:

```
line 100 : $-J1 An affordable new technology revolu-
line 120 : tionizes European business communications.
```

Result: After text processing,

An affordable new technology revolu- tionizes European business communications.

**NOTE::** When text is printed without justification (indicated by a Text Processing command beginning with \$\$ or by option '-TA' entered on the Document Description), hyphenated words are printed as entered and underscore characters are not changed to hyphens ('-') in the printed Volume.

### Print Preview

A Print Preview is available by entering the following in the CHOICE field:

CH: TaaaaaaSIMrrrDbb

Where 'aaaaaa' is replaced by the Text code, 'rrr' by the code of the Volume Print Layout (optional), and 'bb' by the Paragraph/Section code (optional).

This makes it possible to see how a paragraph/section will look when printed according to a specific Volume Print Layout.

For a Print Preview using the Standard Layout, enter '&&&' in place of the Volume Layout code.

**NOTE:** Not available with Text sections uploaded from the WorkStation.

If another Text paragraph/section follows the one for which a Print Preview was requested, it will be simulated in sequence as well as the next paragraphs/sections, until the end of the Text instance.

As a result, you may visualize two or more paragraphs/sections in one Print Preview.

The display sequence is based on the alphabetic order of the Text paragraph/section codes.

If paragraphs/sections of a same Text occurrence are called in their alphabetic order in the Volume, you obtain a WYSIWYG view of the printed pages.

**NOTE:** The Print Preview does not take into account the parameters entered in the 01-labeled line of the Volume Print Layout. This is why for instance the impact of the \$ALI parameter cannot be visualized.

If the Print Window is too large to be fully displayed on the Print Preview, you may specify a column number to define the Preview's left margin.

#### PRINT PREVIEW OF WORKSTATION-UPLOADED TEXTS:

For text lines uploaded from the WorkStation, the choice '-SIM' simulates the Text section according to the print windows (i.e. paragraph formats) defined in the WorkStation.

The TB print option is automatically implemented in the Print Preview of WorkStation-uploaded Texts.

Access to a given Text (aaaaaa) section (bb) is asked by entering the following input in the CHOICE field:

CH: TaaaaaaSIM&&&Dbb



In this case, it is not the Standard Layout which is implemented, but the print windows designed through the WorkStation.

### **Change of Character Font Type (\$+.....)**

#### COMMAND FOR CHANGING FONT TYPES:

'\$+\_\_\_\_\_' This command is used to specify a new character font. The quotes are not part of the command: they are used here so that it is not interpreted as a command that would affect the format of this manual.

This command can be entered anywhere within the TEXT CONTENTS field and remains valid until the next '\$+' command. It may therefore be effective over several selections.

For complete details on Font Type management, see Chapter ADDITIONAL FACILITIES: SPECIFIC LAYOUT & FONT TYPES, Subchapter Font Type Specification.

### **Example**

TEXT	USER DOCUMENTATION PAWINC TRANS AMERICA OVERSEAS AIRWAYS	*DOC.PBDO.DOA.2847 PARAGRAPH	FF
A LIN :	T TEXT CONTENTS		ELEM.
018 :	* \$+3D110		
020 :	- \$-C1 FLIGHT MASTER INQUIRY AND UPDATE SCREEN		
040 :	2 \$-J1 The purpose of this screen is to provide the user with		
060 :	the ability to add, change and delete flights and		
080 :	to make inquiries about flights.		
100 :	1 All the Flight Master Data must appear on the screen.		
110 :	1 All the fields are updatable EXCEPT the flight res_		
120 :	ervation numbers which are display only.		
140 :	- ADDING FLIGHTS AND MODIFYING FLIGHT DATA	\$ .R5B	
160 :	2 All fields are required. In addition, be sure that:		
180 :	2 \$21. the departure and arrival airports are different, and		
200 :	1 \$22. the aircraft serial number is valid (read Air. Master).		
220 :	1 \$23. the aircraft is available for passenger service.		
240 :	(Aircraft Suspense Code = ' ').		
260 :	- \$-J1 DELETING/CANCELLING FLIGHTS		
280 :	2 A Flight Master record may be physically deleted if and only		
300 :	if there are no reservations.		
320 :	2 A flight may be cancelled at nay time by entering a value in		
0:	C1 CH: T pawincDff018		

### COMMENTS ON THE EXAMPLE

The command '\$+' in the example above indicates the 3D110 font type code, as defined in the Report for Font Types associated with the Document.

The commands \$-C1 and \$-J1 will have the associated lines printed centered and justified, respectively, within the No.1 print window defined by the 71-labeled line of the Volume Print Layout.

Commands \$21., \$22., and \$23. are examples of left indentation. Text is printed within the No.2 print window, and the numbers 1., 2., and 3. are printed to the left.

Underlined titles only print at the bottom of a page if there is enough room for the underlining characters. Otherwise, both title and underline are printed at the top of the next page. However, this only applies to the first line of a title.

The text is justified (\$-J1): commands and any leading blanks do not appear in the simulation and are not printed.

Two words (lines 110 and 120) are divided by an underscore followed by a space. When printed, the words will be automatically hyphenated if necessary; otherwise, they will each be printed as a non-hyphenated word on the following line.

The symbolic criterion '\$.R5B' will not be printed (see Chapter ADDITIONAL FACILITIES: SPECIFIC LAYOUT & FONT TYPES, Subchapter Index).

The following print preview example uses the Layout 'MM1' and shows the output of text processing on the Text PAWINC, paragraph FF.

```
-----  
PRINT OF THE TEXT PAWINC TRANS AMERICA OVERSEAS AIRWAYS          LAYOUT MM1  
FIRST LINE OF TEXT : PAWINC FF 020          LEVEL OF LAYOUT : 1  
FLIGHT MASTER INQUIRY AND UPDATE SCREEN  
-----
```

The purpose of this screen is to provide the user with the ability to add, change and delete flights and to make inquiries about flights.

All the Flight Master Data must appear on the screen.

All the fields are updatable EXCEPT the flight reservation numbers which are display only.

#### ----- ADDING FLIGHTS AND MODIFYING FLIGHT DATA -----

All fields are required. In addition, be sure that:

1. the departure and arrival airports are different, and
2. the aircraft serial number is valid (read Air. Master).
3. the aircraft is available for passenger service.  
(Aircraft Suspense Code = ' ').

```
0: C1 CH: -SIMmm1Dff
```

```
WINDOW : LINE 001 COLUMN 001  
-----
```

---

## Chapter 4. Additional Facilities: Specific Layout & Font Types

---

### Introduction

The PDM extension enables to customize the presentation of:

- title-pages
- the Table of Contents
- the Index Table
- generated titles in the Volume body

These four elements are described via a dedicated instance of the Report entity, in its Layout (CH: R...L).

A field-by-field description of the Report Layout is located in Chapter LAYOUT AND CUSTOMIZATION OF A VOLUME, Subchapter The Volume Layout, Section Layout Description, Paragraph The Layout Fields.

More specifically, you will find in the LINE LABEL NUMBER field, the list of all line label numbers necessary to describe these four elements.

**NOTE:** All print windows designed in the Specific Layout must have a minimum length of 30 characters.

The code of this Report instance must be specified in the Volume Definition (SPECIFIC LAYOUT CODE field) or in the PCV Generation-Print command line via the \$SLAY parameter.

When a Specific Layout is to be modified, it may be interesting to know which other Volumes use that Report instance.

This list is obtained by the following input in the CHOICE field:

CH: R...XV

-----

Lines in a Specific Layout must be entered sequentially,

i.e. in ascending order of line label numbers.

-----

**NOTE:** With earlier versions, the Table of Contents and Index was directly described in the Volume Print Layout. For information, please refer to the Appendix at the end of this manual.

---

## Title-pages

-----  
Lines in a Specific Layout must be entered sequentially,  
i.e. in ascending order of line label numbers.  
-----

### TITLE-PAGES

A title-page is a page printed before a section, bearing that section's title, with specific header and footer, if necessary.

Title-pages are automatically generated according to the level specified in the TITLE-PAGE field in the Volume Definition. If the value n is entered in this field, sections of level 0 to n will be preceded by a title-page.

**NOTE:** Generated Titles -- obtained by \$GT=1 and the GV or GA print option -- are also printed in n+1 title-pages, n being the title level under which the corresponding calls are made in the Volume Description.

As a result, make sure that the Volume Definition provide for the correct level of ToC entries.

#### USES OF THE 25-LABELED LINE:

- The 25-labeled line sets the print window for all titles, whatever the section level, including the Table of Contents' and Index titles. The alignment option for titles in title-pages is always 'centered'.

This line is also used to specify framing characteristics for title lines, save the Table of Contents title line (See 35-labeled line in next subchapter), and the Index title line (See 55-labeled line in subchapter, section "INDEX LAYOUT").

- Blank lines in title-pages are 'printed' according to the 25-labeled line where framing characteristics may be entered.
- Also, the number of lines per title-page (excluding header and footer lines) is specified in the 25-labeled line, between the two '\$' characters, with at least one blank character on each side. By default, the number specified in the 70-labeled line of the Volume Print Layout will apply.

- The number of lines must be followed by the number of the line where the title (first line) is to be printed. By default, it will be printed on the 30th line.
- Right indents are irrelevant and will not apply if specified on the 25-labeled line.

#### TITLE-PAGE HEADER AND FOOTER:

The title-page header and footer are described in the 20- and 29-labeled line, respectively.

The header and footer of the Volume title-page (Level-0) are always empty, frame elements are printed only.

#### TITLE PAGE PARAMETERS

**NOTE:** The title page parameters listed below are specifically declared in the 01-labeled line of the Volume Print Layout. See Chapter LAYOUT AND CUSTOMIZATION OF A VOLUME, Subchapter Parameters, for the exhaustive list of parameters.

Parameter	Meaning	Maximum length
\$BP	0: no generation of title-pages	1
	1: title-pages on odd-num. pages, possibly preceded by, and always followed by, a page without a frame (default value).	
	2: title-pages on odd-num. pages, possibly preceded by, and always followed by, a page with a frame.	
	3: title-pages on odd-num. pages, possibly preceded by a page without a frame.	
	4: title-pages on odd-num. pages, possibly preceded by a page with a frame.	
	Default value: 1	
\$FTT	Code of font type used for titles in ALL title-pages	5
\$FT0	Code of font-type for Document Title in Volume title-page	5
\$FTS	Return-to-use-standard-font-type Indicator	

USER DOCUMENTATION											*DOC.PBDO.DOA.2847
REPORT LAYOUT :											LENGTH= 132
XM2 ROBOT VOLUME SPECIFIC LAYOUT											
A LN CP S	1	1	2	2	3	3	4	4	5	5	6
	1...5...	0...5...	0...5...	0...5...	0...5...	0...5...	0...5...	0...5...	0...5...	0...5...	0...
20 20	-----										
21 20	\$NMA						\$N				
22 20	\$L1		\$1	\$TN1							
23 20	\$L2		\$2	\$TN2							
24 20	-----										
25 25	\$	45 21									\$
26 29	-----										
28 29						\$NM					
29 29 2	-----										

0: C1 CH: -L20

## Table of Contents

Lines in a Specific Layout must be entered sequentially,  
i.e. in ascending order of line label numbers.

- TABLE OF CONTENTS ENTRIES:

Entries and subentries in a Table of Contents (ToC) are automatically built from Tn Volume Description lines, according to the levels specified in the TABLE OF CONTENTS/SOURCE field in the Volume Definition.

**EXAMPLE:** If the value '3' is entered in this field, T1, T2, and T3 titles will appear in the ToC.

(Sub)entries are formatted on the 41- to 49-labeled lines. If n is the level specified in the TABLE OF CONTENTS/SOURCE field, the 41- to the 4n-labeled lines must be defined.



**NOTE::** The \$CPAC (line identifier) and \$SPAC (line session number) parameters may be specified in the 41- to 49-labeled lines, outside the margins set by these Print Windows.

You may want to define a 4[n+1]-labeled line, so that the finest title level include the following additional entries in the ToC:

- Generated Titles, obtained by \$GT=1 and the GT or GA print option.
- Title-type lines in Text Descriptions (K, -, \_, +, =), obtained with the TT print option.
- NUMBER OF LINES IN ToC PAGE:

The number of lines in a ToC page (excluding header and footer lines, see below) is specified in the 35-labeled line, between two '\$' characters, with at least one blank character on each side.

By default, the number specified in the 70-labeled line of the Volume Print Layout will apply. Nonetheless, a 35-labeled line is required; it must always be defined in the Specific Layout, even if empty.

- ToC HEADER AND FOOTER:

The Table of Contents header and footer are described in 30- and 39-labeled lines of the Specific Layout, respectively.

Default: header & footer defined for the Volume, in 10-labeled lines of the Volume Print Layout.

Use the \$TP parameter to position the page number in the ToC header or footer. The page number sequence is specific to the ToC, i.e. page numbering after the ToC's last page starts back at 1.

**NOTE:** The \$NT parameter declared in an 01-labeled line of the Volume Print Layout controls page number format; Arabic (0) or Roman numerals, upper (1) or lowercase (2) for the latter.

- ToC TITLE:

You may want a Title for your ToC. This title may be printed in the ToC header or footer, and/or in the ToC title-page.

The ToC title is entered in the 40-labeled line.

The parameter used to position this title in a ToC header or footer is \$TT.

This title gets printed in the ToC title-page if value '1' to '9' is present in the TITLE-PAGE field in the Volume Definition.

It is printed -- centered -- within the Print Window defined in the 25-labeled line. If this line is not defined, the 70-labeled line of the Volume Print Layout will apply.

- ToC TITLE AND BLANK LINES FRAMING CHARACTERISTICS:

Framing characteristics for the ToC title are those defined in the 35-labeled line, and not those entered in the 25-labeled line. This is why it is recommended to use the same framing characteristics for all elements constituent of both Table of Contents and title-pages (and possibly the Volume body).

Framing characteristics of a ToC blank lines also depend on the 35-labeled line.

USER DOCUMENTATION											*DOC.PBDO.DOA.2847			
REPORT LAYOUT :											XM2 ROBOT VOLUME SPECIFIC LAYOUT	LENGTH= 132		
A	LN	CP	S	1	1	2	2	3	3	4	4	5	5	6
				1	5	0	5	0	5	0	5	0	5	0
30	30			-----										
31	30													
32	30													
33	30													
34	30													
35	35													
36	39													
37	39													
38	40													
39	41													
40	42													
41	43													
42	44													
43	45													
44	46													
45	47													
46	48													

0: C1 CH: -L30

## Index

### Compilation Principles

PDM includes the automatic compilation of an Index Table where entries are listed alphabetically and referenced by page numbers.

The PDM Index is based on the following principles:

Index entries are user-defined, made up of one or more words, printed with the corresponding references, i.e. page number(s).

Each entry is assigned explicit and/or symbolic criteria, i.e. character strings searched for throughout the Volume by the Index compilation procedure. Each time the character string is found, a reference is created under the associated entry.

Symbolic criteria allow references to implied, related notions which are not actually printed in the Volume body. Also, it may be used to remove possible ambiguities.

**EXAMPLE:** Let's consider the word firm, which used as an adjective has a different meaning than when used as a noun. In such case, the

use of a symbolic criterion -- instead of an explicit criterion -- allows to pinpoint the relevant notion wherever it is mentioned in the Document body.

Symbolic criteria must also be entered in the Volume body -- wherever necessary -- preceded by the \$. characters. They are not printed when entered in Text Description lines.

Explicit criteria are specified only once as they are supposedly already present in the Volume body.

Comments may be assigned to entries, they will be printed in the Index under the entry to which they are related.

Indexing elements; entries, explicit and symbolic criteria, and comments, are entered in the Description lines of a dedicated Text instance, described further on in this subchapter, in the Section Index Specification.

Parameter	Result
IN *	Index compiled from Descriptions of Text instances and from names of instances whose Definition is called.
-IN	Index compiled from Descriptions of Text instances only.
ID	Index also compiled from : Data Element Description lines and Comments lines.
-ID *	Above-mentioned line types are not taken into account by the Index compilation.

### INDEX COMPILING RULES

- Special characters are not taken into account (accentuated characters are not considered as such).
- Lower-case characters are transformed into upper-case characters (this is not the case for accentuated characters, which must be kept in mind when defining explicit/symbolic criteria).
- Empty and 1-character words are not taken into account.

The list of empty words, specific to the PDM extension, is provided at the end of this manual, in the Appendix.

### INDEX PARAMETERS

Parameter	Meaning	Maximum length
\$IP	Positioning of Index page number	5

Parameter	Meaning	Maximum length
\$IT	Positioning of Index title	50
\$PIT	Index printing variant: \$PIT=0 all entries (& comments) (Default value) \$PIT=1 entries with comments and/or at least one reference \$PIT=2 entries with at least one reference	1
\$SIT	\$SIT=0 Index printing inhibition \$SIT=1 Index printing (default) The Text/Index code must be specified (Volume Definition) and described.	1

**NOTES:** The \$IP and \$IT parameters are to be entered in the Volume Specific Layout (in the 50- or 59-labeled lines, see section Index Layout for complete details).

The \$PIT and \$SIT are to be entered in the Volume Print Layout (in an 01-labeled line).

## Index Specification

Indexing elements, i.e. entries, explicit and symbolic criteria, and comments are entered in the Description of a dedicated Text instance.

The code of this Text instance must be specified in the Volume Definition, in the field INDEX TABLE TEXT CODE.

This instance is dedicated since it is specific to the Volume at-hand and must be used only for indexing purposes, that is, only one paragraph must be described; it is automatically processed by the Index compilation procedure.

### 1. ENTRY:

\$EN=A WORD OR GROUP OF WORDS....

An entry must be preceded by the characters '\$EN=', it must be entered flush left in the TEXT CONTENTS field. It is one or more words, their total length cannot be more than 56 characters.

The character string entered after '\$EN=' is actually printed in the Index, this is why it is called an entry.

### 2. EXPLICIT CRITERIA:

\$SE=WORD.....

An explicit criterion must be specified on a line following an entry, this is how it is attached to this entry.

An explicit criterion must be preceded by the characters '\$SE=', and entered flush left in the TEXT CONTENTS field. It is one word only, its length cannot be more than 30 characters.

If character strings used as explicit criteria are found in the Volume body directly preceded or followed by (or even including) a comma, a period, an underscore, a colon, a semi-colon, an equal sign, a right and/or left parenthesis, a single or double quote, they will create references under their related entry.

There is no limitation on the number of explicit criteria associated with one entry.

### 3. SYMBOLIC CRITERIA:

\$SE=\$.SYMBCRIT

A symbolic criterion must be specified on a line following an entry, this is how it is attached to this entry.

A symbolic criterion must be preceded by the characters '\$SE=\$.', and entered flush left in the TEXT CONTENTS field. It is one character string only, its length cannot be more than 8 characters.

There is no limitation on the number of symbolic criteria associated with one entry.

Symbolic criteria must ALSO be entered in the Volume body wherever necessary (in Text Description lines, instance Names, Data Element Description lines, Comments lines '-GC'), preceded by the '\$.' characters.

**NOTE:** Symbolic criteria are not printed in the Volume when entered in Text Description lines.

### CROSS-REFERENCES WITH DATA ELEMENTS IN WORKSTATION-UPLOADED TEXT INSTANCES:

References to Data Element instances present in Workstation-uploaded Text instances have a specific presentation: Codes of the cross-referenced Data Element instances are not displayed in the ELEM. field but in the TEXT CONTENTS field, preceded by the '\$.E=' characters.

The complete references (\$E=occod) are not printed when called in a Volume nor is it displayed in Text Simulation.

The ELEM. field may still be used, knowing that after a download and let alone after a subsequent upload from the WorkStation, its values are transferred in the TEXT CONTENTS field preceded by '\$E='.

**NOTE:** You should therefore avoid to define symbolic criteria which start with the 'E=' characters, since they would be processed as references to Data Element instances.

#### 4. COMMENTS:

```
$CO=THIS IS A COMMENT LINE
```

Comments must be specified on a line following an entry, this is how they are attached to this entry.

Comments must be preceded by the characters '\$CO=', and entered flush left in the TEXT CONTENTS field.

A maximum of 8 lines of comments may be associated with one entry.

Comments are printed in the Index under the entry to which they are related.

TEXT	USER DOCUMENTATION XINDEX Example	*DOC.PBDO.DOA.2847 PARAGRAPH EN
A LIN : T	TEXT CONTENTS	ELEM.
000 : L		
100 :	\$EN=NEW COMPETITORS	
110 :	\$CO=INCEPTION OF COMPANIES AFTER 1983	
120 :	\$SE=COMPETITORS	
130 :	\$SE=\$.IMPLKEY1	
140 :	\$EN=HOME AND PERSONAL COMPUTERS	
150 :	\$SE=COMPUTER	
160 :	\$SE=COMPUTERS	
170 :	\$EN=SOFTWARE	
180 :	\$CO=COMMERCIAL DEPARTMENT	
190 :	\$CO=PROGRAMS FOR PERSONAL COMPUTERS	
200 :	\$SE=SOFTWARE	
210 :	\$SE=PROGRAMS	
220 :	\$SE=PACKAGES	
:		
:		
:		
:		
0: C1	CH: Txindex Den	



TEXT	USER DOCUMENTATION XTEXTE Example	*DOC.PBDO.DOA.2847 PARAGRAPH BB
A LIN : T	TEXT CONTENTS	ELEM.
150 : 3	EDUCATIONAL SOFTWARE	
170 : 2	For those selling educational software for home and	
180 :	personal computers, a 60 percent annual growth is very	
190 :	disappointing bearing in mind the following facts:	
200 : 2	\$2. the market's doubling,	
204 : 2	\$2. new competitors,	
208 : 2	\$2. economic factors.	
210 : 2	\$1 Since it is such a competitive area, in order to survive	
212 :	and	
220 :	prosper, a firm \$.IMPLKEY1 needs a razzle-dazzle marketing	
225 :	approach.	
230 : 2	Most companies are concentrating on formulating marketing	
235 :	programs for the fastest-growing home market segment.	
:		
:		
:		
:		
:		
:		
0: C1 CH:	Txtexte Dbb	

## Index Layout

Lines in a Specific Layout must be entered sequentially,

i.e. in ascending order of line label numbers.

The 61-labeled line is used to specify the print window and framing characteristics of Index entries.

The 62-labeled line is used to specify the print window and framing characteristics of comments associated with Index entries.

**NOTE:** The \$CPAC and \$SPAC parameters may be specified in the 61- and 62-labeled lines, outside the margins set by these print windows.

The 63-labeled line is used to specify the print window and framing characteristics of the page numbers where explicit and symbolic criteria have been found. The page number parameter (\$NM or \$nN) must be positioned within the print window.

Blank lines in the Index are 'printed' according to the 55-labeled line where framing characteristics can be entered.

Also, the number of lines per Index page (excluding header and footer lines) is specified in the 55-labeled line, between two '\$' characters, with at least one blank character on each side).

By default, the number specified in the 70-labeled line of the Volume Print Layout will apply. Nonetheless, the 55-labeled line is required; it must always be defined in the Specific Layout, even if empty.

#### INDEX HEADER AND FOOTER:

The Index header and footer are described in 50- and 59-labeled lines of the Specific Layout, respectively.

You may set the position of the page numbers specific to the Index ( \$IP ) in its header or footer.

You may also position the Index title ( \$IT ) in its header or footer.

#### INDEX TITLE:

The 60-labeled line contains the Index title, required if the \$IT parameter is positioned and/or if the title-page is requested.

This title will be printed in the Index title-page if requested by at least value '1' in the TITLE-PAGE field in the Volume Definition. It will be printed -- centered -- within the print window defined in the 25-labeled line. If this line is not defined, the 70-labeled line of the Volume Print Layout will apply.

**NOTE:** Framing characteristics for this title are those defined in the 55-labeled line, and not those entered in the 25-labeled line. This is why it is recommended to use the same framing characteristics for all elements constituent of both Index and title-pages (and possibly the Volume body).

USER DOCUMENTATION											*DOC.PBDO.DOA.2847	
REPORT LAYOUT :											LENGTH= 132	
XM2 ROBOT VOLUME SPECIFIC LAYOUT												
A LN CP S	1	1	2	2	3	3	4	4	5	5	6	
50 50	1	5	0	5	0	5	0	5	0	5	0	
51 50	\$NMA											
52 50	\$IT											
53 50												
54 50												
55 55	\$ 49											\$
56 59												
58 59												
59 59 2	\$IP											
60 60	INDEX TABLE											
61 61	\$											\$
62 62	\$											\$
63 63	\$ \$NM											\$
0: C1 CH: -L50												

## Titles Automatically Printed in Volume Body

These titles are:

- Generated Section Titles printed in sections' first pages (\$VT=nm),
- Generated Titles printed in calls' first pages (\$GT=1, GV or GA print option).

For complete details on Generated Titles, see Chapter STRUCTURE AND CONTENTS OF A VOLUME, Subchapter Automated Generation of Titles.

These titles are printed within Print Windows specified in the 71- to 79-labeled lines of the Specific Layout, i.e. titles of Level-n sections will be printed in the print window defined in the 7n-labeled line.

The '\$' character marks the borders of the Print Windows, which cannot be shorter than 30 characters.

**NOTE:** Framing characteristics applied to all 7n-labeled lines are those defined in the 70-labeled line of the Volume Print Layout.

If no Print Window has been defined for a given level, level-n titles will get printed in the No."n" Print Window described in the Volume Print Layout. And, if this Print Window does not exist, the level-n titles will get printed in the No.0 Print Window.

**NOTE:** The page break or line skip is not to be specified on these lines, use the \$ST parameter.

For complete details on page break & line skip management, see the corresponding section in Chapter STRUCTURE AND CONTENTS OF A VOLUME, Subchapter Additional Descriptive Elements.

USER DOCUMENTATION												*DOC.PBDO.DOA.2847		
REPORT LAYOUT :												LENGTH= 132		
XM2 ROBOT VOLUME SPECIFIC LAYOUT														
A	LN	CP	S	1	1	2	2	3	3	4	4	5	5	6
				1	5	0	5	0	5	0	5	0	5	0
71	71			\$										\$
72	72			\$										\$
73	73			\$										\$
74	74			\$										\$
75	75			\$										\$
76	76			\$										\$
77	77			\$										\$
78	78			\$										\$
79	79			\$										\$

0: C1 CH: -L71

## Font Type Specification

### INTRODUCTION

The specification of different character fonts is a PDM feature.

This facility will prove particularly useful when the Volume calls large Report layouts, by using a character font which produces a landscape format.

To each character font code is associated a print command specific to the printer in use.

These codes and their corresponding commands are cataloged in a dedicated instance of the Report entity, in its Layout (CH: R...L).

The code of this Report instance must be specified in the Volume Definition (REPORT CODE FOR FONT TYPE field) or in the PCV Generation-Print command line via the \$FT parameter.

If this code is not specified, character font codes cannot be translated in print commands understandable by the printer in use.

**NOTE::** It may be interesting to know which Volumes use that Report instance. You may check this in the screen called by the following input in the CHOICE field:

CH: R...XV

### DEFINITION OF CHARACTER FONT TYPES

Character font codes and their associated commands are entered on 01-labeled lines in the dedicated Report instance Layout.

Each font type is declared on a separate line, formatted as follows:

- Columns 1 to 5 contain the font type code, preferably formatted as follows:
  - Column 1: Identifier of font type,
  - Column 2: Identifier of font size,
  - Column 3: 1 for bold, 0 for not bold,
  - Column 4: 1 for italics, 0 for not italicized,
  - Column 5: 1 for underlined, 0 for not underlined.
- See IMPORTANT NOTE below, in Paragraph HOW TO IMPLEMENT CHARACTER FONT TYPES WITH WORKSTATION-UPLOADED TEXT INSTANCES WHEN PRINTED IN A VOLUME.
- Column 6 contains an equal sign ("="),
- Remaining columns contain the print command specific to the printer in use.

### HOW TO SPECIFY A CHARACTER FONT TYPE

Character font codes are specified in:

- The Volume Description, on F-type lines (See Chapter STRUCTURE AND CONTENTS OF A VOLUME, Subchapter Additional Descriptive Elements, Section Character Font Types).
- The TEXT CONTENTS field of the Description lines of the called Text instances, preceded by the '\$+' characters.

Font types specified in Text Description lines have priority over those entered in the Volume Description.

For more details, see Chapter LAYOUT AND CUSTOMIZATION OF A VOLUME, Subchapter Text Processing Facilities, Section Change of Character Font Type.

The following parameters are specific to font type management, they are entered either in the 01-labeled line of the Volume Print Layout, or on the PCV Generation-Print command line.

Parameter	Meaning	Maximum length
\$FTS	Code of default font type	5
\$FTT	Code of font type used for titles in ALL title-pages	5
\$FT0	Code of font type for Volume Title in Volume title-page	5
\$FTn	Code of font type used for Level-n Generated Section Titles (\$VT=nm), (including Generated Titles if \$GT=1) printed in section's (or call's) first page	5

#### IMPORTANT NOTES:

Printing with character fonts other than the standard font may result in text formatting problems. Given that the width of each character depends on the font used, and that this width is UNKNOWN by the program managing justification, a text using proportional fonts may lose its justification when printed.

For the most attractive result, it is best to use a non-proportional font with a typesize of 10 or 12. Also, pages should not include a frame.

**NOTE::** Text simulation cannot take into account the final presentation of the text when different fonts have been selected.

#### HOW TO IMPLEMENT CHARACTER FONTS WITH WORKSTATION-UPLOADED TEXT INSTANCES WHEN PRINTED IN A VOLUME:

WorkStation-uploaded Text instances include character font codes specific to the WorkStation, automatically positioned in Text lines (\$+.....) by the upload procedure.

When these Text instances are called by and printed in a Volume, these codes need find their corresponding print commands in the Layout of the associated Report for Font Type instance.

The reader will find in the next pages the codes of all character font types and sizes available through the WorkStation.

#### IMPORTANT NOTE:

It is recommended to use these codes even when working in emulation mode, or with a dumb terminal. As a result, if these Text instances are ever downloaded, font codes will be recognized and implemented in the WorkStation Text Description window.

The following font types are available with the WorkStation running under Windows.

- . Courier
- . Helvetica (or Arial with Windows 3.1)
- . Modern
- . Roman
- . Script
- . System
- . Times Roman (or Times New Roman with Windows 3.1)

The first two characters depend on both the font and the type size:

Courier	type size 10	: 05
	type size 12	: 0:
	type size 13	: 0?
	type size 15	: 0D
	type size 16	: 0I
	type size 20	: 0N
Helvetica or Arial	type size 10	: 15
	type size 12	: 1:
	type size 13	: 1?
	type size 15	: 1D
	type size 16	: 1I
	type size 18	: 1N
	type size 20	: 1S
	type size 22	: 1X
	type size 24	: 1½
	type size 28	: 1b
type size 29	: 1g	
Modern	type size 37	: 1l
	type size 12	: 2D
	type size 14	: 2I
	type size 18	: 2N
	type size 24	: 2S
	type size 30	: 2X
	type size 36	: 2½



Roman	type size 12 : 3D
	type size 14 : 3I
	type size 18 : 3N
	type size 24 : 3S
	type size 30 : 3X
	type size 36 : 3½
Script	type size 14 : 4I
	type size 18 : 4N
	type size 24 : 4S
	type size 30 : 4X
	type size 36 : 4½
System	type size 10 : 5:
	type size 15 : 5?
Times Roman	type size 10 : 65
or Times New	type size 12 : 6:
Roman	type size 13 : 6?
	type size 16 : 6D
	type size 19 : 6I
	type size 20 : 6N
	type size 21 : 6S
	type size 26 : 6X
	type size 27 : 6½
	type size 35 : 6b

The rest of the font code is designated as follows: the third character indicates bold if it equals 1; 0 indicates not bold. The fourth and fifth characters work the same way, and correspond to italics and underlining, respectively.

**EXAMPLE:** The character font corresponding to Roman, type size 12, and bold italics is 3D110.

```

-----
                USER DOCUMENTATION                                *DOC.PBDO.DOA.2847
REPORT LAYOUT :                XM9 ROBOT VOLUME FONTS                LENGTH= 132

A LN CP S                1    1    2    2    3    3    4    4    5    5    6
1...5...0...5...0...5...0...5...0...5...0...5...0...
10 01    15110=%9
12 01    2D010=%1
14 01    3D110=%3
16 01    3N000=%6
18 01    4I001=%7
20 01    4S100=%2
22 01    5?110=%4
24 01    65000=%5
26 01    6:101=%8

0: C1 CH: -L
-----

```

---

## Chapter 5. PAF-PDM Functionalities

---

### Foreword

The PAF Function and the PDM Extension support functions which may be used jointly.

They do not replace the initial PAF and PDM functions but enhance them as they co-operate.

Hereafter, they will be referred to as PAF-PDM functions.

**NOTE:** The PAF-PDM functions may also be used independently of each other.

These functions are therefore sub-divided into PAF+ and PDM+.

The following page lists all the manuals and documents which may be necessary when using the PAF-PDM functions.

Using PAF-PDM requires an in-depth knowledge of the VisualAge Pacbase metamodel and (if installed) the metamodels of the WorkStation's Pacdesign or Pacbench modules (specific to the methodology in use).

### DOCUMENTATION

Listed below is the exhaustive list of manuals and documents which may be necessary when using PAF-PDM:

1. PAF Reference Manual, with an appendix containing two examples of Extraction Master Paths including the execution reports printed by the XPAF Validation procedure.
2. The description of PAF tables.  
See the complete list on the Support internet site, at the following address:  
[www.ibm.com/software/awdtools/vapacbase/support.html](http://www.ibm.com/software/awdtools/vapacbase/support.html).
3. VisualAge Pacbase Procedures Manuals.

---

### Objectives of PAF-PDM Functionalities

#### AUTOMATIC STRUCTURING AND MAINTENANCE OF VOLUMES

The initial purpose of PAF-PDM is to add new functionalities to the PDM extension.

The underlying principle of these functionalities is to make the most of the cross-references between entities in the metamodel.

EXAMPLE:

You want to generate the comments on a Screen instance, i.e the comments entered in:

- the Comments (-GC) of this Screen,
- the Comments (-GC) of its Segments,
- the Description (-D) of the Data Elements called by these Segments.

With PDM, you have to write each individual Segment call into the Volume Description (-D).

As a result, when a new Segment is called in the Screen (-CS), it must also be added in the Volume Description.

With PAF-PDM, you specify the information to be printed in the Volume by defining -- only once -- an Extraction Master Path, also called PTE<sub>x</sub>.

In the example shown above, the extraction path will start with the Screen entity, find the called Segments, and finally work its way down to the Data Elements, its course being guided by the VA Pac Metamodel.

PAF-PDM is therefore a tool not only for the automatic documentation of applications, but also for the automatic maintenance of this documentation. When the documented application is modified, you only have to re-generate the relevant Volumes without having to change their Description.

## DOCUMENTATION STANDARDIZATION

PDM+ allows you to write Master Outlines (PTE<sub>d</sub>s), i.e. skeletons which may be used for various purposes:

- With PDM, print options assigned to a Volume apply to this particular Volume only. As a result, options must be specified in each Volume which makes standardization not an easy task.

PDM+ allows you to specify all relevant print options in one Master Outline. This PTE<sub>d</sub> is then called by as many Volumes as needed.

- Coding standardized calls is another PDM+ facility.

For instance, in a Master Outline, the following call:

TGEN\_\_D\_\_

will cause all Text instances whose code starts with the letters 'GEN' to be printed in ALL Volumes where this Master Outline is invoked.

- Furthermore and most important, standardization in documentation structuring is achieved with PDM+, in co-operation with PAF+.

It is in this framework that the expression Master Outline takes on its full meaning as the PTed becomes a structural skeleton. The generation of different Volumes in relation to several applications may be based on only one Master Outline (PTed) managing data extracted by one PTEx.

**NOTE:** A Volume may call several Master Outlines.

### CONCLUSION

With PAF-PDM, automatic documentation structuring and standardization are not synonyms of strictness and rigidity since data extraction and printing are completely user-defined.

However, this definition should come from one authoritative entity, failing which standardization may prove a vain word.

---

## Operating Mode of PAF-PDM Functionalities

### Introduction

The PAF+/Extraction and the PDM+/Outline functions can be used separately or together.

PAF+ is used to write the Extraction Master Path and execute it when the PTEx is a User Extractor.

PDM+ is used to write and execute the Master Outline (PTed).

The PAF-PDM functions are used when the Master outline calls an Extraction Master Path of the Macro-Command type.

- If you use the PAF+/Extraction function alone, you can generate User Extractor programs and possibly format the extracted data.
- If you use the PDM+/Outline function alone, you can create skeletons to standardize the printing of Volumes (standard Print Options, Text instances always called, standardized calls).
- If you use both functions together, PAF+ extracts data from the Database. This data is processed by PDM+ and finally printed in a Volume.

## The Extraction Master Path - Reminders

**NOTE:** The Extraction Master Path -- as explained above -- may be used jointly with the PDM+ functionality. However, it pertains to the PAF+ functionality.

This is why the following pages make a brief presentation only of the Extraction Master Path.

The complete PAF+ documentation, including a chapter on how to write an Extraction Master Path, is to be found in the PAF Reference Manual.

### PAF+: THE EXTRACTION MASTER PATH

PAF+ allows you to write an Extraction Master Path (PTE<sub>x</sub>), i.e. an exploration course throughout the Specifications Database, from which a data extraction program is automatically generated.

The writing of a PTE<sub>x</sub> means defining and describing a User Entity of a dedicated Meta-Entity coded '.PPTEX' and whose type code is 7E (CH: Y7E.....).

There are two types of PTE<sub>x</sub>, therefore the User Entities of the '.PPTEX' Meta-Entity may be of either one of the following types:

- Type 'M' allows you to generate a Macro-Command, i.e. a subprogram which will have to be called in a Master Outline (PTE<sub>d</sub>).
- Type 'E' allows you to generate a User Extractor program executed independently.

The input of an Extraction Master Path User Entity is documented in the PAF Reference Manual, chapter 'Extraction Master Path: Definition / Description'.

The input of an Extraction Master Path User Entity is documented in the PAF Reference Manual, Chapter "Extraction Master Path: Definition / Description".

### VALIDATION

The Extraction Master Path must then be validated by the XPAF batch procedure which generates the User Extraction Program or the Macro-Command subprogram.

>>>>: The XPAF procedure is documented in the 'Developer's Procedures' Manual, chapter 'Personalized Extraction / Automated Documentation' and in the 'Administrator's Procedures' Manual, chapter 'Manager's Utilities', subchapter 'PACX - Extractions'.

When no error is detected, the validation produces a COBOL source program which must be compiled and linked to be executed.

Execution of a user extractor (E-type PTEEx)

Once validated, compiled, and linked, a User Extractor is ready for execution.

Execution of a macro-command (M-type PTEEx):

Once validated, compiled, and linked, a Macro-Command is not ready for execution. It must be called in a Master Outline.

Note

An Extraction Master Path is independent of the Database in which it is defined and described.

PAF+: EXTRACTION MASTER PATH - DESCRIPTION OF STEPS

DEFINITION	!
-----	!
! ...	!
! Definition : xtmapa	!
! ...	!
! Extraction Type : E or M	!
! ...	!
!	!
! CH : Y7Extmapa	!
-----	!
!	PAF
!	Reference
!	Manual
!	!
!	PAF
!	Tables
!	!
! DECRPTION !	!
-----	!
! ...	!
! ...	!
! ...	!
!	!
! CH : Y7ExtmapaD	!
-----	!
!	!
!	!
!-----V-----	!
! XPAF-Validation procedure	Developer's and !
! -----	Administrator's !
!	Proc. Manual !
--V-----V-----	!
USER EXTRACTOR	MACRO-COMMAND
PROGRAM	SUBPROGRAM
if Extraction Type = E	if Extraction Type = M
!	!
-----	PAF
	Reference
	Manual

```

                !                               !
            COMPILATION-LINK EDIT                !
                !                               !
-----V-----!-----V-----
! EXECUTION      ! 'Installation Guide'!
-----V-----V-----
DATA EXTRACTED      A Macro-Command must be called
                    by a PTEd. See PDM+ Functionality

```

## The Master Outline

### Introduction

#### PDM+: THE MASTER OUTLINE

PDM+ allows to write Master Outlines supported by instances of the P-type Volume entity.

A Master Outline organizes the printing of data extracted by PAF+ when its Description calls an Extraction Master Path (on an M-type line).

Master Outlines are reusable as they may be called in different Volumes where they can be customized.

\*\*\*\*\*

Once defined and described a Master Outline must be validated by the XPDM procedure.

>>>: The XPDM procedure is documented in the 'Developer's Procedures' Manual, chapter 'Personalized Extraction / Automated Documentation'.

\*\*\*\*\*

**NOTE:** A Master Outline cannot be printed per se. It needs be called in another Volume which when printed will include the Master Outline contents.

However, it is possible to print the Description of a Master Outline (GPRT procedure, DCV command).

>>>: You may also use the PRGS procedure which prints the file used to store Extraction Master Paths and their calling Master Outlines.

>>>: The PRGS procedure is documented in the 'Developer's Procedures' Manual, chapter 'Personalized Extraction / Automated Documentation'.

A Master Outline is independent of the VA Pac Database in which it is defined and described, provided the Databases roots are identical.





All topics discussed below refer to the Volume Description (CH: V.....D). A field-by-field description is located in Chapter STRUCTURE AND CONTENTS OF A VOLUME, Subchapter THE VOLUME DESCRIPTION FIELDS.

### CALLING THE EXTRACTION MASTER PATH

- First, define a Volume instance, and set its type to "P".

This type of Volume is a Master Outline capable of calling an Extraction Master Path.

- In the Volume Description, create:
  - an M-type line. This required line calls the Extraction Master Path.
  - Tn-type lines. These lines assign titles.
  - S-type lines. These lines are used to enter specific calls of instances obtained via the Extraction Master Path.
  - Ln-type lines. These lines indicate the beginning of a loop.
  - En-type lines. These lines indicate the end of a loop.
  - H-type lines. These lines are used to define page headers.
  - G-type lines. These lines specify the presentation of information obtained via the Extraction Master Path.

You will find details on all of these line types in the following pages.

### M-TYPE LINE: THE EXTRACTION MASTER PATH CALL LINE

The purpose of this type of line is to call the Extraction Master Path.

There can only be one such line per Volume Description.

It is required to place this line on the first line of the Volume Description.

This line must be entered with:

Y7Eaaaaaa,

where aaaaaa is the code of the Extraction Master Path.

### Tn-TYPE LINES

The purpose of this type of line is to assign titles to the Volume and its sections.

For this type of line, input the following in the Volume Description:

- In the REF. field, input the appropriate cursor,
- In the TITLE/COMMENT/OPTION/FONT/SELECTION field, input the desired title.

If you wish to print codes and names of instances -- whatever their extraction level -- use the reserved words \$CODE (8 characters) and \$NAME (36 characters).

Note that the maximum overall length of such titles is 50 characters, additional characters will not get printed.

The position of these codes and names may be set in two ways:

RELATIVE:

Enter \$CODE=nnn and \$NAME=nnn, where nnn is a column number relative to the beginning of the Print Window defined in the 70-labeled line (Volume Print Layout).

Example: If you enter \$CODE=010 and if the Print Window starts in column 8, codes will be printed starting on column 18.

ABSOLUTE:

Enter \$CODE and \$NAME. The position is obtained from the exact position of the '\$' characters in the TITLE/COMMENT/... field.

**NOTE:** See also the VR print option.

### S-TYPE LINES

The purpose of this type of line is to select the Descriptions of instances found by the Extraction Master Path.

- In the TITLE/COMMENT/OPTION/FONT/SELECTION field, enter your selections as shown in the following examples:

R\_\_L

S\_\_\_\_,-GC,-AT

S\_\_CE

//M SDS\_\_\_\_\_-DI,-X1TXT,-D8

- The appropriate cursor must be input in the REFERENCE CURSOR field.

### Ln-TYPE LINES

The purpose of this type of line is to indicate the beginning of a loop.

A Ln level loop is a pathway to all the instances of the entity on the same Ln level.

Loops are used in a Master Outline in order to print all levels of extracted data.

For example, L1 is used to specify DOM (the highest level) and L2 is used to specify MCD (the second highest level). If only L1 and L2 loops are specified, the Master Outline will not print the entities contained in a MCD (OBJ, REL, etc.).

It is required to begin with L1, and there can only be one L1 line.

### En-TYPE LINES

The purpose of this type of line is to indicate the end of a loop.

This type of line is not required for all loops since the end of the loop is implicit between two paragraphs of the same level.

For example, between two L2 level loops, it is not necessary to create an E2 type line.

### H-TYPE LINES

The purpose of this type of line is to define internal headers, i.e. printed in the Volume body, on each new page.

A header may be printed on a maximum of three lines.

As a result, in the Master Outline Description you may enter three H-type lines knowing that each of these three lines can be continued on one or two lines: create the one or two additional H-type lines with an "S" in the S-labeled column (PAGE BREAK-LINE SKIP field).

Therefore, up to 9 H-type lines may be entered to define a header printed on 3 lines maximum.

**NOTE:** Such headers must be followed by a G-type line where you set presentation characteristics.

If this G-type line is absent, the header will not get printed, even with the option VT.

H-type line contents:

- In the REFERENCE CURSOR field, input the appropriate cursor,
- In the TITLE/COMMENT/OPTION/FONT/SELECTION field, input the desired page header. If you wish to print codes and names of instances -- whatever their extraction level -- use the reserved words \$CODE (8 characters) and \$NAME (36 characters).

The position of these codes and names may be set in two ways:

– RELATIVE

Enter \$CODE=nnn and \$NAME=nnn, where nnn is a column number relative to the beginning of the Print Window defined in the 70-labeled line (Volume Print Layout).

Example: If you enter \$CODE=010 and if the Print Window starts in column 8, codes will be printed starting on column 18.

– ABSOLUTE

Enter \$CODE and \$NAME.

The position is obtained from the exact position of the '\$' characters in the TITLE/COMMENT/... field.

### G-TYPE LINES

G-type lines are used to customize the presentation of extracted data, initially defined in the Extraction Master Path.

- In the REFERENCE CURSOR field, input the appropriate cursor,
- In the TITLE/COMMENT/OPTION/FONT/SELECTION field, enter the desired presentation cursor, among those defined in the Extraction Master Path (P-type lines) for the corresponding data.

The presentation cursor must be preceded in this field by a "\$" character.

If you wish to use several presentation parameters, you must create one G-type line per parameter.

EXAMPLE:

```
A L1L2 LIN : TY S U WA TITLE, COMMENT, ...
              G      $PRE2
              G      $PRE1
```

If you wish to print codes and names of occurrences -- whatever their extraction level -- use \$CODE (8 characters) and \$NAME (36 characters).

The position of these codes and names may be set in two ways:

• RELATIVE

Enter \$CODE=nnn and \$NAME=nnn, where nnn is a column number relative to the beginning of the Print Window defined in the 70-labeled line (Volume Print Layout).

Example: If you enter \$CODE=010 and if the Print Window starts in column 8, codes will be printed starting on column 18.

ABSOLUTE

Enter \$CODE and \$NAME.

The position is obtained from the position of the "\$" characters in the TITLE/COMMENT/... field.

**NOTE:** You can also choose to keep the presentation as initially defined in the Extraction Master Path. To do so, leave the TITLE/COMMENT... field blank. As a result, all presentation cursors will apply in the order in which they are defined in the Extraction Master Path, for the corresponding data.

For more information, refer to the PACBASE ACCESS FACILITY Reference Manual, Chapter PTEX: EXTRACTION MASTER PATH Subchapter Presentation (P-type line).

## Calling the Master Outline in a Volume

PRELIMINARY REMARK:

All topics discussed in this subchapter refer to the Volume Description. A field-by-field description is located in Chapter STRUCTURE AND CONTENTS OF A VOLUME, Subchapter The Volume Description Fields.

### CALLING THE MASTER OUTLINE

A Master Outline (a Volume where Volume type = P) cannot be generated and printed. It must be called in another Volume:

- In the Definition of the Volume that will call the Master Outline, set the type of the Volume to a value other than P.
- In the Description, create a P-type line for each Master Outline called.

For each P-type line, in the TITLE/COMMENT/OPTION/FONT/  
/SELECTION field, you may enter the following input:

Vaaaaaa, T=bbbb, C=ccccccc, B=ddddddd, E=eeeeeee, D=1

where aaaaaa = Master Outline instance code (REQUIRED)

T, C, B, and E are OPTIONAL parameters relevant only when an Extraction Master Path is being called in the Master Outline:

**T =:** Reference cursor; identifies the entity type from which the extraction begins.

For instance, if the Extraction Master Path starts on the DOM entity type, the T parameter can be either blank (which means that the extraction begins at the highest, i.e. DOM level) or it can be specified as MCD (which means that the extraction level begins at the MCD level).

**C =:** Code of extracted instance

The C parameter is used to specify a given instance code, thus limiting the extraction scope. The entity type of that instance is that indicated by the T parameter.

This parameter may include one or more generic '\*' characters.

**B =:** Code of first instance to extract

**E =:** Code of last instance to extract

**D =:** 1 : SPECIAL DEBUG PARAMETER (OPTIONAL)

A debug report is included in the Volume Generation-Print report.

The C parameter is incompatible with the B and E parameters if it does not include at least one generic '\*' character.

**NOTE:** The T, C, B, and E parameters may be entered in the PCV command line in which case they will override the corresponding values possibly entered on the P-type line.

**NOTE:** Should you need one or several of the following options, enter them just BEFORE the call line of the Master Outline to which they apply.

Parameter	Result
VE	Descriptions of both Master Outline and its calling Volume are included in the GPRT execution report. The expanded Master Outline Description (which includes the codes of extracted instances) helps to the correct finalization of its writing.
-VE *	The calling Volume Description only is included in the GPRT execution report.
	Master Outline positioning:
VR *	Relative positioning. EXAMPLE: For an N-level title in a Master Outline which is called in a Volume after an n-level title, the Master Outline title level will be (N+n) in the calling Volume. NOTE: If N + n = 0 then title level will be 1 If N + n > 9 then title level will be 9 This option also allows to nest a Master Outline in another Master Outline, thus allowing a further customization of a Master Outline final output.
-VR	Absolute positioning. NOTE: level 0 in the Master Outline will be level 1 in the calling Volume.
-VT *	Titles defined in the Master Outline which have empty contents are NOT printed.
VT	All titles defined in the Master Outline are printed even those with empty contents.









Use the OPERATION CODE field on the GP screen, or columns 15 and 16 on the Z batch form.

The following chart gives what network view is taken into account according to the network view specified with the PCV command:

PCV Command	Document definition & description	All calls save list-type calls	List-type calls
C1 *	C1	C1	C1
U1	U1	U1	U1
I1	C1	C1	I1

Also, the following print options are available for list-type calls regarding network views:

LI	List printed with the I1 OPERATION CODE value, i.e. the complete branch of Libraries is taken into account.
LU	List printed with the U1 OPERATION CODE value, i.e. the selected Library only is taken into account.
LR *	Use the LR print option to deactivate the LI or LU print option in order to have the OPERATION CODE value set on the PCV command to be effective again.

(\*) Default.

### SELECTIVE PRINTING

- When the Volume DESCRIPTION ORGANIZATION MODE is "1", it is possible -- via the PCV command -- to request the printing of a Level-1 or Level-2 section.

Input is as follows:

- On Batch Form 'Z'
  - "1" in column 23 to print a Level-1 section, or "2" for a Level-2 section,
  - Level-1 Section number in columns 24 and 25 (given by the \$n parameter), necessary whether a Level-1 or -2 section is to be printed,
  - Level-2 Section number in columns 26 and 27 (in order to print that section only).
- On the GP screen, enter PCV in the COM column and press ENTER. The following line is thus displayed:

PRINT VOLUME BY CHAP OR SUBCHAP AND CODE: \_ \_ \_

Enter:

- "1" to print a Level-1 section, or  
"2" to print a Level-2 section (first ' \_ '),
- The Level-1 section number (given by the \$n parameter) (first ' \_\_ ' group), necessary whether a Level-1 or -2 section is to be printed,
- The Level-2 section number, (second ' \_\_ ' group).

**EXAMPLE:** PRINT VOLUME BY CHAP OR SUBCHAP AND CODE: 1 02

The second Level-1 section will be generated and printed.

PRINT VOLUME BY CHAP OR SUBCHAP AND CODE: 2 03 04

The fourth Level-2 section in the third Level-1 section will be generated and printed.

1. When the Document DESCRIPTION ORGANIZATION MODE is "0", the PCV command can be used to print one chapter, or one subchapter.

Input is as follows:

- On Batch Form 'Z'
  - "C" in column 23 to print a chapter, or  
"S" in column 23 to print a subchapter,
  - Chapter code in columns 24 and 25,
  - Subchapter code in columns 26 and 27 (in order to print one subchapter only).
- On the GP screen, enter PCV in the COM column and press ENTER.  
The following line is thus displayed:

PRINT DOCUMENT BY CHAP OR SUBCHAP AND CODE: \_ \_ \_

Enter:

- "C" to print a chapter or "S" to print a subchapter (first ' \_ '),
- the chapter code (first ' \_\_ ' group),
- the subchapter code (optional) (second ' \_\_ ' group).

## VALUE ASSIGNMENT/MODIFICATION OF USER-DEFINED PARAMETERS

Values of user-defined parameters may be assigned or modified when requesting the Document Generation-Print, i.e. on the PCV command line.

These values have priority over the ones which may have been specified on the Document Print Layout (01-labeled line).

1. On Batch Form 'Z'

Enter the values starting in column 31.

Example: \$SSRF=1715

2. On the GP screen,  
 Create a continuation line ('\*' in column 'C'), and press ENTER.  
 On this continuation line, enter the parameters and their associated values.

The following parameters can also be assigned in the PCV command line; they modify input entered in the Document Definition.

Parameter	Result	Maximum length
\$FT	Code of Report instance for Font Type codes	3
\$LAY	Code of Report instance for the Document Print Layout	3 3
\$SLAY	Code of Report instance for the Specific Layout	

### UPPERCASE SHIFT ('UPC')

The 'UPC' command allows for the automatic transformation of lowercase characters into uppercase characters when using a printer which cannot process lowercase characters.

The 'UPC' command may be entered on-line on the Generation and Print Commands (GP) screen or in batch mode on Batch Form 'Z'.

1. On batch form Z,  
 Enter a '1' in column 19 of the 'UPC' card for the transformation of lowercase characters in Volumes.
2. On the GP screen,  
 When the 'UPC' command is entered, the following line is displayed:  
 SHIFT TO UPPERCASE MANUAL:\_ DOC:\_ ERROR MESS:  
 Enter a '1' in the MANUAL field for the transformation of lowercase characters in User Manuals and Volumes, and validate the command line.



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## Chapter 7. Appendix

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### Error Messages

#### Dnn ERROR MESSAGES

##### **D01: TEXT WITH MORE THAN 100 SECTIONS**

WorkStation-uploaded Texts cannot have more than 100 sections.

##### **D02: INVALID SELECTION - NO PROCESSING EXECUTED**

Erroneous call syntax or Description identifier not valid.

##### **D03: UNKNOWN PRINT WINDOW - No.O PRINT WINDOW ASSUMED**

A Print Window declared in a Text line is not defined in the Volume Print Layout. No.0 Print Window assumed.

##### **D04: TOO LONG TITLE FOR THIS SECTION LEVEL - IGNORED**

Too many lines for this title; extra lines are ignored. REMINDER: 3 lines for levels 0, 1 and 2. 1 line for levels 3 to 9.

##### **D05: UNKNOWN ENTITY**

The entity does not exist in the Database.

##### **D06: PROBLEM TO BUILD SCREEN SIMULATION MAP**

The map cannot be built. The on-line choice CH: O-SIM does not work.

##### **D07: PARTIAL SELECTION NOT FOUND**

The level requested in the partial selection does not exist.

##### **D08: INVALID ENVIRONMENT - VOLUME PROCESSING TERMINATED**

The user identification line (\*) is invalid.

##### **D09: ERRONEOUS PRINT OPTION**

The specified Print Option is unknown.

**D10:** OPTIONS GA, GV OR GT SHOULD NOT BE USED WITHOUT \$GT

With the \$GT parameter absent, options GA, GV, or GT are inhibited.

**D11:** OPTIONS GA OR GT SHOULD NOT BE USED WITHOUT ToC

The Table of Contents not being requested, these options are inhibited.

**D12:** OPTION GA OR GV INCOMPATIBLE WITH \$VT

With the \$VT parameter absent (or \$VT=00), these options are inhibited.

**D13:** A VOLUME CALLING A MASTER OUTLINE MUST HAVE ITS  
DESCRIPTION ORGANIZATION MODE = 1

**D14:** VOLUME TITLE LINE MISPLACED -- IGNORED.

The Volume title lines (TO) are incorrectly sequenced. They must be the first lines entered in the Volume Description, next to one another. They are limited to three.

**D15:** TITLE LEVEL INCOMPATIBLE WITH ORGANIZATION MODE = 0 --  
IGNORED.

A Description Organization Mode = 0 limits the Volume structure to Chapter and Subchapters levels only.

To one (Sub-)Chapter code must correspond one (Sub-)Chapter title (maximum of three adjacent T1- or T2-type lines, respectively).

No Tn lines other than T0 lines should be entered before the first Chapter Description line.

Tn lines should be the first lines to be entered for the given n section.

#### Inn ERROR MESSAGES

**I01:** EMPTY INDEX -- VOLUME PRINTED WITHOUT INDEX

The Index Table Text is empty or erroneous.

**I02:** NUMBER OF COMMENTS LINES LIMITED TO 8

For an Index entry, the number of comment lines (\$CO=) is limited to 8. Extra lines are ignored.



### **I03: UNKNOWN ENTRY**

One or several \$CO= or \$SE type lines are not preceded by a line specifying the input (\$EN=) on which they depend.

### Mnn ERROR MESSAGES

#### **M01: ERRONEOUS DEFAULT PRINT WINDOW -- STANDARD LAYOUT IMPLEMENTED**

The default No.0 Print Window in the Volume Print Layout is missing or erroneous (width too narrow or "\$" delimiter missing). The specified Print Layout is replaced by the Standard Print Layout.

#### **M02: PROBLEM WITH ToC ENTRY LINES. VOLUME PRINTED WITHOUT TABLE OF CONTENTS**

Layout lines defining Table of Contents entries are missing or incorrect. If the ToC level requested in the Volume Definition = n, then x1- to 4n-labeled lines should be defined in the Specific Layout.

A xn+1-labeled line should also be defined if the Volume uses the Automated Generation of Titles (with \$GT=1 and the GT or GA option) and/or the TT option.

#### **M03: NOT ENOUGH INF. FOR INDEX. VOLUME PRINTED WITHOUT INDEX**

Lines defining the Index Layout are missing or incorrect.

#### **M04: NO NUMBER OF REPETITIVE LINES -- DEFAULT 48**

The No.0 Print Window (70-labeled line in the Volume Print Layout) does not include the number of repetitive lines printed per page.

#### **M05: PRINT WINDOW SMALLER THAN 30 CHARACTERS**

All Print Windows must be longer than 30 characters.

#### **M06: ERRONEOUS LAYOUT LINE LABEL**

The Layout line label is unknown or misplaced.

#### **M07: TOO MANY CHARACTER FONT TYPES**

Too many character font types are declared in the Font Type Report.

**M08: NO TITLE LINE NUMBER IN 25-LABELED LINE - DEFAULT 30**

The 25-labeled line (Specific Print Layout) does not include the number of the line where titles must be printed.

**M09: PROBLEM WITH 25-LABELED LINE. VOLUME PRINTED WITHOUT TITLES PAGES**

The 25-labeled line (Specific Print Layout) is missing or erroneous (width too narrow or "\$" delimiter missing).

**M10: PROBLEM WITH 35-LABELED LINE. VOLUME PRINTED WITHOUT TABLE OF CONTENTS**

The 35-labeled line (Specific Print Layout) is missing or erroneous (width too narrow or "\$" delimiter missing).

**M11: PROBLEM WITH 55-LABELED LINE. VOLUME PRINTED WITHOUT INDEX**

The 55-labeled line (Specific Print Layout) is missing or erroneous (width too narrow or "\$" delimiter missing).

**M12: NO NUMBER OF REPETITIVE LINE PER TITLE PAGE -- DEFAULT NUMBER OF REPETITIVES LINES PER PAGE**

The 25-labeled line (Specific Print Layout) does not include the number of repetitive lines printed per title page.

The number of repetitive lines per page set in the 70-labeled line in the Volume Print Layout is used as default.

**M13: MISPLACED PARAMETER -- IGNORED**

Check the appropriate placement for this parameter. See Chapter LAYOUT AND CUSTOMIZATION OF A VOLUME, Subchapter Parameters.

**NOTE:** If you have positioned the parameter in the PCV Generation-Print command line, it is considered here as placed in the 01-labeled line of the Print Layout.

**M14: CAPACITY OVERLOAD FOR LAYOUT DATA**

You should contact the Technical Support.

Pnn ERROR MESSAGES

**P01: ERRONEOUS PARAMETER VALUE**

This parameter has a fixed internal value (therefore not modifiable) or its assigned value is erroneous.

**P02: UNKNOWN PARAMETER**

This parameter is unknown.

**P03: ERRONEOUS \$BNI PARAMETER VALUE -- DEFAULT 1**

The value of the \$BNI parameter is erroneous (values 0 to 9 allowed).

**P04: PRINT LAYOUT UNKNOWN - DEFAULT STANDARD PRINT LAYOUT**

The Report code set by the \$LAY parameter does not exist in the Database. The Standard Print Layout is used by default.

**P05: ERRONEOUS SPECIFIC LAYOUT CODE -- DEFAULT DOCUMENT PRINT LAYOUT.**

The Report code set by the \$SLAY parameter does not exist in the Database or is the code of the Document Print Layout. The Document Print Layout is used by default.

**P06: ERRONEOUS FONT TYPES LAYOUT CODE -- FONT TYPES IGNORED**

The Report code set by the \$SFT parameter does not exist in the Database or is either the code of the Document Print or Specific Layout.

**P07: STANDARD PRINT LAYOUT. SPECIFIC LAYOUT IGNORED**

The Specific Layout cannot be taken into account when the Standard Print Layout is being used.

**P08: ERRONEOUS \$GT PARAMETER VALUE. DEFAULT ZERO**

The \$GT parameter value can only be 0 or 1.

**P09: THE ToC MUST BE REQUESTED IF GENERATED TITLES ARE TO BE PRINTED IN THE ToC**

In the Document Definition, enter a Table of Contents request; generated titles will then be printed in the ToC.

**P10: ERRONEOUS \$VT PARAMETER VALUE. DEFAULT 00**

Values 1 to 9 are allowed in each of both positions. However, the default value is 00.

**P11:** ERRONEOUS \$LN PARAMETER VALUE. DEFAULT 000000000

One or more values specified for \$LN are erroneous.

Values 0 to n are allowed in each nth position/level. The default value is 0 for the level with an erroneous value.

**P12:** ERRONEOUS \$PL PARAMETER VALUE. DEFAULT 000000000

One or more values specified for \$PL are erroneous.

Values 0 to 4 are allowed for each position/level. The default value is 0 for the level with an erroneous value.

**P13:** ERRONEOUS \$ST PARAMETER VALUE.

One or more values specified for \$ST are erroneous.

Values 0 to 9 and "\*" are allowed for each position/level. If a title page is requested, a page break will apply ("\*"). Otherwise, a 2-line skip will apply (value 3).

**P14:** ERRONEOUS \$UP PARAMETER VALUE. DEFAULT TTTTTTTTTT

One or more values specified for \$UP are erroneous.

Values A or T are allowed for each position/level. The default value is T for the level with an error.

**P15:** AUTOMATIC TITLES PRINTED IN CALLS FIRST PAGE NEED A \$VT VALUE DIFFERENT THAN "00".

Set an appropriate \$VT value so that generated titles can be printed in calls first page. If \$VT=00, standard section titles do not get printed in the section first page, let alone generated titles.

**P16:** ERRONEOUS \$NT PARAMETER VALUE. DEFAULT 0

Authorized values are 0, 1 or 2.

**P17:** NO \$GT PARAMETER. TABLE OF CONTENTS LIMITED TO T1- AND T2-TYPE DOCUMENT DESCRIPTION LINES

To have titles of finer level sections printed in the ToC, specify \$GT=0 or \$GT=1.

**P18: ERROR ON PARAMETER SPECIFIED ON THE PCV COMMAND LINE**

This parameter is unknown or has a fixed internal value which cannot be modified.

**P19: ERRONEOUS \$DL PARAMETER VALUE - DEFAULT VALUE IS N**

Authorized values are N, or 0 to 9.

Tnn ERROR MESSAGES

**T01: INVALID COMMAND**

Possible internal error. Please, contact our Technical Support.

**T02: UNDEFINED ENVIRONMENT: NO "\*" -TYPE LINE**

Please, contact our Technical Support.

**T03: MASTER OUTLINE NOT FOUND**

The called Master Outline should be validated and stored in the PAC7GS file. See the VA Pac Operations Manual, Volume III.

**T04: MASTER OUTLINE DESCRIPTION IS EMPTY**

**T05: EXTRACTION MASTER PATH NOT FOUND**

The called Extraction Master Path must be validated and stored in the PAC7GS file. See the VA Pac Operations Manual, Volume III.

**T06: REVALIDATION OF MASTER OUTLINE NEEDED**

The Extraction Master Path has been modified and revalidated. Calling Master Outline(s) must therefore be revalidated in turn.

**T07: NO DATA EXTRACTED BY THE EXTRACTION MASTER PATH**

---

**ToC / Index Described in Volume Print Layout**

INTRODUCTION

It is possible to design the Table of Contents Layout in the Volume Print Layout. In this case, titles of level-1 and -2 sections only are entries in the Table of Contents. It also implies that the field REPORT CODE FOR SPECIFIC LAYOUT in the Volume Definition is left blank and that the \$SLAY parameter is not used.

Entries in the Table of Contents are automatically built from T1 (and T2) lines, i.e. section titles entered in the Volume Description lines, if the value entered in the TABLE OF CONTENTS SOURCE field is '1' (or '2').

#### TABLE OF CONTENTS DESCRIPTION LINES

The Table of Contents of such Volume is described in the 80- to 83-labeled lines of the Volume Print Layout.

1. 80-labeled line (optional):

This line contains the Table of Contents title printed in the Table of Contents title-page if requested (by at least value '1' in the TITLE-PAGE field in the Volume Definition). It will be printed centered in the middle of the title-page.

2. 81-labeled line (required):

This line specifies the Print Window and framing characteristics of the Level-1 entries of the Table of Contents (T1-type Volume Description lines). A page number may be positioned (\$NM, \$N1, \$1N).

3. 82-labeled line:

This line specifies the Print Window and framing characteristics of the Level-2 entries of the Table of Contents (T2-type Volume Description lines). A page number may be positioned (\$NM, \$N2, \$2N).

4. 83-labeled line:

This line specifies the Print Window and framing characteristics of automatically generated ToC entries:

- List labels and names of instances whose Definition is called,
- Text title lines if the TT print option is selected.

#### PRELIMINARY REMARK

It is possible to design the Index Layout in the Volume Print Layout.

It implies that the field REPORT CODE FOR SPECIFIC LAYOUT in the Volume Definition is left blank (or that the \$SLAY parameter is not used).

#### INDEX DESCRIPTION LINES

The Index is described in the 90- to 93-labeled lines of the Volume Print Layout.

90-labeled line (optional):

This line contains the Index title printed in the Index title-page if requested (by at least value '1' in the TITLE PAGE OPTION field in the Volume Definition). It will be printed centered in the middle of the title-page.

91-labeled line:

Index entries will be printed within the print window described in this line.

92-labeled line:

Comments will be printed within the print window described in this line.

93-labeled line:

Numbers of the pages where explicit or symbolic criteria are found will be printed within the print window described in this line where the page number parameter (\$NM, \$1N, \$2N) is positioned.

**NOTE:** The Index is printed if the INDEX TABLE TEXT CODE field (in the Volume Definition) contains the code of the Text instance used for indexing purposes.

Complete information on indexing matters is found in Chapter "ADDITIONAL FACILITIES: SPECIFIC LAYOUT AND FONT TYPES", Subchapter "INDEX".

---

## Standard Volume Layout

When no layout is called in the Volume Definition, a standard default layout is used.

In this case, titles of level-1 and -2 sections only are entries in the Table of Contents.

The standard layout -- presented below -- is printed with a page width of 132 columns and a maximum of 48 repetitive lines.

This standard layout cannot be modified.

**NOTE:** The General Documentation of Elements called into the descriptions of Segment, Screens, etc., is truncated after the 56th character.

## LINE SKIPS:

The 10 print windows used for the repetitive lines are assigned a "1" line skip.

All three print windows used for the Table of Contents are assigned a "1" line skip.

The 91-labeled line for the Index entries is assigned a "2" line skip.

The 92-labeled line for the Index comments is assigned a "1" line skip.

The 93-labeled line for the page numbers is assigned a "2" line skip.





GO	THEY
GONE	THIS
GOT	TO
HAD	TOO
HAS	TWO
HAVE	UP
HE	WAS
HER	WE
HIS	WERE
IF	WHEN
IN	WHO
IS	WHOM
IT	WITH
ITS	YES
LESS	YOU
MADE	

**NOTE:** It is possible to bypass the empty word notion by specifying a symbolic criterion.

**EXAMPLE:** If a line \$SE=\$.OFF is attached to an entry, and if '\$.OFF' is entered in a Text Description line (without the quotes), the word OFF will be referenced in the Index.





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