IBM

VisualAge Pacbase 2.5

**PERSONALIZED DOCUMENTATION MANAGER
REFERENCE MANUAL**

Note

Before using this document, read the general information under "Notices" on the next page.

According to your license agreement, you may consult or download the complete up-to-date collection of the VisualAge Pacbase documentation from the VisualAge Pacbase Support Center at:
http://www.ibm.com/software/ad/vapacbase/support.htm

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1. INTRODUCTION TO THE P.D.M EXTENSION

INTRODUCTION

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 Document entity (Volume in the VA Pac character mode interface).

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

NOTE: A Document 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 Document allows for up to nine embedded sections, automatically reflected in the Table of Contents by up to nine subentry levels.

A section's content is built by calling occurrences 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 occurrences 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 Document are made in the Layout screen of a dedicated Report occurrence, the Document Print Layout.

Another Report occurrence -- the Specific Layout -- enables you to define specific layout characteritics 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.

2. STRUCTURE AND CONTENTS OF A DOCUMENT

2.1. DOCUMENT DEFINITION

DEFINITION OF A DOCUMENT

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

```
CH: Vaaaaaa
```

where aaaaaa is replaced by the Document code.

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

The Document Definition enables you to specify the following information:

-- TYPE OF DOCUMENT:

   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 Document Print Layout,
     . Report code for Specific Layout,
     . Report code for Character Fonts,
     . Description Organization Mode.

Keywords may also be assigned to Documents.

```
     --------------------------------------------------------------------------
     !                    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....:         !
     !                                                                         !
     ! O: C1 CH: Vrobot                        ACTION:                         !
     --------------------------------------------------------------------------
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	6		**DOCUMENT CODE** (REQUIRED) This code must contain at least one, non-blank character. Only alphanumeric characters should be used. This code appears in the Document when it is called by the $CMA parameter in the Document Print Layout.
2	36		**DOCUMENT 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 Document when it is called by the $NMA parameter in the Document Print Layout.
3	1		**DOCUMENT 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.
		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 (Document 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 Document title page only. Inserts a title page at the beginning of the Document and before all level-1 sections (including Table of Contents, Index, and Appendix). Inserts a title page at the beginning of the Document and before all sections of level 1 to n. EXAMPLE: The value '2' will have a title page generated for the Document 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.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			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 (Document Type = P).
			FOR DOCUMENTS 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 Document 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).
			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.
			FOR DOCUMENTS WITH PARAMETER $GT ABSENT:
		blank	No Table of Contents (default).
		1	Level-1 section titles are printed in the ToC.
		2	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 (Document Type = P).
		0	Table of Contents printed at the beginning of the Document.
		1	Table of Contents printed at the end of the Document.
			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 (Document type = P).
			This field contains the code of the Text occurrence containing Index entries, references, and comments.
			. The INDEX TABLE TEXT CODE must be entered, otherwise the Document Index cannot be generated.
			. If the value of the $SIT parameter is set to '0',

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			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 (Document Type = P).

A Document's layout is designed in the Layout Descripion of a dedicated occurrence of the Report entity.

This field must be entered with the code of that occurrence. For complete information, refer to Chapter LAYOUT AND CUSTOMIZATION OF A DOCUMENT, Subchapter The Document 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 Document Print Layout effective for uploaded Text lines. |
| | | BLANK | Standard layout. See in the APPENDIX Chapter, Standard Document Layout.

The Report occurrence used as the Document Print Layout may also be specified in the PCV Document 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 (Document Type = P).

The Document's Title-Pages, Table of Contents, Index, Generated Section Titles and Generated Titles are designed in the Layout screen of a dedicated occurrence of the Report entity.

This field should be entered with the code of that occurrence. 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 Document Layout subchapter.

The Report occurrence used as Specific Layout may also be specified in the PCV Document 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 (Document Type = P).

A Document can be printed with different character fonts. These fonts have to be declared, i.e. identified by their code in a dedicated occurrence of the Report entity. This field should be entered with the code of that |

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			occurrence.
			The Report occurrence used as Font Type Catalog may also be specified in the PCV Document 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 Charac-ter Font Types. See also Chapter ADDITIONAL FACILITIES, Subchapter Font Type Specification.
11	1		DESCRIPTION ORGANIZATION MODE (REQUIRED)
			This field offers two options regarding a Document's organization.
		1	ORGANIZATION INTO LEVELS - UP TO 9 LEVELS (default):
			The Document 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 gen-erated Table of Contents may be inconsistent. . The Description Organization Mode must be set to "1" for Master Outlines (Document type=P) and for Documents calling Master Outline(s).
		0	ORGANIZATION INTO CHAPTERS/SUBCHAPTERS:
			The Document 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
			This field allows you to enter additional (explicit) keywords. By default, keywords are generated from an occurrence's clear name (implicit keywords).
			This field only exists on-line. In batch mode, key-words are entered on Batch Form 'G'.
			Keywords must be separated by at least one space. Keywords have a maximum length of 13 characters which must be alphanumeric. However, '=' and '*' are reser-ved for special usage, and are therefore not permitted in keywords.
			Keywords are not case-sensitive: uppercase and lower-case letters are equivalent.
			NOTE: Characters bearing an accent and special characters can be declared as equivalent to an internal value in order to optimize the search of occurrences by keywords.

NUM LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		For more details, refer to the Operations Manual Vol.II: ADMINISTRATOR'S GUIDE, Chapter DATABASE MANAGEMENT UTILITIES, Subchapter PARM: Update of User Parameters. A maximum of ten explicit keywords can be assigned to one entity. For more details, refer to the SPECIFICATIONS DICTIONARY Reference Manual, Chapter KEYWORDS, Subchapter Building the Thesaurus.

2.2. DOCUMENT STRUCTURE

PRELIMINARY REMARK:

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

EMBEDDED SECTIONS

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

EXAMPLE: A Document 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 Document Description.

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

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

2.3. DOCUMENT CONTENTS: OCCURRENCE AND LIST CALLS

2.3.1. INTRODUCTION

PRELIMINARY REMARK:

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

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

A Document may call occurrence elements of virtually all entity types -- Definition, General Documentation (-G), Descriptions, Assigned Texts (-AT) -- and Lists of Occurrences of specified entity types.

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

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

OCCURRENCES SPECIFIC TO A DESIGN METHODOLOGY

Such occurrences -- managed via the VisualAge Pacbase WorkStation -- can also be called and printed in a Document (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 Document (Description No. = D8), it is processed identically to Descriptions of Text occurrences.
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.

Occurrences 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.

. **Document:**

   Definition, General Documentation, Texts Assigned, Lists, and Master Outline Documents.

. **User Entity Relation:**

   Definition, General Documentation, 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:

1. Occurrence-type call allowing Definition, Descriptions, General Documentation lines (-G), and Assigned Text (-AT) to be printed.

2. List-type call, printing at least occurrences names and codes.

Both call types exist in two modes; a selection using the occurrence 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 occurrence-type calls:

. Multiple call,
. Limited call of General Documentation lines (-G) and of Data Element Description lines (E......D).

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

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

2.3.2. OCCURRENCE-TYPE CALL

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

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

. DEFINITION: Data found in the occurrence Definition is printed.

. GENERAL DOCUMENTATION (-G) (See also EG print option).

. TEXT ASSIGNMENT (-AT).

OCCURRENCE-TYPE CALLS BY CODE

A selection by code is entered in the following format:

```
    S  tocccoddid

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

EXAMPLES: S PPROG00G
             S OSCR001CE
             S SSG00CE
             S TTEXT1 DBB

NOTE: If an occurrence code is less than the maximum length (usually
             6 characters), at least one blank must be entered between the
             occurrence 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
                     (1)     O......L  or  O......M
--------------------------------------------------------
Report                       R...CE
                     (1)     R...L
--------------------------------------------------------
Segment                      S....CE
--------------------------------------------------------
Data Element                 E......D
--------------------------------------------------------
Program                      P......9
                             P......XP for comment lines
                                        only
--------------------------------------------------------
User Entity          (1) (2) F......CE
--------------------------------------------------------
User Entity Occurrence       $nn......D1 to $nn......D9
--------------------------------------------------------
Model F.I.C.                 M......CM
--------------------------------------------------------
Model Object                 M......CE
--------------------------------------------------------
Model Property/Attribute     E......D
--------------------------------------------------------
Model Relationship           M......CE
                             M......CM
--------------------------------------------------------
```

(1) Layouts are printed without page frame and footer.

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

OCCURRENCE-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
User Entity	KF............CE
User Entity Occurrence	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

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If you are directly calling Descriptions of occurrences 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 occurrence 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 occurrence type calls may include the '*' wildcard character to enlarge the selection scope. Such calls -- Generic Calls -- are discussed further on in a specific section.

2.3.3. LIST-TYPE CALL

CALLS OF OCCURRENCE LISTS

Lists of occurrences may be printed in a Document. At least, the code and name of each listed occurrence 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.....
User Entity    !  LCF  !          !   LKF.....
U.E. Relation  !  LCQ  !          !   LKQ.....
U.E. Occurrence!  LC$xx !         !   LK$xx...
Document       !  LCV  !  LTVt    !   LKV.....
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
    ...... = occurrence 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, occurrences 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.

2.3.4. GENERIC CALL

GENERIC CALLS

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

Generic calls may be used in all types of calls.

1. OCCURRENCE-TYPE CALL

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

1.1 Selection by Code

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

EXAMPLES:
```
O**0020L  : layout of all Screens ending with '0020'
R***L     : layout of all Reports
```

1.2 Selection by Keyword

Several occurrences 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.

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

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2.   LIST-TYPE CALL:

2.1 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     = Document entity type
SPEC**= occurrence code used as criterion, i.e. all
        Documents whose codes start with the letters SPEC
        get listed.
```

2.2 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.

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

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2.3.5. CALL USING LIMIT(S)

CALLS USING LIMITS

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=).

   NOTES: . If the call includes a selection criterion and if this criterion
            conflicts with the ',B='-lower limit, the lower limit is taken
            into account.
          . Limits are inclusive.

. **EXAMPLES OF OCCURRENCE-TYPE CALLS USING LIMITS:**

    E***COD,-D,B=CLA,E=CLU
**Definition and Description of all Data Element occurrences 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 occurrences assigned keywords starting with the
letters "MAN", until the keyword "MANAGEMENT". For instance, if there are
occurrences 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 occurrences whose code ends with the letter 'E' (and
starts with 'CLI'), and is comprised between 'CLICO' and 'CLIRE'.**

    LTT,B=SP
List of Text occurrences starting with occurrences of the 'SP' type.

    LKO***********, B=NUMBER,E=NUMERIC
List of Screen occurrences 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 occurrences 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.

2.3.6. OCCURRENCE-TYPE MULTIPLE CALL

MULTIPLE CALLS

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

Multiple calls are available with occurrence-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 occurrence of the Data Element entity:

```
EDATAEL,-D,-G,-AT
```
The Definition is called first.

If another order is desired, the Definition is called with the '-' followed by a 'blank':
```
EDATAELD,-  ,-G,-AT
```
Selection of the Definition, General Documentation, Call of Elements and Assigned Text of the Segments having PACBENCH as keyword:
```
KSPACBENCH,-G,-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 OCCURRENCES.

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

2.3.7. LIMITED CALL FOR E......D AND COMMENTS LINES (-G)

LIMITED CALLS OF:
- **DATA ELEMENT DESCRIPTION LINES (E......D)**
- **GENERAL DOCUMENTATION LINES (-G)**

Description lines of Data Element occurrences and General Documentation lines (-G) may be marked out so as NOT to get printed in Document(s):

On the Data Element Description or General Documentation (-G), 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 Document 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 -G lines, this facility is implemented by default provided that the -EG default option is on.

In order to have ALL -G 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.

2.3.8. CALL OF OCCURRENCES SPECIFIC TO A METHODOLOGY

CALLS OF OCCURRENCES SPECIFIC TO A METHODOLOGY

Occurrences specific to a Methodology -- implemented by the VisualAge
WorkStation -- may be called and printed in a Document, 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 Document.

     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 occurrences calls are slightly
different from those of the standard VA Pac occurrences, 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 Document
      following the specific call formats described in this section (see
      EXAMPLE 2 below).

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OCCURRENCE 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   = occurrence 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) occurrences 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) occurrence.

OCCURRENCE CALLS BY KEYWORD:

The command used to call occurrences 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, occurrences 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) occurrences whose code ends with the letter 'E' in the 6th position and is comprised between 'CLICO ' and 'CLIRE ' (YSM).

```
//MLKMCDCLI**********
```
List of Conceptual Data Model (MCD) occurrences which have been assigned a keyword starting with the letters 'CLI' (MERISE).

```
//OLTDBDQY
```
List of Database Block (DBD) occurrences of type QY (SYBASE) (OMT).

GENERIC CALL OF TEXT SECTIONS

When a Text occurrence 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 txcode D1 _ _ _ **
```

  NOTE: If the generic call is standardly written, i.e.:

```
TtxcodeD**
```
sections will be printed according to their alphabetical order.

PRINTING OF GRAPHIC DESCRIPTIONS

Graphic Descriptions can be directly printed within the Document which calls them To do this, you need use the Document 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 DOCUMENT:

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

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

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

These descriptions will be referenced as such in the Document 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.

2.4. AUTOMATED GENERATION OF TITLES

PRELIMINARY REMARK:

All topics discussed in this subchapter refer to the Document Description. A field-by-field description is located in Subchapter The Document Description Fields.

2.4.1. AUTOMATED GENERATION OF TITLES ($GT=1 + OPTION)

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

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

EXAMPLE: Input in Document Description:

```
TY
----------------------------------------------------------
O          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.

>>> This means that occurrences and lists called under a level Tn will have their names and labels printed in the Table of Contents as level Tn+1 titles.

. The name of the Screen occurrence SCR001 ("PASSENGER RESERVATION") is generated as an entry in the Table of Contents.

. The name of the Text occurrence 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:

```
           +----------------+-------------------+
           !CALL'S FIRST PAGE! TABLE OF CONTENTS !
           !AND TITLE-PAGES  !                   !
+-----+----+----------------+-------------------+
!     ! GT !      NO        !       YES         !
!     +----+----------------+-------------------+
!     ! GV !      YES       !       NO          !
!$GT=1+----+----------------+-------------------+
!     ! GA !      YES       !       YES         !
!     +----+----------------+-------------------+
!     !-GA*!      NO        !       NO          !
+-----+----+----------------+-------------------+
!$GT=0    !          NO              NO         !
!         !      whatever print option          !
+---------+-----------------------------------+
```
*: Default option

When the GV or GA option is selected, occurrence 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 Document Definition.

    EXAMPLE:
    A Document 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 Document 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=nnn' parameter.

    EXAMPLE: If the Document has T1 to T3 titles, $VT=14.

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

    EXAMPLE:
    If the Document 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, occurrence names or list labels are entries in the Table of Contents if:

. the additional Table of Contents level -- in relation to the Document Tn Description lines -- has been taken into account in the ToC level request (Document Definition, TABLE OF CONTENTS/SOURCE field).

EXAMPLE: If the Document has T1 to T3 titles, enter the value "4" in the TABLE OF CONTENTS/ SOURCE field.

. the relevant 4n-labeled line is defined in the Document Specific Layout since 4n-labeled lines support level n ToC entries.

EXAMPLE: If the Document has T1 to T4 titles, also define the 45-labeled line.

For details on how to use parameters, refer to Chapter LAYOUT AND CUSTOMIZATION OF A DOCUMENT, 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 Document Specific Layout.
For complete details, please refer to Chapter ADDITIONAL FACILITIES: SPECIFIC LAYOUT & FONT TYPES.

FOR DOCUMENTS WHERE PARAMETER $GT ABSENT:

With the value "2" in the TABLE OF CONTENTS SOURCE field (Document Definition), generated titles are automatically printed in the Table of Contents.
The 83-labeled line of the Document Print Layout must be defined.

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

2.4.2. GENERATED TEXT TITLES (TT PRINT OPTION)

Text title lines (line type value = "K", "-", "_", "+", or "=") may also be automatically generated as entries 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 Document Tn Description lines -- which must be taken into account in:

.   The ToC level request (Document Definition, TABLE OF CONTENTS/SOURCE field).

.   The corresponding 4n-labeled line in the Document Specific Layout.
    NOTE: The section number within the current level ($n parameter) is NOT printed in ToC entries generated by the TT print option.

FOR DOCUMENTS WHERE PARAMETER $GT ABSENT:

With the value "2" in the TABLE OF CONTENTS SOURCE field (Document Definition), Text titles are automatically printed in the Table of Contents.
The 83-labeled line of the Document Print Layout must be defined.

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

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2.5. ADDITIONAL DESCRIPTIVE ELEMENTS

PRELIMINARY REMARK:

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

ADDITIONAL DESCRIPTIVE ELEMENTS

A number of layout settings can be made with Document 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).**

These topics are discussed in this subchapter.

2.5.1. LINE SKIPS AND PAGE BREAKS

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 Document Print Layout.

2. Individual title (Tn) and call (S) lines, using the S-labeled field in the Document Description.

3. Print windows -- for Text occurrences -- defined in the Document Print Layout (71- to 79-labeled lines).

4. Occurrence Description level when available, i.e. Text and Data Element Descriptions, and Report Layout.

    Also, for occurrences 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 Document 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 controled 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 Document 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 Document 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

A. 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.

B. 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.

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2. LINE SKIP/PAGE BREAKS SET IN DOCUMENT DESCRIPTION:

The S-labeled field in the Document 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 Document 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:

a) 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.

b)   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.).

c)   On Appendix call lines (A-type):

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

   These calls will be:

   * Referenced as such in the Document 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.

d) 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 DOCUMENT PRINT LAYOUT:

Refer to Chapter LAYOUT & CUSTOMIZATION OF A DOCUMENT, Subchapter The
Document 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
   Non-Formatted Description  : WorkStation Reference Manual
```

2.5.2. TITLE AUTOMATIC UNDERLINING

AUTOMATIC TITLE UNDERLINING

The following titles can be automatically underlined:

- . Section Titles printed in title-pages,
- . Section Titles requested in the TITLE PAGE field in the Document 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 Document Description,
2. Document levels through the $UT (and $UP) parameter(s).

1. TITLE UNDERLINING SET IN DOCUMENT DESCRIPTION:

The U-labeled field in the Document 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 Document 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 Document 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=DDDDDDDDD)

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The scope of the $UP parameter is identical to that 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.

2.5.3. COMMENTS IN DOCUMENT DESCRIPTION

COMMENT LINES: R- & C-TYPE LINES

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

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

C-type lines are printed in the Document.

Skip/break management of these lines is described above, in the Line Skips and Page Breaks Section, see § 2.d).

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

2.5.4. APPENDIX

APPENDIX: A-TYPE LINES

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

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

These calls will be:

  . Referenced as such in the Document -- 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.

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2.5.5. PRINT WINDOW & ALIGNMENT OPTION (WA columns)

PRINT WINDOW AND 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 Document Print Layout.

> NOTE: When the Standard Document Print Layout is being used, its No.0 print window automatically applies.

For information on the Document Print Layout, refer to Chapter LAYOUT AND CUSTOMIZATION OF A DOCUMENT, Subchapter The Document 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.

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2.5.6. CHARACTER FONT TYPES

CHARACTER FONT SPECIFICATION: F-TYPE LINES

F-type Document 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 occurrence whose code must be specified in the Document Definition, or on the PCV line (Document Generation-Print command) via the $FT parameter.

  NOTE: This facility will prove particularly useful when the Document
        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.

2.6. PRINT OPTIONS

PRELIMINARY REMARK:

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

PRINT OPTIONS

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

They are entered in the Document Description, in O-type lines.
A print option may be specified for the largest to the smallest level,
i.e. Document 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 Document 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.

  >>>> Also, all options are alphabetically listed in the first index at
       the end of this manual.

2.6.1. GENERAL OPTIONS

GENERAL OPTIONS

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

OPTIONS REGARDING SELECTIONS BY KEYWORD

```
------------------------------------------------------------
!         !                                                !
!  WA *   ! All keywords                                   !
!  WL     ! Implicit keywords (from occurrence's name)     !
!  WM     ! Explicit keywords                              !
!         !                                                !
------------------------------------------------------------
```

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2.6.2. TITLE-RELATED OPTIONS

TITLE-RELATED OPTIONS

```
----------------------------------------------------------
!        !                                                !
!        ! Option to be used with the Automated Gener-    !
!        ! ation of Titles ($GT=1) allowing occurrence    !
!        ! 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.

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2.6.3. OPTIONS FOR LISTS

OPTIONS FOR LISTS

```
----------------------------------------------------------
!       !                                                 !
!   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 *! 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       !
!       ! Document 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.**

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2.6.4. TEXT-PROCESSING OPTIONS

TEXT PROCESSING OPTIONS

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

```
---------------------------------------------------------
!         ! 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 follow- !
!         ! ing 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.                                    !
---------------------------------------------------------
!         !                                                !
!         ! Choice of print windows for Text occurrences  !
!         ! uploaded from the VA Pac WorkStation:          !
!         !                                                !
!   TW *  ! Those defined through the WorkStation          !
!  -TW    ! Those defined in the Document Print Layout     !
!         !                                                !
---------------------------------------------------------
!         !                                                !
!         ! Text Title-type lines in Table of Contents    !
!         ! (K, -, _, +, =):                               !
!         !                                                !
!   TT    ! Yes                                            !
!  -TT *  ! No                                             !
!         !                                                !
---------------------------------------------------------
```

2.6.5. OPTIONS FOR DATA ELEMENTS

OPTIONS FOR DATA ELEMENTS

```
-----------------------------------------------------------
!        ! -CEnnnG 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                                             !
-----------------------------------------------------------
```

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2.6.6. OPTIONS FOR SCREENS AND PROGRAMS

OPTIONS FOR SCREENS

```
----------------------------------------------------------
!         ! 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 occurrences           !
!   OF    ! V and F Data Element occurrences              !
!   OP    ! V and P Data Element occurrences              !
!   OV *  ! V Data Element occurrences                    !
----------------------------------------------------------
!         ! 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

```
----------------------------------------------------------
!         ! Line Numbers on a Program's -9 lines:         !
!   PN *  ! Yes                                           !
!  -PN    ! No                                            !
----------------------------------------------------------
```

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2.6.7. OPTIONS FOR REPORTS

OPTIONS FOR REPORTS

```
-----------------------------------------------------------
!         ! 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.                  !
-----------------------------------------------------------
!         ! 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                                           !
-----------------------------------------------------------
```

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2.6.8. OPTIONS FOR SEGMENTS

OPTIONS FOR SEGMENTS (S....CE)

```
---------------------------------------------------------
!          ! 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                                         !
! -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                                          !
---------------------------------------------------------
!        ! FILLERs                                     !
!  SD    ! Yes                                         !
! -SD *  ! No                                          !
---------------------------------------------------------
!        ! Called Segments                             !
!  SS    ! Yes                                         !
! -SS *  ! No                                          !
---------------------------------------------------------
```

2.6.9. MASTER OUTLINE - RELATED OPTIONS

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.**

```
---------------------------------------------------------
!        !                                              !
!   VE   ! Descriptions of both Master Outline and its  !
!        ! calling Document are included in the GPRT    !
!        ! execution report.                            !
!        ! The expanded Master Outline Description (which!
!        ! includes the codes of extracted occurrences) !
!        ! helps to the correct finalization of its     !
!        ! writing.                                      !
!        !                                              !
!  -VE * ! The calling Document 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 Document after   !
!        ! an n-level title, the Master Outline title    !
!        ! level will be (N+n) in the calling Document.  !
!        ! 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 Document         !
!        !                                              !
---------------------------------------------------------
!        !                                              !
!  -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.       !
!        !                                              !
---------------------------------------------------------
```

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2.6.10. INDEX OPTIONS

INDEX COMPILATION OPTIONS

```
---------------------------------------------------------
!        !                                               !
!  IN *  ! Index compiled from Descriptions of Text      !
!        ! occurrences and from names of occurrences     !
!        ! whose Definition is called.                   !
!        !                                               !
!  -IN   ! Index compiled from Descriptions of Text      !
!        ! occurrences only.                             !
!        !                                               !
---------------------------------------------------------
!        !                                               !
!   ID   ! Index also compiled from :                    !
!        ! Data Element Description lines and General    !
!        ! Documentation 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.

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2.7. THE DOCUMENT DESCRIPTION FIELDS

INTRODUCTION TO THE DOCUMENT DESCRIPTION FIELDS

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

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

```
--------------------------------------------------------------------------
!               USER DOCUMENTATION                    *DOC.PBDO.DOA.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 : O       SI                                              !
!   BB    120 : T1      ***********                                    !
!   BB    140 : T1      * HISTORY *                                    !
!   BB    160 : T1      ***********                                    !
!   BB    300 : S       TROBO1 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       ORO0001L,-CE,-G                                !
!   CCBB  440 : S       EIDRO ,-D                                      !
!   CCBB  450 : A       TROBO2 DDD                                     !
!   CCBB  460 : O       -EC                                            !
!                                                                      !
! O: C1 CH: -D                                                         !
--------------------------------------------------------------------------
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	6		**DOCUMENT CODE** This code must contain at least one, non-blank character. Only alphanumeric characters should be used. This code appears in the Document when it is called by the $CMA parameter in the Document Print Layout.
2	1		**ACTION CODE**
			LEVEL 1 - LEVEL 2
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 DOCUMENT DESCRIPTION LINE (REQUIRED)** This field indicates the function of the Document

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			Description line.
		A	Occurrence or list call assigned to the Appendix. Refer to Subchapter Additional Descriptive Elements, Section Appendix.
		C R	Comment line printed in the Document, Comment line -- not printed. Refer to Subchapter Additional Descriptive Elements, Section Comments in Document 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	Occurrence or list call. Refer to Subchapter Document Contents: Occurrence and List Calls.
		T0 Tn	Document title. Level-n section title. Refer to Subchapter Document Structure.
		P	Calls a Master Outline. This type can only be used in standard Documents (i.e. Document type is NOT = P). Refer to Chapter PAF-PDM FUNCTIONALITIES, Subchapter Operating Mode, Section Calling the Master Outline in a Document. TYPES OF MASTER OUTLINE DESCRIPTION LINES: The following types are relevant for P-type Documents 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 Document Description. NOTE: Only one Extraction Master Path may be called in a Master Outline.
		Ln	Beginning of loop.
		En	End of loop.
		H	Internal page 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 information extracted by the Extraction Master Path.
7	1		SECTION LEVEL NUMBER This field can only be used for Tn-, Ln- and En-type lines. A Tn-type line may have the following values:
		0	This value indicates a Document title which may be entered on up to three lines.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			NOTE: A TO line must be entered in the Document 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 Documents 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
		*	Page break
		1	New line
		2	One blank line + new line
		3 to 9	Two to eight blank lines + new line
		blank	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 Document 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.
			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 Document Print Layout. Also, when the Standard Document Print Layout is being used, its No.0 print window automatically applies.
11	1		ALIGNMENT OPTION/COMMENTS

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			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 Document 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 (Document 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 Document 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.

3. LAYOUT AND CUSTOMIZATION OF A DOCUMENT

3.1. INTRODUCTION

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

. **Document Layout,**
. **Parameters,**
. **Text processing.**

INTRODUCTION TO THE DOCUMENT LAYOUT

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

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

A dedicated occurrence of the Report entity supports the description of the Document Layout.

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

The code of this Report occurrence must be entered in the Document Definition or in the PCV Generation-Print command line via the $LAY parameter.
When no Report occurrence code is specified as the Document Layout, a standard layout is used instead. This layout is presented in the Appendix, Subchapter Standard Document Layout.

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

CH: R...XV

3.2. THE DOCUMENT LAYOUT

3.2.1. LAYOUT DEFINITION

REPORT DEFINITION

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

```
CH: Rdde
```

where dd is replaced by the 2-character Data Structure code and e is replaced by an identifying character which completes the Report occurrence code.

The Report occurrence which describes a Document Layout must belong to a J-type Data Structure.

This Data Structure must have been defined prior to defining the dedicated Report. J-type Data Structures allow for up to 36 Report occurrences.

> **NOTE: It is recommended to have one Data Structure occurrence dedicated to Document Print Layouts.**

Input of the Report occurrence code and name suffice for the Definition of the Report occurrence.

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

> **NOTE: If the Document 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:                        !
 -------------------------------------------------------------------------------
```

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3.2.2. LAYOUT DESCRIPTION
3.2.2.1. DESCRIPTION PRINCIPLES

<u>Document Layout Description Principles</u>

<u>PAGE HEADER & FOOTER</u>

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.

<u>REPETITIVE LINES</u>

Repetitive lines describe the part of the Layout where the body of text of the Document 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 Document 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 window (inside the '$' characters).

NOTE FOR TEXT LINES UPLOADED FROM THE WORKSTATION:
Print Windows designed in the Document 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 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 Document 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 Document 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 (Document 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 Document, 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 Document
Print Layout.
For information, refer to the Appendix at the end of this manual.

3.2.2.2. THE LAYOUT FIELDS

Document Layout Description Fields

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

The Layout contains the following fields:

   . An identifier line with the Report occurrence 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.

LAYOUT AND CUSTOMIZATION OF A DOCUMENT   3
THE DOCUMENT LAYOUT   2
LAYOUT DESCRIPTION   2

```
---------------------------------------------------------------------
!               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....!
!   01 10       $VT=19,$GT=1,$LN=111111111,$BP=2,                       !
!   01 15       $L1=SECTION,$L2=CHAPTER,$P0=ROBOT FOLLOW-UP,$M=*,$NT=1   !
!   10 10 *     ------------------------------------------------------------!
!   12 10       ! $NMA                              $N           $NM    !
!   14 10       ! $L1      $TN1                                         !
!   16 10       ! $L2      $TN2                                         !
!   18 10       ------------------------------------------------------------!
!   70 70 3     !   $  48                                        $ $M !
!   71 71       !   $                                            $    !
!   72 72 2     !         $                                      $    !
!   73 73       !         $                                      $    !
!   74 74       !             $                                  $    !
!   75 75       !                 $                              $    !
!   76 76       !                     $                          $    !
!   77 77       !                         $                      $    !
!   78 78       !                     $                          $    !
!   79 79       !                 $                              $    !
!                                                                       !
! O: C1 CH: -L                                                          !
---------------------------------------------------------------------
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	3		**REPORT CODE** (REQUIRED) The REPORT CODE is formed by the DATA STRUCTURE CODE followed by an additional identifying character.
2	1		**ACTION CODE**
3	2		**LINE NUMBER** (REQUIRED) PURE NUMERIC FIELD
		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 contain literals to be printed in the actual report. When on the Report Description (-D), this same value indicates the layout of a line and its constant values. **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 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. For complete information, refer to the PERSONALIZED DOCUMENTATION MANAGER Reference Manual. NOTE: ALL print windows must have a minimum length of 30 characters. 1. DOCUMENT PRINT LAYOUT: >> For detailed information, refer to Paragrah Document Layout Description Principles.
		1	Line for setting parameters' values.

NUM LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
	10	Line for page header or footer.
	70	No. 0 print window (required). Default print window used in relation to A-, G-, H-, and all S-type Document Description lines. NOTE: This default value may be modified by the $DL parameter and at the Document Description line level, in the W labeled field. Print Windows specified in Text lines necessarily override these defaults. Enter between the "$" 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: >> For detailed information, refer to Chapter ADDI-TIONAL FACILITIES: SPECIFIC LAYOUT AND FONT TYPES. NOTE: 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 Document Print Layout. . Also used for title-page blank lines to specify framing characteristics.
	29	Title-page footer

NUM	LEN	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's 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 -----------------------
			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).

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			Page break.
			NOTE: A page break is automatically generated on the first line of a Report 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'.

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3.3. PARAMETERS

3.3.1. INTRODUCTION

PARAMETERS

Parameters are used to request the printing of variable data in the
Document 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.

>>>> Also, parameters are alphabetically listed in the first index at
the end of this manual.

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 Document pages.

Such parameters are entered in the Document 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.

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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 Document layout lines:

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

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

When the parameter value is printed in the Document, 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
        Document 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.

3.3.2. LIBRARY AND DOCUMENT NAMES - TITLES

LIBRARY AND DOCUMENT NAMES - TITLES

PARAMETER	MEANING	MAXIMUM LENGTH
$NAP	Name of Library from which a Document is generated	36
$NMA	Document name, entered in Definition	36
$TMA	First Title line of Document (entered in a T0 Description line)	50
$TMAn	nth line of Document title (n = 1, 2 or 3) NOTE: $TMA1 = $TMA	
$TN1	First Title line of Level-1 sections	50
$TN1n	nth Title line of Level-1 sections (n = 1, 2 or 3) NOTE: $TN11 = $TN1	
$TN2	First Title line of Level-2 sections	50
$TN2n	nth Title line of Level-2 sections (n = 1, 2 or 3) NOTE: $TN21 = $TN2	
$TNn	Title of Level-n sections (n= 3 to 9)	50
$TNC	Title line of current section	50
$TNCn	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 $TN1n, $TN2n, $TNn, $TNCn parameters.

3.3.3. INTERNAL DATA AND DATES

DATABASE-RELATED DATA, DATE FORMATS

PARAMETER	MEANING	MAXIMUM LENGTH
$CMA	Document code	6
$CA	Library code	3
$CUTL	User code	6
$SESS	Document 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
$RUBT	For Text Description lines: Code of Data Element occurrence referenced in ELEM. field (or in the TEXT CONTENTS field preceded by '$.E=' if the Text occurrence has been uploaded from the WorkStation).	6

The last three parameters, $CPAC, $SPAC, and $RUBT, can only be positioned in the 70-labeled line of the Document Print Layout, outside the margins set by this referential print window.
For more details, refer to Subchapter The document Layout, Section Layout Description.

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

3.3.4. PAGE NUMBERS - TITLES IN ToC/TITLE PAGES

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

-------------------------------------------------------------
            !                                   ! MAXIMUM
PARAMETER ! MEANING                             ! LENGTH
-------------------------------------------------------------
                   n = 1 to 9
-------------------------------------------------------------
  $GT       ! WARNING: If the Document has level-3  !
            !          or finer-level titles, $GT is !
            !          a REQUIRED parameter.         !
            !                                        !
            ! $GT=1: Occurrence 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      !   3
            ! level                                  !
            !                                        !
  $Nn       ! Page number in the Level-n section     !   4
            !                                        !
  $N        ! Current section embedded number        !  35
            ! Example: 6.3.4                         !
            !          4th level-3 section in the    !
            !          3rd level-2 section of the    !
            !          6th level-1 section.          !
            !                                        !
  $nN       ! Current section embedded number + Page ! 8 to 40
            ! number in the Level-n section          !
            !                                        !
  $NM       ! Page number in Document                !   5
            !                                        !
-------------------------------------------------------------
```

.**Numbers are left-justified and leading zeros are not printed.**

.**Table of Contents, Index, and Appendices have their own page
 numbering sequence.**

.**The Document body page sequence always starts with page number 1.**

3.3.5. TITLES IN DOCUMENT BODY

TITLES IN DOCUMENT BODY

```
--------------------------------------------------------------
            !                                    ! MAXIMUM
PARAMETER ! MEANING                              ! LENGTH
--------------------------------------------------------------
   $VT     ! $VT=nm :                            !   2
           ! Automatic printing of Titles of     !
           ! Level-n to Level-m sections at the   !
           ! beginning of their first page.       !
           ! Default value: $VT=00                !
           !                                      !
   $GT     ! WARNING: If the Document has level-3 !
           !          or finer-level titles, $GT is !
           !          a REQUIRED parameter.       !
           !                                      !
           ! This parameter controls the Automated !   1
           ! Generation of Titles.                !
           ! $GT=1: Occurrence 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 parameter  !
           !        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.        *
           ***********************************************
           !                                      !
   $LN     ! Current section (embedded) numbers    !   9
           ! printed before titles                !
           ! $LN=nnnnnnnnn                        !
           !.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                !
           !                                      !
           ! $LN Cont'd next page                 !
```

```
            ------------------------------------------------------------
            !                                          ! MAXIMUM
  PARAMETER ! MEANING                                  ! LENGTH
            ------------------------------------------------------------
            ! $LN - Cont'd                             !
            ! 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=111111111 complete embed-   !
            !       ded 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.       !   9
            ! current section (embedded) number        !
            ! printed before titles                    !
            !                                          !
            ! $PL=nnnnnnnnn                            !
            !.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                       !
            !                                          !
    $TC     ! Character printed between the current    !   9
            ! section (embedded) number ($LN) and the! !
            ! title                                    !
            ! Ex.: 3.2.1 - Title                       !
            ! Default : no character                   !
```

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

3.3.6. OTHER PARAMETERS

ADDITIONAL PARAMETERS

PARAMETER	MEANING	MAXIMUM LENGTH
$P0 to $P9	Free parameters, their values will be printed where the corresponding para- meter is positioned in a 10-labeled line.	50
$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
$HF	Indicates a character to be repeated across a horizontal line (for example, in S....CE, O......CE) Default value: blank	1
$VF	Indicates a character to be repeated vertically. Default value: blank	1

PARAMETER	MEANING	MAXIMUM LENGTH
$BP	Face page management: 0: no generation of 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
$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 Document 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

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```
-------------------------------------------------------------
           !                                      ! MAXIMUM
 PARAMETER ! MEANING                              ! LENGTH
-------------------------------------------------------------
           !                                      !
   $TP     ! Positioning of Table of Contents     !   5
           ! page number in header or footer      !
           !                                      !
   $TT     ! Positioning of Table of Contents title !  50
           ! in header of footer                  !
-------------------------------------------------------------
           !                                      !
   $IP     ! Positioning of Index page number     !   5
           !                                      !
   $IT     ! Positioning of Index title           !  50
           !                                      !
   $PIT    ! Index compilation variant:           !   1
           ! $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                     !
           !                                      !
   $SIT    ! $SIT=0 Index printing inhibition     !   1
           ! $SIT=1 Index printing (default)      !
           !        The Text/Index code must be    !
           !        specified (Document Definition) !
           !        and described.                !
           !                                      !
   $FTS    ! Code of default font type            !   5
           !                                      !
   $FTT    ! Code of font type used for titles in  !   5
           ! title pages                          !
           !                                      !
   $FT0    ! Code of font-type for Document Title  !   5
           ! in Document title-page               !
           !                                      !
   $FTn    ! Code of font type used for Level-n    !   5
           ! Generated Section Titles ($VT=nm),    !
           ! (including Generated Titles if $GT=1) !
           ! printed in section's (and call's) first!
           ! page                                 !
           !                                      !
-------------------------------------------------------------
           !                                      !
   $FT     ! Code of Report occurrence for Font    !   3
           !             Type codes               !
           !                                      !
   $LAY    ! Code of Report occurrence for the     !   3
           !             Document Print Layout     !
           !                                      !
   $SLAY   ! Code of Report occurrence for the     !   3
           !             Specific Layout           !
           !                                      !
-------------------------------------------------------------
```

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3.4. 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
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
```

COMMENTS ON THE LAYOUT EXAMPLE

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 occurrences 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 $M parameter is set to * (text lines modified after the Referential session number will contain an *), the Referential session number parameter ($SSRF) 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 Document 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, $TN2).
The composition of the footer is as follows: the Document page number ($NM), the label ROBOT FOLLOW UP ($P0) and the Document generation date ($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.

3.5. TEXT PROCESSING FACILITIES

3.5.1. 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 Document 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 Document.

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).

3.5.2. 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.

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2. NON-JUSTIFICATION COMMANDS:

$$n   **Text is printed exactly as entered in the Text Description line within the No. n print window. NOTE: In the Document output, the $$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 and centered with $-C(n), 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 $$-X(n) commands, the -TA print option has a stronger non-justification impact.

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

```
-----------------------------------------------------
!        ! 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 follow- !
!        ! ing 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.                              !
-----------------------------------------------------
```

3.5.3. LEFT INDENTATION

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---------------------->
```

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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.

- . 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 Document 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.

EXAMPLE:

```
A NLG : T TEXT CONTENTS
  600 : - $3NOTE&&&& Underlined left indents require that
  620 :   the associated paragraphs have at least two
  640 :   printed lines.
```

RESULT:

<u>NOTE</u>   Underlined left indents require that the associated paragraphs have at
        least two printed lines.

3.5.4. 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 underscore 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 :  affordable new technology revolu_
line 120 : tionizes European business communications.
```

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

> **An affordable new technology revolutionizes European 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 :  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 Document.

3.5.5. PRINT PREVIEW

<u>**PRINT PREVIEW OF TEXT PARAGRAPHS/SECTIONS**</u>

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 Document 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 Document Print Layout.

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

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 Document, you obtain a WSIWYG view of the printed pages.

   NOTE: The Print Preview does not take into account the parameters entered
         in the 01-labeled line of the Document 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.

<u>**PRINT PREVIEW OF WORKSTATION-UPLOADED TEXTS:**</u>

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.

3.5.6. 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 'mand. 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.**

3.5.7. EXAMPLE

```
 -------------------------------------------------------------------------------
 !                    USER DOCUMENTATION              *DOC.PBDO.DOA.2847 !
 ! TEXT          PAWINC TRANS AMERICA OVERSEAS AIRWAYS    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 !
 !                                                                       !
 ! O: C1 CH: TpawincDff018                                               !
 -------------------------------------------------------------------------------
```

<u>COMMENTS ON THE EXAMPLE</u>

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 d $-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 Document 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 = ' ').                           !
!   !                                                                       !
! O: Cl CH: -SIMmm1Dff               WINDOW : LINE 001 COLUMN 001           !
--------------------------------------------------------------------------------
```

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ADDITIONAL FACILITIES:SPECIFIC LAYOUT & FONT TYPES   4

4. ADDITIONAL FACILITIES: SPECIFIC LAYOUT & FONT TYPES

4.1. INTRODUCTION

INTRODUCTION TO THE DOCUMENT SPECIFIC LAYOUT

The PDM extension enables to customize the presentation of:

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

These four elements are described via a dedicated occurrence 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 DOCUMENT, Subchapter The Document 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 occurrence must be specified in the Document 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 Documents use that Report occurrence.
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 Document Print Layout. For information, please
         refer to the Appendix at the end of this manual.

4.2. 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 Document 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 Document Description.
>
> As a result, make sure that the Document 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 Document 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 Document 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 Document Print Layout. See Chapter LAYOUT AND CUSTOMIZATION OF A DOCUMENT, Subchapter Parameters, for the exhaustive list of parameters.**

```
-------------------------------------------------------------
             !                                    ! MAXIMUM
PARAMETER ! MEANING                             ! 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 !   5
           ! ALL title-pages                    !
   $FT0    ! Code of font-type for Document Title !   5
           ! in Document title-page             !
   $FTS    ! Return-to-use-standard-font-type   !   5
           ! Indicator                          !
-------------------------------------------------------------
```

```
--------------------------------------------------------------------------------
!               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....!
!   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    -------------------------------------------------------------!
!                                                                           !
!                                                                           !
!                                                                           !
!                                                                           !
!                                                                           !
!                                                                           !
!                                                                           !
!                                                                           !
! O: C1 CH: -L20                                                            !
--------------------------------------------------------------------------------
```

4.3. 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 Document Description lines, according to the levels
specified in the TABLE OF CONTENTS/SOURCE field in the Document
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.
NOTE: The section number within the current level ($n parameter) is not
printed in these ToC entries.

>>>>   For complete details on these titles, see Chapter STRUCTURE AND
CONTENTS OF A DOCUMENT, Subchapter Automated Generation of Titles.

. **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 Document 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 Document, in 10-labeled lines of the Document 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 Document 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 Document 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 Document Print Layout will apply.

. **ToC TITLE AND BLANK LINES FRAMING CHARACTERITICS:**

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 Document body).

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

ADDITIONAL FACILITIES:SPECIFIC LAYOUT & FONT TYPES   **4**
TABLE OF CONTENTS   **3**

```
-------------------------------------------------------------------------------
!                    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....5....0....!
!   30 30        -------------------------------------------------------------!
!   31 30        ! $NMA                                                        !
!   32 30        ! $TT                                                         !
!   33 30        !                                                            !
!   34 30        -------------------------------------------------------------!
!   35 35        !                                                            !
!   36 39        -------------------------------------------------------------!
!   37 39                             $TP                                      !
!   38 40        TABLE OF CONTENTS                                            !
!   39 41            $1 $                                               $ !
!   40 42             $2 $                                              $ !
!   41 43              $3 $                                             $ !
!   42 44               $4 $                                            $ !
!   43 45                $5 $                                           $ !
!   44 46                 $6 $                                          $ !
!   45 47                  $7 $                                         $ !
!   46 48                   $8 $                                        $ !
!                                                                         !
! O: C1 CH: -L30                                                          !
-------------------------------------------------------------------------------
```

4.4. INDEX

4.4.1. COMPILATION PRINCIPLES

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 Document 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 Document 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 Document 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 Document 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 occurrence, described further on in this subchapter, in the Section Index Specification.

ADDITIONAL FACILITIES:SPECIFIC LAYOUT & FONT TYPES   4
INDEX   4
COMPILATION PRINCIPLES   1

INDEX COMPILATION OPTIONS

```
----------------------------------------------------
!        !                                          !
!  IN *  ! Index compiled from Descriptions of Text !
!        ! occurrences and from names of occurrences!
!        ! whose Definition is called.              !
!        !                                          !
! -IN    ! Index compiled from Descriptions of Text !
!        ! occurrences only.                        !
!        !                                          !
----------------------------------------------------
!        !                                          !
!  ID    ! Index also compiled from :               !
!        ! Data Element Description lines and General!
!        ! Documentation 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

```
-------------------------------------------------------------
            !                                   ! MAXIMUM
PARAMETER! MEANING                              ! LENGTH
-------------------------------------------------------------
   $IP    ! Positioning of Index page number   ! 5
   $IT    ! Positioning of Index title         ! 50
          !                                     !
   $PIT   ! Index printing variant:            ! 1
          ! $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                    !
   $SIT   ! $SIT=0 Index printing inhibition   ! 1
          ! $SIT=1 Index printing (default)     !
          !        The Text/Index code must be  !
          !        specified (Document Definition) !
          !        and described.               !
-------------------------------------------------------------
```

NOTES:The $IP and $IT parameters are to be entered in the Document 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 Document Print Layout (in an 01-labeled line).

4.4.2. INDEX SPECIFICATION

INDEX SPECIFICATION

Indexing elements, i.e. entries, explicit and symbolic criteria, and comments are entered in the Description lines of a dedicated Text occurrence.
The code of this Text occurrence must be specified in the Document Definition, in the field INDEX TABLE TEXT CODE.
This occurrence is dedicated since it is specific to the Document 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 Document 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 Document body wherever necessary (in Text Description lines, Occurrence Names, Data Element Description lines, General Documentation lines '-G'), preceded by the '$.' characters.
NOTE: Symbolic criteria are not printed in the Document when entered in Text Description lines.

CROSS-REFERENCES WITH DATA ELEMENTS IN WORKSTATION-UPLOADED TEXT OCCURRENCES:

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

The complete references ($.E=occcod) are not printed when called in a Document 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 occurrences.

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.

```
--------------------------------------------------------------------------------
!                   USER DOCUMENTATION             *DOC.PBDO.DOA.2847 !
! TEXT            XINDEX   Example                 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                                            !
!       :                                                            !
!       :                                                            !
!       :                                                            !
!       :                                                            !
!       :                                                            !
! O: Cl CH: Txindex Den                                              !
--------------------------------------------------------------------------------


--------------------------------------------------------------------------------
!                   USER DOCUMENTATION             *DOC.PBDO.DOA.2847 !
! TEXT            XTEXTE   Example                 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.  !
!       :                                                            !
!       :                                                            !
!       :                                                            !
!       :                                                            !
!       :                                                            !
!                                                                    !
! O: Cl CH: Txtexte Dbb                                              !
--------------------------------------------------------------------------------
```

4.4.3. INDEX LAYOUT

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

INDEX LAYOUT

**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 Document
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 Document 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
Document 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 Document body).**

```
--------------------------------------------------------------------------
!                  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....5....0....!
!   50 50         ------------------------------------------------------------!
!   51 50         ! $NMA                                                    !
!   52 50         ! $IT                                                     !
!   53 50         !                                                         !
!   54 50         ------------------------------------------------------------!
!   55 55         ! $         49                                        $ ! !
!   56 59         ------------------------------------------------------------!
!   58 59         !                            $IP                          !
!   59 59 2       ------------------------------------------------------------!
!   60 60         INDEX TABLE                                               !
!   61 61         !   $                                                $ !  !
!   62 62         !      $                                             $ !  !
!   63 63         !         $  $NM                                     $ !  !
!                                                                          !
!                                                                          !
!                                                                          !
!                                                                          !
!                                                                          !
! O: C1 CH: -L50                                                           !
--------------------------------------------------------------------------
```

4.5. TITLES AUTOMATICALLY PRINTED IN DOCUMENT BODY

Titles may be automatically printed in the Document body, they are:

. Generated Section Titles printed in sections's 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 DOCUMENT, 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 Document 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 Document 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
DOCUMENT, Subchapter Additional Descriptive Elements.

The following parameter is specific to font type management, it is entered
either in the 01-labeled line of the Document Print Layout, or on the PCV
Generation-Print command line (For more information, see next subchapter).

```
------------------------------------------------------------
          !                                ! MAXIMUM
PARAMETER ! MEANING                        ! LENGTH
------------------------------------------------------------
          !                                !
  $FTn    ! Code of font type used for Level-n ! 5
          ! Generated Section Titles ($VT=nm), !
          ! (including Generated Titles if $GT=1) !
          ! printed in section's (or call's) first !
          ! page                           !
          !                                !
------------------------------------------------------------
```

ADDITIONAL FACILITIES:SPECIFIC LAYOUT & FONT TYPES   4
TITLES AUTOMATICALLY PRINTED IN DOCUMENT BODY   5

```
--------------------------------------------------------------------------------
!                     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....!
!   71 71           $                                                 $       !
!   72 72            $                                                $        !
!   73 73             $                                                $       !
!   74 74              $                                                $      !
!   75 75               $                                               $      !
!   76 76                $                                                $    !
!   77 77                 $                                                $   !
!   78 78                  $                                                $  !
!   79 79                   $                                                $ !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
!                                                                              !
! O: C1 CH: -L71                                                               !
--------------------------------------------------------------------------------
```

DDPDM000251A

4.6. FONT TYPE SPECIFICATION

INTRODUCTION

The specification of different character fonts is a PDM feature.

This facility will prove particularly useful when the Document 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 occurrence of the Report entity, in its Layout (CH: R...L**).**

The code of this Report occurrence must be specified in the Document 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 Documents use that Report occurrence. 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 occurrence 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 OCCURRENCES WHEN PRINTED IN A DOCUMENT.

. 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 Document Description, on F-type lines (See Chapter STRUCTURE AND CONTENTS OF A DOCUMENT, Subchapter Additional Descriptive Elements, Section Character Font Types).

. The TEXT CONTENTS field of the Description lines of the called Text occurrences, preceded by the '$+' characters.

  Font types specified in Text Description lines have priority over those entered in the Document Description.
  For more details, see Chapter LAYOUT AND CUSTOMIZATION OF A DOCUMENT, 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 Document Print Layout, or on the PCV Generation-Print command line.

```
-------------------------------------------------------------
          !                                      ! MAXIMUM
PARAMETER ! MEANING                              ! LENGTH
-------------------------------------------------------------
          !                                      !
   $FTS   ! Code of default font type            !   5
          !                                      !
   $FTT   ! Code of font type used for titles in !   5
          ! ALL title-pages                      !
          !                                      !
   $FT0   ! Code of font type for Document Title !   5
          ! in Document title-page               !
          !                                      !
   $FTn   ! Code of font type used for Level-n   !   5
          ! Generated Section Titles ($VT=nm),   !
          ! (including Generated Titles if $GT=1)!
          ! printed in section's (or call's) first !
          ! page                                 !
          !                                      !
-------------------------------------------------------------
```

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 OCCURRENCES WHEN PRINTED IN A DOCUMENT:

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

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

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 occurrences 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	type size 10 :	15
or Arial	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 :	1«
	type size 28 :	1b
	type size 29 :	1g
	type size 37 :	1I

Modern	type size 12 :	2D
	type size 14 :	2I
	type size 18 :	2N
	type size 24 :	2S
	type size 30 :	2X
	type size 36 :	2«

Roman	type size 12 :	3D
	type size 14 :	3I
	type size 18 :	3N
	type size 24 :	3S
	type size 30 :	3X
	type size 36 :	3«

Script	type size 14 :	4I
	type size 18 :	4N
	type size 24 :	4S
	type size 30 :	4X
	type size 36 :	4«

| 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 :	6«
	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....!
!   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                                                 !
!                                                                         !
!                                                                         !
!                                                                         !
!                                                                         !
!                                                                         !
!                                                                         !
!                                                                         !
!                                                                         !
!                                                                         !
! O: C1 CH: -L                                                            !
-------------------------------------------------------------------------
```

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5. PAF-PDM FUNCTIONALITIES

5.1. 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-.

PAF+ is documented in the PAF Reference Manual.
PDM- is documented in the Personalized Documentation Manager Reference Manual.
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).

<u>DOCUMENTATION</u>

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 (Ref: DD PAF).

2. PAF Tables / Host (Ref: DD PAG).

3. PAF Tables describing entities or Descriptions specific to a Methodology.
   These tables are obtained in print via the GPRT 'PCM command.

4. Personalized Documentation Manager Reference Manual (Ref: DD PDM).

5. VisualAge Pacbase Operations Manuals.

5.2. OBJECTIVES OF PAF-PDM FUNCTIONALITIES

5.2.1. AUTOMATIC STRUCTURING AND MAINTENANCE OF DOCUMENTS

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 documentation on a Screen occurrence, i.e documentation entered in:

. the General Documentation (-G) of this Screen,

. the General Documentation (-G) 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 Document Description (-D).
As a result, when a new Segment is called in the Screen (-CS), it must also be added in the Document Description.

With PAF-PDM, you specify the information to be printed in the Document by defining -- only once -- an Extraction Master Path, also called PTEx.

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 Documents without having to change their Description.

5.2.2. DOCUMENTATION STANDARDIZATION

PDM+ allows you to write Master Outlines (PTEds), i.e. skeletons which may be used for various purposes:

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

PDM+ allows you to specify all relevant print options in one Master Outline. This PTEd is then called by as many Documents as needed.

. Coding standardized calls is another PDM+ facility.

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

TGEN___D__

will cause all Text occurrences whose code starts with the letters 'GEN' to be printed in ALL Documents 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 Documents in relation to several applications may be based on only one Master Outline (PTEd) managing data extracted by one PTEx.

NOTE: A Document may call several Master Outlines.

5.2.3. 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.

5.3. OPERATING MODE OF PAF-PDM FUNCTIONALITIES

5.3.1. INTRODUCTION

PAF-PDM OPERATING MODE

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

PAF+ allows for the writing of the Extraction Master Path (PTEx) and for its execution when it is a User Extractor.

PDM- allows for the writing and execution of the Master Outline (PTEd).

When both functionalities are used jointly, the Master Outline calls an Extraction Master Path of the Macro-Command type.

. When the PAF+/Extraction function is used alone, it allows for the generation of User Extractor programs with the possibility of formatting the data extracted.

. When the PDM-/Outline function is used alone, it allows for standardization skeletons (standard Print Options, Text occurrences always called, standardized calls).

. When both functions are used together, PAF+ extracts data from the Database. This data is processed by PDM- and finally printed in a Document.

5.3.2. 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 (PTEx), i.e. an
exploration course throughout the Specifications Database, from which a
data extraction program is automatically generated.

The writing of a PTEx means defining and describing an occurrence of a
dedicated User Entity coded '.PPTEX' and whose type code is 7E (CH:
$7E......).

There are two types of PTEx, therefore occurrences of the '.PPTEX' User
Entity may be of either one of the following types:

. Type 'M allows you to generate a Macro-Command, i.e. a sub-program
  which will have to be called in a Master Outline (PTEd). See the
  Personalized Documentation Manager Reference Manual for a complete
  documentation on the PDM Functionality.

. Type 'E' allows you to generate a User Extractor program executed
  independently.

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

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VALIDATION

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

>>>> The XPAF procedure is documented in the Operations Manual, Vol.III:
      Batch Procedures - User's Guide, Chapter PERSONALIZED EXTRACTION AND
      AUTOMATED DOCUMENTATION, Subchapter XPAF: EXTRACTION MASTER PATH.

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

OPERATIONS

. Execution of a User Extractor (E-type PTEx):

Once validated, compiled, and linked, a User Extractor is ready for
execution.
User Input is described in the PAF Reference Manual, Chapter "EXECUTION OF
A USER EXTRACTOR / E-Type PTEx".
For technical information on this execution, please refer to the
Operations Manual, Part I, Chapter "INSTALLATION", Subchapter "COMPLEMENT:
EXECUTION OF A PAF+ USER EXTRACTOR".

. Execution of a Macro-Command (M-type PTEx):

Once validated, compiled, and linked, a Macro-Command is not ready for
execution. It must be called in a Master Outline.
See the Personalized Documentation Manager Reference Manual for a complete
documentation on the PDM- Functionality.

NOTE: An Extraction Master Path is independent of the Database in which it
      is defined and described as long as the root is the same.

PAF+: EXTRACTION MASTER PATH - DESCRIPTION OF STEPS

```
 DEFINITION                                              !
---------------------------------                       !
! ...                               !                   !
! Definition     :  xtmapa         !                   !
! ...                               !                   !
! Extraction Type :  E  or  M      !                   !
! ...                               !                   !
!                                   !                   PAF
! CH : $7Extmapa                    !                   Reference
---------------------------------                       Manual
          !                                             !
          !                                             PAF
          V                                             Tables
 DECRIPTION                                              !
---------------------------------                       !
! ...                               !                   !
! ...                               !                   !
! ...                               !                   !
!                                   !                   !
! CH : $7ExtmapaD                   !                   !
---------------------------------                       !
          !                                             !
          !                                             !
----------------V----------------------------------------------
    XPAF-Validation procedure            Operations Manual
   ----------------------------               Vol.III
    !                               !               !
--V-------------------------------V----------------------------
USER EXTRACTOR         MACRO-COMMAND                !
PROGRAM                SUB-PROGRAM                  !
if Extraction Type = E  if Extraction Type = M     PAF
       !                        !                   Reference
    -------------------                             Manual
          !                                         !
      COMPILATION-LINK EDIT                         !
       !               !                            !
--------V----------------!-------------------------------
   EXECUTION             !       Operations Manual-Vol.I
--------V----------------V-------------------------------
 DATA EXTRACTED       A Macro-Command must be called
                      by a PTEd. See PDM+ Functionality
```

5.3.3. THE MASTER OUTLINE

5.3.3.1. INTRODUCTION

PDM: THE MASTER OUTLINE

PDM allows to write Master Outlines supported by occurrences of the P-type Document 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 Documents 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 Operations Manual, Vol.III: Batch Procedures - User's Guide, Chapter PERSONALIZED EXTRACTION AND AUTOMATED DOCUMENTATION, Subchapter XPDM MASTER OUTLINE.

```
        **************************************************************
```

NOTE: A Master Outline cannot be printed per se. It needs be called in another Document 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).
>>> For more information, refer to Chapter ACCESS COMMANDS, Subchapter GENERATION-PRINT COMMANDS.

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 Operations Manual, Vol.III: Batch Procedures - User's Guide, Chapter PERSONALIZED EXTRACTION AND AUTOMATED DOCUMENTATION, Subchapter PRGS: PRINTING OF EXTRACTION MASTER PATHS AND MASTER OUTLINES.

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

If an Extraction Master Path is modified and then re-validated (XPAF), all Master Outlines calling this Extraction Master Path may have to be modified and must always be re-validated (XPDM).

PDM: THE MASTER OUTLINE - DESCRIPTION OF STEPS

The chart below presents PAF-PDM used jointly: the Macro-Command Sub-Program is called in a Master Outline.

```
DEFINITION OF MASTER OUTLINE                       !
----------------------------------                 !
! ...                              !                !
! Type : P                        !                !
! ...                              !                !
! CH : Vmasout                     !                !
----------------------------------                 PDM
             !                                     Reference
             !                                     Manual
             V                                     !
DESCRIPTION OF MASTER OUTLINE                       !
----------------------------------                 !
! M     $7Extmapa                  !                !
! ...                              !                !
! CH : Vmasout D                   !                !
----------------------------------                 !
             !                                     !
----------------V----------------------------------------------
XPDM-Validation procedure          Operations Manual
             !                            Vol.III
----------------V----------------------------------------------
DOCUMENT DEFINITION                                !
----------------------------------                 !
! ...                              !                !
! Type : M, C, T, U, E ou X        !                !
! ...                              !                !
! CH : Vvolume                     !                !
----------------------------------                 !
             !                                     !
             !                                     !
             V                                     !
DOCUMENT DESCRIPTION                               !
----------------------------------                 !
! P     Vmasout                    !                PDM
! ...                              !                Reference
! CH : VvolumeD                     !                Manual
----------------------------------                 !
             !                                     !
             !                                     !
             V                                     !
GPRT-Generation-Print Procedure (PCV)
```

5.3.3.2. CALLING THE EXTRACTION MASTER PATH

PRELIMINARY REMARK:

All topics discussed below refer to the Document Description.
A field-by-field description is located in Chapter STRUCTURE AND CONTENTS
OF A DOCUMENT, Subchapter THE DOCUMENT DESCRIPTION FIELDS.

CALLING THE EXTRACTION MASTER PATH

* First, define a Document occurrence, and set its type to "P".

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

* In the Document 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 occurrences 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.

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

This line must be entered with:

        $7Eaaaaaa

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 Document and
its sections.

For this type of line, input the following in the Document 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 occurrences -- 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 (Document
                  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 occurrences 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_____,-G,-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 occurrences 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 Document 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 occurrences -- 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 (Document 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 (Document
>   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).

5.3.4. CALLING THE MASTER OUTLINE IN A DOCUMENT

PRELIMINARY REMARK:

All topics discussed in this subchapter refer to the Document Description. A field-by-field description is located in Chapter STRUCTURE AND CONTENTS OF A DOCUMENT, Subchapter The Document Description Fields.

CALLING THE MASTER OUTLINE

A Master Outline (a Document where Document type = P) cannot be generated and printed. It must be called in another Document:

. In the Definition of the Document that will call the Master Outline, set the type of the Document 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=cccccccc, B=dddddddd, E=eeeeeeee, D=1
```

where aaaaaa = Master Outline occurrence 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 occurrence

**The C parameter is used to specify a given occurrence code, thus limiting the extraction scope. The entity type of that occurrence is that indicated by the T parameter.
This parameter may include one or more generic '*' characters.**

B = Code of first occurrence to extract

E = Code of last occurrence to extract

D = 1 : SPECIAL DEBUG PARAMETER (OPTIONAL)

A debug report is included in the Document 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.

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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.

```
---------------------------------------------------------
!       !                                               !
!   VE  ! Descriptions of both Master Outline and its   !
!       ! calling Document are included in the GPRT     !
!       ! execution report.                             !
!       ! The expanded Master Outline Description (which!
!       ! includes the codes of extracted occurrences)  !
!       ! helps to the correct finalization of its      !
!       ! writing.                                      !
!       !                                               !
! -VE * ! The calling Document 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 Document after   !
!       ! an n-level title, the Master Outline title    !
!       ! level will be (N+n) in the calling Document.  !
!       ! 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 Document         !
!       !                                               !
---------------------------------------------------------
!       !                                               !
! -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.       !
!       !                                               !
---------------------------------------------------------
```

6. ACCESS COMMANDS

6.1. ON-LINE COMMANDS

<div align="center">

DOCUMENTS

</div>

```
LIST OF DOCUMENTS

CHOICE          SCREEN                               UPD
------          ------                               ---

LCVaaaaaa       List of Documents by code (starting   NO
                with Document 'aaaaaa').

LTVtVaaaaaa     List of Documents by type (starting   NO
                with type 't' and with Document 'aaaaaa').


DESCRIPTION OF DOCUMENT 'aaaaaa'
-------------------------------

CHOICE          SCREEN                               UPD
------          ------                               ---

Vaaaaaa         Definition of Document 'aaaaaa'.      YES

VaaaaaaGbbb     General Documentation for Document    YES
                'aaaaaa' (starting with general docu-
                mentation line number 'bbb').

VaaaaaaATbbbbbb Texts assigned to Document 'aaaaaa'   NO
                (starting with text 'bbbbbb').

VaaaaaaX        X-references of Document 'aaaaaa'     NO

VaaaaaaXVbbbbbb X-references of Document 'aaaaaa' to  NO
                Documents (starting with Document 'bbbbbb')

VaaaaaaXQbbbbbb List of entities linked to Document   NO
                'aaaaaa' through user-defined relation-
                ship 'bbbbbb'.

VaaaaaaDbbccnnn Description of Document 'aaaaaa'      YES
                (starting with chapter 'bb', subchapter
                'cc' and line number 'nnn').


PRINT PREVIEW

TaaaaaaSIMbbbDcc Print Preview of Text 'aaaaaa' using   NO
                Report Layout 'bbb', starting with
                Paragraph/Section 'cc'.
                (To use the Standard Layout, enter '&&&'
                for the Layout code).
```

NOTE: After the first choice of type 'Taaaaaa', 'Taaaaaa' can be replaced with '-'. All notations between parentheses are optional.

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6.2. GENERATION-PRINT COMMANDS

A request for the generation and printing of a Document can be made in batch mode on Batch Form 'Z', or in on-line mode on the Generation and Print Commands (GP) screen.

The commands available are as follows:

.LCV: List of occurrences of the Document entity, sorted by code.

.LKV: List of occurrences of the Document entity, sorted by keyword.

.DCV: Document Definition(s), associated keywords, General Documentation lines, and Description(s). DCV output is sorted by code when no Document code is entered.

.PCV: Contents of Document(s), sorted by code when no Document code is specified. An error report is also printed.

>>>> See the VisualAge Pacbase Operations Manual - Vol. III : Batch Procedures User's Guide for more information on the GPRT procedure.

SPECIFIC FEATURES OF THE PCV COMMAND

1. Database network view and related print options,
2. Selective printing,
3. Value assignment / modification of user-defined parameters.

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6.2.1. DATABASE NETWORK VIEW & RELATED PRINT OPTIONS

Variants may be requested via the PCV command regarding the Database
network view used by the Document Generation-Print procedure.

For details on the different Database network options, refer to the USER'S
Reference Manual, Chapter ON-LINE ACCESS LANGUAGE, Subchapter The
Operation Field (O:).

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       !!DOCUMENT DEFINITION ! ALL CALLS SAVE  ! LIST-TYPE
COMMAND  !!& DESCRIPTION       ! LIST-TYPE CALLS ! 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.

6.2.2. SELECTIVE PRINTING

a) When the Document 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 DOCUMENT 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 DOCUMENT BY CHAP OR SUBCHAP AND CODE: 1 02

      The second Level-1 section will be generated and printed.

      PRINT DOCUMENT 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.

b) 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).

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6.2.3. 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.

```
   -------------------------------------------------------------
         !                                        !
   $FT   ! Code of Report occurrence for Font     !  3
         !                       Type codes       !
         !                                        !
   $LAY  ! Code of Report occurrence for the      !  3
         !                       Document Print Layout !
         !                                        !
   $SLAY ! Code of Report occurrence for the      !  3
         !                       Specific Layout  !
         !                                        !
   -------------------------------------------------------------
```

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6.2.4. 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 Documents.

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 Documents, and validate the command line.

7.   APPENDIX

7.1. ERROR MESSAGES

7.1.1. 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. 0 PRINT WINDOW ASSUMED

A print window declared in a Text line is not defined in the Document 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 - DOCUMENT 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 DOCUMENT CALLING A MASTER OUTLINE MUST HAVE ITS DESCRIPTION ORGANIZATION MODE = 1

D14 :   DOCUMENT TITLE LINE MISPLACED -- IGNORED.

    **The Document title lines (T0) are incorrectly sequenced. They must be
the first lines entered in the Document 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 Document 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.**

7.1.2. Inn ERROR MESSAGES

I01 : EMPTY INDEX -- DOCUMENT 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.

7.1.3. Mnn ERROR MESSAGES

M01 : ERRONEOUS DEFAULT PRINT WINDOW -- STANDARD LAYOUT IMPLEMENTED

> The default No. 0 print window in the Document 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. DOCUMENT PRINTED WITHOUT TABLE OF CONTENTS

> Layout lines defining Table of Contents entries are missing or incorrect. If the ToC level requested in the Document 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 Document 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. DOCUMENT 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 Document 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. DOCUMENT 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. DOCUMENT 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. DOCUMENT 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 Document Print Layout is used as default.

M13 : MISPLACED PARAMETER -- IGNORED

Check the appropriate placement for this parameter. See Chapter LAYOUT
AND CUSTOMIZATION OF A DOCUMENT, Subchapter Parameters.
NOTE: If you have positioned the parameter in the PCV Generation-Print
         command line, it is 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.

7.1.4. 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 TTTTTTTTT

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.

7.1.5. 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

7.2. ToC / INDEX DESCRIBED IN DOCUMENT PRINT LAYOUT

INTRODUCTION

It is possible to design the Table of Contents Layout in the Document 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 Document 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 Document 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 Document is described in the 80- to 83-labeled lines of the Document 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 Document 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 Document 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 Document 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 occurrences whose Definition is called,
   . Text title lines if the TT print option is selected.

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PRELIMINARY REMARK

It is possible to design the Index Layout in the Document Print Layout.
It implies that the field REPORT CODE FOR SPECIFIC LAYOUT in the Document
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 Document
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 Document 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
       Document Definition) contains the code of the Text occurrence used
       for indexing purposes.

Complete information on indexing matters is found in Chapter ADDITIONAL
FACILITIES: SPECIFIC LAYOUT AND FONT TYPES, Subchapter Index.

7.3. STANDARD DOCUMENT LAYOUT

STANDARD LAYOUT

When no layout is called in the Document 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.

```
.------------------------------------------------------------------------.
: $L1              $TN1                                                   :
: $L2              $TN2                                                   :
:                                                                        :
'------------------------------------------------------------------------'


.------------------------------------------------------------------------.
:                                                                        :
:    $    48                                                         $ :
:      $                                                             $ :
:        $                                                           $ :
:          $                                                         $ :
:            $                                                       $ :
:              $                                                     $ :
:                $                                                   $ :
:                  $                                                 $ :
:                    $                                               $ :
:                      $                                             $ :
:                                                                        :
:                                                                        :
...                                                                 ...

:                                                                        :
:    --- TABLE OF CONTENTS ---                                           :
: $1   $                                           $     $2N             :
:   $2    $                                        $     $2N             :
:            $                                     $     $2N             :
:    --- INDEX ---                                                       :
:    $                                                               $ :
:     $                                                              $ :
:      $     $2N                                                     $ :
:                                                                        :
:    $TMA                                           $2N                  :
'------------------------------------------------------------------------'
```

7.4. LIST OF EMPTY WORDS / INDEX

LIST OF EMPTY WORDS

The following list contains those words not taken into account when the Index is compiled.

ALL	MAKE
AN	ME
AND	MORE
ANY	NINE
ARE	NO
AS	OF
AT	OFF
BE	ON
BEEN	ONE
BUT	OR
BY	SHE
DOWN	SIX
FIVE	TEN
FOR	THAT
FOUR	THE
FROM	THEM
GET	THEN
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.

7.5. PARAMETERS AND PRINT OPTIONS INDEX