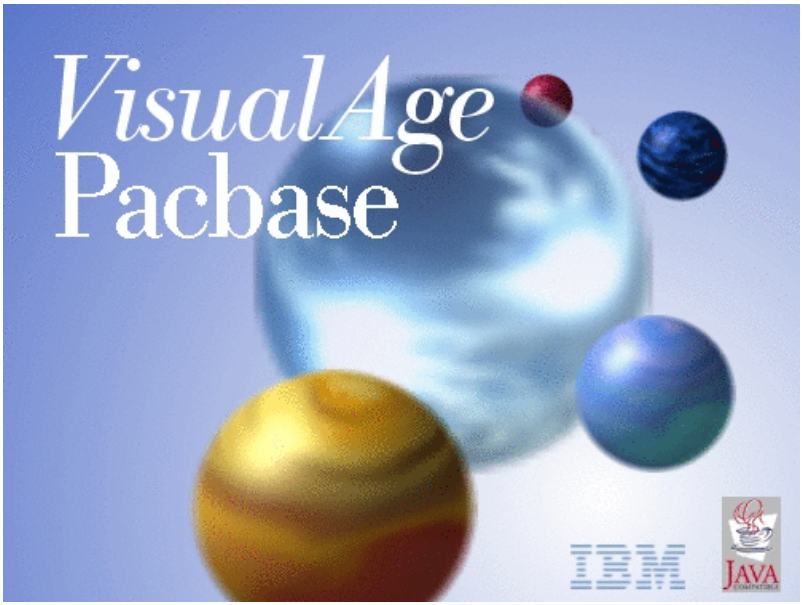
VisualAge Pacbase

CODASYL DATABASE DESCRIPTION

Version 3.5



VisualAge Pacbase

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Note

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

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- VisualAge Pacbase Version 3.5

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Chapter 1. Introduction

VisualAge Pacbase Module

VisualAge Pacbase Products

VisualAge Pacbase is a modular AD solution which is composed of two main products - Pacdesign for application design, Pacbench for application development.

Pacdesign and Pacbench are used to populate the Specifications Database and to ensure the maintenance of existing applications. Each product includes several functions.

Basic Functions

Dictionary

Structured Code

Personalized Documentation Manager (PDM-PDM+)

Generators

On-Line Systems Development

Pacbench Client/Server

Batch Systems Development

COB / Generator

Database Description

DBD

DBD-SQL

Application Revamping

Dialog Web Revamping

Quality Control

Pacbench Quality Control (PQC)

Quality Control Extensibility

Table Management

Pactables

Production Turnover and Follow-up

Support of Configurations Management (SCM)

Pac/Transfer

Development Support Management System (DSMS)

Additionnal services

Pac/Impact

Dictionary Extensibility

Pacbase Access Facility (PAF-PAF+)

DSMS Access Facility (DAF)

Methodology (Merise, YSM, etc.)

Sub-networks comparison utilities

Rename/move entity utility (RMEN)

Journal Statistics utility (ACTI)

RACF / TOPSECRET Security Interface

ENDEVOR

Introduction to the Database Description Function

The Database Description function automatically generates Database descriptions adapted to the Database Management System in use. This is done by using Segment and relationship Descriptions defined during the application analysis phase.

The DBD function can generate the description of the following DBMS's:

- Relational databases,
- Network databases (CODASYL),
- Hierarchical databases (DL/1),
- Physical File - AS/400 databases and TANDEM DDL,
- DMSII databases.

Each one of these DBMS's is documented in a specific Manual.

Principles of Description

In this manual, the entities and screens managed by VisualAge Pacbase are described in two parts:

- An introduction which explains the purpose and the general characteristics of the entity or screen,
- A detailed description of each screen, including the input fields of on-line screens.

For the description of batch input, refer to the 'Developer's Procedures' manual.

All the on-line fields described in this manual are assigned an order number in the screen map. These numbers are also used in the screen description that follows.

If you use Developer workbench, refer to the on-line Help.

If you use the VisualAge Pacbase WorkStation, refer to the 'WorkStation User Interface' guide which documents the corresponding windows.

Note: Each type of Database Block has a specific description. As a result, fields may have different meanings or may not be used, depending on the type of Database Block.

Chapter 2. Use of the Function with CODASYL

Introduction

INTRODUCTION

The DBD CODASYL function allows the description of the following types of CODASYL databases in PACBASE:

-DM4,

-IDS2,

-IDMS,

-DMS.

PURPOSE OF THE MANUAL

The DBD CODASYL Reference Manual is not a technical training manual for CODASYL databases.

The user should be familiar with CODASYL databases and the Specifications Dictionary.

The purpose of this manual is to guide the user through the description of a CODASYL database in the VA Pac Specifications Dictionary.

The first part of this manual deals with the information common to the types of CODASYL databases mentioned above and how to obtain the automatic description of these databases.

Specific examples are presented for each structure and environment type.

Use of Entities

ROLE OF THE SPECIFICATIONS DICTIONARY

The role of the Specifications Dictionary is to manage the logical descriptions of the various external views which are used in programs. These descriptions involve the following entities:

-the Data Elements (elementary data),

-the Segments (a segment = a record),

-the Database Blocks (a block = an external view),

-the General Documentation,

-the Parameterized Input Aids (P.I.A.'s).

CODASYL REMINDERS

A CODASYL schema is a group of records composed of elementary data. The records are linked to each other through sets.

A structure is broken down into areas.

A record, as well as a set, belong to one or more areas.

TERMINOLOGY EQUIVALENTS

A CODASYL schema is described by a database block.

A CODASYL record is defined by a segment.

Each elementary data of a record is defined by a data element.

CODASYL ENTITY Schema or sub-schema Record Elementary data	EQUIVALENT Database block Segment Data Element

Sets and areas do not exist as entities. Since there are no entities to define them, they will be defined in the Specifications Dictionary as part of the schema or sub-schema.

USE OF PACBASE ENTITIES

Basic principle: A CODASYL block is generated from a database block.

GENERATION OF A CODASYL BLOCK

The generator uses all the information available in the Specifications Dictionary (logical level) and, depending upon the type of block, ensures the following:

- at the Block level: generation of data description language lines (DDL) corresponding to the database block type,
- at the Segment Definition level: generation of the DDL lines adapted to CODASYL,

- at the Segment Description level: adaptation of the description to CODASYL. The description of the elementary data of a record is generated from the information specified on the Data Element Definition.

EXAMPLE

Segments used: FF10, FF20 and FF30.

Description of the 'CODAAA' Database Block.

Type M1 (DDL: logical description of the schema):

```
  T AREA  OWNER MEM
    SET    SEG  SEG
  A ARE1A
  A ARE1B
  R ARE1A FF10
  R ARE1A FF20
  R ARE1B FF30
  S SET1A FF10 FF20
  S SET1B FF30 FF10
  S SET1C FF30 FF20
```

The system will generate:

```
SCHEMA NAME IS EXAMPLE.
AREA NAME IS ARE1A.
AREA NAME IS ARE1B.
RECORD NAME IS FF10
WITHIN ARE1A.
    02                FF10-DATEL1
                      TYPE IS CHARACTER    8.
    02                FF10-DATEL2
                      TYPE IS CHARACTER   16.
RECORD NAME IS FF20
WITHIN ARE1A.
    02                FF20-DAEL1
                      TYPE IS CHARACTER    3.
    02                FF20-DAEL2
                      TYPE IS CHARACTER   10.
    02                FF20-DATAE3
                      TYPE IS CHARACTER    8.
RECORD NAME IS FF30
WITHIN ARE1B.
    02                FF30-DATA1
                      TYPE IS CHARACTER   32.
SET NAME IS SET1A
OWNER  IS FF10.
MEMBER IS FF20.
SET NAME IS SET1B
```

```
OWNER  IS FF30.
MEMBER IS FF10.
SET NAME IS SET1C
OWNER  IS FF30.
MEMBER IS FF20.
```

The system generates data element descriptions for Block Types 'M1', 'I1', 'D0' or 'D1' (DDL), according to the information entered on the Segment Call of Elements (CE) and Data Element Definition screens.

The user may replace or complete the generated lines in the 'Generation Elements' screen.

For additional information, refer to Chapter "GENERAL DOCUMENTATION & PARAMETERIZED INPUT AIDS".

GUIDELINES FOR CREATING A CODASYL BLOCK

In order to generate a CODASYL block, the user should first specify the logical characteristics of the schema or sub-schema by:

- defining the elementary data (ie. the VA Pac data elements),
- defining and then describing the records (i.e., the PACBASE segments),
- defining the VA Pac Database Blocks from which the schema or sub-schema is generated,
- describing the schema or sub-schema, by calling the areas, records and sets which comprise it.

It is also necessary to specify the physical characteristics of the database by:

- completing the logical description using the 'Generation Elements' screen (-GG) and P.I.A.'s.

Chapter 3. Elementary Data

Data Element Definition (E)

DATA ELEMENT DEFINITION

A CODASYL elementary data is comparable to a VA Pac data element and is defined on the Data Element Definition screen.

GENERAL CHARACTERISTICS

A data element is defined by a code, a clear name and an internal format.

From the internal format, VA Pac generates the CODASYL format type and length.

The following table shows the CODASYL formats generated by the system from the formats entered on the VA Pac Data Element Definition screen. This is for an IDS2 database.

VA Pac			**CODASYL IDS2**
FORMAT		COBOL	FORMAT
X(n)		DISPLAY	CHARACTER n
X(n)	5	COMP-1	SIGNED BINARY 15
X(n)	6	COMP-2	SIGNED BINARY 31
S9(n)V9(p)	3	COMP-3	SIGNED PACKED DECIMAL n+p,p
(S)9(n)V9(p)	D	DISPLAY	(UN)SIGNED UNPACKED DECIMAL n+p,p

The following table is for a DM4 database:

VA Pac			**CODASYL DM4**
FORMAT		COBOL	FORMAT
X(n)	D	DISPLAY	CHARACTER n
X(n)	5	COMP-1	BINARY 17
X(n)	6	COMP-2	BINARY 35
X(n)	J	COMP-6	BINARY 35
X(n)	Y	DB-KEY	DATA-BASE-KEY
9(n)V9(p)	8	COMP	DECIMAL n+p,p

VA Pac			CODASYL DM4
9(n)V9(p)	9	COMP-3	DECIMAL n+p,p
S9(n)V9(p)	8	COMP	DECIMAL n+p,p SIGNED
S9(n)V9(p)	9	COMP-3	DECIMAL n+p,p SIGNED

For IDMS and DMS databases, the CODASYL format is identical to the VA Pac format.

```
                      ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806

DATA ELEMENT CODE    1 DUEDAT

NAME...............: 2 ORDER DUE DATE
TYPE...............: 3 R
                     3
INPUT FORMAT.......: 5 X(8)                                  LENGTH...:     8
INTERNAL FORMAT....: 6 X(8)                   USAGE : 7 D    LENGTH...:     8
OUTPUT FORMAT......: 8 X(8)                        Z: 9      LENGTH...:     8

EXPLICIT KEYWORDS..: 10

PARENT ELEMENT.....: 11




UPDATED BY.........:            ON:             AT:   :  :      LIB:
SESSION NUMBER.....: 0806       LIBRARY......: GCC    LOCK....:

O: C1 CH: E duedat                   ACTION:
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	6		DATA ELEMENT CODE (REQUIRED)
			Enter the mnemonic code which references the Data Element independently of any Data Structure, Report or Screen to which the Data Element might belong.
			There is no need to include a Report, Screen or Segment code in the Data Element code since the System does it automatically.
			This code consists of alphabetic or numeric characters only.
			Some Data Element codes are reserved by the System for use in Data Structures, Reports or Screens and cannot be defined in the Specifications Dictionary:
		'SUITE'	Prohibited. This code is reserved for the System for program generation.
		'FILLER'	Data Element that is used for the alignment of fields.
			Options of the BSD Function:
			Error Verification fields on transaction files:

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		'ENPR' 'GRPR' 'ERUT'	Used for Data Element error verification. Used for Segment error verification. Used for user defined errors.
			For more information see DATA ELEMENT CODE on the Segment Call of Elements.
			For Reports:
		'LIGNE'	Reserved for the placement and alignment of the layout line. It is used only for a '00' structure.
		'LSKP'	Reserved usage only in the '00' Report Structure. See STRUCTURE NUMBER on the Report Call of Elements.
		'SAUT'	Reserved usage. This code is the counterpart of LSKP and used with the French version of the System.
			Options of the OLSD and Pacbench C/S (TUI Client) Functions:
		'ERMSG'	Data Element for the placement of the error message.
		'LIERR'	Reserved usage. This code is the counterpart of ERMSG and used with the French version of the System.
		'PFKEY'	Used to represent the programmable function keys.
		'*PASWD'	(IMS only): Used for passwords on a specific screen.
			For more information see DATA ELEMENT CODE OR SCREEN CODE TO CALL on the Call of Elements.
2	36		NAME OF DATA ELEMENT (REQUIRED IN CREAT)
			This name should be as explicit as possible. Words used here become implicit keywords (subject to limitations specified in the Character-Mode User Interface Guide, chapter 'Search for Instances', subchapter 'Searching by Keywords').
			This name appears in documentation and in Volumes each time the Data Element is used. It is also possible to list Data Elements sorted by name.
			In IMS: Use uppercase.
3	1		TYPE
		'P'	Property: Elementary piece of information defined at the conceptual level. Note: the FORMAT is optional.
		'R'	Real Data Element (Default value): elementary piece of information, defined at the Specifications Dictionary level.
			D.B.D. function: CODASYL elementary data, Relational column.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		'A'	ALIAS Data Element: This value is used in conjunction with the 'A*' value in the DATA STRUCTURE CODE IN GENER. DESCR. field with the 'DATA' PIA, causes the NAME OF DATA ELEMENT to be generated, rather than the standard element name.
		'L'	Large Object Data Element
		'U'	Unicode-type Data Element. Note: the USAGE must be 'N' (default), 'X' or '1'.
4	10		INPUT FORMAT
			Not used with the DBD function.
5	10		Internal format
			Format normally used in system files (permanent, database and temporary files) and in screen input fields.
			Like the INPUT FORMAT, the INTERNAL FORMAT will be automatically used in the data Segment descriptions.
			For batch Programs, you may select the format type on the Program Call of Data Structures (-CD) screen.
			It is also used (with the necessary transformations) in screen descriptions (input fields). (Refer to screen description in the 'On-Line Systems Development' Manual and 'Pacbench C/S: Business Logic and TUI Clients' (chapter 'TUI Clients')).
			The internal format must be coded like a COBOL picture (without print characters).
			Note: for 'Unicode'-type Data Elements ('U' type), you must indicate 'N(n)' or a signed or unsigned numeric format.
			The 'INTERNAL USAGE' clause is associated with this format.
			Note: if 'Unicode'-type Data Elements have a signed numeric internal format, their internal usage must be 'X' or '1'.
			Data Elements that represent a date can be assigned a symbolic format:
			Display type formats (input):
		D	Without century (DDMMYY or MMDDYY).
		C	With century (DDMMCCYY or MMDDCCYY).
			Internal type formats:
		I	Without century (YYMMDD).

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		S	With century (CCYYMMDD).
			Extended type formats (output) (with slashes):
		E	Without century (DD/MM/YY or MM/DD/YY).
		M	With century (DD/MM/CCYY or MM/DD/CCYY).
		G	Gregorian format (CCYY-MM-DD).
		T	TIME format (HH:MM:SS).
		TS	TIMESTAMP format
			METHODOLOGY function: This field may be left blank for a property.
			For the formats which include a separator (E, G, M and T), you can specify, after the character which represents the format, a separator if you do not want to use the separator included by default in the format (For example, A 'G/' format will generate CCYY/MM/DD instead of CCYY-MM-DD, which is the default Gregorian format).
			For details on the use of the formats with the various types of database blocks, see the summary tables in chapter "Columns: Data Elements" of the "Relational SQL Database Description" Manual.
6	1		INTERNAL USAGE
			Corresponds to the COBOL 'USAGE' clause.
		'D'	DISPLAY (default option), all hardware. Required for data elements indicating dates.
		'C'	COMPUTATIONAL (binary), IBM or equivalent; BINARY, IBM and COBOL II variant.
		'R'	COMPUTATIONAL SYNCHRONIZED RIGHT, IBM or equivalent; This value is preferable to 'C' when binary data is aligned on even addresses, since corresponding COBOL statements are more efficient.
		'N'	COMPUTATIONAL-4 aligned on a half-byte. You must add the complement if the length is uneven.
			or NATIONAL (default usage) for 'Unicode'-type Data Elements ('U' type).
		'P'	COMPUTATIONAL-1 GCOS8.
		'Q'	COMPUTATIONAL GCOS8.
		'F'	COMPUTATIONAL-1 IBM or equivalent. COMPUTATIONAL-9 BULL GCOS7. COMPUTATIONAL-11 GCOS8. Relational DBD : floating point, simple precision.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		'T'	COMPUTATIONAL-3 PACKED SYNC. GCOS8.
		'X'	DISPLAY SIGN IS TRAILING SEPARATE CHARACTER.
			or NATIONAL SIGN IS TRAILING SEPARATE CHARACTER for 'Unicode'-type Data Elements ('U' type).
		'G'	COMPUTATIONAL SYNCHRONIZED RIGHT ICL 2900 COMPUTATIONAL-5 MICROFOCUS.
		'7'	COMPUTATIONAL-5 ICL 2900.
		'O'	COMPUTATIONAL-4 UNISYS 2200
		'U'	COMPUTATIONAL-1 UNISYS 2200.
		'W'	COMPUTATIONAL-2 UNISYS 2200. COMPUTATIONAL-12 GCOS8. RELATIONAL DBD : floating point, double precision.
		'H'	COMPUTATIONAL UNISYS 2200. BINARY UNISYS 2200 (COBOL 85)
		'8'	COMPUTATIONAL BULL 66 GCOS8.
		'9'	COMPUTATIONAL-3 GCOS7 and GCOS8.
		'J'	COMPUTATIONAL-6 GCOS8. REAL UNISYS-A.
		'Y'	DB-KEY GCOS8. POINTER IBM and MICROFOCUS.
		'I'	DISPLAY-1 Unisys 2200
		'5'	COMPUTATIONAL-1 GCOS7 GCOS8
		'6'	COMPUTATIONAL-2 GCOS7 GCOS8
		'3'	COMPUTATIONAL-3 IBM or equivalent. COMPUTATIONAL GCOS7 PACKED-DECIMAL UNISYS 2200 (COBOL 85)
		'0'	COMPUTATIONAL-7 GCOS8
		'1'	DISPLAY SIGN LEADING SEPARATE - UNISYS 2200, GCOS8, IBM, TANDEM, GCOS7.
			or NATIONAL SIGN IS LEADING SEPARATE CHARACTER for 'Unicode'-type Data Elements ('U' type).
		'2'	DISPLAY-2 GCOS8 = DISPLAY, fields are compared in accordance with the "commercial collating sequence" and not in accordance with the standard BULL sequence.
		'Z'	In batch mode only: this option, which is only used with an output format, allows for the generation of a 'BLANK WHEN ZERO' clause with the Batch D.S. function.
			METHODOLOGY function: This field may be left blank for a property.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
7	27		OUTPUT FORMAT
			Not used by the DBD function.
8	1		BLANK WHEN ZERO CLAUSE
			This field is not used when defining a data element used to generate a CODASYL elementary data element or a relational column.
9	55		EXPLICIT KEYWORDS
			This field allows you to enter additional (explicit) keywords. By default, keywords are generated from the instance's name (implicit keywords).
			Keywords must be separated by at least one space. Keywords have a maximum length of 13 characters which must be alphanumeric. However, '=' and '*' are reserved for special usage and are therefore ignored in keywords.
			Keywords are not case-sensitive: uppercase and lower-case letters are equivalent.
			NOTE: Accented and special characters can be declared as equivalent to an internal value in order to optimize the search of instances by keywords (Administrator workbench, 'Window' menu, 'Parameters browser' choice, in 'Special Characters' tab).
			A maximum of ten explicit keywords can be assigned to one entity. For more details, refer to the 'Character Mode User Interface' guide, chapter 'Search for Instances', subchapter 'Searching by Keywords'.
10	6		PARENT ELEMENT CODE
			Allows Data Elements sharing the same characteristics to be defined under different codes.
			If a parent Data Element is indicated, the Data Element takes on the characteristics of the parent by default. These can be modified at the child level.
			The parent Data Element must have been defined previously.

Data Element Description (-D)

DATA ELEMENT DESCRIPTION

A CODASYL elementary data is comparable to a VA Pac Data Element and is described via the Data Element Description (-D) screen.

GENERAL CHARACTERISTICS

This screen is used to describe a data element. It will assign an explanatory text, values or range of values to a data element. However, its use within the CODASYL DBD function is purely documentary.

PREREQUISITE

The data element must have been previously defined.

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806

 ELEMENT DESCRIPTION         1 DUEDAT   ORDER DUE DATE
2   3   4 5     6      7
A LIN : T S VALUE      SIGNIFICANCE - DESCRIPTION
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: E duedat D
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	6		DATA ELEMENT CODE (REQUIRED)
			This is a mnemonic code which references the data element independently of any data structure, report or screen to which it may belong.
2	1		ACTION CODE (REQUIRED)
		'C'	Creation of the line
		M	Modification of the line
		D or 'A'	Deletion of the line
		T	Transfer of the line
		B	Beginning of multiple deletion
		G	Multiple transfer
		?	Request for HELP documentation
		E or '-'	Inhibit implicit update
		X	Implicit update without upper/lowercase transformation.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
3	3		Line number
			Numeric. You are advised to begin with line number '100' and then number them in intervals of 20. This facilitates subsequent line insertions, as necessary.
			This field is alphanumeric if you generate a customized SQL access. In this case, you can enter letters in the 'LIN' field. You can then create more than the '1000' lines initially available.
4	1		Type of line
		'blank'	Value and/or description line.
			With a blank line type, descriptive text is assigned to the Data Element. This text includes all possible values and what they mean.
		'D'	DATA ELEMENT DEFAULT VALUE
			One of the values entered can be referenced as the default value. When the value 'D' is entered on the Segment Call of Elements (-CE) screen in the TYPE : VALIDATION, UPDATE, VALUES field, this value is assigned as the initial value.
			SPECIAL TYPES (OLSD, Pacbench C/S, Pactables Functions)
		'P'	DATA ELEMENT PRESENTATION VALUE:
			The sample value is entered in the SIGNIFICANCE - DESCRIPTION field. This value is used when simulating a screen for documentary purposes.
		'L'	DATA ELEMENT SHORT LABEL: Maximum length: 18 characters. NOTE: This length may be shortened by explicitly entering a delimiter (see description of the DATA ELEMENT VALUE field). Default delimiter is '£'.
		'C'	COLUMN LABEL:
			The Column Label is defined on a single line but may use up to three lines. A delimiter in the Column Label indicates a line skip. The Column Label length is that of its longest line. Maximum length = 18 characters, including delimiters. A Column Label must be delimited by at least one delimiter (default = '/'). NOTE: To change the default delimiter, enter its value left-justified in the DATA ELEMENT VALUE field (refer to the description of this field).
		F	CONVERSATIONAL FORMAT: Data Elements used in input and output on-line:

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			For Date Data Elements, enter the one-character symbolic value that represents the desired format, in the DATA ELEMENT VALUE field. The system will display the format in the SIGNIFICANCE - DESCRIPTION field.
			For other Data Elements, enter the desired output format in the SIGNIFICANCE - DESCRIPTION field.
			For numeric Data Elements, a BLANK WHEN ZERO clause may be obtained by entering 'Z' following the format entered in the SIGNIFICANCE - DESCRIPTION field.
			T ... SIGNIFICANCE - DESCRIPTION
			F ... 9(4) Z
		'O'	Declaration of the OPERATION CODE values.
		'I'	Declaration of the ACTION CODE values.
			For values 'O' and 'I', see also the SKIP OR ACTION TYPE field, and refer to the 'On-Line Systems Development' Manual and to the 'Pacbench C/S: Business Logic and TUI Clients' Manual (chapter TUI Client).
			RELATIONAL DATABASES:
		R	This value generates the Data Element's relational name on 18 characters, which is entered in the SIGNIFICANCE - DESCRIPTION field.
			The relational name of a parent Data Element is not carried forward to the child Data Element.
			With TurboImage, this field generates an Item name different from the Data Element code. In this case only the first 16 characters are recognized.
		E	This value allows you to input non standard date format in the SIGNIFICANCE - DESCRIPTION field.
			The format indicated on the Data Element Definition screen must be X(n), with n < 28 (or n < 15 for an ORACLE Database for the automatic management of dates in ON-LINE SYSTEMS DEVELOPMENT and PACBENCH C/S).

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			This format is taken into account: . in the SQL generation to generate DATE for ORACLE, SYBASE and SQL SERVER, and DATETIME for NONSTOP SQL. . in the OLSD and Pacbench C/S generation for the SQL accesses (e.g. by generating the TOCHAR and TODATE functions for ORACLE). Non-standard dates are not not controlled in the generated programs; only standard dates (types C, D, E, G, I, M, S) are controlled. Furthermore, the date operator (AD) cannot be applied to this non-standard format.
			The system controls only the elements of the format, and not the way you put them together (ex: MD will be rejected but MMMMMM and YY-DD/MM will be accepted).
			DATA ELEMENTS COMING FROM REVERSE ENGINEERING:
		S	The COBOL data-name(s) of the associated REVERSE Elements are generated in the SIGNIFICANCE - DESCRIPTION field.
			COBOL COPYBOOKS:
		A	For COPYBOOKS, when a variant Data Element is being used as an alias-type Element, the SIGNIFICANCE - DESCRIPTION field contains the SEGMENT CODE of the Segment in which the parent is called.
			ADABAS DATABASE:
		A	For a Data Element used in an Adabas Database. This enables you to enter the values for the generation of the Format-Buffer.
			LIST OF TURBOIMAGE CLASSES:
		T	Values of the TurboImage class list.
5	2		LINE SKIP
			PURE NUMERIC FIELD
			This line skip is taken into account at the report generation.
			(default option: 01).
			Enter the number of lines to skip, or an absolute line number.
		'0'	Overprinting
6	10		DATA ELEMENT VALUE
			This field is used to specify the authorized values of the data element.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			These values undergo automatic validation if they are entered as either numeric or alphanumeric literals (quotes for the latter),
			If the Data Element takes on a range of values, the range must be described as two values between parentheses and separated by at least a space. Inverted parentheses indicate that the given value is excluded from the range.
			EXAMPLES:
			('E' 'Z') : from E inclusive to Z inclusive,)0 100(: from 0 exclusive to 100 exclusive.
			If the description of a value calls for several lines, the value must be entered on the first line.
			The values assigned to a parent Data Elements are automatically assigned to each one of its child Data Elements.
			OLSD FUNCTION & PACBENCH C/S
		'*9'	Numeric Data Element. This causes a COBOL NOT NUMERIC check to be generated.
		'*B'	Numeric Data Element: LEADING blanks are replaced by zeros.
		'*Z'	Numeric Data Element: ALL blanks are replaced by zeros.
		'*A'	Alphabetic Data Element: checks that all characters are alphabetic.
		'*L'	Alphabetic Data Element: checks that all characters are lowercase alphabetic..
		'*U'	Alphabetic Data Element: checks that all characters are uppercase alphabetic.
			The system displays a decoded representation, in the SIGNIFICANCE - DESCRIPTION field.
			WITH TYPE OF LINE = 'F'
		I	Without century (picture x(6)): YYMMDD
		S	With century (picture x(8)): CCYYMMDD
		D	Without century (picture x(6)): MMDDYY or DDMMYY depending on the value entered in the DATE FORMAT IN GENERATED PROGRAMS field on the Library Def. screen.
		C	With century (picture x(8)): MMDDCCYY or DDMMCCYY depending on the value entered in the DATE FORMAT IN GENERATED PROGRAMS field on the Library Def. screen.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		G	With century (picture x(10)): CCYY-MM-DD in a Gregorian format.
			Date with slashes:
		E	Without century (picture x(8)): MM/DD/YY or DD/MM/YY.
		M	With century (picture x(10)): MM/DD/CCYY or DD/MM/CCYY
			WITH TYPE OF LINE = 'C':
			Enter the delimiter for the end of each Column label line (left-justified). Default value is '/'.
			WITH TYPE OF LINE = 'L':
			Enter the delimiter for the end of the short label, (left-justified). Default value is '£'.
			WITH TYPE OF LINE = 'O' OR 'I':
			When setting the value of the Operation and/or Action Codes via an element on the screen, enter the value that corresponds to the specific operation or action. NOTE: These values correspond to the internal operation and action codes as entered in the SKIP OR ACTION TYPE field.
		T	Time.
		TS	Timestamp.
			Concerning the use of the formats with the various types of database blocks, see the summary tables in chapter "Columns: Data Elements" of the "RELATIONAL/ SQL DATABASE DESCRIPTION" Reference Manual.
7	54		SIGNIFICANCE - DESCRIPTION
			The value entered here depends upon the value of the TYPE OF LINE field.
			With ' ', 'D', 'O', 'I': Enter a descriptive comment (optional).
			With 'L', 'C', or 'P': Enter the label (with delimiters as needed) or a presentation value.
			With 'A': Enter the SEGMENT CODE where the parent Data Element is called.
			With 'R': Enter the Relational Column name.
			With 'E': Enter the non-standard date format with one or several of the following elements:
			. YY : year (YYYY with the century)

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			. MM : month
			. MON : month's 3 first characters
			. DD : day
			. HH : hour 00 to 23 save for SQL Oracle : 00 to 12
			. HHAM or HHPM: hour 00 to 12 + am/pm indicator
			. HH24 : hour (00 to 23) for SQL Oracle
			. MI : minute
			. SS : second
			. FF : millisecond
			. delimiters / . : - blank
			For more information, refer to the DBMS documentation. For NONSTOP SQL: input of start field and end field.
			With 'F' (for Data Elements other than dates): Enter the output format (using standard COBOL syntax). Note: To generate a BLANK WHEN ZERO clause with numeric Data Elements, follow the format with a blank and a 'Z' (Example: 9(4) Z).
		$OFF $ON	When the Data Element Description is to be printed in a Document (with print option EO), the left-justified $OFF command allows you to exclude from this printing the following Description lines. The explicit exclusion end command is $ON, also left- justified, to be entered just after the last line to exclude from printing. WARNING: This exclusion is not effective when the Data Element Description lines appear in a generated online help. Only lines bearing the $OFF and $ON commands are excluded. For more information about the $OFF and $ON commands, refer to the "Personalized Documentation Manager" Manual.

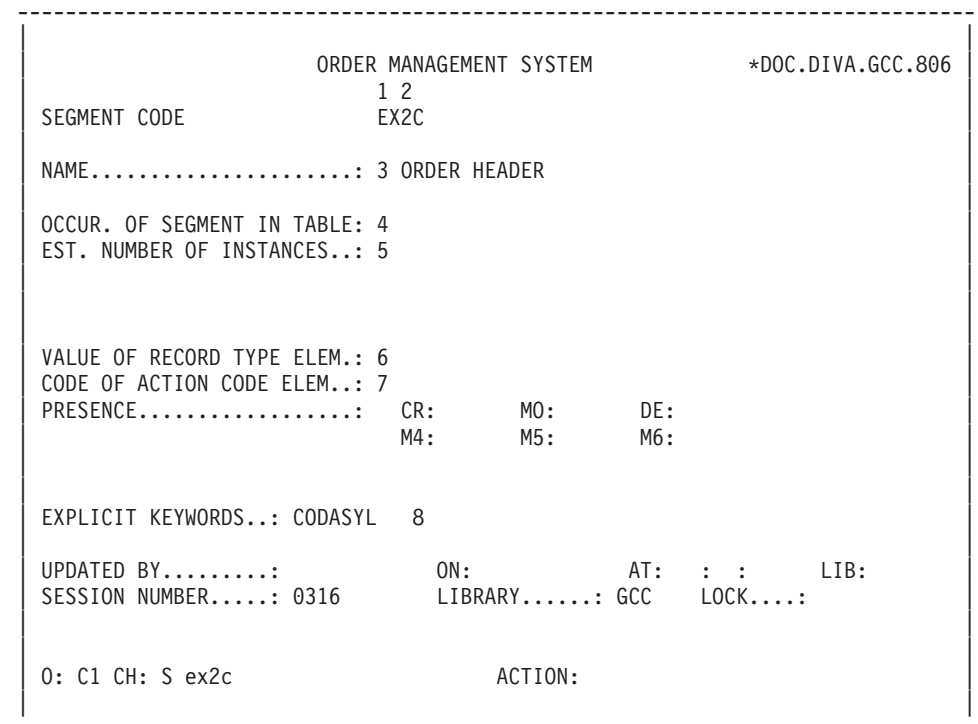
Chapter 4. CODASYL Records

Record Definition (S)

A CODASYL record is comparable to a VA Pac Segment and is defined on the Segment Definition screen.

GENERAL CHARACTERISTICS

A record is defined by a code, a clear name and, if appropriate, the number of occurrences.



NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			DATA STRUCTURE / SEGMENT CODE
1	2		DATA STRUCTURE CODE (REQUIRED)
			This code is made up of two alphanumeric characters. This is a logical code internal to the Database and therefore independent of the names used in Database Blocks and Programs.
2	2		Segment number (REQUIRED)
			The first character must be numeric and the second either numeric or alphabetic. However the second character can be alphabetic only if the first character is other than zero.
		00	For standard files:
			Used to indicate the common part of records in a file, located at the beginning of each record (Default).
			The control break sort keys, the record type and the keys of indexed files are contained in this Segment.
			A file does not necessarily have a common part.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			Records on files with only one type of record should be coded as a '00' Segment.
			With the Pactables function, this value is not allowed.
		01-99	Designates a specific Segment. The common part Data Elements are automatically concatenated with each specific part Segment. Although a data element may not be used twice in the same Segment, it may be used in both the common part and in one or more specific Segments (except data structures used as Tables).
3	36		SEGMENT NAME (REQUIRED IN CREAT)
			This name must be as explicit as possible because it is used in the automatic building of keywords, Words used here become implicit keywords (subject to limitations specified in the Character-Mode User Interface Guide, chapter 'Search for Instances', subchapter 'Searching by Keywords').
4	4	NUMER.	Occurrences of segment in table
			PURE NUMERIC FIELD
			BATCH SYSTEMS DEVELOPMENT:
			This is the amount of space reserved for a Segment in memory (USAGE OF DATA STRUCTURE 'T' or 'X', or RECORD TYPE = 3, or 4.
			For tables (USAGE OF DATA STRUCTURE 'T' or 'X'), the default value at generation time is 100.
			Pactables:
			This field is strictly for documentation purposes.
			PACBENCH C/S:
			The value entered in this field indicates the repetitive read or update capacity of the server which calls the Logical View. This capacity is expressed by a maximum number of repetitions. The Logical View can then be used as a repeated structure.
			NOTE: The use of a Logical View in a card layout does not exclude its use in a row layout. It is therefore strongly recommended to systematically fill in this field. Moreover, the entered value must be high enough to limit the exchanges between the client and the server.
5	9	NUMER.	Estimated number of instances
			PURE NUMERIC FIELD

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			For the Batch Systems Development function, this field is used to specify the estimated number of occurrences for a segment in a database or in a standard file.
			For the METHODOLOGY function, this field is used for activity calculation on the record or set using the Segment (on-line only).
			For the DBD function, this field is used to specify the application number of an entity in a SOCRATE/CLIO Block.
6	10		CODE / VALUE OF RECORD TYPE ELEMENT
			For a Relational Table or View, this field is used to specify the external name between quotes.
			This field is not used to define a CODASYL record.
7	36		CODE OF ACTION CODE ELEMENT
			This field is not used to define a CODASYL record or a Relational Table or View.
8	55		EXPLICIT KEYWORDS
			This field allows you to enter additional (explicit) keywords. By default, keywords are generated from the instance's name (implicit keywords).
			Keywords must be separated by at least one space. Keywords have a maximum length of 13 characters which must be alphanumeric. However, '=' and '*' are reserved for special usage and are therefore ignored in keywords.
			Keywords are not case-sensitive: uppercase and lower-case letters are equivalent.
			NOTE: Accented and special characters can be declared as equivalent to an internal value in order to optimize the search of instances by keywords (Administrator workbench, 'Window' menu, 'Parameters browser' choice, in 'Special Characters' tab).
			A maximum of ten explicit keywords can be assigned to one entity. For more details, refer to the 'Character Mode User Interface' guide, chapter 'Search for Instances', subchapter 'Searching by Keywords'.

Record Description (-CE)

RECORD DESCRIPTION

A CODASYL record is comparable to a VA Pac Segment and is described via the Segment Call of Elements (-CE) screen.

GENERAL CHARACTERISTICS

This description is made by calling all elementary data, i.e. all data elements, into the record and, if applicable, indicating to which sub-schemas they belong.

DESCRIPTION PREREQUISITES

The record, as well as the called data elements, must have been previously defined.

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
                          1 2
SEGMENT CALL OF ELEMENTS EX2C ORDER HEADING
3 4     5      7          8 9   10 11       <----------12-----------> 13
A LIN : ELEM.  INT.FORM.  U OCC GR K CMD456 CONT VALUE/SFC UPD/TRGET DOC LIBR
  100 : ORDHDR                                                        0367
  120 : ENTDAT                    3                                   0367
  122 : MOENTR                                                        0367
  124 : DYENTR                                                        0367
  126 : YRENTR                                                        0367
  140 : DUEDAT                    3                                   0367
  160 : MONDUE                                                        0367
  180 : DAYDUE                                                        0367
  200 : YRDUE                                                         0367
      :
      :
      :
      :
      :
      :
      :
      : NAME    : 6
*** END ***
O: C1 CH: -CE
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			DATA STRUCTURE / SEGMENT CODE
1	2		DATA STRUCTURE CODE (REQUIRED)
			This code is made up of two alphanumeric characters. This is a logical code internal to the Database and therefore independent of the names used in Database Blocks and Programs.
2	2		Segment number (REQUIRED)
			The first character must be numeric and the second either numeric or alphabetic. However the second character can be alphabetic only if the first character is other than zero.
		00	For standard files:
			Used to indicate the common part of records in a file, located at the beginning of each record (Default).
			The control break sort keys, the record type and the keys of indexed files are contained in this Segment.
			A file does not necessarily have a common part.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			Records on files with only one type of record should be coded as a '00' Segment.
			With the Pactables function, this value is not allowed.
		01-99	Designates a specific Segment. The common part Data Elements are automatically concatenated with each specific part Segment. Although a data element may not be used twice in the same Segment, it may be used in both the common part and in one or more specific Segments (except data structures used as Tables).
3	1		ACTION CODE
		'C'	Creation of the line
		M	Modification of the line
		D or 'A'	Deletion of the line
		T	Transfer of the line
		B	Beginning of multiple deletion
		G	Multiple transfer
		?	Request for HELP documentation
		E or '-'	Inhibit implicit update
		X	Implicit update without upper/lowercase transformation.
4	3		Line number
			Numeric. You are advised to begin with line number '100' and then number them in intervals of 20. This facilitates subsequent line insertions, as necessary.
			This field is alphanumeric if you generate a customized SQL access. In this case, you can enter letters in the 'LIN' field. You can then create more than the '1000' lines initially available.
5	6		DATA ELEMENT CODE
			ELEMENTARY DATA ELEMENT DEFINED IN THE DICTIONARY
			The data element automatically assumes the characteristics defined at the Specifications Dictionary level.
			If the data element is used as a group, its format depends on the characteristics of the elementary elements that make up the group.
			If the group is used as a key (sort or access key), the composite format of the elementary elements must be compatible with the format specified for the group.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			DATA ELEMENT NOT DEFINED IN THE DICTIONARY
			The characteristics of data elements not defined in the Specifications Dictionary must be defined at the segment level.
			The data element code 'SUITE' is prohibited, since it is used by VA Pac during program generation.
			The following data element codes have specific uses and therefore may not be used to define a CODASYL database:
			FILLER, ENPR, GRPR and ERUT.
			For more information concerning these reserved codes, please refer to the "DATA ELEMENTS" Chapter in the SPECIFICATIONS DICTIONARY Reference Manual.
6	18		NAME OF DATA ELEMENT
			It is not required for a Data Element which is not defined in the Data Dictionary.
			However, it is optional for a data aggregate or a FILLER.
			NOTE: For on-line entry of Data Elements that are not declared in the Dictionary, this field cannot be used to input more than one Data Element at a time. There is actually only one available field on this screen, whether for input or for display.
			To define an Element at the Segment level :
			- Enter the Element code (and possibly the format) on the -CE, line nnn,
			- On the 'name' line, repeat the line number (nnn), and indicate the name (18 characters maximum),
			- Use the C2 option to view the name and format.
			NOTE: If several undefined Data Elements have been defined in the Dictionary, only the name of the first Data Element will be displayed if the Choice 'CH:S.....CE' is used.
			To view the name of the Data Element CODEL, on line 130, for example, use the choice 'O: C2 CH: Sssss-CE130'. This will display the Data Elements called in the Segment 'ssss' from the line 130 on.
7	10		Data element internal format
			It is required only in the following cases :
			- For an elementary Data Element not defined in the Dictionary (COBOL format),

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			- For a group Data Element that is or belongs to a key; its length must be the sum of the lengths of its elementary Data Elements,
			- For a FILLER-type field.
			It is the internal format; input and output formats will be the same (but with usage Display). It is defined as on a Data Element Definition screen.
8	1		INTERNAL USE
			For Data Elements not defined in the Specifications Dictionary when the INTERNAL FORMAT OF DATA ELEMENT field has been given a value, enter the appropriate USAGE (default : 'D' for DISPLAY).
			For valid values, see the USAGE field on the Data Element Definition Screen.
9	3		NUMBER OF OCCURRENCES
			PURE NUMERIC FIELD
			The use of this field is only appropriate when working with IDMS schemas or sub-schemas.
			This field represents the 'OCCURS' clause at an elementary data element level, or at a group level (maximum of 3 levels).
			This can be changed into an OCCURS DEPENDING ON clause by entering '**' in the 'UPD/TRGET' field, followed by the record code and data element code of the counter.
10	2		NUMBER OF DATA ELEMENTS IN A GROUP
			PSEUDO-NUMERIC FIELD
			A group is defined by the number of elementary data elements it contains.
			Groups may have up to 9 levels but imbedded groups are not allowed.
			CODASYL DBD FUNCTION:
			At generation time, the data elements are taken into account according to their level, and depending on the type of the generated database block (i.e. the environment):
			SCHEMA DM4 (M1):
			Only the elementary data elements are taken into account.
			SCHEMA DM4 (M4):

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			Only group data elements at the first level are taken into account.
			SUB-SCHEMA DM4 (M3):
			All data elements are taken into account.
			SCHEMA IDS2 (I1):
			All data elements are taken into account.
			SUB-SCHEMA IDS2 (I3):
			All data elements are taken into account.
			SCHEMA IDMS (D1):
			All data elements are taken into account.
			SUB-SCHEMA IDMS (D3):
			If the description is different than that of the schema, only the first level data elements are taken into account.
			SUB-SCHEMA IDMS (D4):
			Only the first level data elements are taken into account.
			SCHEMA DMS (S1):
			All data elements are taken into account.
			SUB-SCHEMA DMS (S3):
			If the description is different than that of the schema, only the first level data elements are taken into account.
11	1		KEY INDICATOR FOR ACCESS OR SORT
			For Relational Tables or Views:
		'blank'	Fixed length Column (default value).
		'V'	Variable length Column,
		'W'	For DB2 SQL, SQL/DS, ORACLE, DB2/2 and DB2/6000, generation of a variable length column (VARCHAR).
		'L'	For DB2 SQL, SQL/DS, ORACLE, DB2/2 and DB2/6000, generation of a LONG VARCHAR.
		'C'	For ORACLE V7, generation of a CHAR.
12	30		TYPE AND VALUE FIELDS
			These fields are used to indicate to which sub- schema(s) the data element belongs.
			- 'CONT' FIELD:
			ONLY USED FOR IDMS (D4), AND DMS (S3) SUB-SCHEMAS.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		S	By placing the value 'S' in column 'T' of this field, the user indicates that a data element belongs to one or more sub-schemas.
			EXAMPLE: CONT DATEL1 S
			- 'VALUE/SFC' FIELD:
			The sub-schemas to which the data element belongs are indicated in this field. To indicate that a data element belongs to sub-schema n, enter the letter 'O' in the nth column of the 'VALUE/SFC' field.
			EXAMPLE: CONT VALUE/SFC DATEL1 S O OOO
			In this example, the elementary data element 'DATEL1' belongs to sub-schemas 1, 3, 4 and 5.
13	1		DOCUMENTATION INDICATOR
			This field is used in on-line mode only. It is a read-only field.
		'*'	A Comment, a Generation Element or an Error Message has been assigned to the element called on this line.
			Access to line nnn: -CEnnn, or -Dxnnn for a Database Block (with x = C, H or R depending on the Block type)
			To access the Comment, Generation Element or Error Message assigned to the called element, enter the access to line nnn followed (without blank) by GC (for Comment), GG (for Generation Element) or GE (for Error Message).

Chapter 5. CODASYL Blocks

(Sub-)schema Definition (B)

(SUB-)SCHEMA DEFINITION

A CODASYL schema or sub-schema is comparable to a VA Pac Database Block and is defined on the Database Block Definition screen.

GENERAL CHARACTERISTICS

A database block is defined by a code, a clear name and a type.

TYPE OF DATABASE BLOCK

The user must define the Database Block with a Type that corresponds to both the nature of the schema that he/she wants to generate, and to the operating environment in which he/she is working.

CODASYL-DM4 (CII-HB H66 or DPS8):

″**M1**″**:** Logical schema (DDL), generation of elementary fields,

″**M4**″**:** Logical schema (DDL), generation of group fields only, the format type is always 'UNSPECIFIED',

″**M2**″**:** Physical schema (DMCL),

″**M3**″**:** Sub-schema.

CODASYL-IDS2 (CII-HB H64 or DPS7):

″**I1**″**:** Logical schema (DDL),

″**I2**″**:** Physical schema (DMCL),

″**I3**″**:** Logical sub-schema (SDDL).

CODASYL-IDMS:

″**D0**″**:** Logical schema (DDL) (Release 10.0),

″**D1**″**:** Logical schema (DDL),

″**D2**″**:** Physical schema (DMCL),

″**D3**″**:** Sub-schema,

″**D4**″**:** Sub-schema (Release 5.7).

CODASYL-DMS (UNISYS 1100):

″**S1**″**:** Logical schema (DDL),

″**S3**″**:** Sub-schema.

COMMENTS, GENERATION OPTIONS AND GENERATION ELEMENTS

As with all VA Pac entities, you can assign Comments (-GC) lines to the database blocks. Moreover you can specify Generation Options (-GO) and indicate the physical characteristics of the Block in the Generation Elements (-GG) screen.

It is also possible to define lines of '*' type on the -GC, -GG, -GE, -GO screens. These lines are considered as comments.

Additionally, for certain types of database blocks, virtual lines can be automatically generated by VA Pac on the -GG screen.

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806

BLOCK CODE............:    EXS1M3

NAME..................: 2 SUB-SCHEMA 2 DM4 EXAMPLE
TYPE..................: 3 M3 SUB-SCHEMA
VERSION...............: 4

EXTERNAL NAME.........: 5 S/SCHEMA
EXT. NAME OF SCHEMA...: 6 MANAGER


CONTROL CARDS....... FRONT:  7      BACK:  8


EXPLICIT KEYWORDS..:    9

UPDATED BY.........:             ON:             AT:   :  :      LIB:
SESSION NUMBER.....: 0331        LIBRARY......: GCC    LOCK....:



O: C1 CH: B exssm3                    ACTION:
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	6		BLOCK CODE (REQUIRED)
			One to six alphanumeric characters.
2	36		NAME OF THE BLOCK (REQUIRED IN CREAT)
			This clear name should be as explicit as possible. Words used here become implicit keywords (subject to limitations specified in Subchapter "HOW TO BUILD THE THESAURUS", Chapter "KEYWORDS" in the SPECIFICATIONS DICTIONARY Reference Manual).
3	2		TYPE OF BLOCK (REQUIRED IN CREAT)
			For hierarchical or network databases, it is not required, when creating a database block, to enter the definitive block type. The selection of a network or hierarchical structure is sufficient at this point.
			A specific "physical" type must be entered when generating the Data Description Language (DDL).
		'TR' 'SE'	Tree-like structure (hierarchical block). Group of sets (network block).
			HIERARCHICAL DATABASES - IMS/DL1

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
		'DP'	Physical Database Description.
		'DR'	Physical Database Description (same as 'DP', but only the data elements referenced as access keys in the segment description are generated in the 'FIELD.....' statements).
		'DL'	Logical Database Description.
		'PC'	PCB.
		'IP'	Primary Index.
		'IS'	Secondary Index.
		'PS'	PSB (Assigned at creation. Cannot be modified at a later stage).
			RELATIONAL DATABASES
		Q2	DB2 SQL
		Q3	SQL SERVER
		QB	DB2/2 and DB2/6000
		QC	DATACOM/DB
		QN	NONSTOP SQL
		QP	ORACLE
		QR	RDMS
		QS	SQL/DS
		QT	INTEREL RDBC
		QU	INTEREL RFM
		QY	SYBASE
		DB	DB2 (It is recommended to use the Q2 type)
			NETWORK DATABASES
			.CODASYL-DM4 (GCOS8):
		'M1'	DDL schema, only elementary fields are generated,
		'M4'	DDL schema, only group fields are generated,
		'M2'	DMCL schema,
		'M3'	Sub-schema.
			.CODASYL-IDS2 (GCOS7):
		'I1'	DDL schema,
		'I2'	DMCL schema,
		'I3'	SDDL sub-schema.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			.CODASYL-IDMS:
		'D0'	DDL schema (Release 10.0),
		'D1'	DDL schema,
		'D2'	DMCL schema,
		'D3'	Sub-schema,
		'D4'	Sub-schema (Release 5.7).
			.CODASYL-DMS (UNISYS 1100):
		'S1'	DDL Schema,
		'S3'	Sub-schema.
			DDL TANDEM
		TD	TANDEM
			AS/400 PHYSICAL FILE
		PF	AS/400 Physical file (IBM SYS. 38)
		LF	AS/400 Logical file (IBM SYS. 38).
			DMSII DATABASE
		20	DMSII Database (DASDL)
4	4		VERSION
			This field is not used.
5	8		DATABASE BLOCK EXTERNAL NAME
			Necessary at generation time.
			This is the physical name of the System-generated DDL (Data Description Language) module.
			To obtain a list of blocks sorted by this external name, enter 'LEB' in the CHOICE field.
			For TurboImage, only the first six characters are processed.
6	8		EXTERNAL NAME OF THE SCHEMA
			This field is only used for SE-type blocks (Group of Sets) and for CODASYL Blocks. Otherwise, it is not displayed.
			This is necessary at generation time if the block is a SUB-SCHEMA or a DMCL.
			This is the physical name of the schema to which the given block is attached.
			This field is not used if the block is a schema.
7	1		CONTROL CARDS IN FRONT OF BLOCK

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			Necessary at generation time.
			Enter the one-character code that identifies the job control card to be inserted before the generated block.
8	1		CONTROL CARDS IN BACK OF BLOCK
			Necessary at generation time.
			Enter the one-character code that identifies the job control card to be inserted after the generated block.
9	55		EXPLICIT KEYWORDS
			This field allows you to enter additional (explicit) keywords. By default, keywords are generated from the instance's name (implicit keywords).
			Keywords must be separated by at least one space. Keywords have a maximum length of 13 characters which must be alphanumeric. However, '=' and '*' are reserved for special usage and are therefore ignored in keywords.
			Keywords are not case-sensitive: uppercase and lower-case letters are equivalent.
			NOTE: Accented and special characters can be declared as equivalent to an internal value in order to optimize the search of instances by keywords (Administrator workbench, 'Window' menu, 'Parameters browser' choice, in 'Special Characters' tab).
			A maximum of ten explicit keywords can be assigned to one entity. For more details, refer to the 'Character Mode User Interface' guide, chapter 'Search for Instances', subchapter 'Searching by Keywords'.

(Sub-)schema Description (-DC)

(SUB-)SCHEMA DESCRIPTION

A schema or sub-schema is comparable to a database block and is described on the Database Block Description (-DC) screen.

GENERAL CHARACTERISTICS

The description of a schema or sub-schema involves describing the different database blocks.

On the '-DC' screen, the user declares the areas, calls the records and distributes them within the areas, calls the sets and describes them (code, clear name, parent and child segments).

When generating the CODASYL source, the description of the schema must be complete.

PREREQUISITES

The database blocks, as well as all called entities, must have been previously defined.

NOTE

By default, a record is mono-area. If it is multi-area, replace its description on the -GG screen.

COMMENTS AND GENERATION ELEMENTS

As with all the VA Pac entities, the user may assign Comments (-GC) lines to the description of the schema or sub-schema, or Generation Elements (-GG).

It is also possible to define lines of '*' type on the -GC, -GG, -GE, -GO screens. These lines are considered as comments.

Additionally, virtual lines are automatically generated by VA Pac on the -GG screen.

If a -GC or -GG line has been associated with a description line (-DCnnnGC or -DCnnnGG), on the '-DC' screen an '*' will appear in front of the NUMBER OF OCCURRENCES OF SETS field ('OCC') of the given description line.

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
                                  1
BLOCK DE. CODASYL SUBSCHEMA EXSSM3 SUB-SCHEMA 2 DM4 EXAMPLE
2 3     4 5      6    7    8          9   10
A LIN : T AREA  OWNER MEM  MODEL      OCC NAME OF AREA,
      :   SET    SEG  SEG  CODE           SET OR COMMENT
  100 : A AREA1
  120 : A AREA2
  130 : A AREA3
  140 : A AREA4
  150 : A AREA5
  320 : R AREA1  CL10             *
  340 : R AREA1  CD05
  360 : R AREA1  CD10
  380 : R AREA1  CD20
  400 : R AREA2  FO10
  420 : R AREA3  ME00
  440 : R AREA4  HE00
  460 : R AREA5  EL00
  620 : S SET01  CD05 CD10
  640 : S SET02  CD05 CD20
  650 : * SET02  CD05 CD10
      :

O: C1 CH: -DC
```

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
1	6		BLOCK CODE (REQUIRED)
			One to six alphanumeric characters.
2	1		ACTION CODE
		'C'	Creation of the line
		M	Modification of the line
		D or 'A'	Deletion of the line
		T	Transfer of the line
		B	Beginning of multiple deletion
		G	Multiple transfer
		?	Request for HELP documentation
		E or '-'	Inhibit implicit update
		X	Implicit update without upper/lowercase transformation.
3	3		Line number

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			Numeric. You are advised to begin with line number '100' and then number them in intervals of 20. This facilitates subsequent line insertions, as necessary.
			This field is alphanumeric if you generate a customized SQL access. In this case, you can enter letters in the 'LIN' field. You can then create more than the '1000' lines initially available.
4	1		TYPE (REQUIRED)
		'S'	Set.
		'*'	Continuation of a set.
			For a set with multiple members, the first MEMBER Segment is indicated on an 'S'-type line, the others on '*'-type lines.
		'R'	Record.
		'A'	Area.
5	6		AREA OR SET CODE (REQUIRED)
			CODASYL:
			In this field, the user enters the code which corresponds to the selected description line type.
			Type 'S': Set code (6 characters), Type 'A': Area code (6 characters), Type 'R': Code of area to which the record belongs.
6	4		OWNER SEGMENT CODE
			With TYPE = 'A': Not used.
			With TYPE = 'R': Enter the code of the segment.
			With TYPE = 'S': Enter the parent segment code (OWNER).
7	4		MEMBER SEGMENT CODE
			With TYPE = 'S' , enter the child segment code (MEMBER).
8	6		MODEL RELATIONSHIP CODE
			SCHEMA
			Used only with TYPE = 'S'.
			With the Methodology function only:
			Enter the Relationship code from which the set is derived. VA Pac will automatically create a cross-reference for these relationships.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			NOTE: The relationships are described via the Methodology Function.
			SUB-SCHEMA
			Only used for IDMS ('D3', 'D4' types), DM4 ('M3' type) and DMS ('S3' type) sub-schemas.
			for 'R'-type lines :
			It is possible to change the description of the selected record. The user must indicate the code of the segment redefining the selected segment, as follows : '=FFnn'.
			EXAMPLE:
			T AREA OWNER MEM METHOD OCC NAME OF AREA, SET SEG SEG CODE SET OR COMMENT R AREA1 FF10 =FF20
			In this example record FF10 is generated with the elements belonging to FF20.
			NOTE: Segment FF20 must have been previously defined and described.
9	5	NUMER.	NUMBER OF OCCURRENCES OF SETS
			PURE NUMERIC FIELD
			Used only with TYPE = 'S':
			This is the average number of occurrences of MEMBER segments that are linked to an occurrence of an OWNER segment. This number is used for Activity Calculation (see the PACMODEL Reference Manual).
10	36		NAME OF AREA, SET, OR COMMENT
			With TYPE = 'S': Set name, With TYPE = 'A': Area name, With TYPE = 'R': Comment.
			SUB-SCHEMA IDMS (D4) OR DMS (S3):
			There are four different ways to select a record sub- set, as illustrated in the following example:
			LIN : T AREA OWNER MEM MODEL OCC NAME OF AREA, SET SEG SEG CODE SET OR COMMENT 001 : R AREA1 FF10 002 : R AREA1 FF10 =FF20 003 : R AREA1 FF10 SS=n 004 : R AREA1 FF10 =FF20 SS=n
			LINE 001: Record FF10 of the sub-schema is made up of all the data elements of Segment FF10.
			LINE 002: Record FF10 of the sub-schema is made up of all the data elements of Segment FF20.

NUM	LEN	CLASS VALUE	DESCRIPTION OF FIELDS AND FILLING MODE
			LINE 003: Record FF10 of the sub-schema is made up of the data elements of Sub-schema n.
			LINE 004: Record FF10 of the sub-schema is made up of the data elements of Sub-schema n of Segment FF20.
			IDS2 (I3) sub-schema:
			It is possible to call an object (area, record, set) without re-describing it, by specifying: INCLUSION.

Chapter 6. Elements Generation & Parameterized Input Aids

Elements Generation (-GG)

The user may dynamically access the lines automatically generated by the system. These are 'Virtual' lines.

They are identified by an '*' in the ACTION CODE and '*VIRT' in the LIB field.

In the Generation Elements lines and PIA's, the user can specify the physical characteristics of the areas and sets (DMCL), including the information related to sort keys and insertion modes.

It is possible to create new lines, or modify or delete the lines generated automatically by the function.

Virtual lines are identified by a LINE NUMBER:

- To create new lines: insert a new line with LINE NUMBER at the desired placement,
- To modify or delete lines: repeat the appropriate LINE NUMBER and enter either a modification or an empty line.

INSERTIONS:

The user must choose line numbers that fall between the numbers assigned for the beginning and ending insertion points.

- Modification of a data element description:
  - The code of the data element to be modified will be indicated on the first line, left-justified on 6 positions and delimited by the '<' and '>' characters,
  - The new description of the data element, up to the next data element, will start on the second line.

```
EXAMPLE:
720 G <DEL1>
730 G     02          FF20_DEL1    TYPE IS CHAR 12.
740 G  ...........
750 G  ...........
755 G <DEL2>
```

```
760 G     02          FF20_DEL2    TYPE IS UNSIGNED
770 G  UNPACKED DECIMAL 8.
780 G  ...........
790 G  ...........
```

The lines to be taken into account by the system during generation must be indicated with TYPE OF LINE = 'G'.

Comment lines not to be takebn into account by the system during generation must be indicated with TYPE OF LINE= '*'.

IMPORTANT NOTE

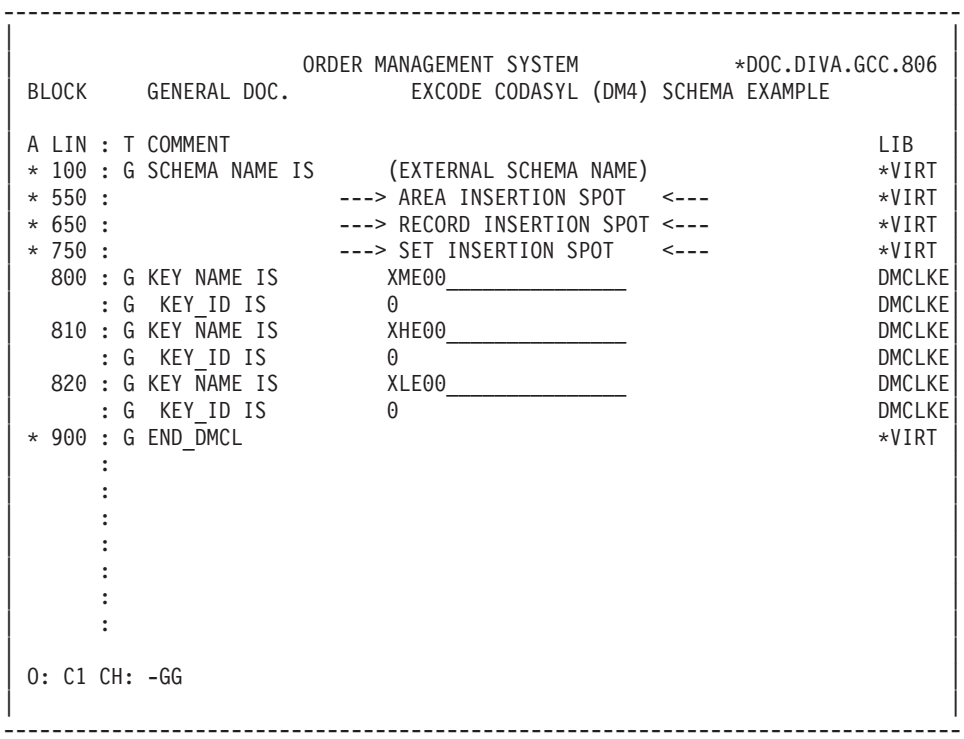
The user should use the first column of the DESCRIPTION field only if it is the beginning of a sentence.

The system identifies the end of a sentence when it comes to the beginning of the next one, i.e., when it locates a character in the first column of the DESCRIPTION field.

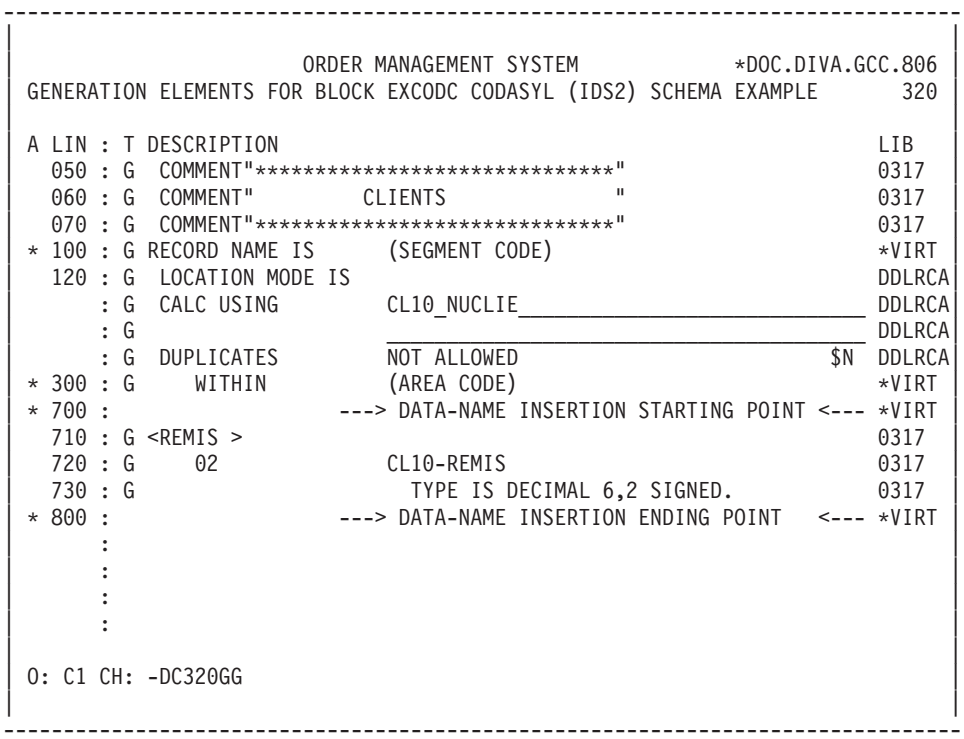
It is recommended that comment lines be inserted after the automatically generated declaration line of the area, record, or set with which they are associated.

Lines must begin in the second position of the DESCRIPTION field.

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK     GENERAL DOC.          EXSSM3 SUB-SCHEMA 2 DM4 EXAMPLE

A LIN : T COMMENT                                                       LIB
* 080 : G TITLE DIVISION                                                *VIRT
* 100 : G SS (EXTERNAL NAME)  WITHIN (EXTERNAL SCHEMA NAME)             *VIRT
* 200 : G MAPPING DIVISION                                              *VIRT
* 300 : G STRUCTURE DIVISION                                            *VIRT
* 500 : G REALM SECTION                                                 *VIRT
* 550 :                   ---> AREA INSERTION SPOT   <---               *VIRT
* 600 : G SET SECTION                                                   *VIRT
* 650 :                   ---> SET INSERTION SPOT    <---               *VIRT
  660 : G KEY SECTION.                                                  0358
  670 : G KD  XME00.                                                    0358
  680 : G KD  XHE00.                                                    0358
  690 : G KD  XLE00.                                                    0358
* 700 : G RECORD SECTION                                                *VIRT
* 750 :                   ---> RECORD INSERTION SPOT <---               *VIRT
* 900 : G END                                                           *VIRT
      :
      :
      :

O: C1 CH: -GG
```


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
BLOCK GENERAL DOC. EXCODE CODASYL (DM4) SCHEMA EXAMPLE
A LIN : T COMMENT LIB
* 100 : G SCHEMA NAME IS (EXTERNAL SCHEMA NAME) *VIRT
* 550 : ---> AREA INSERTION SPOT <--- *VIRT
* 650 : ---> RECORD INSERTION SPOT <--- *VIRT
* 750 : ---> SET INSERTION SPOT <--- *VIRT
800 : G KEY NAME IS XME00 DMCLKE
: G KEY_ID IS 0 DMCLKE
810 : G KEY NAME IS XHE00 DMCLKE
: G KEY_ID IS 0 DMCLKE
820 : G KEY NAME IS XLE00 DMCLKE
: G KEY_ID IS 0 DMCLKE
* 900 : G END_DMCL *VIRT
O: C1 CH: -GG

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXCODE CODASYL (DM4) SCHEMA EXAMPLE      100

A LIN : T COMMENT                                                        LIB
  050 : G  COMMENT"************************"                            0349
  060 : G  COMMENT"      CLIENT ORDER       "                            0349
  070 : G  COMMENT"************************"                            0349
* 100 : G AREA NAME IS        (AREA CODE)                                *VIRT
  200 : G  FILE_CODE IS       "F1"                                       DMCLCA
      : G  ALLOCATE           500___                                     DMCLCA
      : G  PAGE_INTERVAL IS   32_____                                    DMCLCA
      : G  CALC_INTERVAL IS   32_____                                    DMCLCA
      : G  PAGE_SIZE          4096____                                   DMCLCA
      : G  ORGANIZATION IS    INTEGRATED_____                            DMCLCA
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -DC100GG
```


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
GENERATION ELEMENTS FOR BLOCK EXCODC CODASYL (IDS2) SCHEMA EXAMPLE 320
A LIN : T DESCRIPTION LIB
050 : G COMMENT"******************************" 0317
060 : G COMMENT" CLIENTS " 0317
070 : G COMMENT"******************************" 0317
* 100 : G RECORD NAME IS (SEGMENT CODE) *VIRT
120 : G LOCATION MODE IS DDLRCA
: G CALC USING CL10_NUCLIE_____ DDLRCA
: G _____ DDLRCA
: G DUPLICATES NOT ALLOWED $N DDLRCA
* 300 : G WITHIN (AREA CODE) *VIRT
* 700 : ---> DATA-NAME INSERTION STARTING POINT <--- *VIRT
710 : G <REMIS > 0317
720 : G 02 CL10-REMIS 0317
730 : G TYPE IS DECIMAL 6,2 SIGNED. 0317
* 800 : ---> DATA-NAME INSERTION ENDING POINT <--- *VIRT
:
:
:
:
O: C1 CH: -DC320GG

```
                       ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
GENERATION ELEMENTS FOR BLOCK EXCODA CODASYL (IDMS) SCHEMA EXAMPLE     620

A LIN : T DESCRIPTION                                                   LIB
  010 : G                                                               0317
  020 : G         ****************************************              0317
  040 : G         *          SET DESCRIPTIONS             *             0317
  050 : G         ****************************************              0317
  070 : G                                                               0317
* 100 : G         SET NAME IS (SET CODE)                                *VIRT
  110 : G            ***  BAD DEBT CUSTOMERS SET  ***                   0317
  120 : G ORDER NEXT.                                                   0317
  140 : G MODE CHAIN LINKED PRIOR.                                      0317
* 400 : G            OWNER IS (OWNER SEGMENT)                           *VIRT
  420 : G               NEXT DBDKEY POSITION IS 240                     0349
  440 : G                PRIOR DBDKEY POSITION IS 320                   0349
* 700 : G           MEMBER IS (MEMBER SEGMENT)                         *VIRT
  720 : G             MANDATORY AUTOMATIC                               0349
  740 : G           NEXT DBDKEY POSITION IS 410                         0349
  760 : G            PRIOR DBDKEY POSITION IS 630                       0349
  780 : G            LINKED TO OWNER OWNER DBDKEY POSITION IS 240       0349
  800 : G                ASCENDING KEY IS ID                            0349

O: C1 CH: -DC620GG
```

Parameterized Input Aids

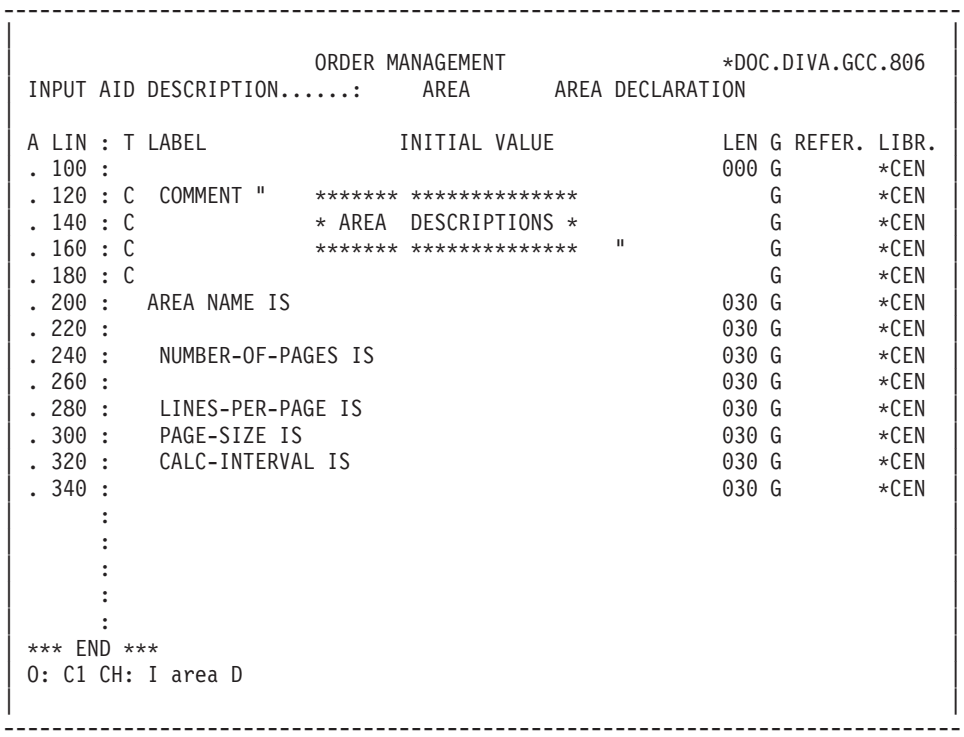
The Parameterized Input Aid (PIA) entity may be used to facilitate entry of General documentation (-G) lines.

The systematic use of PIA's at a site ensures the uniformity of the descriptions, the standardization of documentation and follow-up via the cross-references.

For additional information about PIA's, please refer to the "PARAMETERIZED INPUT AID" Chapter in the VA Pac SPECIFICATIONS DICTIONARY Reference Manual.

Examples of PIA's follow. They concern an IDS2 database and illustrate the use of a PIA to describe areas, records and sets.

NOTE:: The following screens have been reformatted for layout purposes, and therefore do not necessarily exactly correspond to the on-line screens.



```
                         ORDER MANAGEMENT                  *DOC.DIVA.GCC.806
INPUT AID DESCRIPTION......:     AREA       AREA DECLARATION

A LIN : T LABEL                INITIAL VALUE              LEN G REFER. LIBR.
. 100 :                                                   000 G        *CEN
. 120 : C  COMMENT "    ******* **************               G        *CEN
. 140 : C               * AREA  DESCRIPTIONS *               G        *CEN
. 160 : C               ******* **************   "           G        *CEN
. 180 : C                                                    G        *CEN
. 200 :   AREA NAME IS                                    030 G        *CEN
. 220 :                                                   030 G        *CEN
. 240 :    NUMBER-OF-PAGES IS                             030 G        *CEN
. 260 :                                                   030 G        *CEN
. 280 :    LINES-PER-PAGE IS                              030 G        *CEN
. 300 :    PAGE-SIZE IS                                   030 G        *CEN
. 320 :    CALC-INTERVAL IS                               030 G        *CEN
. 340 :                                                   030 G        *CEN
      :
      :
      :
      :
      :
*** END ***
O: C1 CH: I area D
```

```
                        ORDER MANAGEMENT                  *DOC.DIVA.GCC.806
INPUT AID DESCRIPTION......:     MEM      MEMBER DECLARATION

A LIN : T LABEL                INITIAL VALUE              LEN G REFER. LIBR.
. 100 :                                                   000 G        *CEN
. 120 : C  COMMENT "   ******* ****************  "           G        *CEN
. 140 : C   COMMENT "  * MEMBE R DESCRIPTIONS *  "           G        *CEN
. 160 : C   COMMENT "  ******* ****************  "           G        *CEN
. 180 : C                                                     G        *CEN
. 200 :     MEMBER IS                                 030 G        *CEN
. 220 :     INSERTION IS                              030 G        *CEN
. 240 :     RETENTION IS                              030 G        *CEN
. 260 :     SET SELECTION                             030 G        *CEN
. 280 :     THRU                                      030 G        *CEN
. 300 :     OWNER IDENTIFIED                          030 G        *CEN
. 500 : T $A                   AUTOMATIC                           *CEN
. 510 : T $M                   MANUAL                              *CEN
. 520 : T $MY                  MANDATORY                           *CEN
. 530 : T $O                   OPTIONAL                            *CEN
. 540 : T $DB                  DATA-BASE-KEY                       *CEN
. 550 : T $AP                  APPLICATION                         *CEN
. 560 : T $CK                  CALC-KEY                            *CEN
*** END ***
O: C1 CH: I mem D
```

```
                        ORDER MANAGEMENT                  *DOC.DIVA.GCC.806
INPUT AID DESCRIPTION......:     MEMD     MEMBER DECLARATION (DUPL.)

A LIN : T LABEL                INITIAL VALUE              LEN G REFER. LIBR.
. 100 :                                                   000 G        *CEN
. 120 : C COMMENT "    ******* ****************             G        *CEN
. 140 : C              * MEMBE R DESCRIPTIONS *            G        *CEN
. 160 : C              ******* ****************  "          G        *CEN
. 180 : C                                                 G        *CEN
. 200 :   DUPLICATES ARE                                  030 G        *CEN
. 220 :   FOR                                             030 G        *CEN
. 240 :   KEY IS                                          030 G        *CEN
. 260 :                                                   030 G        *CEN
. 280 :   DUPLICATES ARE                                  030 G        *CEN
. 490 : T $DY                  ALLOWED                                 *CEN
. 500 : T $DN                  NOT ALLOWED                             *CEN
. 510 : T $AS                  ASCENDING                               *CEN
. 520 : T $DE                  DESCENDING                              *CEN
. 530 : T $RT                  RECORD-TYPE                             *CEN
. 540 : T $DB                  DATA-BASE-KEY                           *CEN
. 550 : T $F                   FIRST                                   *CEN
. 560 : T $L                   LAST                                    *CEN
. 570 : T $AP                  APPLICATION                             *CEN
. 580 : T $CK                  CALC-KEY                                *CEN
*** END ***
O: C1 CH: I memd D
```

```
                        ORDER MANAGEMENT                 *DOC.DIVA.GCC.806
INPUT AID DESCRIPTION......:     REC      RECORD DECLARATION

A LIN : T LABEL               INITIAL VALUE              LEN G REFER. LIBR.
. 100 :                                                  000 G        *CEN
. 120 : C  COMMENT " ********* ************** "             G        *CEN
. 140 : C  COMMENT " * RECORD  DESCRIPTIONS * "             G        *CEN
. 160 : C  COMMENT " ********* ************** "             G        *CEN
. 180 : C                                                   G        *CEN
. 200 :   RECORD NAME IS                                 030 G        *CEN
. 220 :    LOCATION MODE IS                              030 G        *CEN
. 240 :                                                  030 G        *CEN
. 260 :                                                  030 G        *CEN
. 280 :                                                  030 G        *CEN
. 300 :                                                  000 G        *CEN
. 500 : T $D                  DIRECT                                 *CEN
. 510 : T $CU                 CALC USING                             *CEN
. 520 : T $V                  VIA                                    *CEN
. 530 : T $WA                 ANY AREA AREA-ID IS                    *CEN
. 540 : T $WO                 AREA OF OWNER                          *CEN
. 550 : T $DU                 DUPLICATES NOT ALLOWED                 *CEN
      :
*** END ***
O: C1 CH: I rec D
```

```
                          ORDER MANAGEMENT                  *DOC.DIVA.GCC.806
INPUT AID DESCRIPTION......:     RECD     RECORD DECLARATION (DMCL)

A LIN : T LABEL                INITIAL VALUE              LEN G REFER. LIBR.
. 100 :                                                   000 G        *CEN
. 120 : C  COMMENT " ********* **********************         G        *CEN
. 140 : C            * RECORD  DESCRIPTIONS (DMCL) *         G        *CEN
. 160 : C            ********* ********************** "       G        *CEN
. 180 : C                                                     G        *CEN
. 200 :   RECORD NAME IS                                  030 G        *CEN
. 220 :                                                   030 G        *CEN
. 240 :                                                   030 G        *CEN
. 260 :                                                   030 G        *CEN
. 280 :                                                   030 G        *CEN
. 300 :                                                   030 G        *CEN
. 320 :                                                   030 G        *CEN
. 500 : T $P                   PAGE                                    *CEN
. 510 : T $TH                  THRU                                    *CEN
. 520 : T $PF                  PAGES FROM PAGE                         *CEN
. 530 : T $O                   OPTIMIZE                                *CEN
. 540 : T $H                   HIGH                                    *CEN
. 550 : T $L                   LOW                                     *CEN
      :
*** END ***
O: C1 CH: I recd D
```

```
                        ORDER MANAGEMENT                  *DOC.DIVA.GCC.806
INPUT AID DESCRIPTION......:     SET      SET DECLARATION

A LIN : T LABEL                INITIAL VALUE              LEN G REFER. LIBR.
. 100 :                                                   000 G        *CEN
. 120 : C COMMENT "    ******* ***************  "            G        *CEN
. 140 : C  COMMENT "   *  SET  DESCRIPTIONS  *  "            G        *CEN
. 160 : C  COMMENT "   ******* ***************  "            G        *CEN
. 180 : C                                                    G        *CEN
. 200 :    SET NAME IS                                    030 G        *CEN
. 220 :    OWNER IS                                       030 G        *CEN
. 240 : C  ORDER IS PERMANENT                                G        *CEN
. 260 :    INSERTION IS                                   030 G        *CEN
. 280 :                                                   030 G        *CEN
. 290 :                                                   030 G        *CEN
. 300 :                                                   000          *CEN
. 500 : T $F                   FIRST                                   *CEN
. 510 : T $L                   LAST                                    *CEN
. 520 : T $N                   NEXT                                    *CEN
. 530 : T $P                   PRIOR                                   *CEN
. 540 : T $SW                  SORTED WITHIN RECORD-TYPE               *CEN
. 550 : T $SD                  SORTED DEFINED                          *CEN
. 560 : T $SB                  SORTED BY RECORD-TYPE                   *CEN
. 570 : T $SF                  DUPLICATES FIRST                        *CEN
. 580 : T $SL                  DUPLICATES LAST                         *CEN
. 590 : T $SN                  DUPLICATES NOT ALLOWED                  *CEN
      :
*** END ***
O: C1 CH: I set D
```

Chapter 7. Access Commands

On-line Access Commands

LIST OF DATA ELEMENTS

CHOICE	SCREEN	UPD
LCEaaaaaa	List of Elements by Code (starting with Data Element 'aaaaaa').	NO
LNEaaaaaaaaaaaaa	List of Data Elements sorted by name (starting with name 'aaaaaaaaaaaaa') (case sensitive). The sort is performed on the following Elements: - the first twenty characters of the clear name, - the code of the Data Element. Note: Child Data Elements with no clear name do not appear on the list	NO
LAEaaaaaaaaaaaaa	List of Data Elements sorted by Cobol name (starting with name 'aaaaaaaaaaaaa').	NO
LREaaaaaaaaaaaaaaaaaa	List of Data Elements sorted by relational name (starting with 'aaaaaaaaaaaaaaaaaa').	NO
LFEaaaaaa	List of undefined Data Elements by code (starting with Element 'aaaaaa').	NO
LUEaaaaaa	List of Data Elements for update (starting with Element 'aaaaaa').	YES

DESCRIPTION OF DATA ELEMENT 'aaaaaa'

CHOICE	SCREEN	UPD
Eaaaaaa	Definition of Data Element 'aaaaaa'.	YES
EaaaaaaDbbb	Description of Data Element 'aaaaaa' (starting with line number 'bbb').	YES
EaaaaaaCR	Instances linked to Data Element 'aaaaaa' via User Relations.	YES
EaaaaaaGCbbb	Comments on Data Element 'aaaaaa' (starting with line number 'bbb').	YES

EaaaaaaGEbbb	Error messages on Data Element 'aaaaaa' (starting with line number 'bbb').	YES
EaaaaaaATbbbbbb	Text assigned to the Data Element 'aaaaaa' (starting with text 'bbbbbb').	NO
EaaaaaaX	X-references of Data Element 'aaaaaa' to all entities.	NO
EaaaaaaXTbbbbbb	X-references of Data Element 'aaaaaa' to texts (starting with text 'bbbbbb').	NO
EaaaaaaXMbbbbbb	X-references of Data Element 'aaaaaa' to the Method Entities (starting with Method Entity 'bbbbbb').	NO
EaaaaaaXQbbbbbb	X-references of Data Element 'aaaaaa' to instances through User Relations (starting with User Relation 'bbbbbb').	NO
EaaaaaaXBbbbbbb	X-references of Data Element 'aaaaaa' to Blocks (starting with Block 'bbbbbb').	NO
EaaaaaaXBbbbbbbDCddd	X-references of Data Element 'aaaaaa' to CODASYL-type blocks (starting with Block 'bbbbbb', line number 'ddd')	NO
EaaaaaaXBbbbbbbDHddd	X-references of Data Element 'aaaaaa' to Hierarchical-type Block (starting with Block 'bbbbbb', line number 'ddd')	NO
EaaaaaaXBbbbbbbDRddd	X-references of Data Element 'aaaaaa' to Relational-type Block (starting with Block 'bbbbbb', line number 'ddd')	NO
EaaaaaaXVbbbbbb	X-references of Data Element 'aaaaaa' to Documents (starting with Document 'bbbbbb').	NO
EaaaaaaXObbbbbb	X-references of Data Element 'aaaaaa' to Screens (starting with screen 'bbbbbb').	NO
EaaaaaaXObbbbbbWccddd	X-references of Data Element 'aaaaaa' to Work Areas (-W) of Screen 'bbbbbb' (starting with work area 'cc', line number 'ddd').	NO
EaaaaaaXObbbbbbBccddeee	X-references of Data Element 'aaaaaa' to Beginning Insertions (-B) of Screen 'bbbbbb' (starting with section 'cc', paragraph 'dd', line number 'eee').	NO

EaaaaaaXObbbbbbCPcccccc	X-references of Data Element 'aaaaaa' to Call of P.M.S.(-CP) of Screen 'bbbbbb' (starting with Macro-Structure 'cccccc').	NO
EaaaaaaXObbbbbbPccddeee	X-references of Data Element 'aaaaaa' to Procedural Code (-P) of Screen 'bbbbbb' (starting with function/subfunction 'ccdd', line number ' eee').	NO
EaaaaaaXKbbbb	X-references of Data Element 'aaaaaa' to the key of Relational /SQL Database Blocks (starting with Segment 'bbbb').	NO
EaaaaaaXSbbbb	X-references of Data Element 'aaaaaa' to Segments (starting with Segment 'bbbb').	NO
EaaaaaaXRbbb	X-references of Data Element 'aaaaaa' to Reports (starting with Report 'bbb').	NO
EaaaaaaXRbbbCE	X-references of Data Element 'aaaaaa' to Report Call of Elements (starting with Report 'bbb').	NO
EaaaaaaXPbbbbbb	X-references of Data Element 'aaaaaa' to Programs (starting with Program 'bbbbbb').	NO
EaaaaaaXPbbbbbbBccddeee	X-references of data element 'aaaaaa' to Beginning Insertions (-B) of Program 'bbbbbb' (starting with section 'cc', paragraph 'dd', line number 'eee').	NO
EaaaaaaXPbbbbbbCPcccccc	X-references of Data Element 'aaaaaa' to Call of P.M.S. (-CP) of Program 'bbbbbb' (starting with Macro-Structure 'cccccc').	NO
EaaaaaaXPbbbbbbSCfusfnnn	X-references of Data Element 'aaaaaa' to source code (-SC) of 'reversed' program 'bbbbbb' (starting with function/subfunction 'fusf', line number 'nnn')	NO
EaaaaaaXPbbbbbbWccddd	X-references of Data Element 'aaaaaa' to Work Areas (-W) of Program 'bbbbbb' (starting with Work Area 'cc', line number 'ddd')	NO
EaaaaaaXPbbbbbbPfusfnnn	X-references of Data Element to Procedural Code (-P) of Program 'bbbbbb' (starting with function/ subfunction 'fusf', line number 'nnn').	NO

```
EaaaaaaXPbbbbbb9cccccc  X-references of Data Element      NO
                        to Pure COBOL Source Code (-9)
                        of Program 'bbbbbb' (starting with
                        -9 line 'cccccc').
EaaaaaaXFbbbbbb         X-references of Data Element      NO
                        'aaaaaa' to User Entities
                        (starting with UE 'bbbbbb').
```

NOTE: After the first choice of type 'Eaaaaaa', 'Eaaaaaa' can be replaced with '-'.

All notations between parentheses are optional.

```
LIST OF SEGMENTS
----------------
CHOICE              SCREEN                              UPD
------              ------                              ---
LCSaaaa             List of Segments by code             NO
                    (starting with Segment 'aaaa').
LNSaaaa             List of Segments by name             NO
                    (starting with Segment 'aaaa')
                    (case sensitive).
DESCRIPTION OF SEGMENT 'aaaa'
-----------------------------
CHOICE              SCREEN                              UPD
------              ------                              ---
Saaaa               Definition of Segment 'aaaa'.       YES
SaaaaCR             Instances linked to Segment         YES
                    'aaaa' via User Relations.
SaaaaGCbbb          Comments on Segment 'aaaa'          YES
                    (starting with line number 'bbb').
SaaaaGEbbb          Error messages on Segment 'aaaa'    YES
                    (starting with line number 'bbb').
SaaaaGGbbb          Generation Elements for Segment     YES
                    'aaaa'(starting with line number 'bbb').
SaaaaGObbb          Generation option for Segment 'aaaa' YES
                    (starting with line number 'bbb').
SaaaaATbbbbbb       Text assigned to Segment 'aaaa'      NO
                    (starting with text 'bbbbbb').
SaaaaLSPbbbb        List of Parent Segments for Segment  NO
                    'aaaa' (starting with Parent Segment
                    'bbbb').
SaaaaLSCbbbb        List of Child Segments for Segment   NO
                    'aaaa' (starting with Child Segment
                    'bbbb').
SaaaaX              X-references of Segment 'aaaa'.      NO
SaaaaXSbbbb         X-references of Segment 'aaaa' to    NO
                    segments (starting with Segment 'bbbb').
```

SaaaaXBbbbbbb	X-references of Segment 'aaaa' to Blocks (starting with Block 'bbbbbb').	NO
SaaaaXQbbbbbb	Occurrences linked to Segment 'aaaa' through User Relations (starting with Relation 'bbbbbb').	NO
SaaaaXVbbbbbb	X-references of Segment 'aaaa' to Documents (starting with Document 'bbbbbb').	NO
SaaaaXPbbbbbb	X-references of Segment 'aaaa' to programs (starting with program 'bbbbbb').	NO
SaaaaXPbbbbbbCPcccccc	X-references of Segment 'aaaa' to Call of P.M.S. (-CP) of Program 'bbbbbb' starting with Macro-Structure 'cccccc').	NO
SaaaaXPbbbbbbWcddd	X-references of Segment 'aaaa' to Work Areas (-W) of Program 'bbbbbb' (starting with Work Area 'cc', line number 'ddd').	NO
SaaaaXObbbbbb	X-references of Segment 'aaaa' to Screens (starting with Screen 'bbbbbb').	NO
SaaaaXObbbbbbCPcccccc	X-references of Segment 'aaaa' to Call of P.M.S.(-CP) of Screen 'bbbbbb' (starting with Macro-Structure 'cccccc').	NO
SaaaaXObbbbbbWccnnn	X-references of Segment 'aaaa' to Work Areas (-W) of Screen 'bbbbbb' (starting with Work Area 'cc', line number 'nnn').	NO
SaaaaSSbn	Definition of the sub-schemas or sub-systems of Segment 'aaaa' in the Pactables function (starting with sub-schema 'n' with 'b' = 's', or sub-system 'n' with 'b' = 'y'.	YES
SaaaaCEbbb	Call of Elements/Attributes of Segment 'aaaa'(starting with line number 'bbb').	YES
SaaaaCEbbbGCccc	Comments on the Element/Attribute called on line 'bbb' of Segment 'aaaa' (starting with Comments line number 'ccc").	YES
SaaaaCEbbbGEccc	Error message on the Elem/Attribute called on line 'bbb' of Segment 'aaaa' (starting with line number 'ccc').	YES
SaaaaCEbbbGGccc	Generation Elements on the Element/ Attribute called on line 'bbb' of Segment 'aaaa' (starting with line number 'ccc').	YES

SaaaaDBEbbb	SQL view source for view 'aaaa' (starting with line 'bbb').	YES
SaaaaLALbbb	Level, address and length of Segment 'aaaa' (starting with line 'bbb').	NO
SaaaaDEDbbb	Data Element details of Segment 'aaaa' (starting with line 'bbb'). If this choice is used in C2 option, the relational label replaces that of the Data Element.	NO
SaaaaCNbbbbbb	List of constraints of Segment 'aaaa' integrity (from the block 'bbbbbb')	NO
SaaaaSTA	Statistics on Segment 'aaaa'. A message is displayed if the number of the Data Elements upon generation is greater than 9999.	NO
SaaaaACT	Activity calculation on Segment 'aaaa'.	NO

NOTE: After the first choice of type 'Saaaa', 'Saaaa' can be replaced with '-'.

All notations between parentheses are optional.

LISTS

CHOICE	SCREEN	UPD
LCBaaaaaa	List of Database Blocks by code (starting with block 'aaaaaa').	NO
LNBaaaaaa	List of Database Blocks by name (starting with block 'aaaaaa') (case sensitive).	NO
LTBaabbbbbb	List of Database Blocks by type (starting with type 'aa' and Database Block 'bbbbbb').	NO
LEBaaaaaaaa	List of Database Blocks by external name (starting with name 'aaaaaaaa').	NO

DESCRIPTION OF BLOCK 'aaaaaa'

CHOICE	SCREEN	UPD
Baaaaaa	Definition of Database Block 'aaaaaa'	YES
BaaaaaaCR	Instances linked to Database Block 'aaaaaa' through User Relations.	YES
BaaaaaaGCbbb	Comments for Database Block 'aaaaaa' (starting with line 'bbb').	YES
BaaaaaaGGbbb	Generation Elements for Database Block 'aaaaaa' (starting with line 'bbb').	YES

```
BaaaaaaGObbb       Generation Options for Database       YES
                   Block 'aaaaaa' (starting with line
                   'bbb').

BaaaaaaATbbbbbb    Text Assigned to Database Block        NO
                   'aaaaaa' (starting with text 'bbbbbb').

BaaaaaaX           Cross-references of Database Block     NO
                   'aaaaaa'.

BaaaaaaXBbbbbbb    Cross-references of Database Block     NO
                   'aaaaaa' to PSB's (starting with
                   PSB 'bbbbbb').

BaaaaaaXObbbbbb    Cross-references of Database Block     NO
                   'aaaaaa' to Screens (starting with
                   Screen 'bbbbbb').

BaaaaaaXObbbbbbCScdddd
                   Cross-references of Database Block     NO
                   'aaaaaa' to the Call of Segments
                   of Screen 'bbbbbb'(starting with
                   category 'c' and with Segment 'dddd').
                   Note: 'c' is equal to & for the
                   Screen-top category.

BaaaaaaXObbbbbbWccddd
                   Cross-references of Database Block     NO
                   'aaaaaa' to the Work Areas of Screen
                   'bbbbbb' (starting with Work Area 'cc',
                   line number 'ddd').

BaaaaaaXQbbbbbb    List of occurrences linked to Database NO
                   Block 'aaaaaa' through User-Defined
                   Relation (starting with Relation
                   'bbbbbb').

BaaaaaaXVvvvvvv    Cross-references of Database Block     NO
                   'aaaaaa' to Volumes (starting with
                   Volume 'vvvvvv').

BaaaaaaXPbbbbbb    Cross-references of Database Block     NO
                   'aaaaaa' to Programs (starting with
                   Program 'bbbbbb').

BaaaaaaXPbbbbbbWccddd                                     NO
                   Cross-references of Database Block
                   'aaaaaa' to Work Areas of Program
                   'bbbbbb' (starting with Work Area 'cc',
                   line number 'ddd').

CODASYL (NETWORK) DATABASE BLOCK DESCRIPTION

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

BaaaaaaDCbbb       Description of CODASYL Database Block YES
                   'aaaaaa' (starting with line 'bbb').

BaaaaaaDCbbbGCccc  Comments on CODASYL Database Block    YES
                   'aaaaaa' description line 'bbb'
                   (starting with Comments line 'ccc').
```

```
BaaaaaaDCbbbGGccc  Generation Elements on CODASYL Block  YES
                   'aaaaaa' description line 'bbb'
                   (starting with line 'ccc').
LCAaaaaaa          List of areas by code                 NO
                   (starting with area 'aaaaaa').
LCCaaaaaa          List of CODASYL sets (starting with   NO
                   set 'aaaaaa').
CaaaaaaACT         CODASYL activity on a set             NO
                   (starting with set 'aaaaaa').
```

NOTE: After the first choice of type 'Baaaaaa', 'Baaaaaa' can be replaced with '-'.

All notations between parentheses are optional.

BATCH Access Commands

'L1' is the line code used to define a Database Block.

DATABASE BLOCK DESCRIPTION

BATCH FORM

Batch Form 'L3' is used for the description of a CODASYL, DB2, or TANDEM Database Block.

ACTION CODES

```
.C      = Creation of a line in the library.
.M      = Modification of a line.
.Blank  = Creation or modification of a line, depending
          on its presence or absence in the library.
.X      = Creation or modification with possible use of
          ampersand (&).
.D      = Deletion of a line.
.B      = Deletion of the data base block lines starting
          from an including the indicated line number as
          well as the associated V3 lines.
.R      = End of multiple deletion following this line.
          If no R-type line appears after a B-type
          line, the deletion ends with the last line
          number of the Block.
```

DATA ELEMENT DEFINITION

Batch Form 'C' is used for the definition of a Data Element.

DATA ELEMENT DESCRIPTION

Batch Form 'E' is used for the description of a Data Element.

SEGMENT DEFINITION

Batch Form '2' is used for the definition of a Segment.

SEGMENT DESCRIPTION

Batch Form '3' is used for the description of a Segment.

ACTION CODES

The batch action codes for these entities are identical to the ones used for the Database Block entity.

NOTE CONCERNING DELETION OF A DATA ELEMENT

Deletion of a Data Element (using ACTION CODE 'D') is only possible if the Data Element is not used in screens, reports and Segments and if it has no child Data Element.

It is possible to globally delete (using ACTION CODE 'B') a Data Element and all of its uses in screens, reports or Segments.

When a multiple deletion is done on a parent Data Element, all of its child Data Elements will be deleted along with all of the uses of the parent and child Data Elements.

Generation and/or Printing

The generation and printing of Database Blocks are requested in on-line mode on the

The following commands are available:

LTB: Lists all the Database Blocks of the Libraries of the selected sub-network, sorted by type.

- C1 OPTION: Without keywords,
- C2 OPTION: With explicit keywords.

LCB: Identical to 'LTB' but sorted by code.

LEB: Identical to 'LTB' but sorted by external name.

You can request the list of the Database Blocks which include one or more keyword(s). The corresponding command must be entered with a continuation line, on which the keywords used as selection criteria are indicated (refer to the 'Character Mode User Interface' Guide). The list is sorted by code. The corresponding command is:

LKB: Same as 'LCB' but sorted by keyword. Option 'C2' cannot be used.

DTB: Description of the Database Block whose code is in- dicated in the ENTITY field, or description of all Da- tabase Blocks if the field is not entered.

In the latter case, you can request the descriptions of all the Blocks of a given type, by spe- cifying this type in the print request.

GCB: Generation of a Database Block whose code must be indicated. Same printing option as for DTB.

Chapter 8. DM4 & IDS2 EXAMPLES

Introduction

INTRODUCTION

The purpose of this chapter is to offer the user a global view of the different steps to be followed in order to obtain a database generated in CODASYL language. Information on how VA Pac manages the data is also included.

The example used is not exhaustive, as it does not cover all of the possibilities offered by the function.

The same database is generated in the DM4 and IDS2 environments.

```
1. DM4:
   DDL SCHEMA      (BLOCK TYPE 'M1'):
                   . Screens,
                   . Generated description.
   DDL SCHEMA      (BLOCK TYPE 'M4'):
                   . Screens,
                   . Generated description.
   DMCL SCHEMA     (BLOCK TYPE 'M2'):
                   . Screens,
                   . Generated description.
   SUB-SCHEMA      (BLOCK TYPE 'M3'):
                   . Screens,
                   . Generated description.
2. IDS2:
   DDL SCHEMA      (BLOCK TYPE 'I1'):
                   . Screens,
                   . Generated description.
   DMCL SCHEMA     (BLOCK TYPE 'I2'):
                   . Screens,
                   . Generated description.
   SDDL SUB-SCHEMA (BLOCK TYPE 'I3'):
                   . Screens,
                   . Generated description.
```

The purpose of both examples is to illustrate the use of VA Pac and not the use of DM4 or IDS2.

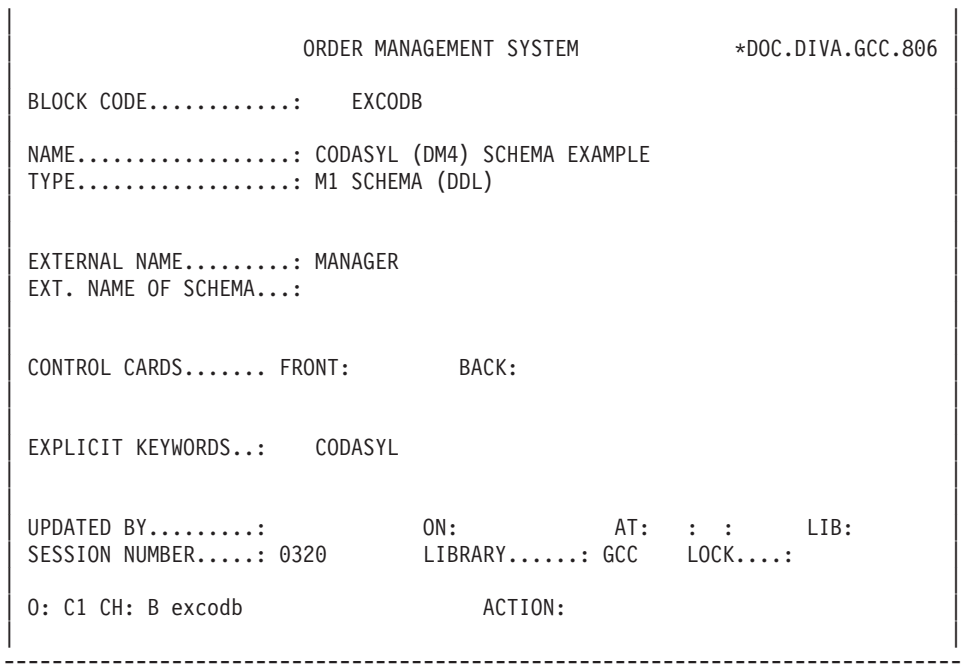
DM4 Schema (DDL) / M1 Type: Screens

DM4 SCHEMA (DDL)

This DM4 schema is generated from an 'M1'-type Database Block.

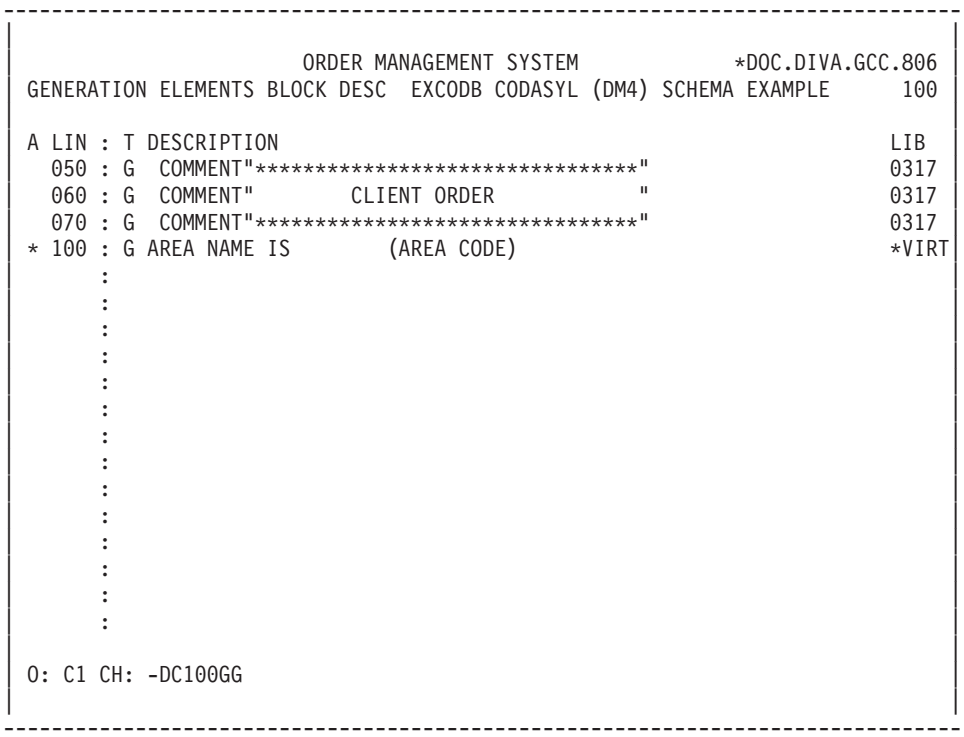
When the description of this type of schema is generated, only the elementary data elements are taken into account.

VA Pac			**CODASYL DM4**
FORMAT		COBOL	FORMAT
X(n)	D	DISPLAY	CHARACTER n
X(n)	5	COMP-1	BINARY 17
X(n)	6	COMP-2	BINARY 35
X(n)	J	COMP-6	BINARY 35
X(n)	Y	DB-KEY	DATA-BASE-KEY
9(n)V9(p)	8	COMP	DECIMAL n+p,p
9(n)V9(p)	9	COMP-3	DECIMAL n+p,p
S9(n)V9(p)	8	COMP	DECIMAL n+p,p SIGNED
S9(n)V9(p)	9	COMP-3	DECIMAL n+p,p SIGNED


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
BLOCK CODE.....: EXCODB
NAME.....: CODASYL (DM4) SCHEMA EXAMPLE
TYPE.....: M1 SCHEMA (DDL)
EXTERNAL NAME.....: MANAGER
EXT. NAME OF SCHEMA...:
CONTROL CARDS..... FRONT: BACK:
EXPLICIT KEYWORDS..: CODASYL
UPDATED BY.....: ON: AT: : : LIB:
SESSION NUMBER.....: 0320 LIBRARY.....: GCC LOCK....:
O: C1 CH: B excodb ACTION:

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
GENERATION ELEMENTS FOR BLOCK    EXCODB CODASYL (DM4) SCHEMA EXAMPLE

A LIN : T DESCRIPTION                                                    LIB
* 100 : G SCHEMA NAME IS      (EXTERNAL SCHEMA NAME)                     *VIRT
* 550 :                   ---> AREA INSERTION SPOT   <---                *VIRT
* 650 :                   ---> RECORD INSERTION SPOT <---                *VIRT
* 750 :                   ---> SET INSERTION SPOT    <---                *VIRT
* 900 : G END_SCHEMA                                                     *VIRT
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC. CODASYL SCHEMA       EXCODB CODASYL (DM4) SCHEMA EXAMPLE

A LIN : T AREA  OWNER MEM  MODEL     OCC NAME OF AREA,
      :   SET    SEG  SEG  CODE          SET OR COMMENT
  100 : A AREA1                    *
  120 : A AREA2                    *
  130 : A AREA3
  140 : A AREA4
  150 : A AREA5
  320 : R AREA1  CL10              *
  340 : R AREA1  CD05              *
  360 : R AREA1  CD10              *
  380 : R AREA1  CD20              *
  400 : R AREA2  FO10              *
  420 : R AREA3  ME00              *
  440 : R AREA4  HE00              *
  460 : R AREA5  EL00              *
  640 : S SET01  CD05 CD10         *       ORDER LINE HEADER
  660 : S SET02  CD05 CD20         *       ORDER PRINT
      :
      :

O: C1 CH: -DC
```


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
GENERATION ELEMENTS BLOCK DESC EXCODB CODASYL (DM4) SCHEMA EXAMPLE 100
A LIN : T DESCRIPTION LIB
050 : G COMMENT"**********" 0317
060 : G COMMENT" CLIENT ORDER " 0317
070 : G COMMENT"**********" 0317
* 100 : G AREA NAME IS (AREA CODE) *VIRT
O: C1 CH: -DC100GG

```
                       ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
GENERATION ELEMENTS BLOCK DESC   EXCODB CODASYL (DM4) SCHEMA EXAMPLE     320

A LIN : T DESCRIPTION                                                    LIB
  050 : G  COMMENT"*****************************"                      0317
  060 : G  COMMENT"         CLIENTS              "                      0317
  070 : G  COMMENT"*****************************"                      0317
* 100 : G RECORD NAME IS      (SEGMENT CODE)                           *VIRT
  120 : G  LOCATION MODE IS                                            DDLRCA
      : G  CALC USING         CL10_NUCLIE_____________________________ DDLRCA
      : G                     ________________________________________ DDLRCA
      : G  DUPLICATES         NOT ALLOWED                         $N   DDLRCA
* 300 : G     WITHIN          (AREA CODE)                              *VIRT
* 700 :                    ---> DATA-NAME INSERTION STARTING POINT <--- *VIRT
  710 : G <REMIS >                                                     0317
  720 : G     02              CL10-REMIS                               0317
  730 : G                       TYPE IS DECIMAL 6,2 SIGNED.            0317
* 800 :                    ---> DATA-NAME INSERTION ENDING POINT   <--- *VIRT
      :
      :
      :
      :

O: C1 CH: -DC320GG
```

```
                      ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
GENERATION ELEMENTS BLOCK DESC  EXCODB CODASYL (DM4) SCHEMA EXAMPLE     640

A LIN : T DESCRIPTION                                                   LIB
  050 : G  COMMENT"*********************************"                 0317
  060 : G  COMMENT"       ORDER LINE HEADER          "                 0317
  070 : G  COMMENT"*********************************"                 0317
* 100 : G SET NAME IS         (SET CODE)                               *VIRT
* 400 : G     OWNER IS        (OWNER SEGMENT)                          *VIRT
  420 : G  SET IS             PRIOR PROCESSABLE__________              DDLOWN
      : G  ORDER IS           PERMANENT_____________________           DDLOWN
      : G  INSERTION IS       FIRST                              $F    DDLOWN
* 700 : G MEMBER IS           (MEMBER SEGMENT)                         *VIRT
  720 : G  AUTOMATIC MANDATORY                                         DDLSET
      : G  LINKED TO          OWNER_________________                   DDLSET
      : G  SET SELECTION IS                                            DDLSET
      : G                 THRU SET01_______________                    DDLSET
      : G  OWNER IDENTIFIED BY APPLICATION_____________                DDLSET
      :
      :
      :
      :

O: C1 CH: -DC640GG
```

DM4 Schema (DDL) / M1 Type: Generated Description

```
SCHEMA NAME IS MANAGER
COMMENT"*****************************"
COMMENT"   CLIENT ORDER              "
COMMENT"*****************************".
AREA NAME IS AREA1
COMMENT"*****************************"
COMMENT"     SUPPLIES                "
COMMENT"*****************************".
AREA NAME IS AREA2.
AREA NAME IS AREA3.
AREA NAME IS AREA4.
AREA NAME IS AREA5
COMMENT"*****************************"
COMMENT"        CLIENTS              "
COMMENT"*****************************".
RECORD NAME IS CL10
LOCATION MODE IS
CALC USING        CL10_NUCLIE
DUPLICATES        NOT ALLOWED
WITHIN AREA1.
  02              CL10_NUCLIE
                  TYPE IS CHARACTER     8.
  02              CL10_RAISO1
```

```
                TYPE IS CHARACTER    25.
  02            CL10_RAISO2
                TYPE IS CHARACTER    25.
  02            CL10_RUE
                TYPE IS CHARACTER    40.
  02            CL10_COPOS
                TYPE IS CHARACTER     5.
  02            CL10_VILLE
                TYPE IS CHARACTER    20.
  02            CL10_MATE
                TYPE IS CHARACTER     8.
  02            CL10_RELEA
                TYPE IS CHARACTER     3.
  02            CL10_LANGU
                TYPE IS CHARACTER     1.
  02            CL10-REMIS
                  TYPE IS DECIMAL 6,2 SIGNED.
  02            CL10_CORRES
                TYPE IS CHARACTER    25.
  02            CL10_RAIS1L
                TYPE IS CHARACTER    25.
  02            CL10_RAIS2L
                TYPE IS CHARACTER    25.
  02            CL10_RUEL
                TYPE IS CHARACTER    40.
  02            CL10_COPOSL
                TYPE IS CHARACTER     5.
  02            CL10_VILLEL
                TYPE IS CHARACTER    20.
  02            CL10_FILLER
                TYPE IS CHARACTER     5
COMMENT"*****************************"
COMMENT"      ORDER HEADER           "
COMMENT"*****************************".
RECORD NAME IS CD05
LOCATION MODE IS
CALC USING        CD05_NUCOM
DUPLICATES        NOT ALLOWED
WITHIN AREA1.
  02            CD05_NUCOM
                TYPE IS CHARACTER     5.
  02            CD05_NUCLIE
                TYPE IS CHARACTER     8.
  02            CD05_DATE
                TYPE IS CHARACTER     6.
  02            CD05_RELEA
                TYPE IS CHARACTER     3.
  02            CD05_MATE
                TYPE IS CHARACTER     8.
  02            CD05_LANGU
                TYPE IS CHARACTER     1.
  02            CD05-REMIS
                  TYPE IS DECIMAL 6,2 SIGNED.
  02            CD05_REFCLI
                TYPE IS CHARACTER    30.
```

```
  02              CD05_RUE
                  TYPE IS CHARACTER    40.
  02              CD05_COPOS
                  TYPE IS CHARACTER     5.
  02              CD05_VILLE
                  TYPE IS CHARACTER    20.
  02              CD05_CORRES
                  TYPE IS CHARACTER    25.
  02              CD05_FILLER
                  TYPE IS CHARACTER     5
COMMENT"******************************"
COMMENT"     ORDER LINE               "
COMMENT"******************************".
RECORD NAME IS CD10
LOCATION MODE IS
VIA               SET01
WITHIN AREA1.
  02              CD10_FOURNI
                  TYPE IS CHARACTER     3.
  02              CD10_QTMAC
                  TYPE IS CHARACTER     2.
  02              CD10_QTMAL
                  TYPE IS CHARACTER     2.
  02              CD10_INFOR
                  TYPE IS CHARACTER    35.
  02              CD10_FILLER
                  TYPE IS CHARACTER     5
COMMENT"******************************"
COMMENT"     PRINT ORDER              "
COMMENT"******************************".
RECORD NAME IS CD20
LOCATION MODE IS
VIA               SET02
WITHIN AREA1.
  02              CD20_EDIT
                  TYPE IS CHARACTER     1.
  02              CD20_FILLER
                  TYPE IS CHARACTER     5
COMMENT"******************************"
COMMENT"       SUPPLIES               "
COMMENT"******************************".
RECORD NAME IS FO10
LOCATION MODE IS
CALC USING        FO10_FOURNI FO10_MATE FO10_RELEA
                  FO10_LANGU FO10_FILLER
DUPLICATES        NOT ALLOWED
WITHIN AREA2.
  02              FO10_FOURNI
                  TYPE IS CHARACTER     3.
  02              FO10_MATE
                  TYPE IS CHARACTER     8.
  02              FO10_RELEA
                  TYPE IS CHARACTER     3.
  02              FO10_LANGU
                  TYPE IS CHARACTER     1.
```

```
  02              FO10_FILLER
                  TYPE IS CHARACTER     5.
  02              FO10_QTMAS
                  TYPE IS CHARACTER     4.
  02              FO10_QTMAM
                  TYPE IS CHARACTER     4.
  02              FO10_LIBFO
                  TYPE IS CHARACTER    20.
  02              FO10_FILL02
                  TYPE IS CHARACTER     2
COMMENT"********************"
COMMENT"***  MESSAGES    ***"
COMMENT"********************".
RECORD NAME IS ME00
LOCATION MODE IS
INDEXED           XME00
WITHIN AREA3
KEY               XME00
                  ASCENDING
                  ME00_COPERS ME00_NUMORD
DUPLICATES        NOT ALLOWED.
  02              ME00_COPERS
                  TYPE IS CHARACTER     5.
  02              ME00_NUMORD
                  TYPE IS CHARACTER     5.
  02              ME00_MESSA
                  TYPE IS CHARACTER    75
COMMENT"*****************************"
COMMENT"***  SCREEN SAVE          ***"
COMMENT"*****************************".
RECORD NAME IS HE00
LOCATION MODE IS
INDEXED           XHE00
WITHIN AREA4
KEY               XHE00
                  ASCENDING
                  HE00_XTERM
DUPLICATES        NOT ALLOWED.
  02              HE00_XTERM
                  TYPE IS CHARACTER    12.
  02              HE00_SCREEN
                  TYPE IS CHARACTER  1920
COMMENT"*****************************"
COMMENT"***  ERROR MESSAGE       ***"
COMMENT"*****************************".
RECORD NAME IS EL00
LOCATION MODE IS
INDEXED           XLE00
WITHIN AREA5
KEY               XLE00
                  ASCENDING
                  EL00_CLELE
DUPLICATES        NOT ALLOWED.
  02              EL00_CLELE
                  TYPE IS CHARACTER    17.
```

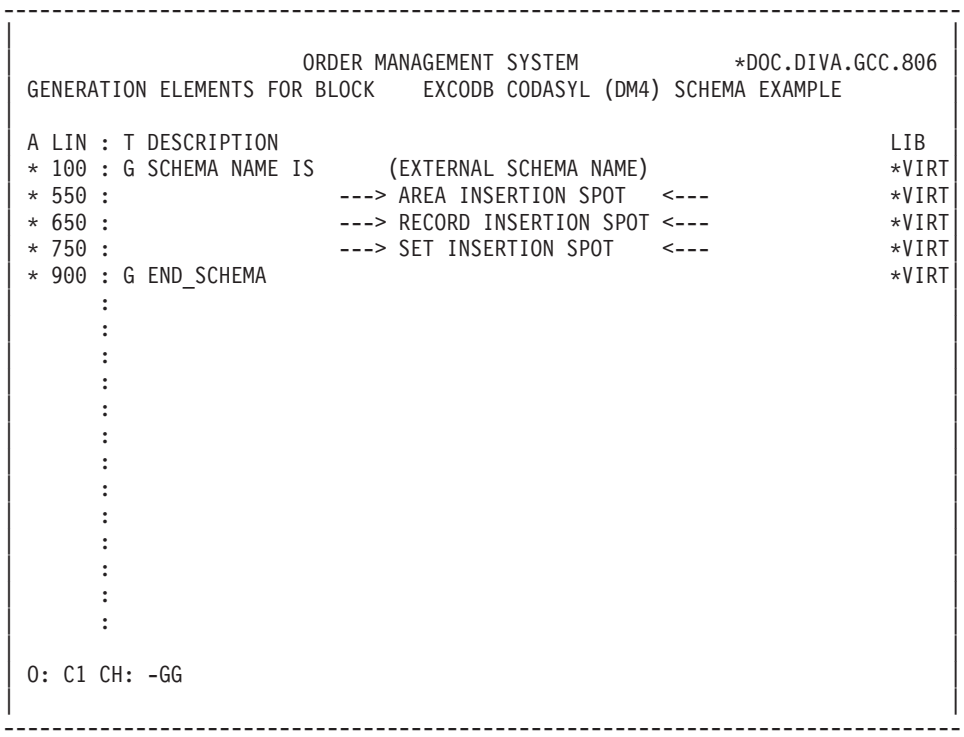
```
  02              EL00_FILLER
                  TYPE IS CHARACTER    73
COMMENT"*****************************"
COMMENT"   ORDER LINE HEADER          "
COMMENT"*****************************".
SET NAME IS SET01
OWNER IS CD05
SET IS            PRIOR PROCESSABLE
ORDER IS          PERMANENT
INSERTION IS      FIRST.
MEMBER IS CD10
AUTOMATIC MANDATORY
LINKED TO         OWNER
SET SELECTION IS
             THRU SET01
OWNER IDENTIFIED BY APPLICATION
COMMENT"*****************************"
COMMENT"*************************"
COMMENT"      PRINT ORDER         "
COMMENT"*************************".
OWNER IS CD05
SET IS            PRIOR PROCESSABLE
ORDER IS          PERMANENT
INSERTION IS      LAST.
MEMBER IS CD20
AUTOMATIC MANDATORY
LINKED TO         OWNER
SET SELECTION IS
             THRU SET02
OWNER IDENTIFIED BY APPLICATION.
END_SCHEMA.
```

DM4 Schema (DDL)/type M4: Screens

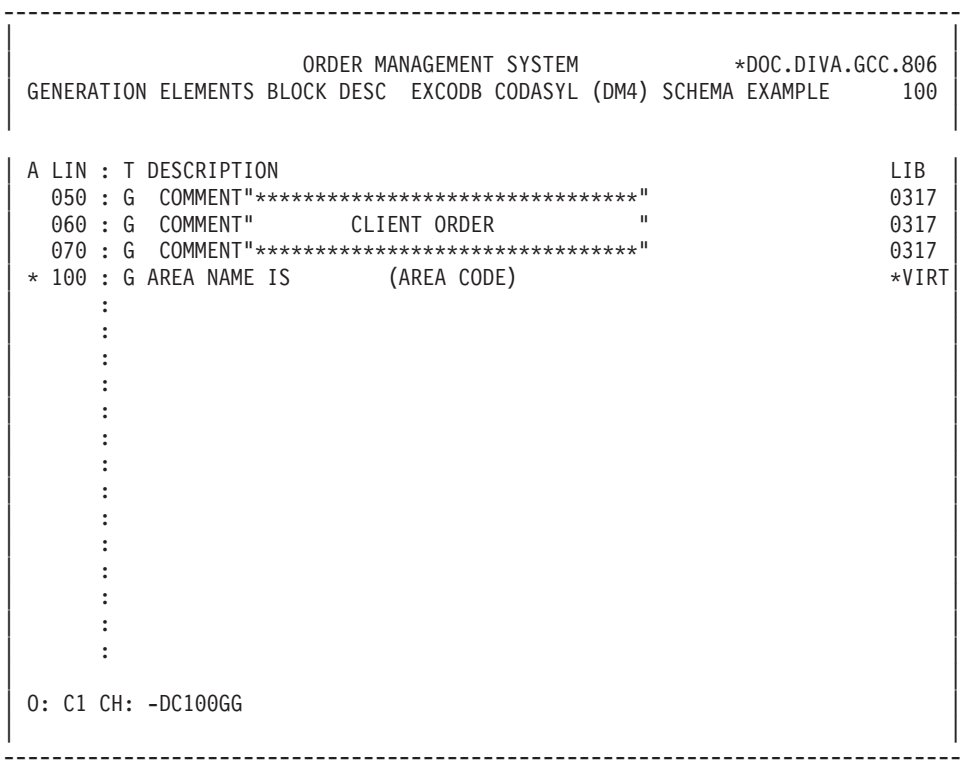
DM4 SCHEMA (DDL)

This DM4 schema is generated from an 'M4'-type Database Block.

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806

BLOCK CODE.............:    EXCODB

NAME...................: CODASYL (DM4) SCHEMA EXAMPLE
TYPE...................: M4 SCHEMA (DDL)


EXTERNAL NAME.........: MANAGER
EXT. NAME OF SCHEMA...:


CONTROL CARDS....... FRONT:         BACK:


EXPLICIT KEYWORDS..:    CODASYL


UPDATED BY.........:             ON:             AT:   :  :      LIB:
SESSION NUMBER.....: 0320        LIBRARY......: GCC    LOCK....:

O: C1 CH: B excodb                    ACTION:
```


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
GENERATION ELEMENTS FOR BLOCK EXCODB CODASYL (DM4) SCHEMA EXAMPLE
A LIN : T DESCRIPTION LIB
* 100 : G SCHEMA NAME IS (EXTERNAL SCHEMA NAME) *VIRT
* 550 : ---> AREA INSERTION SPOT <--- *VIRT
* 650 : ---> RECORD INSERTION SPOT <--- *VIRT
* 750 : ---> SET INSERTION SPOT <--- *VIRT
* 900 : G END_SCHEMA *VIRT
O: C1 CH: -GG

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC. CODASYL SCHEMA       EXCODB CODASYL (DM4) SCHEMA EXAMPLE

A LIN : T AREA  OWNER MEM  MODEL     OCC NAME OF AREA,
      :   SET    SEG  SEG  CODE          SET OR COMMENT
  100 : A AREA1                    *
  120 : A AREA2                    *
  130 : A AREA3
  140 : A AREA4
  150 : A AREA5
  320 : R AREA1  CL10              *
  340 : R AREA1  CD05              *
  360 : R AREA1  CD10              *
  380 : R AREA1  CD20              *
  400 : R AREA2  FO10              *
  420 : R AREA3  ME00              *
  440 : R AREA4  HE00              *
  460 : R AREA5  EL00              *
  640 : S SET01  CD05 CD10         *       ORDER LINE HEADER
  660 : S SET02  CD05 CD20         *       ORDER PRINT
      :
      :

O: C1 CH: -DC
```


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
GENERATION ELEMENTS BLOCK DESC EXCODB CODASYL (DM4) SCHEMA EXAMPLE 100
A LIN : T DESCRIPTION LIB
050 : G COMMENT"**********" 0317
060 : G COMMENT" CLIENT ORDER " 0317
070 : G COMMENT"**********" 0317
* 100 : G AREA NAME IS (AREA CODE) *VIRT
O: C1 CH: -DC100GG

```
                       ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
GENERATION ELEMENTS BLOCK DESC   EXCODB CODASYL (DM4) SCHEMA EXAMPLE     320

A LIN : T DESCRIPTION                                                    LIB
  050 : G  COMMENT"*****************************"                      0317
  060 : G  COMMENT"         CLIENTS              "                      0317
  070 : G  COMMENT"*****************************"                      0317
* 100 : G RECORD NAME IS      (SEGMENT CODE)                           *VIRT
  120 : G  LOCATION MODE IS                                            DDLRCA
      : G  CALC USING         CL10_NUCLIE_____________________________ DDLRCA
      : G                     ________________________________________ DDLRCA
      : G  DUPLICATES         NOT ALLOWED                         $N   DDLRCA
* 300 : G     WITHIN          (AREA CODE)                              *VIRT
* 700 :                    ---> DATA-NAME INSERTION STARTING POINT <--- *VIRT
  710 : G <REMIS >                                                     0317
  720 : G     02              CL10-REMIS                               0317
  730 : G                       TYPE IS DECIMAL 6,2 SIGNED.            0317
* 800 :                    ---> DATA-NAME INSERTION ENDING POINT   <--- *VIRT
      :
      :
      :
      :

O: C1 CH: -DC320GG
```

```
                      ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
GENERATION ELEMENTS BLOCK DESC  EXCODB CODASYL (DM4) SCHEMA EXAMPLE     640

A LIN : T DESCRIPTION                                                   LIB
  050 : G  COMMENT"*********************************"                 0317
  060 : G  COMMENT"       ORDER LINE HEADER          "                 0317
  070 : G  COMMENT"*********************************"                 0317
* 100 : G SET NAME IS         (SET CODE)                               *VIRT
* 400 : G     OWNER IS        (OWNER SEGMENT)                          *VIRT
  420 : G  SET IS             PRIOR PROCESSABLE__________              DDLOWN
      : G  ORDER IS           PERMANENT_____________________           DDLOWN
      : G  INSERTION IS       FIRST                              $F    DDLOWN
* 700 : G MEMBER IS           (MEMBER SEGMENT)                         *VIRT
  720 : G  AUTOMATIC MANDATORY                                         DDLSET
      : G  LINKED TO          OWNER_________________                   DDLSET
      : G  SET SELECTION IS                                            DDLSET
      : G                  THRU SET01_______________                   DDLSET
      : G  OWNER IDENTIFIED BY APPLICATION_____________                DDLSET
      :
      :
      :
      :

O: C1 CH: -DC640GG
```

DM4 Schema (DDL) / M4 Type: Generated Description

```
SCHEMA NAME IS MANAGER.
AREA NAME IS AREA1.
AREA NAME IS AREA2.
AREA NAME IS AREA3.
AREA NAME IS AREA4.
AREA NAME IS AREA5.
RECORD NAME IS CL10
WITHIN AREA1.
  02             CL10_CLECL1
                 TYPE IS UNSPECIFIED      8.
  02             CL10_RAISOC
                 TYPE IS UNSPECIFIED     50.
  02             CL10_RUE
                 TYPE IS UNSPECIFIED     40.
  02             CL10_COPOS
                 TYPE IS UNSPECIFIED      5.
  02             CL10_VILLE
                 TYPE IS UNSPECIFIED     20.
  02             CL10_MATE
                 TYPE IS UNSPECIFIED      8.
  02             CL10_RELEA
                 TYPE IS UNSPECIFIED      3.
  02             CL10_LANGU
```

```
                TYPE IS UNSPECIFIED      1.
  02               CL10_REMIS
                TYPE IS UNSPECIFIED      6.
  02               CL10_CORRES
                TYPE IS UNSPECIFIED     25.
  02               CL10_RAISOL
                TYPE IS UNSPECIFIED     50.
  02               CL10_RUEL
                TYPE IS UNSPECIFIED     40.
  02               CL10_COPOSL
                TYPE IS UNSPECIFIED      5.
  02               CL10_VILLEL
                TYPE IS UNSPECIFIED     20.
  02               CL10_FILLER
                TYPE IS UNSPECIFIED      5.
RECORD NAME IS CD05
WITHIN AREA1.
  02               CD05_CLECD
                TYPE IS UNSPECIFIED      9.
  02               CD05_NUCLIE
                TYPE IS UNSPECIFIED      8.
  02               CD05_DATE
                TYPE IS UNSPECIFIED      6.
  02               CD05_RELEA
                TYPE IS UNSPECIFIED      3.
  02               CD05_MATE
                TYPE IS UNSPECIFIED      8.
  02               CD05_LANGU
                TYPE IS UNSPECIFIED      1.
  02               CD05_REMIS
                TYPE IS UNSPECIFIED      6.
  02               CD05_REFCLI
                TYPE IS UNSPECIFIED     30.
  02               CD05_RUE
                TYPE IS UNSPECIFIED     40.
  02               CD05_COPOS
                TYPE IS UNSPECIFIED      5.
  02               CD05_VILLE
                TYPE IS UNSPECIFIED     20.
  02               CD05_CORRES
                TYPE IS UNSPECIFIED     25.
  02               CD05_FILLER
                TYPE IS UNSPECIFIED      5.
RECORD NAME IS CD10
WITHIN AREA1.
  02               CD10_FOURNI
                TYPE IS UNSPECIFIED      3.
  02               CD10_QTMAC
                TYPE IS UNSPECIFIED      2.
  02               CD10_QTMAL
                TYPE IS UNSPECIFIED      2.
  02               CD10_INFOR
                TYPE IS UNSPECIFIED     35.
  02               CD10_FILLER
                TYPE IS UNSPECIFIED      5.
```

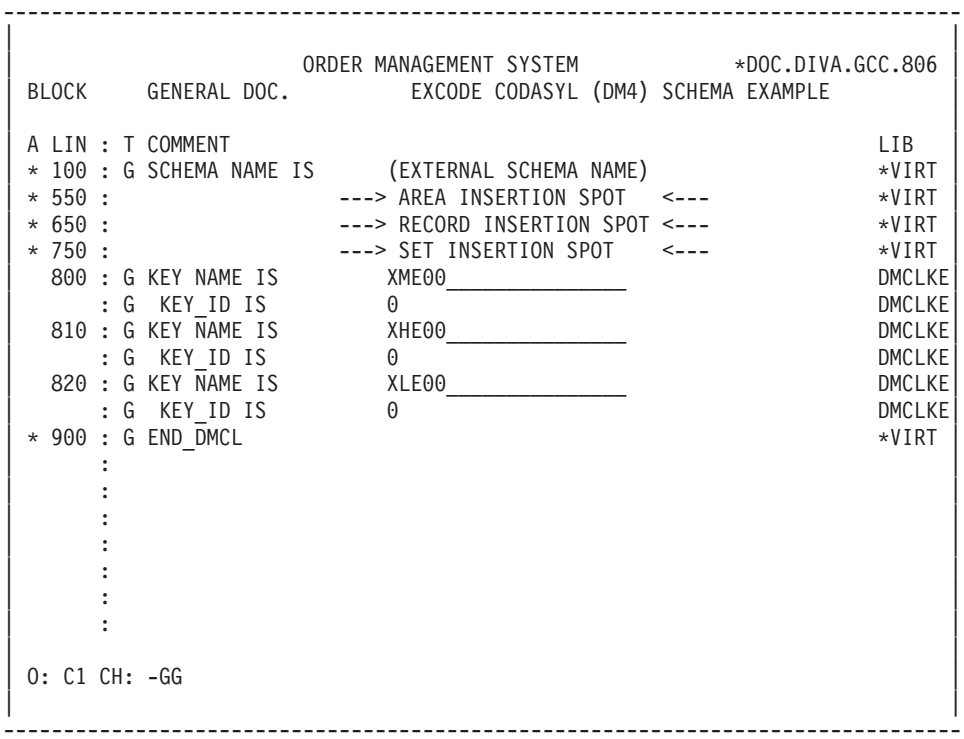
```
RECORD NAME IS CD20
WITHIN AREA1.
  02              CD20_EDIT
                TYPE IS UNSPECIFIED      1.
  02              CD20_FILLER
                TYPE IS UNSPECIFIED      5.
RECORD NAME IS FO10
WITHIN AREA2.
  02              FO10_CLEFO
                TYPE IS UNSPECIFIED     20.
  02              FO10_QTMAS
                TYPE IS UNSPECIFIED      4.
  02              FO10_QTMAM
                TYPE IS UNSPECIFIED      4.
  02              FO10_LIBFO
                TYPE IS UNSPECIFIED     20.
  02              FO10_FILL02
                TYPE IS UNSPECIFIED      2.
RECORD NAME IS ME00
WITHIN AREA3.
  02              ME00_CLEME
                TYPE IS UNSPECIFIED      7.
  02              ME00_MESSA
                TYPE IS UNSPECIFIED     75.
RECORD NAME IS HE00
WITHIN AREA4.
  02              HE00_XTERM
                TYPE IS UNSPECIFIED     12.
  02              HE00_SCREEN
                TYPE IS UNSPECIFIED   1920.
RECORD NAME IS EL00
WITHIN AREA5.
  02              EL00_CLELE
                TYPE IS UNSPECIFIED     17.
  02              EL00_FILLER
                TYPE IS UNSPECIFIED     73.
SET NAME IS SET01
OWNER IS CD05.
MEMBER IS CD10.
SET NAME IS SET02
OWNER IS CD05.
MEMBER IS CD20.
END_SCHEMA.
```

DM4 Schema (DMCL) / M2 Type: Screens

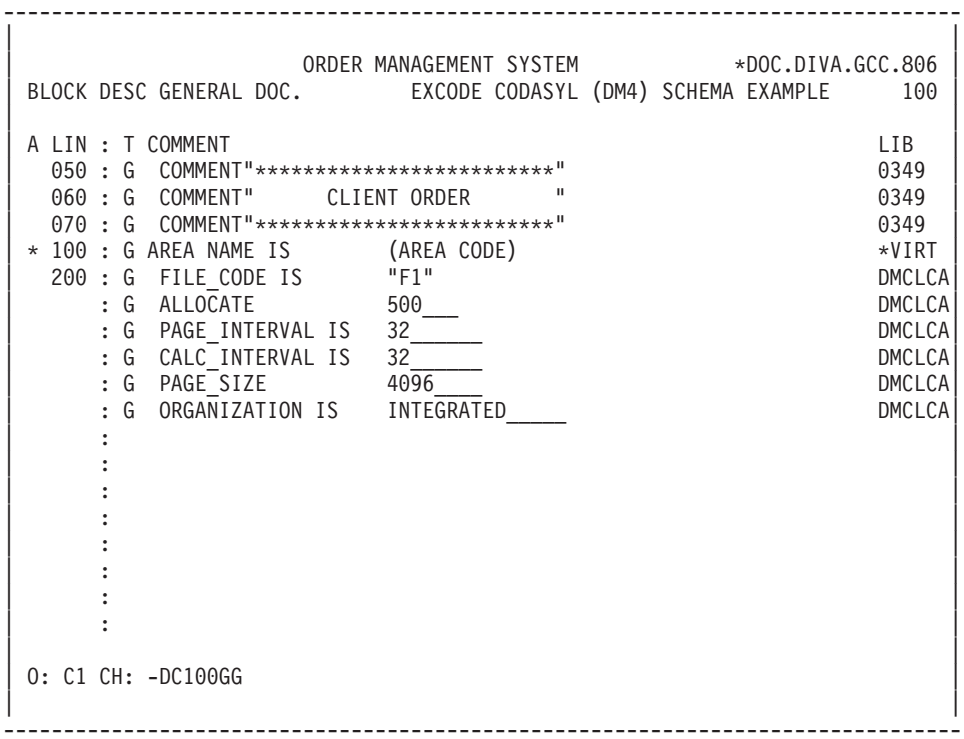
DM4 SCHEMA (DMCL)

The physical description of a DM4 schema is generated from an 'M2'-type Database Block.

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806

BLOCK CODE............:    EXCODE

NAME..................: CODASYL (DM4) SCHEMA EXAMPLE
TYPE..................: M2 SCHEMA (DMCL)


EXTERNAL NAME.........: PRODUCTS
EXT. NAME OF SCHEMA...: MANAGER


CONTROL CARDS....... FRONT:         BACK:


EXPLICIT KEYWORDS..:    CODASYL



UPDATED BY.........:             ON:             AT:   :  :      LIB:
SESSION NUMBER.....: 0331        LIBRARY......: GCC    LOCK....:

O: C1 CH: B excode                    ACTION:
```


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
BLOCK GENERAL DOC. EXCODE CODASYL (DM4) SCHEMA EXAMPLE
A LIN : T COMMENT LIB
* 100 : G SCHEMA NAME IS (EXTERNAL SCHEMA NAME) *VIRT
* 550 : ---> AREA INSERTION SPOT <--- *VIRT
* 650 : ---> RECORD INSERTION SPOT <--- *VIRT
* 750 : ---> SET INSERTION SPOT <--- *VIRT
800 : G KEY NAME IS XME00 DMCLKE
: G KEY_ID IS 0 DMCLKE
810 : G KEY NAME IS XHE00 DMCLKE
: G KEY_ID IS 0 DMCLKE
820 : G KEY NAME IS XLE00 DMCLKE
: G KEY_ID IS 0 DMCLKE
* 900 : G END_DMCL *VIRT
O: C1 CH: -GG

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC. CODASYL DMCL    EXCODE CODASYL (DM4) SCHEMA EXAMPLE

A LIN : T AREA  OWNER MEM  MODEL      OCC NAME OF AREA,
      :   SET    SEG  SEG  CODE          SET OR COMMENT
  100 : A AREA1                    *
  120 : A AREA2                    *
  130 : A AREA3                    *
  140 : A AREA4                    *
  150 : A AREA5                    *
  320 : R AREA1  CL10              *
  340 : R AREA1  CD05
  360 : R AREA1  CD10
  380 : R AREA1  CD20
  400 : R AREA2  FO10
  420 : R AREA3  ME00
  440 : R AREA4  HE00
  460 : R AREA5  EL00
  640 : S SET01  CD05 CD10              ORDER LINE HEADER
  660 : S SET02  CD05 CD20              ORDER PRINT
      :
      :

O: C1 CH: -DC
```


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC. EXCODE CODASYL (DM4) SCHEMA EXAMPLE 100
A LIN : T COMMENT LIB
050 : G COMMENT"**********" 0349
060 : G COMMENT" CLIENT ORDER " 0349
070 : G COMMENT"**********" 0349
* 100 : G AREA NAME IS (AREA CODE) *VIRT
200 : G FILE_CODE IS "F1" DMCLCA
: G ALLOCATE 500___ DMCLCA
: G PAGE_INTERVAL IS 32_____ DMCLCA
: G CALC_INTERVAL IS 32_____ DMCLCA
: G PAGE_SIZE 4096____ DMCLCA
: G ORGANIZATION IS INTEGRATED_____ DMCLCA
O: C1 CH: -DC100GG

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXCODE CODASYL (DM4) SCHEMA EXAMPLE       320

A LIN : T COMMENT                                                          LIB
  050 : G  COMMENT"************************"                             0349
  060 : G  COMMENT"      CLIENTS            "                             0349
  070 : G  COMMENT"************************"                             0349
* 100 : G RECORD NAME IS      (SEGMENT CODE)                             *VIRT
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -DC320GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXCODE CODASYL (DM4) SCHEMA EXAMPLE      640

A LIN : T COMMENT                                                        LIB
* 100 : G SET NAME IS         (SET CODE)                                 *VIRT
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :

O: C1 CH: -DC640GG
```

DM4 Schema (DMCL) / M2 Type: Generated Description

```
SCHEMA NAME IS MANAGER
COMMENT"*************************"
COMMENT"    CLIENT ORDER          "
COMMENT"*************************".
AREA NAME IS AREA1
FILE_CODE IS      "F1"
ALLOCATE          500
PAGE_INTERVAL IS  32
CALC_INTERVAL IS  32
PAGE_SIZE         4096
ORGANIZATION IS   INTEGRATED
COMMENT"*************************"
COMMENT"      SUPPLIES            "
COMMENT"*************************".
AREA NAME IS AREA2
FILE_CODE IS      "F2"
ALLOCATE          500
PAGE_INTERVAL IS  64
CALC_INTERVAL IS  64
PAGE_SIZE         4096
ORGANIZATION IS   INTEGRATED.
AREA NAME IS AREA3
```

```
FILE_CODE IS      "F3"
KEY FILE_CODE IS  "K3"
ALLOCATE          5120
PAGE_INTERVAL IS  512
PAGE_SIZE IS      4096
ORGANIZATION IS   INDEXED.
AREA NAME IS AREA4
FILE_CODE IS      "F4"
KEY FILE_CODE IS  "K4"
ALLOCATE          5120
PAGE_INTERVAL IS  512
PAGE_SIZE IS      4096
ORGANIZATION IS   INDEXED.
AREA NAME IS AREA5
FILE_CODE IS      "F5"
KEY FILE_CODE IS  "K5"
ALLOCATE          14336
PAGE_INTERVAL IS  512
PAGE_SIZE IS      4096
ORGANIZATION IS   INDEXED
COMMENT"************************"
COMMENT"       CLIENTS           "
COMMENT"************************".
RECORD NAME IS CL10.
RECORD NAME IS CD05.
RECORD NAME IS CD10.
RECORD NAME IS CD20.
RECORD NAME IS FO10.
RECORD NAME IS ME00.
RECORD NAME IS HE00.
RECORD NAME IS EL00.
SET NAME IS SET01.
SET NAME IS SET02.
KEY NAME IS       XME00
KEY_ID IS         0.
KEY NAME IS       XHE00
KEY_ID IS         0.
KEY NAME IS       XLE00
KEY_ID IS         0.
END_DMCL.
```

DM4 Sub-schema / M3 Type: Screens

DM4 SUB-SCHEMA

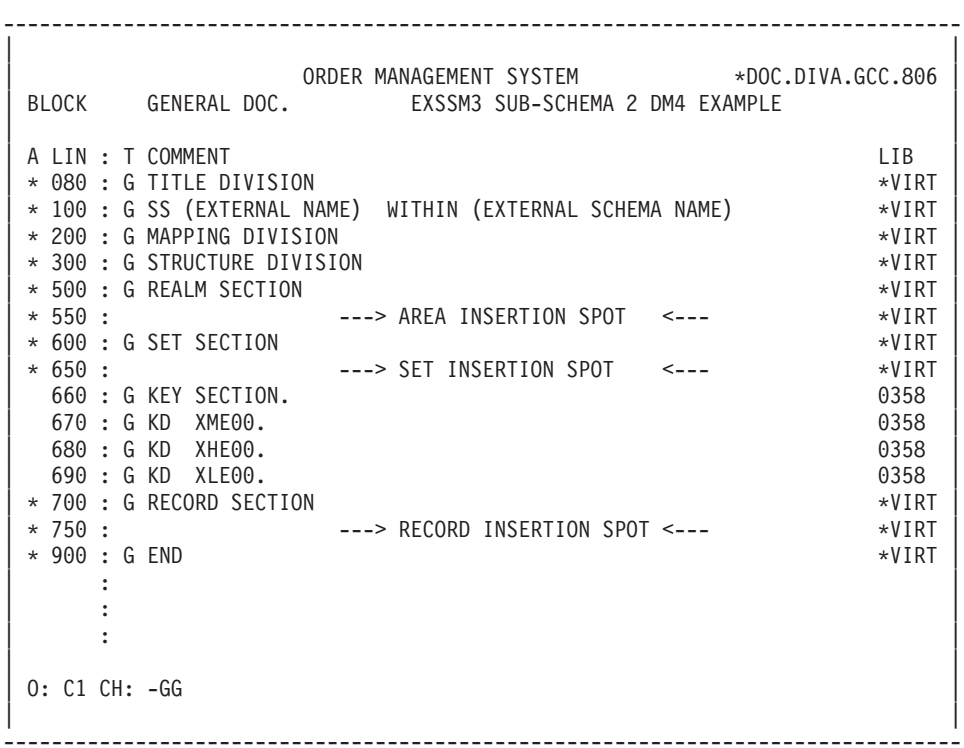
A DM4 sub-schema is generated from an 'M3'-type Database Block.

The user may request a reduced segment description of the global schema description. Such a description request is made on the Database Block Description lines from which the sub-schema is generated.

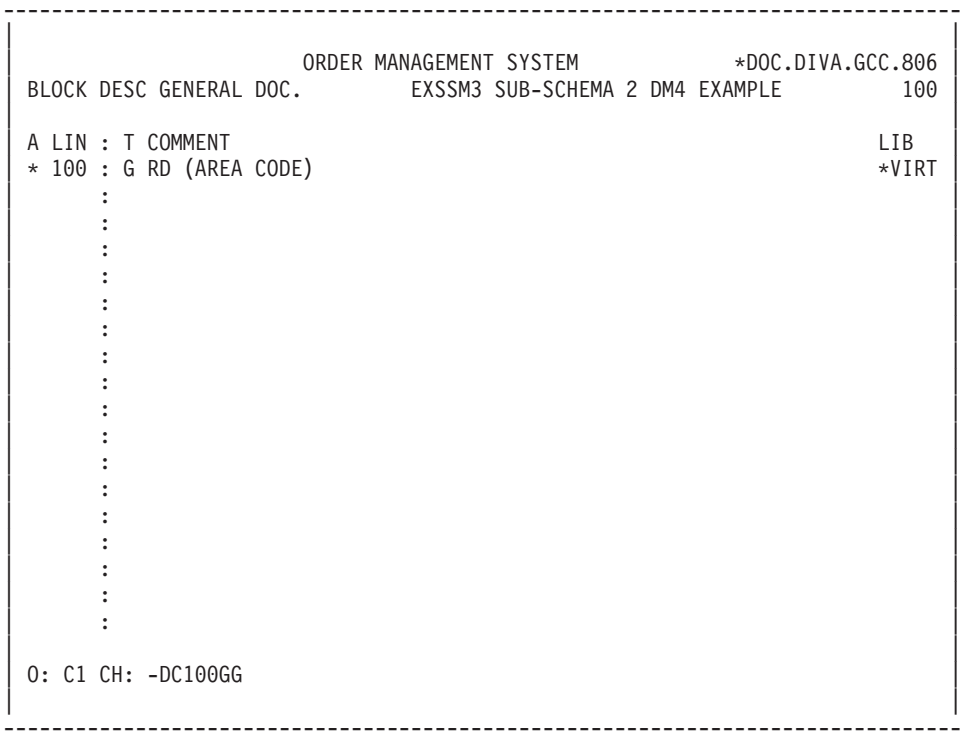
For additional information, please refer to Chapter "CODASYL BLOCKS".

All data elements are taken into account when the description is generated.

```
                        ORDER MANAGEMENT SYSTEM             *DOC.DIVA.GCC.806

BLOCK DEFINITION.............:    EXSSM3

NAME..................: SUB-SCHEMA 2 DM4 EXAMPLE
TYPE..................: M3 SUB-SCHEMA


EXTERNAL NAME.........: S/SCHEMA
EXT. NAME OF SCHEMA...: MANAGER


CONTROL CARDS....... FRONT:         BACK:


EXPLICIT KEYWORDS..:


SESSION NUMBER.....: 0331        LIBRARY......: GCC    LOCK....:




O: C1 CH: B exssm3                    ACTION:
```


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
BLOCK GENERAL DOC. EXSSM3 SUB-SCHEMA 2 DM4 EXAMPLE
A LIN : T COMMENT LIB
* 080 : G TITLE DIVISION *VIRT
* 100 : G SS (EXTERNAL NAME) WITHIN (EXTERNAL SCHEMA NAME) *VIRT
* 200 : G MAPPING DIVISION *VIRT
* 300 : G STRUCTURE DIVISION *VIRT
* 500 : G REALM SECTION *VIRT
* 550 : ---> AREA INSERTION SPOT <--- *VIRT
* 600 : G SET SECTION *VIRT
* 650 : ---> SET INSERTION SPOT <--- *VIRT
660 : G KEY SECTION. 0358
670 : G KD XME00. 0358
680 : G KD XHE00. 0358
690 : G KD XLE00. 0358
* 700 : G RECORD SECTION *VIRT
* 750 : ---> RECORD INSERTION SPOT <--- *VIRT
* 900 : G END *VIRT
O: C1 CH: -GG

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DE. CODASYL SUBSCHEMA EXSSM3 SUB-SCHEMA 2 DM4 EXAMPLE

A LIN : T AREA  OWNER MEM  MODEL      OCC NAME OF AREA,
      :   SET    SEG  SEG  CODE           SET OR COMMENT
  100 : A AREA1
  120 : A AREA2
  130 : A AREA3
  140 : A AREA4
  150 : A AREA5
  320 : R AREA1  CL10             *
  340 : R AREA1  CD05
  360 : R AREA1  CD10
  380 : R AREA1  CD20
  400 : R AREA2  FO10
  420 : R AREA3  ME00
  440 : R AREA4  HE00
  460 : R AREA5  EL00
  620 : S SET01  CD05 CD10
  640 : S SET02  CD05 CD20
  650 : * SET02  CD05 CD10
      :

O: C1 CH: -DC
```


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC. EXSSM3 SUB-SCHEMA 2 DM4 EXAMPLE 100
A LIN : T COMMENT LIB
* 100 : G RD (AREA CODE) *VIRT
O: C1 CH: -DC100GG

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXSSM3 SUB-SCHEMA 2 DM4 EXAMPLE          320

A LIN : T COMMENT                                                        LIB
* 100 : G 01 (SEGMENT CODE)                                              *VIRT
* 700 :                  ---> DATA-NAMES INSERTION STARTING POINT <---  *VIRT
  710 : G <MATE  >                                                       0358
  711 : G     02              CL10-MATE.                                 0358
  712 : G       03            CL10-MATIN    PICTURE X.                   0358
  713 : G       03            CL-MATON      PICTURE X(7).                0358
* 800 :                  ---> DATA-NAMES INSERTION ENDING POINT <---    *VIRT
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -DC320GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXSSM3 SUB-SCHEMA 2 DM4 EXAMPLE          620

A LIN : T COMMENT                                                       LIB
* 100 : G SD (SET CODE)                                                 *VIRT
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :

O: C1 CH: -DC620GG
```

DM4 Sub-schema / M3 Type: Generated Description

```
TITLE DIVISION.
SS S/SCHEMA WITHIN MANAGER.
MAPPING DIVISION.
STRUCTURE DIVISION.
REALM SECTION.
RD AREA1.
RD AREA2.
RD AREA3.
RD AREA4.
RD AREA5.
SET SECTION.
SD SET01.
SD SET02.
KEY SECTION.
KD XME00.
KD XHE00.
KD XLE00.
RECORD SECTION.
01 CL10.
  02              CL10-CLECL1.
    03            CL10-NUCLIE PICTURE 9(8).
  02              CL10-RAISOC.
    03            CL10-RAISO1 PICTURE X(25).
```

```
    03            CL10-RAISO2 PICTURE X(25).
  02              CL10-RUE    PICTURE X(40).
  02              CL10-COPOS  PICTURE X(5).
  02              CL10-VILLE  PICTURE X(20).
  02              CL10-MATE.
    03            CL10-MATIN    PICTURE X.
    03            CL10-MATON    PICTURE X(7).
  02              CL10-RELEA  PICTURE X(3).
  02              CL10-LANGU  PICTURE X.
  02              CL10-REMIS  PICTURE S9(4)V99.
  02              CL10-CORRES PICTURE X(25).
  02              CL10-RAISOL.
    03            CL10-RAIS1L PICTURE X(25).
    03            CL10-RAIS2L PICTURE X(25).
  02              CL10-RUEL   PICTURE X(40).
  02              CL10-COPOSL PICTURE X(5).
  02              CL10-VILLEL PICTURE X(20).
  02              CL10-FILLER PICTURE X(5).
01 CD05.
  02              CD05-CLECD.
    03            CD05-NUCOM  PICTURE 9(5).
  02              CD05-NUCLIE PICTURE 9(8).
  02              CD05-DATE   PICTURE X(6).
  02              CD05-RELEA  PICTURE X(3).
  02              CD05-MATE   PICTURE X(8).
  02              CD05-LANGU  PICTURE X.
  02              CD05-REMIS  PICTURE S9(4)V99.
  02              CD05-REFCLI PICTURE X(30).
  02              CD05-RUE    PICTURE X(40).
  02              CD05-COPOS  PICTURE X(5).
  02              CD05-VILLE  PICTURE X(20).
  02              CD05-CORRES PICTURE X(25).
  02              CD05-FILLER PICTURE X(5).
01 CD10.
  02              CD10-FOURNI PICTURE X(3).
  02              CD10-QTMAC  PICTURE 99.
  02              CD10-QTMAL  PICTURE 99.
  02              CD10-INFOR  PICTURE X(35).
  02              CD10-FILLER PICTURE X(5).
01 CD20.
  02              CD20-EDIT   PICTURE X.
  02              CD20-FILLER PICTURE X(5).
01 FO10.
  02              FO10-CLEFO.
    03            FO10-FOURNI PICTURE X(3).
    03            FO10-MATE   PICTURE X(8).
    03            FO10-RELEA  PICTURE X(3).
    03            FO10-LANGU  PICTURE X.
    03            FO10-FILLER PICTURE X(5).
  02              FO10-QTMAS  PICTURE 9(4).
  02              FO10-QTMAM  PICTURE 9(4).
  02              FO10-LIBFO  PICTURE X(20).
  02              FO10-FILL02 PICTURE XX.
01 ME00.
  02              ME00-CLEME.
```

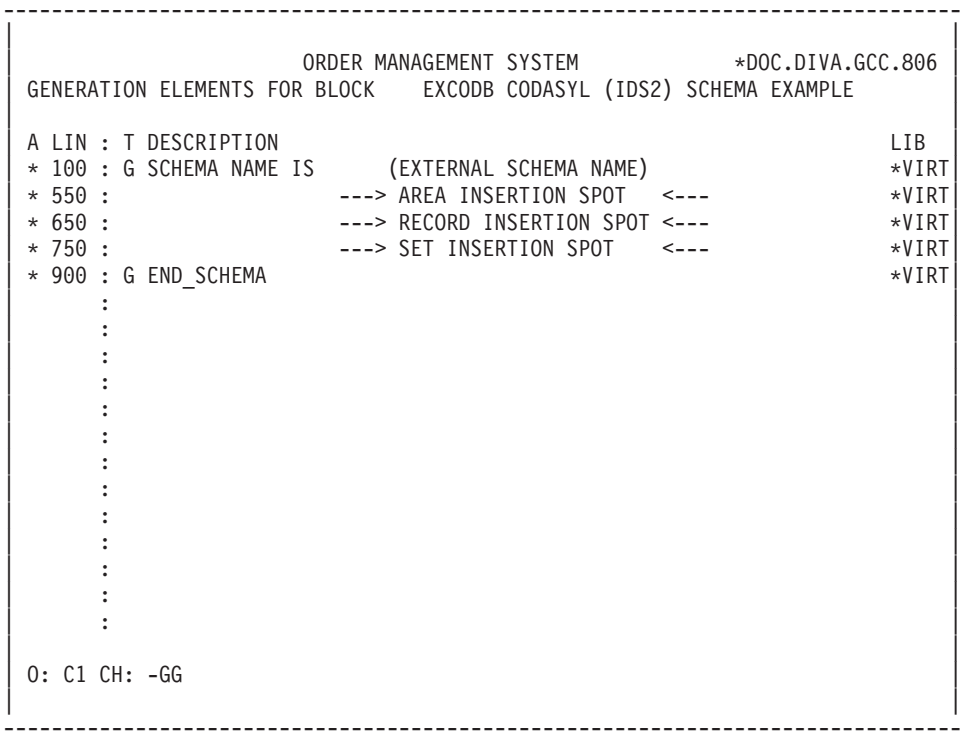
```
    03            ME00-COPERS PICTURE X(5).
    03            ME00-NUMORD PICTURE 9(5).
  02              ME00-MESSA  PICTURE X(75).
01 HE00.
  02              HE00-XTERM  PICTURE X(12).
  02              HE00-SCREEN PICTURE X(1920).
01 EL00.
  02              EL00-CLELE  PICTURE X(17).
  02              EL00-FILLER PICTURE X(73).
END.
```

IDS2 Schema (DDL)/type I1: Screens

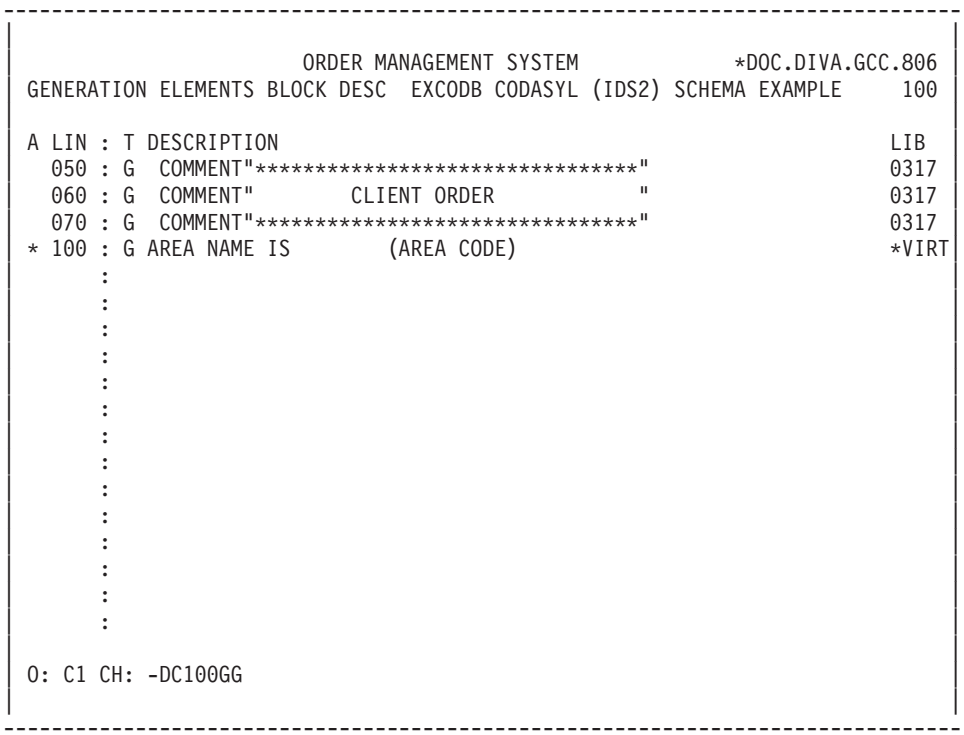
IDS2 SCHEMA (DDL)

This IDS2 schema is generated from an 'I1'-type Database Block.

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806

BLOCK CODE.............:    EXCODB

NAME...................: CODASYL (IDS2) SCHEMA EXAMPLE
TYPE...................: I1 SCHEMA (DDL)


EXTERNAL NAME.........: MANAGER
EXT. NAME OF SCHEMA...:


CONTROL CARDS....... FRONT:         BACK:


EXPLICIT KEYWORDS..:    CODASYL


UPDATED BY.........:             ON:             AT:   :  :      LIB:
SESSION NUMBER.....: 0320        LIBRARY......: GCC    LOCK....:

O: C1 CH: B excodb                    ACTION:
```


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
GENERATION ELEMENTS FOR BLOCK EXCODB CODASYL (IDS2) SCHEMA EXAMPLE
A LIN : T DESCRIPTION LIB
* 100 : G SCHEMA NAME IS (EXTERNAL SCHEMA NAME) *VIRT
* 550 : ---> AREA INSERTION SPOT <--- *VIRT
* 650 : ---> RECORD INSERTION SPOT <--- *VIRT
* 750 : ---> SET INSERTION SPOT <--- *VIRT
* 900 : G END_SCHEMA *VIRT
O: C1 CH: -GG

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC. CODASYL SCHEMA       EXCODB CODASYL (IDS2) SCHEMA EXAMPLE

A LIN : T AREA  OWNER MEM  MODEL     OCC NAME OF AREA,
      :   SET    SEG  SEG  CODE          SET OR COMMENT
  100 : A AREA1                    *
  120 : A AREA2                    *
  130 : A AREA3
  140 : A AREA4
  150 : A AREA5
  320 : R AREA1  CL10              *
  340 : R AREA1  CD05              *
  360 : R AREA1  CD10              *
  380 : R AREA1  CD20              *
  400 : R AREA2  FO10              *
  420 : R AREA3  ME00              *
  440 : R AREA4  HE00              *
  460 : R AREA5  EL00              *
  640 : S SET01  CD05 CD10         *       ORDER LINE HEADER
  660 : S SET02  CD05 CD20         *       ORDER PRINT
      :
      :

O: C1 CH: -DC
```


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
GENERATION ELEMENTS BLOCK DESC EXCODB CODASYL (IDS2) SCHEMA EXAMPLE 100
A LIN : T DESCRIPTION LIB
050 : G COMMENT"**********" 0317
060 : G COMMENT" CLIENT ORDER " 0317
070 : G COMMENT"**********" 0317
* 100 : G AREA NAME IS (AREA CODE) *VIRT
O: C1 CH: -DC100GG

```
                      ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
GENERATION ELEMENTS BLOCK DESC   EXCODB CODASYL (IDS2) SCHEMA EXAMPLE    320

A LIN : T DESCRIPTION                                                    LIB
  050 : G  COMMENT"*****************************"                      0317
  060 : G  COMMENT"         CLIENTS              "                      0317
  070 : G  COMMENT"*****************************"                      0317
* 100 : G RECORD NAME IS      (SEGMENT CODE)                           *VIRT
  120 : G  LOCATION MODE IS                                            DDLRCA
      : G  CALC USING         CL10_NUCLIE_____________________________ DDLRCA
      : G                     ________________________________________ DDLRCA
      : G  DUPLICATES         NOT ALLOWED                         $N   DDLRCA
* 300 : G     WITHIN          (AREA CODE)                              *VIRT
* 700 :                    ---> DATA-NAME INSERTION STARTING POINT <--- *VIRT
  710 : G <REMIS >                                                     0317
  720 : G     02              CL10-REMIS                               0317
  730 : G                       TYPE IS DECIMAL 6,2 SIGNED.            0317
* 800 :                    ---> DATA-NAME INSERTION ENDING POINT   <--- *VIRT
      :
      :
      :
      :

O: C1 CH: -DC320GG
```

```
                      ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
GENERATION ELEMENTS BLOCK DESC  EXCODB CODASYL (IDS2) SCHEMA EXAMPLE     640

A LIN : T DESCRIPTION                                                    LIB
  050 : G  COMMENT"*********************************"                  0317
  060 : G  COMMENT"       ORDER LINE HEADER          "                  0317
  070 : G  COMMENT"*********************************"                  0317
* 100 : G SET NAME IS         (SET CODE)                                *VIRT
* 400 : G     OWNER IS        (OWNER SEGMENT)                           *VIRT
  420 : G  SET IS             PRIOR PROCESSABLE__________               DDLOWN
      : G  ORDER IS           PERMANENT_____________________            DDLOWN
      : G  INSERTION IS       FIRST                                $F   DDLOWN
* 700 : G MEMBER IS           (MEMBER SEGMENT)                          *VIRT
  720 : G  AUTOMATIC MANDATORY                                          DDLSET
      : G  LINKED TO          OWNER_________________                    DDLSET
      : G  SET SELECTION IS                                             DDLSET
      : G                 THRU SET01_________________                   DDLSET
      : G  OWNER IDENTIFIED BY APPLICATION_______________               DDLSET
      :
      :
      :
      :

O: C1 CH: -DC640GG
```

IDS2 Schema (DDL) / I1 Type: Generated Description

IDS2 SCHEMA (DDL)

An IDS2 schema is generated from an 'I1'-type Database Block.

All the data elements are taken into account by the system when the description is generated.

VA Pac			CODASYL IDS2
FORMAT		COBOL	FORMAT
X(n)	D	DISPLAY	CHARACTER n
X(n)	5	COMP-1	SIGNED BINARY 15
X(n)	6	COMP-2	SIGNED BINARY 31
S9(n)V9(p)	3	COMP-3	SIGNED PACKED DECIMAL n+p,p
(S)9(n)V9(p)	D	DISPLAY	(UN)SIGNED UNPACKED DECIMAL n+p,p

```
SCHEMA NAME IS MANAGER
COMMENT"*****************************"
COMMENT"   CLIENT ORDER               "
```

```
COMMENT"*****************************".
AREA NAME IS AREA1
COMMENT"*****************************"
COMMENT"     SUPPLIES                 "
COMMENT"*****************************".
AREA NAME IS AREA2.
AREA NAME IS AREA3.
AREA NAME IS AREA4.
AREA NAME IS AREA5
COMMENT"*****************************"
COMMENT"        CLIENTS               "
COMMENT"*****************************".
RECORD NAME IS CL10
LOCATION MODE IS
CALC USING        CL10_NUCLIE
DUPLICATES        NOT ALLOWED
WITHIN AREA1.
  02              CL10-CLECL1.
    03            CL10-NUCLIE
                  TYPE IS UNSIGNED UNPACKED
                  DECIMAL     8.
  02              CL10-RAISOC.
    03            CL10-RAISO1
                  TYPE IS CHARACTER    25.
    03            CL10-RAISO2
                  TYPE IS CHARACTER    25.
  02              CL10-RUE
                  TYPE IS CHARACTER    40.
  02              CL10-COPOS
                  TYPE IS CHARACTER     5.
  02              CL10-VILLE
                  TYPE IS CHARACTER    20.
  02              CL10-MATE
                  TYPE IS CHARACTER     8.
  02              CL10-RELEA
                  TYPE IS CHARACTER     3.
  02              CL10-LANGU
                  TYPE IS CHARACTER     1.
  02              CL10-REMIS
                    TYPE IS DECIMAL 6,2 SIGNED.
  02              CL10-CORRES
                  TYPE IS CHARACTER    25.
  02              CL10-RAISOL.
    03            CL10-RAIS1L
                  TYPE IS CHARACTER    25.
    03            CL10-RAIS2L
                  TYPE IS CHARACTER    25.
  02              CL10-RUEL
                  TYPE IS CHARACTER    40.
  02              CL10-COPOSL
                  TYPE IS CHARACTER     5.
  02              CL10-VILLEL
                  TYPE IS CHARACTER    20.
  02              CL10-FILLER
                  TYPE IS CHARACTER     5
```

```
COMMENT"*****************************"
COMMENT"      ORDER HEADER            "
COMMENT"*****************************".
RECORD NAME IS CD05
LOCATION MODE IS
CALC USING        CD05_NUCOM
DUPLICATES        NOT ALLOWED
WITHIN AREA1.
  02              CD05-CLECD.
    03            CD05-NUCOM
                  TYPE IS UNSIGNED UNPACKED
                  DECIMAL     5.
  02              CD05-NUCLIE
                  TYPE IS UNSIGNED UNPACKED
                  DECIMAL     8.
  02              CD05-DATE
                  TYPE IS CHARACTER     6.
  02              CD05-RELEA
                  TYPE IS CHARACTER     3.
  02              CD05-MATE
                  TYPE IS CHARACTER     8.
  02              CD05-LANGU
                  TYPE IS CHARACTER     1.
  02              CD05-REMIS
                    TYPE IS DECIMAL 6,2 SIGNED.
  02              CD05-REFCLI
                  TYPE IS CHARACTER    30.
  02              CD05-RUE
                  TYPE IS CHARACTER    40.
  02              CD05-COPOS
                  TYPE IS CHARACTER     5.
  02              CD05-VILLE
                  TYPE IS CHARACTER    20.
  02              CD05-CORRES
                  TYPE IS CHARACTER    25.
  02              CD05-FILLER
                  TYPE IS CHARACTER     5
COMMENT"*****************************"
COMMENT"     ORDER LINE              "
COMMENT"*****************************".
RECORD NAME IS CD10
LOCATION MODE IS
VIA               SET01
WITHIN AREA1.
  02              CD10-FOURNI
                  TYPE IS CHARACTER     3.
  02              CD10-QTMAC
                  TYPE IS UNSIGNED UNPACKED
                  DECIMAL     2.
  02              CD10-QTMAL
                  TYPE IS UNSIGNED UNPACKED
                  DECIMAL     2.
  02              CD10-INFOR
                  TYPE IS CHARACTER    35.
  02              CD10-FILLER
```

```
                TYPE IS CHARACTER     5
COMMENT"*****************************"
COMMENT"      ORDER  PRINT           "
COMMENT"*****************************".
RECORD NAME IS CD20
LOCATION MODE IS
VIA             SET02
WITHIN AREA1.
  02            CD20-EDIT
                TYPE IS CHARACTER     1.
  02            CD20-FILLER
                TYPE IS CHARACTER     5
COMMENT"*****************************"
COMMENT"         SUPPLIES             "
COMMENT"*****************************".
RECORD NAME IS FO10
LOCATION MODE IS
CALC USING      FO10_FOURNI FO10_MATE FO10_RELEA
                FO10_LANGU FO10_FILLER
DUPLICATES      NOT ALLOWED
WITHIN AREA2.
  02            FO10-CLEFO.
    03          FO10-FOURNI
                TYPE IS CHARACTER     3.
    03          FO10-MATE
                TYPE IS CHARACTER     8.
    03          FO10-RELEA
                TYPE IS CHARACTER     3.
    03          FO10-LANGU
                TYPE IS CHARACTER     1.
    03          FO10-FILLER
                TYPE IS CHARACTER     5.
  02            FO10-QTMAS
                TYPE IS UNSIGNED UNPACKED
                DECIMAL     4.
  02            FO10-QTMAM
                TYPE IS UNSIGNED UNPACKED
                DECIMAL     4.
  02            FO10-LIBFO
                TYPE IS CHARACTER    20.
  02            FO10-FILL02
                TYPE IS CHARACTER     2
COMMENT"********************"
COMMENT"***  MESSAGES   ***"
COMMENT"********************".
RECORD NAME IS ME00
LOCATION MODE IS
INDEXED         XME00
WITHIN AREA3
KEY             XME00
                ASCENDING
                ME00_COPERS ME00_NUMORD
DUPLICATES      NOT ALLOWED.
  02            ME00-CLEME.
    03          ME00-COPERS
```

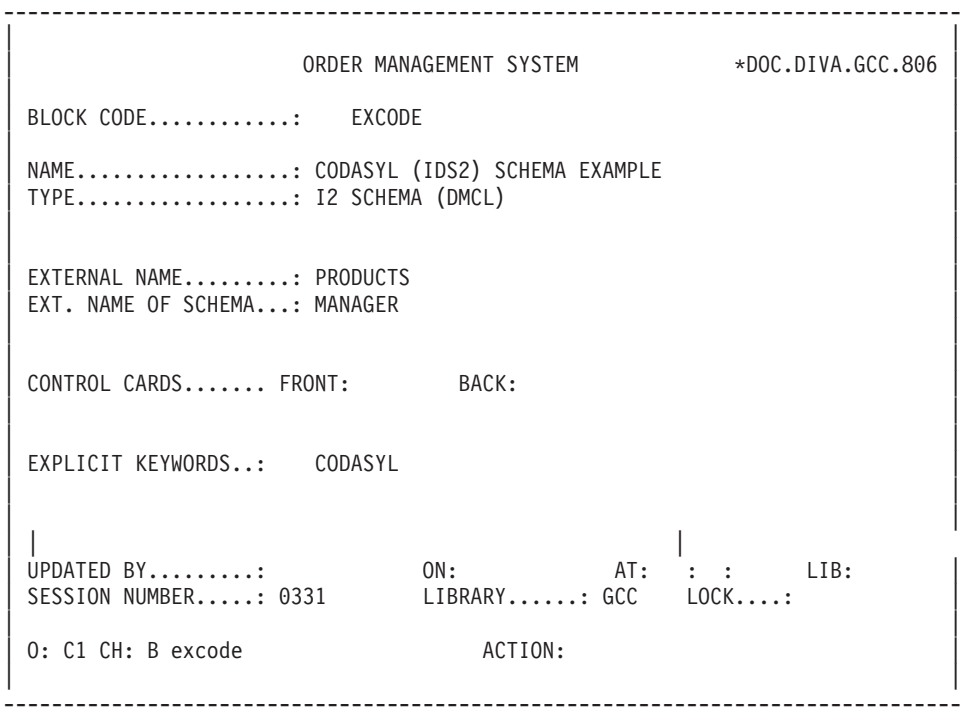
```
                  TYPE IS CHARACTER     5.
    03            ME00-NUMORD
                  TYPE IS UNSIGNED UNPACKED
                  DECIMAL     5.
  02              ME00-MESSA
                  TYPE IS CHARACTER    75
COMMENT"*****************************"
COMMENT"***  SCREEN SAVE          ***"
COMMENT"*****************************".
RECORD NAME IS HE00
LOCATION MODE IS
INDEXED           XHE00
WITHIN AREA4
KEY               XHE00
                  ASCENDING
                  HE00_XTERM
DUPLICATES        NOT ALLOWED.
  02              HE00-XTERM
                  TYPE IS CHARACTER    12.
  02              HE00-SCREEN
                  TYPE IS CHARACTER  1920
COMMENT"*****************************"
COMMENT"***  ERROR MESSAGE       ***"
COMMENT"*****************************".
RECORD NAME IS EL00
LOCATION MODE IS
INDEXED           XLE00
WITHIN AREA5
KEY               XLE00
                  ASCENDING
                  EL00_CLELE
DUPLICATES        NOT ALLOWED.
  02              EL00-CLELE
                  TYPE IS CHARACTER    17.
  02              EL00-FILLER
                  TYPE IS CHARACTER    73
COMMENT"*****************************"
COMMENT"     ORDER LINE HEADER        "
COMMENT"*****************************".
SET NAME IS SET01
OWNER IS CD05
SET IS            PRIOR PROCESSABLE
ORDER IS          PERMANENT
INSERTION IS      FIRST.
MEMBER IS CD10
AUTOMATIC MANDATORY
LINKED TO         OWNER
SET SELECTION IS
             THRU SET01
OWNER IDENTIFIED BY APPLICATION
COMMENT"*****************************"
COMMENT"     ORDER PRINT              "
COMMENT"*****************************".
SET NAME IS SET02
OWNER IS CD05
```

```
SET IS            PRIOR PROCESSABLE
ORDER IS          PERMANENT
INSERTION IS      LAST.
MEMBER IS CD20
AUTOMATIC MANDATORY
LINKED TO         OWNER
SET SELECTION IS
              THRU SET02
OWNER IDENTIFIED BY APPLICATION.
END-SCHEMA.
```

IDS2 Schema (DMCL)/type I2: Schema

IDS2 SCHEMA (DMCL)

The physical description of a IDS2 schema is generated from an 'I2'-type Database Block.


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
BLOCK CODE.....: EXCODE
NAME.....: CODASYL (IDS2) SCHEMA EXAMPLE
TYPE.....: I2 SCHEMA (DMCL)
EXTERNAL NAME.....: PRODUCTS
EXT. NAME OF SCHEMA...: MANAGER
CONTROL CARDS..... FRONT: BACK:
EXPLICIT KEYWORDS..: CODASYL
UPDATED BY.....: ON: AT: : : LIB:
SESSION NUMBER.....: 0331 LIBRARY.....: GCC LOCK....:
O: C1 CH: B excode ACTION:

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK     GENERAL DOC.          EXCODE CODASYL (IDS2) SCHEMA EXAMPLE

A LIN : T COMMENT                                                       LIB
* 100 : G SCHEMA NAME IS      (EXTERNAL SCHEMA NAME)                    *VIRT
* 550 :                   ---> AREA INSERTION SPOT   <---               *VIRT
* 650 :                   ---> RECORD INSERTION SPOT <---               *VIRT
* 750 :                   ---> SET INSERTION SPOT    <---               *VIRT
  800 : G KEY NAME IS         XME00_________________                    DMCLKE
      : G  KEY_ID IS          0                                         DMCLKE
  810 : G KEY NAME IS         XHE00_________________                    DMCLKE
      : G  KEY_ID IS          0                                         DMCLKE
  820 : G KEY NAME IS         XLE00_________________                    DMCLKE
      : G  KEY_ID IS          0                                         DMCLKE
* 900 : G END_DMCL                                                      *VIRT
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC. CODASYL DMCL    EXCODE CODASYL (IDS2) SCHEMA EXAMPLE

A LIN : T AREA  OWNER MEM  MODEL      OCC NAME OF AREA,
      :   SET    SEG  SEG  CODE          SET OR COMMENT
  100 : A AREA1                    *
  120 : A AREA2                    *
  130 : A AREA3                    *
  140 : A AREA4                    *
  150 : A AREA5                    *
  320 : R AREA1  CL10              *
  340 : R AREA1  CD05
  360 : R AREA1  CD10
  380 : R AREA1  CD20
  400 : R AREA2  FO10
  420 : R AREA3  ME00
  440 : R AREA4  HE00
  460 : R AREA5  EL00
  640 : S SET01  CD05 CD10              ORDER LINE HEADER
  660 : S SET02  CD05 CD20              ORDER PRINT
      :
      :

O: C1 CH: -DC
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXCODE CODASYL (IDS2) SCHEMA EXAMPLE     100

A LIN : T COMMENT                                                        LIB
  050 : G  COMMENT"************************"                            0349
  060 : G  COMMENT"      CLIENT ORDER       "                            0349
  070 : G  COMMENT"************************"                            0349
* 100 : G AREA NAME IS        (AREA CODE)                               *VIRT
  200 : G  FILE_CODE IS       "F1"                                      DMCLCA
      : G  ALLOCATE           500___                                    DMCLCA
      : G  PAGE_INTERVAL IS   32_____                                   DMCLCA
      : G  CALC_INTERVAL IS   32_____                                   DMCLCA
      : G  PAGE_SIZE          4096____                                  DMCLCA
      : G  ORGANIZATION IS    INTEGRATED_____                           DMCLCA
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -DC100GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXCODE CODASYL (IDS2) SCHEMA EXAMPLE      320

A LIN : T COMMENT                                                          LIB
  050 : G  COMMENT"************************"                             0349
  060 : G  COMMENT"      CLIENTS            "                             0349
  070 : G  COMMENT"************************"                             0349
* 100 : G RECORD NAME IS      (SEGMENT CODE)                             *VIRT
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -DC320GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXCODE CODASYL (IDS2) SCHEMA EXAMPLE     640

A LIN : T COMMENT                                                       LIB
* 100 : G SET NAME IS         (SET CODE)                                *VIRT
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :

O: C1 CH: -DC640GG
```

IDS2 Schema (DMCL)/ I2 Type: Generated Description

IDS2 SCHEMA (DMCL)

The physical description of an IDS2 schema is generated from an 'I2'-type Database Block.

```
SCHEMA NAME IS MANAGER
COMMENT"***************************"
COMMENT"    CLIENT  ORDER          "
COMMENT"***************************".
AREA NAME IS AREA1
FILE_CODE IS      "F1"
ALLOCATE          500
PAGE_INTERVAL IS  32
CALC_INTERVAL IS  32
PAGE_SIZE         4096
ORGANIZATION IS   INTEGRATED
COMMENT"************************"
COMMENT"     SUPPLIES            "
COMMENT"************************".
AREA NAME IS AREA2
FILE_CODE IS      "F2"
ALLOCATE          500
```

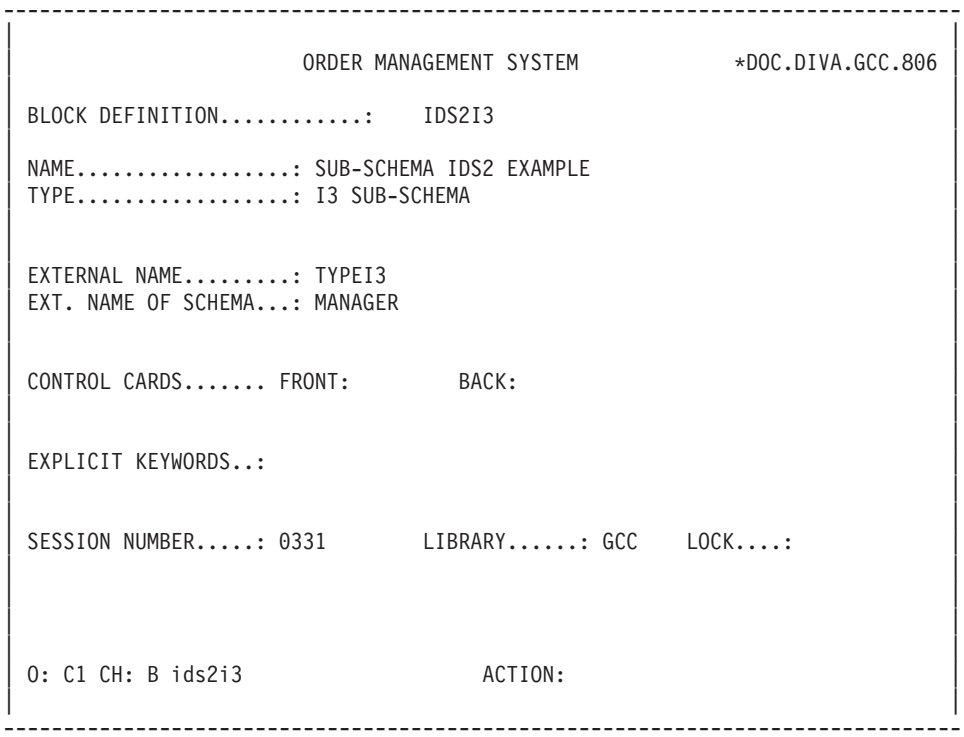
```
PAGE_INTERVAL IS  64
CALC_INTERVAL IS  64
PAGE_SIZE         4096
ORGANIZATION IS   INTEGRATED.
AREA NAME IS AREA3
FILE_CODE IS      "F3"
KEY FILE_CODE IS  "K3"
ALLOCATE          5120
PAGE_INTERVAL IS  512
PAGE_SIZE IS      4096
ORGANIZATION IS   INDEXED.
AREA NAME IS AREA4
FILE_CODE IS      "F4"
KEY FILE_CODE IS  "K4"
ALLOCATE          5120
PAGE_INTERVAL IS  512
PAGE_SIZE IS      4096
ORGANIZATION IS   INDEXED.
AREA NAME IS AREA5
FILE_CODE IS      "F5"
KEY FILE_CODE IS  "K5"
ALLOCATE          14336
PAGE_INTERVAL IS  512
PAGE_SIZE IS      4096
ORGANIZATION IS   INDEXED
COMMENT"************************"
COMMENT"       CLIENTS          "
COMMENT"************************".
RECORD NAME IS CL10.
RECORD NAME IS CD05.
RECORD NAME IS CD10.
RECORD NAME IS CD20.
RECORD NAME IS FO10.
RECORD NAME IS ME00.
RECORD NAME IS HE00.
RECORD NAME IS EL00.
SET NAME IS SET01.
SET NAME IS SET02.
KEY NAME IS       XME00
KEY_ID IS         0.
KEY NAME IS       XHE00
KEY_ID IS         0.
KEY NAME IS       XLE00
KEY_ID IS         0.
END-DMCL.
```

IDS2 Sub-schema (SDDL) / I3: Screens

IDS2 LOGICAL SUB-SCHEMA (SDDL):

The logical description of an IDS2 sub-schema (SDDL) is generated from an 'I3'-type Database Block.

All data elements are taken into account by the system when the Database Block description is generated.


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
BLOCK DEFINITION.....: IDS2I3
NAME.....: SUB-SCHEMA IDS2 EXAMPLE
TYPE.....: I3 SUB-SCHEMA
EXTERNAL NAME.....: TYPEI3
EXT. NAME OF SCHEMA...: MANAGER
CONTROL CARDS..... FRONT: BACK:
EXPLICIT KEYWORDS..:
SESSION NUMBER.....: 0331 LIBRARY.....: GCC LOCK....:
O: C1 CH: B ids2i3 ACTION:

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK     GENERAL DOC.          IDS2I3 SUB-SCHEMA IDS2 EXAMPLE

A LIN : T COMMENT                                                       LIB
* 100 : G SUBSCHEMA  NAME IS  (EXTERNAL NAME)                           *VIRT
* 110 : G     OF SCHEMA       (EXTERNAL SCHEMA NAME)                    *VIRT
* 450 :                   ---> ALIAS INSERTION SPOT  <---               *VIRT
* 550 :                   ---> AREA INSERTION SPOT   <---               *VIRT
* 650 :                   ---> RECORD INSERTION SPOT <---               *VIRT
* 750 :                   ---> SET INSERTION SPOT    <---               *VIRT
* 900 : G END-SUBSCHEMA                                                 *VIRT
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :

O: C1 CH: -GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DE. CODASYL SUBSCHEMA IDS2I3 SUB-SCHEMA IDS2 EXAMPLE

A LIN : T AREA  OWNER MEM  MODEL      OCC NAME OF AREA,
      :   SET    SEG  SEG  CODE           SET OR COMMENT
  100 : A AREA1
  120 : A AREA2
  130 : A AREA3
  140 : A AREA4
  150 : A AREA5
  320 : R AREA1  CL10             *
  340 : R AREA1  CD05
  360 : R AREA1  CD10
  380 : R AREA1  CD20
  400 : R AREA2  FO10
  420 : R AREA3  ME00
  440 : R AREA4  HE00
  460 : R AREA5  EL00
  620 : S SET01  CD05 CD10
  640 : S SET02  CD05 CD20
  650 : * SET02  CD05 CD10
      :

O: C1 CH: -DC
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         IDS2I3 SUB-SCHEMA IDS2 EXAMPLE          100

A LIN : T COMMENT                                                       LIB
* 100 : G AREA NAME IS        (AREA CODE)                               *VIRT
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :

O: C1 CH: -DC100GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         IDS2I3 SUB-SCHEMA IDS2 EXAMPLE           320

A LIN : T COMMENT                                                       LIB
* 100 : G RECORD NAME IS    (SEGMENT CODE)                              *VIRT
* 300 : G     WITHIN AREA   (AREA CODE)                                 *VIRT
* 700 :                 ---> DATA-NAME INSERTION STARTING POINT <----  *VIRT
  710 : G <MATE  >                                                      0358
  711 : G     02              CL10-MATE.                                0358
  712 : G       03            CL10-MATIN    PICTURE X.                  0358
  713 : G       03            CL-MATON      PICTURE X(7).               0358
* 800 :                 ---> DATA-NAME INSERTION ENDING POINT   <---   *VIRT
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -DC320GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         IDS2I3 SUB-SCHEMA IDS2 EXAMPLE          620

A LIN : T COMMENT                                                       LIB
* 100 : G SET NAME IS         (SET CODE)                                *VIRT
* 700 : G MEMBER IS           (MEMBER SEGMENT)                          *VIRT
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :

O: C1 CH: -DC620GG
```

IDS2 Sub-schema (SDDL) / I3: Generated Description

```
SUBSCHEMA NAME IS  TYPEI3    OF   SCHEMA   MANAGER.
AREA NAME IS AREA1.
AREA NAME IS AREA2.
AREA NAME IS AREA3.
AREA NAME IS AREA4.
AREA NAME IS AREA5.
RECORD NAME IS CL10
WITHIN AREA AREA1.
  02              CL10-CLECL1.
    03            CL10-NUCLIE
                  TYPE IS UNSIGNED UNPACKED
                  DECIMAL     8.
  02              CL10-RAISOC.
    03            CL10-RAISO1
                  TYPE IS CHARACTER    25.
    03            CL10-RAISO2
                  TYPE IS CHARACTER    25.
  02              CL10-RUE
                  TYPE IS CHARACTER    40.
  02              CL10-COPOS
                  TYPE IS CHARACTER     5.
  02              CL10-VILLE
                  TYPE IS CHARACTER    20.
```

```
  02              CL10-MATE.
    03            CL10-MATIN    PICTURE X.
    03            CL10-MATON    PICTURE X(7).
  02              CL10-RELEA
                  TYPE IS CHARACTER     3.
  02              CL10-LANGU
                  TYPE IS CHARACTER     1.
  02              CL10-REMIS
                  TYPE IS SIGNED UNPACKED
                  DECIMAL     6,   2.
  02              CL10-CORRES
                  TYPE IS CHARACTER    25.
  02              CL10-RAISOL.
    03            CL10-RAIS1L
                  TYPE IS CHARACTER    25.
    03            CL10-RAIS2L
                  TYPE IS CHARACTER    25.
  02              CL10-RUEL
                  TYPE IS CHARACTER    40.
  02              CL10-COPOSL
                  TYPE IS CHARACTER     5.
  02              CL10-VILLEL
                  TYPE IS CHARACTER    20.
  02              CL10-FILLER
                  TYPE IS CHARACTER     5.
RECORD NAME IS CD05
WITHIN AREA AREA1.
  02              CD05-CLECD.
    03            CD05-NUCOM
                  TYPE IS UNSIGNED UNPACKED
                  DECIMAL     5.
  02              CD05-NUCLIE
                  TYPE IS UNSIGNED UNPACKED
                  DECIMAL     8.
  02              CD05-DATE
                  TYPE IS CHARACTER     6.
  02              CD05-RELEA
                  TYPE IS CHARACTER     3.
  02              CD05-MATE
                  TYPE IS CHARACTER     8.
  02              CD05-LANGU
                  TYPE IS CHARACTER     1.
  02              CD05-REMIS
                  TYPE IS SIGNED UNPACKED
                  DECIMAL     6,   2.
  02              CD05-REFCLI
                  TYPE IS CHARACTER    30.
  02              CD05-RUE
                  TYPE IS CHARACTER    40.
  02              CD05-COPOS
                  TYPE IS CHARACTER     5.
  02              CD05-VILLE
                  TYPE IS CHARACTER    20.
  02              CD05-CORRES
                  TYPE IS CHARACTER    25.
```

```
  02              CD05-FILLER
                  TYPE IS CHARACTER     5.
RECORD NAME IS CD10
WITHIN AREA AREA1.
  02              CD10-FOURNI
                  TYPE IS CHARACTER     3.
  02              CD10-QTMAC
                  TYPE IS UNSIGNED UNPACKED
                  DECIMAL     2.
  02              CD10-QTMAL
                  TYPE IS UNSIGNED UNPACKED
                  DECIMAL     2.
  02              CD10-INFOR
                  TYPE IS CHARACTER    35.
  02              CD10-FILLER
                  TYPE IS CHARACTER     5.
RECORD NAME IS CD20
WITHIN AREA AREA1.
  02              CD20-EDIT
                  TYPE IS CHARACTER     1.
  02              CD20-FILLER
                  TYPE IS CHARACTER     5.
RECORD NAME IS FO10
WITHIN AREA AREA2.
  02              FO10-CLEFO.
    03            FO10-FOURNI
                  TYPE IS CHARACTER     3.
    03            FO10-MATE
                  TYPE IS CHARACTER     8.
    03            FO10-RELEA
                  TYPE IS CHARACTER     3.
    03            FO10-LANGU
                  TYPE IS CHARACTER     1.
    03            FO10-FILLER
                  TYPE IS CHARACTER     5.
  02              FO10-QTMAS
                  TYPE IS UNSIGNED UNPACKED
                  DECIMAL     4.
  02              FO10-QTMAM
                  TYPE IS UNSIGNED UNPACKED
                  DECIMAL     4.
  02              FO10-LIBFO
                  TYPE IS CHARACTER    20.
  02              FO10-FILL02
                  TYPE IS CHARACTER     2.
RECORD NAME IS ME00
WITHIN AREA AREA3.
  02              ME00-CLEME.
    03            ME00-COPERS
                  TYPE IS CHARACTER     5.
    03            ME00-NUMORD
                  TYPE IS UNSIGNED UNPACKED
                  DECIMAL     5.
  02              ME00-MESSA
                  TYPE IS CHARACTER    75.
```

```
RECORD NAME IS HE00
WITHIN AREA AREA4.
  02              HE00-XTERM
                  TYPE IS CHARACTER    12.
  02              HE00-SCREEN
                  TYPE IS CHARACTER  1920.
RECORD NAME IS EL00
WITHIN AREA AREA5.
  02              EL00-CLELE
                  TYPE IS CHARACTER    17.
  02              EL00-FILLER
                  TYPE IS CHARACTER    73.
SET NAME IS SET01.
MEMBER IS CD10.
SET NAME IS SET02.
MEMBER IS CD20.
MEMBER IS CD10.
END-SUBSCHEMA.
```

Chapter 9. IDMS & DMS Examples

Introduction

INTRODUCTION

The purpose of this chapter is to offer the user a global view of the different steps to be followed in order to obtain a database generated in CODASYL language. Information on how VA Pac manages the data is also included.

The example used is not exhaustive as it does not cover all of the possibilities offered by the function.

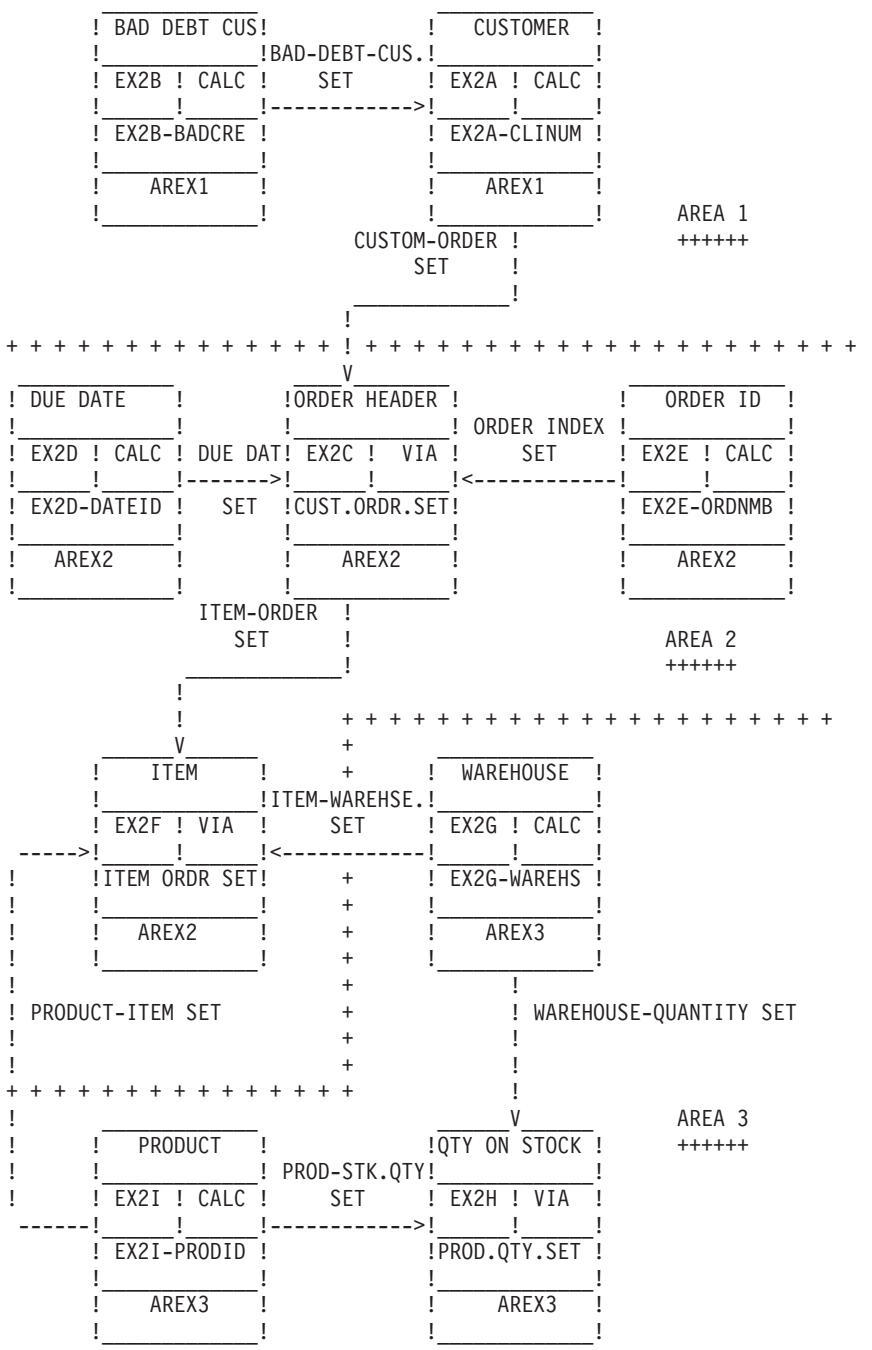
The same database is generated in both the IDMS and DMS environments.

1. REPRESENTATION OF THE SCHEMA EXAMPLE

This example was developed in line with the type of data managed in any commercial company. Its purpose is to illustrate the use of VA Pac and not the use of IDMS or DMS.

```
2. IDMS
   DDL SCHEMA      (BLOCK TYPE 'D1'):
                   . Screens,
                   . Generated description.
   DMCL SCHEMA     (BLOCK TYPE 'D2'):
                   . Screens,
                   . Generated physical description.
   SUB-SCHEMA      (BLOCK TYPE 'D3'):
                   . Screens,
                   . Generated description.
   SUB-SCHEMA      (BLOCK TYPE 'D4'):
                   . Screens,
                   . Generated description.
3. DMS
   DDL SCHEMA      (BLOCK TYPE 'S1'):
                   . Screens,
                   . Generated description.
   SUB-SCHEMA      (BLOCK TYPE 'S3'):
                   . Screens,
                   . Generated description.
```

Database Schema



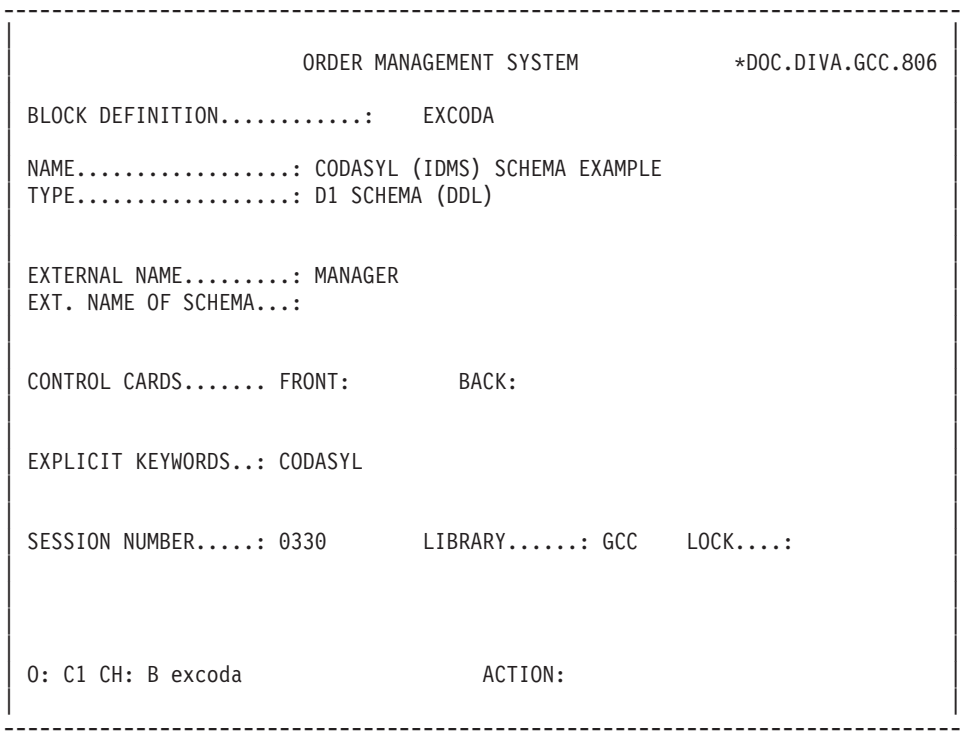
IDMS Schema (DDL) / D1 Type: Screens

IDMS SCHEMA (DDL)

An IDMS schema is generated from a 'D1'- or 'D0'-type (IDMS release 10.0) Database Block.

All data elements are taken into account by the system when the description is generated.

The IDMS CODASYL elementary data format is the same as the VA Pac format.


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
BLOCK DEFINITION.....: EXCODA
NAME.....: CODASYL (IDMS) SCHEMA EXAMPLE
TYPE.....: D1 SCHEMA (DDL)
EXTERNAL NAME.....: MANAGER
EXT. NAME OF SCHEMA...:
CONTROL CARDS..... FRONT: BACK:
EXPLICIT KEYWORDS..: CODASYL
SESSION NUMBER.....: 0330 LIBRARY.....: GCC LOCK....:
O: C1 CH: B excoda ACTION:

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK     GENERAL DOC.          EXCODA CODASYL (IDMS) SCHEMA EXAMPLE

A LIN : T COMMENT                                                       LIB
* 080 : G SCHEMA DESCRIPTION                                           *VIRT
* 100 : G SCHEMA  NAME  IS    (EXTERNAL SCHEMA NAME)                   *VIRT
  120 : G AUTHOR.               TAYLOR.                                 0332
  140 : G DATE.                 19JLY85.                                0332
* 400 : G FILE DESCRIPTION                                             *VIRT
  420 : G FILE NAME IS CUSTOMER FILE      ASSIGN TO CUSSER.             0332
  440 : G FILE NAME IS ORDERS FILE        ASSIGN TO ORDENT.             0332
  460 : G FILE NAME IS INVENTORY FILE     ASSIGN TO VALIDA.             0332
* 500 : G AREA DESCRIPTION                                             *VIRT
* 550 :                   --->  AREA INSERTION SPOT <---               *VIRT
* 600 : G RECORD DESCRIPTION                                           *VIRT
* 650 :                   ---> RECORD INSERTION SPOT <---              *VIRT
* 700 : G SET DESCRIPTION                                              *VIRT
* 750 :                   ---> SET INSERTION SPOT <---                 *VIRT
* 900 : G END-SCHEMA                                                   *VIRT
      :
      :
      :

O: C1 CH: -GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC. CODASYL SCHEMA  EXCODA CODASYL (IDMS) SCHEMA EXAMPLE

A LIN : T AREA  OWNER MEM  MODEL      OCC NAME OF AREA,
      :   SET    SEG  SEG  CODE          SET OR COMMENT
  100 : A AREX1                    *
  120 : A AREX2                    *
  140 : A AREX3                    *
  320 : R AREX1  EX2A              *
  340 : R AREX1  EX2B              *
  360 : R AREX2  EX2C              *
  380 : R AREX2  EX2D              *
  400 : R AREX2  EX2E              *
  420 : R AREX2  EX2F              *
  440 : R AREX3  EX2G              *
  460 : R AREX3  EX2H              *
  480 : R AREX3  EX2I              *
  620 : S STEX1  EX2B EX2A         *       BAD DEBT CUSTOMERS SET
  640 : S STEX2  EX2D EX2C         *       DUE DATE SET
  660 : S STEX3  EX2A EX2C         *       CUSTOMER ORDER SET
  680 : S STEX4  EX2E EX2C         *       ORDER INDEX SET
  700 : S STEX5  EX2C EX2F         *       ITEM ORDER SET
  720 : S STEX6  EX2G EX2F         *       WARE ITEM SET
  740 : S STEX7  EX2I EX2F         *       PRODUCT ITEM SET
  760 : S STEX8  EX2G EX2H         *       WAREHOUSE STOCK QUANTITY SET
  780 : S STEX9  EX2I EX2H         *       PRODUCT QUANTITY SET

O: C1 CH: -DC
```

```
                       ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXCODA CODASYL (IDMS) SCHEMA EXAMPLE     100

A LIN : T COMMENT                                                        LIB
  030 : G *                                                              0327
  050 : G           ************************************                 0327
  070 : G           *        AREA DESCRIPTIONS          *                0317
  080 : G           ************************************                 0317
  090 : G                                                                0317
  095 : G                ***  CUSTOMER SERVICE  ***                      0317
  097 : G                                                                0317
* 100 : G        AREA NAME IS (AREA CODE)                                *VIRT
  120 : G            RANGE IS 10001 THRU 10100                           0332
  140 : G            WITHIN CUSTOMERS FILE FROM 1 THRU 100.              0349
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -DC100GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXCODA CODASYL (IDMS) SCHEMA EXAMPLE     340

A LIN : T COMMENT                                                        LIB
  030 : G *                                                              0327
  050 : G         ***  BAD DEBT CUSTOMERS  ***                         0329
  070 : G                                                              0317
* 100 : G      RECORD NAME IS (SEGMENT CODE)                           *VIRT
  110 : G      RECORD ID IS EX2B                                       0331
  120 : G LOCATION MODE IS CALC USING EX2B-BADCRE                      0317
  140 : G     DUPLICATES ARE NOT ALLOWED.                              0331
* 300 : G              WITHIN (AREA CODE) AREA                         *VIRT
* 700 :                   ---> DATA-NAME INSERTION STARTING POINT <---  *VIRT
* 800 :                   ---> DATA-NAME INSERTION ENDING POINT <---    *VIRT
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -DC340GG
```

```
                      ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXCODA CODASYL (IDMS) SCHEMA EXAMPLE     620

A LIN : T COMMENT                                                        LIB
  010 : G                                                                0317
  020 : G         ****************************************               0317
  040 : G         *            SET DESCRIPTIONS            *             0317
  050 : G         ****************************************               0317
  070 : G                                                                0317
* 100 : G         SET NAME IS (SET CODE)                                 *VIRT
  110 : G          ***  BAD DEBT CUSTOMERS SET  ***                      0317
  120 : G ORDER NEXT.                                                    0317
  140 : G MODE CHAIN LINKED PRIOR.                                       0317
* 400 : G            OWNER IS (OWNER SEGMENT)                           *VIRT
  420 : G               NEXT DBDKEY POSITION IS 240                      0349
  440 : G                PRIOR DBDKEY POSITION IS 320                    0349
* 700 : G           MEMBER IS (MEMBER SEGMENT)                           *VIRT
  720 : G             MANDATORY AUTOMATIC                                0349
  740 : G           NEXT DBDKEY POSITION IS 410                          0349
  760 : G            PRIOR DBDKEY POSITION IS 630                        0349
  780 : G            LINKED TO OWNER OWNER DBDKEY POSITION IS 240        0349
  800 : G                ASCENDING KEY IS ID                             0349
  820 : G                          DUPLICATES ARE NOT ALLOWED.           0349

O: C1 CH: -DC620GG
```

IDMS Schema (DDL) / D1 Type: Generated Description

```
000010 SCHEMA DESCRIPTION.
000020 SCHEMA NAME IS MANAGER.
000030 AUTHOR.               TAYLOR.
000040 DATE.                 21FEB85.
000050 FILE DESCRIPTION.
000060 FILE NAME IS CUSTOMER-FILE      ASSIGN TO CSMSER.
000070 FILE NAME IS ORDER-FILE         ASSIGN TO ORDERY.
000080 FILE NAME IS INVENTORY-FILE     ASSIGN TO INVCON.
000090 AREA DESCRIPTION.
000100 *
000110           ************************************
000120           *        AREA DESCRIPTIONS          *
000130           ************************************
000140
000150                 ***  CUSTOMER SERVICE  ***
000160
000170 AREA NAME IS AREX1
000180            RANGE IS 10001 THRU 10100
000190            WITHIN CUSTOMER-FILE FROM 1 THRU 100.
000200
000210 *           ***  ORDER ENTRY  ***
000220
```

```
000230 AREA NAME IS AREX2
000240            RANGE IS 20001 THRU 20100
000250            WITHIN ORDER-FILE FROM 1 THRU 100.
000260
000270 *             ***  VALIDATION  ***
000280
000290 AREA NAME IS AREX3
000300            RANGE IS 30001 THRU 30100
000310            WITHIN INVENTORY-FILE FROM 1 THRU 100.
000320 RECORD DESCRIPTION.
000330
000340   ***********************************
000350   *       RECORD DESCRIPTIONS        *
000360   ***********************************
000370
000380           ***  CUSTOMERS  ***
000390
000400 RECORD NAME IS EX2A
000410      RECORD ID IS EX2A.
000420 LOCATION MODE IS CALC USING EX2A-CLINUM
000430     DUPLICATES ARE NOT ALLOWED.
000440 WITHIN  AREX1  AREA.
000450     02              EX2A-CLINUM PICTURE 9(8).
000460     02              EX2A-CLINAM PICTURE X(32).
000470     02              EX2A-CLIAD1 PICTURE X(32).
000480     02              EX2A-CLIAD2 PICTURE X(32).
000490 *
000500         ***  BAD DEBT CUSTOMERS  ***
000510
000520 RECORD NAME IS EX2B
000530      RECORD ID IS EX2B.
000540 LOCATION MODE IS CALC USING EX2B-BADCRE
000550     DUPLICATES ARE NOT ALLOWED.
000560 WITHIN  AREX1  AREA.
000570     02              EX2B-CLINUM PICTURE 9(8).
000580 *
000590          ***  ORDER HEADER  ***
000600
000610 RECORD NAME IS EX2C.
000620 LOCATION MODE IS VIA CUSTOMER-ORDER SET.
000630 WITHIN  AREX2  AREA.
000640     02              EX2C-ORDHDR PICTURE X(8).
000650     02              EX2C-ENTDAT.
000660       03            EX2C-MOENTR PICTURE XX.
000670       03            EX2C-DYENTR PICTURE XX.
000680       03            EX2C-YRENTR PICTURE XX.
000690     02              EX2C-DUEDAT.
000700       03            EX2C-MONDUE PICTURE XX.
000710       03            EX2C-DAYDUE PICTURE XX.
000720       03            EX2C-YRDUE  PICTURE XX.
000730 *
000740        ***  DUE DATE  ***
000750
000760 RECORD NAME IS EX2D.
000770 LOCATION MODE IS CALC USING EX2D-DATEID
```

```
000780     DUPLICATES ARE NOT ALLOWED.
000790 WITHIN  AREX2  AREA.
000800     02              EX2D-DATEID PICTURE X(8).
000810 *
000820           ***  ORDER IDENTIFIER  ***
000830
000840 RECORD NAME IS EX2E.
000850 LOCATION MODE IS CALC USING EX2E-ORDNMB
000860     DUPLICATES ARE NOT ALLOWED.
000870 WITHIN  AREX2  AREA.
000880     02              EX2E-ORDNMB PICTURE X(8).
000890     02              EX2E-DELDAT.
000900       03            EX2E-MONDEL PICTURE XX.
000910       03            EX2E-DAYDEL PICTURE XX.
000920       03            EX2E-YRDEL  PICTURE XX.
000930 *
000940          ***  ITEM  ***
000950
000960 RECORD NAME IS EX2F.
000970 LOCATION MODE IS VIA ORDER-ITEM SET.
000980 WITHIN  AREX2  AREA.
000990     02              EX2F-ITEMNM PICTURE X(4).
001000     02              EX2F-ITMQTY PICTURE S9(8).
001010 *
001020        ***  WAREHOUSE  ***
001030
001040 RECORD NAME IS EX2G.
001050 LOCATION MODE IS CALC USING EX2G-WAREHS
001060     DUPLICATES NOT ALLOWED.
001070 WITHIN  AREX3  AREA.
001080     02              EX2G-WAREHS PICTURE XX.
001090     02              EX2G-WARLOC PICTURE X(30).
001100 *
001110        ***  QUANTITY ON STOCK  ***
001120
001130 RECORD NAME IS EX2H.
001140 LOCATION MODE IS VIA PRODUCT-QUANTITY SET.
001150 WITHIN  AREX3  AREA.
001160     02              EX2H-STKQTY PICTURE S9(8).
001170     02              EX2H-STKLOC PICTURE 9(4).
001180 *
001190        ***  PRODUCT  ***
001200
001210 RECORD NAME IS EX2I.
001220 LOCATION MODE IS CALC USING EX2I-PRODID
001230     DUPLICATES NOT ALLOWED.
001240 WITHIN  AREX3  AREA.
001250     02              EX2I-PRODID PICTURE X(4).
001260     02              EX2I-PRDNAM PICTURE X(16).
001270     02              EX2I-PRODES PICTURE X(32).
001280     02              EX2I-PRDINF PICTURE X(24).
001290 SET DESCRIPTION.
001300
001310         ****************************************
001320         *            SET DESCRIPTIONS           *
```

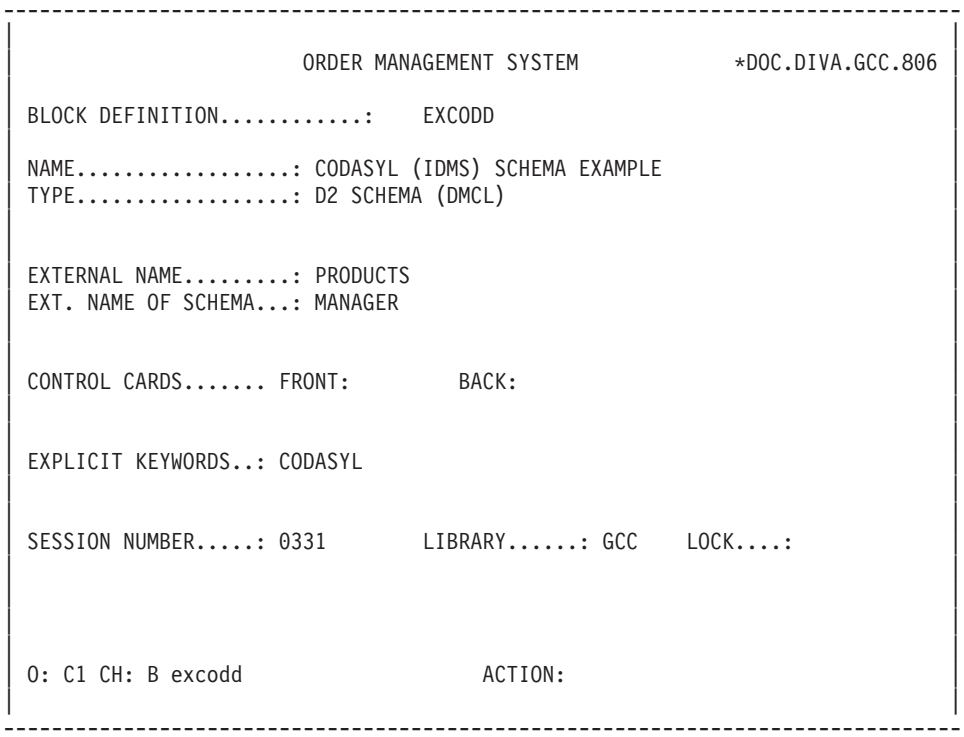
```
001330         ****************************************
001340
001350 SET NAME IS  STEX1
001360             ***  BAD DEBT CUSTOMERS  ***.
001370 ORDER NEXT.
001380 MODE CHAIN LINKED PRIOR.
001390 OWNER  IS EX2B
001400               NEXT DBDKEY POSITION IS 240
001410                PRIOR DBDKEY POSITION IS 320.
001420 MEMBER IS EX2A
001430             MANDATORY AUTOMATIC
001440           NEXT DBDKEY POSITION IS 410
001450            PRIOR DBDKEY POSITION IS 630
001460            LINKED TO OWNER OWNER DBDKEY POSITION IS 240
001470                ASCENDING KEY IS ID
001480                          DUPLICATES ARE NOT ALLOWED.
001490 *
001500              ***  DUE DATE SET  ***
001510
001520 SET NAME IS  STEX2.
001530 ORDER LAST.
001540 MODE CHAIN LINKED PRIOR.
001550 OWNER  IS EX2D.
001560 MEMBER IS EX2C.
001570 *
001580          ***  CUSTOMER ORDER SET  ***
001590
001600 SET NAME IS  STEX3.
001610 ORDER SORTED.
001620 MODE CHAIN LINKED PRIOR.
001630 OWNER  IS EX2A.
001640 MEMBER IS EX2C.
001650 *
001660            ***  ORDER INDEX SET  ***
001670
001680 SET NAME IS  STEX4.
001690 ORDER NEXT.
001700 MODE CHAIN.
001710 OWNER  IS EX2E.
001720 MEMBER IS EX2C.
001730 *
001740             ***  ORDER ITEM SET  ***
001750
001760 SET NAME IS  STEX5.
001770 ORDER NEXT.
001780 MODE CHAIN LINKED PRIOR.
001790 OWNER  IS EX2C.
001800 MEMBER IS EX2F.
001810 *
001820          ***  WAREHOUSE ITEM SET  ***
001830
001840 SET NAME IS  STEX6.
001850 ORDER NEXT.
001860 MODE CHAIN LINKED PRIOR.
001870 OWNER  IS EX2G.
```

```
001880 MEMBER IS EX2F.
001890 *
001900          ***  PRODUCT ITEM SET  ***
001910
001920 SET NAME IS  STEX7.
001930 ORDER NEXT.
001940 MODE CHAIN LINKED PRIOR.
001950 OWNER  IS EX2I.
001960 MEMBER IS EX2F.
001970 *
001980          ***  WAREHOUSE QUANTITY SET  ***
001990
002000 SET NAME IS  STEX8.
002010 ORDER NEXT.
002020 MODE CHAIN.
002030 OWNER  IS EX2G.
002040 MEMBER IS EX2H.
002050 *
002060          ***  PRODUCT QUANTITY SET  ***
002070
002080 SET NAME IS  STEX9.
002090 ORDER NEXT.
002100 MODE CHAIN.
002110 OWNER  IS EX2I.
002120 MEMBER IS EX2H.
```

IDMS Schema (DMCL)/ D2 Type: Screens

IDMS SCHEMA (DMCL)

The physical description of an IDMS schema is generated from a 'D2'-type Database Block.


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
BLOCK DEFINITION.....: EXCODD
NAME.....: CODASYL (IDMS) SCHEMA EXAMPLE
TYPE.....: D2 SCHEMA (DMCL)
EXTERNAL NAME.....: PRODUCTS
EXT. NAME OF SCHEMA...: MANAGER
CONTROL CARDS..... FRONT: BACK:
EXPLICIT KEYWORDS..: CODASYL
SESSION NUMBER.....: 0331 LIBRARY.....: GCC LOCK....:
O: C1 CH: B excodd ACTION:

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK     GENERAL DOC.          EXCODD CODASYL (IDMS) SCHEMA EXAMPLE

A LIN : T COMMENT                                                        LIB
* 080 : G DEVICE-MEDIA        DESCRIPTION                                *VIRT
* 100 : G DEVICE-MEDIA NAME IS (EXT. NAME) OF SCHEMA (SCHEMA EXT.NAME)  *VIRT
  105 : G                                                                0331
  110 : G AUTHOR. TAYLOR                                                 0331
  120 : G DATE. 02 15 85                                                 0331
  130 : G                                                                0331
* 200 : G BUFFER SECTION                                                 *VIRT
  220 : G              BUFFER NAME IS ORDERS                             0331
  230 : G              PAGE CONTAINS N CHARACTERS                        0331
  240 : G              BUFFER CONTAINS X PAGES                           0331
  300 : G                                                                0331
* 500 : G AREA SECTION                                                   *VIRT
      :
      :
      :
      :
      :
      :

O: C1 CH: -GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC. CODASYL DMCL    EXCODD CODASYL (IDMS) SCHEMA EXAMPLE

A LIN : T AREA  OWNER MEM  MODEL      OCC NAME OF AREA,
      :   SET    SEG  SEG  CODE          SET OR COMMENT
  100 : A AREX1                    *
  120 : A AREX2                    *
  140 : A AREX3                    *
  320 : R AREX1  EX2A
  340 : R AREX1  EX2B
  360 : R AREX2  EX2C
  380 : R AREX2  EX2D
  400 : R AREX2  EX2E
  420 : R AREX2  EX2F
  440 : R AREX3  EX2G
  460 : R AREX3  EX2H
  480 : R AREX3  EX2I
  620 : S STEX1  EX2B EX2A               BAD DEBT CUSTOMERS SET
  640 : S STEX2  EX2D EX2C               DUE DATE SET
  660 : S STEX3  EX2A EX2C               CUSTOMER ORDER SET
  680 : S STEX4  EX2E EX2C               ORDER INDEX SET
  700 : S STEX5  EX2C EX2F               ITEM ORDER SET
  720 : S STEX6  EX2G EX2F               WAREHOUSE ITEM SET
  740 : S STEX7  EX2I EX2F               PRODUCT ITEM SET
  760 : S STEX8  EX2G EX2H               WAREHOUSE STOCK QUANTITY SET
  780 : S STEX9  EX2I EX2H               PRODUCT QUANTITY SET

O: C1 CH: -DC
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXCODD CODASYL (IDMS) SCHEMA EXAMPLE     100

A LIN : T COMMENT                                                        LIB
* 100 : G COPY (AREA CODE) AREA                                          *VIRT
  120 : G PAGE-RESERVE CONTAINS Y CHARACTERS.                            0349
  140 : G LOCK SECTION.                                                  0349
  160 : G           LOCK TABLE CONTAINS Z PAGES.                         0349
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -DC100GG
```

IDMS Schema (DMCL)/ D2 Type: Generated Description

```
000010 DEVICE-MEDIA DESCRIPTION.
000020 DEVICE-MEDIA NAME IS PRODUCTS OF SCHEMA NAME MANAGER.
000030
000040 AUTHOR. TAYLOR.
000050 DATE. 02 22 85
000060
000070 BUFFER SECTION.
000080              BUFFER NAME IS ORDERS
000090              PAGE CONTAINS N CHARACTERS
000100              BUFFER CONTAINS X PAGES
000110
000120 AREA SECTION.
000130 COPY AREX1  AREA.
000140 PAGE-RESERVE CONTAINS Y CHARACTERS.
000150 LOCK SECTION.
000160           LOCK TABLE CONTAINS Z PAGES.
000170 COPY AREX2  AREA
000180  PAGE-RESERVE Z CHARACTERS.
000190  LOCK SECTION.
000200            LOCK TABLE CONTAINS X PAGES.
000210 COPY AREX3  AREA.
000220 PAGE-RESERVE CONTAINS U CHARACTERS.
000230 LOCK SECTION.
```

```
000240           LOCK TABLE CONTAINS X PAGES.
000250 SET NAME IS  STEX1.
000260 SET NAME IS  STEX2.
000270 SET NAME IS  STEX3.
000280 SET NAME IS  STEX4.
000290 SET NAME IS  STEX5.
000300 SET NAME IS  STEX6.
000310 SET NAME IS  STEX7.
000320 SET NAME IS  STEX8.
000330 SET NAME IS  STEX9.
```

IDMS Sub-Schema / D3 Type: Screens

IDMS SUB-SCHEMA

An IDMS sub-schema is generated from a 'D3'-type Database Block.

If the record description is identical to the one generated in the schema, the system does not generate a description but a 'COPY'.

The user may request a reduced segment description of the complete schema description.

The request for this description is made on the database block description lines from which the sub-schema is generated.

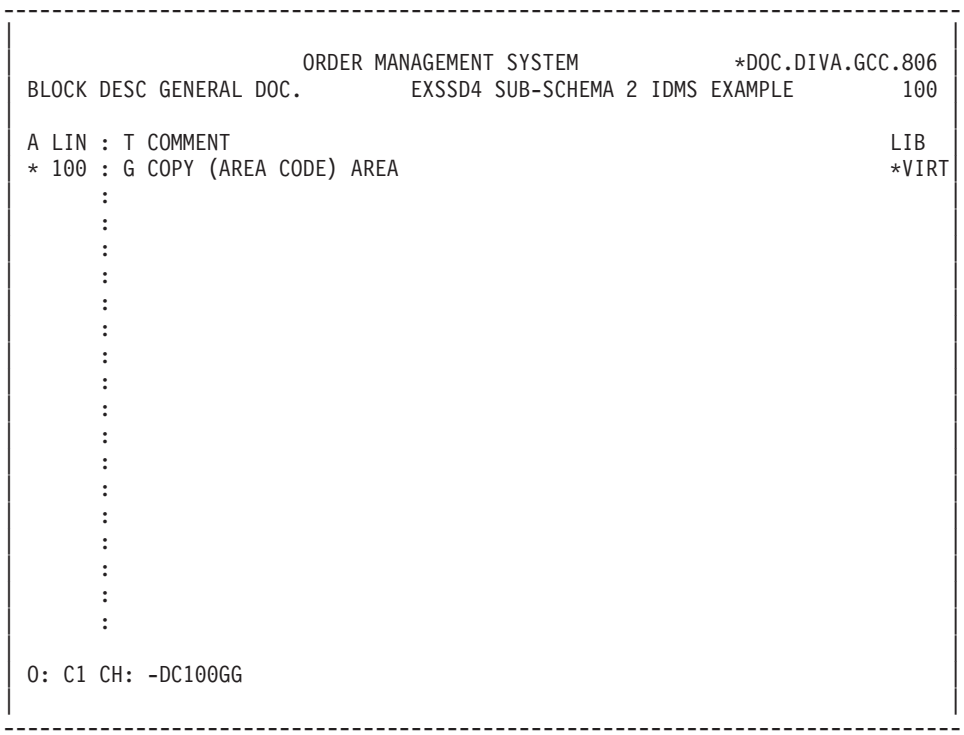
For additional information, please refer to Chapter "CODASYL BLOCKS".

If the record description is different from the one generated in the schema, only the higher-level data elements are taken into account.

```
                        ORDER MANAGEMENT SYSTEM             *DOC.DIVA.GCC.806

BLOCK DEFINITION.............:    EXSSD4

NAME..................: SUB-SCHEMA 2 IDMS EXAMPLE
TYPE..................: D3 SUB-SCHEMA


EXTERNAL NAME.........: S/SCHEMA
EXT. NAME OF SCHEMA...: MANAGER


CONTROL CARDS....... FRONT:         BACK:


EXPLICIT KEYWORDS..:


SESSION NUMBER.....: 0331        LIBRARY......: GCC    LOCK....:




O: C1 CH: B exssd4                    ACTION:
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK     GENERAL DOC.          EXSSD4 SUB-SCHEMA 2 IDMS EXAMPLE

A LIN : T COMMENT                                                       LIB
* 080 : G SUB-SCHEMA          IDENTIFICATION DIVISION                   *VIRT
* 100 : G SUB-SCHEMA NAME IS (EXT. NAME) OF SCHEMA (SCHEMA EXT. NAME)   *VIRT
* 400 : G SUB-SCHEMA   DATA   DIVISION                                  *VIRT
* 500 : G AREA SECTION                                                  *VIRT
* 600 : G RECORD SECTION                                                *VIRT
* 700 : G SET SECTION                                                   *VIRT
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :

O: C1 CH: -GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DE. CODASYL SUBSCHEMA EXSSD4 SUB-SCHEMA 2 IDMS EXAMPLE

A LIN : T AREA  OWNER MEM  MODEL      OCC NAME OF AREA,
      :   SET    SEG  SEG  CODE          SET OR COMMENT
  100 : A AREX1
  120 : A AREX2
  140 : A AREX3
  320 : R AREX1  EX2A
  360 : R AREX2  EX2C      =EX3C
  380 : R AREX2  EX2D
  400 : R AREX2  EX2E
  420 : R AREX2  EX2F
  440 : R AREX3  EX2G
  460 : R AREX3  EX2H
  480 : R AREX3  EX2I
  640 : S STEX2  EX2D EX2C               DUE DATE SET
  660 : S STEX3  EX2A EX2C               CUSTOMER ORDER SET
  680 : S STEX4  EX2E EX2C               ORDER INDEX SET
  700 : S STEX5  EX2C EX2F               ITEM ORDER SET
  720 : S STEX6  EX2G EX2F               WAREHOUSE ITEM SET
  740 : S STEX7  EX2I EX2F               PRODUCT ITEM SET
  760 : S STEX8  EX2G EX2H               WAREHOUSE STOCK QUANTITY SET
  780 : S STEX9  EX2I EX2H               PRODUCT QUANTITY SET

O: C1 CH: -DC
```


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC. EXSSD4 SUB-SCHEMA 2 IDMS EXAMPLE 100
A LIN : T COMMENT LIB
* 100 : G COPY (AREA CODE) AREA *VIRT
O: C1 CH: -DC100GG

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXSSD4 SUB-SCHEMA 2 IDMS EXAMPLE         360

A LIN : T COMMENT                                                       LIB
* 100 : G 01 (SEGMENT CODE)    OR COPY (SEGMENT CODE) RECORD            *VIRT
* 700 :                    ---> DATA-NAME INSERTION STARTING POINT <---  *VIRT
* 800 :                    ---> DATA-NAME INSERTION ENDING POINT <---    *VIRT
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :

O: C1 CH: -DC360GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXSSD4 SUB-SCHEMA 2 IDMS EXAMPLE         660

A LIN : T COMMENT                                                       LIB
* 100 : G COPY  (SET CODE)  SET                                         *VIRT
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :

O: C1 CH: -DC660GG
```

IDMS Sub-Schema / D3 Type: Generated Description

```
000010 SUBSCHEMA IDENTIFICATION DIVISION.
000020 SUBSCHEMA  NAME  IS  S/SCHEMA OF SCHEMA NAME MANAGER.
000030 SUBSCHEMA DATA DIVISION.
000040 AREA SECTION.
000050 COPY AREX1  AREA.
000060 COPY AREX2  AREA.
000070 COPY AREX3  AREA.
000080 RECORD SECTION.
000090 COPY EX2A   RECORD.
000100 01  EX2C.
000110     02              EX2C-ORDHDR.
000120     02              EX2C-ENTDAT.
000130     02              EX2C-DUEDAT.
000140 COPY EX2D   RECORD.
000150 COPY EX2E   RECORD.
000160 COPY EX2F   RECORD.
000170 COPY EX2G   RECORD.
000180 COPY EX2H   RECORD.
000190 COPY EX2I   RECORD.
000200 SET SECTION.
000210 COPY STEX2  SET.
000220 COPY STEX3  SET.
000230 COPY STEX4  SET.
```

```
000240 COPY STEX5  SET.
000250 COPY STEX6  SET.
000260 COPY STEX7  SET.
000270 COPY STEX8  SET.
000280 COPY STEX9  SET.
```

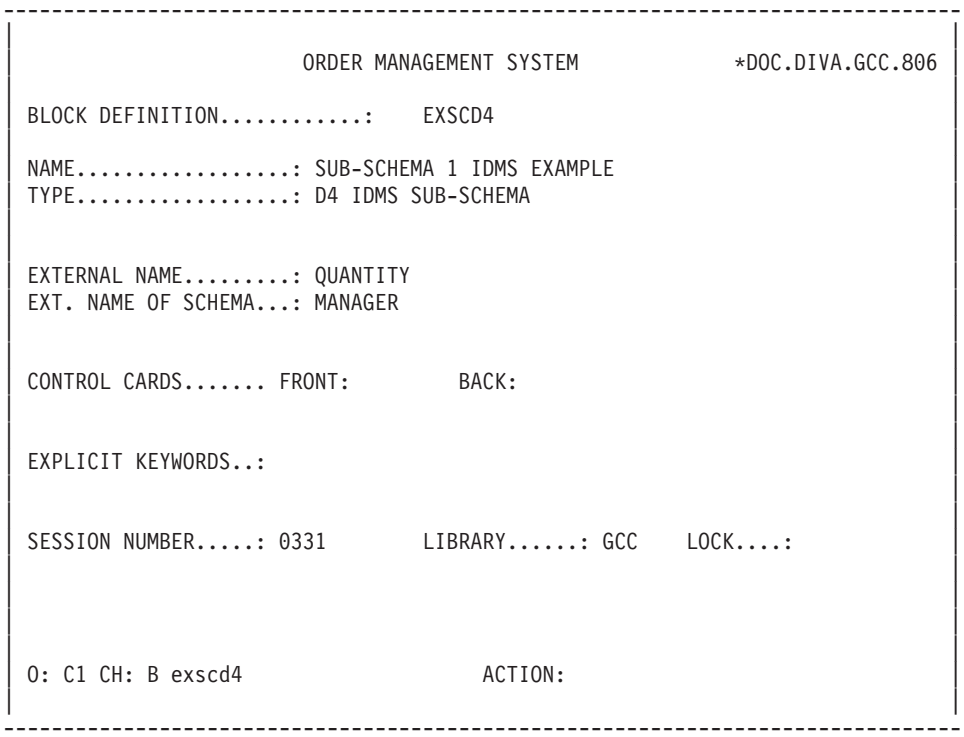
IDMS Sub-Schema / D4 Type: Screens

IDMS SUB-SCHEMA (RELEASE 5.7)

An IDMS sub-schema (release 5.7) is generated from a 'D4'-type Database Block.

Only the data elements at the first level are taken into account when the description is generated.

On the record description line, the user indicates to which sub-schema a data element belongs.


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
BLOCK DEFINITION.....: EXSCD4
NAME.....: SUB-SCHEMA 1 IDMS EXAMPLE
TYPE.....: D4 IDMS SUB-SCHEMA
EXTERNAL NAME.....: QUANTITY
EXT. NAME OF SCHEMA...: MANAGER
CONTROL CARDS..... FRONT: BACK:
EXPLICIT KEYWORDS..:
SESSION NUMBER.....: 0331 LIBRARY.....: GCC LOCK....:
O: C1 CH: B exscd4 ACTION:

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK     GENERAL DOC.          EXSCD4 SUB-SCHEMA 1 IDMS EXAMPLE

A LIN : T COMMENT                                                       LIB
* 080 : G ADD SUB-SCHEMA NAME IS ( NAME ) OF SCHEMA ( NAME )            *VIRT
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :

O: C1 CH: -GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DE. CODASYL SUBSCHEMA EXSCD4 SUB-SCHEMA 1 IDMS EXAMPLE

A LIN : T AREA  OWNER MEM  MODEL      OCC NAME OF AREA,
      :   SET    SEG  SEG  CODE          SET OR COMMENT
  140 : A AREX3
  440 : R AREX3  EX2G
  460 : R AREX3  EX2H
  480 : R AREX3  EX2I
  760 : S STEX8  EX2G EX2H               WAREHOUSE STOCK QUANTITY SET
  780 : S STEX9  EX2I EX2H               PRODUCT QUANTITY SET
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
*** END ***
O: C1 CH: -DC
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXSCD4 SUB-SCHEMA 1 IDMS EXAMPLE         140

A LIN : T COMMENT                                                        LIB
* 100 : G ADD  AREA NAME IS (NAME)                                       *VIRT
* 150 :                    ---> AREA INSERTION SPOT   <---              *VIRT
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -DC140GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXSCD4 SUB-SCHEMA 1 IDMS EXAMPLE         440

A LIN : T COMMENT                                                        LIB
* 100 : G ADD  RECORD NAME IS (NAME)                                     *VIRT
* 150 :                   ---> RECORD INSERTION SPOT <---                *VIRT
* 500 : G      ELEMENTS ARE                                              *VIRT
* 700 :                   ---> DATA-NAME INSERTION STARTING POINT <---   *VIRT
* 800 :                   ---> DATA-NAME INSERTION ENDING POINT <---     *VIRT
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -DC440GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXSCD4 SUB-SCHEMA 1 IDMS EXAMPLE         760

A LIN : T COMMENT                                                        LIB
* 100 : G ADD  SET  NAME IS (NAME)                                       *VIRT
* 150 :                    ---> SET  INSERTION SPOT   <---              *VIRT
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -DC760GG
```

IDMS Sub-Schema / D4 Type: Generated Description

```
ADD    SUBSCHEMA NAME IS QUANTITY OF SCHEMA NAME MANAGER.
ADD  AREA NAME IS AREX3.
ADD  RECORD NAME IS EX2G
     ELEMENTS ARE
                    EX2G-WAREHS
                    EX2G-WARLOC.
ADD  RECORD NAME IS EX2H
     ELEMENTS ARE
                    EX2H-STKQTY
                    EX2H-STKLOC.
ADD  RECORD NAME IS EX2I
     ELEMENTS ARE
                    EX2I-PRODID
                    EX2I-PRDNAM
                    EX2I-PRODES
                    EX2I-PRDINF.
ADD  SET  NAME IS STEX8.
ADD  SET  NAME IS STEX9.
```

DMS Schema (DDL) / S1 Type: Screens

DMS SCHEMA (DDL)

A DMS schema is generated from an 'S1'-type Database Block.

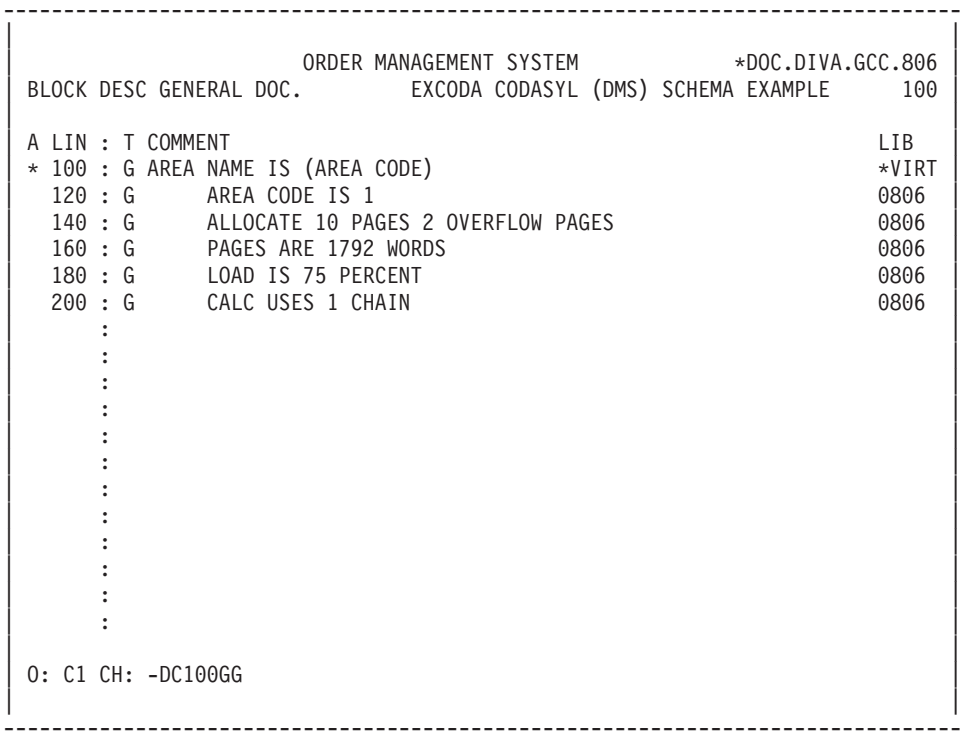
All data elements are taken into account by the system when the description is generated.

The DMS CODASYL elementary data format is the same as the PACBASE format.

```
                        ORDER MANAGEMENT SYSTEM             *DOC.DIVA.GCC.806

BLOCK DEFINITION.............:    EXCODG

NAME..................: CODASYL (DMS) SCHEMA EXAMPLE
TYPE..................: S1 SCHEMA DMS 1100


EXTERNAL NAME.........: MANAGER
EXT. NAME OF SCHEMA...:


CONTROL CARDS....... FRONT:         BACK:


EXPLICIT KEYWORDS..: CODASYL


SESSION NUMBER.....: 0806        LIBRARY......: GCC    LOCK....:




O: C1 CH: B excodg                    ACTION:
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK     GENERAL DOC.          EXCODG CODASYL (DMS) SCHEMA EXAMPLE

A LIN : T COMMENT                                                       LIB
  110 : G             IN FILE XQT$2                                     0806
* 300 : G DATA DIVISION                                                 *VIRT
  400 : G DATA NAME SECTION                                             0806
  420 : G 77  BOOK-AREA-NAME USAGE AREA-NAME                            0806
* 500 : G AREA SECTION                                                  *VIRT
* 550 :                   --->  AREA INSERTION SPOT <---                *VIRT
* 600 : G RECORD SECTION                                                *VIRT
* 650 :                   ---> RECORD INSERTION SPOT <---               *VIRT
* 700 : G SET SECTION                                                   *VIRT
* 750 :                   ---> SET INSERTION SPOT <---                  *VIRT
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC. CODASYL SCHEMA  EXCODA CODASYL (DMS) SCHEMA EXAMPLE

A LIN : T AREA  OWNER MEM  MODEL      OCC NAME OF AREA,
      :   SET    SEG  SEG  CODE          SET OR COMMENT
  100 : A AREX1                    *
  120 : A AREX2

  140 : A AREX3
  320 : R AREX1  EX2A              *
  340 : R AREX1  EX2B
  360 : R AREX2  EX2C
  380 : R AREX2  EX2D
  400 : R AREX2  EX2E
  420 : R AREX2  EX2F
  440 : R AREX3  EX2G
  460 : R AREX3  EX2H
  480 : R AREX3  EX2I
  620 : S STEX1  EX2B EX2A         *       BAD DEBT CUSTOMERS SET
  640 : S STEX2  EX2D EX2C                 DUE DATE SET
  660 : S STEX3  EX2A EX2C                 CUSTOMER ORDER SET
  680 : S STEX4  EX2E EX2C                 ORDER INDEX SET
  700 : S STEX5  EX2C EX2F                 ITEM ORDER SET
  720 : S STEX6  EX2G EX2F                 WAREHOUSE ITEM SET
  740 : S STEX7  EX2I EX2F                 PRODUCT ITEM SET
  760 : S STEX8  EX2G EX2H                 WAREHOUSE STOCK QUANTITY SET
  780 : S STEX9  EX2I EX2H                 PRODUCT QUANTITY SET

O: C1 CH: -DC
```


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC. EXCODA CODASYL (DMS) SCHEMA EXAMPLE 100
A LIN : T COMMENT LIB
* 100 : G AREA NAME IS (AREA CODE) *VIRT
120 : G AREA CODE IS 1 0806
140 : G ALLOCATE 10 PAGES 2 OVERFLOW PAGES 0806
160 : G PAGES ARE 1792 WORDS 0806
180 : G LOAD IS 75 PERCENT 0806
200 : G CALC USES 1 CHAIN 0806
O: C1 CH: -DC100GG

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXCODA CODASYL (DMS) SCHEMA EXAMPLE      320

A LIN : T COMMENT                                                        LIB
* 100 : G RECORD NAME IS (SEGMENT CODE)                                  *VIRT
  120 : G      RECORD CODE IS 9                                          0806
  140 : G      LOCATION MODE IS INDEX SEQUENTIAL                         0806
  160 : G               USING ASCENDING KEY EX2A-CLINUM                  0806
  180 : G               LINKS ARE NEXT                                   0806
  200 : G               DUPLICATES ARE NOT ALLOWED                       0806
  220 : G      RECORD MODE IS ASCII                                      0806
* 300 : G      WITHIN (AREA CODE) AREA                                   *VIRT
* 700 :        ---> DATA-NAME INSERTION STARTING POINT <---              *VIRT
* 800 :        ---> DATA-NAME INSERTION ENDING POINT <---                *VIRT
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -DC320GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXCODA CODASYL (DMS) SCHEMA EXAMPLE      620

A LIN : T COMMENT                                                        LIB
* 100 : G SET NAME IS (SET CODE)                                         *VIRT
  120 : G          SET CODE IS 20                                        0806
  140 : G          MODE IS CHAIN                                         0806
  160 : G          ORDER IS SORTED                                       0806
* 400 : G          OWNER IS (OWNER SEGMENT)                              *VIRT
* 700 : G          MEMBER IS (MEMBER SEGMENT)                            *VIRT
  720 : G          ASCENDING KEY IS EX2A-CLINUM                          0806
  740 : G          DUPLICATES ARE NOT ALLOWED                            0806
      :
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -DC620GG
```

DMS Schema (DDL) / S1 Type: Generated Description

```
IDENTIFICATION DIVISION
SCHEMA NAME IS MANAGER
          IN FILE XQT$2
DATA DIVISION
DATA NAME SECTION
77 BOOK-AREA-NAME USAGE AREA-NAME
AREA SECTION
AREA NAME IS AREX1
   AREA CODE IS 1
   ALLOCATE 10 PAGES 2 OVERFLOW PAGES
   PAGES ARE 1792 WORDS
   LOAD IS 75 PERCENT
   CALC USES 1 CHAINS
AREA NAME IS AREX2
AREA NAME IS AREX3
RECORD SECTION
RECORD NAME IS EX2A
     RECORD CODE IS 9
     LOCATION MODE IS INDEX SEQUENTIAL
              USING ASCENDING KEY EX2A-CLINUM
              LINKS ARE NEXT
              DUPLICATES ARE NOT ALLOWED
     WITHIN AREX1
```

```
  02              EX2A-CLINUM PICTURE 9(8)
                       COMPUTATIONAL
  02              EX2A-CLINAM PICTURE X(32)
  02              EX2A-CLIAD1 PICTURE X(32)
  02              EX2A-CLIAD2 PICTURE X(32)
RECORD NAME IS EX2B
     WITHIN AREX1
  02              EX2B-CLINUM PICTURE 9(8)
                       COMPUTATIONAL
RECORD NAME IS EX2C
     WITHIN AREX2
  02              EX2C-ORDHDR PICTURE X(8)
  02              EX2C-ENTDAT
    03            EX2C-MOENTR PICTURE XX
    03            EX2C-DYENTR PICTURE XX
    03            EX2C-YRENTR PICTURE XX
  02              EX2C-DUEDAT
    03            EX2C-MONDUE PICTURE XX
    03            EX2C-DAYDUE PICTURE XX
    03            EX2C-YRDUE  PICTURE XX
  02              EX2C-CHOIX  PICTURE X
RECORD NAME IS EX2D
     WITHIN AREX2
  02              EX2D-DATEID PICTURE X(8)
RECORD NAME IS EX2E
     WITHIN AREX2
  02              EX2E-ORDNMB PICTURE X(8)
  02              EX2E-DELDAT
    03            EX2E-MONDEL PICTURE XX
    03            EX2E-DAYDEL PICTURE XX
    03            EX2E-YRDEL  PICTURE XX
RECORD NAME IS EX2F
     WITHIN AREX2
  02              EX2F-ITEMNM PICTURE X(4)
  02              EX2F-ITMQTY PICTURE S9(8)
RECORD NAME IS EX2G
     WITHIN AREX3
  02              EX2G-WAREHS PICTURE XX
  02              EX2G-WARLOC PICTURE X(30)
RECORD NAME IS EX2H
     WITHIN AREX3
  02              EX2H-STKQTY PICTURE S9(10)V9(3)
                       COMPUTATIONAL
  02              EX2H-STKLOC
                       COMPUTATIONAL-1
RECORD NAME IS EX2I
     WITHIN AREX3
  02              EX2I-GROUP
    03            EX2I-PRODID PICTURE X(4)
    03            EX2I-PRDNAM PICTURE X(16)
    03            EX2I-PRODES PICTURE X(32)
    03            EX2I-PRDINF PICTURE X(24)
  02              EX2I-PRODID PICTURE X(4)
  02              EX2I-PRDNAM PICTURE X(16)
  02              EX2I-PRODES PICTURE X(32)
```

```
  02              EX2I-PRDINF PICTURE X(24)
SET SECTION
SET NAME IS STEX1
       SET CODE IS 20
       MODE IS CHAIN
       ORDER IS SORTED
  OWNER  IS EX2B
  MEMBER IS EX2A
       ASCENDING KEY IS EX2A-CLINUM
       DUPLICATES ARE NOT ALLOWED
SET NAME IS STEX2
  OWNER  IS EX2D
  MEMBER IS EX2C
SET NAME IS STEX3
  OWNER  IS EX2A
  MEMBER IS EX2C
SET NAME IS STEX4
  OWNER  IS EX2E
  MEMBER IS EX2C
SET NAME IS STEX5
  OWNER  IS EX2C
  MEMBER IS EX2F
SET NAME IS STEX6
  OWNER  IS EX2G
  MEMBER IS EX2F
SET NAME IS STEX7
  OWNER  IS EX2I
  MEMBER IS EX2F
SET NAME IS STEX8
  OWNER  IS EX2G
  MEMBER IS EX2H
SET NAME IS STEX9
  OWNER  IS EX2I
  MEMBER IS EX2H
```

DMS Sub-Schema / S3 Type: Screens

DMS SUB-SCHEMA

A DMS sub-schema is generated from a 'S3'-type Database Block.

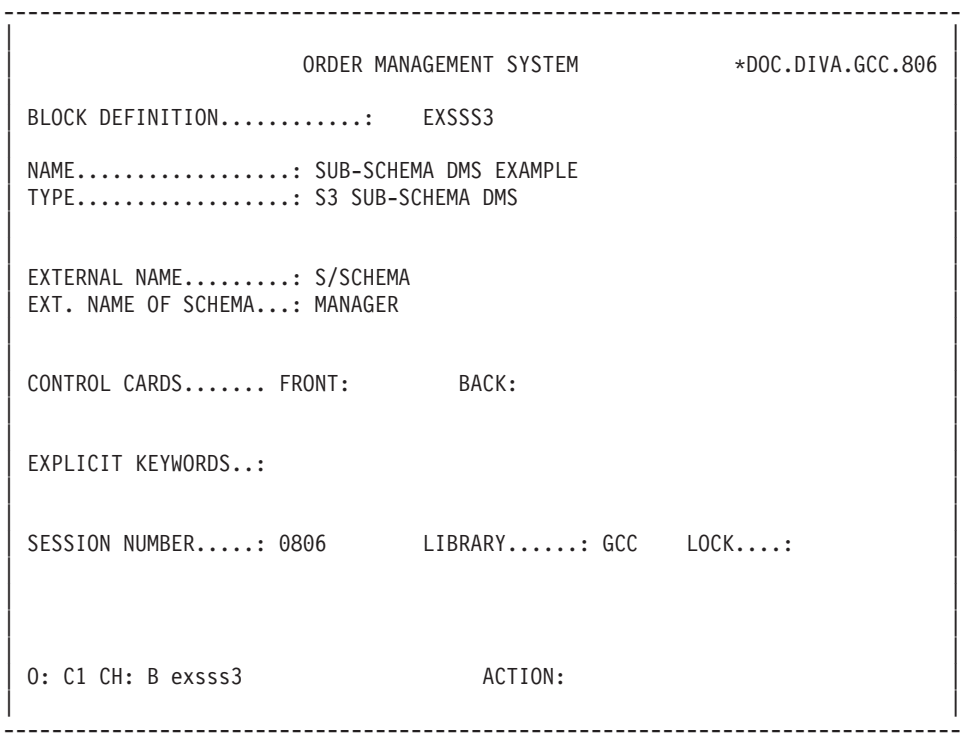
If the record description is identical to the one generated in the schema, the system does not generate a description, but an 'ITEMS ARE ALL'.

The user may request a reduced segment description of the complete schema description.

The request for this description is made on the database block description lines from which the sub-schema is generated.

For additional information, please refer to the "CODASYL BLOCKS" Chapter.

If the record description is different from the one generated in the schema, only the elementary data elements are taken into account.


ORDER MANAGEMENT SYSTEM *DOC.DIVA.GCC.806
BLOCK DEFINITION.....: EXSSS3
NAME.....: SUB-SCHEMA DMS EXAMPLE
TYPE.....: S3 SUB-SCHEMA DMS
EXTERNAL NAME.....: S/SCHEMA
EXT. NAME OF SCHEMA...: MANAGER
CONTROL CARDS..... FRONT: BACK:
EXPLICIT KEYWORDS..:
SESSION NUMBER.....: 0806 LIBRARY.....: GCC LOCK....:
O: C1 CH: B exsss3 ACTION:

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK     GENERAL DOC.          EXSSS3 SUB-SCHEMA DMS EXAMPLE

A LIN : T COMMENT                                                        LIB
* 080 : G IDENTIFICATION DIVISION                                        *VIRT
* 100 : G       SUB-SCHEMA NAME ( NAME )                                 *VIRT
  110 : G       IN FILE XQT$2                                            0806
* 120 : G       OF SCHEMA ( NAME )                                       *VIRT
* 140 : G       HOST LANGTUAGE IS ASCII COBOL                            *VIRT
* 300 : G DATA DIVISION                                                  0806
  400 : G DATA NAME SECTION                                              0806
  410 : G      DATA NAMES ARE ALL                                        0806
* 500 : G AREA SECTION                                                   *VIRT
* 550 : G       AREAS ARE (AREA NAMES)                                   *VIRT
* 600 : G RECORD SECTION                                                 *VIRT
* 650 : G       RECORDS ARE (RECORD NAMES)                               *VIRT
* 700 : G SET SECTION                                                    *VIRT
* 750 : G       SETS ARE (SET NAMES)                                     *VIRT
       :
       :
       :
       :

O: C1 CH: -GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DE. CODASYL SUBSCHEMA EXSSS3 SUB-SCHEMA DMS EXAMPLE

A LIN : T AREA  OWNER MEM  MODEL      OCC NAME OF AREA,
      :   SET    SEG  SEG  CODE           SET OR COMMENT
  100 : A AREX1
  120 : A AREX2
  140 : A AREX3
  320 : R AREX1  EX2A                     SS=1
  360 : R AREX2  EX2C      =EX4C
  380 : R AREX2  EX2D
  400 : R AREX2  EX2E
  420 : R AREX2  EX2F
  440 : R AREX3  EX2G
  460 : R AREX3  EX2H
  480 : R AREX3  EX2I
  640 : S STEX2  EX2D EX2C                DUE DATE SET
  660 : S STEX3  EX2A EX2C                CUSTOMER ORDER SET
  680 : S STEX4  EX2E EX2C                ORDER INDEX SET
  700 : S STEX5  EX2C EX2F                ITEM ORDER SET
  720 : S STEX6  EX2G EX2F                WAREHOUSE ITEM SET
  740 : S STEX7  EX2I EX2F                PRODUCT ITEM SET
  760 : S STEX8  EX2G EX2H                WAREHOUSE STOCK QUANTITY SET
  780 : S STEX9  EX2I EX2H                PRODUCT QUANTITY SET

O: C1 CH: -DC
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXSSS3 SUB-SCHEMA DMS EXAMPLE            100

A LIN : T COMMENT                                                        LIB
* 100 : G      (AREA NAME IN THE SCHEMA)                                 *VIRT
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :

O: C1 CH: -DC100GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXSSS3 SUB-SCHEMA DMS EXAMPLE            360

A LIN : T COMMENT                                                       LIB
* 080 : G      (RECORD NAME IN THE SCHEMA)                             *VIRT
* 100 : G      RECORD NAME IS (SEGMENT CODE)                           *VIRT
* 500 : G        ITEMS ARE                                             *VIRT
* 700 :                ---> ITEMS STARTING POINT     <---              *VIRT
* 800 :                ---> ITEMS ENDING POINT       <---              *VIRT
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :
      :

O: C1 CH: -DC360GG
```

```
                        ORDER MANAGEMENT SYSTEM            *DOC.DIVA.GCC.806
BLOCK DESC GENERAL DOC.         EXSSS3 SUB-SCHEMA DMS EXAMPLE           660

A LIN : T COMMENT                                                    LIB
* 100 : G      (SET NAME IN THE SCHEMA)                              *VIRT
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :
       :

O: C1 CH: -DC660GG
```

DMS Sub-Schema / S3 Type: Generated Description

```
IDENTIFICATION DIVISION
  SUBSCHEMA NAME IS    S/SCHEMA
    IN FILE XQT$2
  OF SCHEMA MANAGER
  HOST LANGUAGE IS ASCII COBOL
DATA DIVISION
DATA NAME SECTION
   DATA NAMES ARE ALL
AREA SECTION
  AREAS ARE
        AREX1
        AREX2
        AREX3
RECORD SECTION
  RECORDS ARE
          EX2A
          EX2C
          EX2D
          EX2E
          EX2F
          EX2G
          EX2H
          EX2I
```

```
  RECORD NAME IS EX2A
         ITEMS ARE
               EX2A-CLINUM
               EX2A-CLINAM
  RECORD NAME IS EX2C
         ITEMS ARE
               EX2C-ORDHDR
               EX2C-MOENTR
               EX2C-DYENTR
               EX2C-YRENTR
  RECORD NAME IS EX2D
         ITEMS ARE ALL
  RECORD NAME IS EX2E
         ITEMS ARE ALL
  RECORD NAME IS EX2F
         ITEMS ARE ALL
  RECORD NAME IS EX2G
         ITEMS ARE ALL
  RECORD NAME IS EX2H
         ITEMS ARE ALL
  RECORD NAME IS EX2I
         ITEMS ARE ALL
SET SECTION
  SETS ARE
        STEX2
        STEX3
        STEX4
        STEX5
        STEX6
        STEX7
        STEX8
        STEX9
```

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