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ETAS Introduction

#### 1 Introduction

This technical note gives an overview over the DCM file formats supported by ASCET and INCA. It gives an overview over the two different file formats, that exist. The two different file formats are referenced as *format 1.x* and *format 2.x* in this document. Format 1.x is described in chapter 2, and format 2.x is described in chapter 3.

ASCET supports the format 1.x and 2.x (since ASCET V5.0). INCA supports V2.x since INCA V3.2, INTECRIO and its experiment environment support format 1.1 since INTECRIO V3.0, and format 2.0 since V3.3 of the experiment environment.

In INCA V5 and higher, the calibration data manager (CDM) supports generating format 2.x only. See the INCA online help for more details.

DCM files can be generated and read within the ASCET or INTECRIO experiment environment and the ASCET data set editor; see the respective online help for more details.

# 1.1 Glossary

#### **CDM**

Calibration Data Manager, an INCA tool that provides you with functions for administering and analyzing datasets generated in test series.

#### Component

Complex element in ASCET. In brief, all elements listed in the database.

#### **DCM**

Data Conservation format, a DAMOS format used in ASCET, INTECRIO and its experiment environment, and INCA.

### Element

Primitive elements, such as variables, parameters, etc.

# 1.2 Typographic Conventions

The following typographic conventions are used:

Select File  $\rightarrow$  Open. Menu options are shown in blue boldface.

Click **OK**. Buttons are shown in **blue boldface**.

Press <ENTER>. Keyboard commands are shown in angled

brackets and CAPITALS.

The "Open File" dialog window

opens.

Names of program windows, dialog windows, fields etc. are shown in quotation marks.

Select the file setup.exe. Text in drop-down lists on the screen, pro-

gram code, as well as path and file names are

shown in the Courier font.

A *distribution* is always a onedimensional table of sample

points.

Content markings and newly introduced

terms are shown in italics.

The OSEK group (see <a href="http://www.osekvdx.org/">http://www.osekvdx.org/</a>) has developed certain standards.

Links to internet documents are set in <u>blue</u>, <u>underlined</u> font.

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Important notes for the user are shown as follows:

Note

Important note for the user.

ETAS DCM File Format 1.x

# 2 DCM File Format 1.x

Two versions of the DCM file format 1.x are available: normal and extended. ASCET provides two options to activate the extended format 1.x. INTECRIO supports only format 1.1.

#### 2.1 File Format

**Comments:** All lines that start with "\*", "!" or "." are comment lines.

**Names of SW parameters :** The syntax conditions used in C apply to names.

**Floating-point numbers**: The syntax conditions used in C apply to floating-point numbers. With whole numbers (without numbers after the decimal point) the decimal point is not required. Numbers can be represented in "E" format.

**Line structure:** The syntax is strictly line-oriented; each line begins with a keyword. The line length is limited to 132. Blank spaces and tabs are permitted as separators and may appear several times. A line must only contain one keyword together with its parameters.

**Syntax**: The DCM format 1.x contains the following syntax elements.

#### Note

Some parts of the syntax elements are available only in the extended format. Those parts are set in boldface.

```
parameter
               ::= FESTWERT < name >
                      WERT <value>
                    END
array
               ::= FESTWERTEBLOCK < name > < size x >
                      WERT <value list>1
                    END
matrix
               ::= FESTWERTEBLOCK <name>
                                <size_x> @ <size_y>
                      WERT <value list>2
                    END
char. line
                    KENNLINIE <name> <size x>
                      ST/X < X  sample point list>^3
                      WERT <value list>4
                    END
```

<sup>1.</sup> The value list contains <size\_x> values.

<sup>&</sup>lt;sup>2.</sup> This line contains <size\_x> values. The syntax element contains <size\_y> of these lines.

<sup>3.</sup> The sample point list contains <size\_x> values.

<sup>4.</sup> The value list contains <size\_x> values.

DCM File Format 1.x **ETAS** 

```
char. map ::= KENNFELD <name> <size x> <size y>
                         ST/X < X  sample point list>^1
                         ST/Y <Y sample point>2
                         WERT <value list>2,3
                       END
  fixed char. line::=FESTKENNLINIE <name> <size x>
                         ST/X < X  sample point list><sup>1</sup>
                         WERT <value list>3
                       END
  fixed char. map::= FESTKENNFELD <name>
                                    <size_x> <size_y>
                         ST/X < X  sample point list><sup>1</sup>
                         ST/Y < Y  sample point><sup>2</sup>
                         WERT <value list>2,3
                       END
  group char. line::=GRUPPENKENNLINIE <name> <size_x>
                       *SSTX <X distribution>
                         ST/X <X sample point list>1
                         WERT <value list>3
                       END
  group char. map::= GRUPPENKENNFELD <name>
                                    <size_x> <size_y>
                       *SSTX <X distribution>
                       *SSTY <Y distribution>
                         ST/X <X sample point list>1
                         ST/Y <Y sample point>2
                         WERT <value list>2,3
                       END
  distribution ::= STUETZSTELLENVERTEILUNG <name>
                                            <size_x>
                         ST/X <sample point list>1
                       END
1. The sample point list contains <size_x> values.
```

<sup>&</sup>lt;sup>2</sup> The syntax element contains <size\_y> pairs of ST/Y and WERT lines.

<sup>3.</sup> The value list contains <size\_x> values.

ETAS DCM File Format 1.x

#### **Explanations:**

 <value> is the value of a scalar parameter. The type depends on the setting for the element, it can be float, signed integer, or unsigned integer.

- <value list> is a list of values from a one- or two-dimensional parameter (array, matrix, characteristic line/map). The type depends on the setting for the element, it can be float, signed integer, or unsigned integer, or logical (array and matrix only).
- <size\_x> and <size\_y> are the X and Y size of the element, represented by integer numbers.
- <X sample point list> is a list of X sample points of a characteristic line or map, or a dsitribution. The type depends on the setting for the element, it can be float, signed integer, or unsigned integer. For fixed and group characteristic lines/maps, these lists are shown only in the extended format.
- <Y sample point> is an Y sample point of a characteristic map. The
  type depends on the setting for the element, it can be float, signed
  integer, or unsigned integer. For fixed and group characteristic
  maps, these values are shown only in the extended format.
- <X distribution> and <Y distribution> are the names of the distributions used in group characteristic lines and maps.

Boolean values are written as integer values in format 1.x (false = 0, true = 1). An option is provided in ASCET to suppress the inclusion of Booleans when a DCM file is created.

Enumerations are shown only in the extended format. They follow the same syntax as parameters (cf. page 7), only the WERT line is replaced by the following line (where <value> is the name of the currently selected enumerator):

TEXT "<value>"

# 2.2 Examples

This section contains examples for the normal (chapter 2.2.1) and extended (chapter 2.2.2) DCM File Format 1.x created with ASCET from a demo module. Fig. 2-1 shows the block diagram, Fig. 2-2 shows the element properties of the module elements.

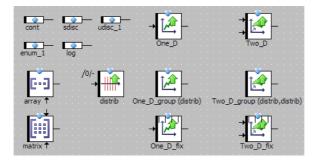


Fig. 2-1 Example module – block diagram

DCM File Format 1.x ETAS

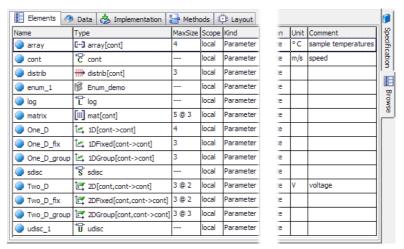


Fig. 2-2 Example module – Elements

FESTWERTEBLOCK array 4

0.75 -0.25 0.5

WERT

#### 2.2.1 Normal DCM File Format 1.x

```
* DAMOS format
* Created by ASCET
* Creation date: 21.11.2012 14:03:54
* DamosDataFilePath: 'c:\ETASData\ASCET6.1\
                                 Test_DCM1.dcm'
* DamosExtensionForOutput: 'dcm'
* DamosFormatVersion: '1'
* DamosCaseSensitiveNames: true
* DamosIncludeBooleans: true
* DamosIncludeDependentParameter: true
* DamosBooleanFormat: 'Integer'
* DamosV1WriteEnums: false
* DamosEnumerationFormat: 'String'
* DamosV1WriteSamplingPoints: false
* DamosShowInputLogFile: true
* DamosInputLogFile: 'c:\ETAS\LogFiles\ASCET\
                                 filein.log'
* DamosShowOutputLogFile: true
* DamosOutputLogFile: 'c:\ETAS\LogFiles\ASCET\
                                 fileout.log'
```

1.5

ETAS DCM File Format 1.x

```
END
FESTWERT cont
 WERT 3.1415
END
STUETZSTELLENVERTEILUNG distrib 3
 ST/X 1.0 2.0 3.0
END
FESTWERT log
 WERT 0
END
FESTWERTEBLOCK matrix 5 @ 3
 WERT 0.0 0.25 0.5 0.75 1.0
 WERT 1.0 1.25 1.5 1.75 2.0
 WERT 2.0 2.25 2.5 2.75 3.0
END
KENNLINIE One_D 4
 ST/X 0.0 1.0 2.0 3.0
 WERT 0.0 0.0 0.0 0.0
END
FESTKENNLINIE One_D_fix 3
WERT -1.0 1.25 3.0
END
GRUPPENKENNLINIE One_D_group 3
*SSTX distrib\Module_Block_Diagram
 WERT -10.0 1.0 5.937
END
FESTWERT sdisc
WERT -98
END
KENNFELD Two_D 3 2
 ST/X 0.0 1.0 2.0
 ST/Y 0.0
```

WERT 0.0 0.4 0.8

WERT 1.0 2.0 3.0

ST/Y 1.0

DCM File Format 1.x ETAS

```
END
  FESTKENNFELD Two_D_fix 3 2
    WERT 0.0 10.0 1000.0
    WERT -1.0 9.0 999.0
  END
  GRUPPENKENNFELD Two_D_group 3 3
  *SSTX distrib\Module_Block_Diagram
  *SSTY distrib\Module_Block_Diagram
    WERT 1.0 2.0 3.0
    WERT 2.0
                  4.0 6.0
    WERT 3.0 6.0 9.0
  END
  FESTWERT udisc_1
     WERT 876
  END
Extended DCM File Format 1.x
Parts of the DCM file not present in the normal format 1.x are set in boldface.
  * DAMOS format
  * Created by ASCET
  * Creation date: 21.11.2012 14:03:39
  * DamosDataFilePath: 'c:\ETASData\ASCET6.1\
                                 Test_DCM1ex.dcm'
  * DamosExtensionForOutput: 'dcm'
  * DamosFormatVersion: '1'
  * DamosCaseSensitiveNames: true
  * DamosIncludeBooleans: true
  * DamosIncludeDependentParameter: true
  * DamosBooleanFormat: 'Integer'
  * DamosV1WriteEnums: true
  * DamosEnumerationFormat: 'String'
  * DamosV1WriteSamplingPoints: true
  * DamosShowInputLogFile: true
  * DamosInputLogFile: 'c:\ETAS\LogFiles\ASCET\
```

2.2.2

filein.log'

\* DamosShowOutputLogFile: true

ETAS DCM File Format 1.x

```
* DamosOutputLogFile: 'c:\ETAS\LogFiles\ASCET\
                          fileout.log'
FESTWERTEBLOCK array 4
  WERT 0.75 -0.25 0.5 1.5
END
FESTWERT cont
 WERT 3.1415
END
STUETZSTELLENVERTEILUNG distrib 3
 ST/X 1.0 2.0 3.0
END
FESTWERT enum_1
  TEXT
        "red"
END
FESTWERT log
 WERT 0
END
FESTWERTEBLOCK matrix 5 @ 3
 WERT 0.0 0.25 0.5
                        0.75
 WERT 1.0 1.25 1.5 1.75
                                2.0
 WERT 2.0
             2.25 2.5
                         2.75
                                3.0
END
KENNLINIE One_D 4
  ST/X 0.0 1.0 2.0 3.0
  WERT 0.0 0.0 0.0 0.0
END
FESTKENNLINIE One_D_fix 3
  ST/X 0.0 1.0 2.0
  WERT -1.0 1.25 3.0
END
GRUPPENKENNLINIE One_D_group 3
*SSTX distrib\Module_Block_Diagram
  ST/X 1.0 2.0 3.0
  WERT -10.0 1.0 5.937
```

DCM File Format 1.x ETAS

END

FESTWERT sdisc

WERT -98

END

KENNFELD Two\_D 3 2

ST/X 0.0 1.0 2.0

ST/Y 0.0

WERT 0.0 0.4 0.8

ST/Y 1.0

WERT 1.0 2.0 3.0

END

FESTKENNFELD Two\_D\_fix 3 2

ST/X 0.0 1.0 2.0

ST/Y 0.0

WERT 0.0 10.0 1000.0

ST/Y 1.0

WERT -1.0 9.0 999.0

END

GRUPPENKENNFELD Two\_D\_group 3 3

\*SSTX distrib\Module\_Block\_Diagram

\*SSTY distrib\Module\_Block\_Diagram

ST/X 1.0 2.0 3.0

ST/Y 1.0

WERT 1.0 2.0 3.0

ST/Y 2.0

WERT 2.0 4.0 6.0

ST/Y 3.0

WERT 3.0 6.0 9.0

END

FESTWERT sdisc

WERT -98

END

ETAS DCM File Format 2.x

#### 3 DCM File Format 2.x

# 3.1 Changes

A new parameter content file format has been defined. This contains much more information than the "conventional" parameter content file. The following information is new:

- Module header info, e.g. for function-related calibration statuses
- Assignment of SW parameters to functions
- · Variant coding
- · Long name (comment) for a SW parameter
- Display name (as per ASAM)
- · Units of measurement
- Text values for verbally converted SW parameters

In format 2.x, the parameter content file is based on the "extended format 1.x" described in chapter 2.1 "File Format". This means that data point information cannot be omitted from grouped and fixed curves and maps.

# 3.2 File Format

**Comments:** All lines that start with "\*", "!" or "." are comment lines.

Names of SW parameters: The rules for the syntax of SW parameter names are the same as those used for writing ASAM-MCD-2MC in ASCET (see the respective documentation). Such names may be made up of several parts, including "." and numbers. This means that array and structure components can be mapped, e.g. rad[3].profilrille[0].breite. The syntax conditions are those used in C.

**Names of functions etc.** The syntax conditions for "identifiers" used in C apply to names.

**Floating-point numbers**: The syntax conditions used in C apply to floating-point numbers. With whole numbers (without numbers after the decimal point), the decimal point is not required. Numbers can be represented in "E" format.

**Line structure:** The syntax is strictly line-oriented; each line begins with a keyword. There is no limit on the line length. Blank spaces and tabs are permitted as separators and may appear several times. A line must only contain one keyword together with its parameters.

**Syntax**: The DCM format 2.x contains the following syntax elements.

<sup>1.</sup> The syntax element contains one FKT line for each function defined.

DCM File Format 2.x ETAS

variant coding ::= VARIANTENKODIERUNG KRITERIUM <v-name> <v-val\_1>  $\dots < v-val\_n > 1,2$ END ::= MODULKOPF <mod name> "<mod text>"3 module header "<mod text>"4 MODULKOPF ::= FESTWERT <name> parameter LANGNAME "<comment text>" DISPLAYNAME <asam-2mc name> VAR < v-name > = < v-val i > 5FUNKTION <f-name> EINHEIT W "<unit text>" WERT <value> END

#### Note

The following syntax elemens can also contain DISPLAYNAME, VAR and FUNKTION lines.

1. The syntax element contains one KRITERIUM line for each variant.

<sup>2.</sup> One KRITERIUM line can contain several values  $\langle v-val\_i \rangle$ .

6. The value list contains <size\_x> values.

<sup>3.</sup> One MODULKOPF line with <mod name > contains one module header element

<sup>4.</sup> The line without <mod name > is used to continue the <mod text > from the line before.

<sup>5.</sup> One VAR line can contain one <v-name>=<v-val\_i> element for each KRITERIUM line in the variant coding.

<sup>7.</sup> This line contains <size\_x> values. The syntax element contains <size\_y> of these lines.

DCM File Format 2.x **ETAS** 

```
char. line ::= KENNLINIE <name> <size_x>
                       LANGNAME "<comment text>"
                       EINHEIT X "<unit text>"
                       EINHEIT_W "<unit text>"
                       ST/X < X  sample point list>^1
                       WERT <value list>2
                    END
               ::= KENNFELD <name> <size_x> <size_y>
char. map
                       LANGNAME "<comment text>"
                       EINHEIT X "<unit text>"
                       EINHEIT_Y "<unit text>"
                       EINHEIT_W "<unit text>"
                       ST/X < X  sample point list><sup>1</sup>
                       ST/Y <Y sample point>3
                       WERT <value list>2,3
                    END
fixed char. line ::= FESTKENNLINIE <name> <size_x>
                          LANGNAME "<comment text>"
                          EINHEIT_X "<unit text>"
                          EINHEIT_W "<unit text>"
                          ST/X < X  sample point list><sup>1</sup>
                          WERT <value list>1
                       END
fixed char. map ::= FESTKENNFELD <name>
                                    <size_x> <size_y>
                          LANGNAME "<comment text>"
                          EINHEIT_X "<unit text>"
                          EINHEIT_Y "<unit text>"
                          EINHEIT W "<unit text>"
                          ST/X < X  sample point list><sup>1</sup>
                          ST/Y < Y  sample point><sup>3</sup>
                          WERT <value list>2,3
                          . . .
                       END
```

<sup>1.</sup> The sample point list contains <size\_x> values.

<sup>2.</sup> The value list contains <size\_x> values.

<sup>3.</sup> The syntax element contains <size\_y> pairs of ST/Y and WERT lines.

DCM File Format 2.x ETAS

```
group char. line ::= GRUPPENKENNLINIE <name> <size_x>
                       LANGNAME "<comment text>"
                       EINHEIT X "<unit text>"
                       EINHEIT_W "<unit text>"
                     *SSTX <X distribution>
                       ST/X < X  sample point list>^1
                       WERT <value list>2
                     END
group char. map ::= GRUPPENKENNFELD <name>
                                                    \downarrow
                                <size_x> <size_y>
                       LANGNAME "<comment text>"
                       EINHEIT_X "<text>"
                       EINHEIT_Y "<text>"
                       EINHEIT W "<unit text>"
                     *SSTX <X distribution>
                     *SSTY <Y distribution>
                       ST/X <X sample point list>1
                       ST/Y <Y sample point>3
                       WERT <value list>2,3
                     END
distribution
                <size x>
                       LANGNAME "<comment text>"
                       EINHEIT_X "<text>"
                       ST/X <sample point list>1
                     END
```

#### **Explanations:**

- <f-name>, <f-version> and <f-longname> are name, version number and longname of a function in a function definition block (page 15).
- <v-name> and <v-val\_i> are the name and values of a variant in the variant coding block (page 16).

<sup>1.</sup> The sample point list contains <size\_x> values.

<sup>&</sup>lt;sup>2</sup> The value list contains <size\_x> values.

<sup>3.</sup> The syntax element contains <size\_y> pairs of ST/Y and WERT lines.

ETAS DCM File Format 2.x

• <mod name > and <mod text > are name and description of a module header element (page 16).

#### Note

DCM files generated by ASCET do not contain a function definition block FUNKTIONEN, a variant coding block VARIANTENCODIERUNG and module header elements MODULKOPF.

- <comment text> in the LANGNAME element is derived from the "Comment" field in the ASCET element editor.
- <asam-2mc name> in the DISPLAYNAME line is the ASAM-MCD-2MC name of the model element.

#### Note

DCM files generated by ASCET do not contain a DISPLAYNAME line.

- <up>• <unit text> in the EINHEIT\_W element is the unit of the value. It is derived from the "Unit" field of the ASCET element editor.
- <text> in the EINHEIT\_X and EINHEIT\_Y elements is the unit of the X and Y axes.

#### Note

DCM files generated by ASCET contain empty EINHEIT\_X and EINHEIT\_Y lines.

- <value> is the value of a scalar parameter. The type depends on the setting for the element, it can be float, signed integer, unsigned integer, Or logical.
- <value list> is a list of values from a one- or two-dimensional parameter (array, matrix, characteristic line/map). The type depends on the setting for the element, it can be float, signed integer, or unsigned integer, or logical (array and matrix only).
- <size\_x> and <size\_y> are the X and Y size of the element, represented by integer numbers.
- <X sample point list> is a list of X sample points of a characteristic line or map, or a dsitribution. The type depends on the setting for the element, it can be float, signed integer, or unsigned integer. For fixed and group characteristic lines/maps, these lists are shown only in the extended format.
- <Y sample point> is an Y sample point of a characteristic map. The
  type depends on the setting for the element, it can be float, signed
  integer, or unsigned integer. For fixed and group characteristic
  maps, these values are shown only in the extended format.
- <X distribution> and <Y distribution> are the names of the distributions used in group characteristic lines and maps.

Boolean values are written either in logical (true or false) or integer format (false = 0, true = 1), depending on your selection in the ASCET options window. In the first case, the WERT line is replaced by the following line:

```
TEXT "<value>" ["<value>" ...]
```

DCM File Format 2.x ETAS

An option is provided to suppress the inclusion of Booleans when a DCM file is created.

Enumerations follow the same syntax as parameters (cf. page 16), only the WERT line is replaced by the followig line (where <value> is the name of the currently selected enumerator):

```
TEXT "<value>"
```

# 3.3 Example: DCM File Format 2.x

WERT 3.1415

This section contains an example for the DCM File Format 2.x created with ASCET from the demo module of chapter 2.2. Syntax elements not present in ASCET-generated DCM files have not been added manually.

```
* DAMOS format
* Created by ASCET
* Creation date: 21.11.2012 17:06:25
* DamosDataFilePath: 'c:\ETASData\ASCET6.1\
                               Test DCM2.dcm'
* DamosExtensionForOutput: 'dcm'
* DamosFormatVersion: '2'
* DamosCaseSensitiveNames: true
* DamosIncludeBooleans: true
* DamosIncludeDependentParameter: true
* DamosBooleanFormat: 'String'
* DamosEnumerationFormat: 'String'
* DamosShowInputLogFile: true
* DamosInputLogFile: 'c:\ETAS\LogFiles\ASCET\
                                                     ↵
                               filein.log'
* DamosShowOutputLogFile: false
* DamosOutputLogFile: 'c:\ETAS\LogFiles\ASCET\
                               fileout.log'
KONSERVIERUNG_FORMAT 2.0
FESTWERTEBLOCK array 4
  LANGNAME "sample temperatures"
  EINHEIT_W "° C"
  WERT
       0.75 -0.25 0.5 1.5
END
FESTWERT cont
  LANGNAME "speed"
  EINHEIT W "m / s"
```

ETAS DCM File Format 2.x

END

```
STUETZSTELLENVERTEILUNG distrib 3
 LANGNAME "object length"
 EINHEIT_X ""
 ST/X 1.0 2.0 3.0
END
FESTWERT enum_1
 LANGNAME ""
 EINHEIT_W ""
 TEXT "first"
END
FESTWERT log
 LANGNAME ""
 EINHEIT_W ""
 TEXT "false"
END
FESTWERTEBLOCK matrix 5 @ 3
 LANGNAME ""
 EINHEIT_W ""
 WERT 0.0 0.25 0.5 0.75 1.0
 WERT 1.0 1.25 1.5 1.75 2.0
  WERT 2.0 2.25 2.5 2.75
                                3.0
END
KENNLINIE One_D 4
 LANGNAME ""
 EINHEIT_X ""
 EINHEIT_W ""
  ST/X 0.0 1.0 2.0 3.0
 WERT 0.0 0.0 0.0 0.0
END
FESTKENNLINIE One_D_fix 3
 LANGNAME ""
 EINHEIT X ""
  EINHEIT_W ""
  ST/X 0.0 1.0 2.0
  WERT -1.0 1.25 3.0
```

DCM File Format 2.x ETAS

END

```
GRUPPENKENNLINIE One_D_group 3
 LANGNAME ""
 EINHEIT_X ""
 EINHEIT_W ""
*SSTX distrib\Module_Block_Diagram
  ST/X 1.0 2.0 3.0
  WERT -10.0 1.0 5.937
END
FESTWERT sdisc
 LANGNAME ""
 EINHEIT_W ""
 WERT -98
END
KENNFELD Two_D 3 2
 LANGNAME "voltage"
 EINHEIT X ""
 EINHEIT_Y ""
 EINHEIT_W "V"
  ST/X 0.0 1.0 2.0
 ST/Y 0.0
 WERT 0.0 0.4 0.8
  ST/Y 1.0
  WERT 1.0 2.0 3.0
END
FESTKENNFELD Two_D_fix 3 2
 LANGNAME ""
 EINHEIT_X ""
  EINHEIT_Y ""
  EINHEIT_W ""
 ST/X 0.0 1.0 2.0
 ST/Y 0.0
  WERT 0.0 10.0 1000.0
  ST/Y 1.0
  WERT -1.0 9.0 999.0
GRUPPENKENNFELD Two_D_group 3 3
```

ETAS DCM File Format 2.x

```
LANGNAME ""
 EINHEIT_X ""
 EINHEIT Y ""
  EINHEIT_W ""
*SSTX distrib\Module_Block_Diagram
*SSTY distrib\Module_Block_Diagram
             2.0 3.0
  ST/X 1.0
  ST/Y 1.0
 WERT 1.0 2.0 3.0
 ST/Y 2.0
 WERT 2.0 4.0 6.0
  ST/Y 3.0
 WERT 3.0 6.0 9.0
END
FESTWERT udisc_1
 LANGNAME ""
 EINHEIT_W ""
 WERT 876
END
```

DCM File Format 2.x ETAS

# 4 ETAS Contact Addresses

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# ETAS Subsidiaries and Technical Support

For details of your local sales office as well as your local technical support team and product hotlines, take a look at the ETAS website:

ETAS subsidiaries WWW: <u>www.etas.com/en/contact.php</u>
ETAS technical support WWW: <u>www.etas.com/en/hotlines.php</u>

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