DCM File Formats

Technical Note

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Contents

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 **D**ata **M**anager, 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** → **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, program code, as well as path and file names are shown in the `Courier` font.
A *distribution* is always a one-dimensional table of sample points.	Content markings and newly introduced terms are shown in *italics*.
The OSEK group (see http://www.osekvdx.org/) has developed certain standards.	Links to internet documents are set in blue, underlined font.

Important notes for the user are shown as follows:

Note

Important note for the user.

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
```

[1] The value list contains <*size_x*> values.

[2] This line contains <*size_x*> values. The syntax element contains <*size_y*> of these lines.

[3] The sample point list contains <*size_x*> values.

[4] The value list contains <*size_x*> values.

```
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>[1]
                      WERT <value list>[3]
                    END

fixed char. map::= FESTKENNFELD <name>                ↵
                                <size_x> <size_y>
                      ST/X <X sample point list>[1]
                      ST/Y <Y sample point>[2]
                      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.
[2] The syntax element contains <*size_y*> pairs of ST/Y and WERT lines.
[3] The value list contains <*size_x*> values.

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 followig 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.

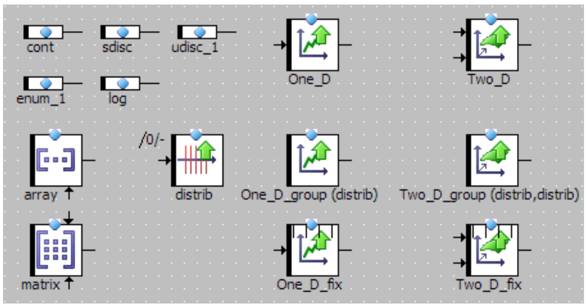
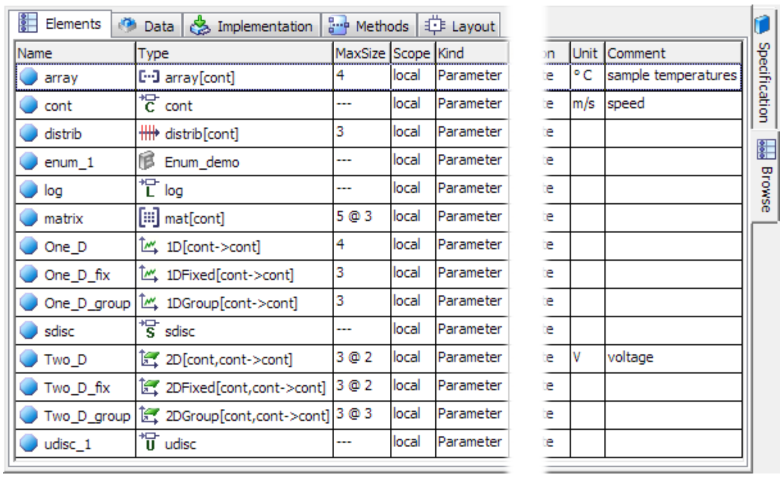


Fig. 2-1 Example module – block diagram



Name	Type	MaxSize	Scope	Kind	n	Unit	Comment
array	array[cont]	4	local	Parameter	e	°C	sample temperatures
cont	cont	---	local	Parameter	e	m/s	speed
distrib	distrib[cont]	3	local	Parameter	e		
enum_1	Enum_demo	---	local	Parameter	e		
log	log	---	local	Parameter	e		
matrix	mat[cont]	5 @ 3	local	Parameter	e		
One_D	1D[cont->cont]	4	local	Parameter	e		
One_D_fix	1DFixed[cont->cont]	3	local	Parameter	e		
One_D_group	1DGroup[cont->cont]	3	local	Parameter	e		
sdisc	sdisc	---	local	Parameter	e		
Two_D	2D[cont,cont->cont]	3 @ 2	local	Parameter	e	V	voltage
Two_D_fix	2DFixed[cont,cont->cont]	3 @ 2	local	Parameter	e		
Two_D_group	2DGroup[cont,cont->cont]	3 @ 3	local	Parameter	e		
udisc_1	udisc	---	local	Parameter	e		

Fig. 2-2 Example module – Elements

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'

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 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
  ST/Y   1.0
  WERT   1.0    2.0    3.0
```

```
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
```

2.2.2 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\       ↵
                             filein.log'
* DamosShowOutputLogFile: true
* 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   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
  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
```

```
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
```

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.

```
funct. defin.    ::=  FUNKTIONEN
                      FKT <f-name> "<f-version>"       ↵
                                   "<f-longname>"[1]

                      ...
                  END
```

[1] The syntax element contains one FKT line for each function defined.

```
variant coding   ::=  VARIANTENKODIERUNG
                        KRITERIUM <v-name> <v-val_1>    ↵
                                   ... <v-val_n>[1,2]
                        ...
                      END
module header    ::=  MODULKOPF <mod name> "<mod text>"[3]
                        MODULKOPF           "<mod text>"[4]
parameter        ::=  FESTWERT <name>
                        LANGNAME "<comment text>"
                        DISPLAYNAME <asam-2mc name>
                        VAR <v-name>=<v-val_i>[5]
                        FUNKTION <f-name>
                        EINHEIT_W "<unit text>"
                        WERT <value>
                      END
```

Note

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

```
array            ::=  FESTWERTEBLOCK <name> <size_x>
                        LANGNAME "<comment text>"
                        EINHEIT_W "<unit text>"
                        WERT <value list>[6]
                      END

matrix           ::=  FESTWERTEBLOCK <name>              ↵
                                 <size_x> @ <size_y>
                        LANGNAME "<comment text>"
                        EINHEIT_W "<unit text>"
                        WERT <value list>[7]
                        ...
                      END
```

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

[2] One `KRITERIUM` line can contain several values <*v-val_i*>.

[3] One `MODULKOPF` line with <*mod name*> contains one module header element.

[4] The line without <*mod name*> is used to continue the <*mod text*> from the line before.

[5] One VAR line can contain one <*v-name*>=<*v-val_i*> element for each `KRITERIUM` line in the variant coding.

[6] The value list contains <*size_x*> values.

[7] This line contains <*size_x*> values. The syntax element contains <*size_y*> of these lines.

```
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

char. map       ::=  KENNFELD <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>[1]
                        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>[1]
                          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>[1]
                          ST/Y <Y sample point>[3]
                          WERT <value list>[2,3]
                          ...
                        END
```

[1] The sample point list contains <*size_x*> values.
[2] The value list contains <*size_x*> values.
[3] The syntax element contains <*size_y*> pairs of `ST/Y` and `WERT` lines.

```
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>          ↵
                                 <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     ::=  STUETZSTELLENVERTEILUNG <name>  ↵
                                 <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).

[1] The sample point list contains *<size_x>* values.
[2] The value list contains *<size_x>* values.
[3] The syntax element contains *<size_y>* pairs of ST/Y and WERT lines.

- <*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.*

- <*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>" ...]
```

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

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"
  WERT 3.1415
```

```
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
```

```
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
END
GRUPPENKENNFELD Two_D_group 3 3
```

```
  LANGNAME ""
  EINHEIT_X ""
  EINHEIT_Y ""
  EINHEIT_W ""
*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 udisc_1
  LANGNAME ""
  EINHEIT_W ""
  WERT 876
END
```

4 ETAS Contact Addresses

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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:

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