Documentation

CSG-Raster

Plot Solutions

Version 2.0

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IMPRINT

CSG-Raster V2.0 Documentation

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INTRODUCTION

Preface

With this documentation you will get an overview of the program CSG-Raster, concerning the functions and the use of them.
It starts with the installation description and indications to configuration and license of the product.
As well the use of the program is described and the configuration file is explained by an example.
Basic knowledge of the operating system NT and the way of working with a pc is required.

Style

Keywords of configuration files of MEDUSA
(e.g.: **CPT041**)

Path names and filenames are written in italic style.
(e.g.: *usr**CSG**csgraster.des*)

CSG-Raster

General hints

CSG-Raster is a program, that converts MEDUSA-sheets to several raster formats. It works like a plotter driver.

All necessary settings are made in a configuration file. You will an example for such a file at the end of the documentation (page 29).

We recommend our supplementary products for direct plotting from MEDUSA, **CSGPLOT** and for offline plotting **X-OFFPLOT**.

New in this version

The version level of the licensing system was increased from 3 to 5, so it is according to MEDUSA licensing system.

The available raster formats have been increased much. Here a list of possible formats:

MODE	raster format	color depth	remark
0	TIFF uncompressed	1,8	
1	BMP uncompressed	1,8	
2	PCX	8	
3	TARGA	8	
7	TIFF Huffman	1	
8	TIFF G3 FAX	1	
10	TIFF G4 FAX	1	
12	BMP compressed	8	
13	JPEG	24	compression degrees adjustable
14	EPS	1	
18	CALS G4 (A,B)	1	additional information possible
20	XBM	1	
32	TARGA High Color	24	
35	XPM	8	
37	RAST	1,8	
41	PHOTOSHOP	8	
43	PNG	1	

So far the format CALS supports only type1.

INSTALLATION

Description of the product

• **CSG-Raster** works like any MEDUSA plotter driver and is released for the following platforms:
- Windows NT 4.0 (Intel)

• supported MEDUSA versions are:
- MEDUSA NG 2000i

• Please refer for all available standard commands to the MEDUSA Plotting Guide. Further informations or examples you can find in the directory *...\plot\examples.*.

• the licensing management is based upon:
- *csgsys V.2.5*

Description of installation

Installation

Copy the software to any directory of your computer. Bellow we take

C:\medusa\otherproducts

for the installation path, to simplify the spelling.
There is a self extracting WinZIP archive on the CD. Open it by double clicking inside the NT Explorer. Enter the target path for the **CSG-Raster** installation and follow the instructions of the installing program.

It is necessary for **CSG-Raster** that the **csgsys** base product is already installed on your system.
Note, that the path included in the product list is called *csgsys\medusa*.

Configuration of the CSG-Raster project with medconfig

Handle **CSG-Raster** like any MEDUSA product, that means that you have to configure it like an other MEDUSA product.

First enter the path to your **CSG-Raster** directory into the product list of your MEDUSA project. It must be entered after the MEDUSA products.
The product must at least contain one MEDUSA module:

- **C:\medusa\medsys**
- **C:\medusa\med2d**
- **C:\medusa\medplot**
- **C:\medusa\otherproducts\CSGSYS\MEDUSA**
- **C:\medusa\otherproducts\MEDPLOT_CSGRASTER**

After the login procedure start the program **medconfig**. (If you configure the first time, use the login of medsys)

```
MEDCONFIG -ADMIN
```

Configure your project.
If you only want to reconfigure, use this command:

```
RECONFIGURE
```

First the MEDUSA products will be configured.

If all MEDUSA products are configured, **CSG-Raster** is integrated.

License

CSG-Raster is available as a single workstation license of CAD-Schroer GmbH. The license must be entered into **csgsys**.

If the product is already installed on your system, open the file *csgsys\csg\licence\licence.dat* using an editor and enter the row for the **CSG-Raster** license.
If this file does not exist, first install the product **csgsys** under this path name and than enter the license using an editor.

If you try to start **CSG-Raster** without a license, an error message will appear and the program does not start.

HANDLING

The program **CSG-Raster** works like a MEDUSA plotter driver.

All necessary settings are made in a configuration file. The syntax corresponds as far as possible to the standard commands of the MEDUSA plotting manuell. The most important commands are described in the chapter CSG-Raster instructions (page 15).

Together with the software an example configuration file is delivered:

medplot_csgraster\PLOT\examples\stdalone.des

there most of the features of **CSG-Raster** are already predefined.

To configure the program, edit the configuration file. Adjust all settings, e.g. declaration of the plotting file and the target format, name of the target file, etc.

You have several possibilities to start **CSG-Raster**.
If you work with **CSG-Plot** or **X-Off-Plot**, you can start **CSG-Raster** out of this programs. Please, look up in the corresponding manual.

To use **CSG-Raster** standalone, open the file:

medplot_csgraster\PLOT\examples\Stdplot.bat

using an editor. It describes, how a sheet is directly send from MEDUSA to a plot queue, in this case **CSG-Raster**.

INSTRUCTIONS OVERVIEW

CSG-Raster instructions

List of all available instructions

The list of all **CSG-Raster** instructions follows below. Each **CSG-Raster** specific instruction starts with **dricom.**

Syntax:

dricom “COMMAND“

The following table shows only the commands.

• **backrgb**	Sets the background color in RGB color system.
• **forgrgb**	Sets the pen's color in RGB color system for the monochrome formats.
• **penrgb**	Sets the colors in RGB color system for the single pens.
• **penwid**	Sets the pen's width.
• **rasmode**	Sets the output format.
• **rasoption**	Input of additional information.
• **resolution**	Sets the resolution for the output format.
• **stkcap**	Sets the line end of the vector end-points.
• **stkjoin**	Sets the value for the segmental joints.
• **usertext**	Sets the text for plotting.

backrgb

NAME	**backrgb**
SYNTAX	dricom “backrgb [RGB-values]“
DESCRIPTION	The command "backrgb" sets the background color for the output format in RGB color system.
OPTIONS	RGB-values A color in RGB color system: three integers 0...255.
EXAMPLE	**dricom “backrgb 0 0 0“** - black background

forgrgb

NAME	**forgrgb**
SYNTAX	dricom “forgrgb [RGB-values]“
DESCRIPTION	The command "forgrgb" sets the default pen's color in RGB color system for the monochrome output formats. This parameter is ignored for the colored output formats, for which the colors of the pens are specified.
OPTIONS	RGB-values color in RGB color system: three integers 0...255.
EXAMPLE	**dricom “forgrgb 255 255 255“** - white background

penrgb

NAME	**penrgb**
SYNTAX	dricom “penrgb [Pen] [RGB-values]“
DESCRIPTION	The colors are assigned to the pens, according to the RGB-values.
OPTIONS	Pen Number of a pen, 0-255 are allowed (256 pens are possible). RGB-values color in RGB color system: three integers 0...255.
EXAMPLE	**dricom “penrgb 0 255 0 0“** - red **dricom “penrgb 1 0 255 0“** - green **dricom “penrgb 2 255 255 0“** - yellow **dricom “penrgb 3 0 255 255“** - light blue

penwid

NAME	**penwid**
SYNTAX	dricom “penwid [pen] [width]“
DESCRIPTION	The command "penwid" sets the width of the single pens for plotting. Resolution should be considered.
OPTIONS	pen Number of a pen, 0-255 are allowed (256 pens are possible). width Width of a pen is a value between 0.0 and 406.7 mm.
EXAMPLE	**dricom “penwid 0 0.18“** **dricom “penwid 1 0.25“** **dricom “penwid 2 0.35“** **dricom “penwid 3 0.5“**

rasmode

NAME **rasmode**

SYNTAX dricom “rasmode [Code]“

DESCRIPTION The command "rasmode" sets the output format.

OPTIONS Supported file formats:

Code:	File format:	Description:	Bit level support:
0	TIFF uncompressed	Tagged Image File Format (*.tif, *.tiff), uncompressed	1 or 8-bits
1	BMP uncompressed	Windows, OS/2 Bitmap (*.bmp), uncompressed	1 or 8-bits
2	PCX	Zsoft Paintbrush (*.pcx)	8-bits
3	TARGA	Truevision Targa (*.tga)	8-bits
7	TIFF Huffman	Tagged Image File Format with Huffmann-compression (*.tif, *.tiff)	1-bit
8	TIFF G3 FAX	Tagged Image File Format (*.tif, *.tiff), compression: G3 FAX	1-bit
10	TIFF G4 FAX	Tagged Image File Format (*.tif, *.tiff), compression: G4 FAX	1-bit
12	BMP compressed	Windows, OS/2 Bitmap (*.bmp), compression	8-bits
13	JPEG	JPEG - JFIF Compliant (*.jpg, *.jif, *.jpeg), adjustable compression.	24-bits
14	EPS	Encapsulated Postscript (*.eps)	1-bit
18	CALS G4 (A,B)	Computer Aided Acquision and Logistic Support. Additional Header-Information can be provided.	1-bit
20	XBM	Unix Bitmap-Format (*.xbm), black/white only.	1-bit
32	TARGA High Color	Truevision Targa (*.tga)	24-bits
35	XPM	Unix Bitmap-Format (*.xpm)	8-bits

37	RAST	Sun Raster Image (*.ras)	1 or 8-bits
41	PHOTOSHOP	Photoshop Image (*.pst)	8-bits
43	PNG	Portable Network Graphics (*.png)	1-bit

EXAMPLE **dricom “rasmode 1“**

rasoption

This instruction allows the user to define additional parameters.

allgemein

NAME	**rasoption**
SYNTAX	dricom “rasoption ’autoextension [on / off]’ “
DESCRIPTION	The command activates or deactivates the automatic extending of the output file names depending on the output file format.
OPTIONS	on or off
auto extension	If "on", a format-dependant extension will be added to the output file name.
EXAMPLE	**dricom “rasoption ’autoextension = on’ “**

jpeg

NAME	**rasoption**
SYNTAX	dricom “rasoption [jpeg_qual] [value]“
DESCRIPTION	The command sets the compression ratio to quality factor when converting to JPEG. 100 corresponds to the best image quality and the largest file size.

OPTIONS	VALUE
jpeg_qual	The compression ratio is an integer between 30-100.

EXAMPLE **dricom “rasoption ’jpeg_qual = 50’ “**

cals

NAME	**rasoption**
SYNTAX	dricom “rasoption [cals_keyword] [String]“
DESCRIPTION	Sets header informations for the CALS output format (1840A, 1840B).

OPTIONS	VALUE
cals_destdocid	String, (1840A, 1840B)
cals_didid	String, (1840B)
cals_docclass	String, (1840B)
cals_dttype	String (1840A, 1840B)
cals_figureid	String, (1840A)
cals_moduleid	String, (1840B)
cals_notes	String (1840A, 1840B)
cals_sourcedocid	String (1840A, 1840B)
cals_sourcegraph	String, (1840A)
cals_specversion	String, (1840B)
cals_textfileid	String, (1840A)
cals_version	aver or bver (1840A, 1840B)
cals_destdocid	String (1840A, 1840B)

EXAMPLE **dricom “rasoption ’cals _version = bver’ “**
dricom “rasoption ’cals _dtype = 1’ “

resolution

NAME	**resolution**
SYNTAX	dricom “resolution [resolution]“
DESCRIPTION	The command "resolution" sets the resolution in DPI (dots per inch) for the output file.
OPTIONS	resolution Integer value between 75 and 1200 DPI. Note that the output files can get large if high resolution (400 DPI and more) is used. For that case more memory is required and performance of the software slows down. Therefore high resolutions should be applied on appropriate equipped hardware and only if required. Standard value is 200 DPI.
EXAMPLE	**dricom “resolution 200“**

stkcap

NAME	**stkcap**
SYNTAX	dricom “stkcap [Mode]“
DESCRIPTION	The command "stkcap" sets the line ending of the vector end-points. The look of the end-points of lines is determined by it.
OPTIONS	Mode Can get following values: 0 Line is square cut at the end-point, default value. 1 line's end-points are filled semicircles of a diameter, which is equal to the line's width. 2 line is square cut at the point, which is situated on that line a half line width after the end-point of it.
EXAMPLE	**dricom “stkcap 0“**

stkjoin

NAME	**stkjoin**
SYNTAX	dricom “stkjoin [Mode]“
DESCRIPTION	The command "stkjoin" sets the value for the segmental joints. It determines the look of the segmental joints of lines, which consist of several segments.
OPTIONS	Mode Can get following values: 0 butt joint: outer edges of both segments are extended to the point where they meet. Default value. 1 rounded joint: a filled circular arc of the diameter, which is equal to the line's width, is drawn around the meeting point of the segments. A rounded corner is the result. 2 bevel joint: segments are square cut at the ends. A filled triangular notch is the result.
EXAMPLE	**dricom “stkjoin 0“**

usertext

NAME	**usertext**
SYNTAX	dricom “usertext [on / off]“ dricom “usertext [String]“ dricom “usertext x, y [text high]“
DESCRIPTION	An additional text is plotted onto the sheet. The original sheet will not be modified.

OPTIONS

on	Set „on“.
off	Sets „off“.
String	Input of the plot string, max 256 characters.
x, y (Text high)	Input of position and text high. If no values are given, default is x=0.0 y=0.0 text high =2.5

EXAMPLE

dricom “usertext on“
dricom “usertext ’Originalzeichnung’ “
dricom “usertext 1.0 1.0 3.5“

CONFIGURATION FILE

Below is an example configuration file. All rows beginning with „--“ are ignored by the program. They are either comments or program options, which are not in use at this time.

Example file

```
@e-echoff
--
--
-- Description file for single sheet plot in standalone mode:
--
-- the following commands are necessary for standalone mode:
-- (for further description look up MEDUSA Plotting Guide)
--
-- php  - Pen Definition
--
-- lgp  - assign MEDUSA pens to plotter-pens (php)
--
-- plotter - definition of the target file and possible spool comment
--
-- area - definition of max. physical plot size at the plotter
--
-- she - description of the sheet file to be plot
--
-- project - description of the MEDUSA project directory
--
-- plot - converting the sheet file into the plotter format
--
-- further useful commands:
--
-- inis on - initializes the plotter driver automatically after
--            every plot. e.g.: the plot area will be set again.
--
-- autoscale - all plots will be scaled and printed to the size given
--             by autoscale, e.g. A4 to A3
--
-- rot - rotates the plot 90 degrees. May be handled together with
--        autoscale, to get the correct result.
--
-- example:
--
-- pen definition
--
php  0  thick 0.1   col 0 0 0
php  1  thick 0.18  col 0 0 0
php  2  thick 0.25  col 0 0 0
php  3  thick 0.35  col 0 0 0
php  4  thick 0.5   col 0 0 0
```

```
php  5  thick 0.7   col 0 0 0
php  6  thick 1.0   col 0 0 0
php  7  thick 1.25  col 0 0 0
--
-- here the logical MEDUSA pens are assigned to the physical
-- plotter pens
--
lgp  0/4  php 0
lgp  5/9  php 1
lgp 10/14 php 2
lgp 15/19 php 3
lgp 20/24 php 4
lgp 25/29 php 5
lgp 30/31 php 6
-- or
--lgp  0/4  php 1
--lgp  5/9  php 2
--lgp 10/14 php 3
--lgp 15/19 php 4
--lgp 20/24 php 5
--lgp 25/29 php 6
--lgp 30/31 php 7
--
-- in the " spool mode " MEDUSA completes the name of the output file
-- with the following characteristics:
-- username, hostname , plotqueue number, number of copies
-- in standalone mode the plotqueue number is always 0
-- e.g-: plot_fredWINHOST_0_1.hgl
--
plotter zeichnungsname sin --spool "copy %f% con" spoolend "del %all%"
--
area  x 2000.0  y 1000.0
--
inis on
--
--
-- at " phpsel man " a pen selection is done, like it is indicated in
the lgp command
--
phpsel man
--
--

dricom "RASOPTION 'AUTOEXTENSION = ON'"
dricom "RASOPTION 'CALS_VERSION = BVER'"
dricom "RASOPTION 'CALS_SPECVERSION = MIL-R-28002A 19881220'"
dricom "RASOPTION 'CALS_DTYPE = 1'"

dricom "forgrgb 0 0 0"
dricom "backrgb  255 255 255"
--
dricom "penw 0 0.18"
```

```
dricom "penw 1 0.25"
dricom "penw 2 0.35"
dricom "penw 3 0.5"
dricom "penw 4 0.7"
dricom "penw 5 1.0"
dricom "penw 6 1.25"

dricom "stkjoin 2"
dricom "stkcap  1"

dricom "penrgb 0 255 0 0"
dricom "penrgb 1   0 196   0"
dricom "penrgb 2 255 255   0"
dricom "penrgb 3   0 255 255"
dricom "penrgb 4 255 128   0"
dricom "penrgb 5 128 128 255"
dricom "penrgb 6 255   0 255"
--
-- scale if necessary
--
-- autoscale 195 280
-- autoscale on
--
-- rotate if necessary
--
-- rot on
--
-- default = 200
dricom "resolution 200"
-- default = 11
--
-- TIFF uncompressed
-- dricom "rasmode 0"
-- BMP uncompressed
dricom "rasmode 1"
-- PCX
-- dricom "rasmode 2"
-- TARGA
-- dricom "rasmode 3"
-- TIFF Huffmann
-- dricom "rasmode 7"
-- TIFF G3
-- dricom "rasmode 8"
-- TIFF G4
-- dricom "rasmode 10"
-- BMP compressed
-- dricom "rasmode 12"
-- JPEG
-- dricom "rasmode 13"
-- CALS G4
-- dricom "rasmode 18"
-- XBM
```

```
-- dricom "rasmode 20"
-- TARGA High Color
-- dricom "rasmode 32"
-- RAST
-- dricom "rasmode 35"
-- RAST
-- dricom "rasmode 37"
-- PHOTOSHOP
-- dricom "rasmode 41"
-- PNG
-- dricom "rasmode 43"
--
-- standalone plot commands:
--
she std_lines.she
--
project k:\medusa\medusa_2000i\master_project
arcfac 0.001
--
plot
--
quit
--
```

Annotation to the sample configuration

In order to annotate the configuration file, we have deleted all commented lines. Better do not do it in practice! Otherwise you will have to insert new lines each time anything must be changed in the configuration. This can lead to additional mistakes.

```
php  0  thick 0.1   col 0 0 0
php  1  thick 0.18  col 0 0 0
php  2  thick 0.25  col 0 0 0
php  3  thick 0.35  col 0 0 0
php  4  thick 0.5   col 0 0 0
php  5  thick 0.7   col 0 0 0
php  6  thick 1.0   col 0 0 0
php  7  thick 1.25  col 0 0 0
```

Assignment of the plotter pens.

```
lgp  0/4  php 0
lgp  5/9  php 1
lgp 10/14 php 2
lgp 15/19 php 3
lgp 20/24 php 4
lgp 25/29 php 5
lgp 30/31 php 6
```

Assignment of the pens to the the logical MEDUSA-pens. A group of MEUSA-lines can be assigned to a plotter pen, for example MEUSA-lines L, or SL from 0 to 4 are assigned to the plotter pen 0.

```
plotter drawing_name sin --spool "copy %f% con" spoolend "del %all%"
```

`„drawing_name“` Name of the output file without extension.

`area  x 2000.0  y 1000.0` Defines the maximum drawing area.

`inis on` Initializes the plotter.

`phpsel man` Pen selection is executed.

`dricom "RASOPTION 'AUTOEXTENSION = ON'"` Activates the automatic extending of the output file name depending on the output file format.

```
dricom "RASOPTION 'CALS_VERSION = BVER'"
dricom "RASOPTION 'CALS_SPECVERSION = MIL-
R-
        28002A 19881220'"
dricom "RASOPTION 'CALS_DTYPE = 1'"
```

Sets the header information for the for the CALS output format (1840A, 1840B).

```
dricom "forgrgb 0 0 0"
dricom "backrgb  255 255 255"
```

Sets the foreground and background colors for the output format in RGB color system.

```
dricom "penw 0 0.18"
dricom "penw 1 0.25"
dricom "penw 2 0.35"
dricom "penw 3 0.5"
dricom "penw 4 0.7"
dricom "penw 5 1.0"
dricom "penw 6 1.25"
```

Sets the width of the single pens for plotting.

```
dricom "stkjoin 2"
```

Sets the look of the segmental joints to the bevel joint (filled triangular notch).

```
dricom "stkcap  1"
```

Sets the look of the line endings to filled semi circles.

```
dricom "penrgb 0 255   0   0"
dricom "penrgb 1   0 196   0"
dricom "penrgb 2 255 255   0"
dricom "penrgb 3   0 255 255"
dricom "penrgb 4 255 128   0"
dricom "penrgb 5 128 128 255"
dricom "penrgb 6 255   0 255"
```

Sets the colors of the pens in RGB color system.

```
dricom "resolution 200"
```

Sets the resolution for the output file to 200DPI (dots per inch).

```
dricom "rasmode 1"
```

Sets the output format to "BMP uncompressed".

`she std_lines.she`	Sets the name of the input file.
`project k:\medusa\medusa_2000i\ master_project`	Sets the path for CSG-Raster.
`arcfac 0.001`	Sets the approximation rate of the circles with polygons.
`plot`	Starts the conversion to the output format.
`quit`	Finishes the application.

RESTRICTIONS

Not supported standard instructions

The following instructions (as described in MEDUSA Plotting Guide) are not supported currently:

- HNC
- HLS
- HSY
- DSY
- DLL
- RASTER
- BACKDROP
- USC
- CYC
- DEFFORMAT FIRSTTEXT
- DEFFORMAT LASTTEXT

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