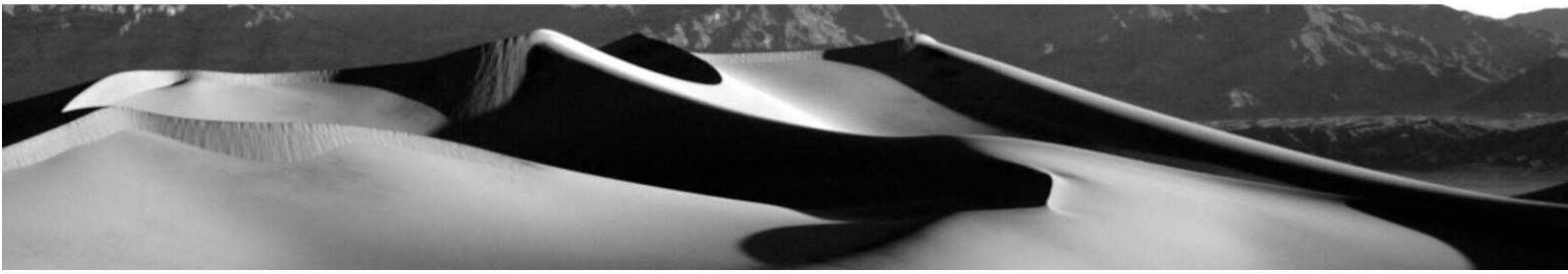

# AV2IDRISI 1.0
## for ArcGIS 9.x and ArcView 3.x

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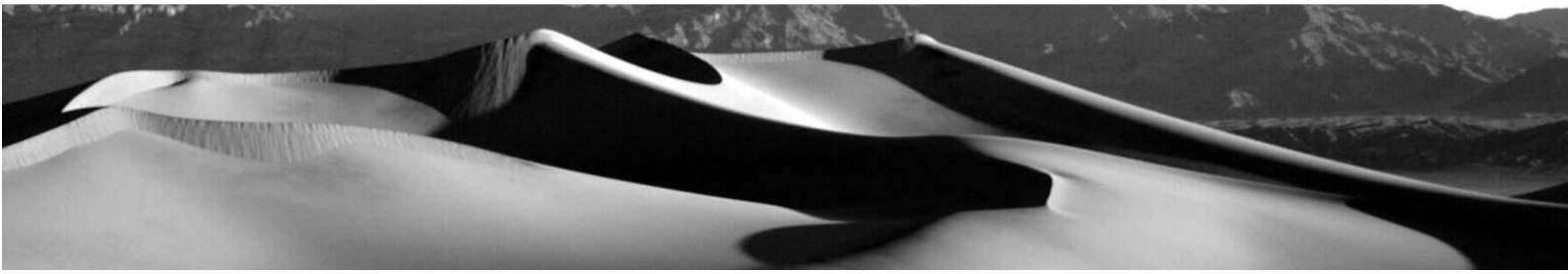
# 1. Introduction

AV 2 IDRISI is a software which converts IDRISI image files into ESRI grid files and vice versa. IDRISI and IDRISI32 images are supported. The following conversion tasks are possible:

**IDRISI to ESRI grid:**

IDRISI byte image ⇨ ESRI integer grid
IDRISI integer image ⇨ ESRI integer grid
IDRISI real image ⇨ ESRI floating point grid



All kind of IDRISI images are supported whether they are in binary or ASCII code and whether the are stored as Idrisi16 or Idrisi32 files. Idrisi16 images have a *.img extension, Idrisi32 images have a *.rst extension.

**ESRI grid to IDRISI:**

ESRI integer grid (2 byte) ⇨ IDRISI integer image
ESRI integer grid (4 byte) ⇨ IDRISI real image
ESRI floating point grid ⇨ IDRISI real image
The IDRISI files can be stored in binary or ASCII code and as Idrisi16 or Idrisi32 files.

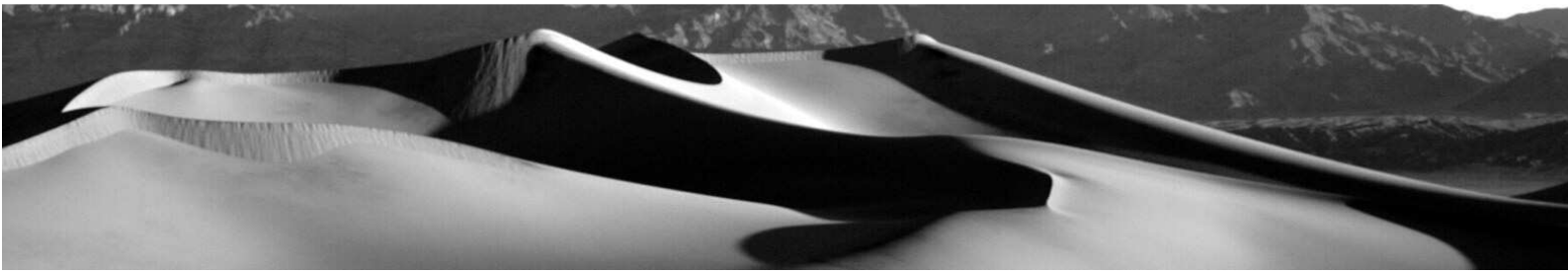
AV 2 IDRISI is availabele in two different versions. One version for ArcGIS 9.x and one version for ArcView 3.x. Both are included in the zipped file av2idrisi.zip. AV 2 IDRISI is free of charge for all purposes (private use, education, science and commercial uses). Please, note that all reported bugs of have been fixed so that we assume that the both extensions should work properly. Nevertheless, there is no warranty for perfect function in any case. Therefore any comments or suggestions for improvement will be highly appreciated.

# 2. Installation

## Installation of AV 2 IDRISI in ArcGIS 9.x

The version ‘AV 2 IDRISI for ArcGIS 9.x’ comes along with two dynamic link libraries ‘grid2idrisi_krn.dll’ and ‘grid2idrisi_dlg.dll‘. To make the extension run it is necessary to copy both libraries on your computer. Make sure to copy the file ‘grid2idrisi_krn.dll’ to the ArcGIS ‘Bin’ folder. The file ‘grid2idrisi_dlg.dll’ can be stored elsewhere. Then perform the following steps:

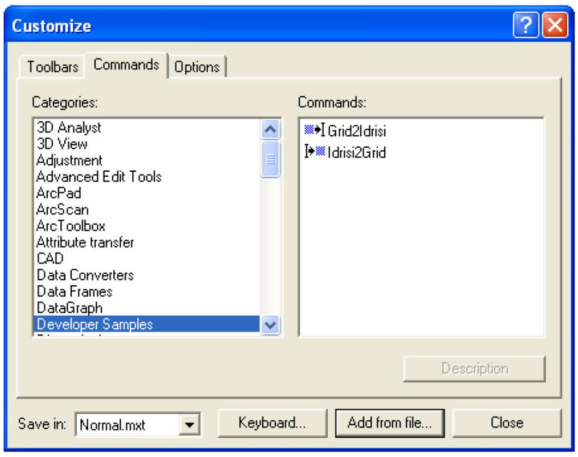
1. launch ArcGIS
2. go to the Tools menu, choose Customize



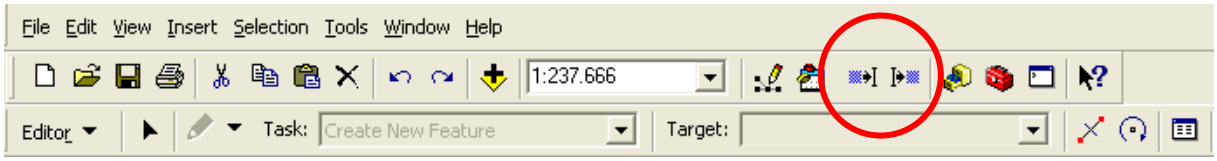
3. push the ‘Add from file’ button

4. Browse for the extension ‘grid2Idrisi_dlg.dll’. Choose the extension and close the dialog.

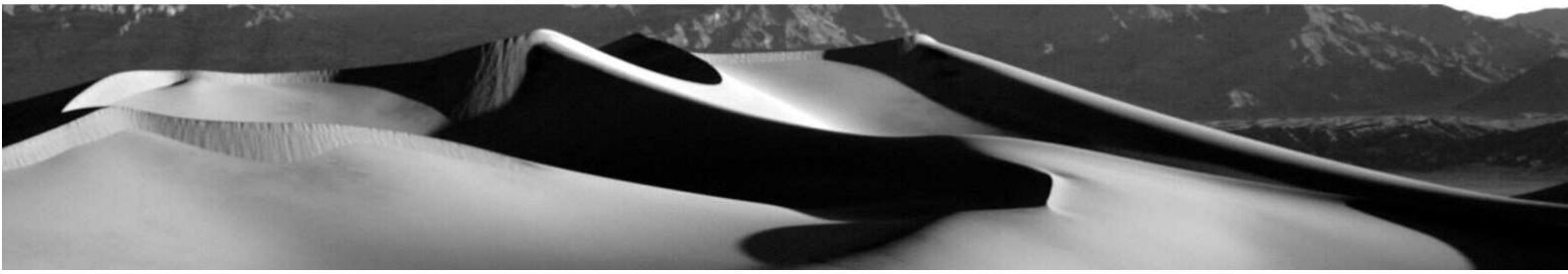
5. go to the ‘Commands’ tab. In the ‘Categories’ list box choose ‘Developer Samples’ (see figure below). Note that two new commands have been added to the ‘Commands’ list box: Grid2Idrisi and Idrisi2Grid.




6. Click on one of the newly added commands in the ‘Commands’ list box.. By drag and drop, you can add the chosen button to the ArcMap environment. Repeat this procedure for the second button if desired. Your ArcMap environment may then look like the following figure.




7. Choose the ‘Close’ button of the ‘Customize’ dialog window. Your newly added functions are now ready for use.



### Installation of AV 2 IDRISI in ArcView 3.x

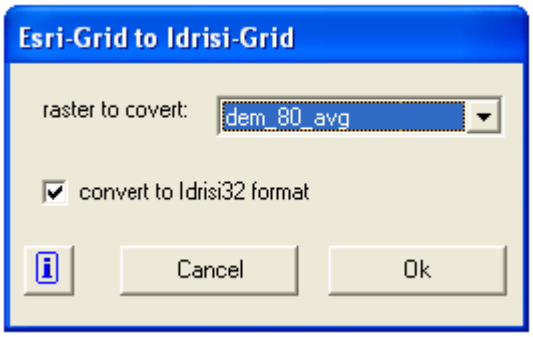
AV 2 IDRISI for ArcView 3.x needs the Spatial Analyst extension for ArcView GIS and is working in a Windows environment only (WIN95/98/NT/2000/XP/VISTA). It comes with two files, av2idrisi.avx and av2idrisi.dll. Before calling AV 2 IDRISI via the Extensions Menu in ArcView, you have to put in the av2idrisi.avx file in ArcView's EXT32 directory and the av2idrisi.dll file in ArcView's BIN32 directory. Keep in mind, that AV 2 IDRISI is not working with ArcView alone, you must have installed the Spatial Analyst extension.

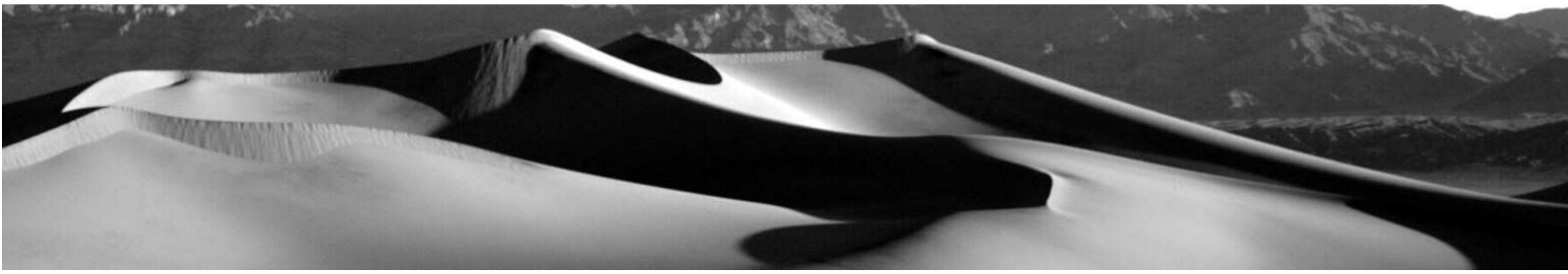
# 3. Using the extension AV 2 IDRISI

### Using the version for ArcGIS 9.x

**1. Conversion of Esri-Grids to Idrisi-Grids :**

Push the button in ArcMap. A dialog will appear asking you to select a raster which is given in the drop down list. Please note, that the raster which you want to be converted must be a layer in the current ArcGIS session.



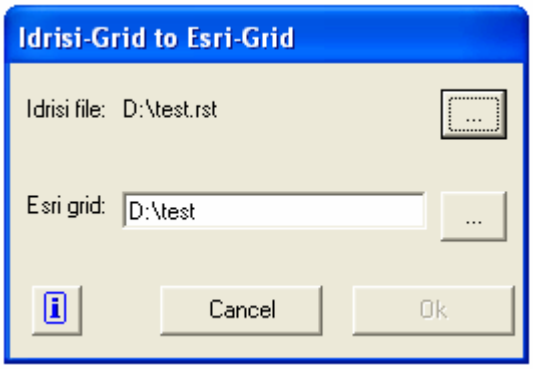


Leaving the check bock 'convert to Idrisi32 format' checked will cause the extension to create an Idrisi raster in Idrisi 32 format. If the check box is un-checked, the output format will be Idrisi16.

Choose OK. A dialog will appear asking you to specify the location where the Idrisi raster will be stored on disk.

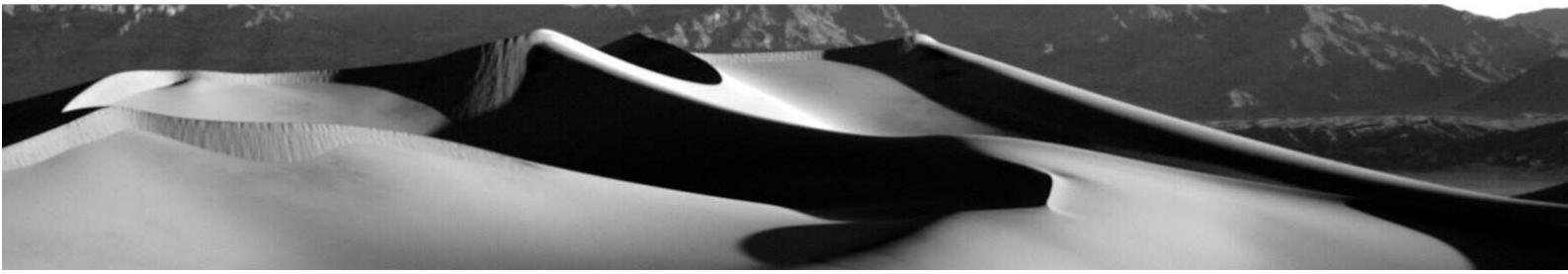
## 2. Conversion of Idrisi-Grids to Esri-Grids :

Push the button in ArcMap. A dialog will appear asking you to specify an Idrisi file.




Click on and browse for the Idrisi source file location. Then close the dialog. The name of the chosen Idrisi raster will be put to the text box specifying the default location of your new Esri-Grid. However, you can also specify a different location by pushing next to the text box.

Finally choose 'Ok'. A new Esri raster is created and saved to the hard-disk, additionally the converted raster is added to the current ArcGIS session. Please note that the name of the created ESRI-rasterfile must not exceed 13 characters!



### Using the version for ArcView 3.x

Av2Idrisi adds two new items in ArcViews Menu GUI:

View: Add IDRISI raster... (conversion and adding of Idrisi raster files in the active view)

Theme: Convert to IDRISI... (conversion of the active Grid themes in Idrisi raster files)

**1. Conversion of Esri-Grids to Idrisi-Grids:**

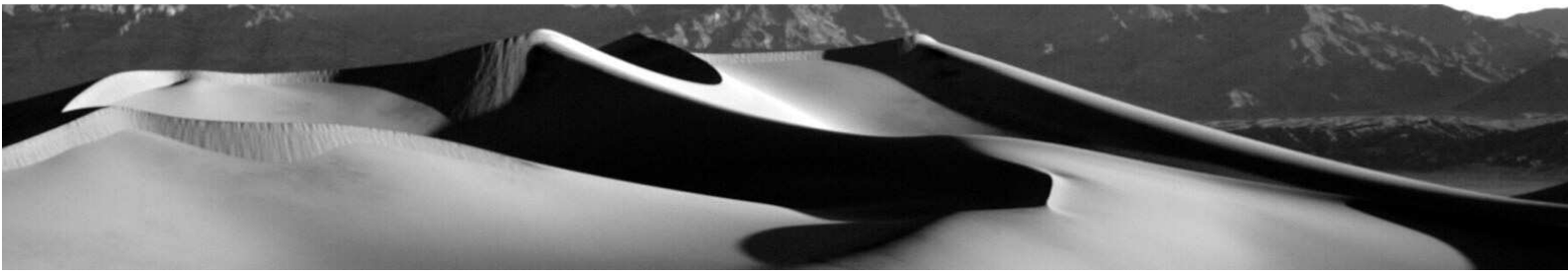
Choose a View with one or more active Grid themes and select the 'Convert to IDRISI...' item in the Theme Menu. Then all active Grid themes will be converted to Idrisi32 files or to standard Idrisi16 files if you want to do that. When you specify the name of the new ArcView Grid do not type in the file extension of the new Idrisi image file. File extensions like *.rst (Idrisi32) or *.img (Idrisi16) are choosen automatically by the program.

**2. Conversion of Idrisi-Grids to Esri-Grids:**

Choose a View and select the 'Add IDRISI raster...' item in the View Menu. Then a dialog box is opened where you can select the Idrisi raster files. If you want to convert Idrisi32 files you should choose 'Idrisi32 Raster Files' in the file list item or 'Idrisi Raster Files' for the conversion of Idrisi16 images respectively. After conversion, the new Grid files will be added in the active View named with the title of the Idrisi file.

# 4. Important hints and troubleshooting

AV 2 IDRISI is a program which should to bridge the gap between ArcGIS 9.x & ArcView 3.x and IDRISI. It is kept as simple as possible, so no additional features are implemented (e.g. batch conversion, compressed IDRISI images or an incorporation of different projections). Nevertheless you should be familiar with both, ESRI grids and IDRISI images files. Especially in case of converting IDRISI files into ArcGIS 9.x & ArcView 3.x, the source files must be consistent and must have complete document files (see below).



1. AV 2 IDRISI is just able to convert IDRISI images files, which are in simple binary or ASCII code. Compressed files or RGB pictures are not supported.

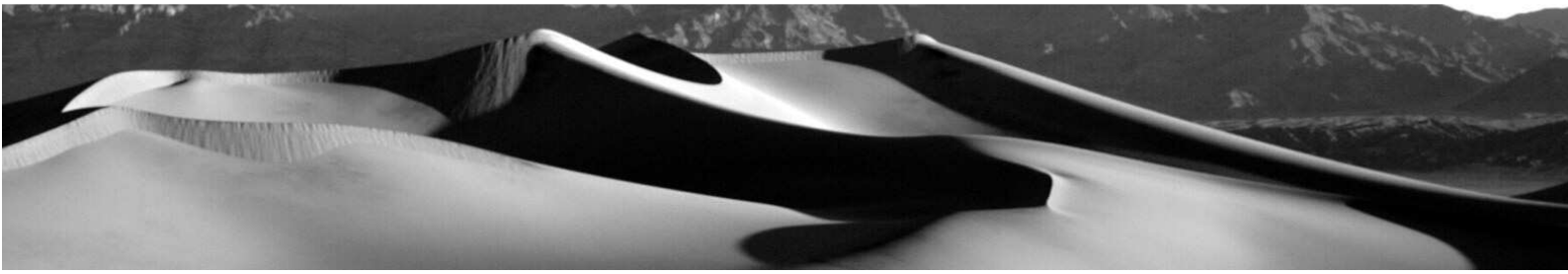
2. NoData values are supported. In case of IDRISI source files, the flag number in the document file will be translated to a NoData value. In case of an ESRI grid, NoData values will be translated to a value of –9999 which is set as flag number in the IDRISI image.

3. At the moment, no projection properties of the files are maintained. The appropriate projections must be adjusted later in ArcGIS 9.x & ArcView 3.x or IDRISI (they are set to plane projection and meters by AV 2 IDRISI).

4. AV 2 IDRISI needs a consistent document file in case of a conversion from IDRISI to ArcGIS 9.x & ArcView 3.x. If the document file (accompaning text file of an IDRISI image like *.doc or *.rdc) is not complete or corrupt, the conversion will fail. A document file must at least have the subsequent informations (= bold letters in the sample file on the next page):
   - informations of data type and file type
   - number of columns, number of rows
   - edge coordinates (min. X, max. X, min. Y, max. Y.)
   - resolution of the cells

# 5. Information in the IDRISI document file

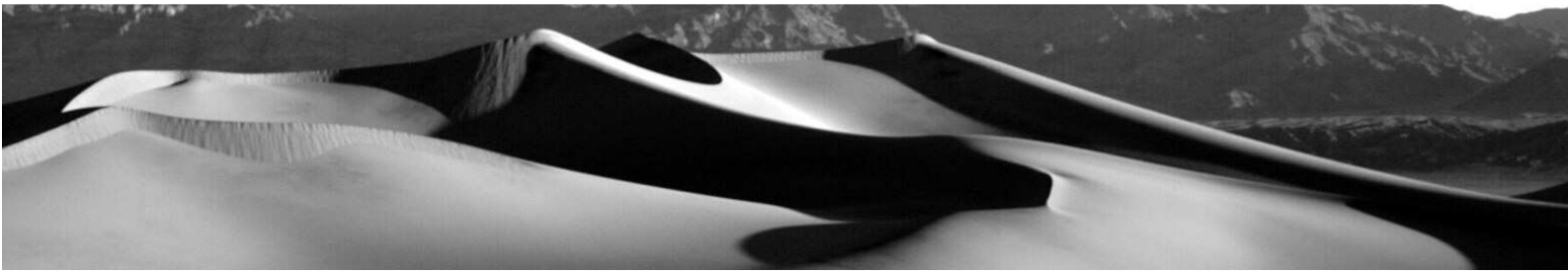
Conversion of ESRI grids to IDRISI images files is simple and can be done with little knowledge of grid or image files. The other way however could give some problems because of the nature of IDRISI images and their accompaning document files. ArcGIS 9.x & ArcView 3.x needs complete and consitent informations of the rows, the columns, the borders (upper right, upper left, top right, top left) and the cell size. If any of that values are inconsitent to the others (e.g. false border values, no cell size) the conversion from an IDRISI source file to an ESRI grid will fail. IDRISI can deal with inconsitencies to a certain degree, whereas ArcGIS 9.x & ArcView 3.x can not. The following pages give some examples of correct and incorrect document files.



### Example of a correct document file (dem.rdc)

All relevant categories (= bold letters) are available and consistent.

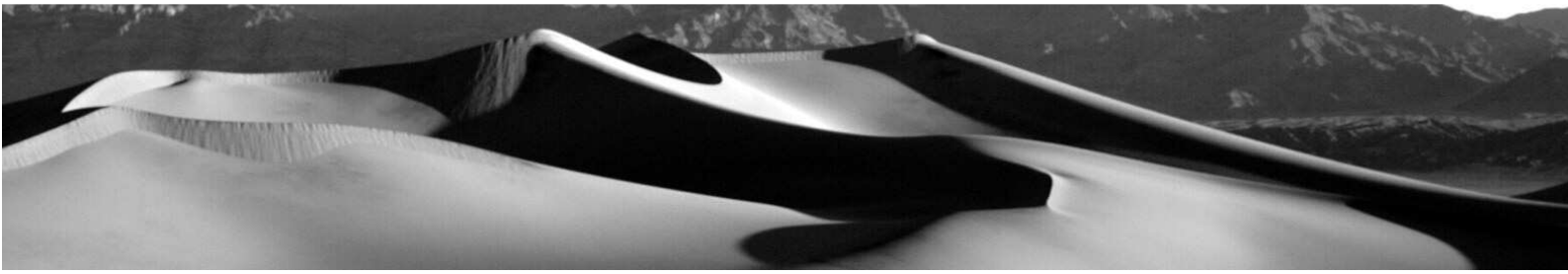
```
file format : IDRISI Raster A.1
file title  : Dem
data type   : real
file type   : binary
columns     : 87
rows        : 210
ref. system : plane
ref. units  : m
unit dist.  : 1
min. X      : 498250.689711
max. X      : 498511.689711
min. Y      : 5076277.893600
max. Y      : 5076907.893600
pos'n error : unknown
resolution  : 3.000000
min. value  : -9999.000000
max. value  : 1532.214478
display min : 1489.328735
display max : 1532.214478
value units : unspecified
value error : unknown
flag value  : -9999
flag def'n  : missing data
legend cats : 0
```



## Example of a incorrect document file (dem.rdc)

The max. X value (= italic bold letters) is not consitent. It can not be calculated from the other border values and the resolution. Similar inconsistencies could arise if values from other relevant categories are inconsistent or missing.

```
file format : IDRISI Raster A.1
file title  : Dem
data type   : real
file type   : binary
columns     : 87
rows        : 210
ref. system : plane
ref. units  : m
unit dist.  : 1
min. X      : 498250.689711
max. X      : 498523.689711
min. Y      : 5076277.893600
max. Y      : 5076907.893600
pos'n error : unknown
resolution  : 3.000000
min. value  : -9999.000000
max. value  : 1532.214478
display min : 1489.328735
display max : 1532.214478
value units : unspecified
value error : unknown
flag value  : -9999
flag def'n  : missing data
legend cats : 0
```



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