

ViewLuc – Graphical display of registers

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The interactive program *ViewLuc* can be used to inspect the following types of register in graphical form:

- Register of land use classes in format GRIDASCII

Example (LBM-DE2012/UBA):

`clcopti1ha_100m_gk3_ex.asc`

The register must be provided as text file of format GRIDASCII with file extension `.asc`.

- Register of land use classes as PNG file

Example (created from the register above):

`lbm-de2012-gk3@3278000-5228000-100.png`

Every register cell (usually of size 100 m times 100 m) is represented by one pixel. The colour of a pixel encodes the land use class. The lower left corner of the lower left cell of the rectangular area that is covered is extracted from the file name. The name format is

Name@llx-lly-dd.asc

(*llx*: x-coordinate of the lower left corner in metre, *lly*: y-coordinate of the lower left corner in metre, *dd*: mesh width in metre).

- Roughness class register in format DMNA

Example (created from the register above and the roughness classes of the new TA Luft draft 2018):

`z0-gk.dnna` and data part `z0-gk.dmnt.gz`

The register must be provided in the format applied by AUSTAL2000. It is created from a CORINE register of land use classes according to the classification of TA Luft, Annex 3.

- Roughness class register as PNG file

Example (created from the roughness length register above):

`z0-lbm-de2012-gk3@3278000-5228000-100.png`

Every register cell (usually of size 100 m times 100 m) is represented by one pixel. The colour of a pixel encodes the roughness class. For the name format see above.

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The current program version recognizes the land use classes of CORINE (3-digit CLC code) that apply to Germany. A unique colour is assigned to every class according to the CORINE specifications. Likewise, a unique colour is assigned to each roughness class (1 to 9) of the TA Luft.

Classes unknown to the program are marked by the colour violet (RGB: 255/0/255).

Program call

The program is provided as a JAR file (ViewLuc.jar). Its execution requires a JAVA Runtime Environment (JRE).

As the input registers are quite big in size, the 64 MB RAM reserved by JAVA is not sufficient and a larger amount of RAM must be requested on program call. Therefore a simple double click in the Explorer on ViewLuc.jar is not useful.

In a command line window, the program can be called with the command

```
java -Xmx1200m -jar ViewLuc.jar
```

Here the call takes place from the directory that contains file ViewLuc.jar, and a maximum of 1.2 GB RAM are requested.

For simpler usage, the program ViewLuc (ViewLuc.exe for Windows systems) is provided. It can be called with a double click in the Explorer. It starts ViewLuc.jar in subdirectory jar with a request of increased RAM. The program tries to apply a local JRE in subdirectory jre (program javaw in subdirectory jre/bin). If this fails, it applies the system JRE as in the command listed above. If this fails too, the program aborts.

Display

After program call a file selection window appears that allows to select the register file to be displayed. After confirmation the file is read.

Note: Reading the file may take several seconds, depending on the applied computer system. PNG files are read fastest and therefore preferred.

After successful reading a window with the graphical display opens. Each cell of the register is depicted by one pixel. The visible part can be shifted with the scroll bars to the right and at the bottom.

If the mouse cursor is within the display part it has the form of a cross. The centre point coordinates of the cell, on which the cross is centred, are shown in the text field in the lower part of the window (x- and y-coordinate in metres).

With a register of land use classes, the land use class of the current cell is also listed. For a roughness class register, the roughness class, the class value of the roughness length, and the

associated land use classes are listed.

The selection box to the right side of the text field allows to change the display language (English or German). Default is the language of the operating system.

Enlarge

A click with the left mouse button on a point in the display part enlarges the area around the current cell (area of 41 times 41 cells, i.e. typically 4 km times 4 km). Another click with the left mouse button brings back the original display with the mouse cursor being reset to the original position.

Position

The white text field in the lower part of the window can be edited. Enter the x- and y-coordinate of a point inside the current register, separated by a blank, then press the RETURN key: the mouse cursor is centred on the cell that contains the specified point.

Note: During this action, the mouse cursor should not be moved on top of the display part, otherwise the input in the text field is overwritten by the coordinates of the current position.

Positioning is disabled during display of an enlarged part.
