

## Geometry bitmap and printing to PDF

## SP Net info 77

Uploaded: 17.02.2008  
 Latest revision: 05.07.2020

All licenses can load a rasterized image in GeoDatabase and show this image as a background map for digitizing other objects. Loadable file formats are \*.bmp, \*.tif, \*.tiff, \*.jpeg, \*.jpg, \*.png and \*.pdf. At loading time each raster/pixel is associated with coordinates (x,y), most often the image is geocoded in a world coordinate system like UTM/ETRS89. In SoundPLAN an image – that this way has been ‘calibrated’ – is named ‘geometry bitmap’.

Licenses with the module Cartography can load geometry bitmaps in Graphics. This is widely used for presentation of calculation results on top of a background map, especially grid noise maps and meshed noise maps. Since noise contour areas are also pixelized (= ‘solid’/non-transparent) it might take a few tests and adjustments before you reach a good-looking presentation of the result with background map. This Net Info states some hints.

### Drawing into geometry bitmap

In map object types of grid noise map and meshed noise map you find the tool ‘Drawing into geometry bitmap’ (from Ver 7.4 on). This makes the program work out – pixel by pixel - a final colour value when the calculated grid/mesh noise map is loaded together with a geometry bitmap.

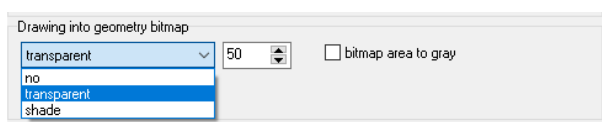


Fig 1 Drawing into geometry bitmap

There are two ways to sandwich the two coloured layers, transparent and shade, see Fig 1 (with ‘no’ the colours are not merged and only the object with the highest draw sequence can be seen).

**Transparent:** A bit of white is added to the calculation result before merging with the geometry bitmap. As a result, the contour areas get hazy and transparent, see Fig 2. This option works best with darker geometry bitmaps, e. g. aerial photos. It can be recommended to give the contour lines a higher draw sequence than the noise map.

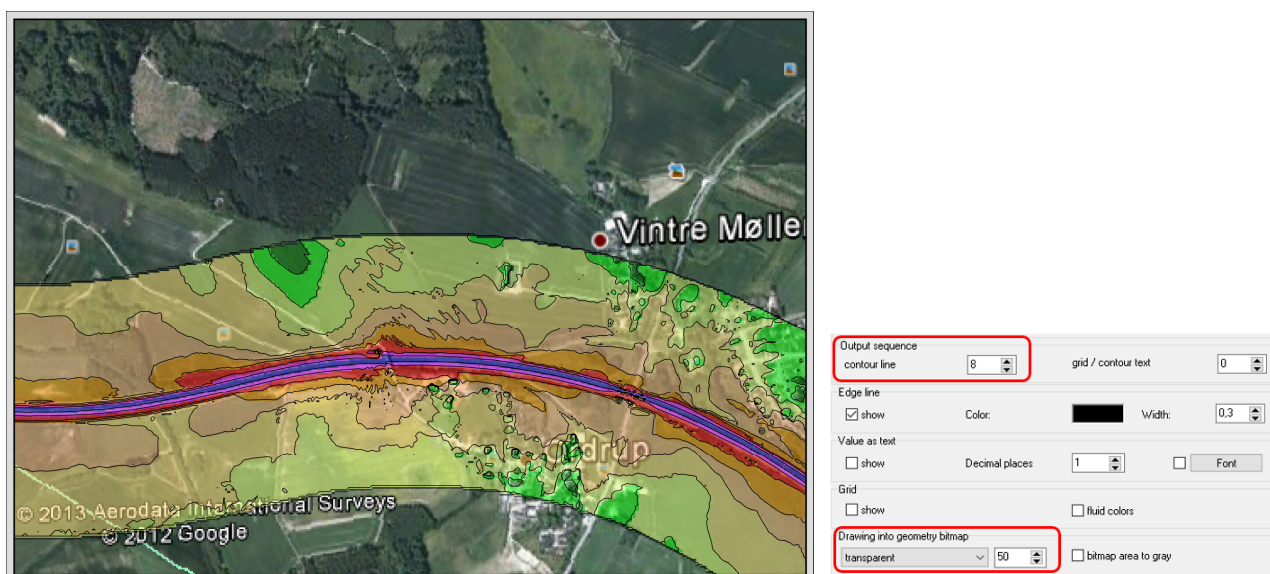


Fig 2 Contour areas drawn with ‘transparent’ option into geometry bitmap. Aerial photo as background map

**Shade:** With this setting the colours of the noise map gets a bit darker. A background map in pastel tones should be preferred, see Fig 3.

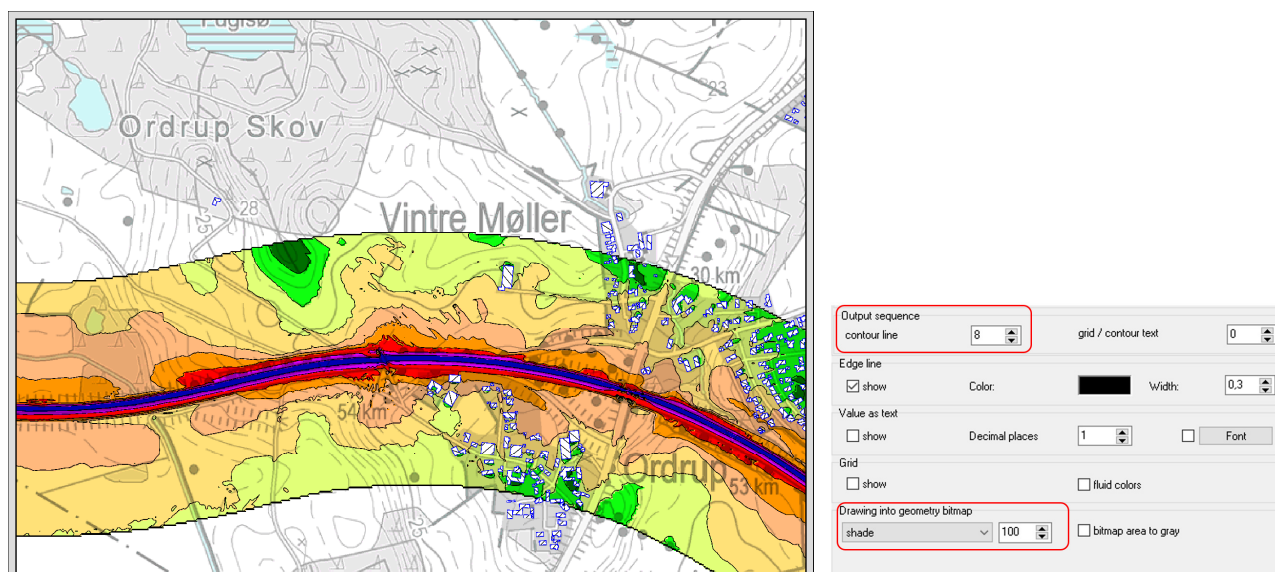


Fig 3 Contour areas drawn with 'shade' option into geometry bitmap. Background map in pastel colours.

In general, it is recommended to go for background maps in pastel colours since dark and saturated colours will distort the display so the colour scale can no longer be trusted 100%. On Fig 4 the same result is presented with and without a background map; even if the colours in the geometry bitmap is subdued, they pollute the colours of the contour areas.

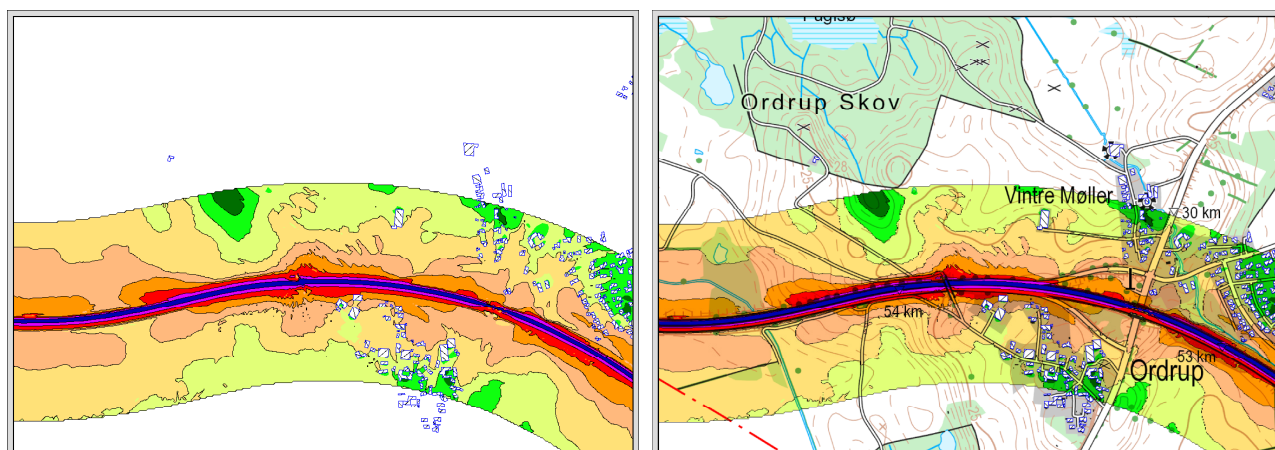


Fig 4 Identical result without and with background map. The geometry bitmap affects the colours of the contour areas.

The program offers a possibility to convert the geometry bitmap to grey scale. On Fig 5 the background map from Fig 3 is converted to grey scale. But still the geometry bitmap twists the colours of the noise contour areas. Look for example in the encircled area, the grey area in the geometry bitmap comes off on the orange and yellow noise contour areas.

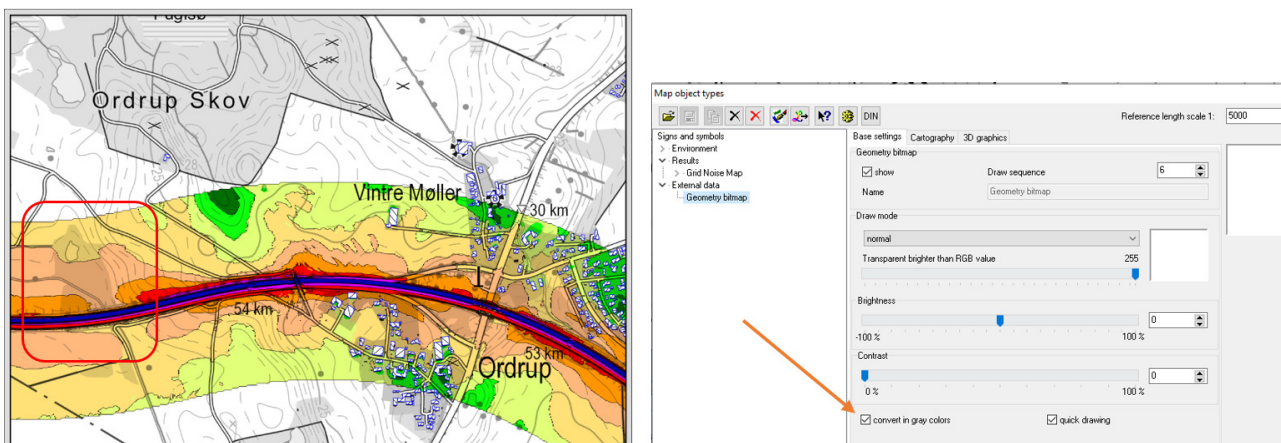


Fig 5 Geometry bitmap in grey scale. Still the background map changes the colour of the noise contour area.

Further the program offers a possibility to adjust brightness and contrast of the geometry bitmap, see Fig 6. The best outcome of these multiple adjustments depends on the material and your taste. It is an obvious job for 'trial and error'.

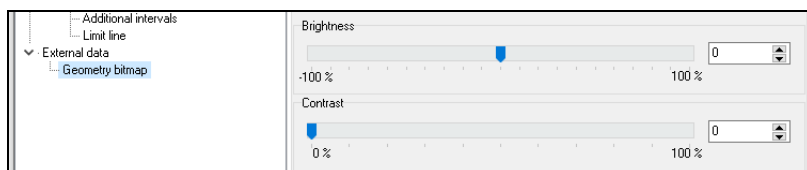


Fig 6 Brightness and contrast can be adjusted individually

## Showing geometry bitmaps without noise maps

When showing geometry bitmaps together with other area objects types such as buildings and roads, the draw mode of the bitmap should be considered. Geometry bitmaps can be drawn in two modes, normal and additive, see Fig 7. In normal mode the bitmap is solid and only objects with a higher draw sequence can be seen. In additive mode colour values from the geometry bitmap and the objects below are mixed. Be aware that coloured object symbols will be distorted a bit and therefore no longer match fully with symbols in the legend box. In additive mode there is a possibility to adjust the threshold value below which colours in the geometry bitmap should be 100% transparent. But even with grayscale geometry bitmaps there is a risk that colours will be twisted a bit.

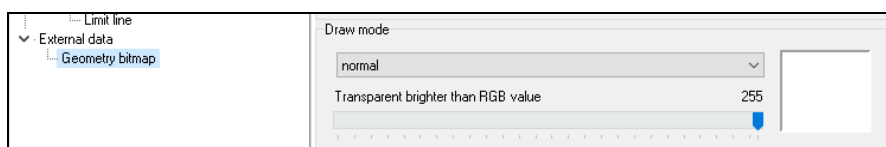


Fig 7 Draw mode of geometry bitmaps

## Printing

While composing your sheet the program does not ask you, which printer you intend to use. Not until you execute File > Print you will be asked to select a printer (the default printer is set in the System setting in the SoundPLAN Manager). If the map is bigger than the printable area of the printer, you will be asked to adjust the size. The non-printable area is hatched with red lines in the Print preview window, see Fig 8.

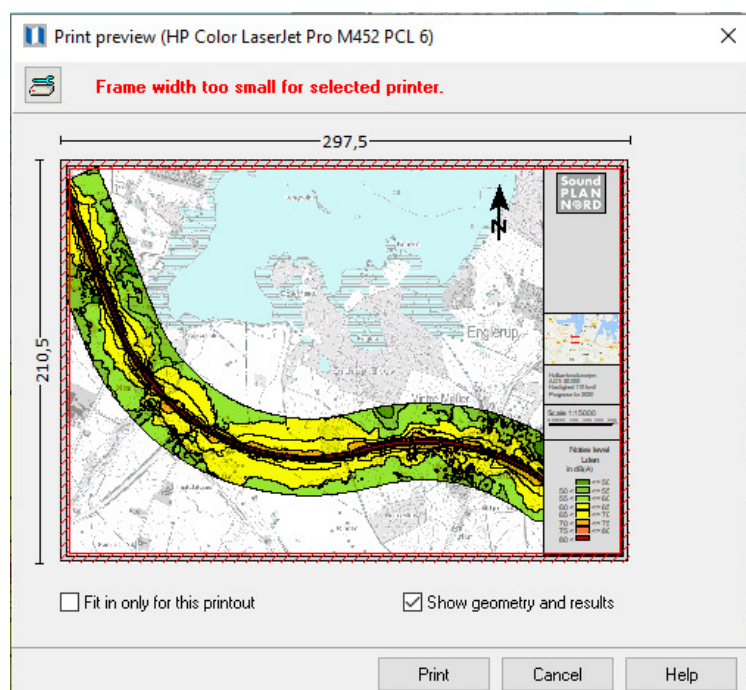


Fig 8 Print preview

If you have a series of sheets of the same scale and you intend to print them automatically (by using 'Print marked sheets') it might be worth composing new sheets of size that the printer can handle. Adjust the size under menu Element > Sheet properties > index card Edge. For a single sheet you can tick for 'Fit in only for this printout'.

### Printing to PDF

This is a very convenient way to store and present your report as well as your graphics sheets. But take care, not all pdf writers can handle bitmaps with transparency. We have successful experience with the eDocPrinter from ITeksoft ([www.iteksoft.com](http://www.iteksoft.com)), but also Microsoft Print to PDF works in most cases. Hint: if the created pdf-file does not show the background map, please try to decrease the number of colours in the background map.

You can also simply copy your graphic sheet as a bitmap to the clipboard (shift + ctrl + c) and paste it into your report (ctrl + v).

### 3D view of background map

A bitmap is 'two dimensional', it does not include any elevation information. If you therefore try to show the geometry bitmap in 3D view, SoundPLAN does not know where to locate the map on the vertical axis. But if you also load a DGM, the program knows where to show the background map. Fig 9 shows an example.

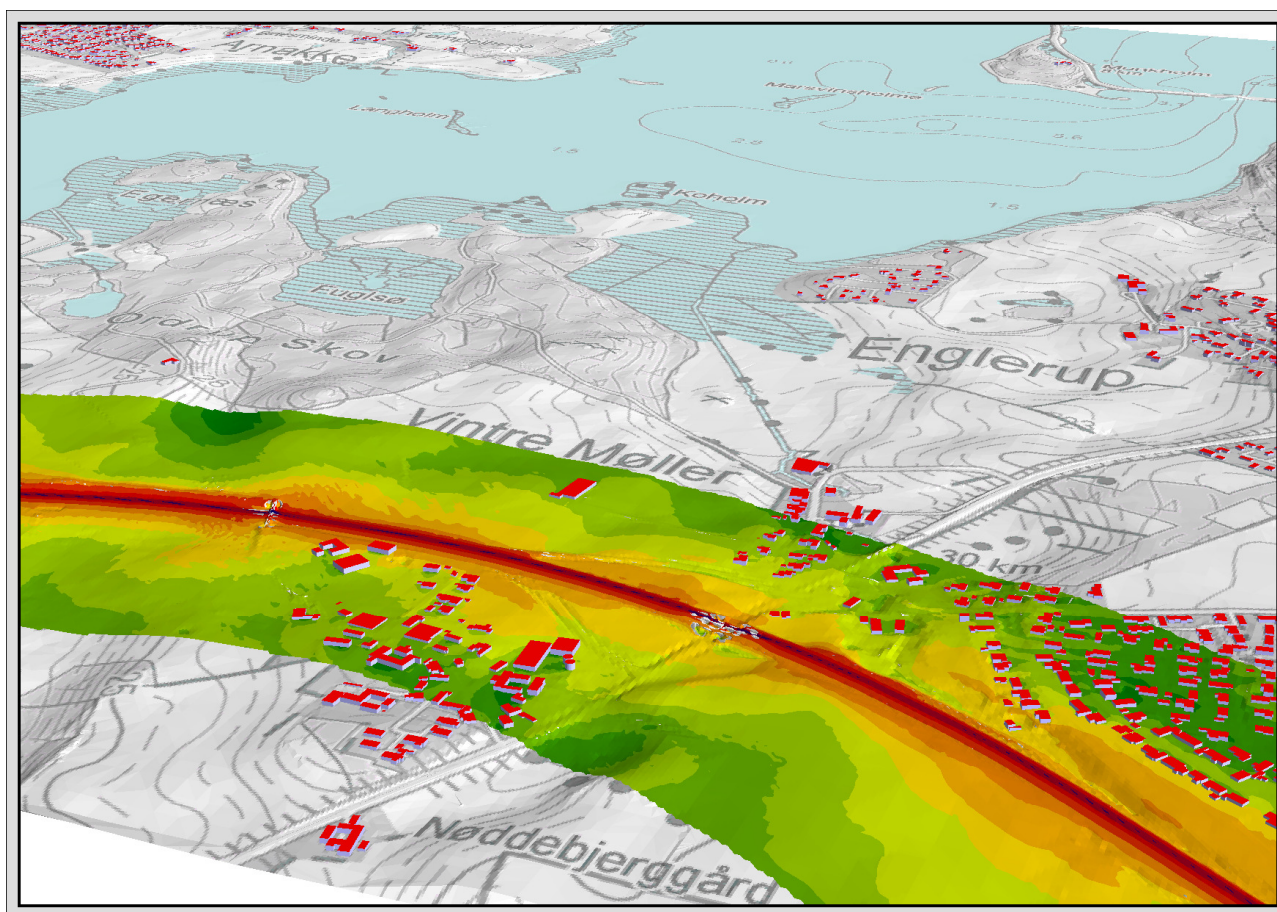


Fig 9 Geometry bitmap presented in 3D

