Projection parameters of Austria

Contributed by h.k.
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Projection parameters of spatial data in Austria for data transformations.

Fundamental information about spatial data transformation: Proj4

Compilation of world-wide transformation parameters: EPSG

Open source utility for spatial data transformation: GDAL

EPSG-transformation parameters

MGI (Militaergeographisches Institut) alias Hermannskogel - Austria:

MGI to WGS84 (7-parameter transformation, accuracy of 1.5 meter)

X-axis translation 577,326 meter

Y-axis translation 90,129 meter

Z-axis translation 463,919 meter

X-axis rotation 5,137 arc-second

Y-axis rotation 1,474 arc-second

Z-axis rotation 5,297 arc-second

scale difference 2,4232 parts per million

Please check always EPSG for newer version of transformation parameters!

For raster transformation by gdal_translate/gdalwarp or vector transformation by ogr2ogr

you have to include

TOWGS84[577.326,90.129,463.919,5.137,1.474,5.297,2.4232]

into the projection parameters of spatial data in Austria. You can also use the following WKT-files:

Austria_BMN_MGI_M28.prj	Bundesmeldenetz Meridian 28
Austria_BMN_MGI_M31.prj	Bundesmeldenetz Meridian 31
Austria_BMN_MGI_M34.prj	Bundesmeldenetz Meridian 34
Austria_GK_MGI_M28.prj	Gauss-Krueger Meridian 28
Austria_GK_MGI_M31.prj	Gauss-Krueger Meridian 31
Austria_GK_MGI_M34.prj	Gauss-Krueger Meridian 34

Austria_MGI_Lambert.prj Lambert

For Germany you can use the following WKT-file:

DHDN_zone4.prj DHDN Zone 4 (e.g. for Bavaria)

For Italy you can use the following WKT-files:

Italy_montemario.prj Italy Gauss-Boaga (northern part of Italy)

italy_etrf1989.prj Italy ETRF 1989 (northern part of Italy)

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example for raster transformation with gdal:

(for syntax and supported formats please see the gdal-manuals)

source: ortho.tif/ortho.tfw in Bundesmeldenetz M28

target: Gauss-Krueger M31

=> assign projection information for Bundesmeldenetz M28 to raster data

gdal_translate -of GTiff -a_srs ESRI::Austria_BMN_MGI_M28.prj //

-co "TFW=YES" -co "COMPRESS=LZW" ortho.tif orthoBMN_M28.tif

=> raster transformation from Bundesmeldenetz M28 to Gauss-Krueger M31

gdalwarp -s_srs ESRI::Austria_BMN_MGI_M28.prj //

-t_srs ESRI::Austria_GK_MGI_M31.prj -of GTiff //

-co "TFW=YES" orthoBMN_M28.tif orthoGK_M31.tif

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example for transformation with ogr2ogr:

(for syntax and supported formats please see the ogr-manuals)

source: shapefileBMNM28.shp in Bundesmeldenetz M28

target: Bundesmeldenetz M34

ogr2ogr -s_srs ESRI::Austria_BMN_MGI_M28.prj //

-t_srs ESRI::Austria_BMN_MGI_M34.prj //

shapefileBMNM34.shp shapefileBMNM28.shp
