QGIS Version: 3.28.2-Firenze

Topic: Integration of transformation according to the NTV2 method

Good afternoon.

Help deal with the problem of recalculation anxiety between the occurrence of coordinates using the NTv2 method.

I have source data represented by a coordinate system that is derived from EPSG:28406.

I have added a custom system to Qgis using the description:

PROJCRS["SK42\_to\_msk\_Dnipro",
    BASEGEOGCRS["Pulkovo 1942",
        DATUM["Pulkovo 1942",
            ELLIPSOID["Krassowsky 1940",6378245,298.3,
                LENGTHUNIT["metre",1,
                    ID["EPSG",9001]]]],
        PRIMEM["Greenwich",0,
            ANGLEUNIT["Degree",0.0174532925199433]]],
    CONVERSION["unnnamed (Gauss Kruger)",
        METHOD["Transverse Mercator",
            ID["EPSG",9807]],
        PARAMETER["Latitude of natural origin",0,
            ANGLEUNIT["Degree",0.0174532925199433],
            ID["EPSG",8801]],
        PARAMETER["Longitude of natural origin",36,
            ANGLEUNIT["Degree",0.0174532925199433],
            ID["EPSG",8802]],
        PARAMETER["Scale factor at natural origin",1,
            SCALEUNIT["unity",1],
            ID["EPSG",8805]],
        PARAMETER["False easting",129999.715,
            LENGTHUNIT["Meter",1],
            ID["EPSG",8806]],
        PARAMETER["False northing",-5343999.94,
            LENGTHUNIT["Meter",1],
            ID["EPSG",8807]]],
    CS[Cartesian,2],
        AXIS["(E)",east,
            ORDER[1],
            LENGTHUNIT["Meter",1]],
        AXIS["(N)",north,
            ORDER[2],
            LENGTHUNIT["Meter",1]]]

The local coordinate system has been assigned the number USER:100001

I create a project in Qgis with the coordinate system EPSG:9824.

I have a transformation field file for the territory with which I work in \*.gsb format

When creating a Qgis project, one option for transforming between USER:100001 to EPSG:9824 coordinate systems is offered.

Transformation between coordinate systems is carried out by applying two transformation operations:

- EPSG:5586 - Pulkovo 1942 to UCS-2000 (1) (EPSG:4284 to EPSG:5561)

- EPSG:9800 - Local coordinate system of Dnipropetrovsk region (EPSG:5561 to EPSG:9834)/

After studying the experience of integrating NTv2 to Qgis, I made the following entry in the srs.db database in the tbl\_datum\_transform table:



When creating an entry in a column:

- source\_crs\_code - I specified 3416, which corresponds to the srs\_id value in the "tbl\_srs" table for the EPSG:4284 coordinate system;

- target\_crs\_code - I specified 29546, which corresponds to the srs\_id value in the "tbl\_srs" table for the EPSG:5561 coordinate system

Despite this entry, Qgis does not have an alternative NTv2 transformation between the EPSG:4284 and EPSG:5561 coordinate systems, and accordingly, the transformation between the local user coordinate system USER:100001 in EPSG:9824 is also not performed.

Help me solve the problem, maybe I'm doing something wrong, tell me the correct solution to the issue.