



Luxembourgish Geodetic Datum LURES

The Luxembourgish national reference system is named LURES (LUXembourg REference System). Nowadays, LUREF (LUXembourg REference Frame) is realized by the SPSLux GNSS reference stations. Those stations are managed in the European reference system ETRS89 (realization ETRF2000). In order to compute cartesian LUREF coordinates, the following "ETRF2000toLUREF2020" transformation has to be applied:

ETRF2000toLUREF2020 Transformation:

1. Molodensky-Badekas:

Rotation origin:

X0 [m]	4,101,567.0943
YO [m]	440,245.0881
ZO [m]	4,848,681.4115

N°	parameter	value
1	translation dX	265.9196 m
2	translation dY	- 76.9506 m
3	translation dZ	- 20.2222 m
4	rotation X	- 0.48171 "
5	rotation Y	- 3.09948 "
6	rotation Z	2.68639 "
7	scale	- 0.46346 ppm

2. Bursa-Wolf:

N°	parameter	value
1	translation dX	189.2280 m
2	translation dY	- 12.0035 m
3	translation dZ	42.6303 m
4	rotation X	- 0.48171 "
5	rotation Y	- 3.09948 "
6	rotation Z	2.68639 "
7	scale	- 0.46346 ppm

Molodensky-Badekas and Bursa-Wolf transformation models deliver equal results.

as of May 2023