

Galileo Terrestrial Reference Frame

Responsible Organization: European Space Agency (ESA)

Abbreviated Frame Name: GTRF

Associated TRS: ITRS

Coverage of Frame: Global

Type of Frame: 3-Dimensional

Last Version: GTRF09v01

Brief Description

The GTRF09v01 is the current GTRF prototype solution obtained by accumulating time series of station positions of 133 stations, including 13 Galileo Experimental Sensor Stations (GESS), using GPS observations. The GTRF09v01 was computed by the GGSP (Galileo Geodetic Service Provider) consortium.

Definition of Frame

- **Origin:** Zero translation and translation rate with respect to ITRF2005
- **Scale:** Zero scale and scale rate with respect to ITRF2005
- **Orientation:** Zero rotation and rotation rate with respect to ITRF2005.
- **Time Evolution:** Zero rotation rate with respect to ITRF2005.

Coordinate System: Cartesian coordinates (X, Y, Z)

References:

- http://www.ggsp.eu/ggsp_home.html

Transformation Parameters

Transformation parameters from GTRF09v01 to other frames. “ppb” refers to parts per billion (or 10^{-9}). The units for rate are understood to be “per year.”

ITRF Solution	Tx (mm)	Ty (mm)	Tz (mm)	D (ppb)	Rx (mas)	Ry (mas)	Rz (mas)	Epoch
ITRF2005	(ZEROS BY CONSTRUCTION)							
ITRF2008	2.0	0.9	4.7	-0.94	0.00	0.00	0.00	2000.0
rates	-0.3	0.0	0.0	0.00	0.00	0.00	0.00	