ISO Geodetic Registry

Item class Transformation

Name ITRF2008 to ITRF2020 [IERS v1]

Item statusVALIDIdentifier816

Information source Title Transformation parameters from ITRF2020 to

past ITRFs

Author International Earth Rotation and Reference

Systems Service (IERS)

Publisher Institut National de l'Information Geographique et

Forestiere (IGN)

Publication date 2022-04-15

Other citation details Webpage: https://itrf.ign.fr/docs/solutions/

itrf2020/Transfo-ITRF2020_TRFs.txt (accessed

2022-04-25)

Data source ISO Geodetic Registry

Remarks The IERS citation describes the transformation. Accuracy of

transformation is given at the reference epoch for the transformation parameters. Accuracy at other epochs depends on the accuracies of the parameters at the reference epoch and their rates of change. Refer to citations for accuracies of the parameters and their rates of change.

Operation version IERS v1

Scope Spatial referencing

Operation accuracy 0.001 m

Source CRS ITRF2008 - XYZ
Target CRS ITRF2020 - XYZ

Operation method Time-Dependent Position Vector Transformation (geocentric Cartesian

domain)

Extent

Description	World		
Geographic Bounding	Box West-bound longitude	-180.0	
	North-bound latitude	90.0	
	East-bound longitude	180.0	
	South-bound latitude	-90.0	

Operation parameter values

Time reference	2015.0 year
Rate of change of scale difference	-0.03 millimetre per year
Rate of change of Z-axis rotation	0.0 milliarc-second per year
Rate of change of Y-axis rotation	0.0 milliarc-second per year
Rate of change of X-axis rotation	0.0 milliarc-second per year
Rate of change of Z-axis translation	-0.1 millimetre per year
Rate of change of Y-axis translation	0.1 millimetre per year
Rate of change of X-axis translation	0.0 millimetre per year
Scale difference	0.29 parts per billion
Z-axis rotation	0.0 milliarc-second
Y-axis rotation	0.0 milliarc-second
X-axis rotation	0.0 milliarc-second

Z-axis translation	-3.3 millimetre
Y-axis translation	-1.0 millimetre
X-axis translation	-0.2 millimetre

ISO Geodetic Registry

Item class OperationMethod

Name Time-Dependent Position Vector

Transformation (geocentric Cartesian domain)

Item statusVALIDIdentifier82

Alias Time-Dependent 7-Parameter Transformation

Alias 14-Parameter Transformation

Alias Time-Dependent Position Vector Transformation

Data source ISO Geodetic Registry

Remarks Note the analogy with the rotation for the Time-dependent Coordinate

Frame Transformation but beware of the differences! The Position

Vector Transformation convention is used by IAG.

Formula Geomatics Guidance Note No 7, part 2: Coordinate Conversions and

Transformations including Formulas

Operation parameters

X-axis translation

Y-axis translation

Z-axis translation

X-axis rotation

Y-axis rotation

Z-axis rotation

Scale difference

Rate of change of X-axis translation

Rate of change of Y-axis translation

Rate of change of Z-axis translation

Rate of change of X-axis rotation

Rate of change of Y-axis rotation

Rate of change of Z-axis rotation

Rate of change of scale difference

Time reference