ISO Geodetic Registry

Item class	Transformation	
Name	**ITRF89 to ETRF2014 [EUREF v1]**	
Item status	VALID	
Identifier	760	
Information source	*Title*	EUREF Technical Note 1: Relationship and Transformation between the International and the European Terrestrial Reference Systems
	Author	Z. Altamimi
	Publisher	Institut National de l'Information Géographique et Forestière (IGN), France
	Revision date	2018-06-28
	Series/Journal name	EUREF Technical Notes
	Other citation details	http://etrs89.ensg.ign.fr/pub/EUREF-TN-1.pdf (accessed 2020-10-14)
Information source	*Title*	Guidelines for EUREF Densifications
	Author	C. Bruyninx, Z. Altamimi, A. Caporali, A. Kenyeres, J. Legrand, M. Lidberg
	Publisher	IAG sub-commission for the European Reference Frame – EUREF
	Revision date	2018-03-09
	Other citation details	http://www.epncb.oma.be/_documentation/guidelines/Guidelines_for_EUREF_Densifications.pdf (accessed 2020-20-14)
Data source	ISO Geodetic Registry	
Remarks	Accuracy of transformation is given at the reference epoch for the transformation parameters (2010.0); actual accuracy then depends on the epoch at which the transformation parameters are applied (refer to Citation for accuracies of velocities of the para	
Operation version	EUREF v1	
Scope	Spatial referencing	
Operation accuracy	0.0 m	
Source CRS	ITRF89 - XYZ	
Target CRS	ETRF2014 - XYZ	
Operation method	Time-Dependent Position Vector Transformation (geocentric Cartesian domain)	

Extent

Description	**Europe - onshore and offshore: Albania, Andorra, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Faroe Islands, Finland, France, Germany, Gibraltar, Greece, Hungary, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malta, Monaco, Montenegro, Netherlands, Norway including Svalbard and Jan Mayen, Poland, Portugal, Romania, San Marino, Serbia, Slovakia, Slovenia, Spain,**

	Sweden, Switzerland, United Kingdom (UK) including Channel Islands and Isle of Man, Vatican City State.	
Geographic Bounding Box	*West-bound longitude*	-16.1
	North-bound latitude	84.17
	East-bound longitude	39.65
	South-bound latitude	32.88

Operation parameter values

Time reference	2010.0 year
Rate of change of scale difference	-0.12 parts per billion per year
Rate of change of Z-axis rotation	-0.79 milliarc-second per year
Rate of change of Y-axis rotation	0.531 milliarc-second per year
Rate of change of X-axis rotation	0.085 milliarc-second per year
Rate of change of Z-axis translation	3.3 millimetre per year
Rate of change of Y-axis translation	0.5 millimetre per year
Rate of change of X-axis translation	-0.1 millimetre per year
Scale difference	-8.19 parts per billion
Z-axis rotation	-16.43 milliarc-second
Y-axis rotation	11.151 milliarc-second
X-axis rotation	1.785 milliarc-second
Z-axis translation	130.8 millimetre
Y-axis translation	-35.5 millimetre
X-axis translation	-30.4 millimetre

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Item class	OperationMethod
Name	**Time-Dependent Position Vector Transformation (geocentric Cartesian domain)**
Item status	VALID
Identifier	82
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