

# ISO Geodetic Registry

<i>Item class</i>	GeodeticCRS
<i>Name</i>	<b>ETRF2014 - XYZ</b>
<i>Item status</i>	VALID
<i>Identifier</i>	748
<i>Alias</i>	European Terrestrial Reference Frame 2014
<i>Information source</i>	<p><i>Title</i> EUREF 2017 Resolutions</p> <p><i>Author</i> M. Greaves</p> <p><i>Publication date</i> 2017-05-19</p> <p><i>Series/Journal name</i> Report on the Symposium of the IAG Subcommission for Europe (EUREF), Wroclaw, Poland, 17-19 May 2017</p> <p><i>Other citation details</i> <a href="http://www.euref.eu/symposia/2017Wroclaw/06-01-Resolutions-EUREF2017.pdf">http://www.euref.eu/symposia/2017Wroclaw/06-01-Resolutions-EUREF2017.pdf</a> (accessed 2020-10-14)</p>
<i>Information source</i>	<p><i>Title</i> Guidelines for EUREF Densifications</p> <p><i>Author</i> C. Bruyninx, Z. Altamimi, A. Caporali, A. Kenyeres, J. Legrand, M. Lidberg</p> <p><i>Publisher</i> IAG sub-commission for the European Reference Frame – EUREF</p> <p><i>Revision date</i> 2018-03-09</p> <p><i>Other citation details</i> <a href="http://www.epncb.oma.be/_documentation/guidelines/Guidelines_for_EUREF_Densifications.pdf">http://www.epncb.oma.be/_documentation/guidelines/Guidelines_for_EUREF_Densifications.pdf</a> (accessed 2020-10-14)</p>
<i>Information source</i>	<p><i>Title</i> EUREF Technical Note 1: Relationship and Transformation between the International and the European Terrestrial Reference Systems</p> <p><i>Author</i> Z. Altamimi</p> <p><i>Publisher</i> Institut National de l'Information Géographique et Forestière (IGN), France</p> <p><i>Revision date</i> 2018-06-28</p> <p><i>Series/Journal name</i> EUREF Technical Notes</p> <p><i>Other citation details</i> <a href="http://etrs89.ensg.ign.fr/pub/EUREF-TN-1.pdf">http://etrs89.ensg.ign.fr/pub/EUREF-TN-1.pdf</a> (accessed 2020-10-14)</p>
<i>Data source</i>	ISO Geodetic Registry
<i>Remarks</i>	The EUREF Governing Board recommends to use the ETRF2014 for high precision applications and better consistency with the ITRF2014 precise geocentric origin.
<i>Scope</i>	Spatial referencing
<i>Datum</i>	European Terrestrial Reference Frame 2014
<i>Coordinate System</i>	Geocentric 3D right-handed Cartesian CS. Axes: Geocentric X,Y,Z. Orientation: Z to North Pole, [X and Y in the equatorial plane, X at Prime Meridian   X in the equatorial plane at the Prime Meridian]. UoM: m.

## Extent

<i>Description</i>	<b>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,</b>
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**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

# ISO Geodetic Registry

<i>Item class</i>	GeodeticDatum	
<i>Name</i>	<b>European Terrestrial Reference Frame 2014</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	745	
<i>Alias</i>	ETRF2014	
<i>Information source</i>	<i>Title</i>	EUREF Technical Note 1: Relationship and Transformation between the International and the European Terrestrial Reference Systems
	<i>Author</i>	Z. Altamimi
	<i>Publisher</i>	Institut National de l'Information Géographique et Forestière (IGN), France
	<i>Revision date</i>	2018-06-28
	<i>Series/Journal name</i>	EUREF Technical Notes
	<i>Other citation details</i>	<a href="http://etrs89.ensg.ign.fr/pub/EUREF-TN-1.pdf">http://etrs89.ensg.ign.fr/pub/EUREF-TN-1.pdf</a> (accessed 2020-10-14)
<i>Information source</i>	<i>Title</i>	EUREF 2017 Resolutions
	<i>Author</i>	M. Greaves
	<i>Publication date</i>	2017-05-19
	<i>Series/Journal name</i>	Report on the Symposium of the IAG Subcommission for Europe (EUREF), Wroclaw, Poland, 17-19 May 2017
	<i>Other citation details</i>	<a href="http://www.euref.eu/symposia/2017Wroclaw/06-01-Resolutions-EUREF2017.pdf">http://www.euref.eu/symposia/2017Wroclaw/06-01-Resolutions-EUREF2017.pdf</a> (accessed 2020-10-14)
<i>Information source</i>	<i>Title</i>	Guidelines for EUREF Densifications
	<i>Author</i>	C. Bruyninx, Z. Altamimi, A. Caporali, A. Kenyeres, J. Legrand, M. Lidberg
	<i>Publisher</i>	IAG sub-commission for the European Reference Frame – EUREF
	<i>Revision date</i>	2018-03-09
	<i>Other citation details</i>	<a href="http://www.epncb.oma.be/_documentation/guidelines/Guidelines_for_EUREF_Densifications.pdf">http://www.epncb.oma.be/_documentation/guidelines/Guidelines_for_EUREF_Densifications.pdf</a> (accessed 2020-20-14)
<i>Data source</i>	ISO Geodetic Registry	
<i>Remarks</i>	The EUREF Technical Working Group (TWG) recommends to use the ETRF2014 for high precision applications and better consistency with the ITRF2014 precise geocentric origin.	
<i>Anchor definition</i>	Coincides with ITRF2014 at epoch 1989.0 and is fixed to the stable part of the Eurasian tectonic plate through 3 rotation rates derived from the ITRF2014 velocity field, representing the Eurasian plate's angular velocity about its Euler pole.	
<i>Release date</i>	2017-11-16	
<i>Coordinate Reference Epoch</i>	2010.0	
<i>Scope</i>	Spatial referencing	
<i>Ellipsoid</i>	GRS 1980	
<i>Prime Meridian</i>	Greenwich	

## Extent

<i>Description</i>	<b>Europe - onshore and offshore: Albania, Andorra, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus,</b>
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**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

# ISO Geodetic Registry

<i>Item class</i>	Ellipsoid														
<i>Name</i>	<b>GRS 1980</b>														
<i>Item status</i>	VALID														
<i>Identifier</i>	27														
<i>Alias</i>	Geodetic Reference System 1980														
<i>Alias</i>	GRS1980														
<i>Alias</i>	IAG GRS80														
<i>Alias</i>	International 1979														
<i>Alias</i>	GRS80														
<i>Information source</i>	<table> <tr> <td><i>Title</i></td><td>Geodetic Reference System 1980</td></tr> <tr> <td><i>Author</i></td><td>H. Moritz</td></tr> <tr> <td><i>Publisher</i></td><td>Springer International Publishing</td></tr> <tr> <td><i>Publication date</i></td><td>2003-03</td></tr> <tr> <td><i>Series/Journal name</i></td><td>Journal of Geodesy</td></tr> <tr> <td><i>Issue identification</i></td><td>Volume 74, No. 1</td></tr> <tr> <td><i>Page</i></td><td>128–162</td></tr> </table>	<i>Title</i>	Geodetic Reference System 1980	<i>Author</i>	H. Moritz	<i>Publisher</i>	Springer International Publishing	<i>Publication date</i>	2003-03	<i>Series/Journal name</i>	Journal of Geodesy	<i>Issue identification</i>	Volume 74, No. 1	<i>Page</i>	128–162
<i>Title</i>	Geodetic Reference System 1980														
<i>Author</i>	H. Moritz														
<i>Publisher</i>	Springer International Publishing														
<i>Publication date</i>	2003-03														
<i>Series/Journal name</i>	Journal of Geodesy														
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<i>Page</i>	128–162														
<i>Information source</i>	<table> <tr> <td><i>Title</i></td><td>Geodetic Reference System 1980</td></tr> <tr> <td><i>Author</i></td><td>H. Moritz</td></tr> <tr> <td><i>Publisher</i></td><td>International Association of Geodesy</td></tr> <tr> <td><i>Publication date</i></td><td>1984</td></tr> <tr> <td><i>Series/Journal name</i></td><td>Bulletin Geodesique</td></tr> <tr> <td><i>Issue identification</i></td><td>Volume 58, No. 3</td></tr> <tr> <td><i>Page</i></td><td>395-405</td></tr> </table>	<i>Title</i>	Geodetic Reference System 1980	<i>Author</i>	H. Moritz	<i>Publisher</i>	International Association of Geodesy	<i>Publication date</i>	1984	<i>Series/Journal name</i>	Bulletin Geodesique	<i>Issue identification</i>	Volume 58, No. 3	<i>Page</i>	395-405
<i>Title</i>	Geodetic Reference System 1980														
<i>Author</i>	H. Moritz														
<i>Publisher</i>	International Association of Geodesy														
<i>Publication date</i>	1984														
<i>Series/Journal name</i>	Bulletin Geodesique														
<i>Issue identification</i>	Volume 58, No. 3														
<i>Page</i>	395-405														
<i>Data source</i>	ISO Geodetic Registry														
<i>Remarks</i>	Adopted by IUGG 1979 Canberra. Inverse flattening is derived from geocentric gravitational constant $GM = 3986005e8 \text{ m}^3/\text{s}^2$ , dynamic form factor $J_2 = 108263e-8$ and Earth's angular velocity = $7292115e-11 \text{ rad/s}$ .														
<i>Semi-major axis</i>	6378137.0 m														
<i>Inverse flattening</i>	298.257222101 m														

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<i>Item class</i>	PrimeMeridian	
<i>Name</i>	<b>Greenwich</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	25	
<i>Alias</i>	Zero meridian	
<i>Information source</i>	<i>Title</i>	Why the Greenwich meridian moved
	<i>Author</i>	S. Malys, J.H. Seago, N.K. Pavlis, P.K. Seidelmann, G.H. Kaplan
	<i>Publisher</i>	Springer International Publishing
	<i>Publication date</i>	2015-12
	<i>Series/Journal name</i>	Journal of Geodesy
	<i>Issue identification</i>	Volume 89, No. 12
	<i>Page</i>	1263–1272
	<i>Title</i>	IERS Conventions (2010)
	<i>Author</i>	G. Petit, B.J. Luzum (eds)
	<i>Publisher</i>	Verlag des Bundesamts für Kartographie und Geodäsie
<i>Information source</i>	<i>Publication date</i>	2010
	<i>Edition date</i>	
	<i>Series/Journal name</i>	IERS Technical Notes
	<i>Issue identification</i>	36.0
	<i>Other citation details</i>	ISSN: 1019-4568
<i>Data source</i>	ISO Geodetic Registry	
<i>Greenwich longitude</i>	0.0 °	

# ISO Geodetic Registry

Item class	CartesianCS	
Name	<b>Geocentric 3D right-handed Cartesian CS.</b> <b>Axes: Geocentric X,Y,Z. Orientation: Z to North Pole, [X and Y in the equatorial plane, X at Prime Meridian   X in the equatorial plane at the Prime Meridian]. UoM: m.</b>	
Item status	VALID	
Identifier	45	
Alias	Earth centred, earth fixed, right-handed 3D coordinate system, consisting of 3 orthogonal axes with X and Y axes in the equatorial plane, positive Z-axis parallel to mean earth rotation axis and pointing towards North Pole. UoM: m.	
Alias	ECEF	
Information source	Title	ISO 19111 Geographical information - Spatial referencing by coordinates
	Author	International Organization for Standardization (ISO)
	Publisher	International Organization for Standardization (ISO)
	Publication date	2007-07-01
	Edition	Second Edition
	Series/Journal name	International Standard
	Issue identification	ISO 19111:2007
Data source	ISO Geodetic Registry	
Remarks	Used in geocentric coordinate reference systems.	

## Axes

Item class	CoordinateSystemAxis	
Name	<b>Geocentric X</b>	
Item status	VALID	
Identifier	33	
Information source	Title	ISO 19111 Geographical information - Spatial referencing by coordinates
	Author	International Organization for Standardization (ISO)
	Publisher	International Organization for Standardization (ISO)
	Publication date	2007-07-01
	Edition	Second Edition
	Series/Journal name	International Standard
	Issue identification	ISO 19111:2007
Data source	ISO Geodetic Registry	
Abbreviation	X	
Direction	Geocentre > equator/0°E	
Unit	metre	

Item class	CoordinateSystemAxis	
Name	<b>Geocentric Y</b>	
Item status	VALID	
Identifier	37	

<i>Information source</i>	<i>Title</i>	ISO 19111 Geographical information - Spatial referencing by coordinates
	<i>Author</i>	International Organization for Standardization (ISO)
	<i>Publisher</i>	International Organization for Standardization (ISO)
	<i>Publication date</i>	2007-07-01
	<i>Edition</i>	Second Edition
	<i>Series/Journal name</i>	International Standard
	<i>Issue identification</i>	ISO 19111:2007
<i>Data source</i>	ISO Geodetic Registry	
<i>Abbreviation</i>	Y	
<i>Direction</i>	Geocentre > equator/90°E	
<i>Unit</i>	metre	

<i>Item class</i>	CoordinateSystemAxis	
<i>Name</i>	<b>Geocentric Z</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	39	
<i>Information source</i>	<i>Title</i>	ISO 19111 Geographical information - Spatial referencing by coordinates
	<i>Author</i>	International Organization for Standardization (ISO)
	<i>Publisher</i>	International Organization for Standardization (ISO)
	<i>Publication date</i>	2007-07-01
	<i>Edition</i>	Second Edition
	<i>Series/Journal name</i>	International Standard
	<i>Issue identification</i>	ISO 19111:2007
<i>Data source</i>	ISO Geodetic Registry	
<i>Abbreviation</i>	Z	
<i>Direction</i>	Geocentre > north pole	
<i>Unit</i>	metre	