

# ISO Geodetic Registry

<i>Item class</i>	GeodeticCRS	
<i>Name</i>	<b>ITRF2014 - XYZ</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	425	
<i>Alias</i>	International Terrestrial Reference Frame 2014	
<i>Alias</i>	IERS Terrestrial Reference Frame 2014	
<i>Information source</i>	<i>Title</i>	ITRF2014: A new release of the International Terrestrial Reference Frame modeling nonlinear station motions
	<i>Author</i>	Z. Altamimi, P. Rebischung, L. Metivier, X. Collilieux
	<i>Publisher</i>	American Geophysical Union
	<i>Publication date</i>	2016-08-04
	<i>Edition date</i>	
	<i>Series/Journal name</i>	Journal of Geophysical Research Solid Earth
<i>Information source</i>	<i>Issue identification</i>	Volume 121, Issue 8
	<i>Title</i>	ITRF2014 is available on line
	<i>Author</i>	IERS
	<i>Publication date</i>	2016-01-22
	<i>Edition date</i>	
<i>Information source</i>	<i>Series/Journal name</i>	IERS Message
	<i>Issue identification</i>	289.0
	<i>Title</i>	Analysis and results of ITRF2014
	<i>Author</i>	Z. Altamimi, P. Rebischung, L. Metivier, X. Collilieux
	<i>Publisher</i>	International Earth Rotation and Reference Systems Service Central Bureau, Verlag des Bundesamts für Kartographie und Geodäsie, Frankfurt am Main, Germany
	<i>Publication date</i>	2017
<i>Data source</i>	<i>Edition date</i>	
	<i>Series/Journal name</i>	IERS Technical Notes
	<i>Issue identification</i>	38.0
	<i>ISO Geodetic Registry</i>	
<i>Remarks</i>	Replaces ITRF2008 - XYZ.	
<i>Scope</i>	Spatial referencing	
<i>Datum</i>	International 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>World.</b>	
<i>Geographic Bounding Box</i>	<i>West-bound longitude</i>	-180.0
	<i>North-bound latitude</i>	90.0
	<i>East-bound longitude</i>	180.0
	<i>South-bound latitude</i>	-90.0

# ISO Geodetic Registry

Item class	GeodeticDatum	
Name	International Terrestrial Reference Frame 2014	
Item status	VALID	
Identifier	175	
Alias	ITRF2014	
Alias	IERS Terrestrial Reference Frame 2014	
Information source	Title	Analysis and results of ITRF2014
	Author	Z. Altamimi, P. Rebischung, L. Metivier, X. Collilieux
	Publisher	International Earth Rotation and Reference Systems Service Central Bureau, Verlag des Bundesamts fur Kartographie und Geodasie, Frankfurt am Main, Germany
	Publication date	2017
	Edition date	
	Series/Journal name	IERS Technical Notes
Information source	Issue identification	38.0
	Title	ITRF2014 is available on line
	Author	IERS
	Publication date	2016-01-22
	Edition date	
Information source	Series/Journal name	IERS Message
	Issue identification	289.0
	Title	ITRF2014: A new release of the International Terrestrial Reference Frame modeling nonlinear station motions
	Author	Z. Altamimi, P. Rebischung, L. Metivier, X. Collilieux
	Publisher	American Geophysical Union
	Publication date	2016-08-04
Data source	Edition date	
	Series/Journal name	Journal of Geophysical Research Solid Earth
	Issue identification	Volume 121, Issue 8
		ISO Geodetic Registry
Remarks	Replaces ITRF2008. This is a purely Cartesian reference frame with no ellipsoid defined. GRS80 is the ellipsoid recommended by the IAG and IERS.	
Anchor definition	Realisation of the IERS Terrestrial Reference System (ITRS) at reference epoch 2010.0. Origin is defined such that there are zero translation parameters at epoch 2010.0 and zero translation rates between the ITRF2014 and the ILRS SLR long-term solution obtained by tacking the ILRS time series. Scale is defined such that there are zero scale and scale rate between ITRF2014 and the average of VLBI and SLR scales/rates. Orientation is defined such that there are zero rotation parameters at epoch 2010.0 and zero rotation rates between the ITRF2014 and ITRF2008. Datum defined by a set of 3 dimensional Cartesian station coordinates, velocities, annual and semi-annual terms, and post-seismic deformation models given by the citations.	
Release date	2016-01-22	
Coordinate Reference Epoch	2010.0	
Scope	Spatial referencing	
Ellipsoid	GRS 1980	
Prime Meridian	Greenwich	

## Extent

<i>Description</i>	<b>World.</b>		
<i>Geographic Bounding Box</i>	<i>West-bound longitude</i>		-180.0
	<i>North-bound latitude</i>		90.0
	<i>East-bound longitude</i>		180.0
	<i>South-bound latitude</i>		-90.0

# 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														
<i>Issue identification</i>	Volume 74, No. 1														
<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														

# ISO Geodetic Registry

<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>Information source</i>	<i>Title</i>	IERS Conventions (2010)
	<i>Author</i>	G. Petit, B.J. Luzum (eds)
	<i>Publisher</i>	Verlag des Bundesamts fur Kartographie und Geodasie
	<i>Publication date</i>	2010
	<i>Edition date</i>	
	<i>Series/Journal name</i>	IERS Technical Notes
	<i>Issue identification</i>	36.0
<i>Data source</i>	<i>Other citation details</i>	ISSN: 1019-4568
	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	