ISO Geodetic Registry

Item class	GeodeticCRS	
Name	**WGS 84 (G2139) - LatLonEHt**	
Item status	VALID	
Identifier	797	
Information source	*Title*	Recent Update to WGS 84 Reference Frame and NGA Transition to IGS ANTEX
	Author	Office of Geomatics / GNSS Division, National Geospatial-Intelligence Agency
	Publisher	National Geospatial-Intelligence Agency
	Publication date	2021
	Series/Journal name	Public Release
	Issue identification	21-520
	Other citation details	https://earth-info.nga.mil/php/download.php?file=(U)WGS%2084(G2139).pdf (accessed 2021-09-24)
Information source	*Title*	Personal communication
	Author	Robert Wong
	Publisher	National Geospatial-Intelligence Agency
	Publication date	2021-10-25
	Series/Journal name	ISOGR Control Body Meeting
	Issue identification	2021-10-25
Data source	ISO Geodetic Registry	
Remarks	Replaces WGS 84 (G1762) - LatLonEHt.	
Scope	Spatial referencing and GPS satellite navigation.	
Datum	World Geodetic System 1984 (G2139)	
Coordinate System	Ellipsoidal 3D CS. Axes: latitude, longitude, ellipsoidal height. Orientations: north, east, up. UoM: degree, degree, metre.	

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

ISO Geodetic Registry

Item class	GeodeticDatum	
Name	**World Geodetic System 1984 (G2139)**	
Item status	VALID	
Identifier	795	
Alias	WGS 84 (G2139)	
Information source	*Title*	Recent Update to WGS 84 Reference Frame and NGA Transition to IGS ANTEX
	Author	Office of Geomatics / GNSS Division, National Geospatial-Intelligence Agency
	Publisher	National Geospatial-Intelligence Agency
	Publication date	2021
	Series/Journal name	Public Release
	Issue identification	21-520
	Other citation details	https://earth-info.nga.mil/php/download.php?file=(U)WGS%2084(G2139).pdf (accessed 2021-09-24)
Information source	*Title*	Personal communication
	Author	Robert Wong
	Publisher	National Geospatial-Intelligence Agency
	Publication date	2021-10-25
	Series/Journal name	ISOGR Control Body Meeting
	Issue identification	2021-10-25
Data source	ISO Geodetic Registry	
Remarks	From 2021-01-03 replaces World Geodetic System 1984 (G1762), which has been redesignated World Geodetic System 1984 (G1762'). Tracking station coordinates changed on 2021-03-28 when NGA implemented the IGS definition of GPS satellite antenna phase centre offsets.	
Anchor definition	Defined through coordinates of 19 GPS tracking stations aligned to a subset of IGb14 stations at epoch 2016.0. The IGb14 station coordinates are considered to be equivalent to ITRF2014.	
Release date	2021-01-03	
Coordinate Reference Epoch	2016.0	
Scope	Spatial referencing and GPS satellite navigation	
Ellipsoid	WGS 84	
Prime Meridian	Greenwich	

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

ISO Geodetic Registry

Item class	Ellipsoid	
Name	**WGS 84**	
Item status	VALID	
Identifier	30	
Alias	WGS84	
Information source	*Title*	Department of Defense World Geodetic System 1984: Its Definition and Relationships with Local Geodetic Systems, Version 1.0.0
	Author	National Geospatial-Intelligence Agency
	Publisher	National Geospatial-Intelligence Agency
	Publication date	2014-07-08
	Series/Journal name	Standardization Document
	Issue identification	NGA.STND.0036_1.0.0_WGS84
Information source	*Title*	World Geodetic System 1984
	Author	L.B. Decker, Defense Mapping Agency Aerospace Center
	Publisher	Defense Mapping Agency Aerospace Center
	Publication date	1986-04
	Edition date	
Information source	*Title*	Refinements to The World Geodetic System 1984
	Author	S. Malys, J.A. Slater, R.W. Smith, L.E. Kunz, S.C. Kenyon
	Publisher	Institute of Navigation
	Publication date	1997-09
	Edition date	
	Series/Journal name	Proceedings of the 10th International Technical Meeting of the Satellite Division of The Institue of Navigation (ION-GPS-1997), Kansas City, MO, September 1997
	Page	841-850
Data source	ISO Geodetic Registry	
Remarks	The World Geodetic System 1984 (WGS 84) contains four defining physical parameters for the Earth: the semi-major axis (a), the reciprocal of flattening (1/f) of an oblate spheroid of revolution, the geocentric gravitational constant (GM = 3.986004418e14 m^3/s^2) includes the mass of the atmosphere, and the Earth's angular rotational velocity about its spin axis (omega = 7.2921150e-5 rad/s).	
Semi-major axis	6378137.0 m	
Inverse flattening	298.2572236 m	

ISO Geodetic Registry

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

ISO Geodetic Registry

Item class	EllipsoidalCS	
Name	**Ellipsoidal 3D CS. Axes: latitude, longitude, ellipsoidal height. Orientations: north, east, up. UoM: degree, degree, metre.**	
Item status	VALID	
Identifier	46	
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 geographic 3D coordinate reference systems. Horizontal coordinates referenced to this CS are in degrees. Any degree representation (e.g. DMSH, decimal, etc.) may be used but that used must be declared for the user.	

Axes

Item class	CoordinateSystemAxis	
Name	**Geodetic latitude**	
Item status	VALID	
Identifier	38	
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 geographic 2D and geographic 3D coordinate reference systems.	
Abbreviation	Lat	
Direction	north	
Unit	degree (supplier to define representation)	

Item class	CoordinateSystemAxis	
Name	**Geodetic longitude**	
Item status	VALID	
Identifier	34	
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 geographic 2D and geographic 3D coordinate reference systems.	
Abbreviation	Lon	
Direction	east	
Unit	degree (supplier to define representation)	

Item class	CoordinateSystemAxis	
Name	**Ellipsoidal height**	
Item status	VALID	
Identifier	36	
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 only as part of an ellipsoidal 3D coordinate system in a geographic 3D coordinate reference system, never on its own.	
Abbreviation	h	
Direction	up	
Unit	metre	