

ISO Geodetic Registry

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|---------------------------|--|---|
| <i>Item class</i> | GeodeticCRS | |
| <i>Name</i> | WGS 84 (G1674) - XYZ | |
| <i>Item status</i> | VALID | |
| <i>Identifier</i> | 334 | |
| <i>Information source</i> | <i>Title</i> | Recent Updates to the WGS 84 Reference Frame |
| | <i>Author</i> | R.F. Wong, C.M. Rollins, C.F. Minter |
| | <i>Publisher</i> | Institute of Navigation |
| | <i>Publication date</i> | 2012-09 |
| | <i>Edition date</i> | |
| | <i>Series/Journal name</i> | Proceedings of the 25th International Technical Meeting of the Satellite Division of The Institute of Navigation (ION-GNSS-2012), Nashville, TN, September 2012 |
| | <i>Page</i> | 1164-1172 |
| <i>Data source</i> | ISO Geodetic Registry | |
| <i>Remarks</i> | Replaces WGS 84 (G1150) - XYZ. Replaced by WGS 84 (G1762) - XYZ. | |
| <i>Scope</i> | Spatial Referencing and GPS satellite navigation. | |
| <i>Datum</i> | World Geodetic System 1984 (G1674) | |
| <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> | World. | |
| <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 |

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|-----------------------------------|--|--|
| <i>Item class</i> | GeodeticDatum | |
| <i>Name</i> | World Geodetic System 1984 (G1674) | |
| <i>Item status</i> | VALID | |
| <i>Identifier</i> | 196 | |
| <i>Alias</i> | WGS 84 (G1674) | |
| <i>Information source</i> | <i>Title</i> | Recent Updates to the WGS 84 Reference Frame |
| | <i>Author</i> | R.F. Wong, C.M. Rollins, C.F. Minter |
| | <i>Publisher</i> | Institute of Navigation |
| | <i>Publication date</i> | 2012-09 |
| | <i>Edition date</i> | |
| <i>Information source</i> | <i>Series/Journal name</i> | Proceedings of the 25th International Technical Meeting of the Satellite Division of The Institute of Navigation (ION-GNSS-2012), Nashville, TN, September 2012 |
| | <i>Page</i> | 1164-1172 |
| | <i>Title</i> | Affirmation of Vertical Datum for Surveying and Mapping Activities for the Islands of Rota, Saipan and Tinian of the Commonwealth of the Northern Mariana Islands (CNMI) |
| | <i>Author</i> | US Government |
| | <i>Publisher</i> | Office of Federal Register, NARA |
| <i>Information source</i> | <i>Publication date</i> | 2009-01-22 |
| | <i>Edition date</i> | 2009-01-22 |
| | <i>Series/Journal name</i> | Federal Register Notice |
| | <i>Issue identification</i> | Volume 74, No. 13, Document: E9-1180, Citation: 74 FR 3990 |
| | <i>Page</i> | 3990-3991 |
| <i>Data source</i> | <i>Other citation details</i> | Mandates use of NMVD03 |
| | <i>ISO Geodetic Registry</i> | |
| | <i>Remarks</i> | Replaces World Geodetic System 1984 (G1150) from 2012-02-08. Replaced by World Geodetic System 1984 (G1762) from 2013-10-16. Used in broadcast ephemeris from 2012-02-08 to 2013-10-15 and in precise ephemeris from 2012-05-07 to 2013-10-15. |
| | <i>Anchor definition</i> | Defined through coordinates of 15 GPS tracking stations adjusted to a subset of IGS stations at epoch 2005.0. The IGS station coordinates are considered to be equivalent to ITRF2008. |
| | <i>Release date</i> | 2012-02-08 |
| <i>Coordinate Reference Epoch</i> | 2005.0 | |
| <i>Scope</i> | Spatial Referencing and GPS satellite navigation | |
| <i>Ellipsoid</i> | WGS 84 | |
| <i>Prime Meridian</i> | Greenwich | |

Extent

| | | |
|--------------------------------|-----------------------------|--------|
| <i>Description</i> | World. | |
| <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 |

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|---------------------------|--|
| <i>Item class</i> | Ellipsoid |
| <i>Name</i> | WGS 84 |
| <i>Item status</i> | VALID |
| <i>Identifier</i> | 30 |
| <i>Alias</i> | WGS84 |
| <i>Information source</i> | <p><i>Title</i> Department of Defense World Geodetic System 1984: Its Definition and Relationships with Local Geodetic Systems, Version 1.0.0</p> <p><i>Author</i> National Geospatial-Intelligence Agency</p> <p><i>Publisher</i> National Geospatial-Intelligence Agency</p> <p><i>Publication date</i> 2014-07-08</p> <p><i>Series/Journal name</i> Standardization Document</p> <p><i>Issue identification</i> NGA.STND.0036_1.0.0_WGS84</p> |
| <i>Information source</i> | <p><i>Title</i> World Geodetic System 1984</p> <p><i>Author</i> L.B. Decker, Defense Mapping Agency Aerospace Center</p> <p><i>Publisher</i> Defense Mapping Agency Aerospace Center</p> <p><i>Publication date</i> 1986-04</p> <p><i>Edition date</i></p> |
| <i>Information source</i> | <p><i>Title</i> Refinements to The World Geodetic System 1984</p> <p><i>Author</i> S. Malys, J.A. Slater, R.W. Smith, L.E. Kunz, S.C. Kenyon</p> <p><i>Publisher</i> Institute of Navigation</p> <p><i>Publication date</i> 1997-09</p> <p><i>Edition date</i></p> <p><i>Series/Journal name</i> Proceedings of the 10th International Technical Meeting of the Satellite Division of The Institute of Navigation (ION-GPS-1997), Kansas City, MO, September 1997</p> <p><i>Page</i> 841-850</p> |
| <i>Data source</i> | ISO Geodetic Registry |
| <i>Remarks</i> | 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 ($GM = 3.986004418 \times 10^{14} \text{ m}^3/\text{s}^2$) includes the mass of the atmosphere, and the Earth's angular rotational velocity about its spin axis ($\omega = 7.2921150 \times 10^{-5} \text{ rad/s}$). |
| <i>Semi-major axis</i> | 6378137.0 m |
| <i>Inverse flattening</i> | 298.2572236 m |

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|----------------------------|-------------------------------|---|
| <i>Item class</i> | PrimeMeridian | |
| <i>Name</i> | Greenwich | |
| <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

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|--------------------|---|---|
| Item class | CartesianCS | |
| Name | 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. | |
| 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 | Geocentric X | |
| 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 | |

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| Item class | CoordinateSystemAxis | |
| Name | Geocentric Y | |
| Item status | VALID | |
| Identifier | 37 | |

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|---------------------------|-----------------------------|---|
| <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 | |

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|---------------------------|-----------------------------|---|
| <i>Item class</i> | CoordinateSystemAxis | |
| <i>Name</i> | Geocentric Z | |
| <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 | |