

ISO Geodetic Registry

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|-----------------------------------|---|---|
| <i>Item class</i> | GeodeticDatum | |
| <i>Name</i> | World Geodetic System 1984 (G2139) | |
| <i>Item status</i> | VALID | |
| <i>Identifier</i> | 795 | |
| <i>Alias</i> | WGS 84 (G2139) | |
| <i>Information source</i> | <i>Title</i> | Recent Update to WGS 84 Reference Frame and NGA Transition to IGS ANTEX |
| | <i>Author</i> | Office of Geomatics / GNSS Division, National Geospatial-Intelligence Agency |
| | <i>Publisher</i> | National Geospatial-Intelligence Agency |
| | <i>Publication date</i> | 2021 |
| | <i>Series/Journal name</i> | Public Release |
| | <i>Issue identification</i> | 21-520 |
| <i>Information source</i> | <i>Other citation details</i> | https://earth-info.nga.mil/php/download.php?file=(U)WGS%2084(G2139).pdf (accessed 2021-09-24) |
| | <i>Title</i> | Personal communication |
| | <i>Author</i> | Robert Wong |
| | <i>Publisher</i> | National Geospatial-Intelligence Agency |
| | <i>Publication date</i> | 2021-10-25 |
| | <i>Series/Journal name</i> | ISOGR Control Body Meeting |
| <i>Data source</i> | <i>Issue identification</i> | 2021-10-25 |
| | ISO Geodetic Registry | |
| <i>Remarks</i> | 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. | |
| <i>Anchor definition</i> | 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. | |
| <i>Release date</i> | 2021-01-03 | |
| <i>Coordinate Reference Epoch</i> | 2016.0 | |
| <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 ° | |