

# ISO Geodetic Registry

|                           |  |  |
|---------------------------|--|--|
| <i>Item class</i>         | GeodeticCRS  |  |
| <i>Name</i>               | <b>WGS 84 (G873) - LatLonEHt</b>   |  |
| <i>Item status</i>        | VALID  |  |
| <i>Identifier</i>         | 344  |  |
| <i>Information source</i> | <i>Title</i>   | Department of Defense World Geodetic System 1984: Its Definition and Relationships with Local Geodetic Systems   |
|                           | <i>Author</i>  | National Imagery and Mapping Agency  |
|                           | <i>Publisher</i>   | National Imagery and Mapping Agency  |
|                           | <i>Publication date</i>  | 2000-01-03   |
|                           | <i>Edition</i>   | Third Edition, Amendment 1   |
|                           | <i>Edition date</i>  | 2000-01-03   |
|                           | <i>Series/Journal name</i>   | Technical Report   |
|                           | <i>Issue identification</i>  | TR8350.2   |
|                           | <i>Title</i>   | Refinements to The World Geodetic System 1984  |
|                           | <i>Author</i>  | S. Malys, J.A. Slater, R.W. Smith, L.E. Kunz, S.C. Kenyon  |
| <i>Information source</i> | <i>Publisher</i>   | Institute of Navigation  |
|                           | <i>Publication date</i>  | 1997-09  |
|                           | <i>Edition date</i>  |  |
|                           | <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 |
|                           | <i>Page</i>  | 841-850  |
| <i>Information source</i> | <i>Title</i>   | Department of Defense World Geodetic System 1984: Its Definition and Relationships with Local Geodetic Systems   |
|                           | <i>Author</i>  | National Imagery and Mapping Agency  |
|                           | <i>Publisher</i>   | National Imagery and Mapping Agency  |
|                           | <i>Publication date</i>  | 1997-07-04   |
|                           | <i>Edition</i>   | Third Edition  |
|                           | <i>Edition date</i>  | 1997-07-04   |
|                           | <i>Series/Journal name</i>   | Technical Report   |
|                           | <i>Issue identification</i>  | TR8350.2   |
|                           | <i>Title</i>   | Department of Defense World Geodetic System 1984: Its Definition and Relationships with Local Geodetic Systems   |
|                           | <i>Author</i>  | National Imagery and Mapping Agency  |
| <i>Information source</i> | <i>Publisher</i>   | National Imagery and Mapping Agency  |
|                           | <i>Publication date</i>  | 2004-06-23   |
|                           | <i>Edition</i>   | Third Edition, Amendment 2   |
|                           | <i>Edition date</i>  | 2004-06-23   |
|                           | <i>Series/Journal name</i>   | Technical Report   |
|                           | <i>Issue identification</i>  | TR8350.2   |
|                           | <i>Title</i>   | Department of Defense World Geodetic System 1984: Its Definition and Relationships with Local Geodetic Systems   |
|                           | <i>Author</i>  | National Imagery and Mapping Agency  |
|                           | <i>Publisher</i>   | National Imagery and Mapping Agency  |
|                           | <i>Publication date</i>  | 2004-06-23   |
| <i>Data source</i>        | ISO Geodetic Registry  |  |
| <i>Remarks</i>            | Replaces WGS 84 (G730) - LatLonEHt. Replaced by WGS 84 (G1150) - LatLonEHt.  |  |
| <i>Scope</i>              | Spatial Referencing and GPS satellite navigation.  |  |
| <i>Datum</i>              | World Geodetic System 1984 (G873)  |  |
| <i>Coordinate System</i>  | Ellipsoidal 3D CS. Axes: latitude, longitude, ellipsoidal height. Orientations: north, east, up. UoM: degree, degree, metre. |  |

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>         | GeodeticDatum   |  |
| <i>Name</i>               | <b>World Geodetic System 1984 (G873)</b>  |  |
| <i>Item status</i>        | VALID   |  |
| <i>Identifier</i>         | 135   |  |
| <i>Alias</i>              | WGS 84 (G873)   |  |
| <i>Information source</i> | <i>Title</i>  | Refinements to The World Geodetic System 1984  |
|                           | <i>Author</i>   | S. Malys, J.A. Slater, R.W. Smith, L.E. Kunz, S.C. Kenyon  |
|                           | <i>Publisher</i>  | Institute of Navigation  |
|                           | <i>Publication date</i>   | 1997-09  |
|                           | <i>Edition date</i>   |  |
| <i>Information source</i> | <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 |
|                           | <i>Page</i>   | 841-850  |
|                           | <i>Title</i>  | Department of Defense World Geodetic System 1984: Its Definition and Relationships with Local Geodetic Systems   |
|                           | <i>Author</i>   | National Imagery and Mapping Agency  |
|                           | <i>Publisher</i>  | National Imagery and Mapping Agency  |
| <i>Information source</i> | <i>Publication date</i>   | 2000-01-03   |
|                           | <i>Edition</i>  | Third Edition, Amendment 1   |
|                           | <i>Edition date</i>   | 2000-01-03   |
|                           | <i>Series/Journal name</i>  | Technical Report   |
|                           | <i>Issue identification</i>   | TR8350.2   |
| <i>Information source</i> | <i>Title</i>  | Department of Defense World Geodetic System 1984: Its Definition and Relationships with Local Geodetic Systems   |
|                           | <i>Author</i>   | National Imagery and Mapping Agency  |
|                           | <i>Publisher</i>  | National Imagery and Mapping Agency  |
|                           | <i>Publication date</i>   | 1997-07-04   |
|                           | <i>Edition</i>  | Third Edition  |
| <i>Information source</i> | <i>Edition date</i>   | 1997-07-04   |
|                           | <i>Series/Journal name</i>  | Technical Report   |
|                           | <i>Issue identification</i>   | TR8350.2   |
|                           | <i>Title</i>  | Department of Defense World Geodetic System 1984: Its Definition and Relationships with Local Geodetic Systems   |
|                           | <i>Author</i>   | National Imagery and Mapping Agency  |
| <i>Information source</i> | <i>Publisher</i>  | National Imagery and Mapping Agency  |
|                           | <i>Publication date</i>   | 2004-06-23   |
|                           | <i>Edition</i>  | Third Edition, Amendment 2   |
|                           | <i>Edition date</i>   | 2004-06-23   |
|                           | <i>Series/Journal name</i>  | Technical Report   |
| <i>Data source</i>        | <i>Issue identification</i>   | TR8350.2   |
| <i>Remarks</i>            | ISO Geodetic Registry   |  |
| <i>Anchor definition</i>  | Replaces World Geodetic System 1984 (G730) from 1997-01-29.   |  |
|                           | Replaced by World Geodetic System 1984 (G1150) from 2002-01-20. Used in broadcast ephemeris from 1997-01-29 to 2002-01-19 and in precise ephemeris from 1996-09-29 to 2002-01-19.   |  |
| <i>Release date</i>       | Defined through coordinates of 13 GPS tracking stations adjusted to a subset of ITRF94 stations at epoch 1997.0. The reference epoch for the adjustment was 1994.0 and the station coordinates were propagated to 1997.0 using the NNR-NUVEL-1A plate motion model. |  |

|                                   |  |
|-----------------------------------|--|
| <i>Coordinate Reference Epoch</i> | 1997.0   |
| <i>Scope</i>                      | Spatial Referencing and GPS satellite navigation |
| <i>Ellipsoid</i>                  | WGS 84   |
| <i>Prime Meridian</i>             | 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  |

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|                           |  |
|---------------------------|--|
| <i>Item class</i>         | Ellipsoid  |
| <i>Name</i>               | <b>WGS 84</b>  |
| <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  |

# 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>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

|                           |  |   |
|---------------------------|--|---|
| <i>Item class</i>         | EllipsoidalCS  |   |
| <i>Name</i>               | <b>Ellipsoidal 3D CS. Axes: latitude, longitude, ellipsoidal height. Orientations: north, east, up. UoM: degree, degree, metre.</b>  |   |
| <i>Item status</i>        | VALID  |   |
| <i>Identifier</i>         | 46   |   |
| <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>Remarks</i>            | 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

|                           |   |   |
|---------------------------|---|---|
| <i>Item class</i>         | CoordinateSystemAxis  |   |
| <i>Name</i>               | <b>Geodetic latitude</b>  |   |
| <i>Item status</i>        | VALID   |   |
| <i>Identifier</i>         | 38  |   |
| <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>Remarks</i>            | Used in geographic 2D and geographic 3D coordinate reference systems. |   |
| <i>Abbreviation</i>       | Lat   |   |
| <i>Direction</i>          | north   |   |
| <i>Unit</i>               | degree (supplier to define representation)                            |   |

  

|                           |                           |   |
|---------------------------|---------------------------|---|
| <i>Item class</i>         | CoordinateSystemAxis      |   |
| <i>Name</i>               | <b>Geodetic longitude</b> |   |
| <i>Item status</i>        | VALID                     |   |
| <i>Identifier</i>         | 34                        |   |
| <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>Remarks</i>      | Used in geographic 2D and geographic 3D coordinate reference systems. |  |
| <i>Abbreviation</i> | Lon   |  |
| <i>Direction</i>    | east  |  |
| <i>Unit</i>         | degree (supplier to define representation)                            |  |

|                           |  |   |
|---------------------------|--|---|
| <i>Item class</i>         | CoordinateSystemAxis   |   |
| <i>Name</i>               | <b>Ellipsoidal height</b>  |   |
| <i>Item status</i>        | VALID  |   |
| <i>Identifier</i>         | 36   |   |
| <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  |
|                           | ISO Geodetic Registry  |   |
| <i>Data source</i>        | ISO Geodetic Registry  |   |
| <i>Remarks</i>            | Used only as part of an ellipsoidal 3D coordinate system in a geographic 3D coordinate reference system, never on its own. |   |
| <i>Abbreviation</i>       | h  |   |
| <i>Direction</i>          | up   |   |
| <i>Unit</i>               | metre  |   |