

# ISO Geodetic Registry

|                           |  |  |
|---------------------------|--|--|
| <i>Item class</i>         | GeodeticCRS  |  |
| <i>Name</i>               | <b>WGS 84 TRANSIT - XYZ</b>  |  |
| <i>Item status</i>        | VALID  |  |
| <i>Identifier</i>         | 272  |  |
| <i>Alias</i>              | WGS84  |  |
| <i>Alias</i>              | WGS 84   |  |
| <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>  | Defense Mapping Agency   |
|                           | <i>Publisher</i>   | Defense Mapping Agency   |
|                           | <i>Publication date</i>  | 1987-09-30   |
|                           | <i>Edition date</i>  | 1987-09-30   |
|                           | <i>Series/Journal name</i>   | Technical Report   |
|                           | <i>Issue identification</i>  | TR8350.2   |
| <i>Information source</i> | <i>Title</i>   | World Geodetic System 1984   |
|                           | <i>Author</i>  | L.B. Decker, Defense Mapping Agency  |
|                           |  | Aerospace Center   |
|                           | <i>Publisher</i>   | Defense Mapping Agency Aerospace Center  |
|                           | <i>Publication date</i>  | 1986-04  |
| <i>Information source</i> | <i>Edition date</i>  |  |
|                           | <i>Title</i>   | Department of Defense World Geodetic System 1984: Its Definition and Relationships with Local Geodetic Systems |
|                           | <i>Author</i>  | Defense Mapping Agency   |
|                           | <i>Publisher</i>   | Defense Mapping Agency   |
|                           | <i>Publication date</i>  | 1991-09-01   |
|                           | <i>Edition</i>   | Second Edition   |
|                           | <i>Edition date</i>  | 1991-09-01   |
| <i>Data source</i>        | <i>Series/Journal name</i>   | Technical Report   |
|                           | <i>Issue identification</i>  | TR8350.2   |
|                           | <i>ISO Geodetic Registry</i>   |  |
|                           | <i>Scope</i>   | Spatial referencing and GPS satellite navigation.  |
|                           | <i>Datum</i>   | World Geodetic System 1984 TRANSIT   |
| <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

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|-----------------------------|--|--|
| <i>Item class</i>           | GeodeticDatum  |  |
| <i>Name</i>                 | <b>World Geodetic System 1984 TRANSIT</b>  |  |
| <i>Item status</i>          | VALID  |  |
| <i>Identifier</i>           | 156  |  |
| <i>Alias</i>                | WGS84  |  |
| <i>Alias</i>                | WGS 84   |  |
| <i>Information source</i>   | <i>Title</i>   | World Geodetic System 1984   |
|                             | <i>Author</i>  | L.B. Decker, Defense Mapping Agency<br>Aerospace Center  |
|                             | <i>Publisher</i>   | Defense Mapping Agency Aerospace Center  |
|                             | <i>Publication date</i>  | 1986-04  |
|                             | <i>Edition date</i>  |  |
| <i>Information source</i>   | <i>Title</i>   | Department of Defense World Geodetic System<br>1984: Its Definition and Relationships with Local<br>Geodetic Systems |
|                             | <i>Author</i>  | Defense Mapping Agency   |
|                             | <i>Publisher</i>   | Defense Mapping Agency   |
|                             | <i>Publication date</i>  | 1987-09-30   |
|                             | <i>Edition date</i>  | 1987-09-30   |
|                             | <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<br>1984: Its Definition and Relationships with Local<br>Geodetic Systems |
|                             | <i>Author</i>  | Defense Mapping Agency   |
|                             | <i>Publisher</i>   | Defense Mapping Agency   |
|                             | <i>Publication date</i>  | 1991-09-01   |
|                             | <i>Edition</i>   | Second Edition   |
|                             | <i>Edition date</i>  | 1991-09-01   |
|                             | <i>Series/Journal name</i>   | Technical Report   |
| <i>Issue identification</i> | TR8350.2   |  |
|                             |  |  |
| <i>Data source</i>          | ISO Geodetic Registry  |  |
| <i>Remarks</i>              | Replaced by WGS 84 (G730) 1994-01-02.  |  |
| <i>Anchor definition</i>    | The origin, scale and orientation of WGS 84 are nominally defined to be that for the BIH Terrestrial System 1984 (BTS84) with origin at the geocentre. Stations in the Doppler reference frame NWL 9D were brought into alignment with BTS 84 using an internationally adopted transformation. |  |
| <i>Release date</i>         | 1987-01-01   |  |
| <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  |

# ISO Geodetic Registry

|                           |  |
|---------------------------|--|
| <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>Information source</i>  | <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>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

|                           |   |   |
|---------------------------|---|---|
| <i>Item class</i>         | CartesianCS   |   |
| <i>Name</i>               | <b>Geocentric 3D right-handed Cartesian CS.</b><br><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>       |   |
| <i>Item status</i>        | VALID   |   |
| <i>Identifier</i>         | 45  |   |
| <i>Alias</i>              | 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. |   |
| <i>Alias</i>              | ECEF  |   |
| <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 geocentric coordinate reference systems.  |   |

## Axes

|                           |                             |   |
|---------------------------|-----------------------------|---|
| <i>Item class</i>         | CoordinateSystemAxis        |   |
| <i>Name</i>               | <b>Geocentric X</b>         |   |
| <i>Item status</i>        | VALID                       |   |
| <i>Identifier</i>         | 33                          |   |
| <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>       | X                           |   |
| <i>Direction</i>          | Geocentre > equator/0°E     |   |
| <i>Unit</i>               | metre                       |   |

  

|                    |                      |  |
|--------------------|----------------------|--|
| <i>Item class</i>  | CoordinateSystemAxis |  |
| <i>Name</i>        | <b>Geocentric Y</b>  |  |
| <i>Item status</i> | VALID                |  |
| <i>Identifier</i>  | 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                       |   |