

# ISO Geodetic Registry

|                           |   |  |
|---------------------------|---|--|
| <i>Item class</i>         | GeodeticCRS   |  |
| <i>Name</i>               | <b>ITRF2000 - LatLonEHt</b>   |  |
| <i>Item status</i>        | VALID   |  |
| <i>Identifier</i>         | 355   |  |
| <i>Alias</i>              | IERS Terrestrial Reference Frame 2000   |  |
| <i>Alias</i>              | International Terrestrial Reference Frame 2000  |  |
| <i>Information source</i> | <i>Title</i>  | IERS Message No. 5: ITRF2000 Primary Solution  |
|                           | <i>Author</i>   | C. Boucher, Z. Altamimi  |
|                           | <i>Publication date</i>   | 2001-03-19   |
|                           | <i>Edition date</i>   |  |
|                           | <i>Series/Journal name</i>  | IERS Message   |
| <i>Information source</i> | <i>Issue identification</i>   | 5.0  |
|                           | <i>Title</i>  | The ITRF2000   |
|                           | <i>Author</i>   | C. Boucher, Z. Altamimi, P. Sillard, M. Feissel-Vernier  |
|                           | <i>Publisher</i>  | International Earth Rotation and Reference Systems Service Central Bureau, Verlag des Bundesamts für Kartographie und Geodäsie, Frankfurt am Main, Germany |
|                           | <i>Publication date</i>   | 2004-01-01   |
| <i>Information source</i> | <i>Edition date</i>   |  |
|                           | <i>Series/Journal name</i>  | IERS Technical Notes   |
|                           | <i>Issue identification</i>   | 31.0   |
|                           | <i>Title</i>  | Effect of recent revisions to the geomagnetic reversal time scale on estimates of current plate motions  |
|                           | <i>Author</i>   | C.S. DeMets, R.G. Gordon, D.F. Argus, S. Stein   |
| <i>Data source</i>        | <i>Publisher</i>  | American Geophysical Union   |
|                           | <i>Publication date</i>   | 1994-10-01   |
|                           | <i>Edition date</i>   |  |
|                           | <i>Series/Journal name</i>  | Geophysical Research Letters   |
|                           | <i>Issue identification</i>   | Volume 21, Issue 20  |
| <i>Remarks</i>            | Replaces ITRF97 - LatLonEHt . Replaced by ITRF2005 - LatLonEHt.   |  |
| <i>Scope</i>              | Spatial referencing   |  |
| <i>Datum</i>              | International Terrestrial Reference Frame 2000  |  |
| <i>Coordinate System</i>  | Ellipsoidal 3D CS. Axes: latitude, longitude, ellipsoidal height.<br>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>International Terrestrial Reference Frame 2000</b>   |  |
| <i>Item status</i>                | VALID   |  |
| <i>Identifier</i>                 | 165   |  |
| <i>Alias</i>                      | IERS Terrestrial Reference Frame 2000   |  |
| <i>Alias</i>                      | ITRF2000  |  |
| <i>Information source</i>         | <i>Title</i>  | Effect of recent revisions to the geomagnetic reversal time scale on estimates of current plate motions  |
|                                   | <i>Author</i>   | C.S. DeMets, R.G. Gordon, D.F. Argus, S. Stein   |
|                                   | <i>Publisher</i>  | American Geophysical Union   |
|                                   | <i>Publication date</i>   | 1994-10-01   |
|                                   | <i>Edition date</i>   |  |
|                                   | <i>Series/Journal name</i>  | Geophysical Research Letters   |
| <i>Information source</i>         | <i>Issue identification</i>   | Volume 21, Issue 20  |
|                                   | <i>Title</i>  | IERS Message No. 5: ITRF2000 Primary Solution  |
|                                   | <i>Author</i>   | C. Boucher, Z. Altamimi  |
|                                   | <i>Publication date</i>   | 2001-03-19   |
| <i>Information source</i>         | <i>Edition date</i>   |  |
|                                   | <i>Series/Journal name</i>  | IERS Message   |
|                                   | <i>Issue identification</i>   | 5.0  |
|                                   | <i>Title</i>  | The ITRF2000   |
| <i>Information source</i>         | <i>Author</i>   | C. Boucher, Z. Altamimi, P. Sillard, M. Feissel-Vernier  |
|                                   | <i>Publisher</i>  | International Earth Rotation and Reference Systems Service Central Bureau, Verlag des Bundesamts fur Kartographie und Geodasie, Frankfurt am Main, Germany           |
|                                   | <i>Publication date</i>   | 2004-01-01   |
|                                   | <i>Edition date</i>   |  |
|                                   | <i>Series/Journal name</i>  | IERS Technical Notes   |
|                                   | <i>Issue identification</i>   | 31.0   |
| <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 fur Kartographie und Geodasie  |
|                                   | <i>Publication date</i>   | 2010   |
|                                   | <i>Edition date</i>   |  |
|                                   | <i>Series/Journal name</i>  | IERS Technical Notes   |
| <i>Information source</i>         | <i>Issue identification</i>   | 36.0   |
|                                   | <i>Other citation details</i>   | ISSN: 1019-4568  |
|                                   | <i>Data source</i>  | ISO Geodetic Registry  |
|                                   | <i>Remarks</i>  | Replaces ITRF97. Replaced by ITRF2005. This is a purely Cartesian reference frame with no ellipsoid defined. GRS80 is the ellipsoid recommended by the IAG and IERS. |
| <i>Anchor definition</i>          | Realisation of the IERS Terrestrial Reference System (ITRS) at reference epoch 1997.0. Origin is defined by satellite laser ranging (SLR). Scale is defined by SLR and very long baseline interferometry. Orientation is aligned to the ITRF97 at epoch 1997.0, and its time evolution follows that of the no-net-rotation NNR-NUVEL-1A geophysical model. Datum defined by a set of 3 dimensional Cartesian station coordinates and velocities given by the citations. |  |
| <i>Release date</i>               | 2001-03-19  |  |
| <i>Coordinate Reference Epoch</i> | 1997.0  |  |
| <i>Scope</i>                      | Spatial referencing   |  |

|                       |           |
|-----------------------|-----------|
| <i>Ellipsoid</i>      | GRS 1980  |
| <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>GRS 1980</b>  |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Item status</i>          | VALID  |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Identifier</i>           | 27   |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Alias</i>                | Geodetic Reference System 1980   |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Alias</i>                | GRS1980  |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Alias</i>                | IAG GRS80  |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Alias</i>                | International 1979   |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Alias</i>                | GRS80  |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Information source</i>   | <table> <tr> <td><i>Title</i></td><td>Geodetic Reference System 1980</td></tr> <tr> <td><i>Author</i></td><td>H. Moritz</td></tr> <tr> <td><i>Publisher</i></td><td>Springer International Publishing</td></tr> <tr> <td><i>Publication date</i></td><td>2003-03</td></tr> <tr> <td><i>Series/Journal name</i></td><td>Journal of Geodesy</td></tr> <tr> <td><i>Issue identification</i></td><td>Volume 74, No. 1</td></tr> <tr> <td><i>Page</i></td><td>128–162</td></tr> </table>  | <i>Title</i> | Geodetic Reference System 1980 | <i>Author</i> | H. Moritz | <i>Publisher</i> | Springer International Publishing    | <i>Publication date</i> | 2003-03 | <i>Series/Journal name</i> | Journal of Geodesy  | <i>Issue identification</i> | Volume 74, No. 1 | <i>Page</i> | 128–162 |
| <i>Title</i>                | Geodetic Reference System 1980   |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Author</i>               | H. Moritz  |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Publisher</i>            | Springer International Publishing  |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Publication date</i>     | 2003-03  |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Series/Journal name</i>  | Journal of Geodesy   |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Issue identification</i> | Volume 74, No. 1   |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Page</i>                 | 128–162  |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Information source</i>   | <table> <tr> <td><i>Title</i></td><td>Geodetic Reference System 1980</td></tr> <tr> <td><i>Author</i></td><td>H. Moritz</td></tr> <tr> <td><i>Publisher</i></td><td>International Association of Geodesy</td></tr> <tr> <td><i>Publication date</i></td><td>1984</td></tr> <tr> <td><i>Series/Journal name</i></td><td>Bulletin Geodesique</td></tr> <tr> <td><i>Issue identification</i></td><td>Volume 58, No. 3</td></tr> <tr> <td><i>Page</i></td><td>395-405</td></tr> </table> | <i>Title</i> | Geodetic Reference System 1980 | <i>Author</i> | H. Moritz | <i>Publisher</i> | International Association of Geodesy | <i>Publication date</i> | 1984    | <i>Series/Journal name</i> | Bulletin Geodesique | <i>Issue identification</i> | Volume 58, No. 3 | <i>Page</i> | 395-405 |
| <i>Title</i>                | Geodetic Reference System 1980   |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Author</i>               | H. Moritz  |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Publisher</i>            | International Association of Geodesy   |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Publication date</i>     | 1984   |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Series/Journal name</i>  | Bulletin Geodesique  |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Issue identification</i> | Volume 58, No. 3   |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Page</i>                 | 395-405  |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Data source</i>          | ISO Geodetic Registry  |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Remarks</i>              | Adopted by IUGG 1979 Canberra. Inverse flattening is derived from geocentric gravitational constant $GM = 3986005e8 \text{ m}^3/\text{s}^2$ , dynamic form factor $J_2 = 108263e-8$ and Earth's angular velocity = $7292115e-11 \text{ rad/s}$ .   |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Semi-major axis</i>      | 6378137.0 m  |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |
| <i>Inverse flattening</i>   | 298.257222101 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>         | 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  |
| <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  |   |