

ISO Geodetic Registry

| | | |
|---------------------------|---|---|
| <i>Item class</i> | GeodeticCRS | |
| <i>Name</i> | ITRF93 - XYZ | |
| <i>Item status</i> | VALID | |
| <i>Identifier</i> | 263 | |
| <i>Alias</i> | International Terrestrial Reference Frame 1993 | |
| <i>Alias</i> | IERS Terrestrial Reference Frame 1993 | |
| <i>Information source</i> | <i>Title</i> | Results and Analysis of the ITRF93 |
| | <i>Author</i> | C. Boucher, Z. Altamimi, L. Duhem |
| | <i>Publisher</i> | Central Bureau of IERS - Observatoire de Paris, 61 avenue de l'Observatoire, 75014 Paris, France |
| | <i>Publication date</i> | 1994-10-01 |
| | <i>Edition date</i> | |
| | <i>Series/Journal name</i> | IERS Technical Notes |
| | <i>Issue identification</i> | 18.0 |
| <i>Data source</i> | ISO Geodetic Registry | |
| <i>Remarks</i> | Replaces ITRF92 - XYZ. Replaced by ITRF94 - XYZ. | |
| <i>Scope</i> | Spatial referencing | |
| <i>Datum</i> | International Terrestrial Reference Frame 1993 | |
| <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 |

ISO Geodetic Registry

| | | |
|-----------------------------------|---|--|
| <i>Item class</i> | GeodeticDatum | |
| <i>Name</i> | International Terrestrial Reference Frame 1993 | |
| <i>Item status</i> | VALID | |
| <i>Identifier</i> | 122 | |
| <i>Alias</i> | IERS Terrestrial Reference Frame 1993 | |
| <i>Alias</i> | ITRF93 | |
| <i>Information source</i> | <i>Title</i> | Results and Analysis of the ITRF93 |
| | <i>Author</i> | C. Boucher, Z. Altamimi, L. Duhem |
| | <i>Publisher</i> | Central Bureau of IERS - Observatoire de Paris, 61 avenue de l'Observatoire, 75014 Paris, France |
| | <i>Publication date</i> | 1994-10-01 |
| | <i>Edition date</i> | |
| | <i>Series/Journal name</i> | IERS Technical Notes |
| <i>Information source</i> | <i>Issue identification</i> | 18.0 |
| | <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>Information source</i> | <i>Series/Journal name</i> | IERS Technical Notes |
| | <i>Issue identification</i> | 36.0 |
| | <i>Other citation details</i> | ISSN: 1019-4568 |
| | <i>Publication date</i> | |
| <i>Data source</i> | ISO Geodetic Registry | |
| <i>Remarks</i> | Replaces ITRF92. Replaced by ITRF94. 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 1993.0. Origin and orientation constrained to those of ITRF91. The time evolution of the orientation follows the geophysical model NNR-NUVEL1A. Datum defined by a set of 3 dimensional Cartesian station coordinates and velocities given by the citations. The ITRF93 global combined solution is divided into three parts: a set of station coordinates at epoch 1988.0 (not published), a set of station coordinates at epoch 1993.0, and a velocity field consistent with the above two sets. The consistency of the ITRF93 with the IERS series of EOP at the two epochs 1988.0 and 1993.0 defines the orientation and time evolution of the ITRF93. The origin and the scale of the ITRF93 are defined by holding to zero the three translations and the scale factor of the SLR Solution SSC(CSR) 94 L 01 in the two coordinates sets at the two epochs. | |
| <i>Release date</i> | 1994-10-01 | |
| <i>Coordinate Reference Epoch</i> | 1993.0 | |
| <i>Scope</i> | Spatial referencing | |
| <i>Ellipsoid</i> | GRS 1980 | |
| <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 |

ISO Geodetic Registry

| | | | | | | | | | | | | | | | |
|-----------------------------|--|--------------|--------------------------------|---------------|-----------|------------------|--------------------------------------|-------------------------|---------|----------------------------|---------------------|-----------------------------|------------------|-------------|---------|
| <i>Item class</i> | Ellipsoid | | | | | | | | | | | | | | |
| <i>Name</i> | GRS 1980 | | | | | | | | | | | | | | |
| <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> | 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>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>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

| | | |
|--------------------|---|---|
| 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 | |

| | | |
|-------------|----------------------|--|
| Item class | CoordinateSystemAxis | |
| Name | Geocentric Y | |
| Item status | VALID | |
| Identifier | 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> | 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 | |