

ISO Geodetic Registry

| | | |
|---------------------------|--|---|
| <i>Item class</i> | GeodeticCRS | |
| <i>Name</i> | ITRF2005 - XYZ | |
| <i>Item status</i> | VALID | |
| <i>Identifier</i> | 269 | |
| <i>Alias</i> | International Terrestrial Reference Frame 2005 | |
| <i>Alias</i> | IERS Terrestrial Reference Frame 2005 | |
| <i>Information source</i> | <i>Title</i> | ITRF2005: A new release of the International Terrestrial Reference Frame based on time series of station positions and Earth Orientation Parameters |
| | <i>Author</i> | Z. Altamimi, X. Collilieux, J. Legrand, B. Garayt, C. Boucher |
| | <i>Publisher</i> | American Geophysical Union |
| | <i>Publication date</i> | 2007-09-07 |
| | <i>Edition date</i> | |
| | <i>Series/Journal name</i> | Journal of Geophysical Research |
| | <i>Issue identification</i> | Vol 112 |
| <i>Information source</i> | <i>Title</i> | ITRF2005 on line 2006-10-05 |
| | <i>Author</i> | IERS |
| | <i>Publication date</i> | 2006-10-05 |
| | <i>Edition date</i> | |
| | <i>Series/Journal name</i> | IERS Message |
| <i>Data source</i> | <i>Issue identification</i> | 97.0 |
| | ISO Geodetic Registry | |
| <i>Remarks</i> | Replaces ITRF2000 - XYZ. Replaced by ITRF2008 - XYZ. | |
| <i>Scope</i> | Spatial referencing | |
| <i>Datum</i> | International Terrestrial Reference Frame 2005 | |
| <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 2005 | | | | | | | | | | | | | | | | | | |
| <i>Item status</i> | VALID | | | | | | | | | | | | | | | | | | |
| <i>Identifier</i> | 105 | | | | | | | | | | | | | | | | | | |
| <i>Alias</i> | ITRF2005 | | | | | | | | | | | | | | | | | | |
| <i>Alias</i> | IERS Terrestrial Reference Frame 2005 | | | | | | | | | | | | | | | | | | |
| <i>Information source</i> | <table> <tr> <td><i>Title</i></td><td>National Vertical Control Network - Notice of Final Action</td></tr> <tr> <td><i>Author</i></td><td>US Government</td></tr> <tr> <td><i>Publisher</i></td><td>Office of Federal Register, NARA</td></tr> <tr> <td><i>Publication date</i></td><td>1976-05-14</td></tr> <tr> <td><i>Edition date</i></td><td>1976-05-17</td></tr> <tr> <td><i>Series/Journal name</i></td><td>Federal Register Notice</td></tr> <tr> <td><i>Issue identification</i></td><td>Volume 41, No. 96, Document 76-14245</td></tr> <tr> <td><i>Page</i></td><td>20202.0</td></tr> <tr> <td><i>Other citation details</i></td><td>Formally adopted usage of NGVD 29 as datum name</td></tr> </table> | <i>Title</i> | National Vertical Control Network - Notice of Final Action | <i>Author</i> | US Government | <i>Publisher</i> | Office of Federal Register, NARA | <i>Publication date</i> | 1976-05-14 | <i>Edition date</i> | 1976-05-17 | <i>Series/Journal name</i> | Federal Register Notice | <i>Issue identification</i> | Volume 41, No. 96, Document 76-14245 | <i>Page</i> | 20202.0 | <i>Other citation details</i> | Formally adopted usage of NGVD 29 as datum name |
| <i>Title</i> | National Vertical Control Network - Notice of Final Action | | | | | | | | | | | | | | | | | | |
| <i>Author</i> | US Government | | | | | | | | | | | | | | | | | | |
| <i>Publisher</i> | Office of Federal Register, NARA | | | | | | | | | | | | | | | | | | |
| <i>Publication date</i> | 1976-05-14 | | | | | | | | | | | | | | | | | | |
| <i>Edition date</i> | 1976-05-17 | | | | | | | | | | | | | | | | | | |
| <i>Series/Journal name</i> | Federal Register Notice | | | | | | | | | | | | | | | | | | |
| <i>Issue identification</i> | Volume 41, No. 96, Document 76-14245 | | | | | | | | | | | | | | | | | | |
| <i>Page</i> | 20202.0 | | | | | | | | | | | | | | | | | | |
| <i>Other citation details</i> | Formally adopted usage of NGVD 29 as datum name | | | | | | | | | | | | | | | | | | |
| <i>Information source</i> | <table> <tr> <td><i>Title</i></td><td>ITRF2005: A new release of the International Terrestrial Reference Frame based on time series of station positions and Earth Orientation Parameters</td></tr> <tr> <td><i>Author</i></td><td>Z. Altamimi, X. Collilieux, J. Legrand, B. Garayt, C. Boucher</td></tr> <tr> <td><i>Publisher</i></td><td>American Geophysical Union</td></tr> <tr> <td><i>Publication date</i></td><td>2007-09-07</td></tr> <tr> <td><i>Edition date</i></td><td></td></tr> <tr> <td><i>Series/Journal name</i></td><td>Journal of Geophysical Research</td></tr> <tr> <td><i>Issue identification</i></td><td>Vol 112</td></tr> </table> | <i>Title</i> | ITRF2005: A new release of the International Terrestrial Reference Frame based on time series of station positions and Earth Orientation Parameters | <i>Author</i> | Z. Altamimi, X. Collilieux, J. Legrand, B. Garayt, C. Boucher | <i>Publisher</i> | American Geophysical Union | <i>Publication date</i> | 2007-09-07 | <i>Edition date</i> | | <i>Series/Journal name</i> | Journal of Geophysical Research | <i>Issue identification</i> | Vol 112 | | | | |
| <i>Title</i> | ITRF2005: A new release of the International Terrestrial Reference Frame based on time series of station positions and Earth Orientation Parameters | | | | | | | | | | | | | | | | | | |
| <i>Author</i> | Z. Altamimi, X. Collilieux, J. Legrand, B. Garayt, C. Boucher | | | | | | | | | | | | | | | | | | |
| <i>Publisher</i> | American Geophysical Union | | | | | | | | | | | | | | | | | | |
| <i>Publication date</i> | 2007-09-07 | | | | | | | | | | | | | | | | | | |
| <i>Edition date</i> | | | | | | | | | | | | | | | | | | | |
| <i>Series/Journal name</i> | Journal of Geophysical Research | | | | | | | | | | | | | | | | | | |
| <i>Issue identification</i> | Vol 112 | | | | | | | | | | | | | | | | | | |
| <i>Information source</i> | <table> <tr> <td><i>Title</i></td><td>ITRF2005 on line 2006-10-05</td></tr> <tr> <td><i>Author</i></td><td>IERS</td></tr> <tr> <td><i>Publication date</i></td><td>2006-10-05</td></tr> <tr> <td><i>Edition date</i></td><td></td></tr> <tr> <td><i>Series/Journal name</i></td><td>IERS Message</td></tr> <tr> <td><i>Issue identification</i></td><td>97.0</td></tr> </table> | <i>Title</i> | ITRF2005 on line 2006-10-05 | <i>Author</i> | IERS | <i>Publication date</i> | 2006-10-05 | <i>Edition date</i> | | <i>Series/Journal name</i> | IERS Message | <i>Issue identification</i> | 97.0 | | | | | | |
| <i>Title</i> | ITRF2005 on line 2006-10-05 | | | | | | | | | | | | | | | | | | |
| <i>Author</i> | IERS | | | | | | | | | | | | | | | | | | |
| <i>Publication date</i> | 2006-10-05 | | | | | | | | | | | | | | | | | | |
| <i>Edition date</i> | | | | | | | | | | | | | | | | | | | |
| <i>Series/Journal name</i> | IERS Message | | | | | | | | | | | | | | | | | | |
| <i>Issue identification</i> | 97.0 | | | | | | | | | | | | | | | | | | |
| <i>Data source</i> | ISO Geodetic Registry | | | | | | | | | | | | | | | | | | |
| <i>Remarks</i> | Replaces ITRF2000. Replaced by ITRF2008. 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 2000.0. Origin at geocentre, originally orientated to the BIH Terrestrial System at epoch 1984.0 then adjusted to ensure zero net rotation to earth's overall tectonic motion. Origin is defined such that there are null translation parameters at epoch 2000.0 and null translation rates between the ITRF2005 and the ILRS SLR time series. Scale is defined such that there are null scale factor at epoch 2000.0 and null scale rate between the ITRF2005 and IVS VLBI time series. Orientation is defined such that there are null rotation parameters at epoch 2000.0 and null rotation rates between the ITRF2005 and ITRF2000. Datum defined by a set of 3 dimensional Cartesian station coordinates and velocities given by the citations. | | | | | | | | | | | | | | | | | | |
| <i>Release date</i> | 2006-10-05 | | | | | | | | | | | | | | | | | | |
| <i>Coordinate Reference Epoch</i> | 2000.0 | | | | | | | | | | | | | | | | | | |
| <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>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

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