

# ISO Geodetic Registry

|                                   |                                                                                                                                                                                                                                                                                                                                       |                                                                                        |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| <i>Item class</i>                 | GeodeticDatum                                                                                                                                                                                                                                                                                                                         |                                                                                        |
| <i>Name</i>                       | <b>IGS08</b>                                                                                                                                                                                                                                                                                                                          |                                                                                        |
| <i>Item status</i>                | VALID                                                                                                                                                                                                                                                                                                                                 |                                                                                        |
| <i>Identifier</i>                 | 106                                                                                                                                                                                                                                                                                                                                   |                                                                                        |
| <i>Alias</i>                      | International GNSS Service 2008                                                                                                                                                                                                                                                                                                       |                                                                                        |
| <i>Information source</i>         | <i>Title</i>                                                                                                                                                                                                                                                                                                                          | IGS08: the IGS realization of ITRF2008                                                 |
|                                   | <i>Author</i>                                                                                                                                                                                                                                                                                                                         | P. Rebischung                                                                          |
|                                   | <i>Publisher</i>                                                                                                                                                                                                                                                                                                                      | Springer                                                                               |
|                                   | <i>Publication date</i>                                                                                                                                                                                                                                                                                                               | 2012-10-01                                                                             |
|                                   | <i>Edition date</i>                                                                                                                                                                                                                                                                                                                   |                                                                                        |
| <i>Information source</i>         | <i>Series/Journal name</i>                                                                                                                                                                                                                                                                                                            | GPS Solutions                                                                          |
|                                   | <i>Issue identification</i>                                                                                                                                                                                                                                                                                                           | Volume 16, Issue 4                                                                     |
|                                   | <i>Title</i>                                                                                                                                                                                                                                                                                                                          | Upcoming switch to IGS08/igs08.atx                                                     |
|                                   | <i>Author</i>                                                                                                                                                                                                                                                                                                                         | P. Rebischung, R. Schmid, J. Ray                                                       |
|                                   | <i>Publisher</i>                                                                                                                                                                                                                                                                                                                      | International GNSS Service (IGS)                                                       |
| <i>Information source</i>         | <i>Publication date</i>                                                                                                                                                                                                                                                                                                               | 2011-03-07                                                                             |
|                                   | <i>Edition date</i>                                                                                                                                                                                                                                                                                                                   |                                                                                        |
|                                   | <i>Series/Journal name</i>                                                                                                                                                                                                                                                                                                            | IGSMail                                                                                |
|                                   | <i>Issue identification</i>                                                                                                                                                                                                                                                                                                           | 6354.0                                                                                 |
|                                   | <i>Title</i>                                                                                                                                                                                                                                                                                                                          | Chronology of IGS Reference Frame Usage                                                |
| <i>Information source</i>         | <i>Author</i>                                                                                                                                                                                                                                                                                                                         | International GNSS Service Analysis Centre Coordinator                                 |
|                                   | <i>Publisher</i>                                                                                                                                                                                                                                                                                                                      | National Oceanic and Atmospheric Administration (NOAA), National Geodetic Survey (NGS) |
|                                   | <i>Publication date</i>                                                                                                                                                                                                                                                                                                               | 2012-10-04                                                                             |
|                                   | <i>Other citation details</i>                                                                                                                                                                                                                                                                                                         | Website                                                                                |
|                                   | <i>Data source</i>                                                                                                                                                                                                                                                                                                                    | ISO Geodetic Registry                                                                  |
| <i>Remarks</i>                    | Replaces IGS05. Replaced by IGS08. Used by IGS products within the period 2011-04-17 thru 2012-10-06.                                                                                                                                                                                                                                 |                                                                                        |
| <i>Anchor definition</i>          | Derived from and aligned to a subset of stable, well-performing IGS station coordinates and velocities in ITRF2008 at epoch 2005.0 with position corrections applied to account for updates to receiver antenna calibrations. Uses updated absolute antenna calibrations for both ground stations and satellite antennas (igs08.atx). |                                                                                        |
| <i>Release date</i>               | 2011-04-17                                                                                                                                                                                                                                                                                                                            |                                                                                        |
| <i>Coordinate Reference Epoch</i> | 2005.0                                                                                                                                                                                                                                                                                                                                |                                                                                        |
| <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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |                                |               |           |                  |                                      |                         |         |                            |                     |                             |                  |             |         |

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|                            |                               |                                                                 |
|----------------------------|-------------------------------|-----------------------------------------------------------------|
| <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 °                         |                                                                 |