

# ISO Geodetic Registry

|                    |  |   |  |
|--------------------|--|---|--|
| Item class         | GeodeticCRS  |   |  |
| Name               | SIRGAS-CON DGF05P01 - XYZ  |   |  |
| Item status        | VALID  |   |  |
| Identifier         | 373  |   |  |
| Alias              | SIRGAS   |   |  |
| Alias              | SIRGAS-CON   |   |  |
| Alias              | DGF05P01   |   |  |
| Alias              | DGFI05P01  |   |  |
| Alias              | SIRGAS Multi-Year Solution 2005  |   |  |
| Alias              | Geocentric Reference System for the Americas   |   |  |
| Alias              | Sistema de Referencia Geocentrico para las Americas  |   |  |
| Information source | Title  | Sistema de Referencia Geocentrico para las Americas (SIRGAS)  |  |
|                    | Author   | Sistema de Referencia Geocéntrico para las Américas (SIRGAS)  |  |
|                    | Publisher  | Sistema de Referencia Geocéntrico para las Américas (SIRGAS)  |  |
|                    | Publication date   | 2018  |  |
|                    | Other citation details   | Website   |  |
| Information source | Title  | Report on new activities of IGS Regional Associate Analysis for SIRGAS (IGS RNAAC SIR)  |  |
|                    | Author   | W. Seemueller   |  |
|                    | Publication date   | 2005  |  |
|                    | Other citation details   | Presented at the SIRGAS 2005 General Meeting. Caracas, Venezuela  |  |
| Information source | Title  | Deformation of the South American crust estimated from finite element and collocation methods   |  |
|                    | Author   | H. Drewes, O. Heidbach  |  |
|                    | Publisher  | Springer Berlin Heidelberg  |  |
|                    | Publication date   | 2005  |  |
|                    | Series/Journal name  | International Association of Geodesy Symposia   |  |
|                    | Issue identification   | 128.0   |  |
|                    | Page   | 544-549   |  |
|                    | Other citation details   | In Sanso F. (eds) A Window on the Future of Geodesy. International Association of Geodesy Symposia, Vol 128. Springer, Berlin, Heidelberg |  |
| Data source        | ISO Geodetic Registry  |   |  |
| Scope              | Spatial referencing  |   |  |
| Datum              | SIRGAS Continuously Operating Network DGF05P01   |   |  |
| Coordinate System  | Geocentric 3D right-handed Cartesian CS. Axes: Geocentric X,Y,Z. Orientation: Z to North Pole, [X and Y in the equatorial plane, X at Prime Meridian   X in the equatorial plane at the Prime Meridian]. UoM: m. |   |  |

## Extent

|                                |   |         |
|--------------------------------|---|---------|
| <i>Description</i>             | <b>South America - onshore and offshore. Central America - onshore and offshore. Mexico - onshore and offshore.</b> |         |
| <i>Geographic Bounding Box</i> | <i>West-bound longitude</i>   | -122.19 |

|                             |        |
|-----------------------------|--------|
| <i>North-bound latitude</i> | 32.72  |
| <i>East-bound longitude</i> | -25.28 |
| <i>South-bound latitude</i> | -59.87 |

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|                                   |  |   |
|-----------------------------------|--|---|
| <i>Item class</i>                 | GeodeticDatum  |   |
| <i>Name</i>                       | <b>SIRGAS Continuously Operating Network DGF05P01</b>  |   |
| <i>Item status</i>                | VALID  |   |
| <i>Identifier</i>                 | 125  |   |
| <i>Alias</i>                      | SIRGAS   |   |
| <i>Alias</i>                      | SIRGAS-CON   |   |
| <i>Alias</i>                      | DGF05P01   |   |
| <i>Alias</i>                      | DGFI05P01  |   |
| <i>Alias</i>                      | SIRGAS Multi-Year Solution 2005  |   |
| <i>Alias</i>                      | Geocentric Reference System for the Americas   |   |
| <i>Alias</i>                      | Sistema de Referencia Geocentrico para las Americas  |   |
| <i>Information source</i>         | <i>Title</i>   | Sistema de Referencia Geocentrico para las Americas (SIRGAS)  |
|                                   | <i>Author</i>  | Sistema de Referencia Geocéntrico para las Américas (SIRGAS)  |
|                                   | <i>Publisher</i>   | Sistema de Referencia Geocéntrico para las Américas (SIRGAS)  |
|                                   | <i>Publication date</i>  | 2018  |
|                                   | <i>Other citation details</i>  | Website   |
| <i>Information source</i>         | <i>Title</i>   | Report on new activities of IGS Regional Associate Analysis for SIRGAS (IGS RNAAC SIR)  |
|                                   | <i>Author</i>  | W. Seemueller   |
|                                   | <i>Publication date</i>  | 2005  |
|                                   | <i>Other citation details</i>  | Presented at the SIRGAS 2005 General Meeting. Caracas, Venezuela  |
|                                   | <i>Title</i>   | Deformation of the South American crust estimated from finite element and collocation methods   |
| <i>Information source</i>         | <i>Author</i>  | H. Drewes, O. Heidbach  |
|                                   | <i>Publisher</i>   | Springer Berlin Heidelberg  |
|                                   | <i>Publication date</i>  | 2005  |
|                                   | <i>Series/Journal name</i>   | International Association of Geodesy Symposia   |
|                                   | <i>Issue identification</i>  | 128.0   |
|                                   | <i>Page</i>  | 544-549   |
| <i>Information source</i>         | <i>Other citation details</i>  | In Sanso F. (eds) A Window on the Future of Geodesy. International Association of Geodesy Symposia, Vol 128. Springer, Berlin, Heidelberg |
|                                   | <i>Title</i>   | Deformation of the South American crust estimated from finite element and collocation methods   |
| <i>Data source</i>                | ISO Geodetic Registry  |   |
| <i>Remarks</i>                    | Replaces DGF04P01. Replaced by DGF06P01.   |   |
| <i>Anchor definition</i>          | Realized by a frame of 95 continuously operating stations using GPS observations from June 1996 to September 2005 and aligned to ITRF2000 at epoch 2004.0. Velocity model VEMOS2003 used to propagate coordinates from an arbitrary epoch to the 2004.0 reference epoch. |   |
| <i>Release date</i>               | 2005   |   |
| <i>Coordinate Reference Epoch</i> | 2004.0   |   |
| <i>Scope</i>                      | Spatial referencing  |   |
| <i>Ellipsoid</i>                  | GRS 1980   |   |
| <i>Prime Meridian</i>             | Greenwich  |   |

Extent

|                                |   |         |  |
|--------------------------------|---|---------|--|
| <i>Description</i>             | <b>South America - onshore and offshore. Central America - onshore and offshore. Mexico - onshore and offshore.</b> |         |  |
| <i>Geographic Bounding Box</i> | <i>West-bound longitude</i>   | -122.19 |  |
|                                | <i>North-bound latitude</i>   | 32.72   |  |
|                                | <i>East-bound longitude</i>   | -25.28  |  |
|                                | <i>South-bound latitude</i>   | -59.87  |  |

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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 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               | <b>Geocentric 3D right-handed Cartesian CS.</b><br><b>Axes: Geocentric X,Y,Z. Orientation: Z to North Pole, [X and Y in the equatorial plane, X at Prime Meridian   X in the equatorial plane at the Prime Meridian]. UoM: m.</b>       |   |
| 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               | <b>Geocentric X</b>     |   |
| 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        | <b>Geocentric Y</b>  |  |
| 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>               | <b>Geocentric Z</b>         |   |
| <i>Item status</i>        | VALID                       |   |
| <i>Identifier</i>         | 39                          |   |
| <i>Information source</i> | <i>Title</i>                | ISO 19111 Geographical information - Spatial referencing by coordinates |
|                           | <i>Author</i>               | International Organization for Standardization (ISO)                    |
|                           | <i>Publisher</i>            | International Organization for Standardization (ISO)                    |
|                           | <i>Publication date</i>     | 2007-07-01  |
|                           | <i>Edition</i>              | Second Edition  |
|                           | <i>Series/Journal name</i>  | International Standard  |
|                           | <i>Issue identification</i> | ISO 19111:2007  |
| <i>Data source</i>        | ISO Geodetic Registry       |   |
| <i>Abbreviation</i>       | Z                           |   |
| <i>Direction</i>          | Geocentre > north pole      |   |
| <i>Unit</i>               | metre                       |   |