

# ISO Geodetic Registry

|                    |   |  |  |
|--------------------|---|--|--|
| Item class         | GeodeticCRS   |  |  |
| Name               | SIRGAS-CON DGF08P01 - XYZ                           |  |  |
| Item status        | VALID   |  |  |
| Identifier         | 442   |  |  |
| Alias              | SIRGAS  |  |  |
| Alias              | SIRGAS-CON  |  |  |
| Alias              | DGFI08P01   |  |  |
| Alias              | Geocentric Reference System for the Americas        |  |  |
| Alias              | Sistema de Referencia Geocentrico para las Americas |  |  |
| Alias              | DGF08P01  |  |  |
| Alias              | SIRGAS Multi-Year Solution 2008                     |  |  |
| 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  | The position and velocity solution DGF08P01 of the IGS Regional Network Associate Analysis Centre for SIRGAS (IGS RNAAC SIR) |
| Information source | Author  | W. Seemueller, M. Kruegel, L. Sanchez, H. Drewes   |  |
|                    | Publisher   | Deutsches Geodaetisches Forschungsinstitut, Munich, Germany  |  |
|                    | Publication date                                    | 2008   |  |
|                    | Series/Journal name                                 | DGFI Report  |  |
|                    | Issue identification                                | No. 79   |  |
|                    | Information source                                  | Title  | Deformation of the South American crust estimated from finite element and collocation methods                                |
| Information source | 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  |  |
| Information source | 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 DGF08P01   |  |
|                    | 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  |

# ISO Geodetic Registry

|                                   |   |   |
|-----------------------------------|---|---|
| <i>Item class</i>                 | GeodeticDatum   |   |
| <i>Name</i>                       | <b>SIRGAS Continuously Operating Network DGF08P01</b>   |   |
| <i>Item status</i>                | VALID   |   |
| <i>Identifier</i>                 | 184   |   |
| <i>Alias</i>                      | SIRGAS  |   |
| <i>Alias</i>                      | SIRGAS-CON  |   |
| <i>Alias</i>                      | DGFI08P01   |   |
| <i>Alias</i>                      | Geocentric Reference System for the Americas  |   |
| <i>Alias</i>                      | Sistema de Referencia Geocentrico para las Americas   |   |
| <i>Alias</i>                      | DGF08P01  |   |
| <i>Alias</i>                      | SIRGAS Multi-Year Solution 2008   |   |
| <i>Information source</i>         | <i>Title</i>  | The position and velocity solution DGF08P01 of the IGS Regional Network Associate Analysis Centre for SIRGAS (IGS RNAAC SIR)              |
|                                   | <i>Author</i>   | W. Seemueller, M. Kruegel, L. Sanchez, H. Drewes  |
|                                   | <i>Publisher</i>  | Deutsches Geodaetisches Forschungsinstitut, Munich, Germany   |
|                                   | <i>Publication date</i>   | 2008  |
|                                   | <i>Series/Journal name</i>  | DGFI Report   |
|                                   | <i>Issue identification</i>   | No. 79  |
| <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>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>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>  |   |
| <i>Data source</i>                | ISO Geodetic Registry   |   |
| <i>Remarks</i>                    | Replaces DGF07P01. Replaced by SIR09P01.  |   |
| <i>Anchor definition</i>          | Realized by a frame of 126 continuously operating stations using GPS observations from December 2002 to March 2008 and aligned to IGS05 at epoch 2004.5. GPS data from December 2002 to November 2006 reprocessed using the first reprocessing campaign products (IG1) of the International GNSS Service and absolute phase centre calibrations referring to the IGS05/IGb05 reference frame. Velocity model VEMOS2003 used to propagate coordinates from an arbitrary epoch to the 2004.5 reference epoch. |   |
| <i>Release date</i>               | 2008  |   |
| <i>Coordinate Reference Epoch</i> | 2004.5  |   |

|                       |                     |
|-----------------------|---------------------|
| <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 für Kartographie und Geodäsie             |
|                            | <i>Publication date</i>       | 2010  |
|                            | <i>Edition date</i>           |   |
|                            | <i>Series/Journal name</i>    | IERS Technical Notes  |
|                            | <i>Issue identification</i>   | 36.0  |
| <i>Data source</i>         | <i>Other citation details</i> | ISSN: 1019-4568   |
|                            | ISO Geodetic Registry         |   |
| <i>Greenwich longitude</i> | 0.0 °                         |   |

# ISO Geodetic Registry

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