

# ISO Geodetic Registry

<i>Item class</i>	GeodeticCRS	
<i>Name</i>	<b>SIRGAS-CON SIR15P01 - LatLonEHt</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	235	
<i>Alias</i>	SIR15P01	
<i>Alias</i>	SIRGAS	
<i>Alias</i>	SIRGAS-CON	
<i>Alias</i>	SIRGAS Multi-Year Solution 2015	
<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>	VEMOS2015: Velocity and deformation model for Latin America and the Caribbean, link to ZIP archive
	<i>Author</i>	L. Sanchez, H. Drewes
	<i>Publisher</i>	PANGAEA
	<i>Publication date</i>	2016
	<i>Series/Journal name</i>	PANGAEA
	<i>Issue identification</i>	10.1594/PANGAEA.863131
	<i>Other citation details</i>	In supplement to: Sánchez, L; Drewes, H (2016): Crustal deformation and surface kinematics after the 2010 earthquakes in Latin America. Journal of Geodynamics, 102, 1-23, <a href="https://doi.org/10.1016/j.jog.2016.06.005">https://doi.org/10.1016/j.jog.2016.06.005</a>
	<i>Title</i>	Crustal deformation and surface kinematics after the 2010 earthquakes in Latin America
	<i>Author</i>	L. Sanchez, H. Drewes
<i>Information source</i>	<i>Publisher</i>	Elsevier
	<i>Publication date</i>	2016
	<i>Series/Journal name</i>	Journal of Geodynamics
	<i>Issue identification</i>	102.0
	<i>Page</i>	2023-01-01
	<i>Other citation details</i>	Data for paper included in two supplements: Sanchez L., Drewes H (2016): SIR15P01: Multiyear solution for the SIRGAS Reference Frame, link to ZIP archive, PANGAEA, doi:10.1594/PANGAEA.862536; Sanchez L., Drewes H (2016): VEMOS2015: Velocity and deformation model for Latin America and the Caribbean, link to ZIP archive, PANGAEA, doi:10.1594/PANGAEA.863131.
	<i>Title</i>	SIR15P01: Multiyear solution for the SIRGAS Reference Frame, link to ZIP archive
	<i>Author</i>	L. Sanchez, H. Drewes
	<i>Publisher</i>	PANGAEA
<i>Information source</i>	<i>Publication date</i>	2016
	<i>Series/Journal name</i>	PANGAEA
	<i>Issue identification</i>	10.1594/PANGAEA.862536
	<i>Other citation details</i>	In supplement to: Sánchez, L; Drewes, H (2016): Crustal deformation and surface kinematics after the 2010 earthquakes in Latin America. Journal of Geodynamics, 102, 1-23, <a href="https://doi.org/10.1016/j.jog.2016.06.005">https://doi.org/10.1016/j.jog.2016.06.005</a>
	<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>Data source</i>	ISO Geodetic Registry	
<i>Scope</i>	Spatial referencing	
<i>Datum</i>	SIRGAS Continuously Operating Network SIR15P01	
<i>Coordinate System</i>	Ellipsoidal 3D CS. Axes: latitude, longitude, ellipsoidal height. Orientations: north, east, up. UoM: degree, degree, metre.	

## 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 SIR15P01</b>
<i>Item status</i>	VALID
<i>Identifier</i>	109
<i>Alias</i>	SIR15P01
<i>Alias</i>	SIRGAS
<i>Alias</i>	SIRGAS-CON
<i>Alias</i>	SIRGAS Multi-Year Solution 2015
<i>Alias</i>	Geocentric Reference System for the Americas
<i>Alias</i>	Sistema de Referencia Geocentrico para las Americas
<i>Information source</i>	<p><i>Title</i> SIR15P01: Multiyear solution for the SIRGAS Reference Frame, link to ZIP archive</p> <p><i>Author</i> L. Sanchez, H. Drewes</p> <p><i>Publisher</i> PANGAEA</p> <p><i>Publication date</i> 2016</p> <p><i>Series/Journal name</i> PANGAEA</p> <p><i>Issue identification</i> 10.1594/PANGAEA.862536</p> <p><i>Other citation details</i> In supplement to: Sánchez, L; Drewes, H (2016): Crustal deformation and surface kinematics after the 2010 earthquakes in Latin America. Journal of Geodynamics, 102, 1-23, <a href="https://doi.org/10.1016/j.jog.2016.06.005">https://doi.org/10.1016/j.jog.2016.06.005</a></p>
<i>Information source</i>	<p><i>Title</i> Sistema de Referencia Geocentrico para las Americas (SIRGAS)</p> <p><i>Author</i> Sistema de Referencia Geocéntrico para las Américas (SIRGAS)</p> <p><i>Publisher</i> Sistema de Referencia Geocéntrico para las Américas (SIRGAS)</p> <p><i>Publication date</i> 2018</p> <p><i>Other citation details</i> Website</p>
<i>Information source</i>	<p><i>Title</i> Crustal deformation and surface kinematics after the 2010 earthquakes in Latin America</p> <p><i>Author</i> L. Sanchez, H. Drewes</p> <p><i>Publisher</i> Elsevier</p> <p><i>Publication date</i> 2016</p> <p><i>Series/Journal name</i> Journal of Geodynamics</p> <p><i>Issue identification</i> 102.0</p> <p><i>Page</i> 2023-01-01</p> <p><i>Other citation details</i> Data for paper included in two supplements: Sanchez L., Drewes H (2016): SIR15P01: Multiyear solution for the SIRGAS Reference Frame, link to ZIP archive, PANGAEA, doi:10.1594/PANGAEA.862536; Sanchez L., Drewes H (2016): VEMOS2015: Velocity and deformation model for Latin America and the Caribbean, link to ZIP archive, PANGAEA, doi:10.1594/PANGAEA.863131.</p>
<i>Information source</i>	<p><i>Title</i> VEMOS2015: Velocity and deformation model for Latin America and the Caribbean, link to ZIP archive</p> <p><i>Author</i> L. Sanchez, H. Drewes</p> <p><i>Publisher</i> PANGAEA</p> <p><i>Publication date</i> 2016</p> <p><i>Series/Journal name</i> PANGAEA</p>

	<i>Issue identification</i>	10.1594/PANGAEA.863131
	<i>Other citation details</i>	In supplement to: Sánchez, L; Drewes, H (2016): Crustal deformation and surface kinematics after the 2010 earthquakes in Latin America. Journal of Geodynamics, 102, 1-23, <a href="https://doi.org/10.1016/j.jog.2016.06.005">https://doi.org/10.1016/j.jog.2016.06.005</a>
<i>Data source</i>	ISO Geodetic Registry	
<i>Remarks</i>	Replaces SIR14P01. Replaced by SIR17P01.	
<i>Anchor definition</i>	Realized by a frame of 303 continuously operating stations using GPS and GLONASS observations from March 2010 to April 2015 and aligned to IGB08 at epoch 2013.0. Weekly normal equations from March 2010 to April 2011 were reprocessed using the second reprocessing campaign products (IG2) of the International GNSS Service and absolute phase centre calibrations referring to the IGS08 reference frame. Velocity model VEMOS2015 used to propagate coordinates from an arbitrary epoch to the 2013.0 reference epoch.	
<i>Release date</i>	2016	
<i>Coordinate Reference Epoch</i>	2013.0	
<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

# ISO Geodetic Registry

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

# ISO Geodetic Registry

<i>Item class</i>	EllipsoidalCS	
<i>Name</i>	<b>Ellipsoidal 3D CS. Axes: latitude, longitude, ellipsoidal height. Orientations: north, east, up. UoM: degree, degree, metre.</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	46	
<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>Remarks</i>	Used in geographic 3D coordinate reference systems. Horizontal coordinates referenced to this CS are in degrees. Any degree representation (e.g. DMSH, decimal, etc.) may be used but that used must be declared for the user.	

## Axes

<i>Item class</i>	CoordinateSystemAxis	
<i>Name</i>	<b>Geodetic latitude</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	38	
<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>Remarks</i>	Used in geographic 2D and geographic 3D coordinate reference systems.	
<i>Abbreviation</i>	Lat	
<i>Direction</i>	north	
<i>Unit</i>	degree (supplier to define representation)	

  

<i>Item class</i>	CoordinateSystemAxis	
<i>Name</i>	<b>Geodetic longitude</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	34	
<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>Remarks</i>	Used in geographic 2D and geographic 3D coordinate reference systems.	
<i>Abbreviation</i>	Lon	
<i>Direction</i>	east	
<i>Unit</i>	degree (supplier to define representation)	

  

<i>Item class</i>	CoordinateSystemAxis	
<i>Name</i>	<b>Ellipsoidal height</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	36	
<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>Remarks</i>	Used only as part of an ellipsoidal 3D coordinate system in a geographic 3D coordinate reference system, never on its own.	
<i>Abbreviation</i>	h	
<i>Direction</i>	up	
<i>Unit</i>	metre	