

# ISO Geodetic Registry

<i>Item class</i>	GeodeticCRS	
<i>Name</i>	<b>SIRGAS-CON SIR09P01 - XYZ</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	319	
<i>Alias</i>	SIRGAS	
<i>Alias</i>	SIRGAS-CON	
<i>Alias</i>	SIRGAS Multi-Year Solution 2009	
<i>Alias</i>	Geocentric Reference System for the Americas	
<i>Alias</i>	Sistema de Referencia Geocentrico para las Americas	
<i>Alias</i>	SIR09P01	
<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>	The new Multi-year Position and Velocity Solution SIR09P01 of the IGS Regional Network Associate Analysis Centre (IGS RNAAC SIR)
	<i>Author</i>	W. Seemueller, L. Sanchez, M. Seitz
	<i>Publisher</i>	Springer Berlin Heidelberg
	<i>Publication date</i>	2011
	<i>Series/Journal name</i>	International Association of Geodesy Symposia
	<i>Issue identification</i>	136.0
	<i>Page</i>	675-680
	<i>Other citation details</i>	
<i>Information source</i>	<i>Title</i>	The 2009 Horizontal Velocity Field for South America and the Caribbean
	<i>Author</i>	H. Drewes, O. Heidbach
	<i>Publisher</i>	Springer Berlin Heidelberg
	<i>Publication date</i>	2012
	<i>Series/Journal name</i>	International Association of Geodesy Symposia
	<i>Issue identification</i>	136.0
	<i>Page</i>	657-664
	<i>Other citation details</i>	In Kenyon S., Pacino M., Marti U. (eds) Geodesy for Planet Earth. International Association of Geodesy Symposia, Vol 136. Springer, Berlin, Heidelberg
<i>Information source</i>	<i>Title</i>	The position and velocity solution SIR09P01 of the IGS Regional Network Associate Analysis Centre for SIRGAS (IGS RNAAC SIR)
	<i>Author</i>	W. Seemueller, M. Seitz, L. Sanchez, H. Drewes
	<i>Publisher</i>	Deutsches Geodaetisches Forschungsinstitut, Munich, Germany
	<i>Publication date</i>	2009
	<i>Series/Journal name</i>	DGFI Report
<i>Data source</i>	<i>Issue identification</i>	No. 85
	ISO Geodetic Registry	
	Spatial referencing	
<i>Datum</i>	SIRGAS Continuously Operating Network SIR09P01	
<i>Coordinate System</i>	Geocentric 3D right-handed Cartesian CS. Axes: Geocentric X,Y,Z. Orientation: Z to North Pole, [X and Y in the equatorial plane, X at	

Prime Meridian | X in the equatorial plane at the Prime Meridian]. UoM:  
m.

Extent

Description	South America - onshore and offshore. Central America - onshore and offshore. Mexico - onshore and offshore.		
Geographic Bounding Box	West-bound longitude	-122.19	
	North-bound latitude	32.72	
	East-bound longitude	-25.28	
	South-bound latitude	-59.87	

# ISO Geodetic Registry

<i>Item class</i>	GeodeticDatum	
<i>Name</i>	<b>SIRGAS Continuously Operating Network SIR09P01</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	181	
<i>Alias</i>	SIRGAS	
<i>Alias</i>	SIRGAS-CON	
<i>Alias</i>	SIRGAS Multi-Year Solution 2009	
<i>Alias</i>	Geocentric Reference System for the Americas	
<i>Alias</i>	Sistema de Referencia Geocentrico para las Americas	
<i>Alias</i>	SIR09P01	
<i>Information source</i>	<i>Title</i>	The position and velocity solution SIR09P01 of the IGS Regional Network Associate Analysis Centre for SIRGAS (IGS RNAAC SIR)
	<i>Author</i>	W. Seemueller, M. Seitz, L. Sanchez, H. Drewes
	<i>Publisher</i>	Deutsches Geodaetisches Forschungsinstitut, Munich, Germany
	<i>Publication date</i>	2009
	<i>Series/Journal name</i>	DGFI Report
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	<i>Author</i>	H. Drewes, O. Heidbach
	<i>Publisher</i>	Springer Berlin Heidelberg
	<i>Publication date</i>	2012
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	<i>Page</i>	657-664
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<i>Information source</i>	<i>Author</i>	W. Seemueller, L. Sanchez, M. Seitz
	<i>Publisher</i>	Springer Berlin Heidelberg
	<i>Publication date</i>	2011
	<i>Series/Journal name</i>	International Association of Geodesy Symposia
	<i>Issue identification</i>	136.0
<i>Information source</i>	<i>Page</i>	675-680
	<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>Data source</i>	<i>Other citation details</i>	Website
	<i>ISO Geodetic Registry</i>	
<i>Remarks</i>	Replaces DGF08P01. Replaced by SIR10P01.	
<i>Anchor definition</i>	Realized by a frame of 128 continuously operating stations using GPS observations from January 2000 to January 2009 and aligned to IGS05 at epoch 2005.0. GPS data from January 2000 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 VEMOS2009 used to propagate coordinates from an arbitrary epoch to the 2005.0 reference epoch.
<i>Release date</i>	2009
<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>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>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> <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	