

ISO Geodetic Registry

Item class	GeodeticCRS			
Name	SIRGAS-CON SIR13P01 - LatLonEHt			
Item status	VALID			
Identifier	399			
Alias	SIRGAS			
Alias	SIRGAS Multi-Year Solution 2013			
Alias	SIRGAS-CON			
Alias	SIR13P01			
Alias	Geocentric Reference System for the Americas			
Alias	Sistema de Referencia Geocentrico para las Americas			
Information source	Title	The 2009 Horizontal Velocity Field for South America and the Caribbean		
	Author	H. Drewes, O. Heidbach		
	Publisher	Springer Berlin Heidelberg		
	Publication date	2012		
	Series/Journal name	International Association of Geodesy Symposia		
	Issue identification	136.0		
	Page	657-664		
	Other citation details	In Kenyon S., Pacino M., Marti U. (eds) Geodesy for Planet Earth. International Association of Geodesy Symposia, Vol 136. Springer, Berlin, Heidelberg		
	Information source	Title	SIRGAS core network stability	
		Author	L. Sanchez, H. Drewes, C. Brunini, M.V. Mackern, W. Martinez-Diaz	
Publisher		Springer Berlin Heidelberg		
Publication date		2016		
Series/Journal name		International Association of Geodesy Symposia		
Issue identification		143.0		
Page		183-190		
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		
Data source	ISO Geodetic Registry			
Scope	Spatial referencing			
Datum	SIRGAS Continuously Operating Network SIR13P01			
Coordinate System	Ellipsoidal 3D CS. Axes: latitude, longitude, ellipsoidal height. Orientations: north, east, up. UoM: degree, degree, metre.			

Extent

<i>Description</i>	South America - onshore and offshore. Central America - onshore and offshore. Mexico - onshore and offshore.	
<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

South-bound latitude

-59.87

ISO Geodetic Registry

<i>Item class</i>	GeodeticDatum
<i>Name</i>	SIRGAS Continuously Operating Network SIR13P01
<i>Item status</i>	VALID
<i>Identifier</i>	177
<i>Alias</i>	SIRGAS
<i>Alias</i>	SIRGAS Multi-Year Solution 2013
<i>Alias</i>	SIRGAS-CON
<i>Alias</i>	SIR13P01
<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> The 2009 Horizontal Velocity Field for South America and the Caribbean</p> <p><i>Author</i> H. Drewes, O. Heidbach</p> <p><i>Publisher</i> Springer Berlin Heidelberg</p> <p><i>Publication date</i> 2012</p> <p><i>Series/Journal name</i> International Association of Geodesy Symposia</p> <p><i>Issue identification</i> 136.0</p> <p><i>Page</i> 657-664</p> <p><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</p>
<i>Information source</i>	<p><i>Title</i> SIRGAS core network stability</p> <p><i>Author</i> L. Sanchez, H. Drewes, C. Brunini, M.V. Mackern, W. Martinez-Diaz</p> <p><i>Publisher</i> Springer Berlin Heidelberg</p> <p><i>Publication date</i> 2016</p> <p><i>Series/Journal name</i> International Association of Geodesy Symposia</p> <p><i>Issue identification</i> 143.0</p> <p><i>Page</i> 183-190</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>Data source</i>	ISO Geodetic Registry
<i>Remarks</i>	Replaces SIR11P01. Replaced by SIR14P01. First multi-year solution after the El Maule earthquake of February 2010.
<i>Anchor definition</i>	Realized by a frame of 108 continuously operating stations using GPS observations from April 2010 to June 2013 and aligned to IGB08 at epoch 2012.0. Weekly normal equations from April 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 VEMOS2009 used to propagate coordinates from an arbitrary epoch to the 2012.0 reference epoch.
<i>Release date</i>	2013
<i>Coordinate Reference Epoch</i>	2012.0
<i>Scope</i>	Spatial referencing
<i>Ellipsoid</i>	GRS 1980

Prime Meridian	Greenwich
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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>	Ellipsoid														
<i>Name</i>	GRS 1980														
<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														
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<i>Publisher</i>	Springer International Publishing														
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<i>Series/Journal name</i>	Journal of Geodesy														
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<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>	Greenwich	
<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 °	

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<i>Item class</i>	EllipsoidalCS	
<i>Name</i>	Ellipsoidal 3D CS. Axes: latitude, longitude, ellipsoidal height. Orientations: north, east, up. UoM: degree, degree, metre.	
<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>	Geodetic latitude	
<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>	Geodetic longitude	
<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>	Ellipsoidal height	
<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	