

# ISO Geodetic Registry

<i>Item class</i>	Transformation	
<i>Name</i>	<b>IGS05 to SIRGAS-CON SIR09P01 [SIRv1]</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	512	
<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>Information source</i>	<i>Issue identification</i>	No. 85
	<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>Information source</i>	<i>Other citation details</i>	Website
	<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>Information source</i>	<i>Series/Journal name</i>	International Association of Geodesy Symposia
	<i>Issue identification</i>	136.0
	<i>Page</i>	675-680
	<i>Title</i>	The 2009 Horizontal Velocity Field for South America and the Caribbean
	<i>Author</i>	H. Drewes, O. Heidbach
<i>Information source</i>	<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>Information source</i>	<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>Title</i>	Use of velocities in the processing of GNSS data
	<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>	2017
<i>Information source</i>	<i>Other citation details</i>	Website
	<i>Other citation details</i>	Website
<i>Data source</i>	ISO Geodetic Registry	
<i>Remarks</i>	Null reference frame transformation between IGS05 and SIRGAS-CON SIR09P01.	
<i>Operation version</i>	SIRv1	
<i>Scope</i>	Spatial referencing	
<i>Operation accuracy</i>	0.01 m	
<i>Source CRS</i>	IGS05 - LatLon	

<i>Target CRS</i>	SIRGAS-CON SIR09P01 - LatLon
<i>Operation method</i>	Time-Dependent Position Vector Transformation (geocentric Cartesian domain)

## 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

## Operation parameter values

<i>Time reference</i>	2005.0 year
<i>Rate of change of scale difference</i>	0.0 parts per billion per year
<i>Rate of change of Z-axis rotation</i>	0.0 milliarc-second per year
<i>Rate of change of Y-axis rotation</i>	0.0 milliarc-second per year
<i>Rate of change of X-axis rotation</i>	0.0 milliarc-second per year
<i>Rate of change of Z-axis translation</i>	0.0 millimetre per year
<i>Rate of change of Y-axis translation</i>	0.0 millimetre per year
<i>Rate of change of X-axis translation</i>	0.0 millimetre per year
<i>Scale difference</i>	0.0 parts per billion
<i>Z-axis rotation</i>	0.0 milliarc-second
<i>Y-axis rotation</i>	0.0 milliarc-second
<i>X-axis rotation</i>	0.0 milliarc-second
<i>Z-axis translation</i>	0.0 millimetre
<i>Y-axis translation</i>	0.0 millimetre
<i>X-axis translation</i>	0.0 millimetre

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<i>Item class</i>	OperationMethod
<i>Name</i>	<b>Time-Dependent Position Vector Transformation (geocentric Cartesian domain)</b>
<i>Item status</i>	VALID
<i>Identifier</i>	82
<i>Alias</i>	Time-Dependent 7-Parameter Transformation
<i>Alias</i>	14-Parameter Transformation
<i>Alias</i>	Time-Dependent Position Vector Transformation
<i>Data source</i>	ISO Geodetic Registry
<i>Remarks</i>	Note the analogy with the rotation for the Time-dependent Coordinate Frame Transformation but beware of the differences! The Position Vector Transformation convention is used by IAG.
<i>Formula</i>	Geomatics Guidance Note No 7, part 2: Coordinate Conversions and Transformations including Formulas

## Operation parameters

<i>X-axis translation</i>
<i>Y-axis translation</i>
<i>Z-axis translation</i>
<i>X-axis rotation</i>
<i>Y-axis rotation</i>
<i>Z-axis rotation</i>
<i>Scale difference</i>
<i>Rate of change of X-axis translation</i>
<i>Rate of change of Y-axis translation</i>
<i>Rate of change of Z-axis translation</i>
<i>Rate of change of X-axis rotation</i>
<i>Rate of change of Y-axis rotation</i>
<i>Rate of change of Z-axis rotation</i>
<i>Rate of change of scale difference</i>
<i>Time reference</i>