ISO Geodetic Registry

Item class	Transformation
Name	**IGS05 to SIRGAS-CON SIR09P01 [SIRv1]**
Item status	VALID
Identifier	512
Information source	Title — The position and velocity solution SIR09P01 of the IGS Regional Network Associate Analysis Centre for SIRGAS (IGS RNAAC SIR)
	Author — W. Seemueller, M. Seitz, L. Sanchez, H. Drewes
	Publisher — Deutsches Geodaetisches Forschungsinstitut, Munich, Germany
	Publication date — 2009
	Series/Journal name — DGFI Report
	Issue identification — No. 85
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 new Multi-year Position and Velocity Solution SIR09P01 of the IGS Regional Network Associate Analysis Centre (IGS RNAAC SIR)
	Author — W. Seemueller, L. Sanchez, M. Seitz
	Publisher — Springer Berlin Heidelberg
	Publication date — 2011
	Series/Journal name — International Association of Geodesy Symposia
	Issue identification — 136.0
	Page — 675-680
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 — Use of velocities in the processing of GNSS data
	Author — Sistema de Referencia Geocéntrico para las Américas (SIRGAS)
	Publisher — Sistema de Referencia Geocéntrico para las Américas (SIRGAS)
	Publication date — 2017
	Other citation details — Website
Data source	ISO Geodetic Registry
Remarks	Null reference frame transformation between IGS05 and SIRGAS-CON SIR09P01.
Operation version	SIRv1
Scope	Spatial referencing
Operation accuracy	0.01 m
Source CRS	IGS05 - LatLon

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

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

Operation parameter values

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

ISO Geodetic Registry

Item class	OperationMethod
Name	**Time-Dependent Position Vector Transformation (geocentric Cartesian domain)**
Item status	VALID
Identifier	82
Alias	Time-Dependent 7-Parameter Transformation
Alias	14-Parameter Transformation
Alias	Time-Dependent Position Vector Transformation
Data source	ISO Geodetic Registry
Remarks	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.
Formula	Geomatics Guidance Note No 7, part 2: Coordinate Conversions and Transformations including Formulas

Operation parameters

X-axis translation
Y-axis translation
Z-axis translation
X-axis rotation
Y-axis rotation
Z-axis rotation
Scale difference
Rate of change of X-axis translation
Rate of change of Y-axis translation
Rate of change of Z-axis translation
Rate of change of X-axis rotation
Rate of change of Y-axis rotation
Rate of change of Z-axis rotation
Rate of change of scale difference
Time reference