ISO Geodetic Registry

Item class	Transformation	
Name	**ITRF2014 to KSA-GRF17 [GASGI v1]**	
Item status	VALID	
Identifier	781	
Information source	*Title*	Technical Summary for Saudi Arabia National Spatial Reference System (SANSRS).
	Author	General Directorate of Geodesy
	Publisher	General Directorate of Geodesy, General Authority for Survey and Geospatial Information, Kingdom of Saudi Arabia
	Publication date	2019-06
	Revision date	2021-02
	Other citation details	https://www.gasgi.gov.sa/En/Products/Products_v1/Geodesy/Documents/Technical_Summary_for_SANSRS_v1.1.pdf (accessed 2021-06-07)
Data source	ISO Geodetic Registry	
Remarks	3D Cartesian rotation rates representing the Arabian tectonic plate Euler pole rotation as derived from 41 KSA-GRF stations.	
Operation version	GASGI v1	
Scope	Spatial referencing	
Operation accuracy	0.001 m	
Source CRS	ITRF2014 - XYZ	
Target CRS	KSA-GRF17 - XYZ	
Operation method	Time-Dependent Position Vector Transformation (geocentric Cartesian domain)	

Extent

Description	**Saudi Arabia - onshore and offshore.**	
Geographic Bounding Box	*West-bound longitude*	34.44
	North-bound latitude	32.16
	East-bound longitude	55.67
	South-bound latitude	16.29

Operation parameter values

X-axis translation	0.0 millimetre
Y-axis translation	0.0 millimetre
Z-axis translation	0.0 millimetre
X-axis rotation	0.0 milliarc-second
Y-axis rotation	0.0 milliarc-second
Z-axis rotation	0.0 milliarc-second
Scale difference	0.0 parts per billion
Rate of change of X-axis translation	0.0 millimetre per year
Rate of change of Y-axis translation	0.0 millimetre per year
Rate of change of Z-axis translation	0.0 millimetre per year
Rate of change of X-axis rotation	-1.199 milliarc-second per year
Rate of change of Y-axis rotation	0.107 milliarc-second per year
Rate of change of Z-axis rotation	-1.468 milliarc-second per year

Rate of change of scale difference	0.0 parts per billion per year
Time reference	2017.0 year

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