ISO Geodetic Registry

Name ITRF2014 to KSA-GRF17 [GASGI v1]

Transformation

Item statusVALIDIdentifier781

Item class

Information source Title Technical Summary for Saudi Arabia National

Spatial Reference System (SANSRS).

Author General Directorate of Geodesy

Publisher General Directorate of Geodesy, General

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Kingdom of Saudi Arabia

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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 Time reference 0.0 parts per billion per year 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