# ISO Geodetic Registry

Item class Transformation

Name ITRF97 to GDA94 [GA v2]

Item status VALID
Identifier 474

Information source Title ITRF to GDA94 coordinate transformations

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Data source ISO Geodetic Registry

Remarks Implemented 2010. Replaces 2001 transformation by Dawson and

Steed, ITRF97 to GDA94 [GA-Aus 2001 v1]. RMS of transformation residuals: 26mm north, 12mm east and 179mm vertical. Maximum

residuals: 49mm north, 24mm east and 464mm vertical.

Operation version GA v2

Scope Spatial referencing

Operation accuracy 0.18 m

Source CRS ITRF97 - XYZ
Target CRS GDA94 - XYZ

Operation method Time-Dependent Coordinate Frame Transformation (geocentric

Cartesian domain)

#### Extent

Description	Australia - onshore and offshore - mainland, Tasmania, Lord Howe Island, Norfolk Island, Macquarie Island. Christmas Island - onshore and offshore. Cocos (Keeling) Islands -		
	onshore and offshore.		
Geographic Bounding Box	West-bound longitude	93.41	
	North-bound latitude	-8.47	
	East-bound longitude	173.4	
	South-bound latitude	-60.56	

### Operation parameter values

Time reference	1994.0 year
Rate of change of scale difference	0.007 parts per billion per year
Rate of change of Z-axis rotation	1.3801 milliarc-second per year
Rate of change of Y-axis rotation	1.5198 milliarc-second per year
Rate of change of X-axis rotation	1.6394 milliarc-second per year
Rate of change of Z-axis translation	11.25 millimetre per year
Rate of change of Y-axis translation	0.36 millimetre per year
Rate of change of X-axis translation	-8.6 millimetre per year
Scale difference	6.695 parts per billion
Z-axis rotation	0.9962 milliarc-second

-0.6047 milliarc-second	
-1.7893 milliarc-second	
-25.32 millimetre	
-27.62 millimetre	
-14.63 millimetre	
	-1.7893 milliarc-second -25.32 millimetre -27.62 millimetre

# **ISO Geodetic Registry**

Item class OperationMethod

Name Time-Dependent Coordinate Frame

**Transformation (geocentric Cartesian domain)** 

Item status VALID
Identifier 94

Alias Time-Dependent 7-Parameter Transformation

Alias 14-Parameter Transformation

Alias Time-Dependent Coordinate Frame Transformation

Data source ISO Geodetic Registry

Remarks Note the analogy with the Time-dependent Position Vector

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