ISO Geodetic Registry

Item class Transformation

Name ITRF96 to ITRF97 [LINZ v1]

Item status **VALID** Identifier 542

Information source Title Transforming between ITRF and NZGD2000

> Land Information New Zealand **Author** Land Information New Zealand Publisher

Publication date 2017-05-09

Data source ISO Geodetic Registry

Typically used as the second step in a two-step process to transform Remarks

> coordinates from NZGD2000 to ITRF97. The first step is to transform coordinates from NZGD2000, which is aligned to ITRF96 at epoch 2000.0, to ITRF96 at the specified epoch using the latest version of that transformation. The ITRF96 coordinate at the specified epoch is then transformed to ITRF97 at the same epoch using this transformation.

Operation version LINZ v1

Scope Spatial referencing.

Operation accuracy 0.001 m Source CRS ITRF96 - XYZ ITRF97 - XYZ Target CRS

Operation method Time-Dependent Position Vector Transformation (geocentric Cartesian

domain)

Extent

Description New Zealand - onshore and offshore -Antipodes Islands, Auckland Islands, Bounty Islands, Campbell Island Chatham Islands, Kermadec Islands, North Island, Raoul Island, Snares Islands, South Island, Stewart Island. West-bound lonaitude 160.0

Geographic Bounding Box

North-bound latitude -25.0 East-bound longitude -170.0 South-bound latitude -60.0

Operation parameter values

X-axis rotation

Time reference 2000.0 year Rate of change of scale difference 0.19201 parts per billion per year Rate of change of Z-axis rotation 2.7E-4 milliarc-second per year Rate of change of Y-axis rotation -0.01514 milliarc-second per year Rate of change of X-axis rotation 0.01347 milliarc-second per year Rate of change of Z-axis translation -1.86 millimetre per year Rate of change of Y-axis translation 0.1 millimetre per year Rate of change of X-axis translation -0.69 millimetre per year Scale difference 1.51099 parts per billion Z-axis rotation -0.05984 milliarc-second Y-axis rotation -0.26897 milliarc-second

0.16508 milliarc-second

Z-axis translation	-15.53 millimetre
Y-axis translation	0.51 millimetre
X-axis translation	0.0 millimetre
	Y-axis translation

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