## ISO Geodetic Registry

Item class Transformation

Name ITRF96 to ITRF2000 [LINZ v1]

Item statusVALIDIdentifier682

Information source Title Transforming between ITRF and NZGD2000

Author Land Information New Zealand Publisher Land Information New Zealand

Publication date 2017-05-09

Data source ISO Geodetic Registry

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

coordinates from NZGD2000 to ITRF2000. The first step is to transform coordinates from NZGD2000, which is aligned to ITRF96 at epoch 2000.0, to ITRF96 at the desired epoch using the latest version of that transformation. The ITRF96 coordinate at the desired epoch is then transformed to ITRF2000 at the same epoch using this transformation.

Operation version LINZ v1

Scope Spatial referencing.

Operation accuracy 0.001 m

Source CRS ITRF96 - XYZ

Target CRS ITRF2000 - XYZ

Operation method Time-Dependent Position Vector Transformation (geocentric Cartesian

domain)

#### Extent

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.

Geographic Bounding Box
West-bound longitude
160.0

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

#### Operation parameter values

Time reference 2000.0 year Rate of change of scale difference 0.18201 parts per billion per year -0.01973 milliarc-second per year Rate of change of Z-axis rotation 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 -0.46 millimetre per year Rate of change of Y-axis translation 0.7 millimetre per year Rate of change of X-axis translation -0.69 millimetre per year Scale difference -0.06901 parts per billion Z-axis rotation -0.11984 milliarc-second Y-axis rotation -0.26897 milliarc-second X-axis rotation 0.16508 milliarc-second

| Z-axis translation | 7.17 millimetre  |
|--------------------|------------------|
| Y-axis translation | -3.79 millimetre |
| X-axis translation | -6.7 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