# ISO Geodetic Registry

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|---|---|---|
| *Item class* | Transformation | |
| *Name* | **ITRF97 to GDA94 [GA v2]** | |
| *Item status* | VALID | |
| *Identifier* | 474 | |
| *Information source* | *Title* | ITRF to GDA94 coordinate transformations |
| | *Author* | John Dawson and Alex Woods |
| | *Publisher* | de Gruyter |
| | *Publication date* | 2010-10-25 |
| | *Edition date* | 2010-10-01 |
| | *Series/Journal name* | Journal of Applied Geodesy |
| | *Issue identification* | 4.0 |
| | *Page* | 189.0 |
| *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

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|---|---|---|
| *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

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|---|---|
| *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 |

| | |
|---|---|
| *Y-axis rotation* | -0.6047 milliarc-second |
| *X-axis rotation* | -1.7893 milliarc-second |
| *Z-axis translation* | -25.32 millimetre |
| *Y-axis translation* | -27.62 millimetre |
| *X-axis translation* | -14.63 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

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|---|
| *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* |