

ISO Geodetic Registry

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|---------------------------|---|--|
| <i>Item class</i> | Transformation | |
| <i>Name</i> | ITRF97 to GDA94 [GA v2] | |
| <i>Item status</i> | VALID | |
| <i>Identifier</i> | 474 | |
| <i>Information source</i> | <i>Title</i> | ITRF to GDA94 coordinate transformations |
| | <i>Author</i> | John Dawson and Alex Woods |
| | <i>Publisher</i> | de Gruyter |
| | <i>Publication date</i> | 2010-10-25 |
| | <i>Edition date</i> | 2010-10-01 |
| | <i>Series/Journal name</i> | Journal of Applied Geodesy |
| | <i>Issue identification</i> | 4.0 |
| | <i>Page</i> | 189.0 |
| <i>Data source</i> | ISO Geodetic Registry | |
| <i>Remarks</i> | 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. | |
| <i>Operation version</i> | GA v2 | |
| <i>Scope</i> | Spatial referencing | |
| <i>Operation accuracy</i> | 0.18 m | |
| <i>Source CRS</i> | ITRF97 - XYZ | |
| <i>Target CRS</i> | GDA94 - XYZ | |
| <i>Operation method</i> | Time-Dependent Coordinate Frame Transformation (geocentric Cartesian domain) | |

Extent

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

Operation parameter values

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

| | |
|---------------------------|-------------------------|
| <i>Y-axis rotation</i> | -0.6047 milliarc-second |
| <i>X-axis rotation</i> | -1.7893 milliarc-second |
| <i>Z-axis translation</i> | -25.32 millimetre |
| <i>Y-axis translation</i> | -27.62 millimetre |
| <i>X-axis translation</i> | -14.63 millimetre |

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|--------------------|--|
| <i>Item class</i> | OperationMethod |
| <i>Name</i> | Time-Dependent Coordinate Frame Transformation (geocentric Cartesian domain) |
| <i>Item status</i> | VALID |
| <i>Identifier</i> | 94 |
| <i>Alias</i> | Time-Dependent 7-Parameter Transformation |
| <i>Alias</i> | 14-Parameter Transformation |
| <i>Alias</i> | Time-Dependent Coordinate Frame Transformation |
| <i>Data source</i> | ISO Geodetic Registry |
| <i>Remarks</i> | Note the analogy with the Time-dependent Position Vector Transformation but beware of the differences! The Position Vector Transformation convention is used by IAG. |
| <i>Formula</i> | Geomatics Guidance Note No 7, part 2: Coordinate Conversions and Transformations including Formulas |

Operation parameters

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|---|
| <i>X-axis translation</i> |
| <i>Y-axis translation</i> |
| <i>Z-axis translation</i> |
| <i>X-axis rotation</i> |
| <i>Y-axis rotation</i> |
| <i>Z-axis rotation</i> |
| <i>Scale difference</i> |
| <i>Rate of change of X-axis translation</i> |
| <i>Rate of change of Y-axis translation</i> |
| <i>Rate of change of Z-axis translation</i> |
| <i>Rate of change of X-axis rotation</i> |
| <i>Rate of change of Y-axis rotation</i> |
| <i>Rate of change of Z-axis rotation</i> |
| <i>Rate of change of scale difference</i> |
| <i>Time reference</i> |