

ISO Geodetic Registry

<i>Item class</i>	Transformation	
<i>Name</i>	ATRF2014 to GDA2020 [GA v1]	
<i>Item status</i>	VALID	
<i>Identifier</i>	790	
<i>Information source</i>	<i>Title</i>	Australian Terrestrial Reference Frame
	<i>Author</i>	Geoscience Australia
	<i>Publisher</i>	Geoscience Australia
	<i>Revision date</i>	2020
	<i>Other citation details</i>	Website. https://www.icsm.gov.au/australian-terrestrial-reference-frame (accessed 2021-09-27)
<i>Information source</i>	<i>Title</i>	Australian Terrestrial Reference Frame (ATRF): Technical Implementation Plan
	<i>Author</i>	Intergovernmental Committee on Surveying and Mapping (ICSM)
	<i>Publisher</i>	Geoscience Australia
	<i>Revision date</i>	2020-02-12
	<i>Edition</i>	Version 2.3
	<i>Edition date</i>	2020-02-12
	<i>Other citation details</i>	https://www.icsm.gov.au/sites/default/files/2020-02/ATRF%20Technical%20Implementation%20Plan%20v2.3_1.pdf (accessed 2021-09-27)
<i>Data source</i>	ISO Geodetic Registry	
<i>Remarks</i>	Australian Plate Motion Model	
<i>Operation version</i>	GA v1	
<i>Scope</i>	Spatial referencing	
<i>Operation accuracy</i>	0.03 m	
<i>Source CRS</i>	ATRF2014 - XYZ	
<i>Target CRS</i>	GDA2020 - XYZ	
<i>Operation method</i>	Time-Dependent Coordinate Frame Transformation (geocentric Cartesian domain)	

Extent

<i>Description</i>	Australia including Lord Howe Island, Macquarie Island, Ashmore and Cartier Islands, Christmas Island, Cocos (Keeling) Islands, Norfolk Island. All 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>	173.34
	<i>South-bound latitude</i>	-60.56

Operation parameter values

<i>X-axis translation</i>	0.0 millimetre
<i>Y-axis translation</i>	0.0 millimetre
<i>Z-axis translation</i>	0.0 millimetre
<i>X-axis rotation</i>	0.0 milliarc-second
<i>Y-axis rotation</i>	0.0 milliarc-second
<i>Z-axis rotation</i>	0.0 milliarc-second

<i>Scale difference</i>	0.0 parts per billion
<i>Rate of change of X-axis translation</i>	0.0 millimetre per year
<i>Rate of change of Y-axis translation</i>	0.0 millimetre per year
<i>Rate of change of Z-axis translation</i>	0.0 millimetre per year
<i>Rate of change of X-axis rotation</i>	1.50379 milliarc-second per year
<i>Rate of change of Y-axis rotation</i>	1.18346 milliarc-second per year
<i>Rate of change of Z-axis rotation</i>	1.20716 milliarc-second per year
<i>Rate of change of scale difference</i>	0.0 parts per billion per year
<i>Time reference</i>	2020.0 year

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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

<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>