

ISO Geodetic Registry

<i>Item class</i>	Transformation	
<i>Name</i>	NAD83(CSRS) v4 to NAD83(CSRS) v7 [v1]	
<i>Item status</i>	VALID	
<i>Identifier</i>	1032	
<i>Alias</i>	NAD83(CSRS) epoch 2002 to NAD83(CSRS) epoch 2010	
<i>Information source</i>	<i>Title</i>	Coordinate Transformations
	<i>Author</i>	Canadian Geodetic Survey
	<i>Publisher</i>	Canadian Geodetic Survey, Surveyor General Branch, Lands and Minerals Sector, Natural Resources Canada, Government of Canada
	<i>Revision date</i>	2022-04-29
	<i>Other citation details</i>	Web page: https://webapp.csrscs.nrcan-nrcan.gc.ca/geod/data-donnees/transformations.php (accessed 2024-02-25)
<i>Information source</i>	<i>Title</i>	NAD83v70VG: a new national crustal velocity model for Canada
	<i>Author</i>	C.M.I. Robin, M. Craymer, R. Ferland, T.S. James, E. Lapelle, M. Piraszewski, Y Zhao
	<i>Publisher</i>	Geomatics Canada
	<i>Publication date</i>	2020
	<i>Series/Journal name</i>	Open File
	<i>Issue identification</i>	0062
	<i>Other citation details</i>	Web page: https://doi.org/10.4095/327592 (accessed 2024-02-25)
<i>Data source</i>	ISO Geodetic Registry	
<i>Remarks</i>	Transformation based on propagation between coordinate reference epochs using the NAD83(CSRS) v7.0 velocity model/grid.	
<i>Operation version</i>	v1	
<i>Scope</i>	Spatial referencing.	
<i>Operation accuracy</i>	0.02 m	
<i>Source CRS</i>	NAD83(CSRS) v4 - LatLonEHt	
<i>Target CRS</i>	NAD83(CSRS) v7 - LatLonEHt	
<i>Operation method</i>	Geographic3D Shift by Velocity Grid [NRCan]	

Extent

<i>Description</i>	Canada - onshore and offshore - Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland and Labrador, Northwest Territories, Nova Scotia, Nunavut, Ontario, Prince Edward Island, Quebec, Saskatchewan, Yukon.	
<i>Geographic Bounding Box</i>	<i>West-bound longitude</i>	-141.01
	<i>North-bound latitude</i>	90.0
	<i>East-bound longitude</i>	-47.74
	<i>South-bound latitude</i>	40.04

Operation parameter values

<i>3D point motion velocity grid file</i>	NAD83v70VG
<i>ISOGR code for Interpolation CRS</i>	340.0 unity

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<i>Item class</i>	OperationMethod
<i>Name</i>	Geographic3D Shift by Velocity Grid [NRCan]
<i>Item status</i>	VALID
<i>Identifier</i>	1016
<i>Alias</i>	Coordinate Epoch Propagation
<i>Data source</i>	ISO Geodetic Registry
<i>Remarks</i>	Transformation method between different static NAD83(CSRs) realizations (datums) at different fixed coordinate reference epochs (defined in each datum entry) using an NRCan velocity grid to account for crustal motions between epochs, which represent the primary differences between such realizations. Residual differences are due to the use of more data and improved adjustment methodologies in successive realizations, which are considered insignificant for practical purposes and quantified by the specific transformation accuracies. The transformation involves interpolation of the specified velocity grid using ellipsoidal coordinates in the interpolation CRS to obtain the predicted velocities in mm/yr in north, east and up. See formula citation for description of grid format. No official reference is provided by NRCan for the transformation formula. See instead the description in EPSG Geomatics Guidance Note Number 7, part 2. Method is reversible to any practical accuracy level (better than 0.001 mm/yr).
<i>Formula</i>	For operation method procedure and formulae, refer to NRCan "Coordinate Transformations" website at https://webapp.csr-scrs.nrcan-rncan.gc.ca/geod/data-donnees/transformations.php .

Operation parameters

3D point motion velocity grid file
ISOGR code for Interpolation CRS