

# ISO Geodetic Registry

<i>Item class</i>	GeodeticCRS	
<i>Name</i>	<b>NAD83(CSR96) v1 - XYZ</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	447	
<i>Alias</i>	NAD83(CSR96)v1	
<i>Alias</i>	CSR96	
<i>Alias</i>	NAD83	
<i>Alias</i>	NAD83(CSR96)	
<i>Alias</i>	Canadian Spatial Reference System 1996	
<i>Alias</i>	North American Datum 1983 v1	
<i>Alias</i>	NAD83(CSR96)	
<i>Alias</i>	Canadian Spatial Reference System	
<i>Alias</i>	CSR96	
<i>Alias</i>	NAD83v1	
<i>Information source</i>	<i>Title</i>	The Canadian Spatial Reference System (CSR96)
	<i>Author</i>	Canadian Geodetic Survey
	<i>Publisher</i>	Canadian Geodetic Survey, Surveyor General Branch, Earth Sciences Sector, Natural Resources Canada, Government of Canada
	<i>Publication date</i>	2016-08-30
<i>Information source</i>	<i>Title</i>	Modern Geodetic Reference Frames for Precise Satellite Positioning and Navigation
	<i>Author</i>	J. Kouba, J. Popelar
	<i>Publication date</i>	1994-09-02
	<i>Series/Journal name</i>	Proceedings on the International Symposium on Kinematic Systems in Geodesy, Geomatics and Navigation, Banff, Canada, August 30 - September 2, 1994
<i>Data source</i>	<i>Page</i>	79-86
	<i>ISO Geodetic Registry</i>	
<i>Scope</i>	Spatial referencing	
<i>Datum</i>	North American Datum of 1983 (CSR96) version 1	
<i>Coordinate System</i>	Geocentric 3D right-handed Cartesian CS. Axes: Geocentric X,Y,Z. Orientation: Z to North Pole, [X and Y in the equatorial plane, X at Prime Meridian   X in the equatorial plane at the Prime Meridian]. UoM: m.	

## Extent

<i>Description</i>	<b>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.</b>	
<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

# ISO Geodetic Registry

<i>Item class</i>	GeodeticDatum														
<i>Name</i>	<b>North American Datum of 1983 (CSRS96) version 1</b>														
<i>Item status</i>	VALID														
<i>Identifier</i>	148														
<i>Alias</i>	NAD83(CSRS)v1														
<i>Alias</i>	CSRS96														
<i>Alias</i>	NAD83														
<i>Alias</i>	Canadian Spatial Reference System 1996														
<i>Alias</i>	North American Datum 1983 v1														
<i>Alias</i>	NAD83(CSRS96)														
<i>Alias</i>	Canadian Spatial Reference System														
<i>Alias</i>	CSRS														
<i>Alias</i>	NAD83v1														
<i>Information source</i>	<table> <tr> <td><i>Title</i></td><td>The Evolution of NAD83 in Canada</td></tr> <tr> <td><i>Author</i></td><td>M. Craymer</td></tr> <tr> <td><i>Publisher</i></td><td>Canadian Institute of Geomatics</td></tr> <tr> <td><i>Publication date</i></td><td>2006</td></tr> <tr> <td><i>Series/Journal name</i></td><td>Geomatica</td></tr> <tr> <td><i>Issue identification</i></td><td>Volume 60, No. 2</td></tr> <tr> <td><i>Page</i></td><td>151-164</td></tr> </table>	<i>Title</i>	The Evolution of NAD83 in Canada	<i>Author</i>	M. Craymer	<i>Publisher</i>	Canadian Institute of Geomatics	<i>Publication date</i>	2006	<i>Series/Journal name</i>	Geomatica	<i>Issue identification</i>	Volume 60, No. 2	<i>Page</i>	151-164
<i>Title</i>	The Evolution of NAD83 in Canada														
<i>Author</i>	M. Craymer														
<i>Publisher</i>	Canadian Institute of Geomatics														
<i>Publication date</i>	2006														
<i>Series/Journal name</i>	Geomatica														
<i>Issue identification</i>	Volume 60, No. 2														
<i>Page</i>	151-164														
<i>Information source</i>	<table> <tr> <td><i>Title</i></td><td>Modern Geodetic Reference Frames for Precise Satellite Positioning and Navigation</td></tr> <tr> <td><i>Author</i></td><td>J. Kouba, J. Popelar</td></tr> <tr> <td><i>Publication date</i></td><td>1994-09-02</td></tr> <tr> <td><i>Series/Journal name</i></td><td>Proceedings on the International Symposium on Kinematic Systems in Geodesy, Geomatics and Navigation, Banff, Canada, August 30 - September 2, 1994</td></tr> <tr> <td><i>Page</i></td><td>79-86</td></tr> </table>	<i>Title</i>	Modern Geodetic Reference Frames for Precise Satellite Positioning and Navigation	<i>Author</i>	J. Kouba, J. Popelar	<i>Publication date</i>	1994-09-02	<i>Series/Journal name</i>	Proceedings on the International Symposium on Kinematic Systems in Geodesy, Geomatics and Navigation, Banff, Canada, August 30 - September 2, 1994	<i>Page</i>	79-86				
<i>Title</i>	Modern Geodetic Reference Frames for Precise Satellite Positioning and Navigation														
<i>Author</i>	J. Kouba, J. Popelar														
<i>Publication date</i>	1994-09-02														
<i>Series/Journal name</i>	Proceedings on the International Symposium on Kinematic Systems in Geodesy, Geomatics and Navigation, Banff, Canada, August 30 - September 2, 1994														
<i>Page</i>	79-86														
<i>Information source</i>	<table> <tr> <td><i>Title</i></td><td>The Canadian Spatial Reference System (CSRS)</td></tr> <tr> <td><i>Author</i></td><td>Canadian Geodetic Survey</td></tr> <tr> <td><i>Publisher</i></td><td>Canadian Geodetic Survey, Surveyor General Branch, Earth Sciences Sector, Natural Resources Canada, Government of Canada</td></tr> <tr> <td><i>Publication date</i></td><td>2016-08-30</td></tr> </table>	<i>Title</i>	The Canadian Spatial Reference System (CSRS)	<i>Author</i>	Canadian Geodetic Survey	<i>Publisher</i>	Canadian Geodetic Survey, Surveyor General Branch, Earth Sciences Sector, Natural Resources Canada, Government of Canada	<i>Publication date</i>	2016-08-30						
<i>Title</i>	The Canadian Spatial Reference System (CSRS)														
<i>Author</i>	Canadian Geodetic Survey														
<i>Publisher</i>	Canadian Geodetic Survey, Surveyor General Branch, Earth Sciences Sector, Natural Resources Canada, Government of Canada														
<i>Publication date</i>	2016-08-30														
<i>Information source</i>	<table> <tr> <td><i>Title</i></td><td>The Evolution of NAD83 in Canada: Addendum</td></tr> <tr> <td><i>Author</i></td><td>M. Craymer</td></tr> <tr> <td><i>Publisher</i></td><td>Canadian Institute of Geomatics</td></tr> <tr> <td><i>Publication date</i></td><td>2006</td></tr> <tr> <td><i>Series/Journal name</i></td><td>Geomatica</td></tr> <tr> <td><i>Issue identification</i></td><td>Volume 60, No. 4</td></tr> <tr> <td><i>Page</i></td><td>433.0</td></tr> </table>	<i>Title</i>	The Evolution of NAD83 in Canada: Addendum	<i>Author</i>	M. Craymer	<i>Publisher</i>	Canadian Institute of Geomatics	<i>Publication date</i>	2006	<i>Series/Journal name</i>	Geomatica	<i>Issue identification</i>	Volume 60, No. 4	<i>Page</i>	433.0
<i>Title</i>	The Evolution of NAD83 in Canada: Addendum														
<i>Author</i>	M. Craymer														
<i>Publisher</i>	Canadian Institute of Geomatics														
<i>Publication date</i>	2006														
<i>Series/Journal name</i>	Geomatica														
<i>Issue identification</i>	Volume 60, No. 4														
<i>Page</i>	433.0														
<i>Data source</i>	ISO Geodetic Registry														
<i>Remarks</i>	Adopted by the Canadian federal government for use in Canada. Replaces NAD83(Original). Replaced by NAD83(CSRS) v2.														
<i>Anchor definition</i>	Realization of the North American Datum of 1983 and the first version of the Canadian Spatial Reference System, referred to as CSRS96. The frame is defined by a seven parameter transformation of ITRF92 3D geocentric Cartesian coordinates for Canadian stations at reference epoch 1988.0. This solution is associated with only a diagonal covariance matrix for the defining coordinates. The origin, scale and orientation of the frame are nominally defined to be that for the BIH Terrestrial System 1984 (BTS84).														

<i>Release date</i>	1996-01-01
<i>Scope</i>	Spatial referencing
<i>Ellipsoid</i>	GRS 1980
<i>Prime Meridian</i>	Greenwich

## Extent

<i>Description</i>	<b>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.</b>	
<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

# ISO Geodetic Registry

<i>Item class</i>	Ellipsoid														
<i>Name</i>	<b>GRS 1980</b>														
<i>Item status</i>	VALID														
<i>Identifier</i>	27														
<i>Alias</i>	Geodetic Reference System 1980														
<i>Alias</i>	GRS1980														
<i>Alias</i>	IAG GRS80														
<i>Alias</i>	International 1979														
<i>Alias</i>	GRS80														
<i>Information source</i>	<table> <tr> <td><i>Title</i></td><td>Geodetic Reference System 1980</td></tr> <tr> <td><i>Author</i></td><td>H. Moritz</td></tr> <tr> <td><i>Publisher</i></td><td>Springer International Publishing</td></tr> <tr> <td><i>Publication date</i></td><td>2003-03</td></tr> <tr> <td><i>Series/Journal name</i></td><td>Journal of Geodesy</td></tr> <tr> <td><i>Issue identification</i></td><td>Volume 74, No. 1</td></tr> <tr> <td><i>Page</i></td><td>128–162</td></tr> </table>	<i>Title</i>	Geodetic Reference System 1980	<i>Author</i>	H. Moritz	<i>Publisher</i>	Springer International Publishing	<i>Publication date</i>	2003-03	<i>Series/Journal name</i>	Journal of Geodesy	<i>Issue identification</i>	Volume 74, No. 1	<i>Page</i>	128–162
<i>Title</i>	Geodetic Reference System 1980														
<i>Author</i>	H. Moritz														
<i>Publisher</i>	Springer International Publishing														
<i>Publication date</i>	2003-03														
<i>Series/Journal name</i>	Journal of Geodesy														
<i>Issue identification</i>	Volume 74, No. 1														
<i>Page</i>	128–162														
<i>Information source</i>	<table> <tr> <td><i>Title</i></td><td>Geodetic Reference System 1980</td></tr> <tr> <td><i>Author</i></td><td>H. Moritz</td></tr> <tr> <td><i>Publisher</i></td><td>International Association of Geodesy</td></tr> <tr> <td><i>Publication date</i></td><td>1984</td></tr> <tr> <td><i>Series/Journal name</i></td><td>Bulletin Geodesique</td></tr> <tr> <td><i>Issue identification</i></td><td>Volume 58, No. 3</td></tr> <tr> <td><i>Page</i></td><td>395-405</td></tr> </table>	<i>Title</i>	Geodetic Reference System 1980	<i>Author</i>	H. Moritz	<i>Publisher</i>	International Association of Geodesy	<i>Publication date</i>	1984	<i>Series/Journal name</i>	Bulletin Geodesique	<i>Issue identification</i>	Volume 58, No. 3	<i>Page</i>	395-405
<i>Title</i>	Geodetic Reference System 1980														
<i>Author</i>	H. Moritz														
<i>Publisher</i>	International Association of Geodesy														
<i>Publication date</i>	1984														
<i>Series/Journal name</i>	Bulletin Geodesique														
<i>Issue identification</i>	Volume 58, No. 3														
<i>Page</i>	395-405														
<i>Data source</i>	ISO Geodetic Registry														
<i>Remarks</i>	Adopted by IUGG 1979 Canberra. Inverse flattening is derived from geocentric gravitational constant $GM = 3986005e8 \text{ m}^3/\text{s}^2$ , dynamic form factor $J_2 = 108263e-8$ and Earth's angular velocity = $7292115e-11 \text{ rad/s}$ .														
<i>Semi-major axis</i>	6378137.0 m														
<i>Inverse flattening</i>	298.257222101 m														

# ISO Geodetic Registry

<i>Item class</i>	PrimeMeridian	
<i>Name</i>	<b>Greenwich</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	25	
<i>Alias</i>	Zero meridian	
<i>Information source</i>	<i>Title</i>	Why the Greenwich meridian moved
	<i>Author</i>	S. Malys, J.H. Seago, N.K. Pavlis, P.K. Seidelmann, G.H. Kaplan
	<i>Publisher</i>	Springer International Publishing
	<i>Publication date</i>	2015-12
	<i>Series/Journal name</i>	Journal of Geodesy
	<i>Issue identification</i>	Volume 89, No. 12
	<i>Page</i>	1263–1272
<i>Information source</i>	<i>Title</i>	IERS Conventions (2010)
	<i>Author</i>	G. Petit, B.J. Luzum (eds)
	<i>Publisher</i>	Verlag des Bundesamts fur Kartographie und Geodasie
	<i>Publication date</i>	2010
	<i>Edition date</i>	
	<i>Series/Journal name</i>	IERS Technical Notes
	<i>Issue identification</i>	36.0
<i>Data source</i>	<i>Other citation details</i>	ISSN: 1019-4568
	ISO Geodetic Registry	
<i>Greenwich longitude</i>	0.0 °	

# ISO Geodetic Registry

Item class	CartesianCS	
Name	<b>Geocentric 3D right-handed Cartesian CS.</b> <b>Axes: Geocentric X,Y,Z. Orientation: Z to North Pole, [X and Y in the equatorial plane, X at Prime Meridian   X in the equatorial plane at the Prime Meridian]. UoM: m.</b>	
Item status	VALID	
Identifier	45	
Alias	Earth centred, earth fixed, right-handed 3D coordinate system, consisting of 3 orthogonal axes with X and Y axes in the equatorial plane, positive Z-axis parallel to mean earth rotation axis and pointing towards North Pole. UoM: m.	
Alias	ECEF	
Information source	Title	ISO 19111 Geographical information - Spatial referencing by coordinates
	Author	International Organization for Standardization (ISO)
	Publisher	International Organization for Standardization (ISO)
	Publication date	2007-07-01
	Edition	Second Edition
	Series/Journal name	International Standard
	Issue identification	ISO 19111:2007
Data source	ISO Geodetic Registry	
Remarks	Used in geocentric coordinate reference systems.	

## Axes

Item class	CoordinateSystemAxis	
Name	<b>Geocentric X</b>	
Item status	VALID	
Identifier	33	
Information source	Title	ISO 19111 Geographical information - Spatial referencing by coordinates
	Author	International Organization for Standardization (ISO)
	Publisher	International Organization for Standardization (ISO)
	Publication date	2007-07-01
	Edition	Second Edition
	Series/Journal name	International Standard
	Issue identification	ISO 19111:2007
Data source	ISO Geodetic Registry	
Abbreviation	X	
Direction	Geocentre > equator/0°E	
Unit	metre	

Item class	CoordinateSystemAxis	
Name	<b>Geocentric Y</b>	
Item status	VALID	
Identifier	37	

<i>Information source</i>	<i>Title</i>	ISO 19111 Geographical information - Spatial referencing by coordinates
	<i>Author</i>	International Organization for Standardization (ISO)
	<i>Publisher</i>	International Organization for Standardization (ISO)
	<i>Publication date</i>	2007-07-01
	<i>Edition</i>	Second Edition
	<i>Series/Journal name</i>	International Standard
	<i>Issue identification</i>	ISO 19111:2007
<i>Data source</i>	ISO Geodetic Registry	
<i>Abbreviation</i>	Y	
<i>Direction</i>	Geocentre > equator/90°E	
<i>Unit</i>	metre	

<i>Item class</i>	CoordinateSystemAxis	
<i>Name</i>	<b>Geocentric Z</b>	
<i>Item status</i>	VALID	
<i>Identifier</i>	39	
<i>Information source</i>	<i>Title</i>	ISO 19111 Geographical information - Spatial referencing by coordinates
	<i>Author</i>	International Organization for Standardization (ISO)
	<i>Publisher</i>	International Organization for Standardization (ISO)
	<i>Publication date</i>	2007-07-01
	<i>Edition</i>	Second Edition
	<i>Series/Journal name</i>	International Standard
	<i>Issue identification</i>	ISO 19111:2007
<i>Data source</i>	ISO Geodetic Registry	
<i>Abbreviation</i>	Z	
<i>Direction</i>	Geocentre > north pole	
<i>Unit</i>	metre	