ISO Geodetic Registry

Item class Transformation

Name ITRF97 to NAD83(CSRS) v3 [v1]

Item statusVALIDIdentifier522

Information source Title The Canadian Spatial Reference System (CSRS)

Author Canadian Geodetic Survey

Publisher Canadian Geodetic Survey, Surveyor General

Branch, Earth Sciences Sector, Natural Resources Canada, Government of Canada

Publication date 2016-08-30

Information source Title The Evolution of NAD83 in Canada

Author M. Craymer

Publisher Canadian Institute of Geomatics

Publication date 2006
Series/Journal name Geomatica
Issue identification Volume 60, No. 2

Page 151-164

Data source ISO Geodetic Registry

Remarks Transformation defines NAD83(CSRS)v3 and is treated as errorless.

Operation version v1

Scope Spatial referencing

Operation accuracy 0.0 m

Source CRS ITRF97 - XYZ

Target CRS NAD83(CSRS) v3 - XYZ

Operation method Time-Dependent Position Vector Transformation (geocentric Cartesian

domain)

Extent

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.

Geographic Bounding Box
West-bound longitude
-141.01

North-bound latitude 90.0
East-bound longitude -47.74
South-bound latitude 40.04

Operation parameter values

X-axis translation0.9889 metreY-axis translation-1.9074 metreZ-axis translation-0.503 metre

X-axis rotation-25.915 milliarc-secondY-axis rotation-9.426 milliarc-secondZ-axis rotation-11.599 milliarc-secondScale difference-0.935 parts per billion

Rate of change of X-axis translation	7.0E-4 metre per year
Rate of change of Y-axis translation	-1.0E-4 metre per year
Rate of change of Z-axis translation	0.0019 metre per year
Rate of change of X-axis rotation	-0.067 milliarc-second per year
Rate of change of Y-axis rotation	0.757 milliarc-second per year
Rate of change of Z-axis rotation	0.031 milliarc-second per year
Rate of change of scale difference	-0.192 parts per billion per year
Time reference	1997.0 year

ISO Geodetic Registry

Item class OperationMethod

Name Time-Dependent Position Vector

Transformation (geocentric Cartesian domain)

Item status VALID Identifier 82

Alias Time-Dependent 7-Parameter Transformation

Alias 14-Parameter Transformation

Alias Time-Dependent Position Vector Transformation

Data source ISO Geodetic Registry

Remarks Note the analogy with the rotation for the Time-dependent Coordinate

Frame 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

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