

# ISO Geodetic Registry

|                           |                                                                                                                                                                                                                              |                                                                                                                                                                                           |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Item class</i>         | Transformation                                                                                                                                                                                                               |                                                                                                                                                                                           |
| <i>Name</i>               | <b>CGVD28 to CGVD2013(CGG2013a) epoch 1997 [v1]</b>                                                                                                                                                                          |                                                                                                                                                                                           |
| <i>Item status</i>        | VALID                                                                                                                                                                                                                        |                                                                                                                                                                                           |
| <i>Identifier</i>         | 975                                                                                                                                                                                                                          |                                                                                                                                                                                           |
| <i>Information source</i> | <i>Title</i>                                                                                                                                                                                                                 | Height Transformation version 2.0 (HTv2.0), Epochs 2002.0 and 2010.0                                                                                                                      |
|                           | <i>Author</i>                                                                                                                                                                                                                | M. Veronneau                                                                                                                                                                              |
|                           | <i>Publisher</i>                                                                                                                                                                                                             | Geodetic Survey Division, Natural Resources Canada, Government of Canada                                                                                                                  |
|                           | <i>Publication date</i>                                                                                                                                                                                                      | 2019                                                                                                                                                                                      |
|                           | <i>Series/Journal name</i>                                                                                                                                                                                                   | Internal Report                                                                                                                                                                           |
| <i>Information source</i> | <i>Title</i>                                                                                                                                                                                                                 | Referencing and Time Tagging Heights in Canada                                                                                                                                            |
|                           | <i>Author</i>                                                                                                                                                                                                                | M. Veronneau                                                                                                                                                                              |
|                           | <i>Publisher</i>                                                                                                                                                                                                             | Geodetic Survey Division, Natural Resources Canada, Government of Canada                                                                                                                  |
|                           | <i>Publication date</i>                                                                                                                                                                                                      | 2018                                                                                                                                                                                      |
|                           | <i>Series/Journal name</i>                                                                                                                                                                                                   | Internal Report                                                                                                                                                                           |
| <i>Information source</i> | <i>Title</i>                                                                                                                                                                                                                 | GPS-H                                                                                                                                                                                     |
|                           | <i>Author</i>                                                                                                                                                                                                                | Canadian Geodetic Survey                                                                                                                                                                  |
|                           | <i>Publisher</i>                                                                                                                                                                                                             | Geodetic Survey Division, Natural Resources Canada, Government of Canada                                                                                                                  |
|                           | <i>Revision date</i>                                                                                                                                                                                                         | 2021-03-15                                                                                                                                                                                |
|                           | <i>Other citation details</i>                                                                                                                                                                                                | Website: <a href="https://webapp.geod.nrcan.gc.ca/geod/tools-outils/gpsh.php">https://webapp.geod.nrcan.gc.ca/geod/tools-outils/gpsh.php</a>                                              |
| <i>Information source</i> | <i>Title</i>                                                                                                                                                                                                                 | Geoid Models                                                                                                                                                                              |
|                           | <i>Author</i>                                                                                                                                                                                                                | Canadian Geodetic Survey                                                                                                                                                                  |
|                           | <i>Publisher</i>                                                                                                                                                                                                             | Geodetic Survey Division, Natural Resources Canada, Government of Canada                                                                                                                  |
|                           | <i>Revision date</i>                                                                                                                                                                                                         | 2021-12-07                                                                                                                                                                                |
|                           | <i>Other citation details</i>                                                                                                                                                                                                | Website: <a href="https://webapp.geod.nrcan.gc.ca/geod/data-donnees/geoid.php?locale=en">https://webapp.geod.nrcan.gc.ca/geod/data-donnees/geoid.php?locale=en</a> (accessed 2022-01-21). |
| <i>Data source</i>        | ISO Geodetic Registry                                                                                                                                                                                                        |                                                                                                                                                                                           |
| <i>Remarks</i>            | Grid transformation from CGVD28 normal orthometric heights to CGVD2013(CGG2013a) orthometric heights at epoch 1997.0. Bi-linear interpolation of the grid file will give results agreeing to within 1 cm 99.97% of the time. |                                                                                                                                                                                           |
| <i>Operation version</i>  | v1                                                                                                                                                                                                                           |                                                                                                                                                                                           |
| <i>Scope</i>              | Spatial referencing.                                                                                                                                                                                                         |                                                                                                                                                                                           |
| <i>Operation accuracy</i> | 0.05 m                                                                                                                                                                                                                       |                                                                                                                                                                                           |
| <i>Source CRS</i>         | CGVD28 - NOHt                                                                                                                                                                                                                |                                                                                                                                                                                           |
| <i>Target CRS</i>         | CGVD2013(CGG2013a) epoch 1997 - OHt                                                                                                                                                                                          |                                                                                                                                                                                           |
| <i>Operation method</i>   | Gravity-related height transformation (Canada)                                                                                                                                                                               |                                                                                                                                                                                           |

## Extent

|                    |                                                                                                                                                                                    |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Description</i> | <b>Canada - onshore - Alberta, British Columbia, Manitoba south of 57°N, New Brunswick, Northwest Territories south west of a line between 60°N, 110°W and the coast at 132°W,</b> |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Nova Scotia, Ontario south of 52°N, Prince Edward Island, Quebec - mainland west of 66°W and south of 55°N, Saskatchewan south of 55°N, Yukon.**

|                                |                             |         |
|--------------------------------|-----------------------------|---------|
| <i>Geographic Bounding Box</i> | <i>West-bound longitude</i> | -141.01 |
|                                | <i>North-bound latitude</i> | 69.8    |
|                                | <i>East-bound longitude</i> | -59.73  |
|                                | <i>South-bound latitude</i> | 41.67   |

#### Operation parameter values

|                                             |                       |
|---------------------------------------------|-----------------------|
| <i>Geoid (height correction) model file</i> | HT2_1997_CGG2013a.byn |
| <i>ISOGP code for Interpolation CRS</i>     | 320.0 unity           |

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|                    |                                                                                                                                                                                                                                                                                           |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Item class</i>  | OperationMethod                                                                                                                                                                                                                                                                           |
| <i>Name</i>        | <b>Gravity-related height transformation (Canada)</b>                                                                                                                                                                                                                                     |
| <i>Item status</i> | VALID                                                                                                                                                                                                                                                                                     |
| <i>Identifier</i>  | 962                                                                                                                                                                                                                                                                                       |
| <i>Alias</i>       | GPS-H                                                                                                                                                                                                                                                                                     |
| <i>Data source</i> | ISO Geodetic Registry                                                                                                                                                                                                                                                                     |
| <i>Remarks</i>     | Transforms gravity-related heights between CGVD28 and CGVD2013(CGG2013a) vertical datums using GPS-H software with coordinate epoch propagation and bi-quadratic interpolation of a grid of geoid model differences. See information sources for algorithm and file format documentation. |

## Operation parameters

*Geoid model difference file*  
*ISOGR code for Interpolation CRS*