### ISO Geodetic Registry

Item class Transformation

Name ITRF2020 to NAD 83 (2011) Epoch 2010 [NGS

v1]

Item status VALID Identifier 985

Information source Title HTDP User Guide (Version 3.5.0)

Author M. Dennis, J. Saleh, R. Snay, C. Pearson Publisher National Geodetc Survey (NGS), National

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user-guide.pdf (accessed 2023-01-28)

Data source ISO Geodetic Registry

Remarks Transformation defines NAD 83 (2011) with respect to ITRF2020 and is

treated as errorless.

Operation version NGS v1

Scope Spatial referencing

Operation accuracy 0.0 m

Source CRS ITRF2020 - XYZ

Target CRS NAD 83 (2011) Epoch 2010 - XYZ

Operation method Time-Dependent Coordinate Frame Transformation (geocentric

Cartesian domain)

#### Extent

Description **United States and Territories - onshore** and offshore: Puerto Rico. United States (USA) - Alaska, CONUS (Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming). Virgin Islands (US).

Geographic Bounding Box West-bound longitude 167.65

North-bound latitude 74.71 East-bound longitude -63.88

## Operation parameter values

X-axis translation	1.0039 metre
Y-axis translation	-1.90961 metre
Z-axis translation	-0.54117 metre
X-axis rotation	26.78138 milliarc-second
Y-axis rotation	-0.42027 milliarc-second
Z-axis rotation	10.93206 milliarc-second
Scale difference	-0.05109 parts per billion
Rate of change of X-axis translation	7.9E-4 metre per year
Rate of change of Y-axis translation	-7.0E-4 metre per year
Rate of change of Z-axis translation	-0.00124 metre per year
Rate of change of X-axis rotation	0.06667 milliarc-second per year
Rate of change of Y-axis rotation	-0.75744 milliarc-second per year
Rate of change of Z-axis rotation	-0.05133 milliarc-second per year
Rate of change of scale difference	-0.07201 parts per billion per year
Time reference	2010.0 year

# **ISO Geodetic Registry**

Item class OperationMethod

Name Time-Dependent Coordinate Frame

**Transformation (geocentric Cartesian domain)** 

Item status VALID
Identifier 94

Alias Time-Dependent 7-Parameter Transformation

Alias 14-Parameter Transformation

Alias Time-Dependent Coordinate Frame Transformation

Data source ISO Geodetic Registry

Remarks Note the analogy with the Time-dependent Position Vector

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