

# ISO Geodetic Registry

Item class	Transformation		
Name	ITRF2014 to NAD 83 (2011) Epoch 2010 [NGS v1]		
Item status	VALID		
Identifier	987		
Information source	Title	Multi-Year CORS Solution 2 (MYCS2)	
		Coordinates	
	Author	U.S. National Geodetic Survey (NGS)	
	Publisher	National Geodetic Survey (NGS), National Oceanic and Atmospheric Administration (NOAA)	
	Publication date	2021-11-17	
	Other citation details	Website: <a href="https://geodesy.noaa.gov/CORS/news/mycs2/mycs2.shtml#htdp_params">https://geodesy.noaa.gov/CORS/news/mycs2/mycs2.shtml#htdp_params</a> (accessed 2023-01-28)	
Data source	ISO Geodetic Registry		
Remarks	Transformation defines NAD 83 (2011) with respect to ITRF2014 and is treated as errorless.		
Operation version	NGS v1		
Scope	Spatial referencing		
Operation accuracy	0.0 m		
Source CRS	ITRF2014 - XYZ		
Target CRS	NAD 83 (2011) Epoch 2010 - XYZ		
Operation method	Time-Dependent Coordinate Frame Transformation (geocentric Cartesian domain)		

## Extent

<i>Description</i>	<b>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).</b>		
<i>Geographic Bounding Box</i>	<i>West-bound longitude</i>	167.65	
	<i>North-bound latitude</i>	74.71	
	<i>East-bound longitude</i>	-63.88	
	<i>South-bound latitude</i>	14.92	

## Operation parameter values

<i>Time reference</i>	2010.0 year
<i>Rate of change of scale difference</i>	-0.07201 parts per billion per year
<i>Rate of change of Z-axis rotation</i>	-0.05133 milliarc-second per year
<i>Rate of change of Y-axis rotation</i>	-0.75744 milliarc-second per year
<i>Rate of change of X-axis rotation</i>	0.06667 milliarc-second per year
<i>Rate of change of Z-axis translation</i>	-0.00144 metre per year
<i>Rate of change of Y-axis translation</i>	-6.0E-4 metre per year
<i>Rate of change of X-axis translation</i>	7.9E-4 metre per year
<i>Scale difference</i>	0.36891 parts per billion
<i>Z-axis rotation</i>	10.93206 milliarc-second
<i>Y-axis rotation</i>	-0.42027 milliarc-second
<i>X-axis rotation</i>	26.78138 milliarc-second
<i>Z-axis translation</i>	-0.54157 metre
<i>Y-axis translation</i>	-1.90921 metre
<i>X-axis translation</i>	1.0053 metre

# ISO Geodetic Registry

<i>Item class</i>	OperationMethod
<i>Name</i>	<b>Time-Dependent Coordinate Frame Transformation (geocentric Cartesian domain)</b>
<i>Item status</i>	VALID
<i>Identifier</i>	94
<i>Alias</i>	Time-Dependent 7-Parameter Transformation
<i>Alias</i>	14-Parameter Transformation
<i>Alias</i>	Time-Dependent Coordinate Frame Transformation
<i>Data source</i>	ISO Geodetic Registry
<i>Remarks</i>	Note the analogy with the Time-dependent Position Vector Transformation but beware of the differences! The Position Vector Transformation convention is used by IAG.
<i>Formula</i>	Geomatics Guidance Note No 7, part 2: Coordinate Conversions and Transformations including Formulas

## Operation parameters

<i>X-axis translation</i>
<i>Y-axis translation</i>
<i>Z-axis translation</i>
<i>X-axis rotation</i>
<i>Y-axis rotation</i>
<i>Z-axis rotation</i>
<i>Scale difference</i>
<i>Rate of change of X-axis translation</i>
<i>Rate of change of Y-axis translation</i>
<i>Rate of change of Z-axis translation</i>
<i>Rate of change of X-axis rotation</i>
<i>Rate of change of Y-axis rotation</i>
<i>Rate of change of Z-axis rotation</i>
<i>Rate of change of scale difference</i>
<i>Time reference</i>