ISO Geodetic Registry

Item class	Transformation	
Name	**Korean 1985 to KGD2002 [NGII v1]**	
Item status	VALID	
Identifier	1012	
Alias	NGI_Pro v.2.54	
Alias	Bessel to GRS80 Ellipsoid Transformation v.2.54	
Information source	*Title*	National Geographic Information Institute (NGII) Notice 2003-497
	Author	National Geographic Information Institute (NGII)
	Publisher	National Geographic Information Institute (NGII), Ministry of Construction and Transportation, Republic of Korea
	Revision date	2003
	Series/Journal name	National Geographic Information Institute (NGII) Notice
	Issue identification	2003-497
	Other citation details	Web page in Korean, accessible only within Korea. https://www.ngii.go.kr/kor/board/view.do?sq=30573&board_code=notify (accessed 2023-06-07)
Information source	*Title*	Bessel to GRS80 Ellipsoid Transformation v.2.54
	Author	Geodesy Department, NGII
	Publisher	National Geographic Information Institute (NGII), Ministry of Construction and Transportation, Republic of Korea
	Revision date	2009-12-08
	Other citation details	Web page in Korean, accessible only within Korea. https://www.ngii.go.kr/kor/contents/view.do?sq=565&board_code=contents_data (accessed 2023-06-07)
Data source	ISO Geodetic Registry	
Operation version	NGII v1	
Scope	Spatial referencing	
Operation accuracy	0.8 m	
Source CRS	Korean 1985 - LatLon	
Target CRS	KGD2002 - LatLon	
Operation method	Molodensky-Badekas Transformation (CF geographic 2D domain)	

Extent

Description	**Republic of Korea - onshore and offshore**

Operation parameter values

X-axis translation	-145.907 metre
Y-axis translation	505.034 metre
Z-axis translation	685.756 metre
X-axis rotation	-1.162 arc-second
Y-axis rotation	2.347 arc-second
Z-axis rotation	1.592 arc-second
Scale difference	6.342 parts per million

Ordinate 1 of evaluation point	-3159521.31 metre
Ordinate 2 of evaluation point	4068151.32 metre
Ordinate 3 of evaluation point	3748113.85 metre

ISO Geodetic Registry

Item class	OperationMethod
Name	**Molodensky-Badekas Transformation (CF geographic 2D domain)**
Item status	VALID
Identifier	1002
Data source	ISO Geodetic Registry
Remarks	Transformation of coordinates from one geographic coordinate reference system into another is carried out as a concatenation of the following operations: (geographical to geocentric) + (geocentric to geocentric) + (geocentric to geographic). The Molodensky-Badekas (CF geog2D domain) transformation has 5 steps: (1) geographic 2D coordinates are converted to geographic 3D using ISOGR coordinate operation method code 86; (2) geographic 3D coordinates are converted to geocentric coordinates using ISOGR coordinate operation method code 78; (3) geocentric coordinates are transformed to the target frame using the Molodensky-Badekas (geocentric domain) method, ISOGR operation method code 1000; 4) transformed geocentric coordinates are converted to geographic 3D using ISOGR coordinate operation method code 78; (5) geographic 3D coordinates are converted to geographic 2D using ISOGR coordinate operation method code 86.

Operation parameters

X-axis translation
Y-axis translation
Z-axis translation
X-axis rotation
Y-axis rotation
Z-axis rotation
Scale difference
Ordinate 1 of evaluation point
Ordinate 2 of evaluation point
Ordinate 3 of evaluation point