

# ISO Geodetic Registry

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

## Extent

<i>Description</i>	<b>Republic of Korea - onshore and offshore</b>
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## Operation parameter values

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

<i>Ordinate 1 of evaluation point</i>	-3159521.31 metre
<i>Ordinate 2 of evaluation point</i>	4068151.32 metre
<i>Ordinate 3 of evaluation point</i>	3748113.85 metre

# ISO Geodetic Registry

<i>Item class</i>	OperationMethod
<i>Name</i>	<b>Molodensky-Badekas Transformation (CF geographic 2D domain)</b>
<i>Item status</i>	VALID
<i>Identifier</i>	1002
<i>Data source</i>	ISO Geodetic Registry
<i>Remarks</i>	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

<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>Ordinate 1 of evaluation point</i>
<i>Ordinate 2 of evaluation point</i>
<i>Ordinate 3 of evaluation point</i>