## ISO Geodetic Registry

Item class Transformation

Name Korean 1985 to KGD2002 [NGII v1]

Item statusVALIDIdentifier1012

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 metreY-axis translation505.034 metreZ-axis translation685.756 metreX-axis rotation-1.162 arc-secondY-axis rotation2.347 arc-secondZ-axis rotation1.592 arc-secondScale difference6.342 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

Molodensky-Badekas Transformation (CF

geographic 2D domain)

Item statusVALIDIdentifier1002

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