

ISO Geodetic Registry

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|---------------------------|---|---|
| <i>Item class</i> | Transformation | |
| <i>Name</i> | Korean 1985 to KGD2002 [NGII v1] | |
| <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 |
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| | <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. https://www.ngii.go.kr/kor/contents/view.do?sq=565&board_code=contents_data (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> | Republic of Korea - onshore and offshore |
|--------------------|---|

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

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|--------------------|---|
| <i>Item class</i> | OperationMethod |
| <i>Name</i> | Molodensky-Badekas Transformation (CF geographic 2D domain) |
| <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

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|---------------------------------------|
| <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> |