GeographicCalculator

When Close Isn't Close Enough

Geospatial Data Management

Geographic Calculator is the standard-bearer in the field of geomatic calculation and transformation. Built on the foundation of the largest database of geodetic definitions and coordinate system parameters commercially available, this powerful software is designed to ensure accuracy and consistency in any geospatial data management process.

FILE AND DATABASE SUPPORT

With support for some 60 raster and vector file formats, as well as ODBC and spatial databases, Geographic Calculator can process large volumes of data efficiently and reliably. Calculator also features a very powerful point database job that mimics much of the functionality and layout of MS Excel spreadsheets.

SEISMIC SURVEY QUALITY CONTROL

The Seismic Survey Conversion allows seismic data managers to efficiently access, maintain, and convert SEG, SPS, and UKOOA formatted ASCII files to correct and improve improperly formatted data. New in the 2017 release, the Seismic QC Job performs several quality checks on preplot and poststack seismic lines.

ADMINISTRATIVE TOOLS

Geographic Calculator includes a powerful set of customizable administrative tools allowing data managers to establish standard coordinate system and transformation rules and parameters that can be quickly and easily deployed to all users. These rules and controls can be locked down with passwords and saved as workspaces to be used in Calculator, Global Mapper or ArcGIS.

3D COORDINATE SUPPORT

Geographic Calculator includes more vertical transformations and geoid definitions than any other GIS software. Support for vertical and horizontal transformation enables accurate 3D data processing particularly useful for LiDAR files, digital elevation models, and other terrain layers. Pair the Calculator with Global Mapper and you can even make your own Geoid models.

SOFTWARE HIGHLIGHTS

- Interactive/single point conversion
- Point database spreadsheet processing
- Vector file transformations
- Unmatched variety of vertical datum support
- Seismic survey quality control tools
- Area of use polygons and accuracy tags for reliability
- Powerful CAD support
- Time-dependent transformations
- Spatial database read and write access
- Always current EPSG geodetic database support
- Support for the new GeoCalc geodetic registry
- Support for GeoCalc geodetic database
- Custom geoid creation with Global Mapper extension
- Customizable data source containing:
  - Over 5,000 coordinate systems
  - Over 450 horizontal datums
  - Over 120 vertical datums
  - Over 1,600 coordinate transformations

Blue Marble GEOGRAPHICS
Mind the gap between world and map

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Extension to Global Mapper

ADVANCED PROJECTION MANAGEMENT

Geographic Calculator's geodetic datasource can now be accessed from within Global Mapper, Blue Marble's easy-to-use, affordable GIS software. This integration of extensive GIS format support, powerful spatial analysis tools, and advanced geodetic processing provides a multifaceted geomatically-enabled GIS toolkit. GeoCalc mode can be enabled in Global Mapper when an active license of Geographic Calculator is present on the same computer. Global Mapper also offers the ability to view, create or modify geoid models as well as import them into the Calculator datasource as new vertical transformation models.

TIME DEPENDENT TRANSFORMATIONS

Calculator also supports Horizontal Time Dependent Positioning (HTDP) models and 14 parameter transformations, which provide the means to predict and adjust for data transformations related to movements of the Earth's crust over time.

Recent Enhancements

- Seismic QC job for quality checking of preplot and poststack seismic lines
- Tool for writing Coordinate Systems and Transformations to Petrel CTL files
- Access to the online GeoCalc Geodetic Registry for continual geodetic datasource updates
- Improved Point Database Conversion with separate interfaces for Conversion, Forward/Inverse, Scale & Translate, Best Fit, and Derive Datum Shift
- User-friendly Start Page with Job Guide
- Support for Magnetic Declination
- Geoid Creation ability in conjunction with Global Mapper
- Streamlined menus for the Projection and Transformation interface
- Support and Display of EPSG "Area of Use" Polygon data
- Integration of the Geographic Calculator's advanced coordinate system management into Global Mapper through the GeoCalc toolbar in Global Mapper
- Ability to create custom Geoid definitions through the Global Mapper GeoCalc Toolbar
- Flexible transformation options when working with high accuracy elevation based data
- Land Survey Summary job for generating printed layouts in Canadian survey systems
- Enhanced PDC interface to calculate bounds of loaded data and filter coordinate systems and transformations.
- Support for manually specified transformations with scale, translation, and rotation parameters in Point Database and Vector Conversion jobs.
- And much more …

DATA FORMATS
Vector

- ArcSDE, Personal and File Geodatabase
- ASCII text (including custom text file formats – UKOOA, for example)
- AutoCAD support through AutoCAD 2010 (.dwg, .dxf)
- Blue Marble Layers (.bml) *
- dBase (.dbf)
- Digital Line Graph (.dlg) *
- Esri ArcInfo Export (.e00)
- Esri ArcInfo Generate (.gen)
- Esri Geodatabase
- Esri Shapefile (.shp)
- Excel (.xls)
- Geospatial PDF (.pdf) *
- GML Simple Features – Ver 3.1.1 (.gml)
- Google Keyhole Markup Language (.kml)
- GPX Data File (.gpx)
- LiDAR Data Exchange – Ver 1.0 - 1.4 (.las)
- MapInfo Import (.mif)
- MapInfo Table (.tab)
- Microstation Design (.dgn)
- MS Access (.mdb)
- ODBC databases including MS SQL, MS Access, Oracle, MySQL, Postgres
- Oracle database
- PostGIS database
- S-57 (.000) *
- Shell Processing Support
- Spatial Data Transfer Standard (catd.ddf) *
- TIGER/Line (.rt1) *
- Velocity File (.txt)

Raster

- ARC Digitized Raster Graphics (.img,.ovr) *
- BIL/HDR Raster Dataset (.bil) *
- Bitmap Files (.bmp)
- BSB v3 – KAP (.kap) *
- BSQ Files (.bsq) *
- Compressed ARC Digitized Raster Graphics *
- Enhanced Compressed Wavelet (.ecw)
- JPEG (.jpg)
- JPEG 2000 (.jp2)
- LizardTech MrSID (.sid)
- Portable Network Graphics (.png)
- TIFF and GeoTIFF (.tif)

Import only

Image Reference

- Blue Marble (RSF)
- BIL/HDR Reference Files (.HDR)
- ECW Reference File Format (ERS)
- Internal Referencing (GeoTiff, ECW, MrSID, JP2, CADRG, ADRG, DOQQ, etc.)
- MapInfo Raster (TAB)
- World files (various file extensions)

Seismic Survey

- OGP P1/11
- SEG P1 (.seg)
- Shell Processing System (.sps)
- UKOOA P1/90 (.uko)
- SEG–Y

Note: Also supports import/export of custom variants via the Seismic Survey Format Wizard.

MOST COMPREHENSIVE DATA SOURCE

- Over 5000 pre-defined projected coordinate systems
- Over 1800 coordinate transformations
- Over 500 horizontal datums
- Over 150 vertical datums (necessary for LiDAR transformations)
- Over 80 various unit definitions
- Full matches to ESRI, MapInfo, Autodesk and more
- Define your own coordinate systems

MAP PROJECTIONS

- Albers Equal–Area Conic
- Azimuthal Equal Area
- Azimuthal Equidistant
- Behrmann
- Belgium 72
- Cassini
- Craster Parabolic
- Danish System 34
- Double Stereographic
- Equal-Area Cylindrical
- Equidistant Cylindrical
- Fuller (Dymaxion)
- Gall-Peters
- Gall Stereographic
- Lambert Conformal Conic (1 parallel, 2 parallel & Extended)
- Hammer Aitoff
- IMW Polyconic
- Krovak
- Laborde
- MGRS (Military Grid Reference System)
- Oblique Mercator Azimuth
- Polyconic
- Robinson
- Stereographic
- Mercator Variant C
- And much more …

Datum Transformations
Horizontal

- Three, Seven and Ten Parameter
- Best Fit using the Geographic Calculator
- Canadian National Transformation (NTv2)
- DMA Multiple Regression Equations
- NGS NADCON, NGS HARN
- Ordnance Survey Great Britain – OSTN02
- 14 Parameter Time Dependent
- Horizontal Time Dependent Positioning
- Canadian Velocity Grid
- And much more …

Vertical

- Australia – AUSGEOID 98, AusGeoid2009
- Canadian – CVGD28, Vertical Geoid2013
- Colombia – GEOCOL 04
- Denmark – DVR90
- Finland Geoid – FIN2000N00
- France and Corsica – RAC09, RAF09
- Great Britain – OSTN15
- Japan – Japan Height Datum via GSIGEO2005
- The Netherlands – NLGEO2004
- South Africa – SAGEOID2010
- United States – NAVD88, NGVD29 via Geoid 99, Geoid 03, Geoid 09, or Geoid 12a
- Worldwide – EGM96, EGM08, OSU91A
- And much more …