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# Enabling Geomatics Where it Needs to Be…

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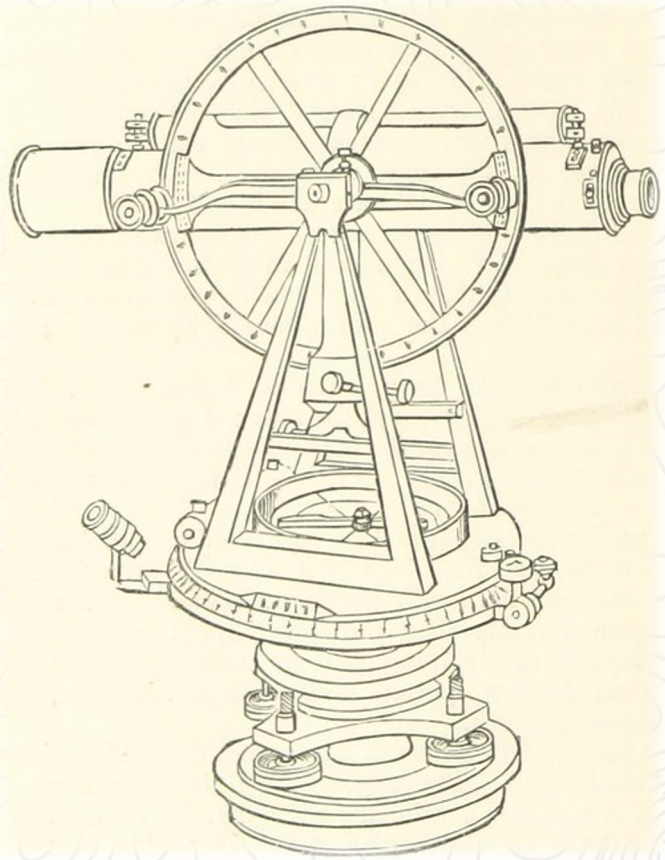
# Where do we work?

This year has made it clear that there’s not one answer to that question anymore.



# Field Work

- Traditional land surveying
- Seismic surveying
- Hydrographic surveying
- GIS Mapping
- Drone/Aerial survey

All of these take place in the field solutions need to be portable. Commonly, portable or mobile devices are involved. Offline or disconnected environments are more prevalent.

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# Data cleanup and processing

Everything done in the field needs checking and validation.

- Typically a “desktop environment”
- Maybe disconnected
- Maybe in a hotel room
- Maybe back to a corporate office
- Many different tools

Highly variable, depending on the work and the data and the level of processing the data requires

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# Analysis

This normally lives in “the office”.

- Fully connected network environment
- Corporate licensing
- IT staff easily accessible
- Heavy software footprints

Doesn’t really sound like 2020 does it?

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# Moving outside the box

Some requests we heard this year

- Portable VPN friendly licensing
- Mobile device accessible software
- Lighter footprints for installation
- Ability to run it outside the corporate network altogether
- Centralized management in disconnected systems

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# Tradeoffs and Risks of Flexibility

- Accuracy
- Reliability
- Replicability
- Security

Which of these are we willing to trade?

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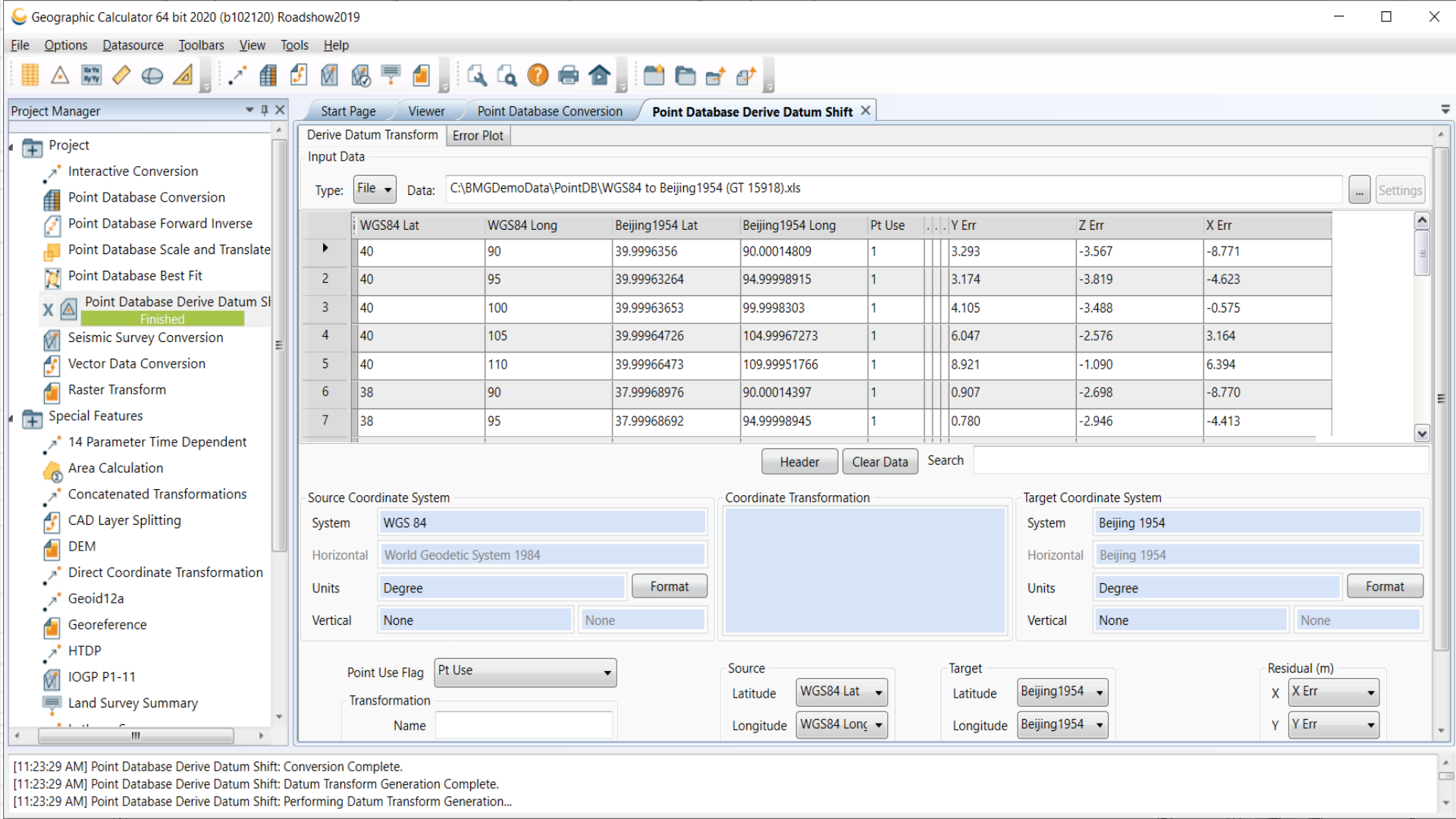
Geographic Calculator 64 bit 2020 (b102120) Roadshow2019
File Options Datasource Toolbars View Tools Help
Project Manager
Project
Interactive Conversion
Point Database Conversion
Point Database Forward Inverse
Point Database Scale and Translate
Point Database Best Fit
Point Database Derive Datum Sl
Finished
Seismic Survey Conversion
Vector Data Conversion
Raster Transform
Special Features
14 Parameter Time Dependent
Area Calculation
Concatenated Transformations
CAD Layer Splitting
DEM
Direct Coordinate Transformation
Geoid12a
Georeference
HTDP
IOGP P1-11
Land Survey Summary
Start Page
Viewer
Point Database Conversion
Point Database Derive Datum Shift
Derive Datum Transform
Error Plot
Input Data
Type: File
Data: C:\BMGDemoData\PointDB\WGS84 to Beijing1954 (GT 15918).xls
Settings
WGS84 Lat | WGS84 Long | Beijing1954 Lat | Beijing1954 Long | Pt Use | Y Err | Z Err | X Err
1 | 40 | 90 | 39.9996356 | 90.00014809 | 1 | 3.293 | -3.567 | -8.771
2 | 40 | 95 | 39.99963264 | 94.99998915 | 1 | 3.174 | -3.819 | -4.623
3 | 40 | 100 | 39.99963653 | 99.9998303 | 1 | 4.105 | -3.488 | -0.575
4 | 40 | 105 | 39.99964726 | 104.99967273 | 1 | 6.047 | -2.576 | 3.164
5 | 40 | 110 | 39.99966473 | 109.99951766 | 1 | 8.921 | -1.090 | 6.394
6 | 38 | 90 | 37.99968976 | 90.00014397 | 1 | 0.907 | -2.698 | -8.770
7 | 38 | 95 | 37.99968692 | 94.99998945 | 1 | 0.780 | -2.946 | -4.413
Header
Clear Data
Search
Source Coordinate System
System WGS 84
Horizontal World Geodetic System 1984
Units Degree
Format
Vertical None
None
Coordinate Transformation
Target Coordinate System
System Beijing 1954
Horizontal Beijing 1954
Units Degree
Format
Vertical None
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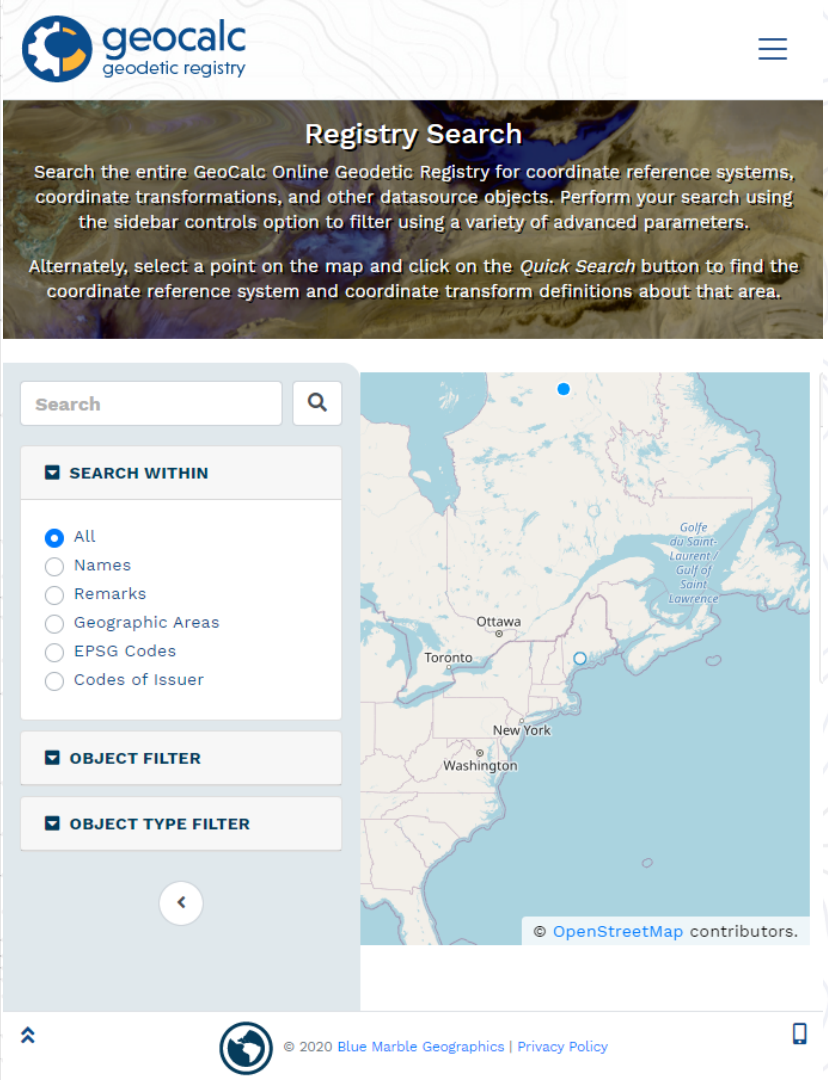
Transformation
Name
Source
Latitude WGS84 Lat
Longitude WGS84 Long
Target
Latitude Beijing1954
Longitude Beijing1954
Residual (m)
X X Err
Y Y Err
[11:23:29 AM] Point Database Derive Datum Shift: Conversion Complete.
[11:23:29 AM] Point Database Derive Datum Shift: Datum Transform Generation Complete.
[11:23:29 AM] Point Database Derive Datum Shift: Performing Datum Transform Generation...

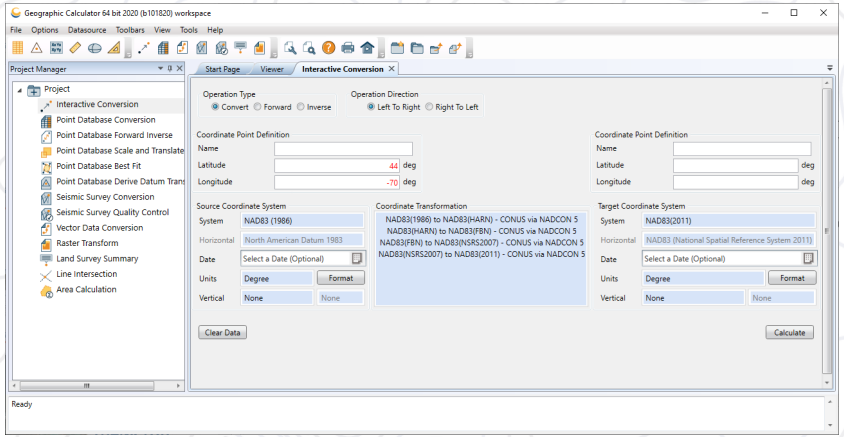



# Improving Access

GeoCalc Online

- Online for 3 years
- Available to the public as a library that both mirrors and supplements the EPSG dataset
- Available online or as a behind-the-firewall installation
- Synched with EPSG dataset
- Mobile friendly for field use

# Taking calculations out of the box




- This year we were able to increase the flexibility of our desktop licensing to function over VPN connections for our single user licenses
- This was enabled by existing technology we already had access to in our third-party tools
- Sometimes flexibility is already there, you just need to know it

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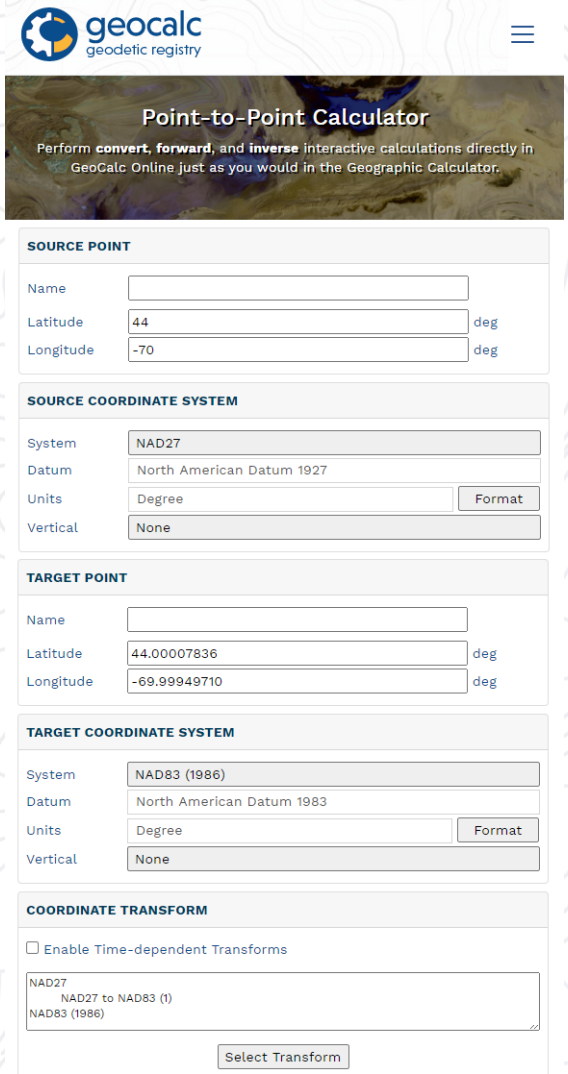
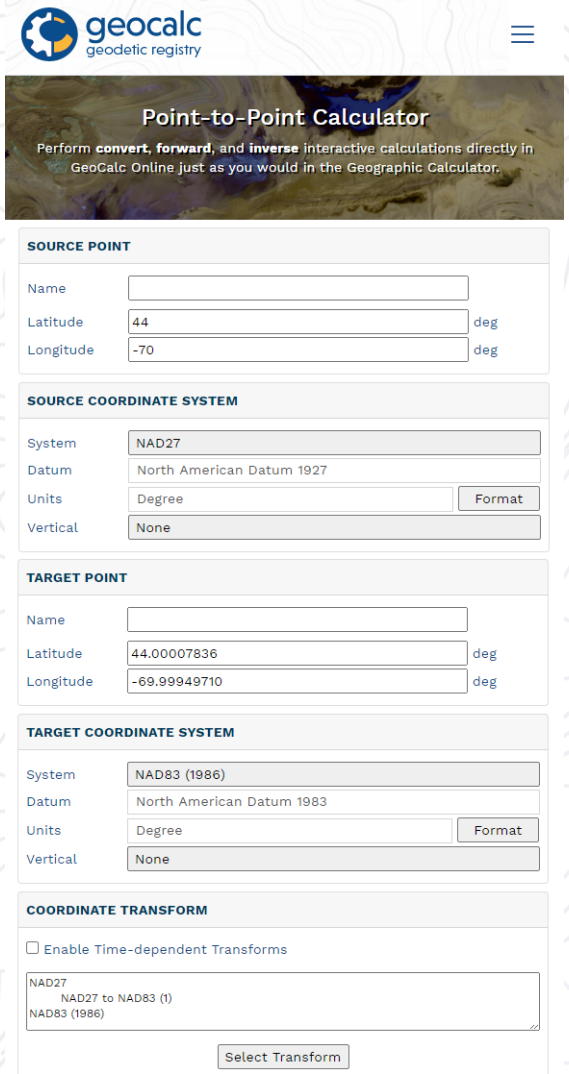



# Moving to the Cloud

- Some situations need more than flexibility in existing tools
- GeoCalc Online serves as a platform we could extend as more than just a lookup
- Demand for both public facing and internal calculation tools led us to begin extending our desktop functions into a cloud environment




# Moving to the Cloud (cont'd)

Decision factors about Cloud infrastructure

- Risk of data access
- Requires "always-on" technology under the hood; if the net is down, you are dead in the water
- Centralized management of data and tools takes specific knowledge

# Our Pathway to the Cloud

- Cloud technology is not for everyone in every application
- It doesn’t make sense for us at this point to 100% transition
- Too many users are disconnected, offline completely, or in highly secure environments
- It does make sense to add OPTIONS in the cloud, which is where GeoCalc Online comes in for us

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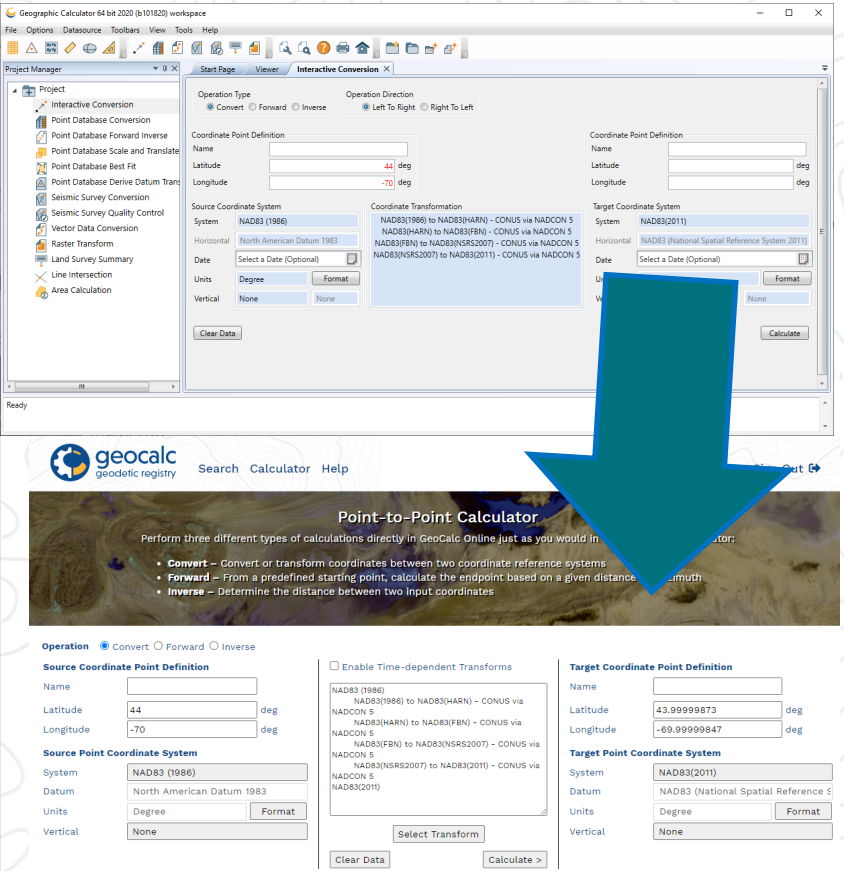





# “Moving” to the Cloud

- Geocalc Online (v3) for us is more of an *addition* of Cloud tools rather than a complete transition *to* them
- Like all our projects, we chose to do this in house using the same team that writes our desktop applcations
- That’s not always a no brainer, sometimes an external partner can help

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# GeoCalc Online

- A web-based repository available for researching parameters
- Used to distribute updates to our software and our OEM partners

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# THANK YOU!