
LGO 1.1 SCRIPTING

LEICA Geo Office 1.1 has just been released and contains many new features. Scripting is one of the new features that opens up many possibilities. In this newsletter we will look at the features and functionality of LGO scripting as well as some scripting related applications.

You can also read the LGO release notes for more information about the other new features of LGO 1.1. Download the newsletter from:

<http://downloads.leica-geosystems.com/downloads/index.htm>

WHAT IS SCRIPTING?

Scripting is essentially simple programming, but don't let that put you off. Scripting works with easy-to-use programming languages and the functionality of script enabled programs such as LEICA Geo Office 1.1, Excel and AutoCAD.

With scripting you can access the functionality of enabled programs to allow for customisation and automation.

All this brings a lot of possibilities but scripting does not have to be a "monster", it is easy to learn and easy to use.

For example, scripting is already being used by surveyors who regularly and repetitively measure GPS data and process baselines. In these cases the use of scripting makes the office part of the job simpler and quicker – just one button click to import, process, store and export!

LGO AND SCRIPTING

LEICA Geo Office 1.1 is script enabled. This means that you can create scripts or simply use scripts that access the functionality of LGO. New user interface functionality has also been included to make the management and use of scripts within LGO easier.

SCRIPT MANAGEMENT

In LGO 1.1 there is a new management component called, naturally, **Script Management**. This allows you to manage the scripts that run within LGO. In Script Management you can register a new script and assign a toolbar button to the script. It is also possible to register scripts written by other people.

LGO supports scripts in **vbscript** and **jscript**, the two most popular scripting languages. Vbscript is essentially a simplified form of Visual Basic while jscript is based on the popular Java languages.

SUPPORTED ELEMENTS

LGO now has extensive support of scripting with most functionality being supported. The following areas are currently script enabled:

- **Coordinates Systems:** Projections, Transformations, CSCS Models, Ellipsoids, Geoid Models, State Plane Zones
- **Import/Export Settings:** Custom ASCII, User ASCII
- **Projects:** Import/Export, Create / Delete, Process, Register, Project Points, Convert, Create / Delete, Rename, Query
- **Project Results:** Query, Store, Delete

EXAMPLE SCRIPTS

When installing LGO 1.1, the following five example scripts are also installed and registered in Script Management. These are useful to give you an overview of the flexibility of scripting and the benefits it can bring.

HowTo Sample Scripts: Index provides a list of all script enabled functionality within LGO. Each component has a description, sample code and a working example of the functionality. It is perfect for learning what LGO scripting can do.

Glacier Express: A detailed script that was written to import, process and analyse data

WORKING
TOGETHER

X FUNCTION
integrated



LEICA SYSTEM 1200

from a glacier-monitoring project in Switzerland.

Create COGO Points: This script allows additional points between two selected points to be create (basically segmenting a line).

Hidden Point Observations Report: A report created using scripting that provide details of GPS Hidden Point measurements.

TPS Observations Report: Another report created using scripting that lists TPS measurements and coordinates.

APPLICATIONS

Scripting can be used for many different applications within LGO. The automation of processes, customisation and extending functionality are all possible with scripting. The example scripts show some of the most important applications of LGO scripting.

NEWSLETTER EXAMPLE

The scripting example included with this newsletter allows you to create a LGO project and import the System 1200 GPS sample data which is then processed and exported it in an ASCII format.

This sample script is based on a real-world application where everyday a surveyor measured a number points with GPS, processed the baselines and created an ASCII file. His projects and ASCII files were stored for reference.

The script is deliberately simple with only the project name and path of the data needing to be entered. (It would of course be easy to extend this functionality - for example, to include a browse button). It uses a modern HTML style user interface that is designed for this script. Although there are four files attached the actual script itself is just 11 lines! The rest is just “Bells and Whistles”.

Download the attached sample script.

REGISTER

WORKING
TOGETHER



LEICA SYSTEM 1200

Copy all the files into one folder and register the Newsletter.vbs script in Script Management. To register the script you need to select **Script Management** from the **Tools** menu and with the right mouse click select **New**. Search for the **Newsletter.vbs** file and give the script a name. In Script Management you can execute the script by accessing the context menu over the script and selecting **Run**. The script should appear in a new dialogue.

Report Newsletter

Leica
Geosystems

Import, Process and ASCII Export

Define a project name and GPS data path to import.
Press GO and the project is created the GPS data imported,
then define your ASCII output.

Project Name:

System 1200 Data Path:

Go!

HOW DOES IT WORK?

As mentioned before the actual script is very small. First the LGO application object is set and we get an empty project collection. Then we create a new project.

objProjects.Create (myProject)

Then we import the system 1200 data.

objProject.ImportRawDataFiles

eLgoRawDataTypeSystem1200,

LgoDataProcessingToolAutoProc,

C:\Temp\,

True,

ObjImportedCoordSystems

Here the import type (System 1200), processing mode and path (recursive) are specified.

A simple line is used to process the data:

objProject.Process

and, of course, the results should be stored

objResultPoints.Store(True)

To bring up the ASCII export dialogue we use this function:

objProject.ExportAscii

These are the essentials of this script.

A script could be written that does exactly the same thing without the HTML user interface.

Additionally, scripts can also be written that access LGO functionality from outside of LGO itself. For example a script could be activated from Microsoft Excel which imports data into LGO and then exports this data directly into Excel.

The possibilities are endless...

REMEMBER

Try the Newsletter example script as well as the sample scripts installed with LGO v1.1.

Scripting uses simple programming languages and is easy to learn.

LGO scripting provides a new level of customisation, automation and flexibility.

**WORKING
TOGETHER**

X **FUNCTION**
integrated



LEICA SYSTEM 1200