Eijkelkamp GeoPoint
SoilSolutions

GeoExplorer VideoCone Application
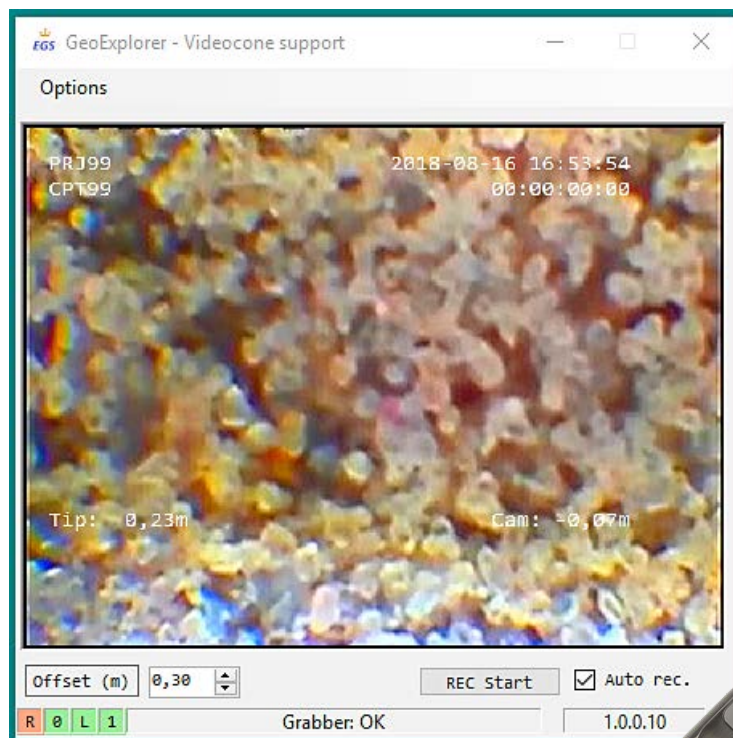
Meet the difference

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Contents

On these operating instructions

☞ **If the text follows a mark (as shown on the left), this means that an important instruction follows.**

⚠️ **If the text follows a mark (as shown on the left), this means that an important warning follows relating to danger to the user or damage to the apparatus.The user is always responsible for its own personal protection.**

Text **Italic indicated text indicates that the text concerned appears in writing on the display (or must be typed).**

1.   Preface

When using a VideoCone with GeoExplorer, this app can record the sounding for later analysis. It is using the CPT VideosignalSplitter and GeoExplorer information for recording.
The app is written in VB.Net.

2.   Hardware

The app is using the Eijkelkamp GeoPoint SoilSolutions VideoCone in combination with:
- GeoExplorer (from build 66)
- GeoLogger (USB or serial RS232)
- GPGE1Video app
- USB dongle to enable the video library
- Video codec
- CPT VideosignalSplitter

Make sure that you have enough USB ports available on your computer or use an USB 2.0 hub.

- USB dongle
- CPT VideosignalSplitter
- GeoLogger

Test your software and hardware setup before going in the field. Not always all USB hubs work fine with the VideosignalSplitter or dongle.

☞ **It is recommended that you use a second screen with the application. GeoExplorer is an application that starts using the whole screen, without handles to resize. When you run the app, it is best to move this to the second screen.**

See chapter 8 "Running GeoExplorer and the app" for tips on using your display and switching between the applications.

3.   Software

The app is developed with Visual Studio 2015 and .NET Framework 4.7 and is tested on Windows 10 and Windows 7 Environments.

The setup of the software will need some manual interaction. This will be solved in future versions.

The installation is based on a OneClick installation, meaning that you cannot chose an installation folder or any other options. When installing the app it will check if all components are available on the PC. It may ask to download a version of the .Net Framework. When the PC is connected to the internet it will ask if it can download and install.

4.   Installation

Prerequisites: a valid standard installation of GeoExplorer (version 66 or higher).

The installation comes in a ZIP file: GPGE1Video_<versionnumber>.zip.
UnZIP in a temporary folder.
The folder contains:
- Publish (folder)
- GrabberDLL02.dll
- GRABBER.VAR

1. Start publish\setup.exe
2. Allow the application to be installed[1]
3. After installing, the app will automatically start and show a message in the statusline "*GrabberDLL20.dll not found in PATH*"
4. Click *Menu → Options → Location*
   a. This shows the location where the app is installed
5. Copy GrabberDLL20.dll and GRABBER.VAR to this installation folder
6. Stop and Start the app.

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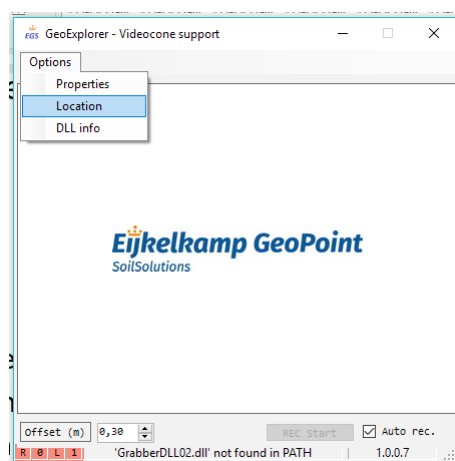
1 If Windows security settings do not allow you to install, please check the following URL:
https://superuser.com/questions/1252575/unable-to-install-clickonce-application-due-to-security-settings-windows-10

Modify the following key:
Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\.NETFramework\Security\TrustManager\PromptingLevel
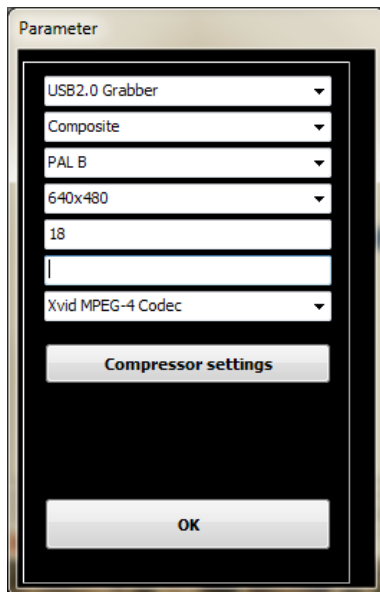
5. Running the application

5.1 First time use

First time you start the app, you need to configure the codec.
For this select *Menu→ Options → Properties*
This opens the *Parameter* settings for the video software.
Make sure that parameters look like in the screenshot below. When you use a different codec, the option for the codec name ('*Xvid MPEG-4 Codec*') may look different.

Next step is to configure the codec: select '*Compressor settings*'.
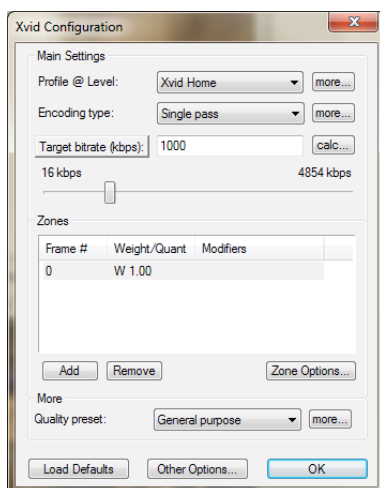
Select the profile '*Xvid Home*'.
The 3rd option is a button named either '*Target Quantizer*' or '*Target Bitrate*'. Make sure that '*Target Bitrate*' is selected.
The value should be 1000.

Click *OK*.

With these settings the recordings will have the right quality for analyzing later and will not grow too big in used disk size.
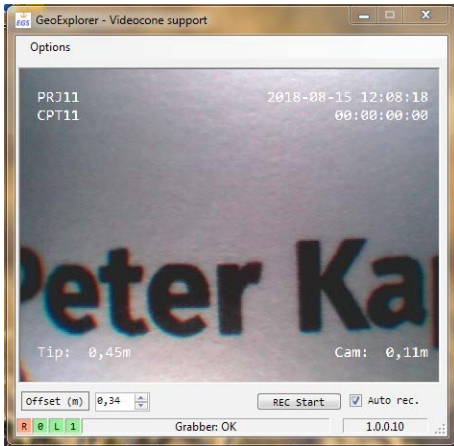
5.2   Recording a sounding

☞   **Start the application before you start GeoExplorer.**

☞   **It is best to use a second screen and position the app there.**

See chapter 8 "Running GeoExplorer and the app" on how to switch between GeoExplorer and the app.

The app retrieves realtime information from GeoExplorer for:
•   Folder where to store the results from the recording (*.avi and *.idx files)
•   Current project name, CPT test name, pulses per cm, etc.
•   Depth

It also detects when a sounding is started and finished. When '*Auto rec.*' is selected, recording the video is starting and stopping accordingly. This means that normally there is no need for other interaction with the app so it can run unattended in the background.

☞   **Make sure you set the offset right for the distance between cone tip and camera.**

You can manually start and stop the video recording. This will generate more video files, one for each stop/start. There will only be one indexfile per sounding. Normally there is no need for stopping and starting manually.

6. Additional software

6.1 GeoExplorer

The app for the VideoCone is an add-on to GeoExplorer.
We assume that there is a valid GeoExplorer installation available on the PC.
Standard installation is in C:\geoexplorer

Sounding results are stored in C:\geoexplorer\results
This location will also be used to store the video information: video files and the index file.

Make sure that you can start GeoExplorer:
• When there is no valid license, GeoExplorer will ask you to enter a license key when you start it the first time. Please call +31 (0)71 301 9251 or email to elektro@eijkelkamp-geopoint.com for a new license. Make sure you have the machine code/id ready.
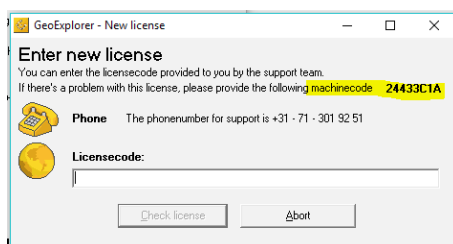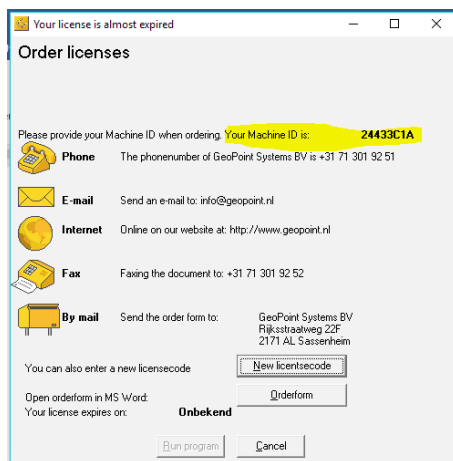
6.2 Software for the CPT VideosignalSplitter

To use the camera in the cone, we need 2 software elements:
• The drivers for the CPT VideosignalSplitter
• The video codec for recording

First install the drivers for the CPT VideosignalSplitter.
These are in the software distribution in folder "\Aplic"

- Go to \Aplic
- Start autorun.exe

- Select "*Install Drivers*"
- Follow the instructions and finish the installation
- Exit the installation screen

6.3   Installation of the codec

We need a codec for recording. For this application we need the XVid codec. In the software distribution there is a version of the Xvid codec available.

- Start \XVid\Xvid-1.3.4-2015061.exe
- Follow the instructions
- When asked for play back media types: select all 3 options

The settings for this codec are described in chapter 5 'Running the application'

7.   USB tips

When using this application, you need at least 3 free USB ports.
- The CPT VideosignalSplitter
- The dongle
- The GeoLogger

Most PCs don't have that many spare USB ports, so it is adviced to use an USB hub. Use a hub with at least 3-4 ports and it has to be USB 2.0 compatible. There is no need to use an USB hub with an external power supply.

☞   **The USB cable from the CPT VideosignalSplitter needs to be connected to the PC, not via the hub. This is because it has to power the internal hardware and has a high data throughput.**

Use the hub for the GeoLogger, dongle, USB sticks, mouse, keyboard, etc.

Using a hub also is minimizing the wear on your fixed USB ports on the PC.

8.   Running GeoExplorer and the app

Both GeoExplorer and the app have their own way to use the display on your PC.
GeoExplorer will use the whole display, without any handles for minimizing or moving the window around.

The video frame from the app likes to stay on top, which is in conflict with GeoExplorer.

These issues will be solved in a future version of GeoExplorer and the app.

For now we have a couple of solutions to deal with this.

8.1   Key combinations

When using the key combinations Windows+Tab or Alt+Tab you can choose which application will be put on top. Select GeoExplorer or the app.

8.2   Using 2 displays

You can use an extra display on your PC. GeoExplorer will always run fullscreen on the first display, so position the app on the second display.

☞   **First start the app and move it to the second display before starting GeoExplorer.**

A shortcut for configuring the setup of the displays is Windows+P.

8.3   Using a virtual desktop

In Windows 10 there is an option to emulate 2 displays, this is called virtual desktops.

Use Windows+Tab to bring up the screen to chose between the running applications.
Top left there is an option to start an extra desktop and to switch between desktops.

Use one desktop to start GeoExplorer and use another desktop to start the app.

To switch between virtual desktops:
• Windows+Tab: select the desktop you want to see
• Windows+Ctrl+LeftCursor or Windows+Ctrl+RightCursor to switch desktops