UNDERWATER INFORMATION SYSTEMS

WINDOWS APP / VERSION 1.1.0

UWIS Grammetry

Bring position and depth to your underwater imagery.

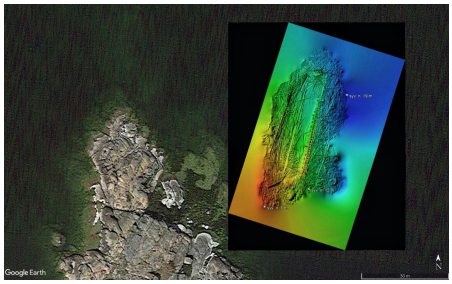
Connect your UWIS dive log to photos, extracted frames and video. Turn recorded positions into useful references for 3D reconstruction and clear on-screen video data.



Example textured wreck model

Photo positioning

Prepare image positions for Agisoft Metashape.



Positioned imagery and a depth model

Video overlay

Show the dive data alongside the footage.



Depth, time, coordinates, route, chart and logo

ONE LOG. TWO OUTPUTS. A SHARED TIMING REFERENCE.

01 Record

Capture the camera diver's UWIS track and photos or video. Note a shared timing reference.

02 Align and review

Export QGIS TXT from Tracker. Match a shared moment, then check the route and depth.

03 Export

Create an image-position CSV for Metashape or an MP4 with your chosen video overlays.

DOWNLOAD UWIS GRAMMETRY

Download for Windows

dl.uwis.fi/Grammetry/download.php

Windows 64-bit / English interface
Signed installer / No Python needed
Street maps require internet

QUICK GUIDE / PHOTO POSITIONING

From images to camera positions

Still photos and numbered video frames for Agisoft Metashape

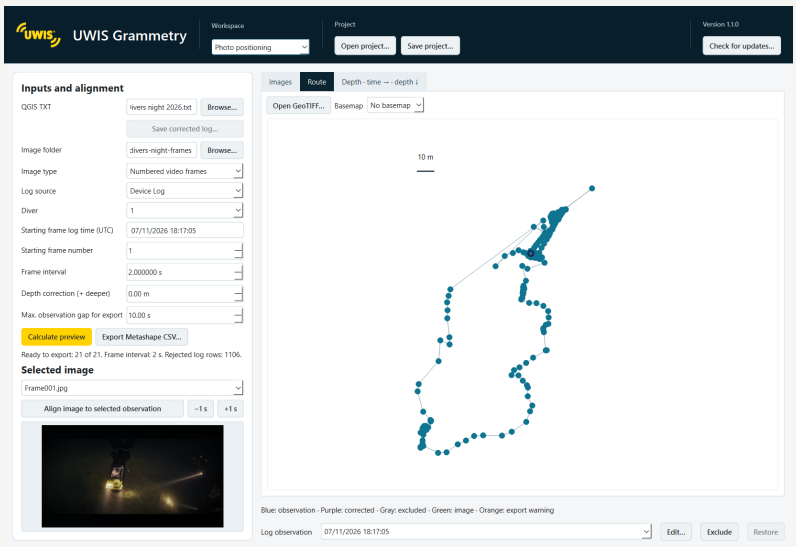


Photo positioning workspace - example with extracted frames

BEFORE YOU START

Input
Tracker QGIS TXT export + image folder.

Timing
EXIF capture times for stills, or frame numbers and a known interval.

Output
CSV with filename, longitude, latitude and negative depth as altitude.

1 Open the inputs

Choose **Photo positioning**. Open the **QGIS TXT** and **Image folder**. Select the camera diver and **Log source**: Tracker session = recording PC local time; Device Log = UTC.

2 Choose the image timing

Photos (EXIF) uses capture timestamps. **Numbered video frames** uses the last number in each filename. Set the starting frame number, matching log time and interval (e.g. 2 s). Extract frames before using this app.

3 Match a shared moment

Select an image and its matching log observation, then click **Align image to selected observation**. Or enter the first image's log time / a signed clock offset. Fine-tune with **-1 s / +1 s**.

4 Calculate and check

Click **Calculate preview**. Review the images, route and depth. Edit or drag incorrect observations, or exclude them. Set camera **Depth correction (+ deeper)** if needed, then recalculate.

5 Export to Metashape

Choose **Export Metashape CSV...**. Use the same image filenames when importing the reference CSV into Metashape. Rows without a usable position/depth, or beyond the gap limit, are omitted.

6 Keep the work reusable

Save corrected log... writes a reusable TXT copy. **Save project...** stores the active workspace's alignment and edits. Keep the original log, image folder and any GeoTIFF available when reopening.

Timing example: camera 12:00:00 = log 10:00:00 at the same moment. Apply **-7200 s**; EXIF spacing between photos is preserved. Default maximum observation gap: **10 s**.

QUICK GUIDE / VIDEO OVERLAY

Put the dive data on screen

Synchronise once, choose the overlays and export the selected clip



Example overlay - position, depth profile and layout are configurable

AVAILABLE OVERLAYS

Depth / log time
Latitude and longitude (6 decimals)
Route + current position
Depth chart for a chosen interval
One logo or image

Choose **Edit overlay**, enable **Show this overlay in video**, then drag it or adjust **Left / Top / Width**.

1 Open video and data

Choose **Video overlay**. Open the video and QGIS TXT. Select the diver and log source. The timeline pauses while dragging; playback resumes only if it was playing beforehand.

2 Align the video to the log

Pause at a shared moment. Select the matching log observation and click **Align current video here**. Or enter **Log time at video start** for the original video's **0:00**, not the trimmed start. Use **-1 s / +1 s** to refine.

3 Set the route background

Select **Route** in **Edit overlay**. Choose a light panel (**No basemap**), **Transparent (route only)**, **Street** or **GeoTIFF**. For Street, frame the map in the yellow square and click **Use this Street view in video**.

4 Add a chart and logo

For **Depth chart**, set **Depth chart from / until** in seconds from video 0:00, or copy the export interval. Its yellow marker follows playback. For **Logo / image**, click **Add image...**; PNG transparency is preserved.

5 Choose the clip and quality

Set **Export from / until**, or use **Use current** at each boundary. **Original bitrate** is the smaller-file default; **High quality** can be larger. Original video dimensions are preserved.

6 Export and save the setup

Click **Export video...** to create MP4 (H.264 + AAC audio when present). You can cancel the export. **Save project...** retains layout, alignment and the captured map; the logo is embedded. Keep the source video, log and any GeoTIFF available; they stay external.

Keep in mind: one time offset applies to the whole video. Long data gaps show missing values. Street needs internet; GeoTIFF needs the correct CRS/EPSG. Video is re-encoded at a constant frame rate.