About Qimera (vn2)

Qimera. | Multibeam processing.
It's that easy.

Qimera offers full sonar processing and point cloud cleaning for a wide variety of industry standard formats. Qimera is easy, and will always remain so, with rich data extraction for a streamlined, "hands off" data import and guided workflows to reduce human error and training requirements. Automation is achieved via Qimera Live, for near real-time data processing, highly customizable spline filters for rapid data cleaning, and Processing State Management to ensure the correct sequence of post-processing actions with a single-click. Advanced tools include the Patch Test tool and Wobble analysis to diagnose and fix any errors in the multibeam and motion sensor integration, and the TU Delft Sound Speed Inversion to automatically correct refraction error. Additional analysis tools include Time Series Multiplots, Cross Check tool and Extinction Tests, which all work to ensure high multibeam data quality and system health. Great efficiency is gained with Cooperative Cleaning and Production Line Processing, which allow for multiple personnel to work on the same project simultaneously, and "Connected" S-57 feature management that ensures agreement between features and bathymetry. Qimera offers multibeam backscatter processing and mosaicking via Fledermaus Geocoder Toolbox, and Midwater for rapid water-column processing.

Qimera versions are differentiated by users who wish to work with processed points, and those that need full sonar processing:

Qimera Clean	For editing, filtering, gridding, and product generation from a wide variety of point cloud formats. Includes Qimera Live and Cooperative Cleaning. Ideal for any user only requiring point editing. For example, users employing real-time RTK heights and without need for sonar reprocessing.
Qimera	Includes all the functionality of Qimera Clean, but with both point cloud and raw sonar formats (DB, ALL, KMALL, S7K, HSX, JSF, GSF, XSE, R2SC). Includes advanced analysis tools—Patch test, Wobble analysis, Time Series Multiplots, Cross Check, and Extinction test. The user may return to the original ping anytime and maintains full control of the sonar data.
Midwater add-on *Available as add-on with:* • *Qimera 2*	Qimera Midwater add-on enables feature and shoal sounding extraction from multibeam water column recorded in DB, ALL/KMALL and S7K formats. It is the ideal tool to rapidly detect objects in the water column, and to extract and process water-column soundings to ensure the least depths are attained atop wrecks and narrow obstructions. Also very useful for the quick diagnosis of interference or bubble washdown.
Backscatter add-on *Available as add-on with:* • *Qimera 2*	Backscatter add-on; creates corrected backscatter mosaics and supervised seafloor characterizations based on the Geocoder algorithm. It includes multi-frequency mosaicking and intra-vessel normalization. An ideal tool for seafloor characterization, inferring sediment types, and habitat mapping workflows. The functionality is provided through FMGT.

QPS.

ENC Plus add-on

Available as add-on with:
- Qimera 2 Clean
- Qimera 2

The ENC PLUS Add-on allows the user to create IHO S57 objects and includes full feature management capabilities for nautical charting workflows. Wrecks, rocks, and obstructions may be linked to a sounding or grid node, ensuring features maintain agreement with bathymetry and greatly increasing efficiency in feature management workflows.

TU Delft Sound Speed Inversion add-on

Available as add-on with:
- Qimera 2 Clean
- Qimera 2

The SVP Correction (TU Delft) Add-on is an automated and repeatable algorithm to ensure high data quality by fixing refraction that is evident in the data. Refraction is mitigated by reprocessing with a harmonic sound speed value, presented to the user as an alternative solution.

Structure from Motion for Bathy add-on

Available as add-on with:
- Qimera 2 Clean
- Qimera 2

The Structure for Motion for Bathy add-on allows converting photogrammetry data into bathymetry data using a water level and refraction correction that is dependent on the angle of incidence.

Automatic Height Matching add-on

Available as add-on with:
- Qimera 2

This add-on allows users to automatically correct for height mismatches between neighboring passes of survey lines in a user selected area. This can sometimes be necessary in cases of poor tidal corrections offshore, or with subsea vehicles suffering from drifting pressure sensors. Like with all aspects of Qimera, we provide full user review of results, along with the ability to easily QA and potentially modify the results. The user can also easily enable/disable application of the height offset for one, many or all lines through our Processing State Management.

Qimera Feature List	Qimera Clean	Qimera
2D swathe editing tools	✕	√
3D point cloud editing tools	√	√
2D slice editing tools	√	√
Cross-Platform: Windows, Mac & linux	√	√
Point cloud import (many formats; includes LAS/LAZ)	√	√
Spline filter, automatic despiking and Cleaning Profiles	√	√
CUBE surface and despiking	√	√
Cooperative Cleaning and Production Line Processing	√	√
Time-Series editing and Time-Series Multiplots	✕	√
Sound Velocity Profile processing	✕	√
Patch Test utility	✕	√
Crosscheck utility	√	√
Wobble test utility	✕	√
Qinsy points file (.QPD) support*	√	√
Qinsy project (.Db and *.QPD support)*	✕	√
*Kongsberg EM sonar *.ALL data file support*	Point editing only	√
*Teledyne-RESON *.S7K data file support*	✕	√
*HYPACK *.HSX data file support*	✕	√
*Leidos *.GSF data file support*	Point editing only	√
*Edgetech *.JSF data file (not SSS) support*	✕	√
*ELAC *.XSE support*	✕	√
*R2Sonic *.R2SC support*	✕	√

Microsoft Window, MAC iOS and LINUX support	√	√
Data export, Gridded and Point cloud	√	√
Water Column Data (WCD) viewing	✕	√
Water Column Data (WCD) depth digitization	✕	Add-on
Post Processed Trajectory support	✕	√
Tide data (single or multi-station, and zonal)	✕	√
Multibeam Extinction tests	✕	√
Qimera LIVE	QPD format only	√
Creation of S-57 objects from bathymetry and water column data	Add-on	Add-on
Processing of backscatter data	✕	Add-on
TU Delft Sound Speed Inversion	Add-on	Add-on
Convert photogrammetry to refraction-corrected bathymetry	Add-on	Add-on
Correct for height mismatches between neighboring lines.	✕	Add-on