

## Introduction

From scraping diamonds off the seabed to dumping rock on pipelines, from anchor handling to bathymetric or side scan sonar surveys, its modular design and inherent flexibility makes QINSy perfect for a wide variety of applications.

- Hydrographic & Oceanographic Surveys
- Offshore inspections Surveys
- Marine / Offshore Construction Support
- ROV & AUV Tracking and data collection
- Barge, Tug and Fleet Management
- Dredging Monitoring & Navigation
- OBC - Seismic support
- Electronic Navigation Chart production
- Engineering Chart production, Cross section creation and Volume calculations

Since its launch in 1996, QINSy has become the standard in marine surveying, bathymetric chart and ENC production.



QPS developed QINSy with '**Doing it right first time**' principle in mind to produce almost final results on-the-fly and visualize the end result for real time quality control!

For this purpose QINSy makes use of a project template database which contains all survey configuration parameters pertinent to the project. QINSy supports most of the World's datums and projections, multiple units and geoidal models used world-wide. The project template also contains vessel shapes, administrative information, as well as vessel offsets and I/O parameters.

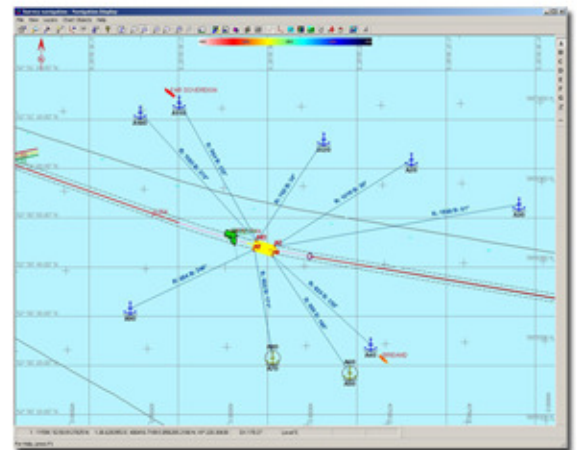
Together with real-time depth measurements, sound velocity profiles, tide levels, RTK heights etc QINSy calculates **on the fly** the final foot print positions and visualize this on the various display.

**Real-time DTM production** is the dream of every surveyor. In QINSy all computations are performed in 3D. Together with accurate RTK heights or real-time tide gauges, all depth observations are immediately available in absolute survey coordinates. This unique technique is called 'on-the-fly DTM production'. QPS was the first company introducing the delat heave method which means that the quality of the final DTM is no longer affected by heave drift caused by vessel turns.

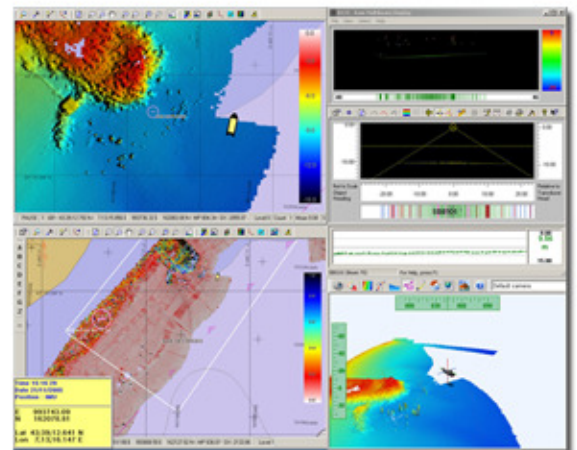
QINSy key technology is based on collection, visualization and storage of large volumes of navigation, depth and other sensor data, producing (almost) final results in real time. The **QINSy** "no limits" design criterion, allowing the user in supporting an unlimited number of vessels, sensors, computations and displays.

**QINSy Survey** is the heart of the QINSy portfolio and is used for Survey Planning, Data Acquisition, Processing and Data Cleaning. Add-on modules extend basic package functionality, including;

- Multibeam
- Side Scan Sonar
- Dredging
- DGPS QC
- S57 ENC Bathymetric update
- QLOUD
- QOMPOSER



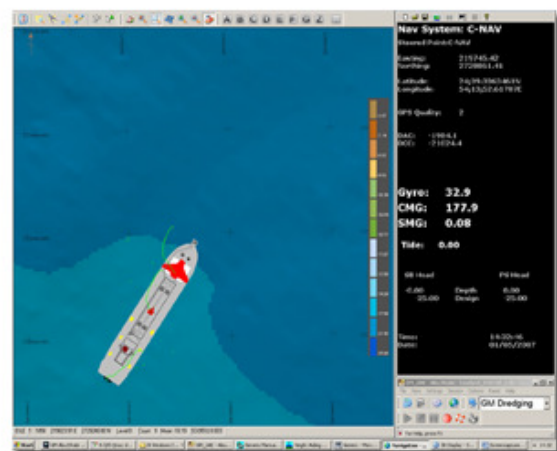
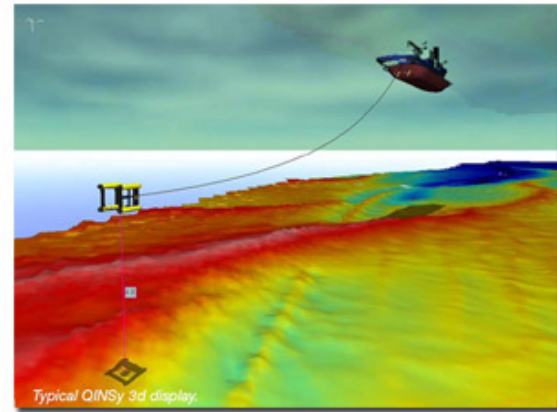
**Accurate timing** is imperative in multibeam surveys and 'Doing it right first time' principle. QINSy uses a sophisticated timing routine based on the PPS option available on most GNSS receivers. All incoming and outgoing data is accurately stamped with an UTC time label. Internally, QINSy uses 'observation ring buffers' so that data values can be 'placed' for the exact moment of an event or ping. This combination gives QINSy a proven accuracy of 1msec!



## TOTAL HYDROGRAPHIC SOLUTION; FROM BATHYMETRIC SURVEY TO ANCHOR HANDLING AND DREDGING

- Real-time calculation of footprint positions and on-the-fly DTM production
  - Accurate Timing; Combination of ring buffers and PPS gives QINSy a proven accuracy of 1 msec
  - Storage of Raw sensor data enables total replay of performed survey in the office with different settings if required
  - Total Propagated Uncertainty (error budget) calculation in real-time which can be used for on line data clipping
  - Multi layer sounding grid used for on-line visualization of; on the fly DTM, SSS draping, layer differences etc
  - Support for Anchor handling & Tug management
  - Advanced Dredging functionality
  - ROV positioning & Monitoring
  - Side Scan Sonar support for targeting and mosaicing
  - Great flexibility in sensor support which ensures interfacing of almost all sensors
  - Survey planning tool enables you to prepare your project in the office
  - Visualization of project using powerful 2D and 3D visualization techniques together with flexible alpha numerical info displays
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- Powerful Data Processing & Validation techniques
  - Sound velocity manager which enables you time & spatial processing of SVP casts
  - Plotting of Engineering charts with bathymetric data, cross en long profiles
  - Different Volume calculation methods
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- S57 ENC production; both file based as spatial database solutions incl notice to mariners, updates
  - S57 ENC distribution

QINSy Definition List	Inshore	Lite	Survey
2D/3D XYZ Data Cleaning (line by line method)	✓	✓	✓
3D Area Based Data Cleaning (QLOUD)	-	add-on	add-on
3D Grid Display (incl. 3DS Object support)	-	✓	✓
AIS Transponder and ARPA Support	-	✓	✓
Attitude sensors	-	✓	✓
Barge and Fleet Management	-	-	✓
Complex Tidal Reduction Models	✓	✓	✓
DGPS Computation and QC Support	-	add-on	add-on
Digital Chart Display (ENC) Support	✓	✓	✓
Dredging Support	-	add-on	add-on
DTM Production in Real Time	✓	✓	✓
Enhanced Multi Layer Navigation Display	✓	✓	✓
Extensive Filter Methods (on-line & post process)	✓	✓	✓
GeoTIFF Presentation Support	✓	✓	✓
Heading sensors	✓	✓	✓
Multibeam echosounder	-	add-on	add-on
Multiple Sensor Support	-	-	✓
Pipeline Detection and Eventing	-	-	✓
Position Navigation Systems (GNSS)	✓	✓	✓
PPS UTC Timing Support	-	✓	✓
Remote Display Client (LAN/WAN broadcast)	-	add-on	add-on
ROV, AUV and Multiple Object Support	-	-	✓
Side Scan Sonar support	-	add-on	add-on
Single beam echosounder	✓	✓	✓
Sound Velocity Management & Modeling	✓	✓	✓
Sound Velocity Profiler Support (File input & on-line)	File only	✓	✓
Surface Navigation Systems	-	✓	✓
Tide Gauge Support (File input & on-line)	File only	✓	✓
Tug Management Display	-	-	✓
Unlimited Sensor Support (NMEA & Non-NMEA)	-	✓	✓
USBL and LBL Support	-	-	✓
X-Section View and Profile Display	-	✓	✓



QINSy HIGHLIGHTS