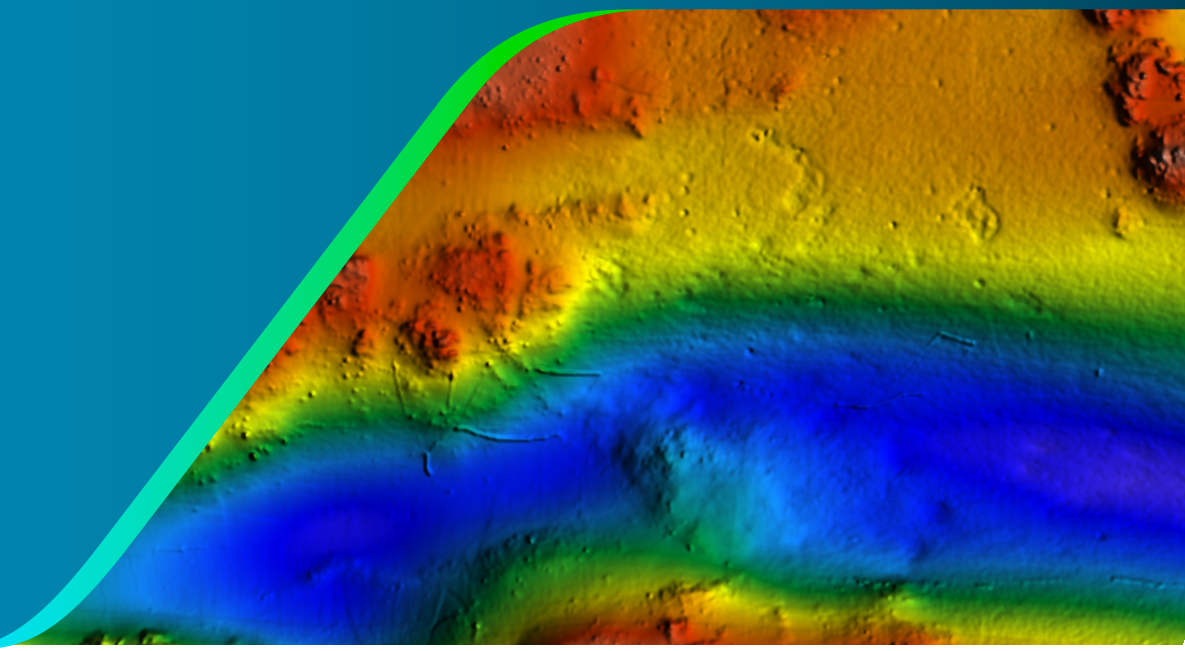
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HYPACK PRODUCTS

PROVIDING SOFTWARE SOLUTIONS FOR ALL YOUR HYDROGRAPHIC AND DREDGING NEEDS







Inside this booklet, you'll find an overview of our full range of HYPACK products designed to support every stage of your work and provides the tools you need to get the job done efficiently and accurately. Our software offers comprehensive tools needed to design surveys; collect, process, and edit hydrographic survey and environmental data; plan, track, measure, and share dredging data; and generate final products. Through ongoing industry engagement and strong partnerships with equipment manufacturers, we deliver adaptable, end-to-end solutions that support a wide range of survey operations—from small boats to complex survey vessels with integrated, networked systems.

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HYPACK® - Our standard package HYPACK® MAX encompasses survey planning, navigation, data collection, processing, and analysis software for single beam sonar, side scan sonar, sub-bottom, ADCP, and magnetometers. Its user-friendly interface and robust post-processing capabilities ensure accurate results, improved efficiency, and streamlined workflows. Whether you're mapping harbors, rivers, or coastlines, HYPACK® delivers the confidence you need in your survey data.

HYSWEEP® - Software for calibrating, collecting, and processing multibeam bathymetry, backscatter, topographic laser/lidar, and water column data. HYSWEEP® helps you achieve complete and precise coverage of your survey area while minimizing time on the water. From shallow water mapping to offshore projects, HYSWEEP® ensures high-quality results that meet the demands of modern hydrographic surveys.

DREDGEPACK® - Comprehensive dredging control solution for cutter suction, trailing suction hopper, excavator, and bucket dredges. It enhances operational accuracy through a combination of high-precision sensors and advanced software, allowing operators to position dredges with pinpoint accuracy. This ensures precise material removal while preventing over-dredging or under-dredging, reducing the possibility of costly fines and rework. DREDGEPACK® reduces downtime, increases accuracy, and keeps your project on track from start to finish.

HYPACK® GEOPHYSICS - Software that supports the collection and processing of geophysical survey data. Three common geophysical survey devices are supported: Magnetometers, side scan sonars, and sub-bottom profilers. HYPACK® GEOPHYSICS enables collating and comparing

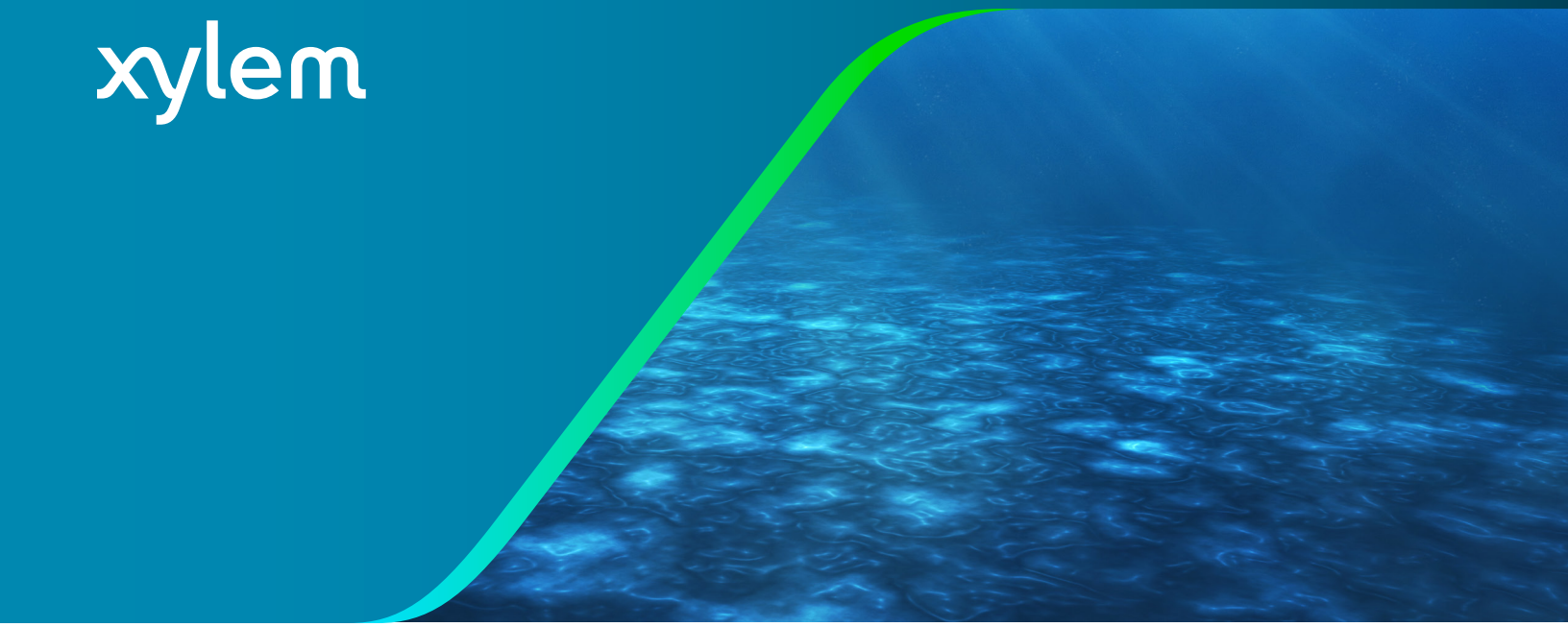
HYPACK® ECHO - Our software package for bathymetric and hydrographic surveying, which use single beam echosounder (SBES) technologies. HYPACK® ECHO is a good choice for any industry that requires an SBES survey, and is especially suitable for supporting mining operators or military surveyors in need of professional-grade software with a simplified workflow. HYPACK® ECHO is built on the same core as HYPACK®, which ensures ECHO can be maintained and continuously improved for the future.

HYPACK® Environmental Mapping - This solution addresses the global need to understand and improve marine and aquatic bodies of water through environmental monitoring, we've developed a software package that makes it easier to collect, view and analyze data in both time and space using a diverse selection of sensors. HYPACK® Environmental Mapping software is your solution for mapping water characteristics using water quality sensors and Acoustic Doppler Current Profilers (ADCPs). This robust software collects data streams from vessel-mounted sensors (or stationary sensors) to support the comprehensive mapping of marine and aquatic environments. This package ensures reliable results for research institutions, government agencies, and environmental consultants.

Multibeam on a Dredge - HYSWEEP® and DREDGEPACK® are integrated software solutions engineered for high-precision hydrographic surveying, high-accuracy data acquisition, visualization, and real-time dredge monitoring in marine construction and dredging environments.This solution offers dredging contractors, marine engineers, and port authorities the ability to reduce downtime, improve accuracy, and support the successful completion of marine infrastructure projects on schedule and within specifications.

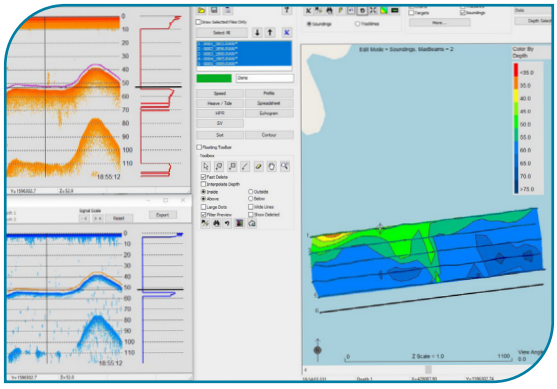
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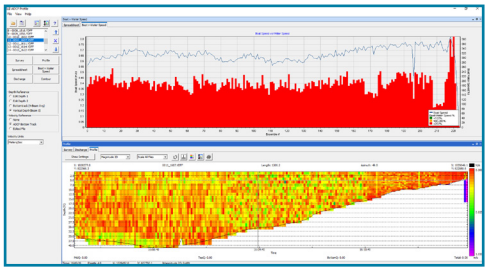
SOFTWARE FOR PLANNING, COLLECTION, PROCESSING, AND CREATION OF FINAL PRODUCTS FOR HYDROGRAPHIC SURVEYS.



With over 10,000 users, HYPACK® is one of the world's most widely used hydrographic software packages. As a comprehensive, all-in-one solution, it streamlines every phase of your survey—from initial planning to final product delivery—seamlessly and efficiently within a single, powerful package. Our standard package HYPACK® MAX encompasses survey planning, navigation, data collection, processing, and analysis software for single beam sonar, side scan sonar, sub-bottom, ADCP, and magnetometers.

FEATURES

- Easy-to-use tools for defining survey boundaries, creating planned lines and mission plans, and designing channel files.
- Built-in DynamicOpenStreetMaps and compatibility with ENCs in S-57 and S-63 format to simplify project planning.
- Support for various RTK tide correction methods and worldwide geodetic models, including a tool to convert custom geoid files.



Focused HYPACK® Packages

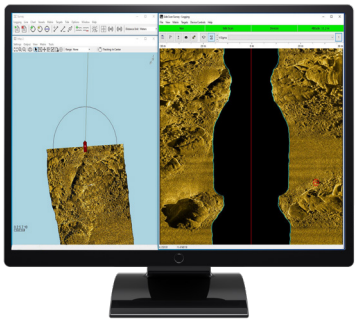
Perfect for applications that only need a limited number of tools offered by HYPACK® MAX. Ask us about HYPACK® ECHO, Environmental Mapping, GEOPHYSICS, LITE, OFFICE, and SURVEY to learn more.

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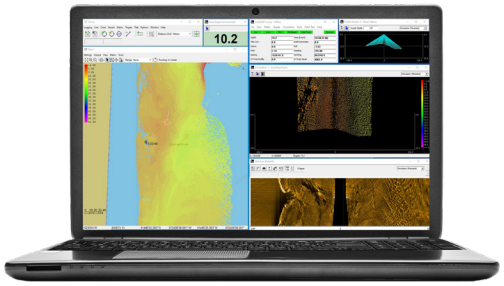
BENEFITS

1. Flexible licensing options and software packages allow you to select the best option for your specific survey needs and budget.
   - HYPACK® MAX encompasses survey planning, navigation, data collection, processing, and analysis software for single beam sonar, side scan sonar, sub-bottom, ADCP, and magnetometers.
   - Focused software packages offer a cost-effective way to obtain the essential set of HYPACK® MAX tools needed for specialized applications.
   - Lease HYPACK® software packages for as little as three days – take advantage of easy lease extension and the option to apply up to 85% of the lease price paid to the purchase of a full package.

2. Simple to set up, configure, and integrate with most sensors on the market today including:
   - Acoustic doppler current profilers (ADCPs)
   - GNSS positioning devices
   - Magnetometers
   - Motion sensors
   - Multibeam and LiDAR devices (HYSWEEP license is required)
   - Single beam sonars
   - Side scan sonars
   - Sub-bottom systems



3. Access to our dedicated technical support team, who are readyto assist with expert guidance and solutions for even the most complex scenarios.



4. Quarterly updates provide new features, performance enhancements, and timely bug fixes.

Compatibility with over 500 sensors, with additional drivers added every year as new technology emerges.

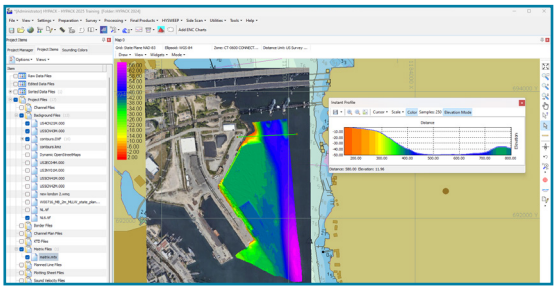
Ability to interface with unmanned and autonomous platforms as well as conventional vessel autopilot systems to optimize survey efficiency.

Real-time navigation and data collection display for surveyors and helmsman, including remote viewing capabilities.

Powerful processing tools which allow you to manually clean or apply automatic filters to your data.

Tools for final product creation and visualization, include surface modeling, 3D point cloud display, volume calculations, chart plotting, and ENC generation.

Ability to export to a wide range of formats for seamless data sharing and integration with external CAD, GIS, analysis, and visualization software.



SUPPORTED CHART FILES INCLUDE
TIF and Esri TIF, DXF, georeferenced image files, S57, S63, S102

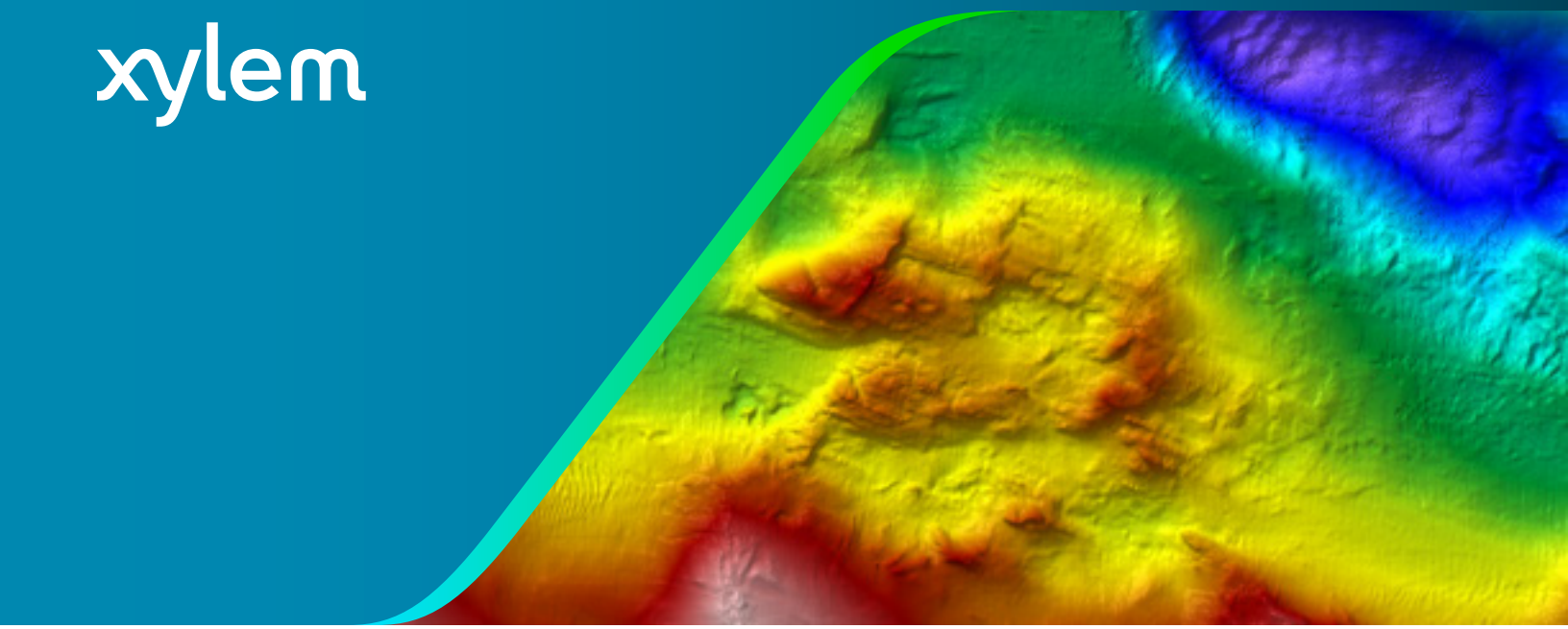
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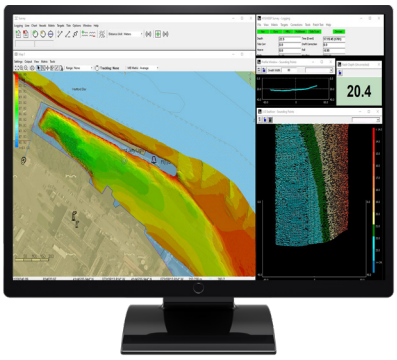


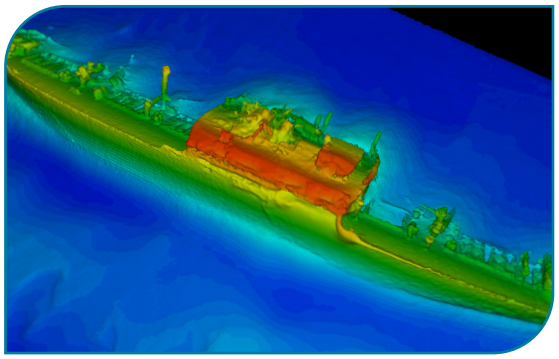
HYSWEEP®

SOFTWARE FOR CALIBRATING, COLLECTING, AND PROCESSING MULTIBEAM BATHYMETRY, BACKSCATTER, TOPOGRAPHIC LASER/LIDAR, AND WATER COLUMN DATA

FEATURES

- Interfaces with nearly all multibeam sonars and several popular compact laser and LiDAR systems on the market today.
- Simplistic, easily repetitive tools for system calibration (Patch Test).
- Backscatter, intensity, and water column data from multibeam sonars and topographic laser and LiDAR systems can be acquired simultaneously with sounding data.
- Real-time 3D point cloud display during data collection allowing for verification of data accuracy.
- Efficient, user-interpretive processing of large data sets within our 64-bit HYSWEEP® Editor.
- Tools for data analysis include TPU, CUBE, Wobble Analysis, and Beam Angle (Performance) Tests.
- Export data to ASCII XYZ, LAS, matrix MTX' files, and multiple custom formats. Data can be gridded to user-defined spacings, user-defined horizontal and vertical sounding positions including actual XY and cell center, and have sounding reductions applied via median, average, mode, standard deviation, and many more.





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Included in HYSWEEP®

- The **HYSWEEP® Patch Test** is a simple, repetitive system calibration tool, that provides the user with a statistical analysis and graph of the computed values along with the ability to override and recalculate finer adjustment values, as needed, for the angular mounting offsets.
- **HYSWEEP® SURVEY** provides excellent real-time coverage displays, TPU, and other quality control tools for real-time analysis of the data, allowing you to quickly and efficiently review what you've acquired and verify survey completion before returning to the office for data processing.
- **HYPACK Real Time Cloud (RTC)** runs in conjunction with HYSWEEP® SURVEY and displays both multibeam and topographic laser data in a corrected, geo-referenced, and color-coded point cloud. The RTC window increases visual feature detection and improved data quality control.
- The **HYSWEEP® 64-bit Editor** allows you to review your raw data components, incorporate sound velocity and water level corrections (including manual, RTK, and post-processed RTK tides and VDatum), and apply user-defined and statistical filters to quickly assist the cleaning of your data and output a variety of data subsets.
- The **HYSWEEP® Water Column Logger** allows users to ensure the full detection of fine targets above the seabed, such as wrecks, masts, and cables.
- **GEOCODER™** is included in HYSWEEP® (licensed from UNH CCOM), allowing you to generate mosaics and perform bottom classification using average backscatter and snippet data.

HYSWEEP® interfaces with the following systems, with additional drivers added each year as new technology emerges:

Multibeam

- 2G Robotics – ULS-500
- Atlas – Bomasweep, Fansweep, Hydrosweep
- Benthos – 162X, C3D
- BlueView – 1350, 2250, 5000
- EdgeTech – 2205, 4600, 6205/S2
- FURUNO – HS series
- GeoAcoustics – GeoSwath
- Hydro-Tech – MS400U
- IBeam
- Imagenex - Delta T, DT100,101,102 SIR (and Dual Heads)
- ITER Systems (Bathyswath and SEA SWATHplus)
- Klein – HydroChart 3500/5000, UUV-3500
- Kongsberg - MS1000
- Kongsberg - EM 1002/2000/2040/Dual
- Kongsberg - EM 3000/3002/3002D/302
- Kongsberg - EM 710, ME70
- Kongsberg - Mesotech M3
- Kongsberg - KMALL
- Norbit – WBMS, iWBMS, WingHead, and Dual Heads
- Odom – Echoscan II, ES3 (Dual), MB1 (Dual), MB2 (Dual), Miniscan
- Pico-Tech – PicoMBES 120/130
- PingDSP - 3DSS-DX, -iDX
- R2Sonic - Sonic 20XX, Dual Head 20XX, and VOX Series
- RESON - 71xx (Dual), 81xx (Dual), 90xx, T20 (Dual), T50 (Dual), T51 (Dual)
- Ross Smart Sweep
- Seabeam 2100, 3000 Series, SB1000 Series
- Tritech Gemini
- Tritech SeaKing
- Velodyne HDL, VLP
- WASSP – S3/F3 series

LiDAR

- Carlson – Merlin
- Leica – P15/16/20/30/40/50
- MDL – Dynascan
- Optech – ILRIS, Polaris
- Ouster - OS-1
- Riegl – LMS, V, and VUX Series
- Renishaw – SLM
- Velodyne – VLP-16 series/VLP-32 series/HDL-32E series

Inertial and Motion Sensors

- Advanced Navigation INS
- Applanix POS MV/LV – All Models
- CodaOctopus - F170/175/180/185/190/290
- IXSEA/IXBLUE – HYDRINS/OCTANS/PHINS
- Kongsberg/SeaTex – SeaPath, MRU5/6
- Novatel – SPAN
- SBG – Ellipse/Ekinox/Apogee/NavSight
- TSS – 335B/DMS

Sound Velocity Profilers

- AML – 3/6, BaseX2
- SonTek Castaway CTD
- Valeport SWiFT SVP

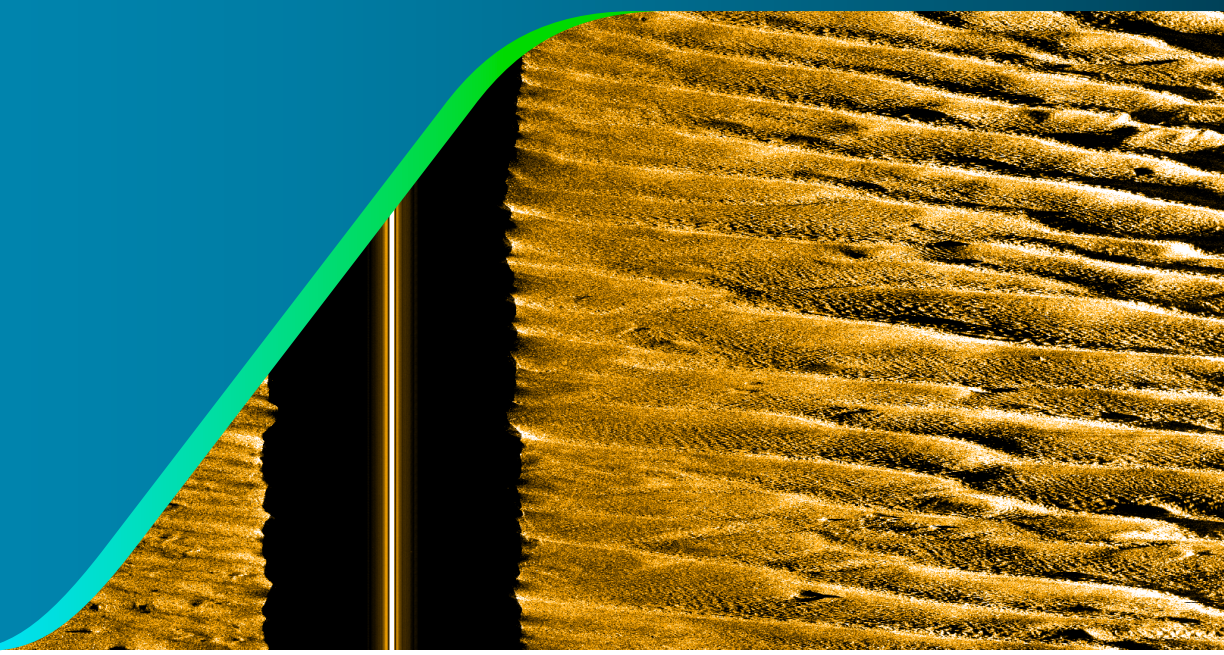
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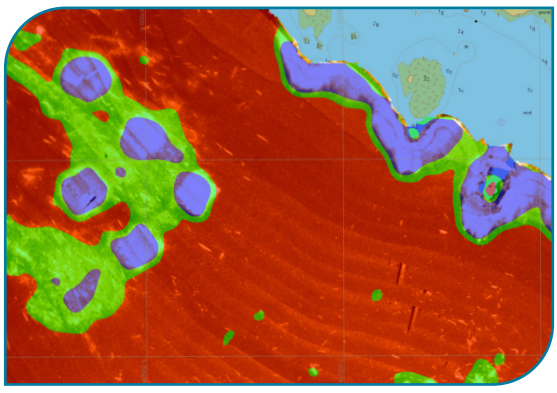


HYPACK® GEOPHYSICS

SOFTWARE FOR ACQUIRING AND PROCESSING SUB-BOTTOM, SIDE SCAN, AND MAGNETOMETER DATA

BENEFITS

- Simple and cost-effective solution
- Can be upgraded to HYPACK® MAX
- On-call technical support provided by experienced and knowledgeable customer support team members



HYPACK® GEOPHYSICS supports the collection and processing of geophysical survey data. Three common geophysical survey devices are supported: Magnetometers, side scan sonars, and sub-bottom profilers. HYPACK® GEOPHYSICS enables collating and comparing data from these devices in one interface.

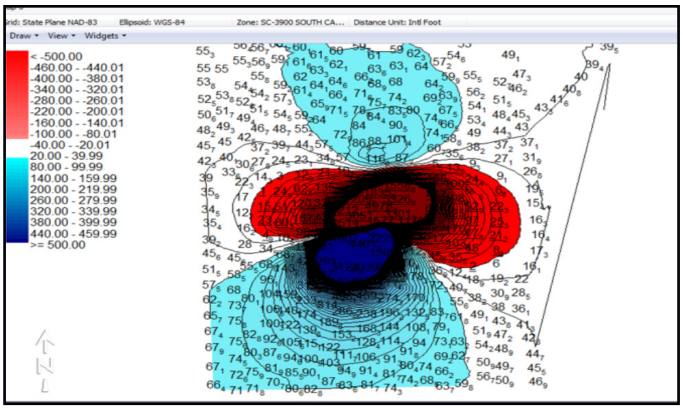
FEATURES

- Survey planning and navigation support
- MAVLink, Seafloor, SeaRobotics, Spatialnetics
- Side Scan data collection, targeting, and mosaic tools
- Sub-Bottom collection and analysis tools to digitize layers
- Magnetometer support to collect, target, and create contours
- Multi-frequency display to see all frequencies once
- Overview display to see your entire file at once or jump to specific areas of interest quickly
- Modern gain algorithms

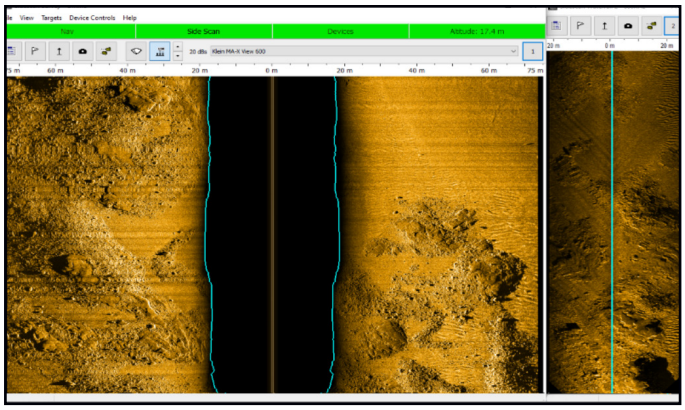
SEGMENTATION SUPPORT

- Create contours using side scan or backscatter data

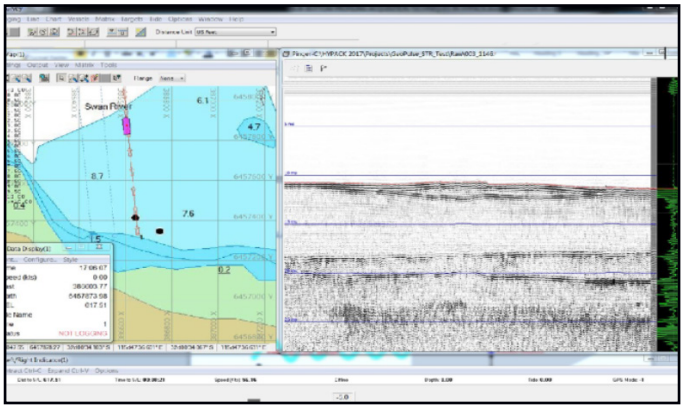
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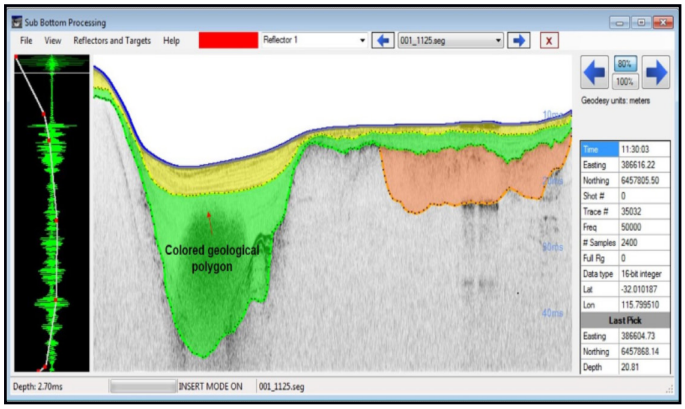
Dipolar target created in the Magnetometer Editing software displayed as a DXF Contour.



Collect data and map side scan data with the latest sensors on the market, including this data from the Klein MA-X View 600.



Navigation support includes both differential and RTK GPS units applies to all sensor options.



Processing Sub-Bottom data allows for the creation of geological polygons to visualize layers within the recorded data.

HYPACK® GEOPHYSICS Specifications

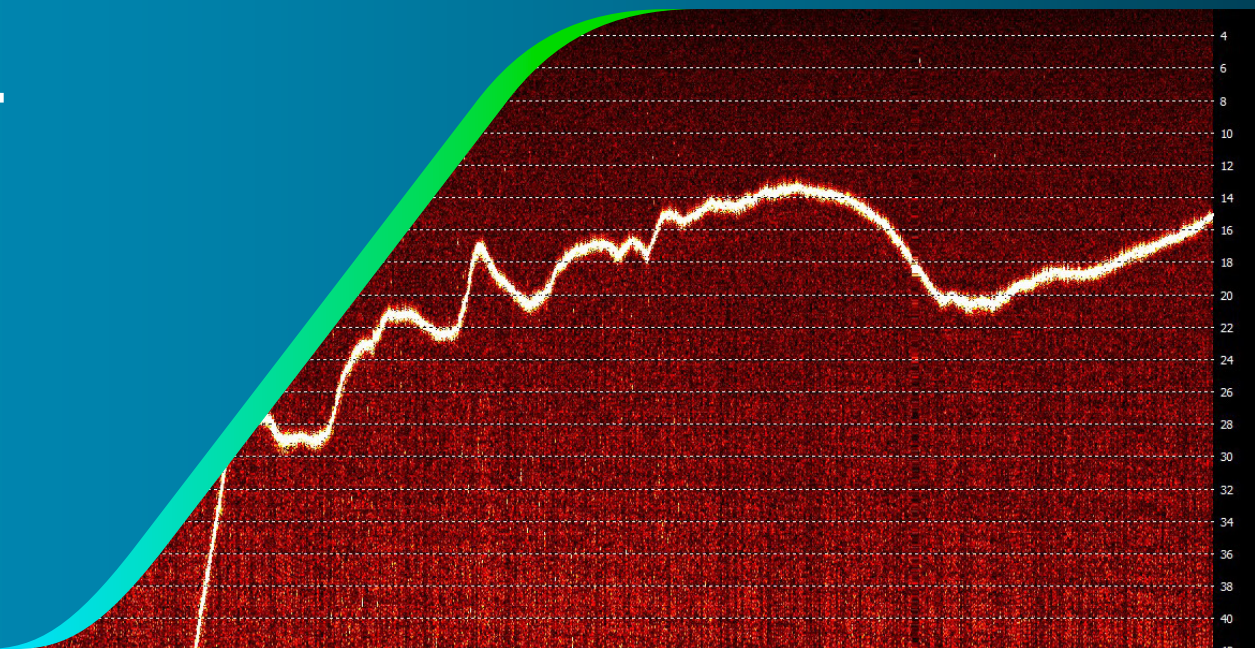
Survey Planning	HYPACK® Shell, Web Map Server, Line Planning, Autonomous Mission Planning.
Geodesy	Support for over 100 pre-defined grids including UTM, State Plane, and many country-specific grids. Geodesy supports EPSG code search.
Position Support	GPS / GNSS / RTK / INS support, including Applanix, SBG, VectorNav, and many others.
Magnetometer Support	DF 1000, Gem Systems GSM-19, Gem Systems GSMP-35UC, Insight Dual Mag, IXSEA Magis, JW Fisher Proton (3,4,5), JW Fisher Pulse 12, Marine Magnetics SeaQuest (3/4 Channel), Marine Magnetics SeaSPY Explorer, Marine Magnetics SeaSPY Gradiometer, OFG SCM Magnetometer, Quantro Sensing, Scintrex ENVI GRAD, SMM II, UC Magnetometer, Geometrics (881, 882, G-858, G-882 TVG, G-882TVG Mag and Transverse Gradiometer)
Side Scan Support	Benthos 162x, Benthos C3D, C-MAX CM2, EdgeTech (272-T/TD, 4100, 4125, 4200, 4205, 4300, 4600/6205), GeoAcoustics (Digital Side Scan, GeoSwath), Imagenex (878 RGB, AUV, SportScan, YellowFin), Innomar SES, Klein (3000, 3500 Deep, 3900, 4000, 4900, 4K-SVY, 5000, D3500TF, HydroScan 3500, UUV-3500), Kongsberg PulSAR, Marine Sonic (Sea Scan, Sea Scan ARC Explorer, Sea Scan HDS, SonarTech SonarBeam S-150, Tritech (SeaKing, StarFish 450/452, 990)
Sub-Bottom Support	EdgeTech 3000 Series, Falmouth HMX-6xx, Fugro 32 Bit Analog, Innomar SES-2000, Knudsen Pinger, Knudsen Chirp, Benthos SBP, Specialty Devices, SyQwest B2010/SB3510HD, SyQwest StrataBox, Teledyne Odom Chirp III.

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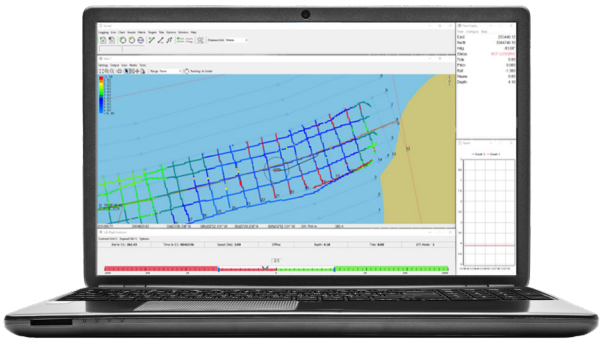


HYPACK® ECHO

A SIMPLIFIED SOLUTION FOR SINGLE BEAM BATHYMETRIC AND HYDROGRAPHIC SURVEYING

BENEFITS

- Simple and focused solution.
- The software is designed to display only the tools applicable to SBES surveying.
- Support provided by our experienced and knowledgeable support team.
- Upgradeable to our full suite of tools, HYPACK® MAX.



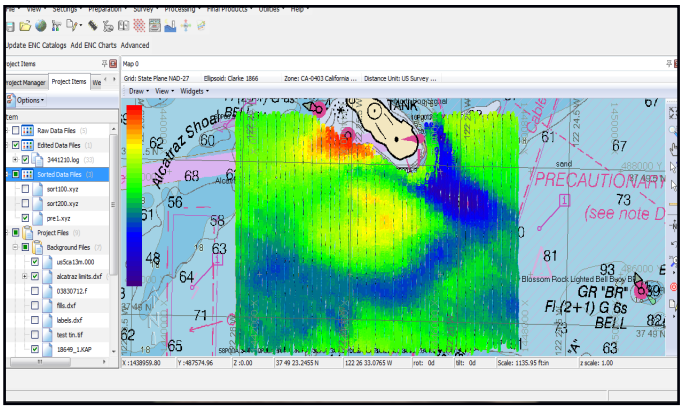
HYPACK® ECHO is our software package for bathymetric and hydrographic surveying, which use single beam echosounder (SBES) technologies. HYPACK® ECHO is a good choice for any industry that requires an SBES survey, and is especially suitable for supporting mining operators or military surveyors in need of professional-grade software with a simplified workflow. HYPACK® ECHO is built on the same core as HYPACK®, which ensures ECHO can be maintained and continuously improved for the future.

FEATURES

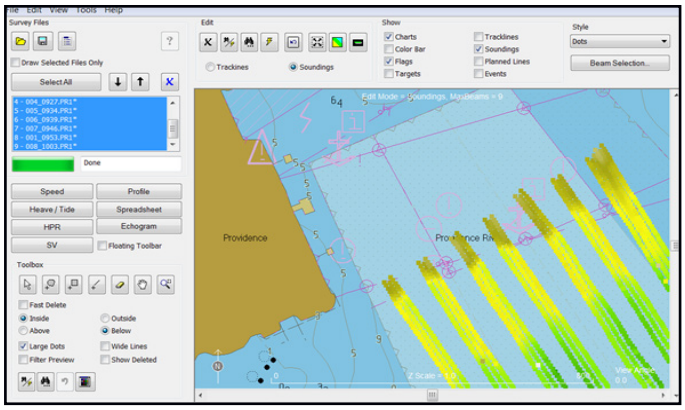
- Survey planning and real-time navigation
- Full positioning support including RTK and Differential GPS
- Support for popular AUV interfaces (MAVLink, SeaRobotics)
- Background charts (ENC and Web Map support)
- View and analyze single beam data, including echogram support
- Final Products include plotting and exporting to ASCII XYZ and DXF

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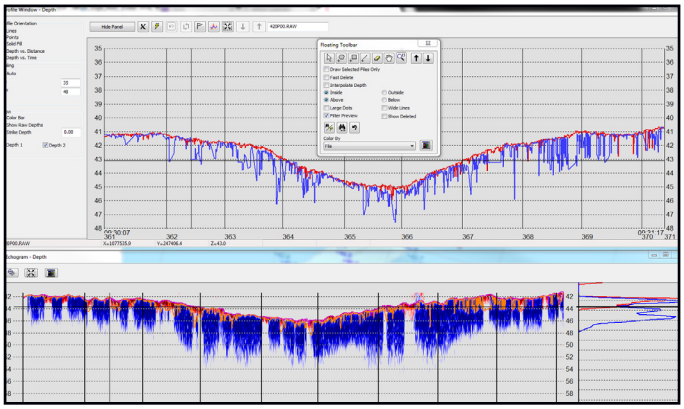
HYPACK® ECHO EDITOR: Powerful and intuitive software for single beam echosounder data review, cleaning and visualization.



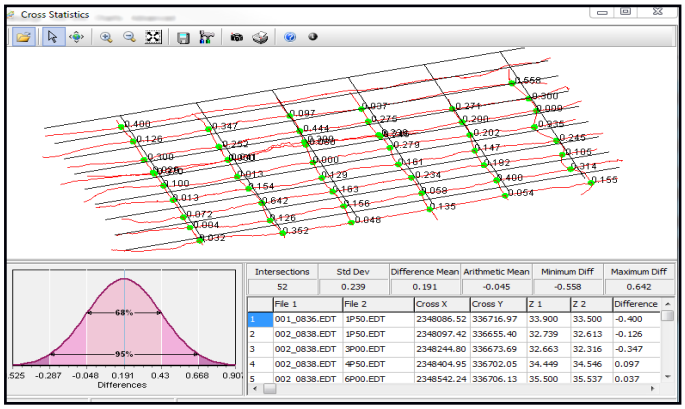
Colored sounding on ENC background chart.



Single beam data editing, sorting, and DXF Contours.



Single beam bathymetric profile and echogram.



Cross-statistics module for performance test.

HYPACK® ECHO Specifications

Survey Planning	HYPACK® Shell, Web Map Server, Line Creation, Autonomous Mission Planning.
Geodesy	Support for UTM, State Plan, Multiple Grids, WGS84, and Other Ellipsoids.
Position Support	GPS (NMEA-0183), RTK Support (NMEA, POS MV, SBG, VectorNav)
Motion Support	TSS1 Message
Echosounders Supported	Atlas, CEEDUCER PRO/CEESCOPE, EchoLogger, ELAC MKII HydroStar, HydroBall, Innerspace, Kaijo, Knudsen, Kongsberg, Marimatech, NaviSound, Navitron, Ocean Data Bathy, SonarLite, SonarMite, Teledyne Odom, and any NMEA compatible sonar.
Data Processing Engine	HYPACK® Single Beam Editor (SBMAX64) with DXF Contour and XYZ Sort Option.
Export Files	XYZ, HS2x, EDT, DXF, DWG, DGN, KMZ, SHP
Final Products	Sort, Export to XYZ, Plotting, DXF Contours

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HYPACK® Environmental Mapping

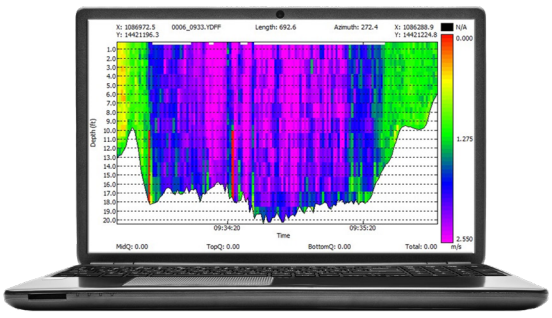
SIMPLIFYING DATA COLLECTION, PROCESSING, AND MAPPING THE CHARACTERISTICS OF WATER

BENEFITS

- Simultaneous data collection and editing of measurements from generic sensors.
- ADCP data collection, editing and mapping (velocities, depths, backscatter, and discharge).
- Generate and export plots, charts, and final products to help compare, analyze, and communicate data results.
- Plan surveys, collect various brand sensor measurements with real-time QA/QC, edit and map results all in one software package.

To address the global need to understand and improve marine and aquatic bodies of water through environmental monitoring, we've developed a software package that makes it easier to collect, view and analyze data in both time and space using a diverse selection of sensors. HYPACK® Environmental Mapping software is your solution for mapping water characteristics using water quality sensors and Acoustic Doppler Current Profilers (ADCPs). This robust software collects data streams from vessel-mounted sensors (or stationary sensors) to support the comprehensive mapping of marine and aquatic environments.

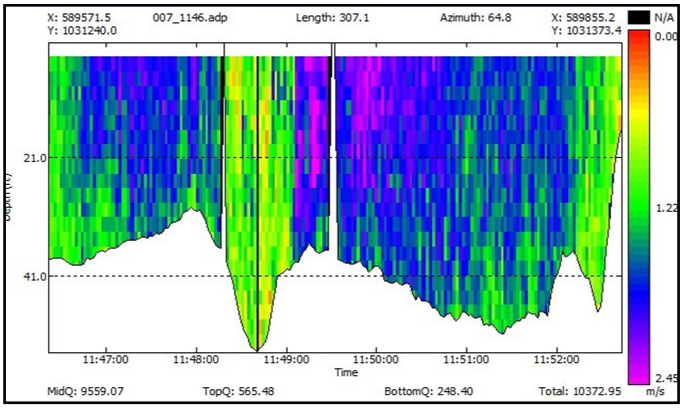
Environmental surveys involve a range of sensors, methods, and procedures, and users often need to compare data from different sources or projects. With our software, you can align datasets both geographically and temporally to gain valuable insights about water bodies through the trends and correlations of the measured parameters. The flexibility of our software extends to supporting data collection and mapping from several sensor brands and types. Experience a user-friendly environmental mapping solution that makes understanding and improving our water resources more accessible than ever.



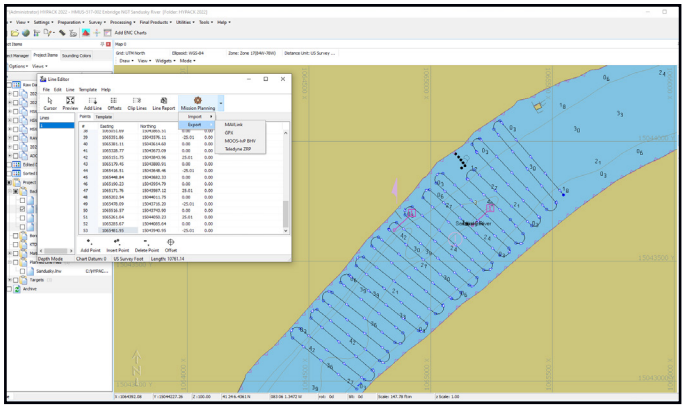


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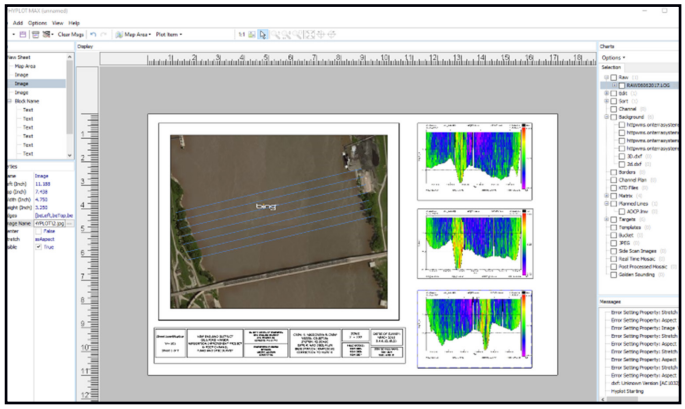
HYPACK® Environmental Mapping: Software to Collect, Edit, Visualize, Map, and Manage Environmental Sensor Data



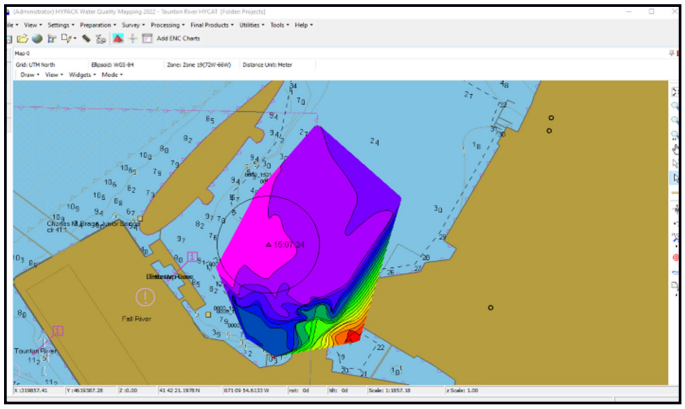
Discharge and velocity measurement for acoustic doppler current profilers.



Mission planning and QA/QC via web browser for autonomous vehicles.



Rapidly create maps and final products with HYPLOT to show data from multiple views.



Generate contour maps of environmental parameters such as this salinity plot.

HYPACK® Environmental Mapping Specific Features and Supported Brands

Survey Planning	HYPACK® Shell: Standard features including mission planning export to MavLINK, Teledyne ZRP, MOOS-IvP and GPX formats.
Geodesy	HYPACK® Geodesy Toolbox: Standard features including pre-defined, country-specific, or custom horizontal and vertical coordinate grid frames and EPSG code support.
Position and Depth Support	HYPACK® SURVEY: Standard features including GPS (NMEA-0183), RTK support, and bottom-tracking DVL; Compatible with POSMV, SBG, Trimble, VectorNAV and others. Echosounder support for depth values DBT & DPT (NMEA-0183) only.
Autonomous Vehicles	Supports i3XO, HYCAT, Seafloor Systems, ArQPOD, SeaRobotics, and most other vehicles.
Acoustic Doppler Current Profilers	Collect with real-time QA/QC or post-process data to map ADCP velocities and multiple-beam bathymetry. Calculate USGS volumetric flow rates. Compatible with SonTek, RDI, Rowe and Nortek instruments.
Environmental Sensors	Collect with real-time QA/QC or post-process data for up to 32 water quality parameters (includes generic ASCII data parser.) Compatible with YSI CastAway®-CTD, YSI 6600, YSI EXO Sonde, YSI Turbidity Monitor and other water quality sensors. Also compatible with WindObserver anemometer, and various brands of water level gauges.
Data Products	HYPLOT® MAX: Standard features for creating maps and data overlays for reports. Export to CAD or exchange (import/export) data with products from ESRI.

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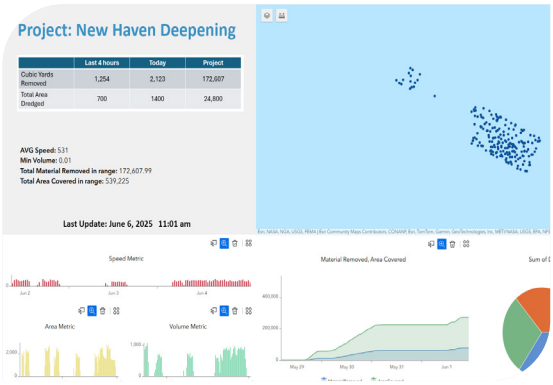
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HYPACK® LINK

FIELD-TO-OFFICE DREDGING INTELLIGENCE SOFTWARE



HYPACK® LINK is a dredging intelligence software suite that is designed to bridge the gap between field operations and strategic management, providing a single source of truth for your entire organization. By combining near real-time operational awareness with advanced analytics and reporting, we empower stakeholders at every level—from on-site crews to executive leadership—to maintain complete oversight and deeply understand project performance. Accessible via intuitive Esri powered dashboards from anywhere in the world, our solution ensures that you have the immediate, actionable insights needed to optimize operations and make data-driven decisions, regardless of where you are located.

FEATURES

- Universal Dredge Support
- Resilient Hybrid Data
- Multi-Device Accessibility
- Enterprise-Grade Security
- Strategic Decision Support System

Zero-Touch Data Collection: Automatically captures, structures, and logs operational metrics, letting operators focus entirely on safe, efficient dredging without manual input.

Autonomous Cloud Synchronization: Always-on background sync pushes organized data to the cloud as soon as connectivity is available, giving office teams instant access without crew intervention.

Edge Computing & Organization: Pre-processes and standardizes sensor data on the vessel, delivering analysis-ready, structured insights to stakeholders anywhere in the world.

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Benefits of HYPACK® LINK

Maximize Operational Efficiency: Move beyond simple data collection to actionable analysis. By identifying inefficiencies and bottlenecks in the dredging cycle—whether for cutter suction or mechanical rigs—you can optimize cycle times and reduce unnecessary fuel consumption and wear.

Real-Time Situational Awareness: Eliminate the disconnect between the office and vessel. Gain an immediate, transparent view of exactly what is happening in the field, ensuring that shore-based management can support crews and address issues the moment they arise.

Accurate Project Tracking: Remove the guesswork and inaccuracies from progress reporting. Continuously monitor the project's status against defined goals to ensure you stay on schedule, meet dredging volume targets, and manage client expectations with precision.

Unified Decision-Making: Bridge the gap between different organizational levels. With secure, role-based access on any device (phone, tablet, or computer), everyone from the site supervisor to the executive board operates using the same single source of truth, speeding up critical decisions.

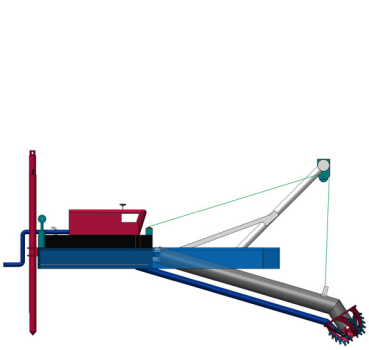
Data Security & Continuity: Protect your most valuable operational assets. With robust user access controls and a hybrid storage system that syncs local data to the cloud, your fleet's performance history is secure and available even after working in remote, low-connectivity zones.

WHAT'S INCLUDED IN HYPACK® LINK?

Users will receive one seat to upload dredging data to the cloud and another seat to view that data through a web browser from anywhere in the world.

- Eliminate the frustration of delayed project reports by using a solution that delivers instant, low-latency insight into performance.









FIELD

The dredge generates vast amounts of information from it's sensors that can be used to understand the performance of the operation (position, heading, density, flow, etc.)



Web server accessible from any browser on any device

USER-SIDE

Receive actionable metrics and insights that support real decision-making, instead of raw data that needs extensive analysis before it becomes useful.

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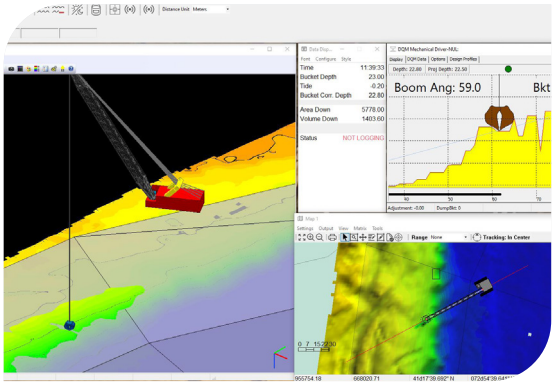
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DREDGEPACK®

SOFTWARE FOR DREDGING OPERATIONS

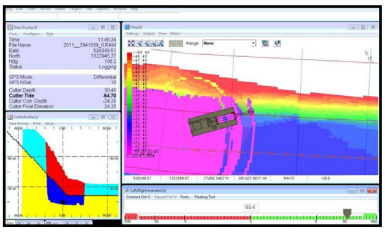


DREDGEPACK® is a comprehensive dredging control solution for cutter suction, trailing suction hopper, excavator, and bucket dredges. It enhances operational accuracy through a combination of high-precision sensors and advanced software, allowing operators to position dredges with pinpoint accuracy. This ensures precise material removal while preventing over-dredging or under-dredging, reducing the possibility of costly fines and rework.

Beyond assisting the operator, DREDGEPACK® serves as a crucial monitoring and compliance tool for project managers and engineers. It continuously tracks progress, providing supervisors with real-time oversight to ensure dredging meets design specifications and regulatory requirements. This proactive approach helps identify inefficiencies early, preventing costly delays while maintaining environmental and contractual compliance. By minimizing over-dredging, the system also reduces material displacement costs and fuel consumption, making dredging operations both cost-effective and environmentally responsible.

FEATURES

- Fast and reliable customer support
- Single platform to streamline surveying and dredging operations
- Supports sensors for dredge operations
- Ready-built interfaces to the USACE dredge quality management system's Real-time 2D and 3D displays



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BENEFITS

As dredge plans grow increasingly complex, precise modeling and data-driven execution are more critical than ever. DREDGEPACK® provides powerful design capabilities that allow companies to calculate, simulate, and refine dredging plans before execution. Its real-time cross-sectional profiles offer an instant visual comparison of 'As Dredged' and 'As Surveyed' surfaces, ensuring operators work within the planned design. For hopper dredges, these profiles can be viewed along track or across track, while cutter suction dredges and excavators benefit from a cross-sectional display along the arc of rotation, improving navigation and excavation accuracy.

To streamline operations, DREDGEPACK® seamlessly integrates with multiple file formats (DXF, DWG, SHP, KMZ, GeoTIFF), allowing teams to import and analyze survey data effortlessly. This enables better pre-dredge planning and post-dredge reporting, reducing redundancy and rework. Additionally, the system features an intuitive calibration process and simplified hardware setup, ensuring a hassle-free implementation that minimizes downtime. By optimizing data integration, modeling, and execution, DREDGEPACK® enhances efficiency not just during dredging, but throughout the entire project lifecycle.

Included in DREDGEPACK®

PLANNING TOOLS

- Advanced Channel Design to generate complex plans for digging or capping.
- Line and border editors to design and organize dredging projects.
- Specific programs convert the bathymetry into a matrix file for use as a reference of the pre-dredged area.

OPERATION TOOLS

- **2D and 3D Bucket Patterns:** Generate bucket patterns prior to digging for optimal placement.
- **Dredging progression:** Visual tracking of dredge advancement to monitor excavation accuracy and ensure alignment with project plans.
- **Real-time information:** Instant display of current dredging conditions, including depth, position, and material removal for informed decision making.
- **Performance Metrics:** Quantitative data on dredging efficiency and compliance, aiding in project evaluation and operational optimization.

REPORTING TOOLS

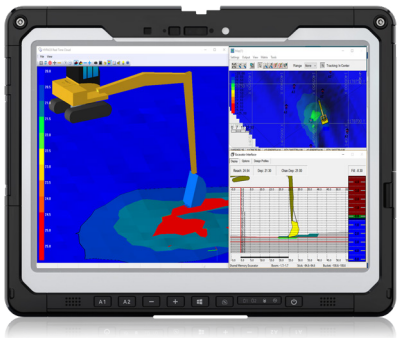
- **Dredge Statistics:** View the depth distribution to monitor over-digging.
- **MTX Reporter:** Produce a graphic that shows dredging progress based on each shift or day.
- **Bucket Log Reports:** Keep a history of each bucket drop or placement location, and export it to your CAD/GIS package.
- **TIN model:** Perform volume calculations to determine the volume of removed materials.

INDUSTRY LEADING SUPPORT

The HYPACK Technical Support team is always ready to assist with any issues and maintains phone, email, and online support. A HYPACK Support Team member can log into your computer through an Internet connection and remotely troubleshoot software issues as they arise.

USACE DREDGE QUALITY MANAGEMENT

DREDGEPACK® also allows you to meet your reporting requirements. The software is compliant with the USACE Silent Inspector requirements for hopper dredges, as well as proposed Silent Inspector requirements for cutter suction dredges and excavators.



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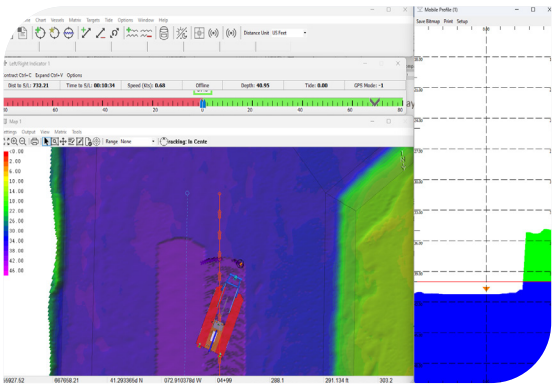
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CUTTER SUCTION SYSTEM

INCREASING PRODUCTIVITY & MAINTAINING COMPLIANCE



The HYPACK® Cutter Suction System and DREDGEPACK® Software create a powerful synergy that maximizes your digging efficiency and work production while minimizing operator error and over-dredging. This system enhances the dredge operator's effectiveness by improving cutting tool placement and providing immediate surface updates while dredging.

FEATURES & BENEFITS

- Precise dredge positioning with RTK
- Dredge and capping operations
- Advanced 3D channel designs
- Quick surface to cutting tool reference with cut/fill bar

Easy to Operate and Maintain

The HYPACK® Cutter Suction System features a turn-key dredging system which provides the operator a more comprehensive overview of the dredge operations. Maintenance of this system is minimal due to its simplified hardware design. Calibration can be accomplished, at the operator's discretion, with a simple one-touch routine. Go from planning to dredging with ease as all HYPACK software packages share the same file formats, making importing your survey data and background charts seamless. By maintaining a record of the area dredged, the operator will be able to reduce dredging redundancy. This system also saves time by decreasing the dredge's cycle time and simplifying the post-dredge analysis and reporting.

> A cost-effective way to track the depth and position of the cutting tool on a cutter suction dredge. After installation, the system can be calibrated by the operator with a single push of a button.

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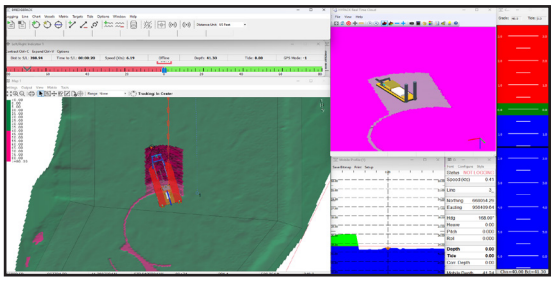
Dredging Efficiency

The HYPACK® Cutter Suction System helps organize the dredging operation by using reference lines or areas as a tool for the operator. It can display a pre-dredge or post-dredge Digital Terrain Model (DTM) colored by depth. The swing radius can be used as a planning tool for the next line. DREDGEPACK® also supports several file types including DXF, DWG, SHP, KMZ, and georeferenced TIF which can be used to plan the most efficient operation from the office, reducing delays and improving efficiency.



DTM Color Modeling & Real-Time Updates

The HYPACK® Cutter Suction System improves dredge efficiency by showing the exact location and depth of the cutting tool in real time. DREDGEPACK® displays already dredged areas, allowing the operator to position the dredge accordingly and continue the operation while preventing additional cost from over digging. The dredge template is visible on the screen for the operator to view the relationship of the cutting tool to the design.



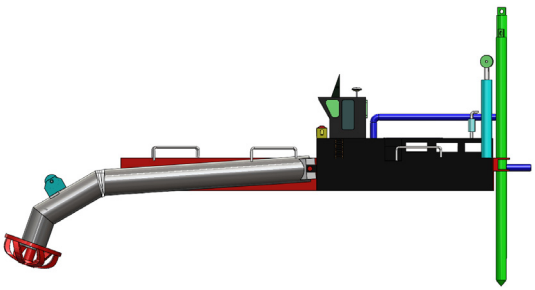
SWING LADDER

This package can also provide the sensors for working with cutter suction dredges with a swing ladder.



DOUBLE-ARTICULATED LADDER

DREDGEPACK® can calculate the depth for cutter suction dredges with a double-articulated ladder.



BETTER DATA, BETTER DECISIONS!

DREDGEPACK® is designed to assist your company in monitoring its digging operations. Area maps, nautical charts, and DXF files can be downloaded for geographical reference. A color-coded matrix shows your current depth, while a profile view displays both your current and required depths.

WHAT'S INCLUDED IN THE HYPACK CUTTER SUCTION SYSTEM?

HYPACK will provide:

- A complete package containing a DREDGEPACK® license and sensors
- Fast and reliable customer support
- A single platform to streamline surveying and dredging operations
- Support for over 400 marine sensors
- Software that readily interfaces with the USACE dredge quality management system

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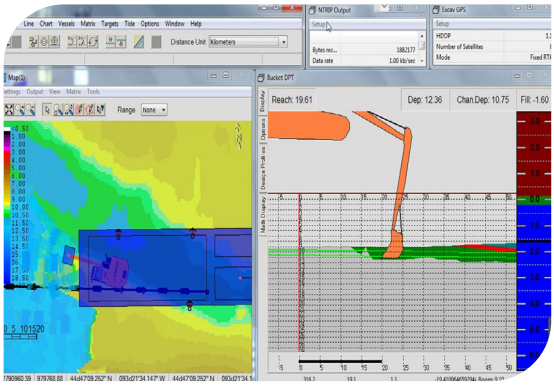
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EXCAVATOR SYSTEM

INCREASING PRODUCTIVITY & MAINTAINING COMPLIANCE



The Excavator System and DREDGEPACK® Software create a powerful synergy that maximizes your digging efficiency and work production while minimizing operator error and over-dredging. This system enhances the excavator operator's effectiveness by improving the accuracy of bucket placement and providing immediate surface updates while dredging.

Easy to Operate and Maintain

The Excavator System features a turn-key dredging system which provides the operator with a more comprehensive overview of the dredging operations. Maintenance of this system is minimal due to its simplified hardware design. The system can be calibrated with a simple routine. Go from planning to dredging and capping with ease as all HYPACK® software packages share the same file formats, making importing your survey data and background charts seamless. By maintaining a record of the area dredged, the operator will reduce over-dredging and ensure that accurate dredging depths, sensors, and software work together to help reduce fuel consumption and overall operational costs. This is achieved by optimizing the use of the excavator and minimizing the need for rework.

FEATURES & BENEFITS

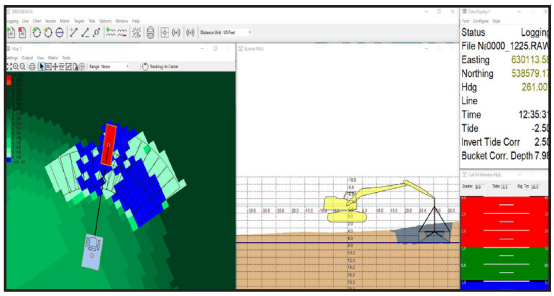
- Precise dredge positioning with RTK
- Dredge and capping operations
- Advanced 3D channel designs
- Quick surface to cutting tool reference with cut/fill bar

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A cost-effective way to track the depth and position of the bucket on an excavator. After installation, the system can be calibrated with a simple routine.

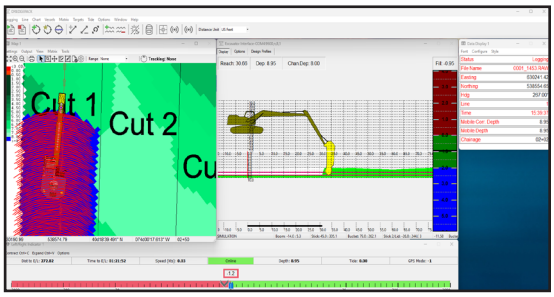
Dredging Performance

The HYPACK® Excavator System utilizes a combination of sensors and software which allow it to perform in the most challenging conditions, providing high accuracy when the excavator experiences pitch and roll dynamics, or vertical variations due to draft or tide. This enhanced performance is vital on certain projects where the depth of the bucket or tool needs to be calculated precisely with excavators working on environmental projects.



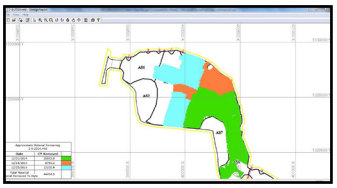
DTM Color Modeling & Real-Time Updates

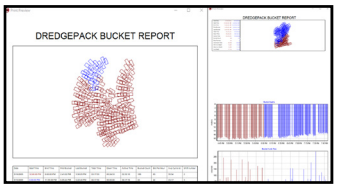
The HYPACK® Excavator System reduces delays by improving the efficiency of both planning and executing stages of dredging operations. The dredge template shows the operator the exact location and depth of the bucket, as well as its relationship to the design. DREDGEPACK® also supports several file formats, such as DXF, DWG, SHP, KMZ, and GeoTIFF, which allows planning from the office. The operator can perform an organized dredging operation using reference lines or areas as their guide.



Reports and Analysis

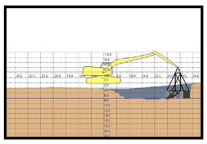
DREDGEPACK® incorporates a set of tools for generating reports to determine the area covered, estimated material removed, and the number of buckets for each of the shifts. After a post-dredging survey, it is possible to create a volume calculation report and obtain additional useful statistics.





Environmental Excavator

Additional sensors provided for enhanced precision for environmental projects.



Amphibious Excavator

The system performs properly on excavators experiencing high dynamics.



Long Reach Excavators

A solution ready for long reach excavators using two sticks.



Different Tools/Attachments

Additional options when using different tools and attachments.



WHAT'S INCLUDED IN THE HYPACK EXCAVATOR SYSTEM?

HYPACK will provide:

- A complete package containing a DREDGEPACK® license and sensors
- Fast and reliable customer support
- A single platform to streamline surveying and dredging operations
- Support for over 400 marine sensors
- Software that readily interfaces with the USACE dredge quality management system

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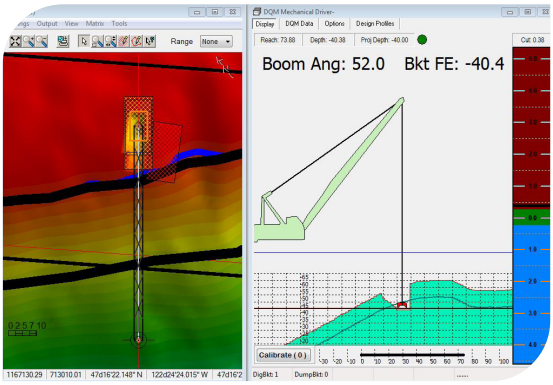
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CRANE SYSTEM

INCREASING PRODUCTIVITY & MAINTAINING COMPLIANCE



The HYPACK® Crane System and DREDGEPACK® Software create a powerful synergy that maximizes your digging efficiency and work production while minimizing operator error and over-dredging. This system enhances the crane operator's effectiveness by improving the accuracy of bucket placement and providing immediate surface updates while dredging.

Easy to Operate and Maintain

The HYPACK® Crane System features a turn-key dredging system which provides the operator a more comprehensive overview of the dredge operations. Maintenance of this system is minimal due to its simplified hardware design. Calibration can be accomplished, at the operator's discretion, with a simple one-touch routine. Go from planning to dredging with ease as all HYPACK software packages share the same file formats, making importing your survey data and background charts seamless. By maintaining a placement record of every bucket, the operator will be able to reduce dredging redundancy. This system also saves time by decreasing the dredge's cycle time, and simplifying the post-dredge analysis and reporting.

FEATURES & BENEFITS

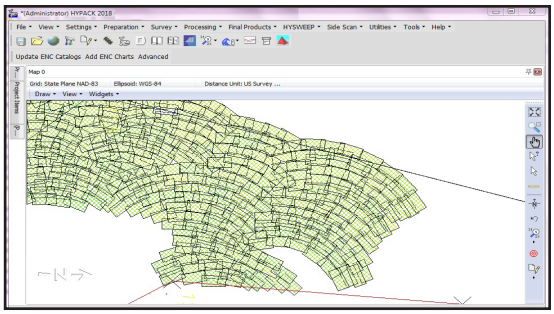
- Precise dredge positioning with RTK
- Dredge and capping operations
- Advanced 3D channel designs
- Quick surface to cutting tool reference with cut/fill bar

> Offering a cost-effective way to track the depth and position of the bucket on a clamshell dredge. After installation, the system can be calibrated by the operator with a single push of a button.

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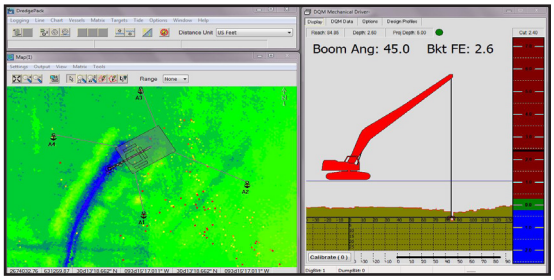
Dredging Efficiency

The HYPACK® Crane System improves dredge efficiency by showing the operator the exact location of the previous bucket and the location of the actual bucket. This allows the operator to accurately remove the next bucket of material. Utilizing the HYPACK® Crane System, the operator will be able to reduce cycle time and prevent costly over digging. The dredge template is visible on the screen for the operator to view the relationship of the bucket to the design.



DTM Color Modeling & Real-Time Updates

The HYPACK® Crane System can display a pre-dredge Digital Terrain Model (DTM), which is colored by depth or amount of material to be removed. Real-time updates of the DTM after each bucket show where the operator must still remove material, reducing the time required to clear an area to grade, and the cost to complete the dredge project.



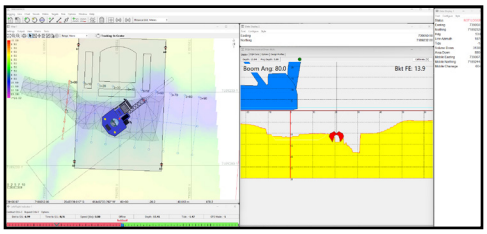
PUMP AS A TOOL

The crane system can be used to calculate the angle of the A frame or boom, and the position and depth of the pump.



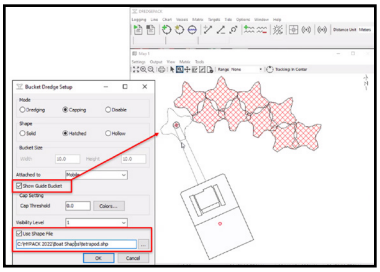
PLACING OBJECTS

The system can be used for positioning objects accurately, and the operator can mark and store the positions into a file.



BARGE MONITORING

The solution can monitor the position and heading of the barge by using a second GNSS receiver and a wireless link.



WHAT'S INCLUDED IN THE CRANE SYSTEM?

HYPACK will provide:

- A complete package with a DREDGEPACK® license and sensors
- Fast and reliable customer support
- A single platform to streamline surveying and dredging operations
- Support for over 400 marine sensors
- Software that readily interfaces with the USACE dredge quality management system

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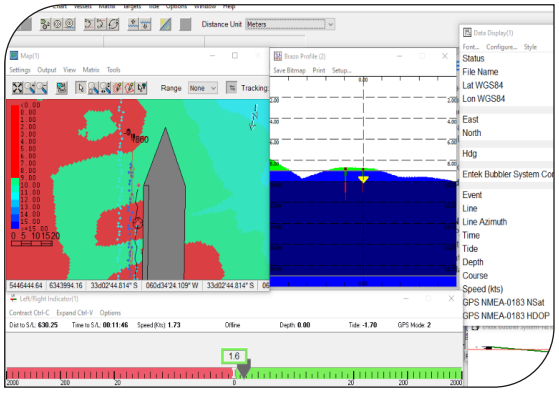
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TRAILING SUCTION HOPPER DREDGE SYSTEM

INCREASING PRODUCTIVITY WHILE MAINTAINING COMPLIANCE

The HYPACK Trailing Suction Hopper Dredge (TSHD) System and DREDGEPACK® Software create a powerful synergy together to maximize your digging efficiency and work production while minimizing operator error and over-dredging. This system enhances the dredge operator's effectiveness by improving the accuracy of drag head placement and providing immediate surface updates while dredging.

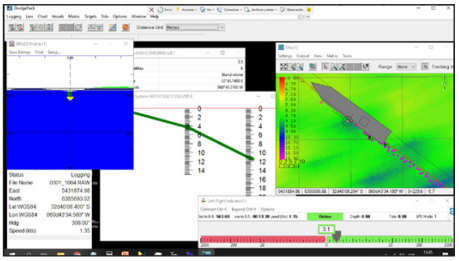


Easy to Operate and Maintain

The HYPACK® TSHD system is a turn-key solution that gives the bridge team a complete view of hopper-dredge operations. Hardware is streamlined for minimal maintenance, and calibrations (ie: GNSS/heading, draft, hopper level, drag arm angles) follow simple, repeatable routines. Plan, load, and dispose with ease—HYPACK software shares common file formats, so importing survey data and background charts is seamless. By tracking cut depths, drag head position, hopper fill trends, and tracklines in real time, operators reduce over-dredging, achieve accurate target depths, and avoid unnecessary rework. The result is more consistent cycles, lower fuel consumption, and reduced overall operating costs.

FEATURES & BENEFITS

- Precise dredge positioning and heading with dual-antenna GNSS (RTK-ready)
- Live hopper level and draft monitoring for optimal loading
- Real-time arm or drag head positioning and depth tracking
- DTM color modeling, 3D channel designs, and cut/fill visualization
- Seamless planning-to-dredging workflows (DXF, DWG, SHP, KMZ, GeoTIFF)
- Minimal maintenance hardware, rugged enclosures, and simplified cabling



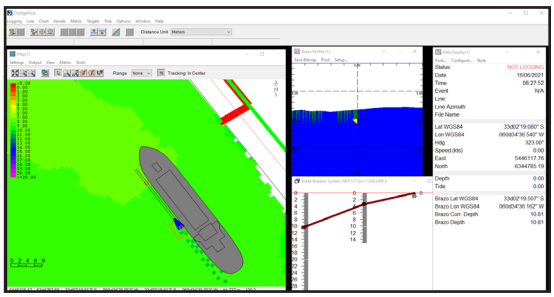
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Dredging Performance

The HYPACK® TSHD System combines precise sensors with DREDGEPACK® software to deliver high-accuracy performance under demanding dredging conditions. Dual-antenna GNSS and pitch/roll calculations are performed in real time, while draft, tide, and heave corrections maintain reliable vertical references giving accurate real time positioning. Hopper-level ultrasonics and draft/bubbler inputs track loading in real time, and continuous surface updates keep target depths on spec. This accuracy is critical on projects with tight environmental or over-dredge limits—ensuring precise drag head depth control, reducing rework, and supporting compliant, consistent production.

DTM Color Modeling & Real-Time Updates

The HYPACK® TSHD System improves the efficiency by showing the exact location and depth of the bucket. The dredge template is visible on the screen for the operator to view the relationship of the bucket to the design. DREDGEPACK® also supports several file types like DXF, DWG, SHP, KMZ, and georeferenced TIF, which can be used for efficient operation planning from the office, reducing delays. The operator can perform an organized dredging operation using reference lines or areas as guidance.



Reports and Analysis

- Downtime tagging and shift-based KPIs
- Real-time production dashboards (loading %, hopper fill trend)
- Cycle-time tracking (transit, loading, sailing-to-disposal, discharge)
- Material estimates and post-survey volume reports
- Automated PDF/CSV exports for office review and compliance

Configurations & Alternatives

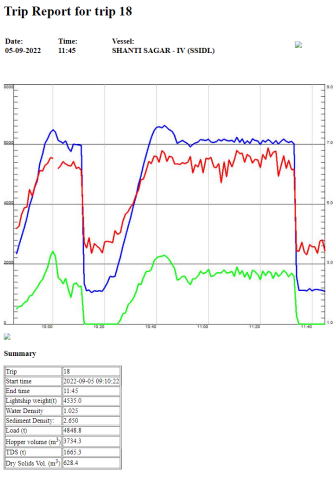
- TSHD package (inclinometers, rotation sensor, pressure sensors)
- Bubbler-based package (air channels for arms and draft)
- Single or dual-arm configurations
- GNSS-only or GNSS+INS solutions

WHAT'S INCLUDED IN THE HYPACK® TSHD SYSTEM?

HYPACK will provide:

- DREDGEPACK® software license and configuration templates
- Dual-antenna GNSS receiver with antennas, cabling, and power
- Pitch/Roll options for dynamic compensation
- Arm angle & swing sensors (inclinometers/rotation) or bubbler channels
- Hopper level ultrasonic sensors (forward and aft)
- Draft measurement via pressure sensors or air bubbler
- Industrial interface box(es), cabling, and network connectivity
- Onboarding support and world-class technical assistance

A cost-effective way to track the depth and position a hopper dredge bucket. After installation, the system can be calibrated with a simple routine.



Trip Report for trip 18

Date:	Time:	Vessel:
05-09-2022	11:45	SHANTI SAGAR - IV (SSIDL)

Summary

Trip	18
Start time	2022-09-05 09:10:22
End time	11:45
Lightship wieght(kt)	4535.0
Water Density	1.025
Sediment Density	2.650
Load (t)	4848.8
Hopper volume (m³)	3734.3
TDS (t)	1665.3
Dry Solids Vol. (m³)	628.4

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