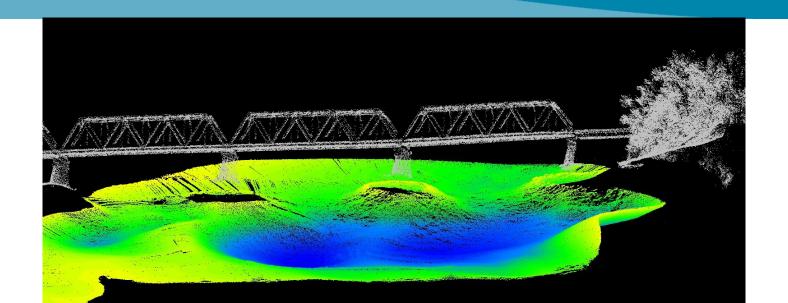


Why HYPACK...?

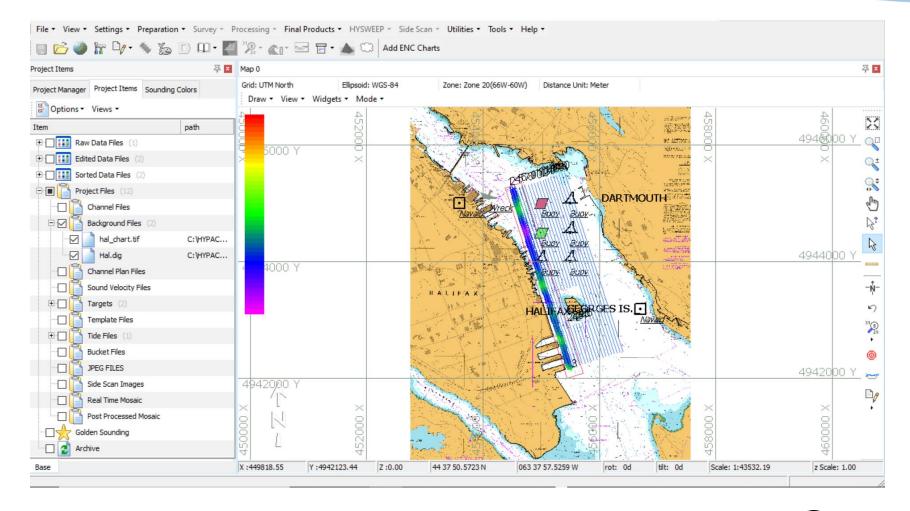


HYdrographic software PACKage

- HYPACK was founded as Coastal Oceanographics in 1984 by Pat Sanders. The company name was soon changed to that of its software. "The founder" sold HYPACK to Xylem in October 2015 and has since "gone golfing". Happy Retirement to Pat!
- Early developments based on the need to provide standard time-tagging of sensors for data collection and processing.
- Early HYPACK surveys with single beam sonars (one depth at a time down the line), later expanded to support side scan, sub-bottom profilers, and eventually multibeam sonars, LiDAR systems, autonomous vessels and more...



HYPACK Provides Tools for Survey Planning and Project Execution



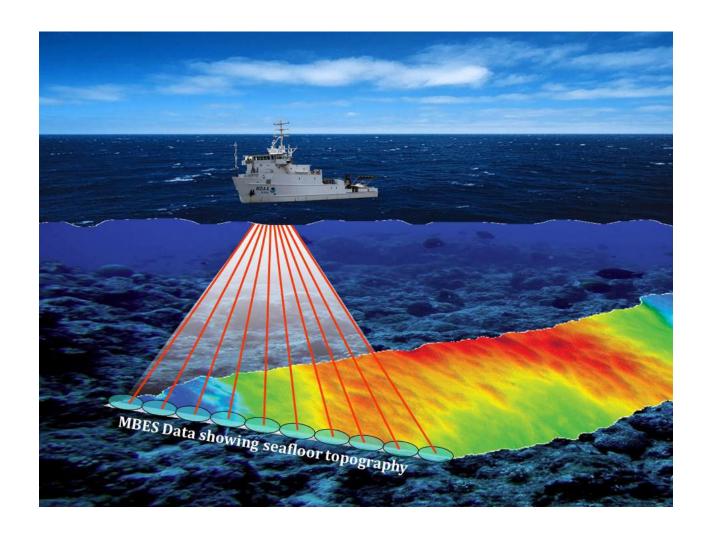


Cross-Sectional Data Analysis



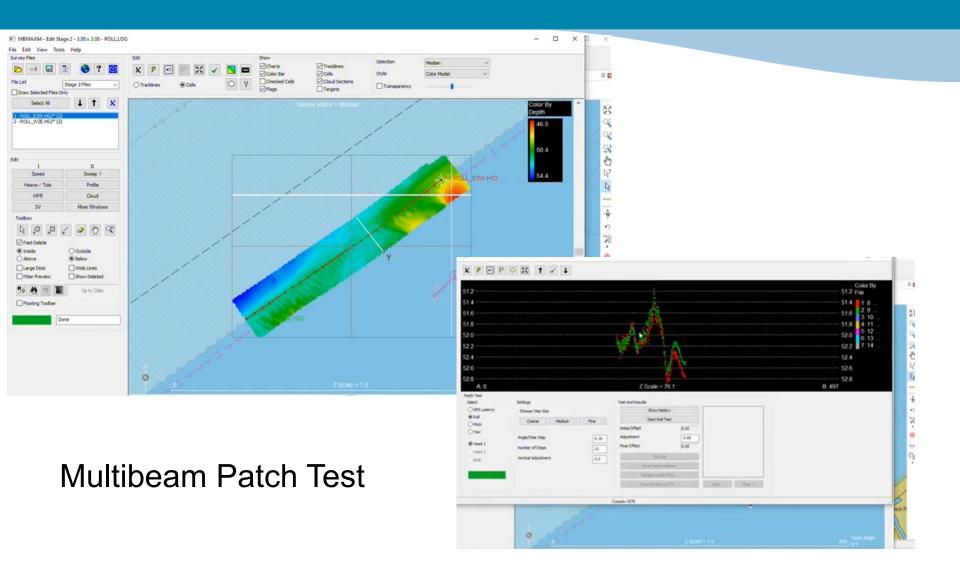


Multibeam Sonars Revolutionized Hydrographic Surveying (Mid-90's)





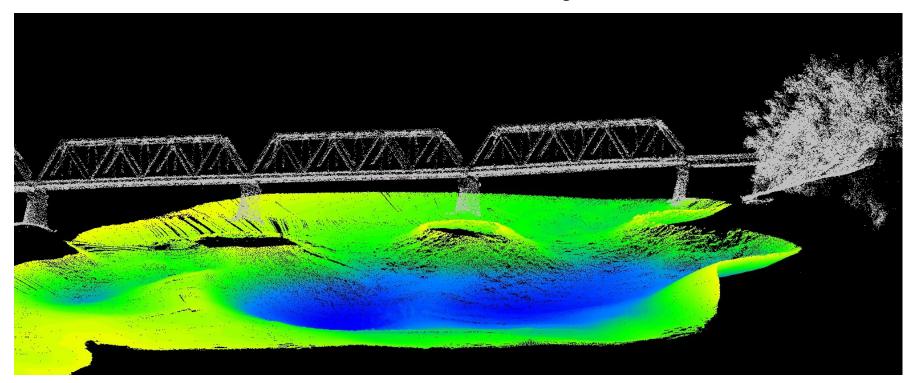
Tools for Data Analysis and Processing





Merged Topographic and Hydrographic Data Set

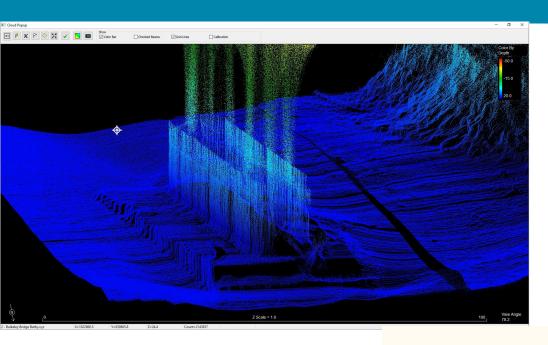
Connecticut River Railroad Bridge



Data collected simultaneously with Multibeam Sonar and LiDAR systems mounted on a vessel of opportunity.



Connecticut River - Railroad Bridge



3D Cloud Display

User-Defined Settings for Visualizations



DREDGEPACK for Real-Time Dredge Guidance

DREDGEPACK supports all standard dredge types.











Dredge Standardizations vs. Custom Solutions

- Cutter Suction/Auger Dredge Systems

- * Standard Packages Common
- * DQM systems require minimal custom programming

Excavator Systems

* Standard Packages Common with Some Exceptions

- Crane Systems

- * Greater variety in hardware due to job specs
- * Standard Crane System stabilized... need to decide on accessories



Sensor Calibration to Meet U.S. Army Corps of Engineers Job Specs

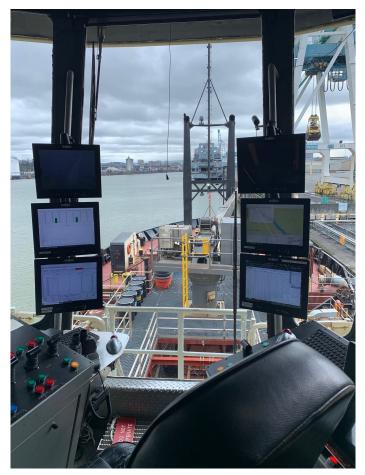




Custom Support for Hopper Dredges



- Josh Vey (HYPACK Technical Sales) visits the Dredge Yaquina annually and provides advanced technical support.





Sample HYPACK Dredge System Request

- (x2) GPS (barge and crane) Will need (x1) extra-long cable for boom tip GPS antenna
- (x1) Rugged laptop for barge (please describe it as a "HYPACK data collection device")
- (x2) "Bullet" Antennas (barge and crane)
- (x1) Tablet for crane + mount (please describe it as a "HYPACK data collection device")
- (x1) 13" Monitor for tug + mount
- (x1) Bucket switch

*Momentum Growing for Increased Standardizations of Systems
**HYPACK Support Technicians Provide Lead with User Requests





Thank you, CMANC!!

Questions ???

(Call Josh Vey!)

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