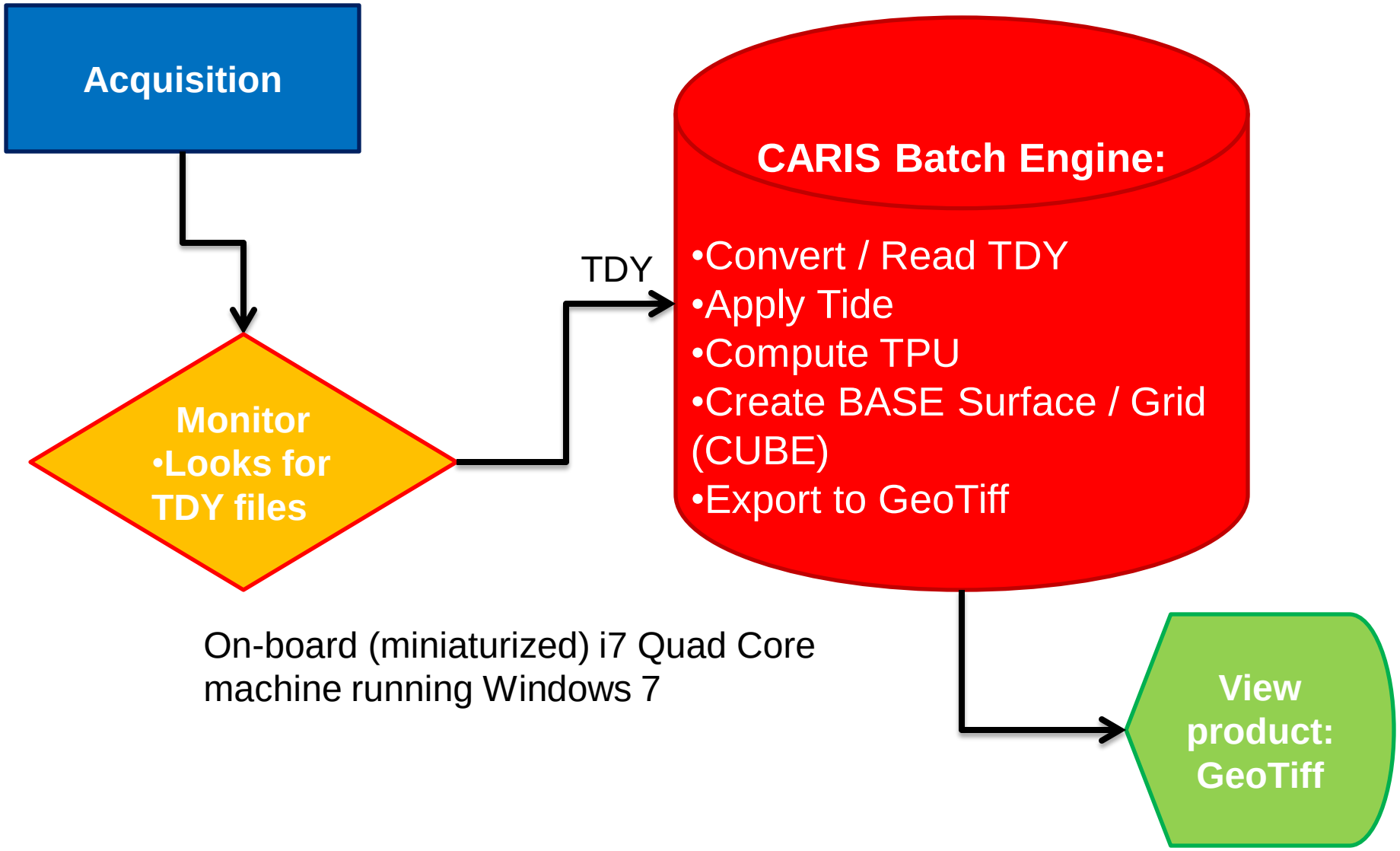
CARIS Hydrographic Data Processing

Onboard the SV3 Wave Glider

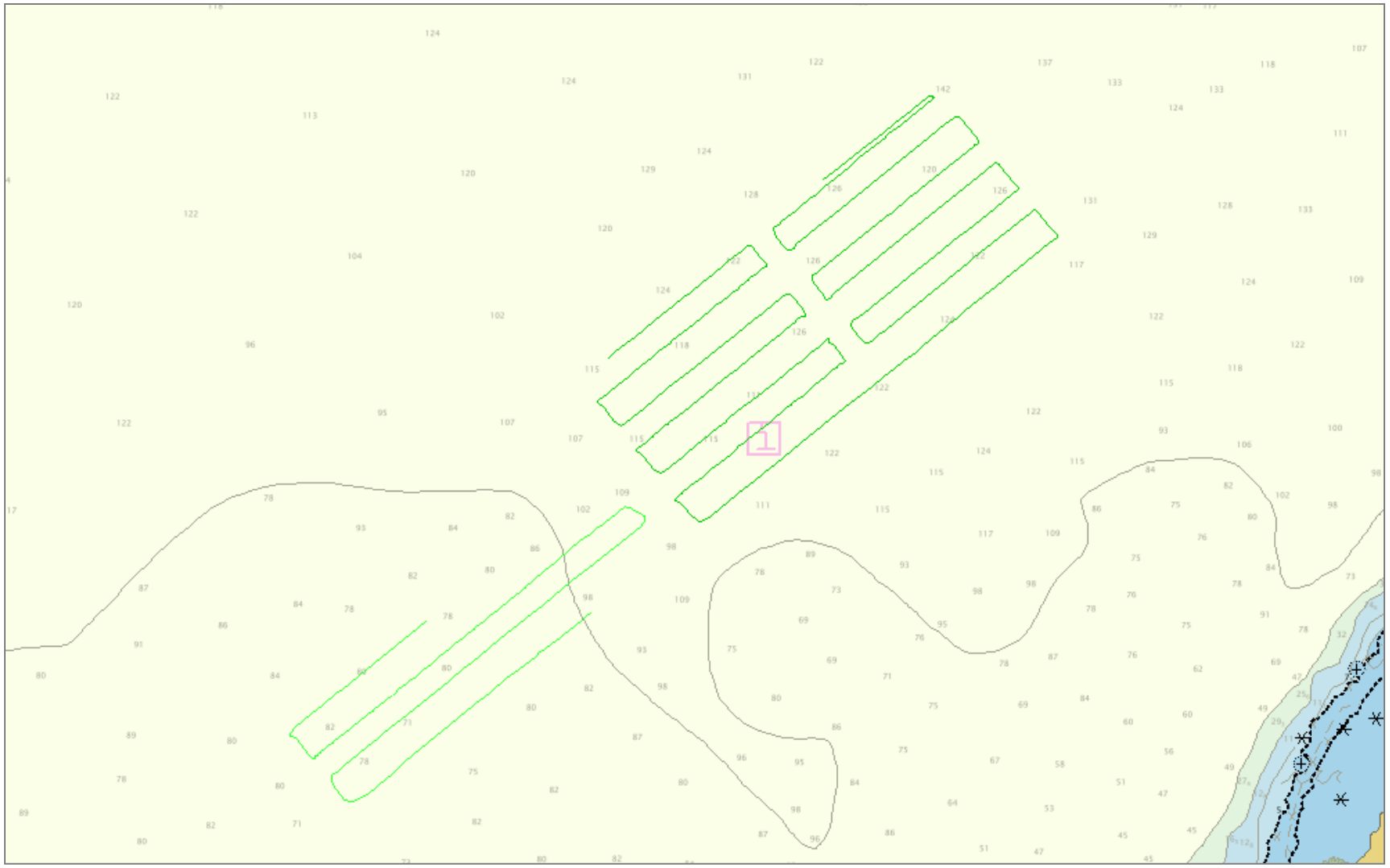
- Create Vessel File
  - Enter lever arm measurements
  - Supply device model for MB1
  - Build model for Total Propagated Uncertainty
- Create Project
- Raw data conversion
- Apply correctors
  - Load Tide
- Georeference data – Merge Process
- Optionally compute Total Propagated Uncertainty
- Create BASE Surface using CUBE algorithm
- Export to raster format, GeoTiff

Teledyne Odom MB1



On-board (miniaturized) i7 Quad Core machine running Windows 7

- Vessel Track

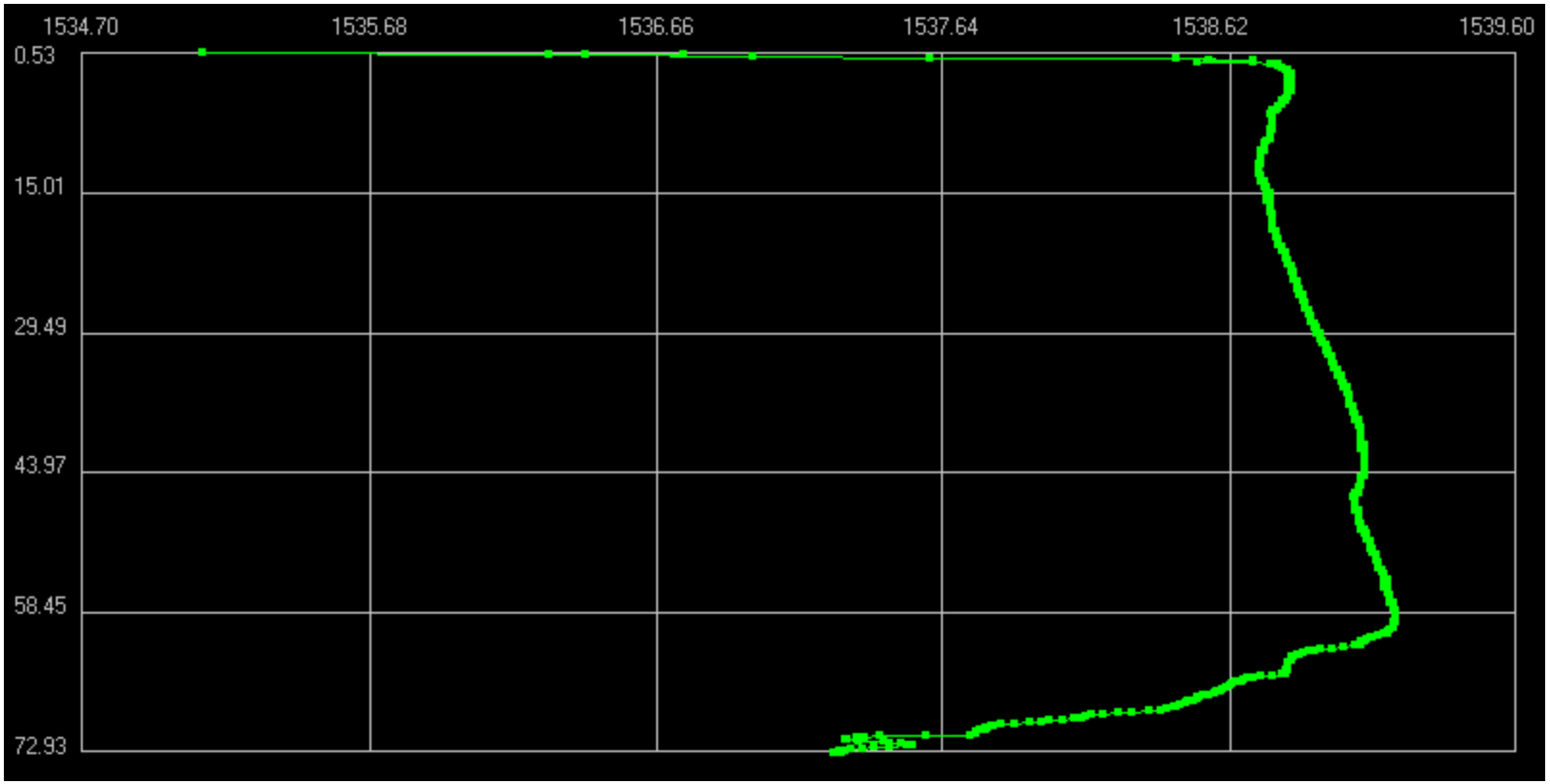


- BASE Surface and GeoTiff Export

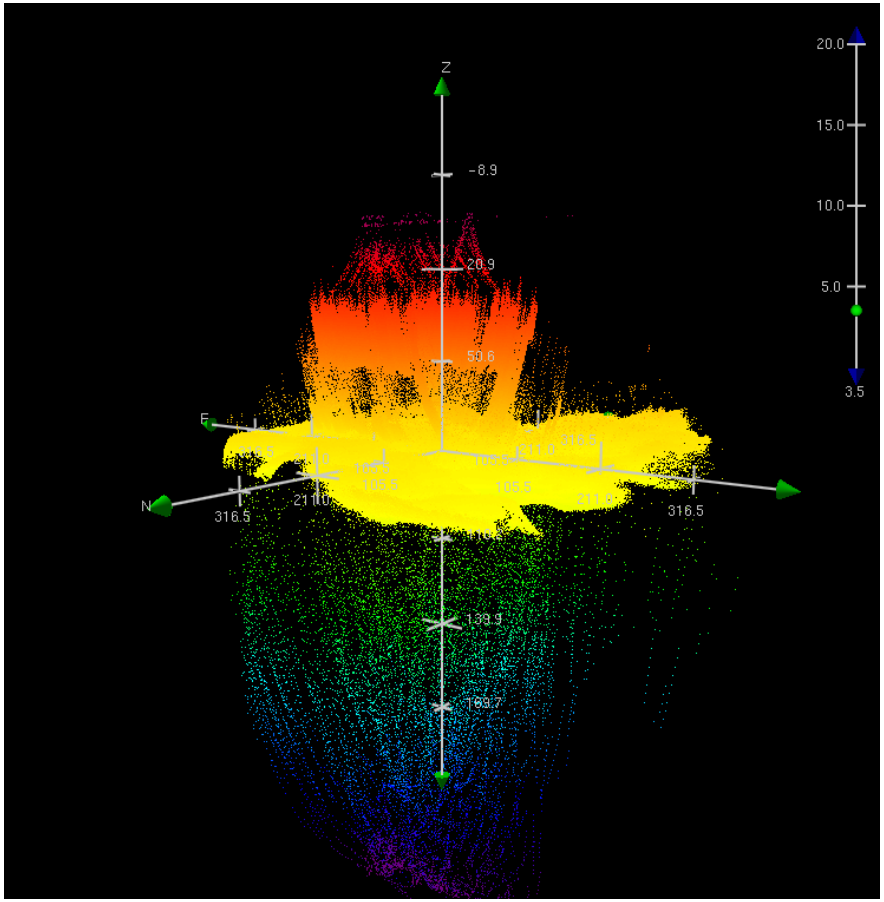
Demo

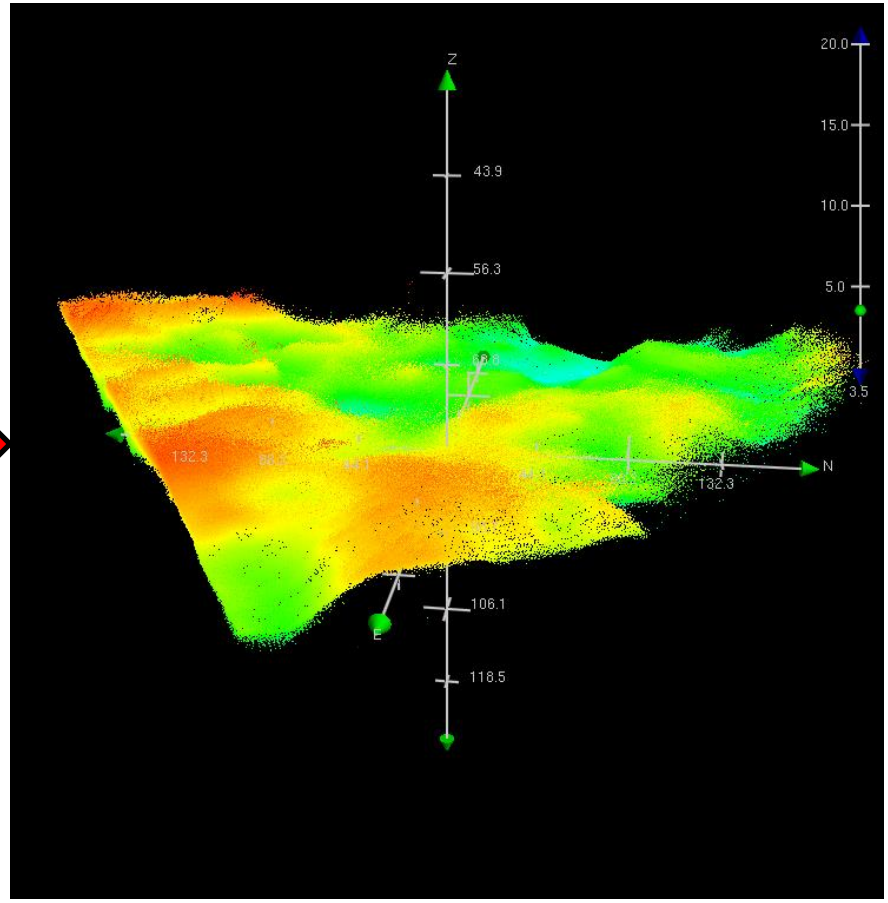
- BASE Surface and GeoTiff Export

- Sound Velocity Correction
- Load observed Tides

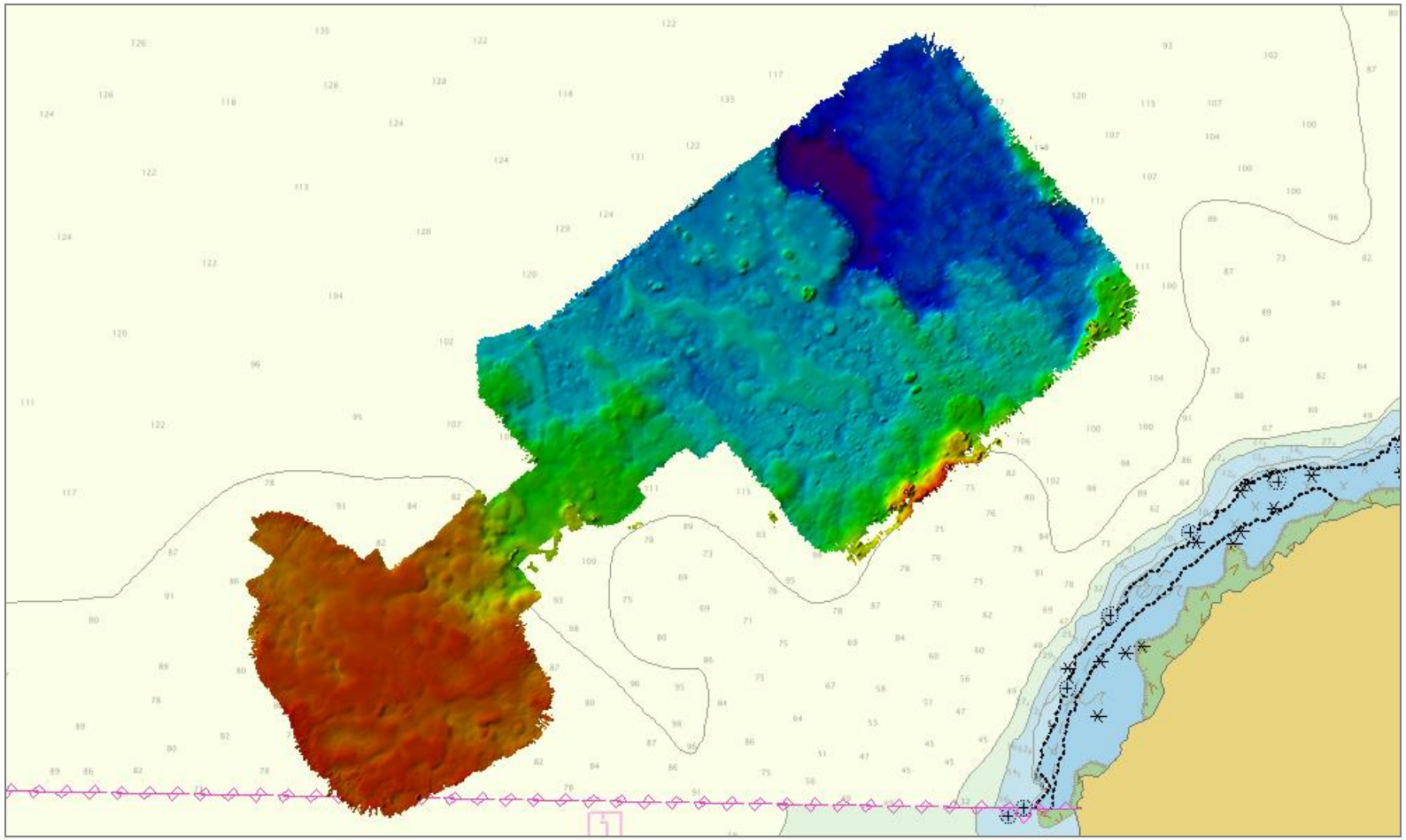


- Swath and/or TPU filters
- Area-based editing

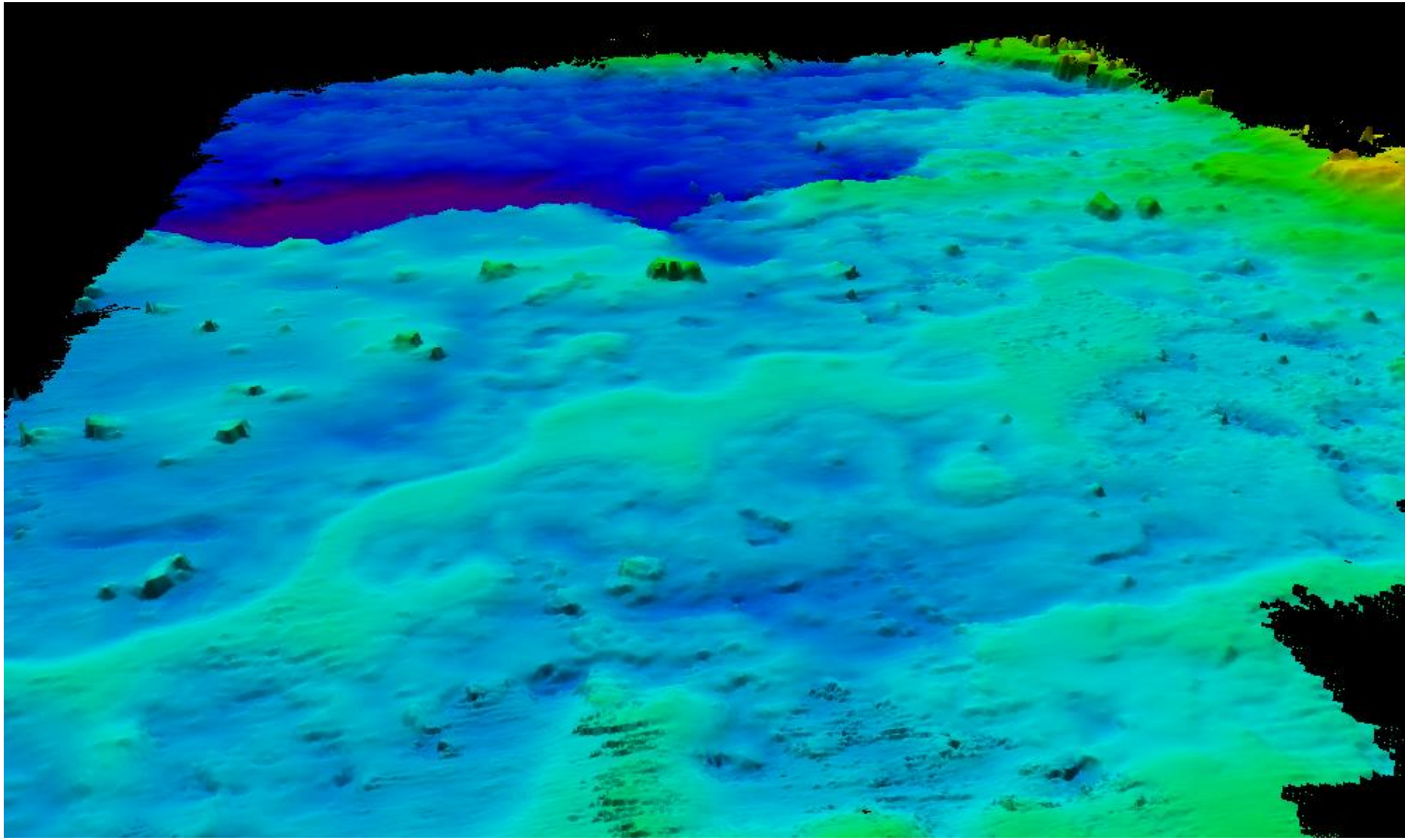




- Final BASE Surface
  - All post processing corrections applied
  - Ping edited



Final Products



- Autonomous surface vehicles with lightweight multibeam sonar a viable option for hydrographic survey
  - Power consumption and other technology issues are being overcome
- Onboard data processing speeds ping to product time and efficiency
- Extends resources by reducing personnel and platform cost

- Survey can be conducted not by one but by *MANY* coordinated vehicles (10s, 100s, etc.)
  - Reduce acquisition times
  - Area-specific missions
- Selected vehicles can have different missions
  - Multibeam sonar data collection
  - Sound Velocity collection
  - All data can be compiled into a single dataset
- Optimum use strategy currently being developed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