New Technology at Teledyne CARIS

Moving Towards Data Centricity

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NOAA's Open House on Nautical Cartography

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What does Data Centricity mean to Teledyne CARIS?

- A move to service orientated and standards based systems
  - Open data storage
  - Connectivity to 3rd party tools
  - Extensive scripting and batch capabilities
  - Cloud based processing potential
  - Mobile data entry and access

- Process automation
  - Rules-based workflows
  - Survey processing and cartography
  - Faster and better quality results
  - Validation of data in field prior to loading into data store

What else does Data Centricity mean to Teledyne CARIS?

- Greater emphasis on spatial analysis

- Expanding our markets
  - Oil and Gas
  - Oceanography
  - Wider array of sensor processing
    - Acoustic, Optic and Location

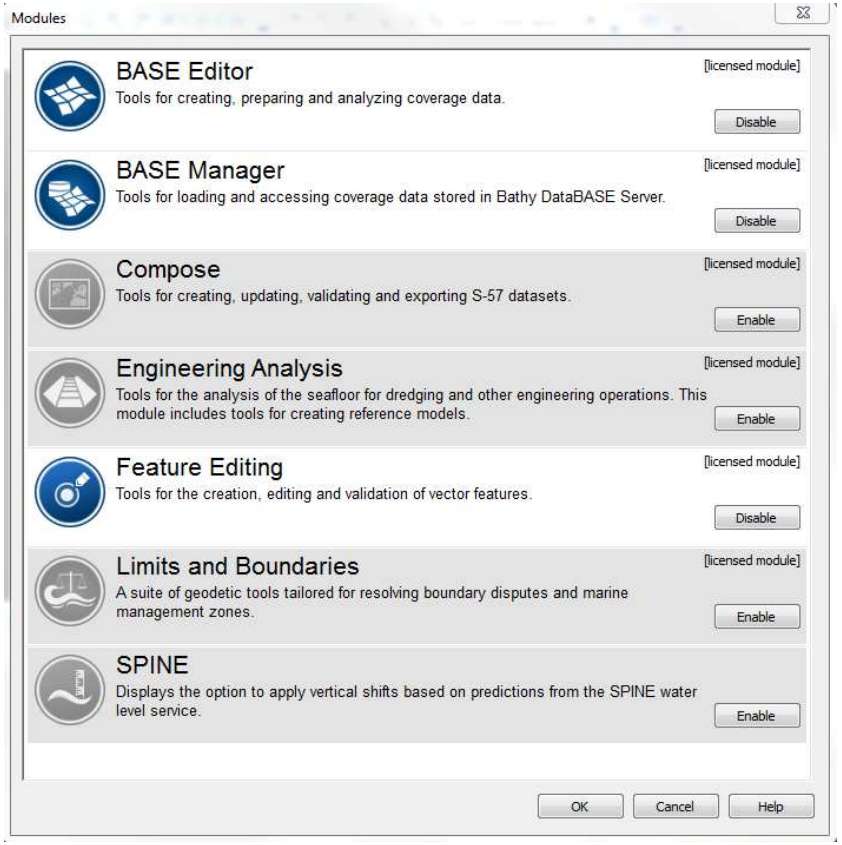
Allows us to continue to be the leaders in Hydrographic software by offering a complete workflow that supports the changing nature of our clients' business

DATA CENTRICITY

How far have we come?

Data Centricity: how far have we come?

- Modularity
  - Individually licensed modules
- Shared codebase
  - BDB, HIPS, Onboard
- Onboard Service
  - “Small” service deployment



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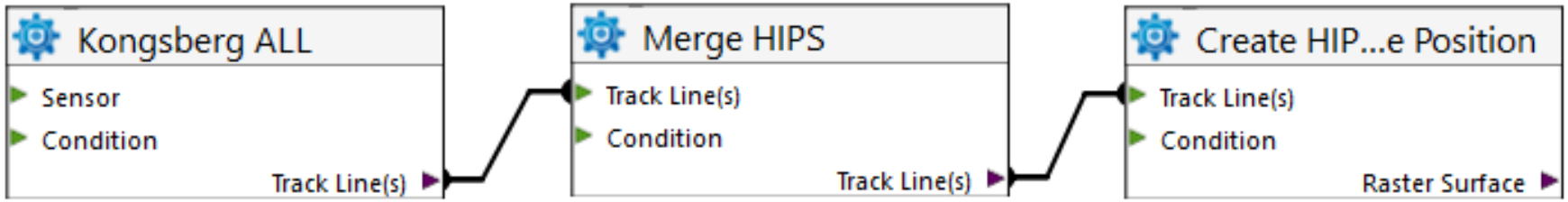
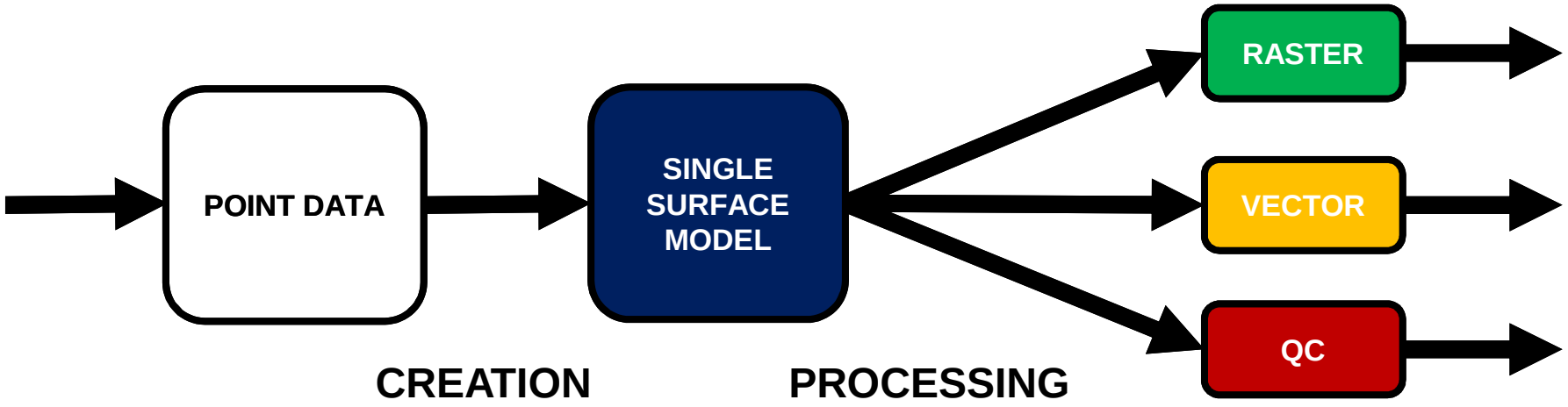
Process Automation:

- Process Designer: Assemble processing workflows with graphical models
- Onboard: Automate processing in the field in near-real time

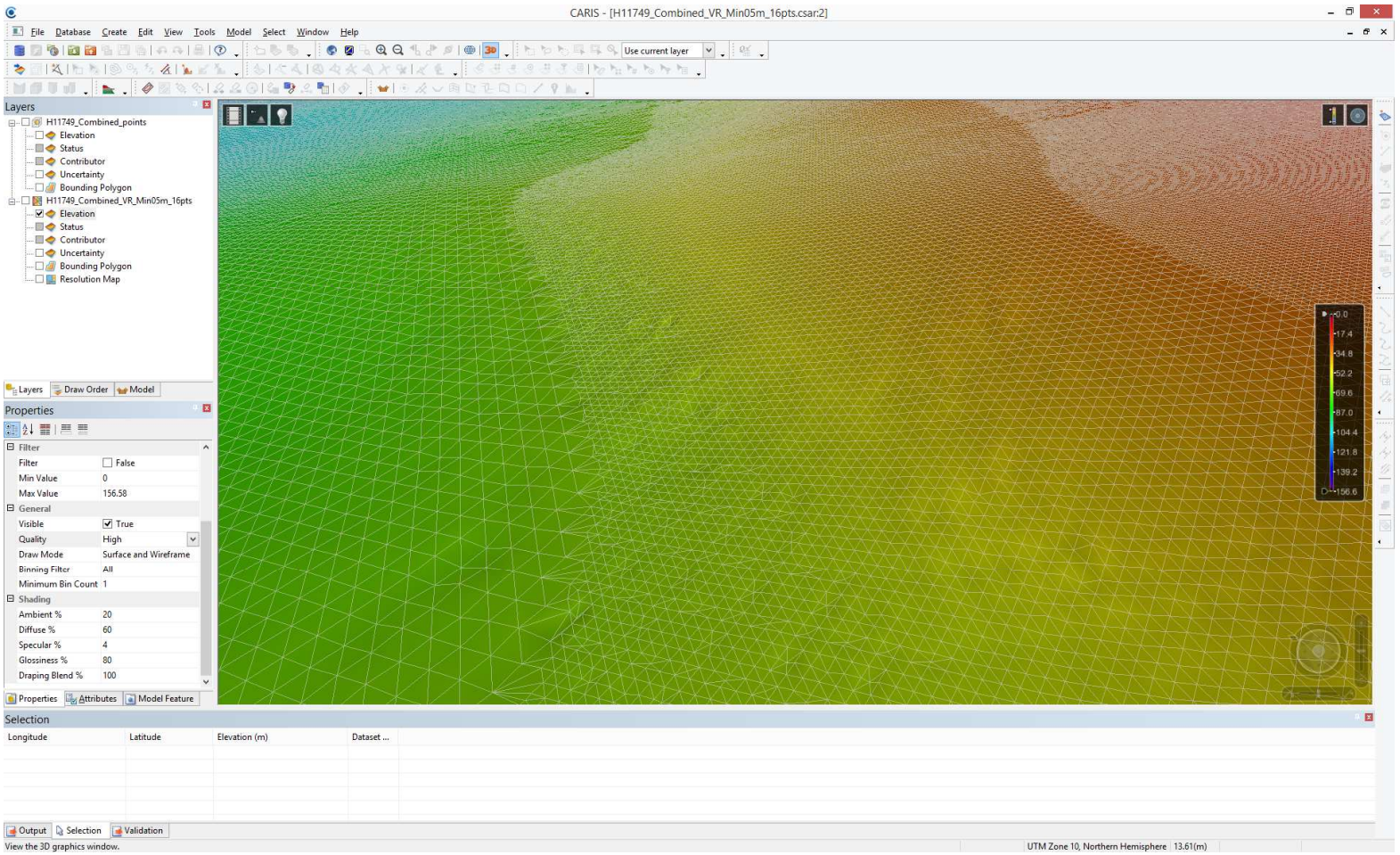


- Variable Resolution



Data Centricity: how far have we come?

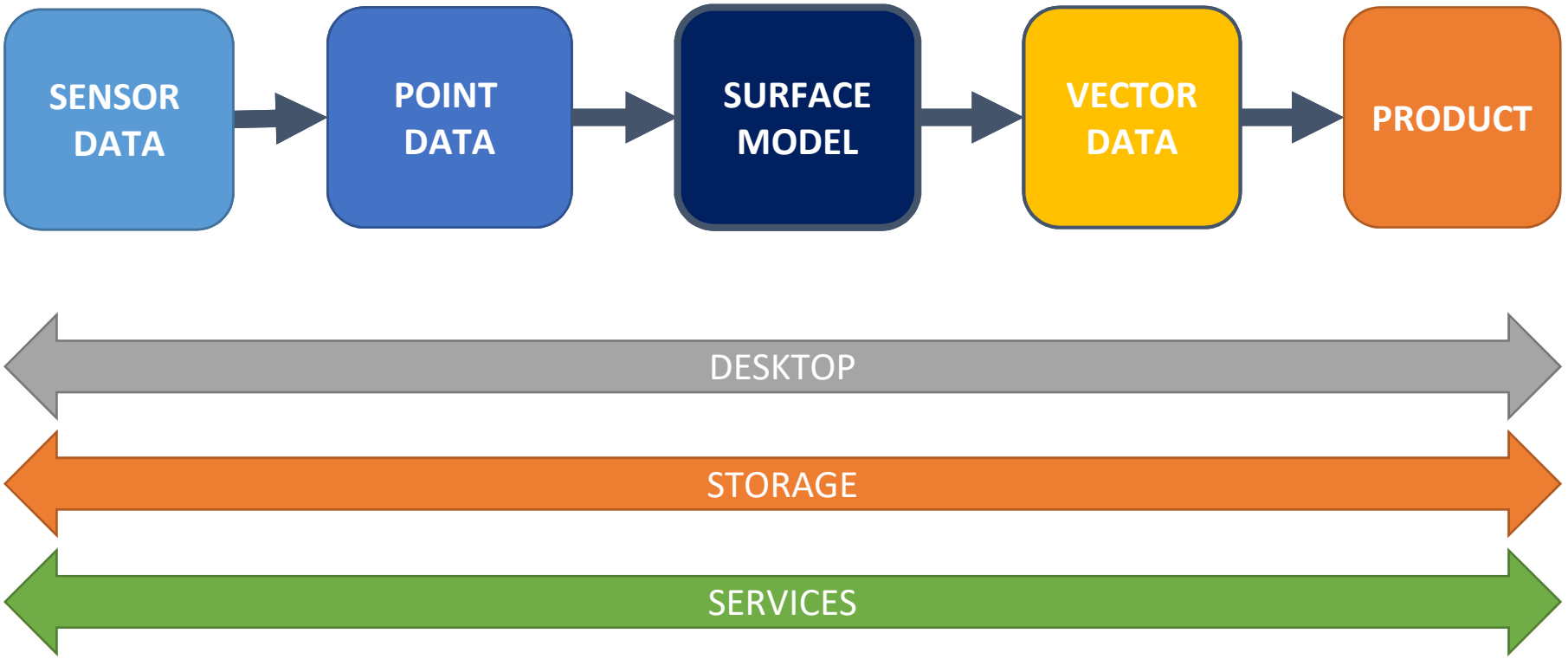
- Variable Resolution



DATA CENTRICITY

Where are we going?

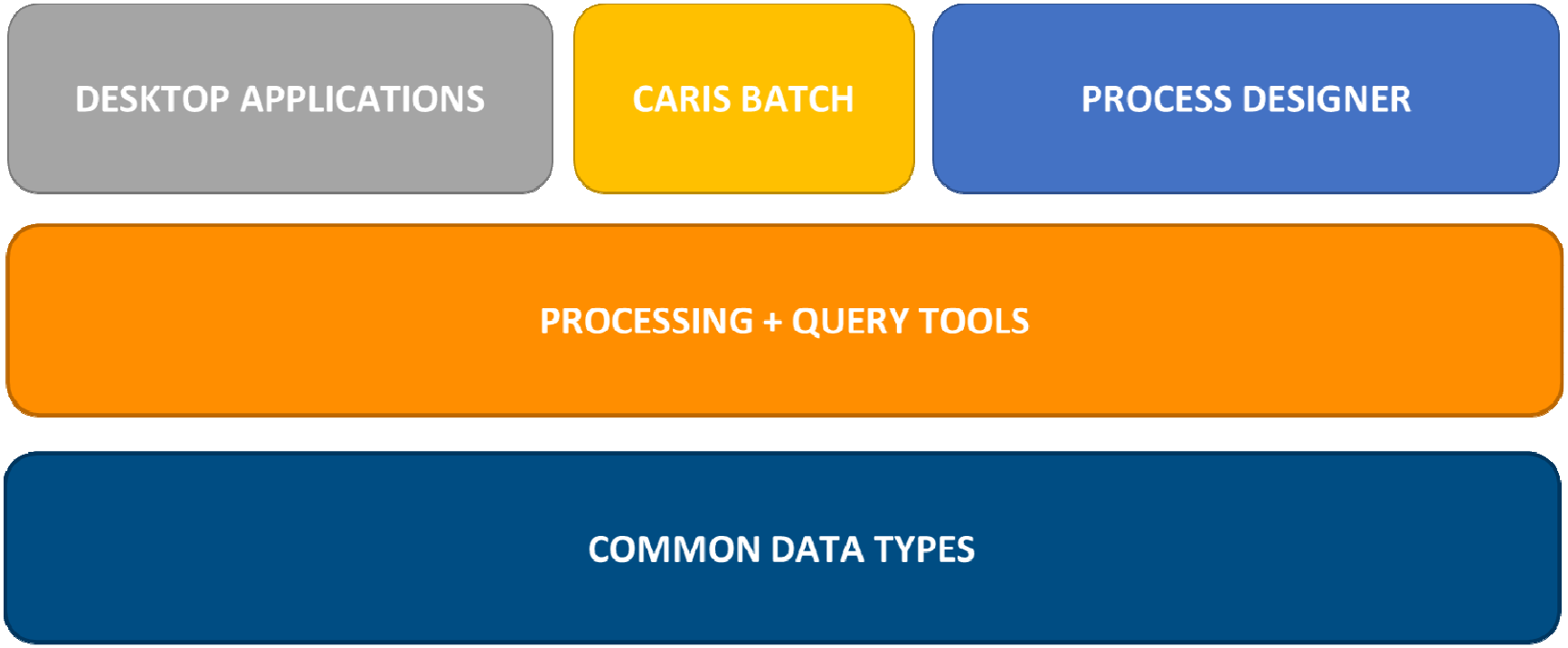
Current Ping-to-Chart Workflow



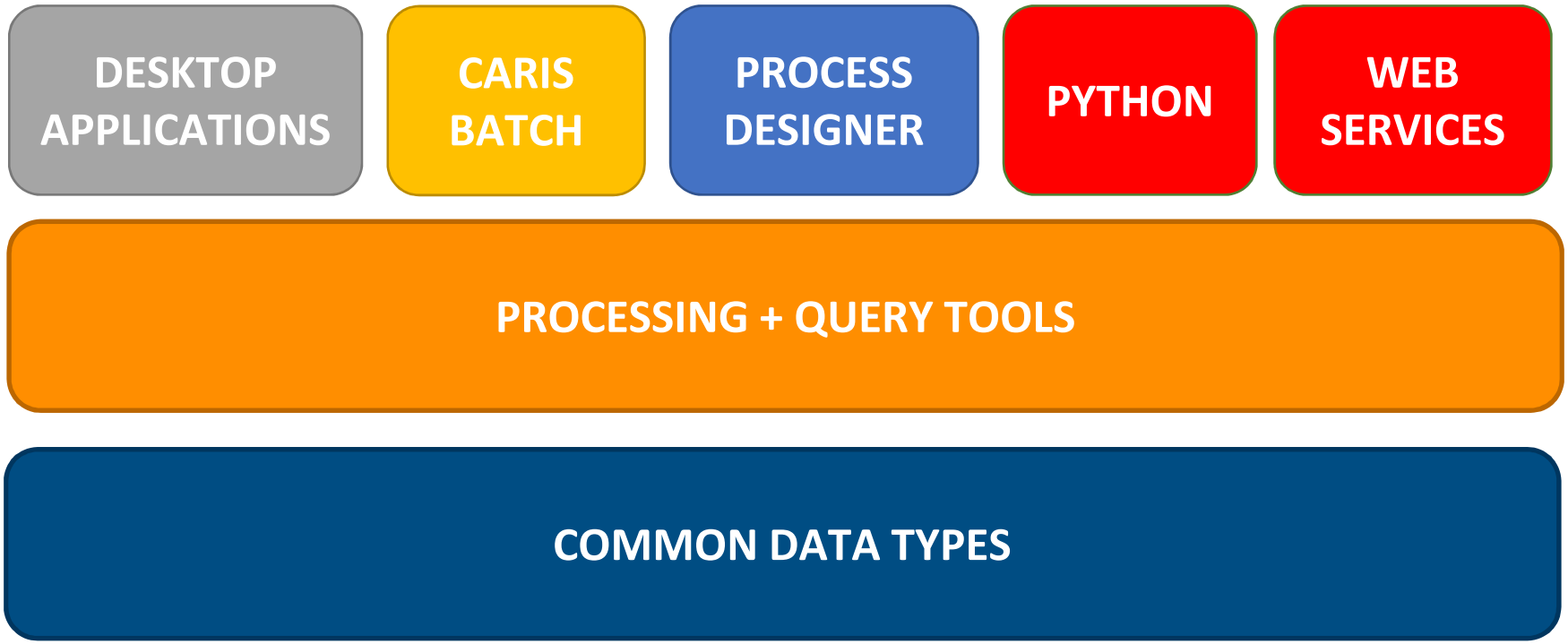
Goals

- Data Centric
- Automated
- Easy to Use

New Layered Architecture



Python and Web Services



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Data models are more flexible

Tools work on more data

Better interoperability

- Between CARIS applications
- Between CARIS and 3rd party tools

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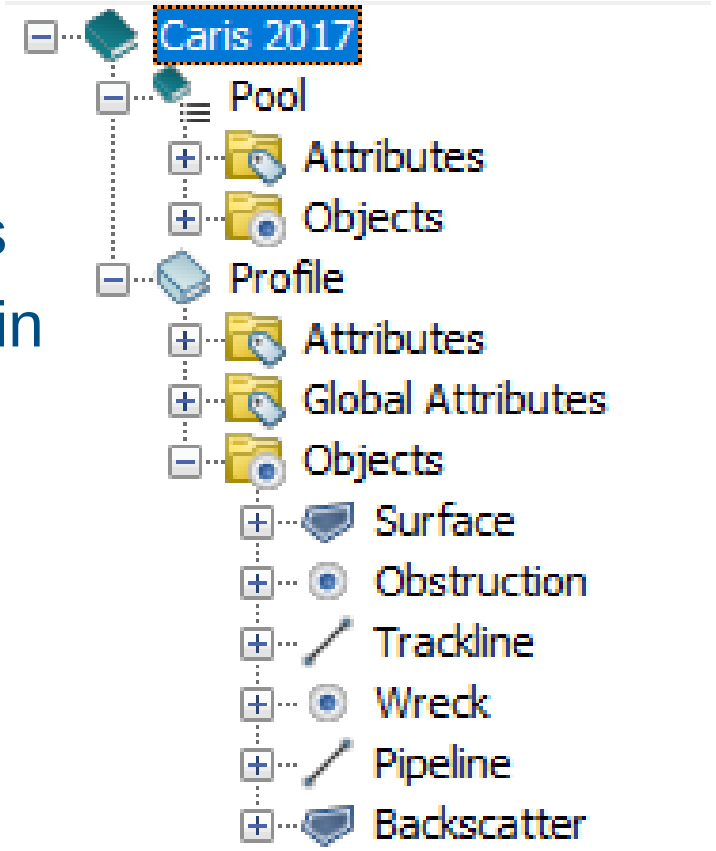
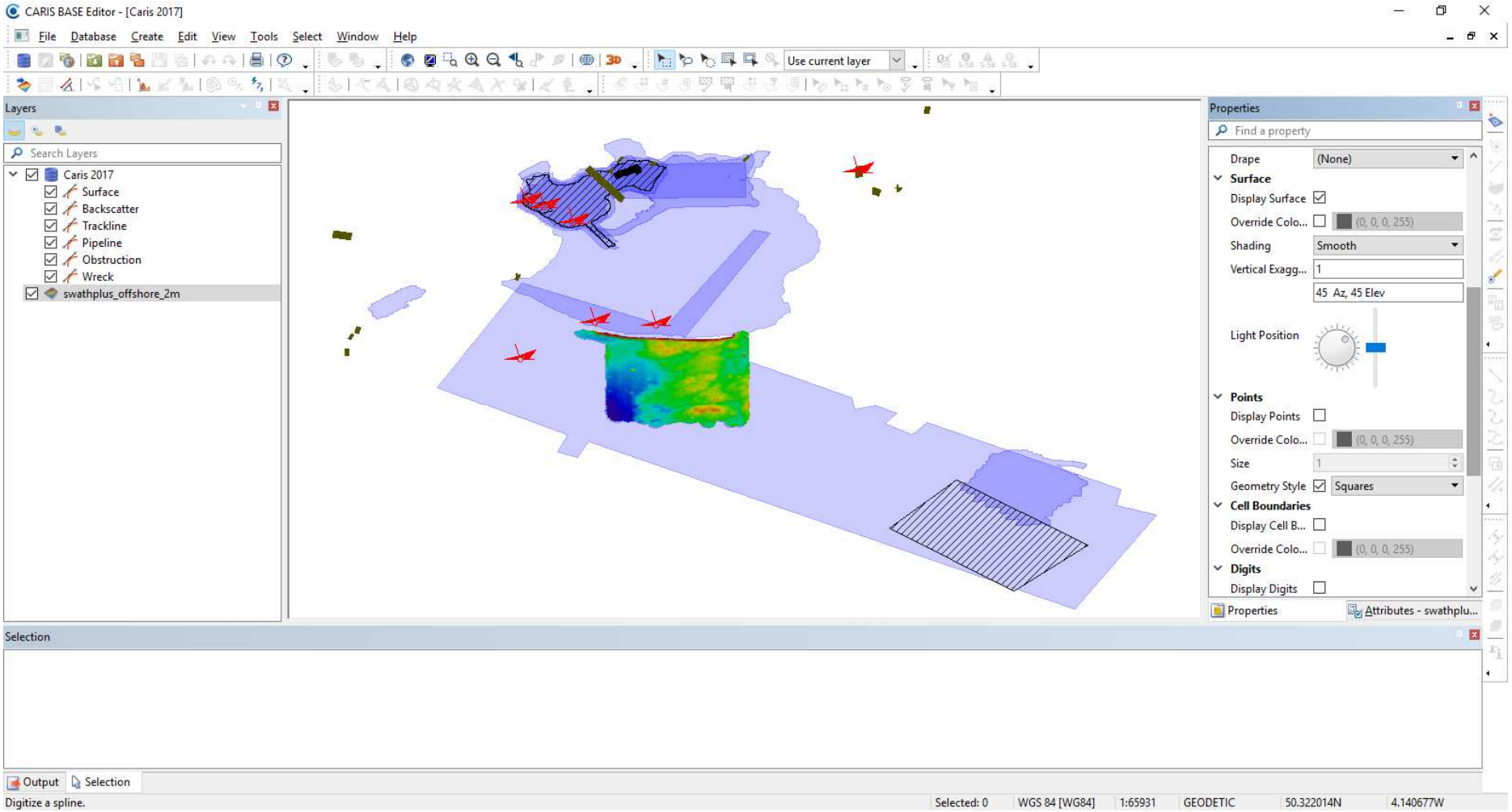
BATHY DATABASE 5.0

- Scheduled for Q4 2017
- Release of BASE Editor application and BDB Server
- Focus is on data centricity:
  - **Open object model**
  - Point, line, polygon objects + coverages
  - 2D and 2.5D geometries
  - improved support for coverage types
  - Enhanced Python API
  - New client application interface

- Store features in the database
  - Continue with Survey, Surfac or define new set of object definitions
  - Define new objects and attributes in Catalogue Editor
  - Customizable catalogue allows flexibility to use domain specific terminology

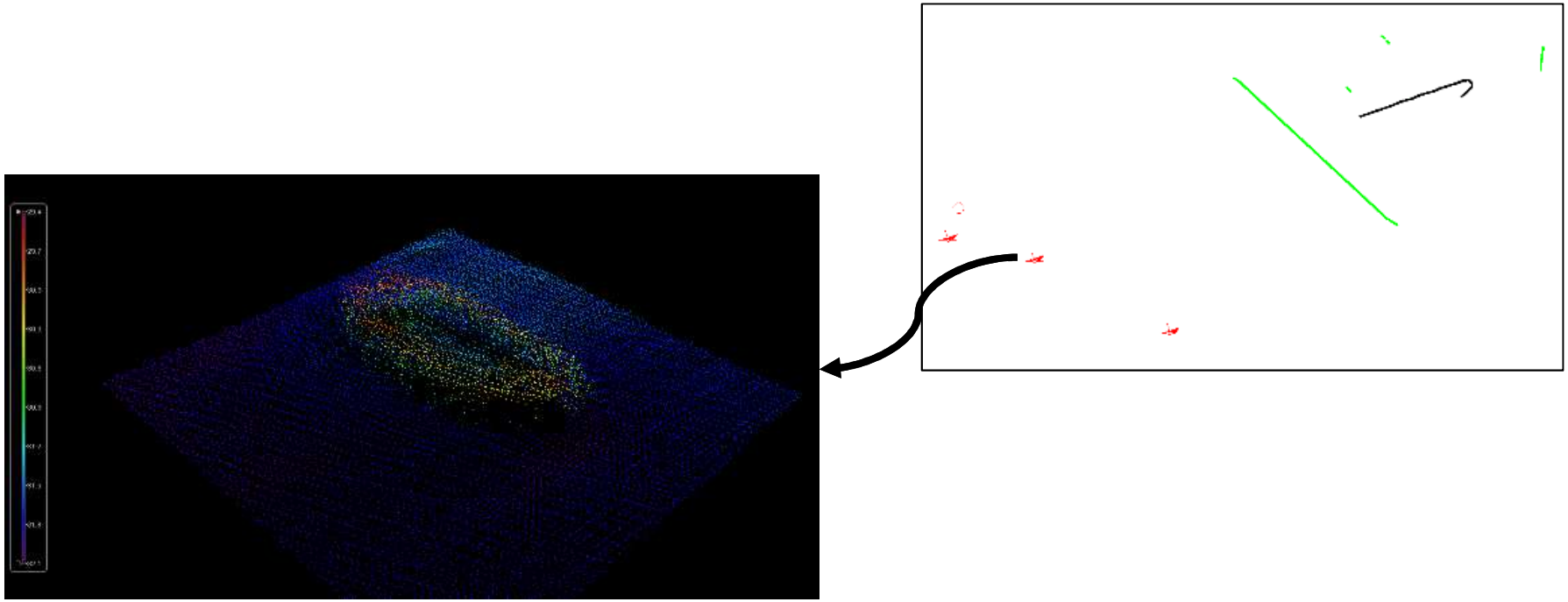


Bathy DataBASE 5.0



BDB 5.0 – Point, line, polygon objects + coverages

- Opening vector storage to point, lines and polygon
- Coverages continue to be associated with a vector feature



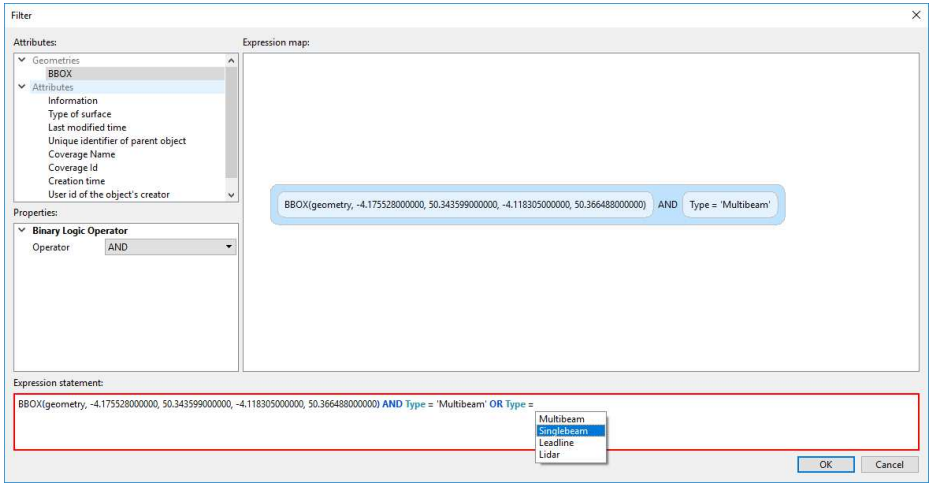
BDB 5.0 – Improved support for coverage types

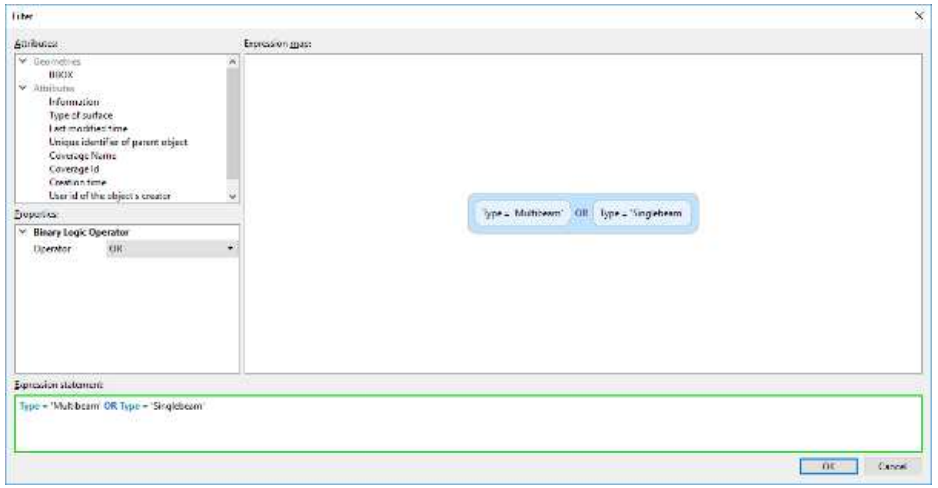
- Incorporate additional data from HIPS workflows such as water column clouds, backscatter mosaics (CSAR and TIF)

- Incorporate additional data from other systems such as wrecks, imagery, sweep hits

BDB 5.0 – New client application interface

- The GIS interface is used for:
  - Connection to BDB database
  - Connection to external databases
  - Read/write to supported vector formats





Summary

- Data Centric applications
  - Desktop tools evolving
  - Connectivity to databases and 3rd party applications
  - Services
- Bathy DataBASE 5.0 represents next application to champion data centricity
  - Open object data model
- CARIS to continue with data centric and process automation themes