

# NDSF Technology update

**NDSF** NATIONAL  
DEEP SUBMERGENCE  
FACILITY



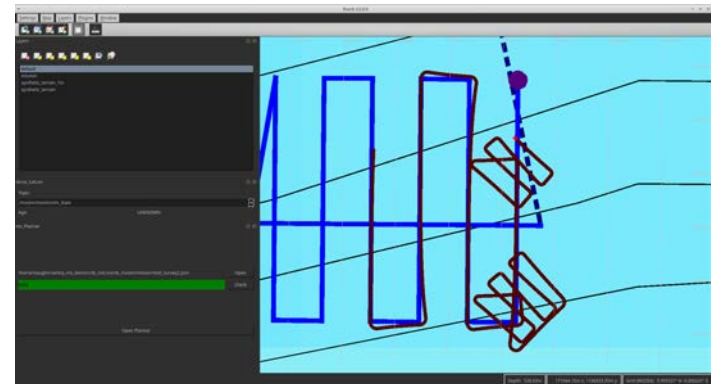
## *NDSF* Technology Update: New Goals

Increase the capability, efficiency, and cross training of NDSF by:

- More aggressively pulling technology from R&D projects
- Ensuring that designs are as modular and re-useable as possible and that significant effort is put into common hardware and software on all vehicles
- Moving all vehicles to a single software platform that is also run on R&D vehicles to improve code re-use streamline maintenance and enable technology pull

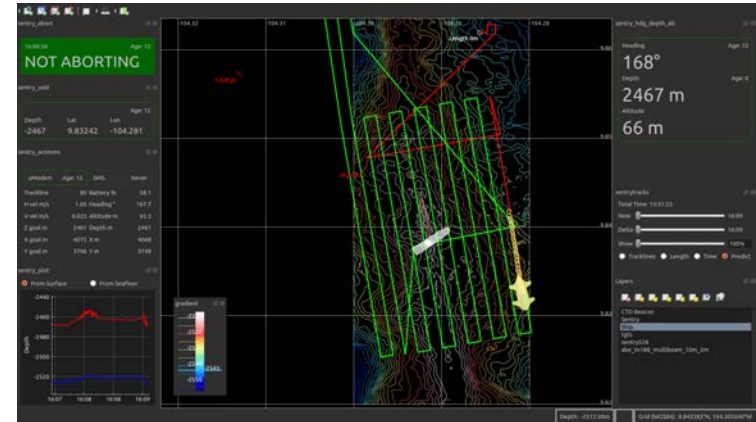
## NDSF Technology Update: DS\_ROS

- ROS now running on Sentry 60+ dives – highly reliable
- Rolling out mission executive for advanced monitoring and autonomy
- Gives ability to rapidly develop new autonomy modules in a relatively low risk way
- Gives a high end monitoring and cueing system as well as configuration control that will be highly useful even on human-in/on-the-loop systems
- Initial testing on Sentry Engineering Cruise this fall
- Substantial ONR funded development work now ongoing as well (path planning, new nav,
- Started planning work for moving Alvin/Jason to ROS – Jason to start Fall 2020
- Maintainable, common code base
- Interchangeable personnel
- New capabilities for both



# NDSF Technology Update: NavG3

- New vehicle user interface
- Looks similar, but different from the ground up
- GIS based – co-locate your data, planning, and monitoring
- Plug in based with savable configurations
- Mainstream on Sentry
- Currently being adapted for Jason – goal is rollout this fall (Oct?)



## NDSF Technology Update:

- Move all three vehicles to a common post processing pipeline
- Close, but have all diverged
- Adopt Sentry cruise report format
- Requires a web front end and a database back end to make accessible to all users
- Summer student last summer made viable Sentry/Jason proto – further internal discussion next week
- Will move forward on this as soon as staff free up from Jason NavG3 work
- Reliability Tracking
- Goal is to capture more detailed failure information to allow a data driven approach to reliability
- Being developed now – goal is roll out Fall 2020.

Reliability Tracking Form

Select Vehicle:

Search

Sentry

- |-Sensors
  - |-Vehicle
    - |-Pressure / Depth
      - |-Paroscientific 8B7000-I
  - |-Geophysical
    - |-Sonars
      - |-Multibeam
        - |-Reson 7125
      - |-Sidescan
      - |-Subbottom
    - |-Oceanographic
      - |-CTD
        - |-Seabird 49
      - |-Sampling Equipment
      - |-Mission Planning

Select Component

Component: Paroscientific 8B7000-I

Dive #: 483

Time Frame: Pre Dive / Deployment

Cost: \$1000

Effort: 4 hours

Science Lost:  Data

Safety:  Near Miss

Failure Description:

Mark form as open

Mark form as closed

Save and Continue Quit Page 1 of 2

Reset Levels Save & Finish Quit