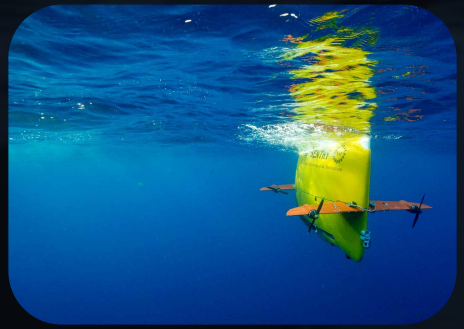
AUV SENTRY

WOODS HOLE
OCEANOGRAPHIC
INSTITUTION



AUV SENTRY

NATIONAL DEEP SUBMERGENCE FACILITY

Andy Bowen

NDSF Program Manager

abowen@whoi.edu

Anna Michel

Chief Scientist for deep Submergence

csds@whoi.edu

Sean Kelley

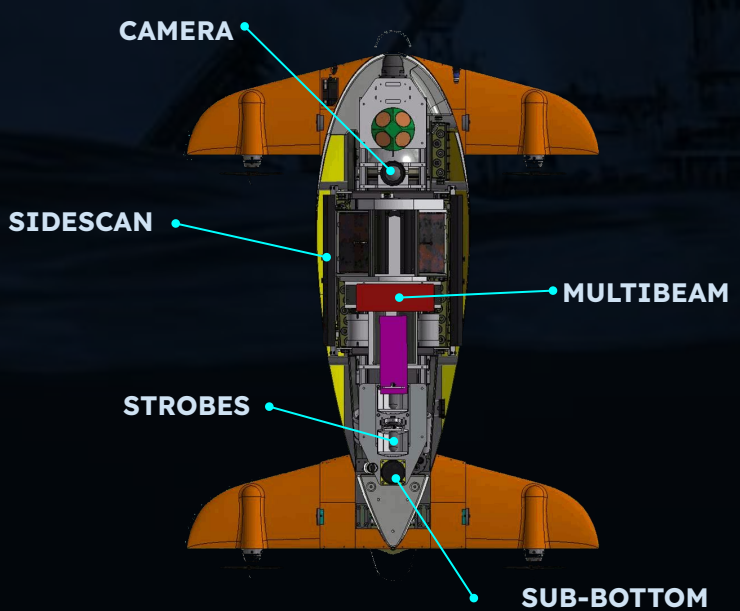
AUV Sentry Program manager

skelley@whoi.edu

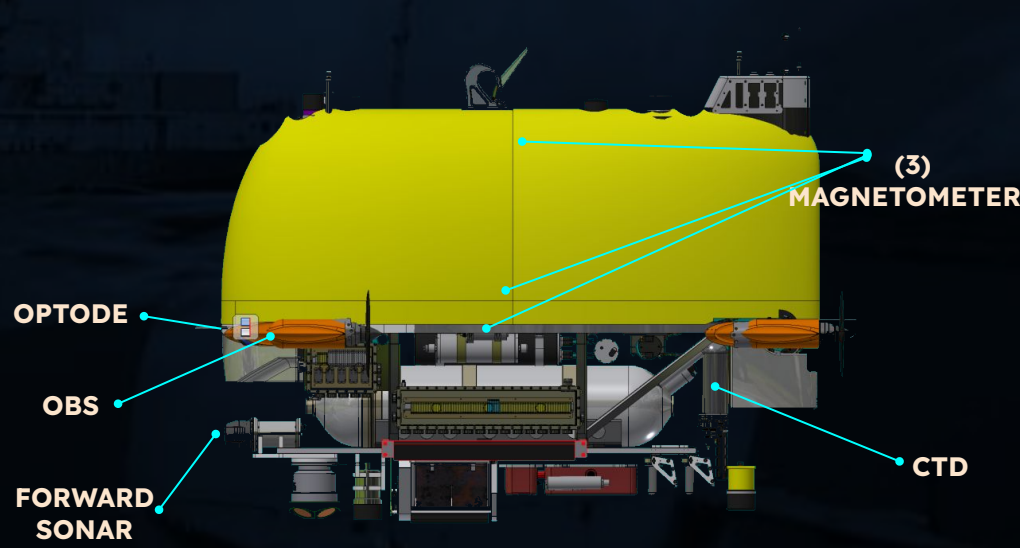
AUV SENTRY OVERVIEW

- 6,000 Meter depth rated AUV
- Designed for maneuverability
- Autonomous - pre-programmed missions
- Full package (ops, processing, mission planning)
- Routine concurrent Operations
- Ideal for new and development sensors

AUV SENTRY SYSTEMS



BOTTOM VIEW



PORT SIDE VIEW

Missions from 12 to 30 hours, running 1-2knots SOG

Third party equipment that is highly integrated into the vehicle

CAPABILITIES

Surveys are pre-programmed and include high and low level surveys

Altitudes 5m to 100m

Real time acoustic communications

Real time acoustic communications

OPERATIONAL MODEL

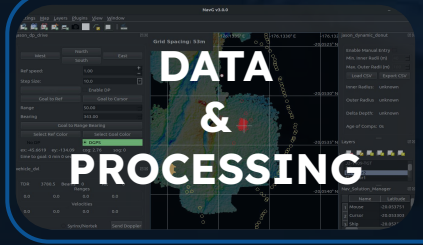
Sentry travels with two 20’ containers and will operate on vessels of opportunity. Available to serve the broader scientific community for a wide range of applications.

LOGISTICS

- 2X - 20’ Containers
- Vessels of opportunity
- 5 Sentry personnel
- Pre Cruise planning

OPERATIONS

- Mission planning
- Launch/Recover
- Watch standing
- Concurrent operations
- Vehicle configurations and maint.



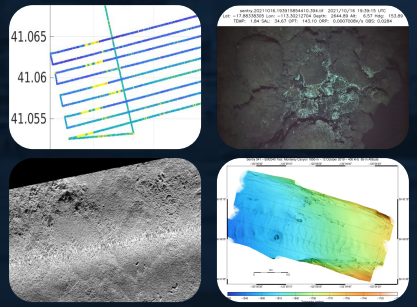
DATA & PROCESSING

- First draft data products
- Multibeam
- Sidescan
- Sensor plotting

AUV SENTRY USE CASES

SENTRY & ROV/HOV OPERATIONS

ROV
HOV
CTDs
Dredging
Box coring



COMBINED OPS

Sentry can be added to many programs to increase efficiency, add a high level view of the worksite, and create a better data product

DATA

Data products are produced after each dives, photos, MB, Sidescan, sensor plots over navigation and available to the science user

DIVE PLANNING

Better informed with high fidelity data about your worksite

PLUME HUNTING

Sentry used as a plume sniffing and hunting vehicle that can cover large areas around a known vent field to identify and characterize plume dispersal.

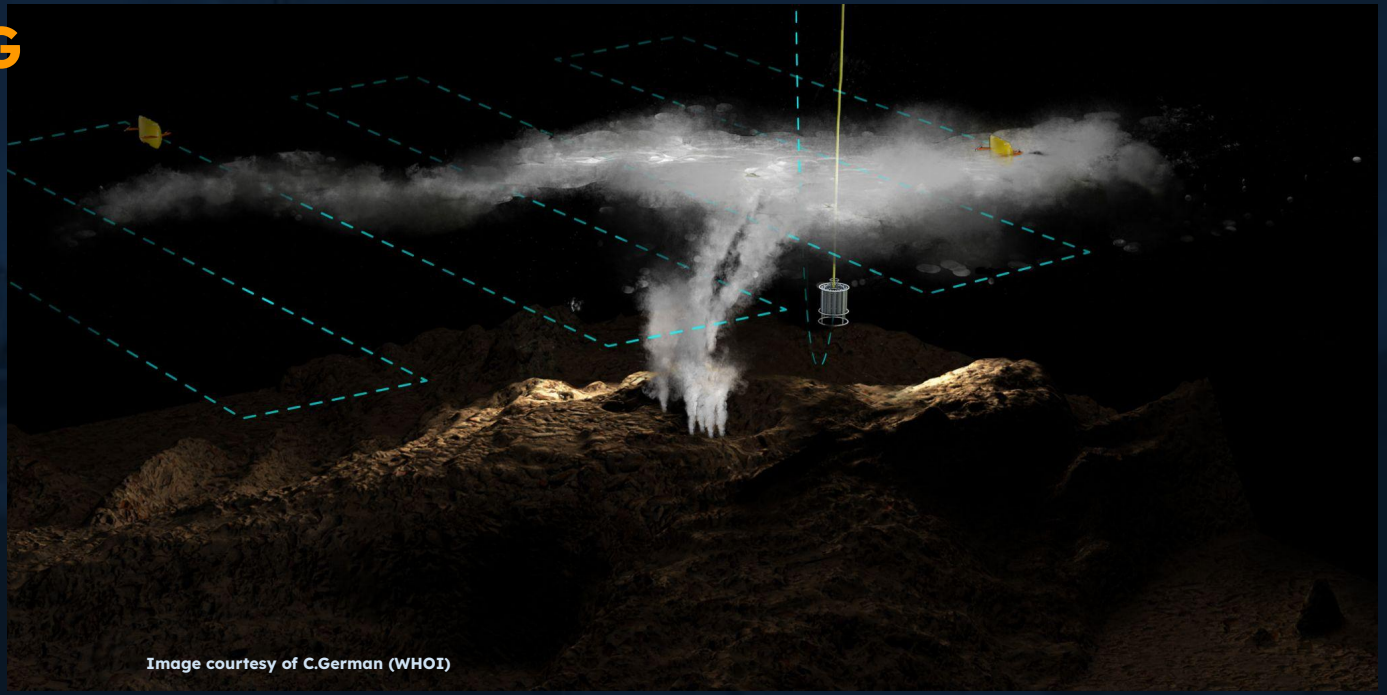
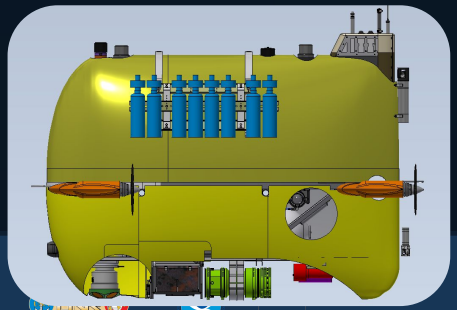
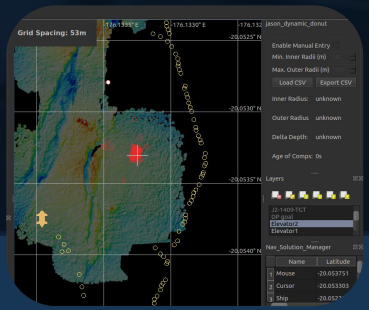


Image courtesy of C.German (WHOI)

SENSORS

- Methane Sensor
- Water Sampler
- Real time vehicle data
- Optical Backscatter
- CTD





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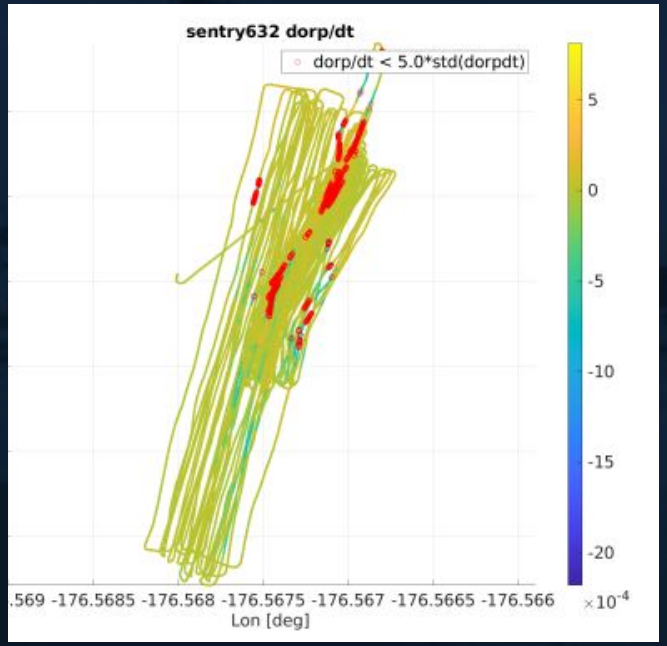
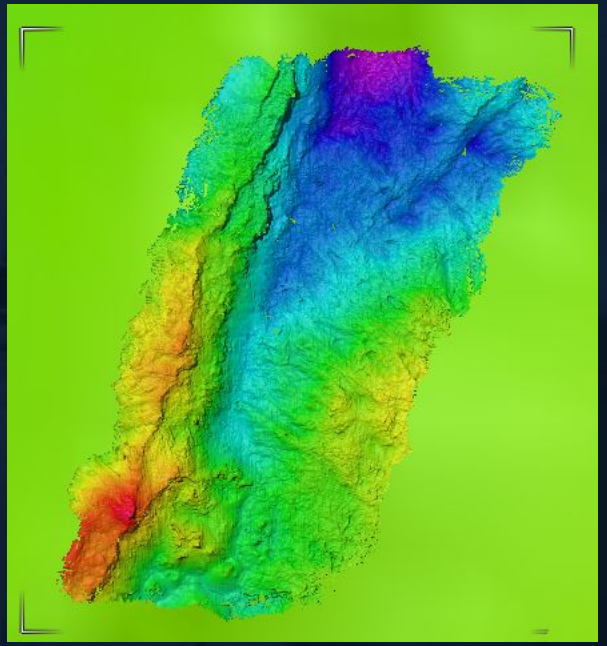
LARVAL SAMPLING

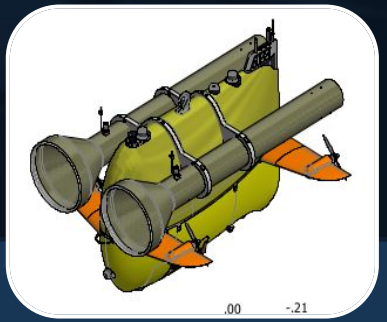
Larval sampler developed at WHOI allows for near bottom larval samples, allowing Sentry to pump significant volumes of water over the course of the dive.





SENSORS

- SyPRID
- Optical BackScatter
- CTD
- Optode



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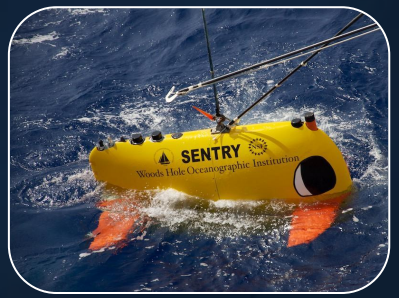
Future of US Marine Seafloor and Subseafloor Sampling (And Sentry)

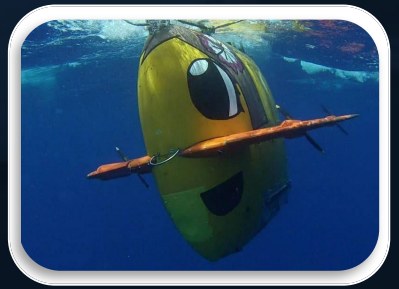


How can Sentry be used in the next five to ten years?

What capabilities are needed?

What technologies need to be developed

What technologies need to be integrated



THANK YOU

Sean Kelley - AUV Sentry Program Manager

SKELLEY@WHOI.EDU

WOODS HOLE OCEANOGRAPHIC INSTITUTION