



SUBSEA TECHNOLOGY

Robotics & Autonomy

July 2021



**POSITIONING
NAVIGATION
COMMUNICATION
MONITORING
IMAGING**

Introduction to Sonardyne and Sonardyne Group

Leading independent provider of underwater acoustic, inertial, optical and sonar technology

70+

The number of countries where we operate

>400

Sonardyne group employees worldwide

>50

The age of our company

10,000

Transducer manufactured each year

15mm

Positioning accuracy of 6G acoustic technology

600Mb/s

The speed we can transfer data subsea

100%

Deep water fields where Sonardyne technology is used

80%

Percentage of products we export

24/7

Support any time you need it

156,000

Total square footage of our facilities

12,000m

How deep our equipment can operate

EIVA

VOYIS

Chelsea Technologies



Sonardyne
SOUND IN DEPTH



WAVEFRONT
A SONARDYNE GROUP COMPANY

Royal Navy

<https://twitter.com/AdmTonyRadakin/status/1374063836093898759>

National Oceanic and Atmospheric Administration

<https://www.noaa.gov/media-release/noaa-releases-new-strategies-to-apply-emerging-science-and-technology>

Equinor

<https://www.equinor.com/en/how-and-why/digitalisation-in-our-dna.html>

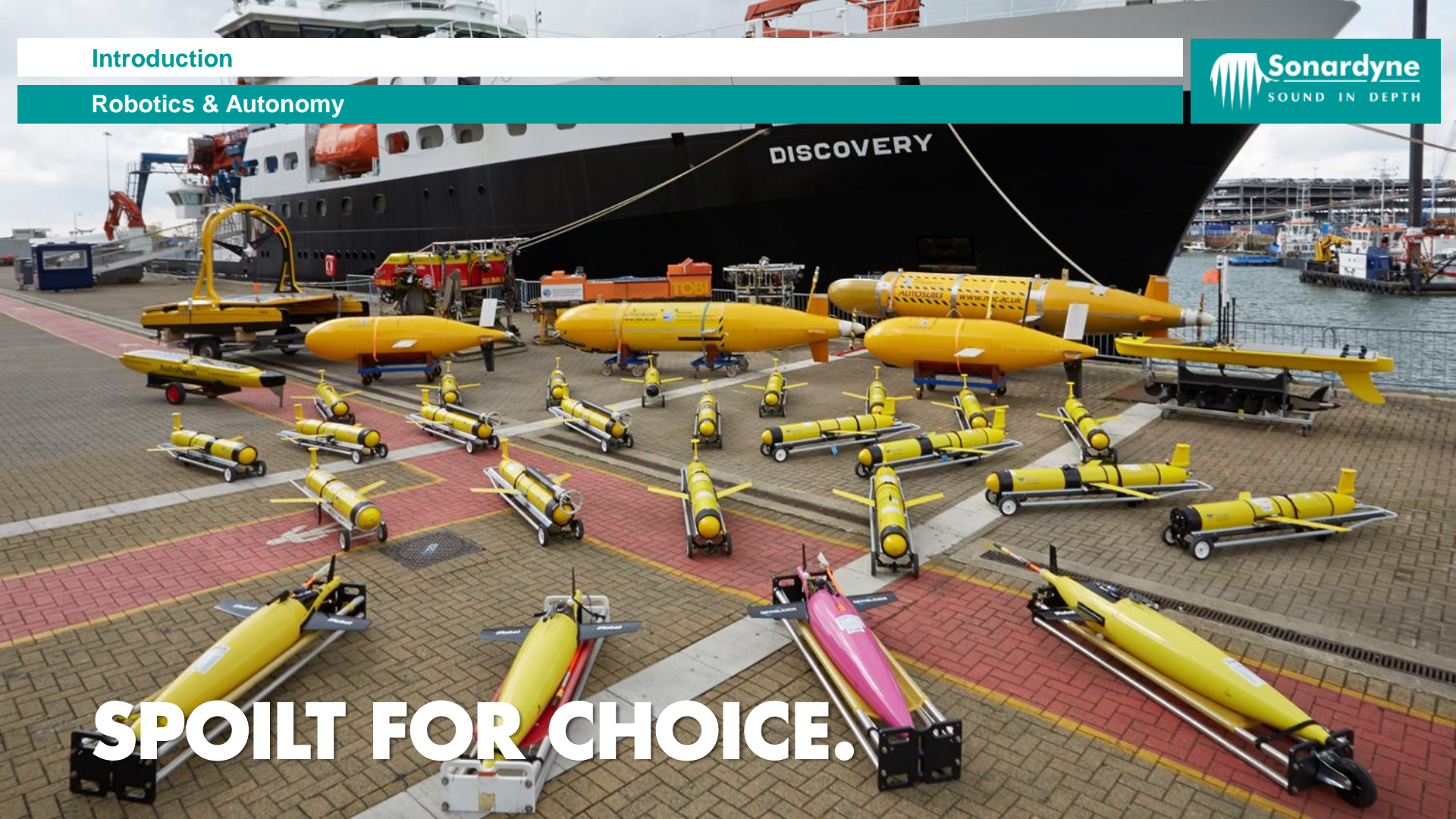
IT'S HAPPENING

Introduction

Robotics & Autonomy



SPOILT FOR CHOICE.



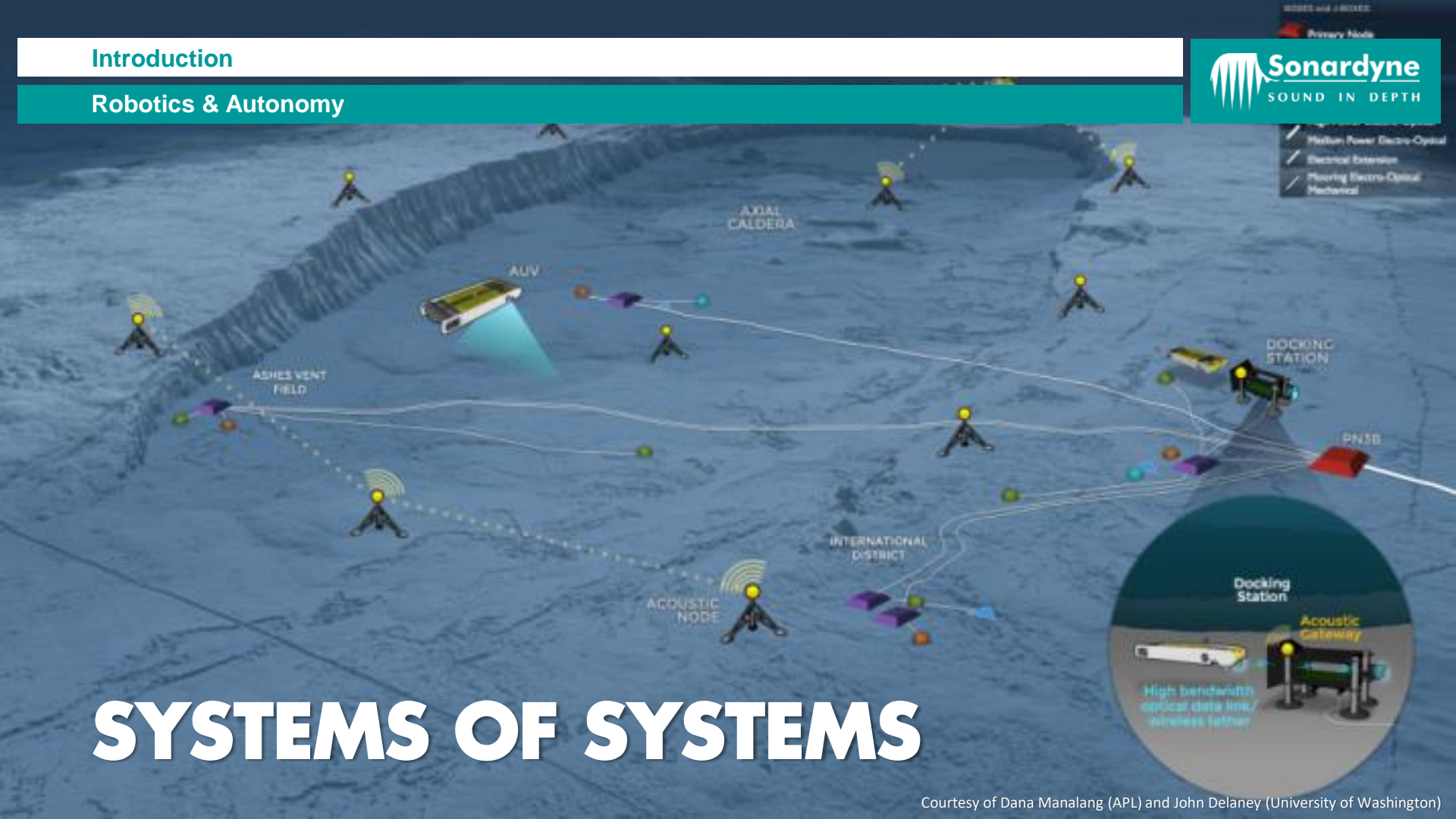
Introduction

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DATA HOARDERS.

SYSTEMS OF SYSTEMS

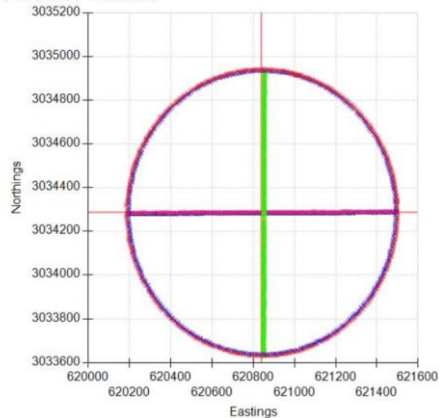


Early Box-in Examples

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Vessel Track



Results:

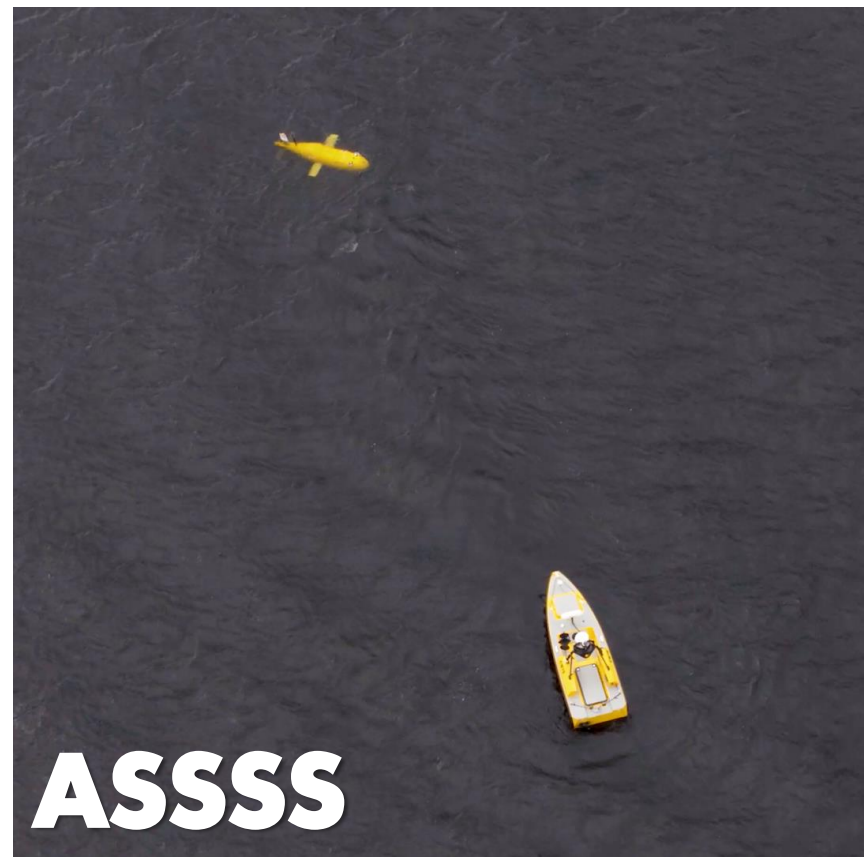
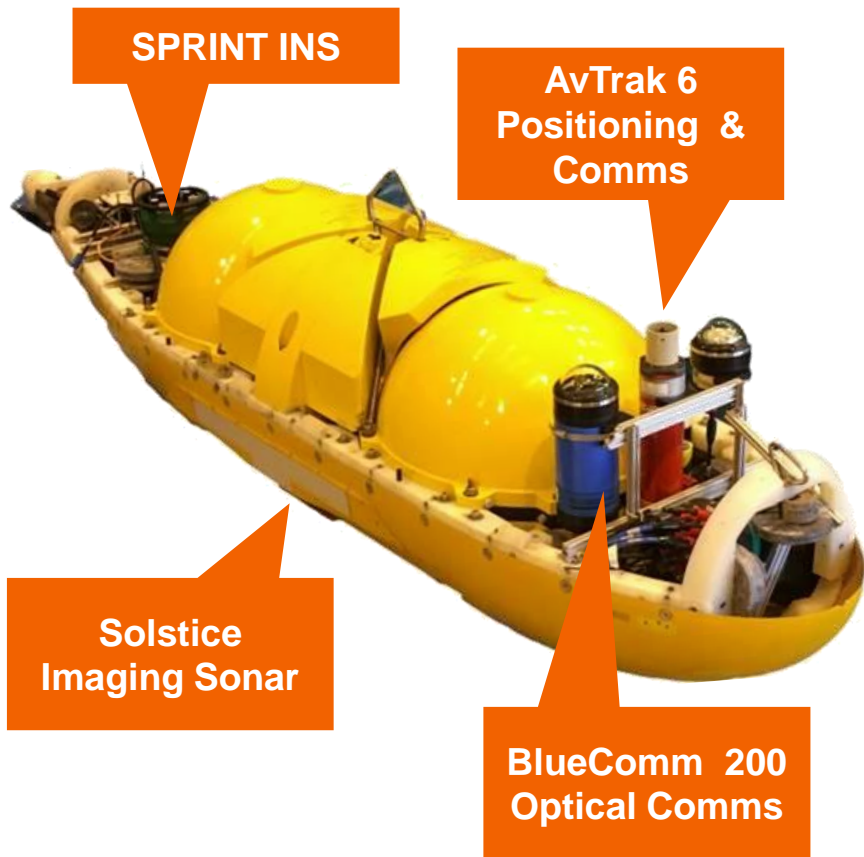
Beacon BoxIn	Beacon Eastings	Beacon Northings	Beacon Depth
Before	620846.42m	3034293.14m	1300.67m
Calculated	620839.59m	3034287.01m	1304.32m
Calculated Accuracy	0.04m	0.04m	0.14m

Autonomous vehicles can manoeuvre perfectly therefore optimising data collection



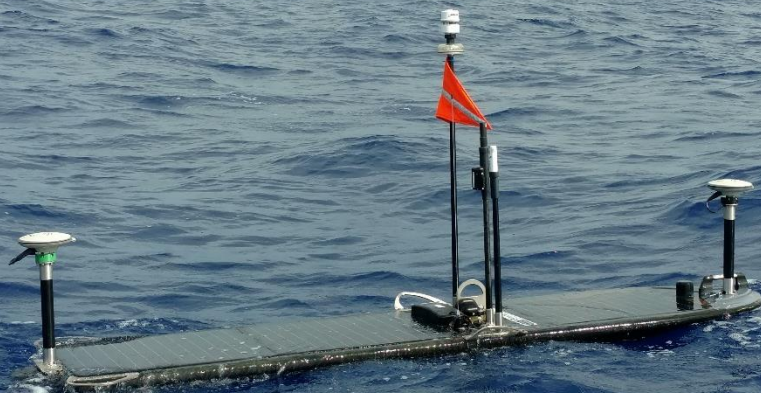
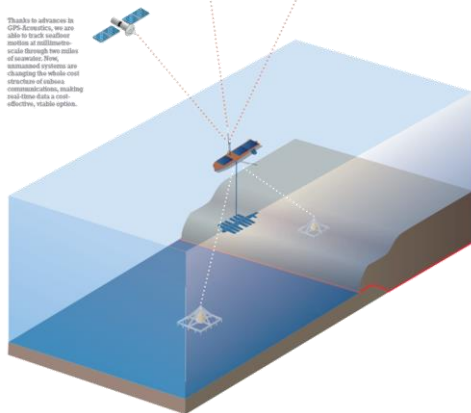
Remote control through
optical and acoustic
communications

Intervention



Case Study: Precision acoustics for persistent subsea observations

Thanks to advances in GPS-dynamics, we are able to track another motion of millimeters scale through two orders of magnitude. Now, autonomous systems are changing the whole cost structure of subsea communications, making real-time data a cost-effective, viable option.



OVER-THE-HORIZON

Improved Area Coverage Rates

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Increasing area coverage rates
for man-portable AUVs



Combined ROV & USV Operations for Remote Operations in the Littoral

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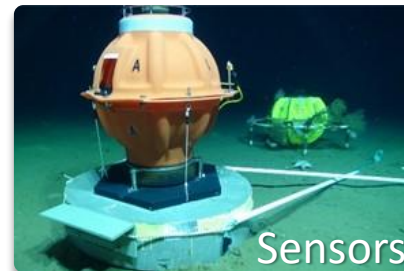
Combined remote operations
using ROV & USV



ARISE

Over-the-horizon Uncrewed

Robotics & Autonomy

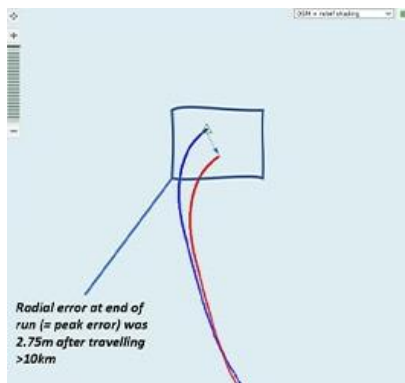


HARVEST

Courtesy of XOCEAN

Improved Navigation for Higher Endurance

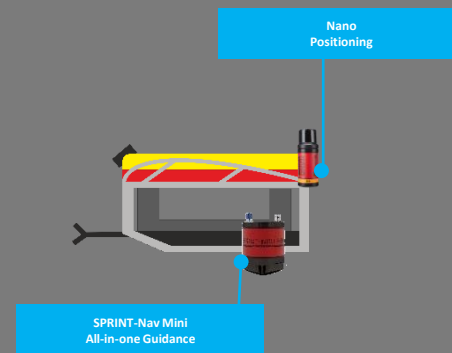
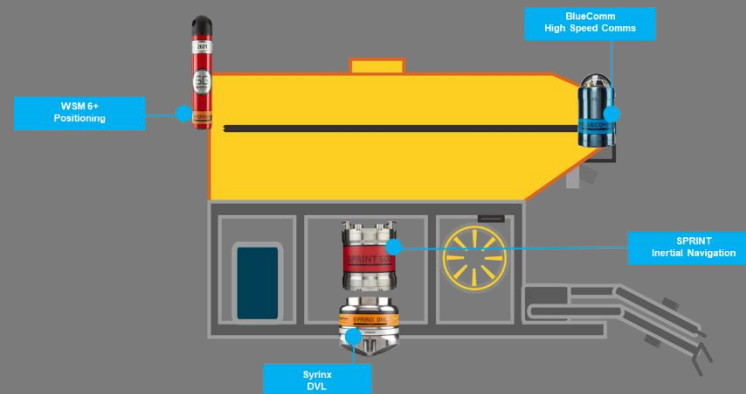
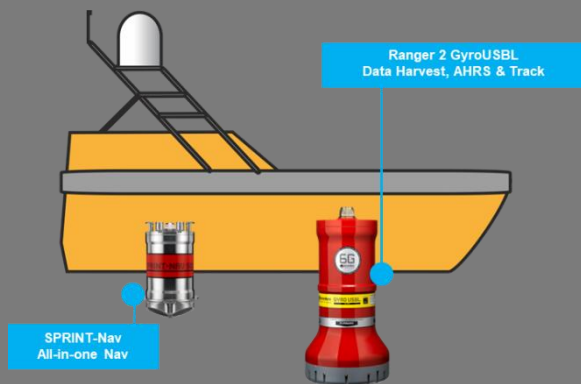
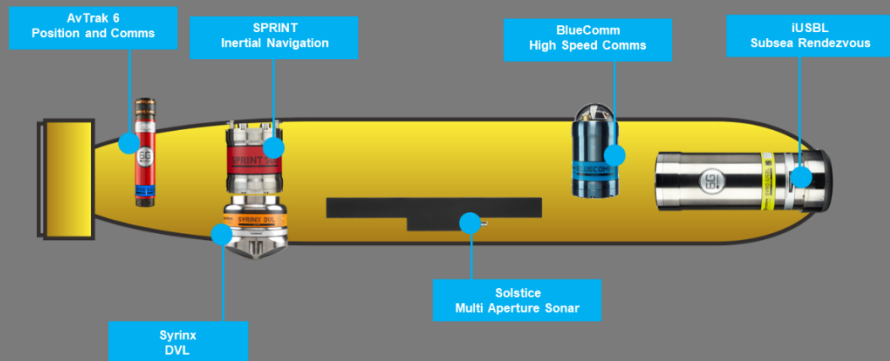
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Peak error of 2.75 m
following a 10 km transect

Instrument Enabled Autonomy

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**Thank you for your time today
any questions?**

SONARDYNE.COM



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