

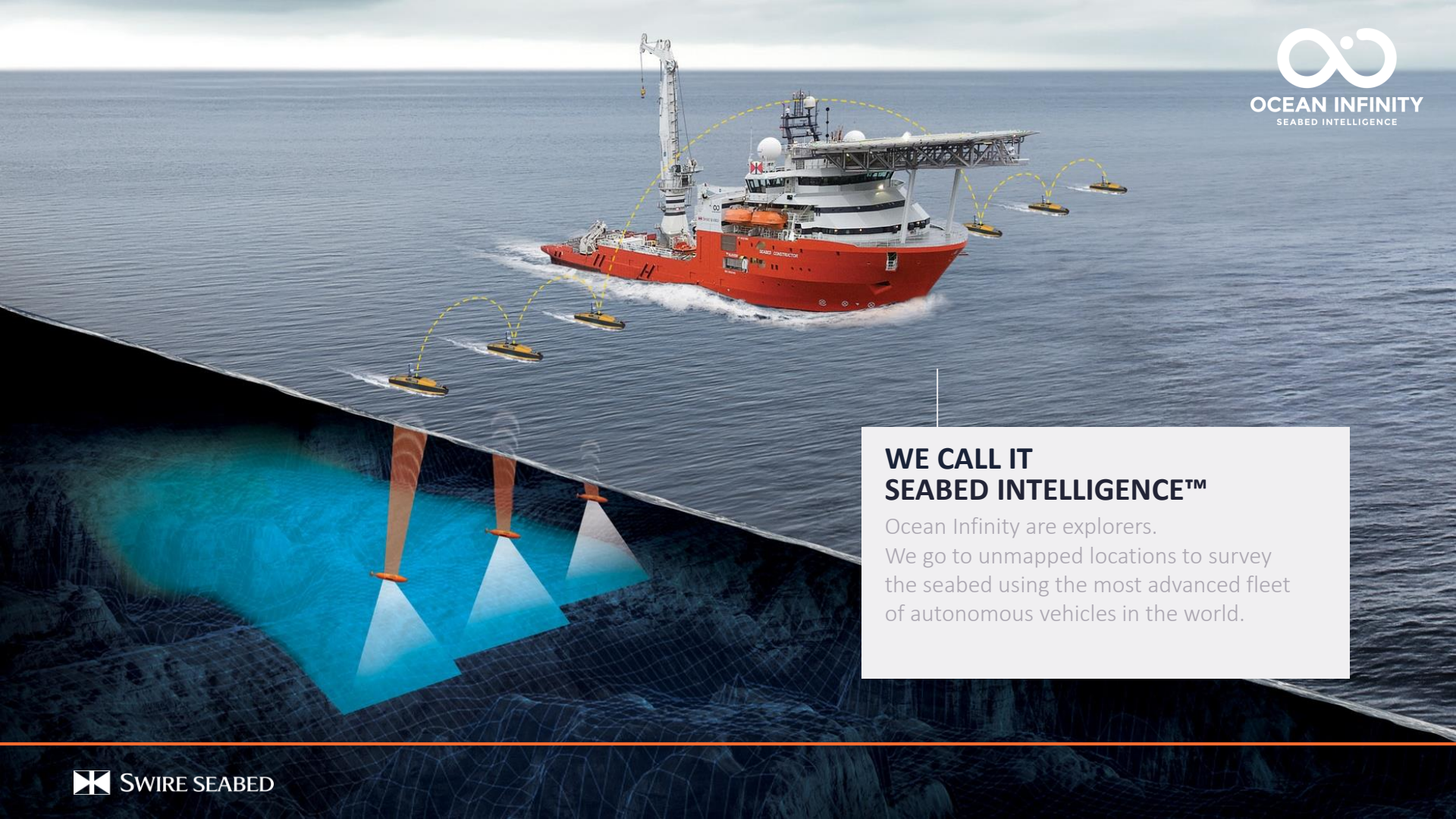


OCEAN INFINITY
SEABED INTELLIGENCE

AUTOMATION AT DEPTH: OCEAN INFINITY AND SEABED MAPPING USING MULTIPLE AUVS

SS Rotterdam, 15th November 2017

11/20/2017

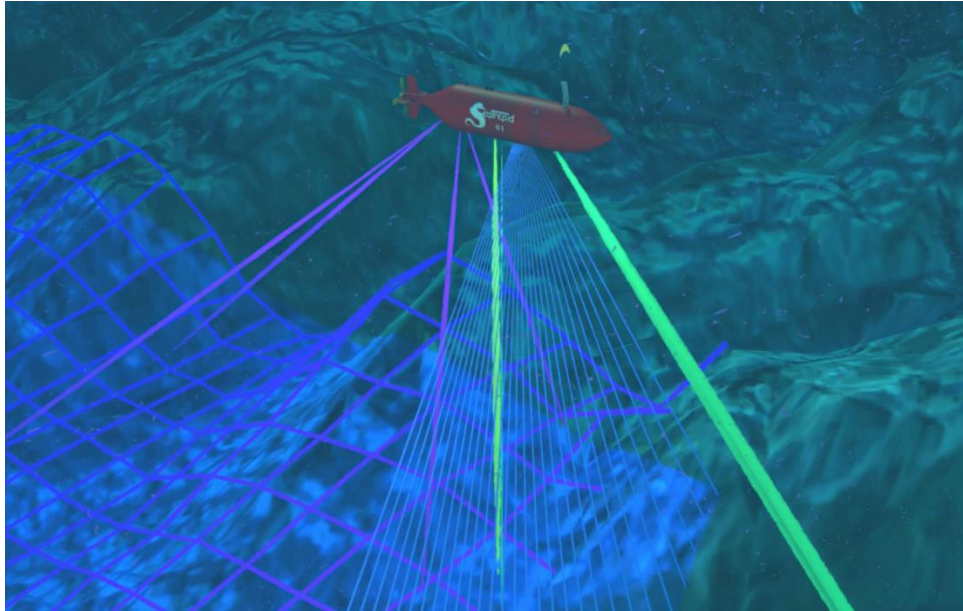


WE CALL IT SEABED INTELLIGENCE™

Ocean Infinity are explorers.
We go to unmapped locations to survey
the seabed using the most advanced fleet
of autonomous vehicles in the world.



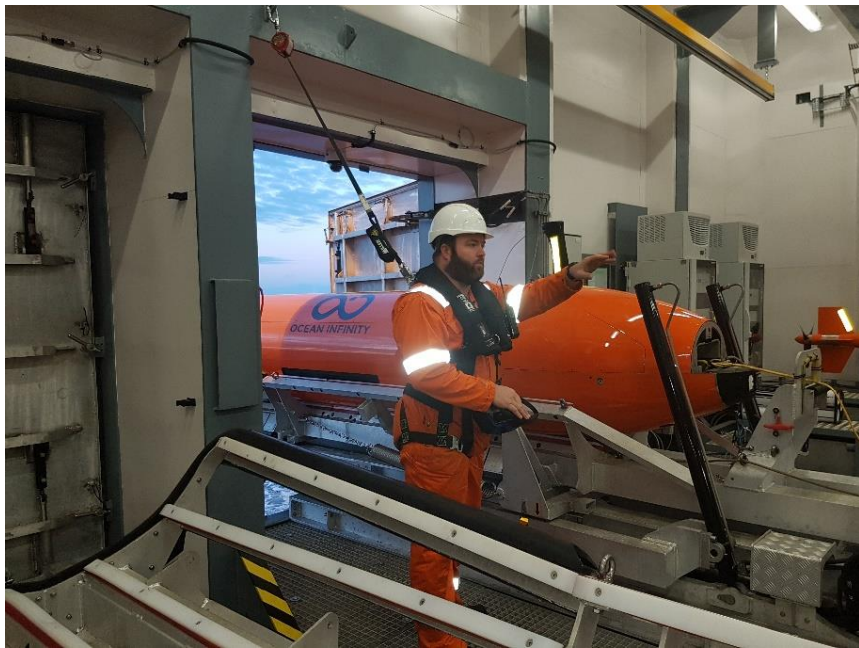
AUV SHOALING



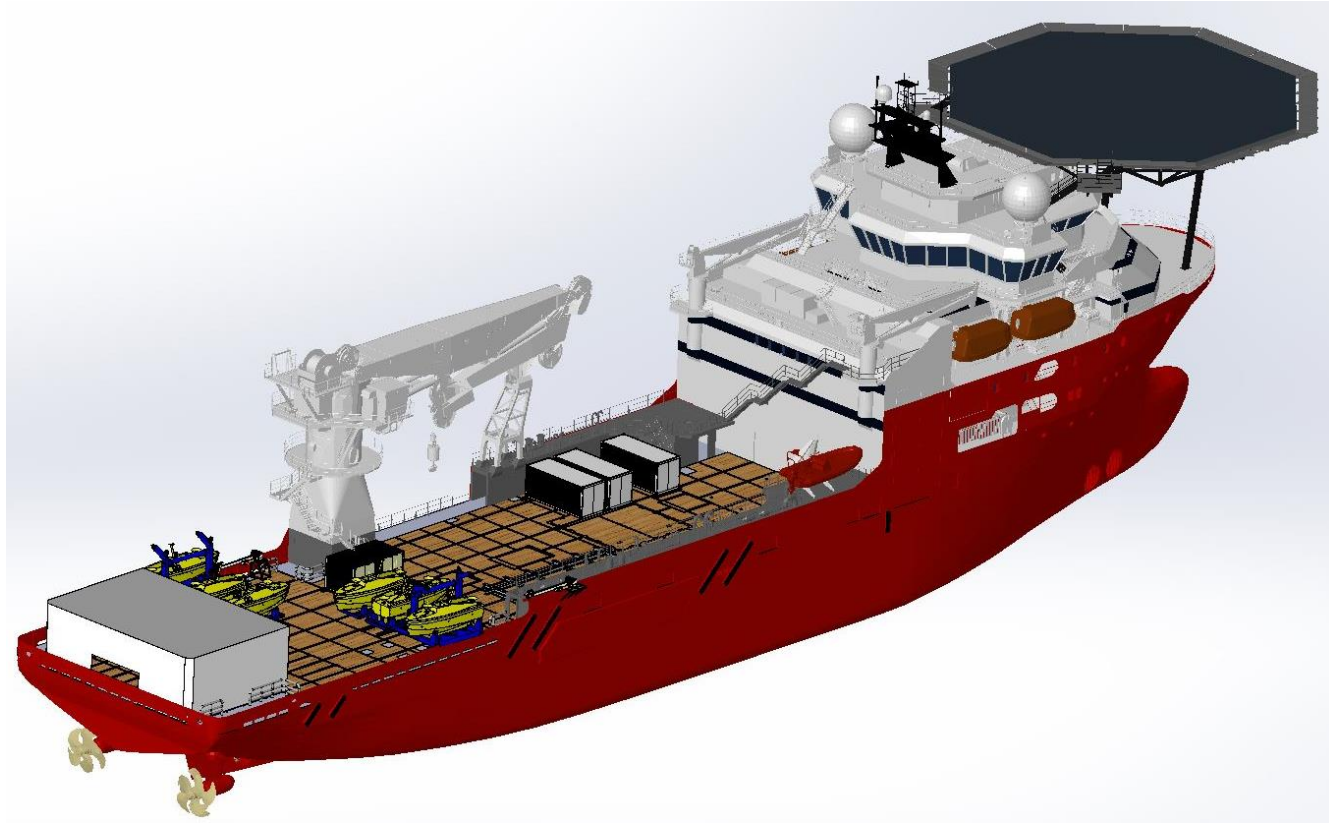
HUGIN 6000



AUV DATA TRANSFER



SEABED CONSTRUCTOR LAYOUT

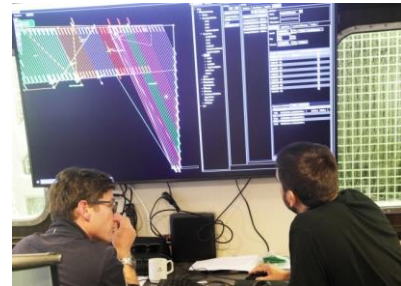
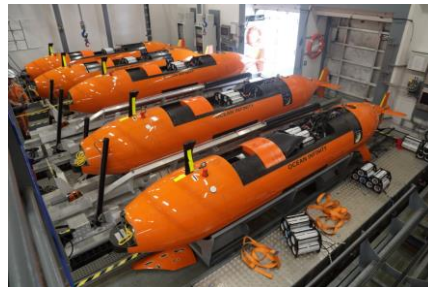




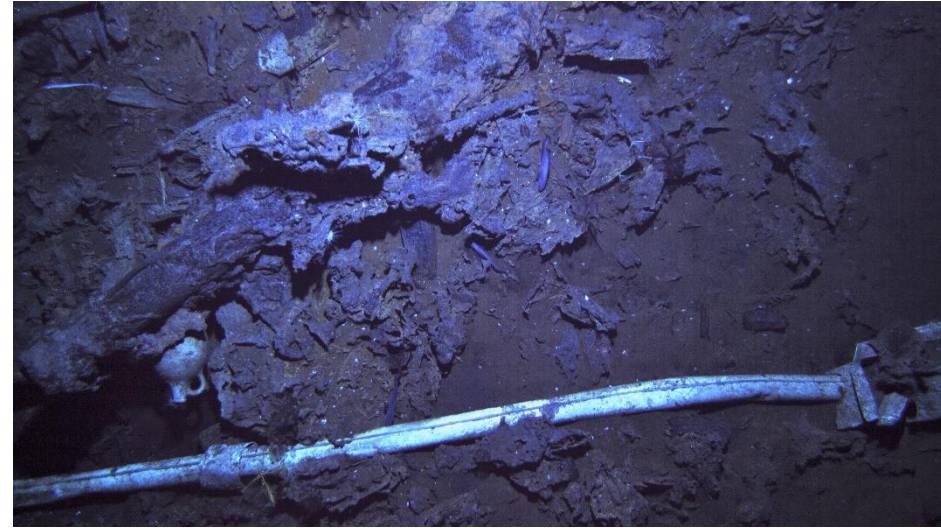
OPERATIONAL STATUS

Performed 4 projects so far with the AUV solution:

- 1st project was the size of Faroe Islands or Singapore, this was surveyed in 9 days, 1700km².
- 2nd project was 1440km² area surveyed, 18x AUV dives
- 6 AUV's surveying simultaneously
- Area surveyed last month 5944 km²
- Planned installation of hull mounted EM302 MBES



CathX Rectified Subsea Images



SIDESCAN SONAR DATA

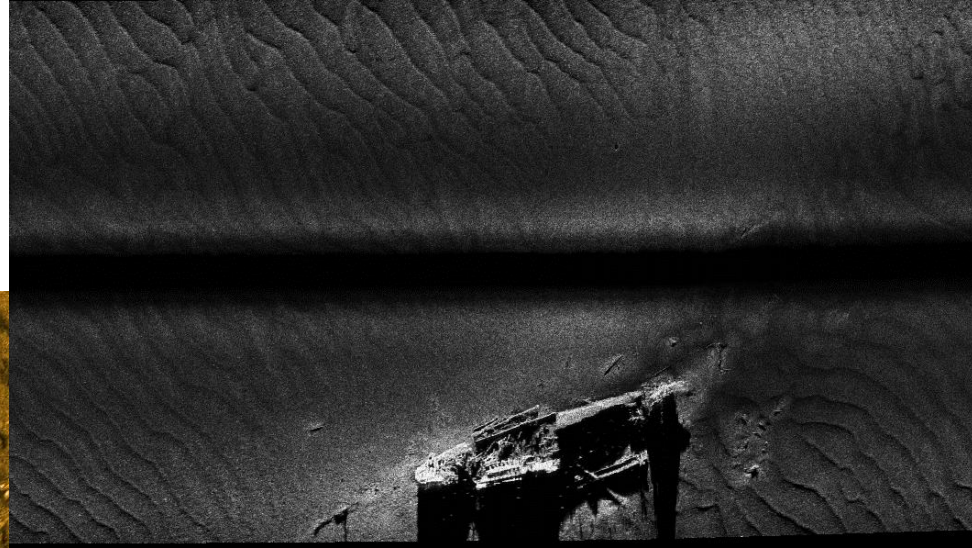
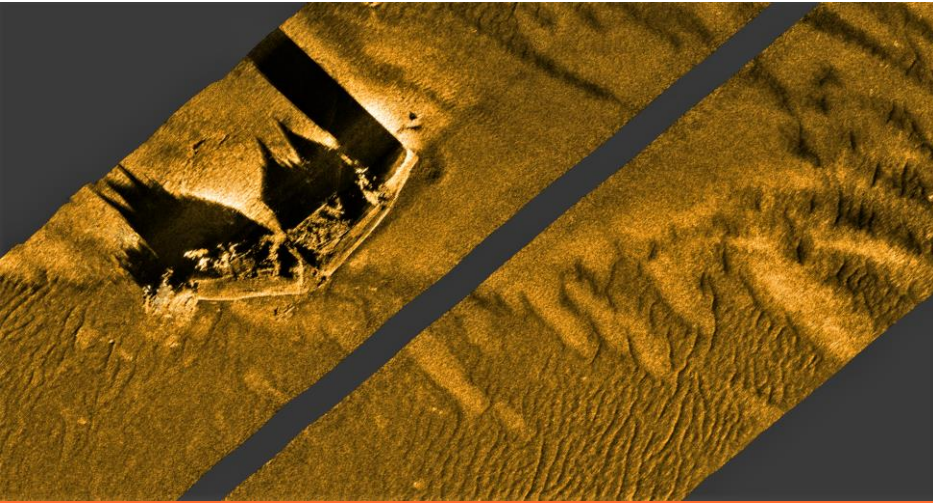
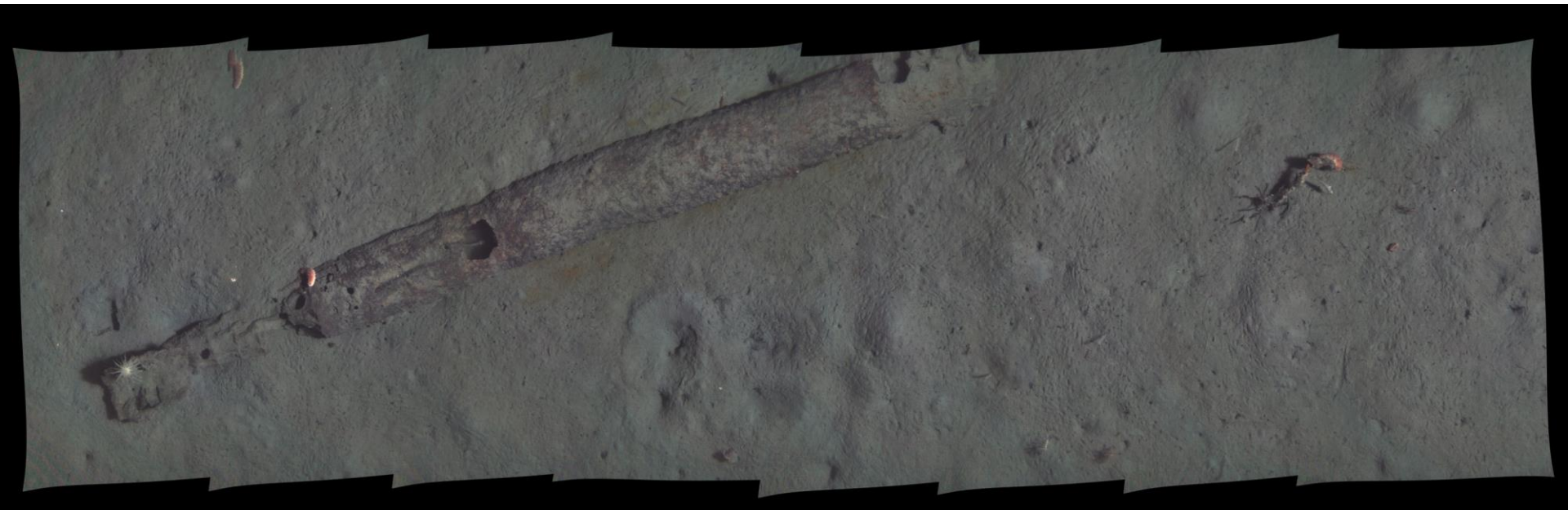


PHOTO MOSAIC



STANDARDISATION & AUTOMATION

DATA PROCESSING

Each AUV per 24 hours:

- 1 TB digital data
- 430,000 still images (max.)

Processing packages:

- Delph iXblue
- EIVA NaviSuite
- ESRI ArcGIS
- CathX

Deliverables:

- SSDM format GIS data
- .bag compatibility
- Mosaic raster catalogs
- Field Reports

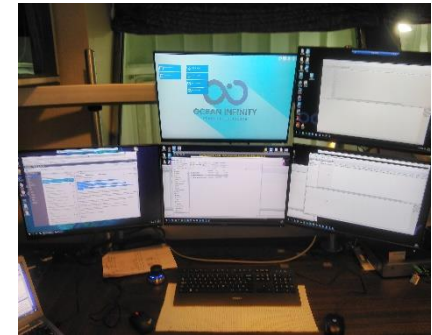
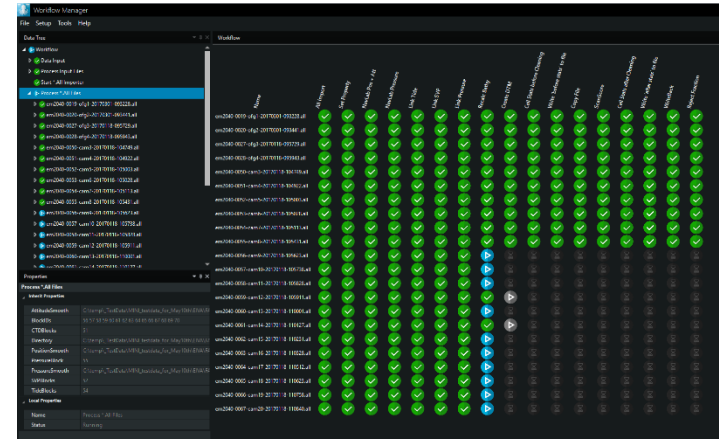
Turnaround production:

- Preliminary results within 24 hours after data on disk.



AUTOMATIC DATA PROCESSING

- Virtual machines set up on 7 workplaces
3-5 monitors depending on use
- One virtual machine workplace is for the Eiva WFM user interface
This in turn remote control one or more additional virtual machines.
- One data processor on shift dedicated to navigation and MBE basic processing only.
- Record so far is processing of 3 auv dives in less than one 12h shift.
Total of 125h of data.



ONSHORE DATA MANAGEMENT AND DELIVERY

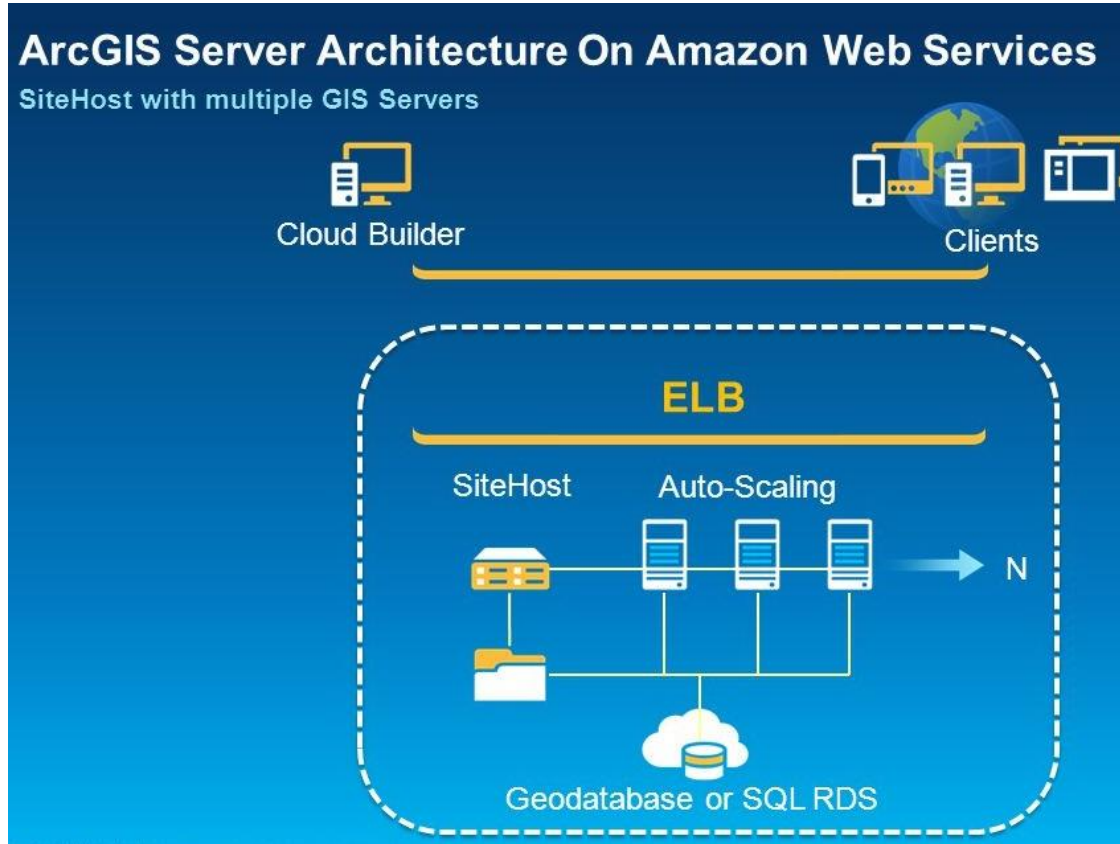
BIG DATA

- Being big is not necessary!
- Can involve a high Variety of data from complex sources
- Ability to analyse unstructured and structured data together to generate incite
- High Velocity streaming data
- Velocity, Variety and Volume

ArcGIS Server



WHERE TO STORE OUR BIG DATA?

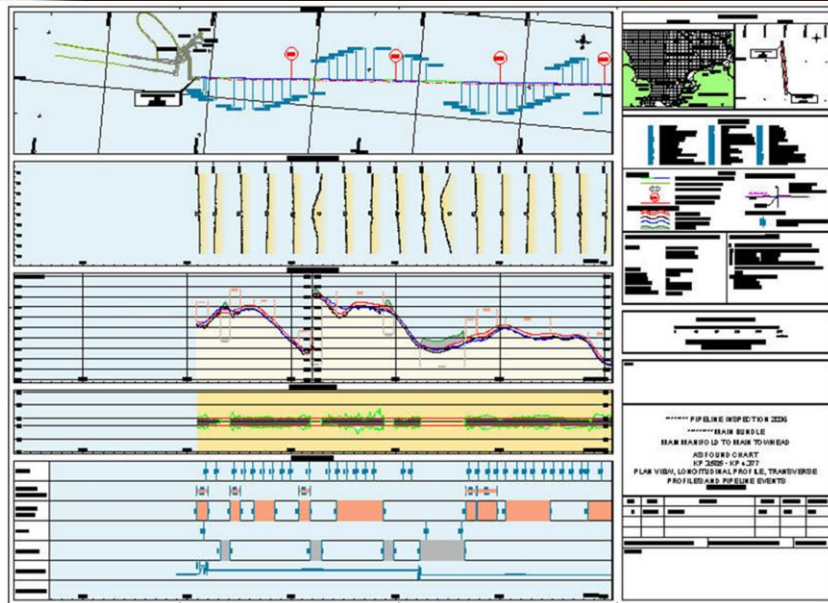


DATA SHARING



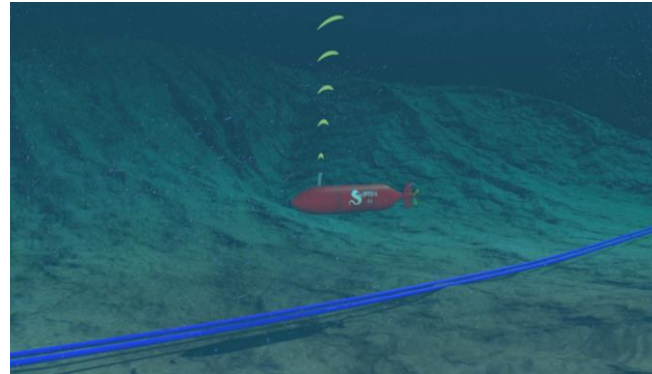
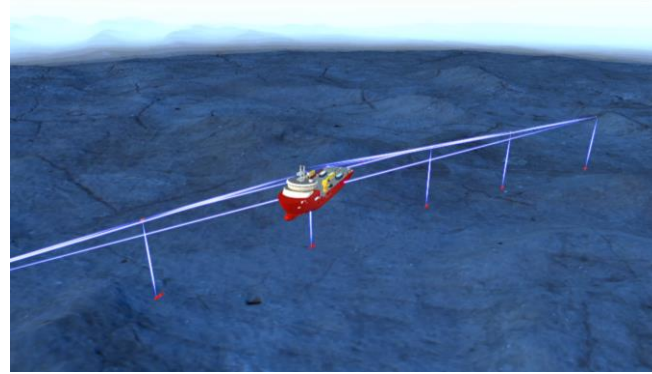
Allow the data ‘owner’ to retain the responsibility for their data and its maintenance, as well as the technological mechanisms to share it efficiently with others.

NOT FUTURE PROOF



APPLICATIONS

- Geophysical Seabed Mapping
- Cable Route Surveys
- Decommissioning Surveys
- Benthic Habitat Mapping
- Archeological Survey
- Marine Debris Search
- Pipeline Inspection Survey /
Asset Integrity Surveys
- Environmental mapping



Thank you for your attention

Any Questions

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