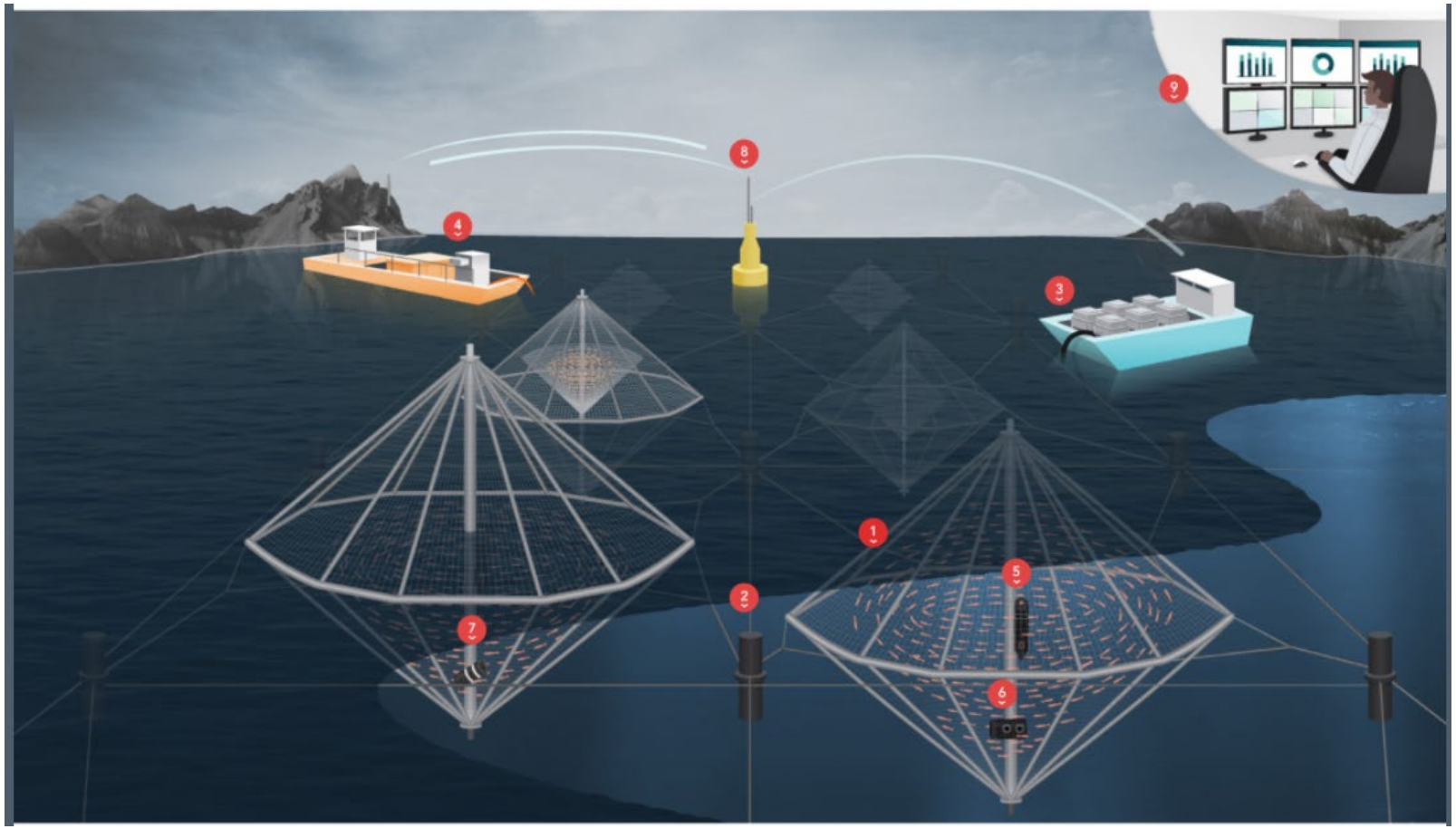
Two applications for the last manuscript (device lifetime maximization)

- Precision salmon System
- Emergency communication

Precision salmon System



sensors were installed to collect information determining the vertical **distribution of the fish** in the **cage**, while a network of **environmental sensors** characterized local site conditions.

Fish response based on thermoregulation (temperature variations), oxygen levels, or weather data can be used to **inform feeding schedule, oxygen supplementation, or stocking densities to ensure fish health**.

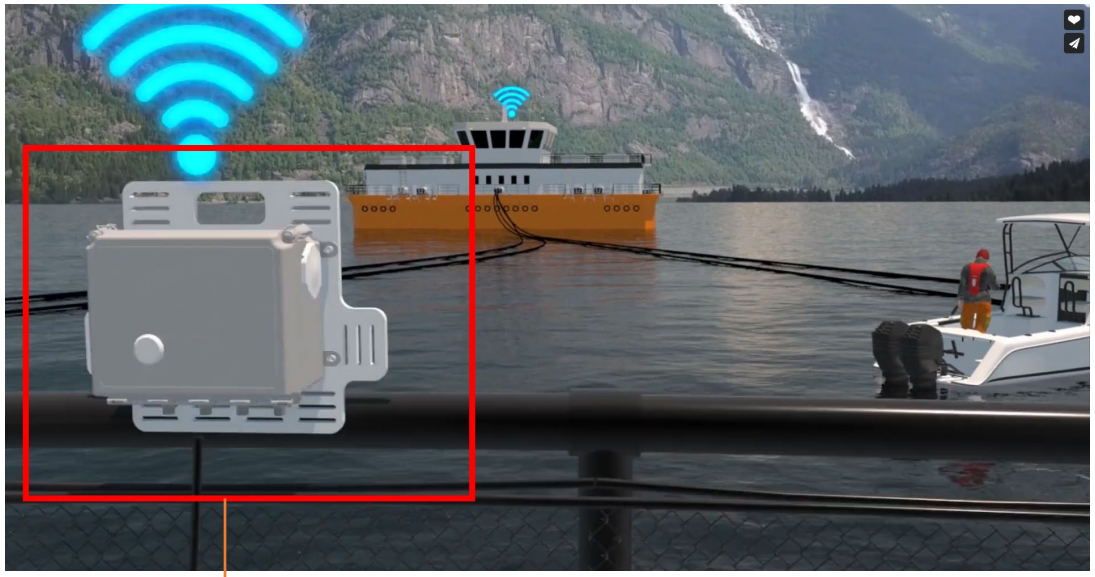
aquaMeasure sensors

https://www.innovasea.com/open-ocean-aquaculture/

A
GAIN Project: Precision Salmon
Thermoregulation
Oxygen Levels
Weather data
Institute of Aquaculture
UNIVERSITY of STIRLING
稍后观看
分享

Project: Precision Salmon

Secure Cloud Communications for Aquaculture



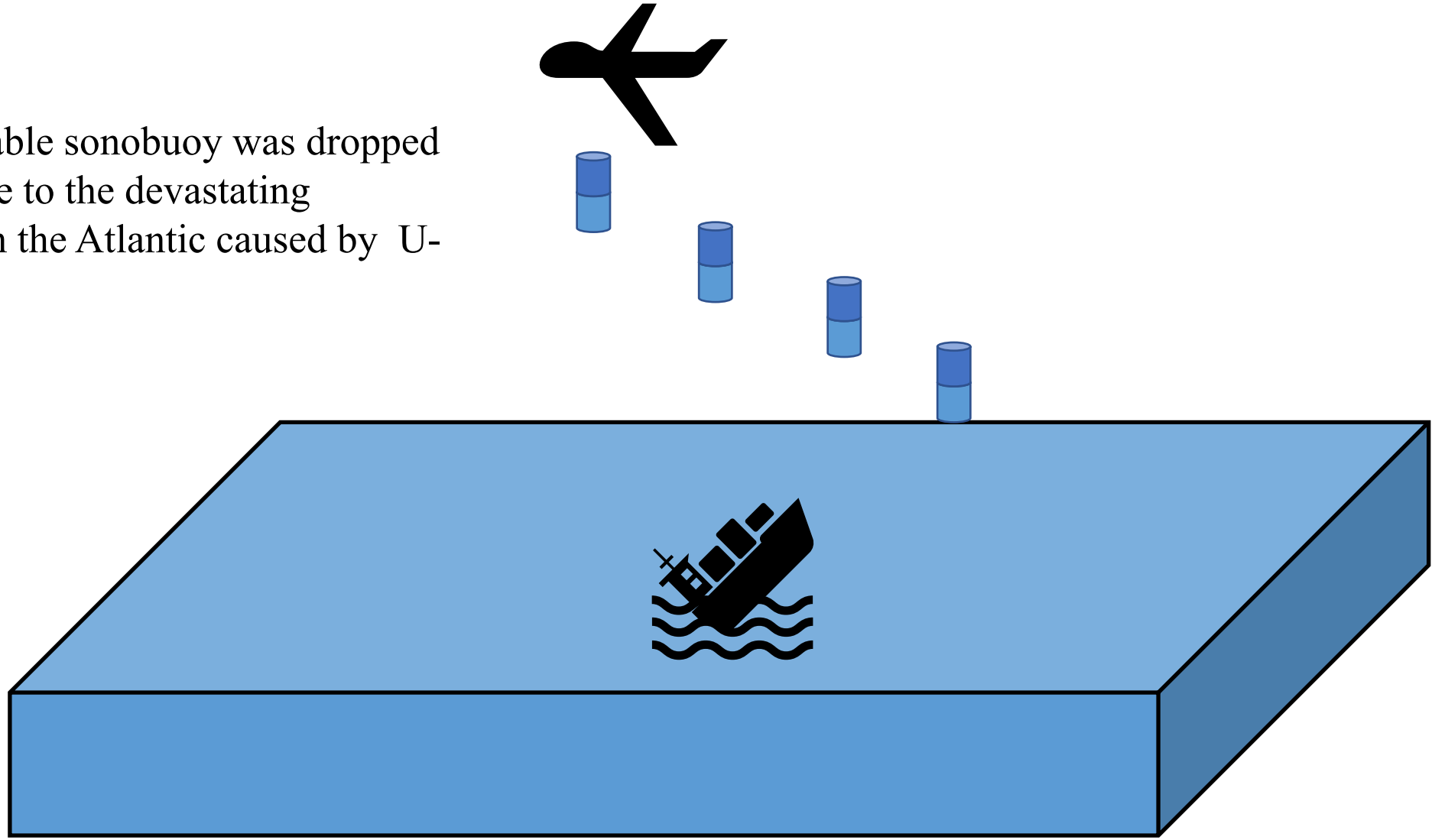
- All the information from aquaMeasure sensors is sent to the **aquaHub**, which can be mounted on existing infrastructure or on a feed barge.
- Roughly the **size of a shoebox**, the aquaHub uploads the data to the cloud via **cellular, Wi-Fi or Iridium satellite**

Replaced by UAV in remote area

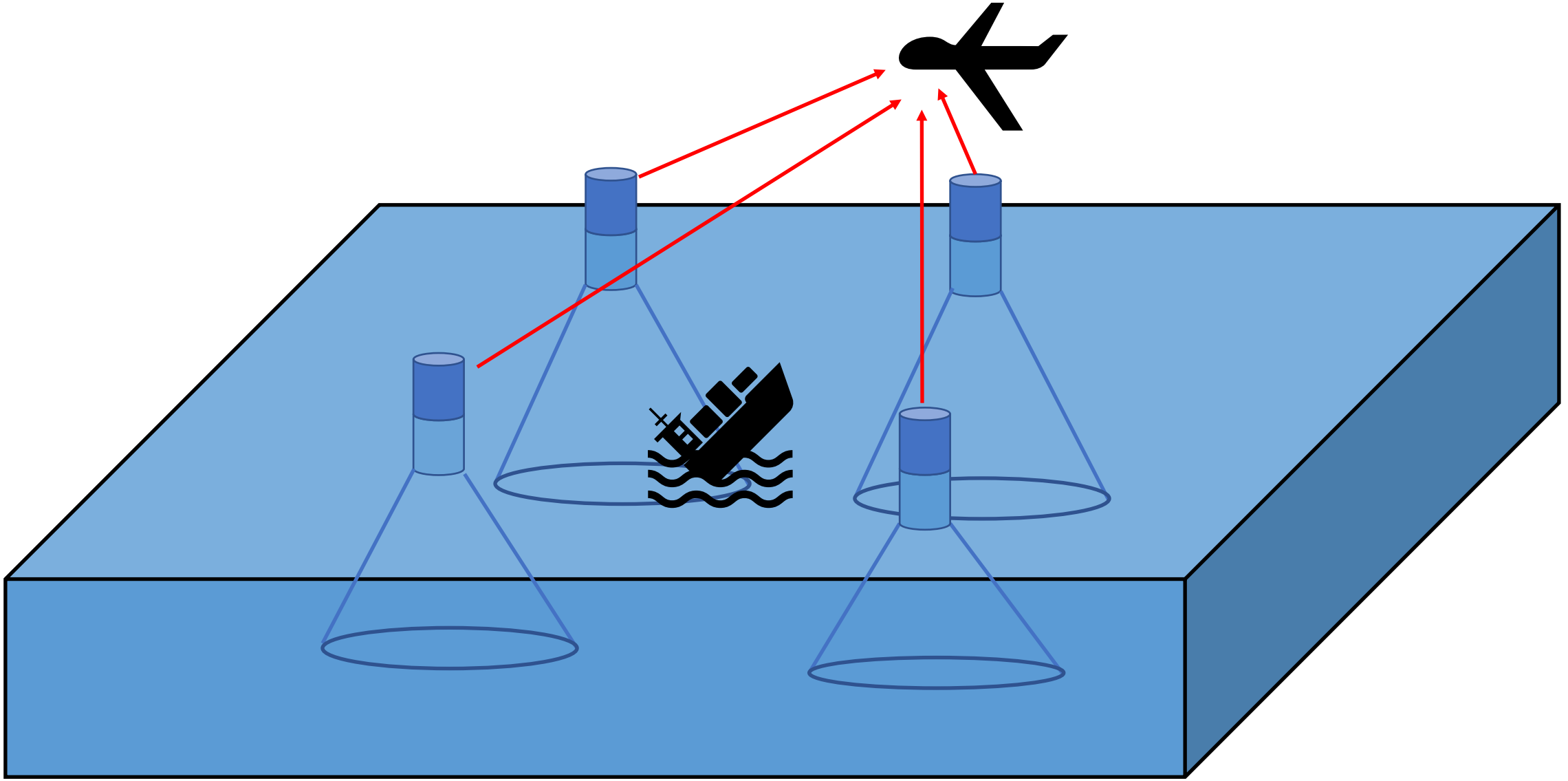
Emergency communication

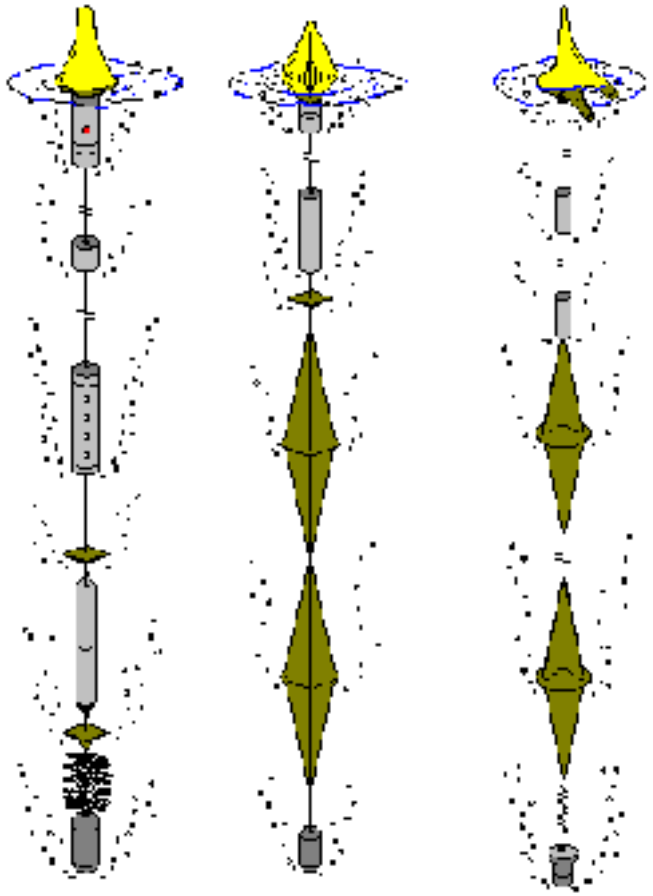
An example

- In World War II, expendable sonobuoy was dropped into the ocean in response to the devastating destruction of shipping in the Atlantic caused by U-boats.



https://apps.dtic.mil/dtic/tr/fulltext/u2/a597432.pdf





- The Directional Command Activated Sonobuoy System (DICASS) sonobuoy is an active acoustic sonobuoy used by the Navy to detect submarines.
- Operate for up to **one hour** at depths of up to 457 m (1,500 ft).
- The echo returns of the active sonar signals provide range, bearing, and Doppler information on acoustic contacts

https://dosits.org/galleries/technology-gallery/locating-objects-by-listening-to-their-sounds/difar/