The SONNE

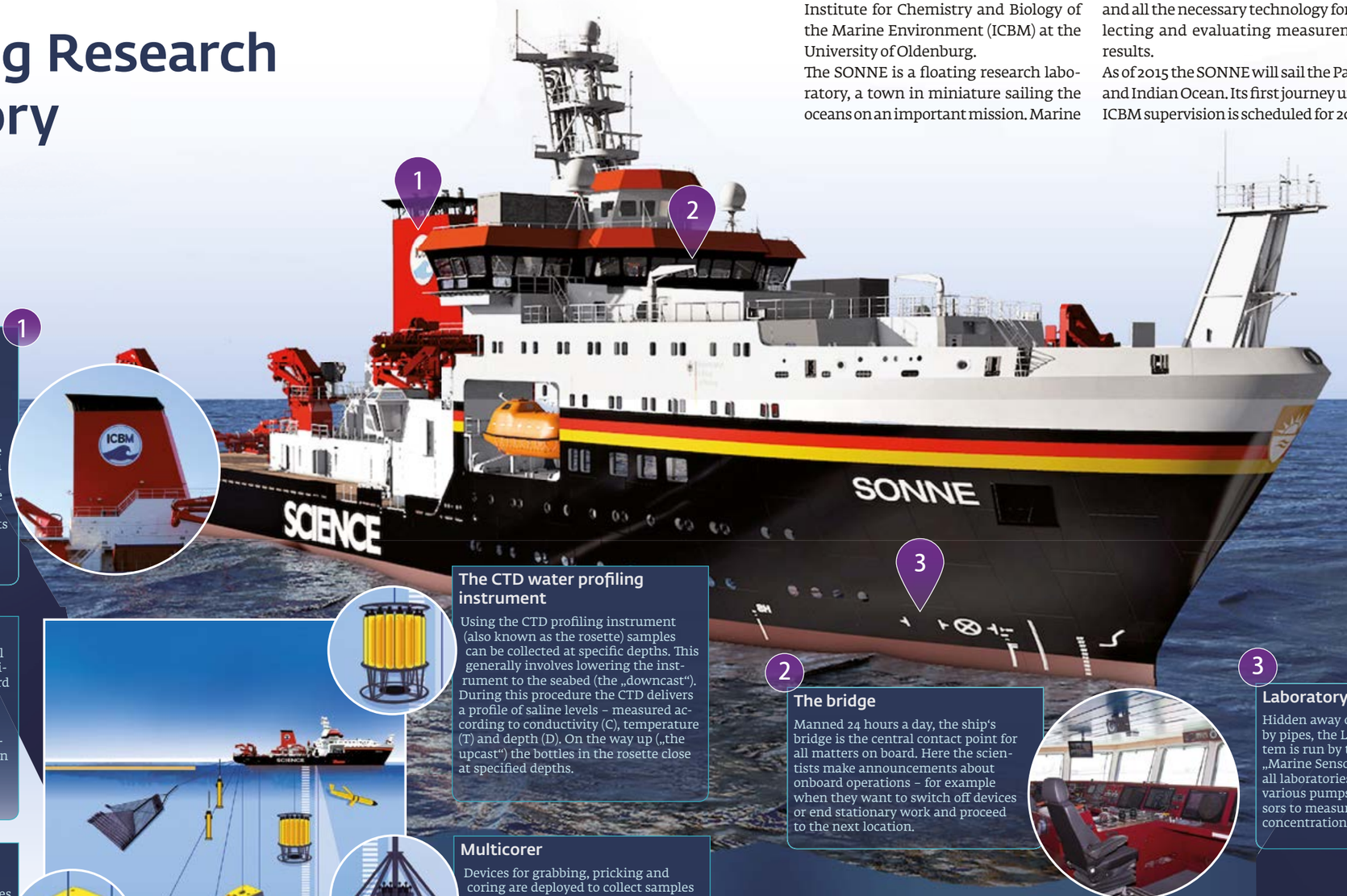
A Floating Research Laboratory

116 metres long, with living space for 40 scientists and 35 crew and approximately 600 square metres of working space, the new deep sea vessel SONNE [sun] provides all the conditions to take marine research to new heights in the coming decades. The ship's home institute is the Institute for Chemistry and Biology of the Marine Environment (ICBM) at the University of Oldenburg.

The SONNE is a floating research laboratory, a town in miniature sailing the oceans on an important mission. Marine researchers plan to use the ship to research climate change, evaluate human impact on the ecosystem and search for maritime resources. They will chart the ocean floor, analyse bacteria and study minerals. To this end the vessel features state-of-the-art echosounder systems and all the necessary technology for collecting and evaluating measurement results.

As of 2015 the SONNE will sail the Pacific and Indian Ocean. Its first journey under ICBM supervision is scheduled for 2016 – a four-week expedition from the South Pacific island state of Fiji to Anchorage, Alaska.

The ship was built at the Meyer shipyard in Papenburg at a cost of 124 million euros. The German government covered 90 percent of the costs, and the rest was contributed by the coastal states of Lower Saxony, Bremen, Hamburg, Schleswig-Holstein and Mecklenburg-Western Pomerania.



Technical information

- Length: 116 m
- Beam: 20.2 m
- Draught: 6.4 m
- Max. speed: 15 knots
- 6 cranes, 2 sliding bars and one A-frame bearing up to 30 tonnes of equipment
- 9 winches with up to 12,000 m cable
- Space for 40 scientists and 35 crew

1 The ICBM as home institute

The ICBM scientists support the shipping company and the Hamburg-based Control Station German Research Vessels in guaranteeing the quality of the scientific measuring equipment on board. They also represent the ship in various organisations, including the MaNIDA network, which oversees data management for German research infrastructures (www.manida.org). The home port of the SONNE is Wilhelmshaven, where the ICBM also operates its marine centre.

↗ www.icbm.de

Dynamic Positioning

Just press a button and the SONNE will automatically maintain its exact position. This happens courtesy of its onboard "Dynamic Positioning (DP)" system. Special computers steer the engines, taking into consideration the vessel's specific features, the wind and the currents. Thanks to this system devices can be placed on the ocean floor while the ship is kept in position directly above them, for example.

The ROV

Underwater ROVs (Remotely Operated Vehicles) are the marine scientists' „eyes and hands". Using video cameras and mechanical arms these devices can for example collect specimens from sponges and corals which the scientists of the ICBM research group „Environmental Biochemistry" can then examine for natural biologically-active substances.

Illustration: Jutta Drewes, jutta@seesaw.de

The CTD water profiling instrument

Using the CTD profiling instrument (also known as the rosette) samples can be collected at specific depths. This generally involves lowering the instrument to the seabed (the „downcast"). During this procedure the CTD delivers a profile of saline levels – measured according to conductivity (C), temperature (T) and depth (D). On the way up („the upcast") the bottles in the rosette close at specified depths.

Multicorer

Devices for grabbing, pricking and coring are deployed to collect samples from the ocean floor. The multicorer collects several cores at a time. It provides marine researchers – for example those in the ICBM's „Microbiogeochemistry" and „Paleomicrobiology" research groups – with material for their studies.

2 The bridge

Manned 24 hours a day, the ship's bridge is the central contact point for all matters on board. Here the scientists make announcements about onboard operations – for example when they want to switch off devices or end stationary work and proceed to the next location.

3 Laboratory Seawater System

Hidden away on Deck 1 and surrounded by pipes, the Laboratory Seawater System is run by the ICBM research group „Marine Sensor Systems". It provides all laboratories with seawater through various pumps and intakes, using sensors to measure the salinity and algae concentration of the pumped water.

Flag Alphabet

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