# GERMAN RESEARCH VESSELS\*

except RVs from the Ministries of Defence (1 RV), Agriculture (3 RVs), Transport (6 RVs)



- Replacement for Polarstern is in the

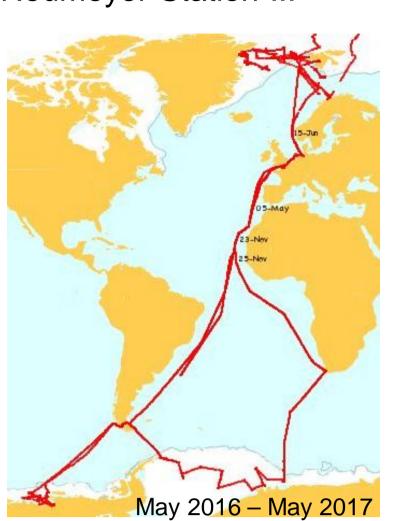
Shipyard tenders are being reviewed.

process of planning.

Last 35 years in operation for AWI, Bremerhaven

POLARSTERN

- Arctic & Antarctic expeditions
- 310 days per year
- Supplies German Antarctic Neumeyer-Station-III





### METEOR

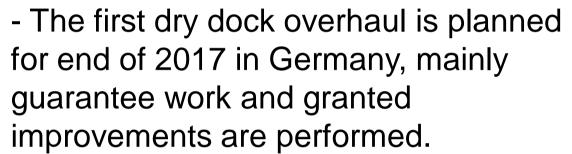


- In 2016 there was no dry dock overhaul and no significant occurrences
- Next dry dock overhaul is planned for October 2017 in Varna
- Hull blasting
- Painting and repair work
- The German government decided that one new research vessel will be built supposed to replace both, METEOR and POSEIDON.



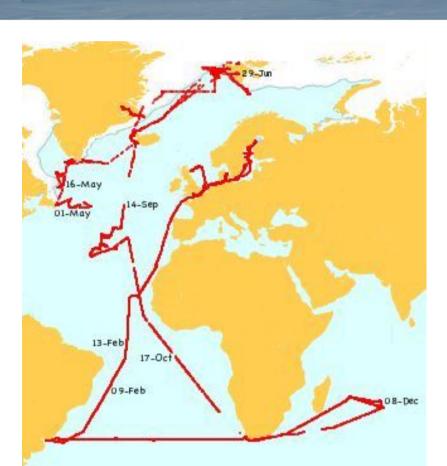
# SONNE

- The first two years of operation were successfully accomplished without any notable failures
- Good usage as multidisciplinary research vessel.



- Installation of a waste incineration system including a new room behind the ship's chimney
- Complete redesign of the pure water system
- Rectification of pending claims
- Improvements regarding system accesses, deck illumination and automation



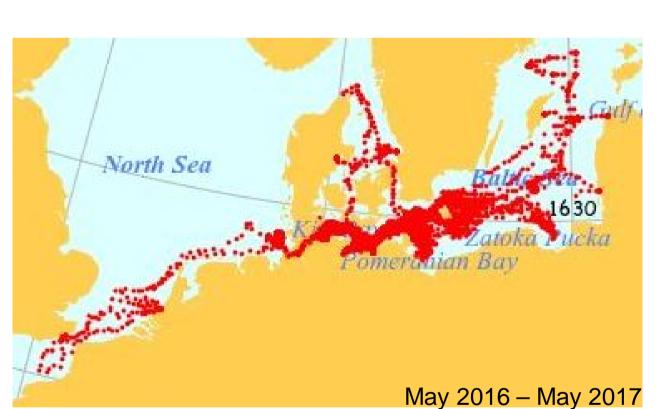


May 2016 – May 2017

### MARIA S. MERIAN

- Dry dock overhaul in March/April 2017
- Main tasks performed were:
- Installation of an EM 712 0,5 x 0,5° Multibeam echosounder with arctic-tank (first system worldwide in this configuration)
- Installation of an Optimarin Ballast Water System
- Installation of a new POD with a newly developed rotor positioning encoder
- New VDR
- Upgrade to DSHIP-3
- Painting work
- Vessel class related work
- A second shipyard period is planned for October 2017
- Here: Modernisation of the underwater positioning system





- In November / December 2016 the vessel was docking at Lindenau ship yard in Kiel.
- Intermediate class survey. - Renewal of shaft sealings.
- Extensive work on the fresh water system.
- Painting work on vessel, winches, and A-frame
- Inspection and maintenance work in electrics.

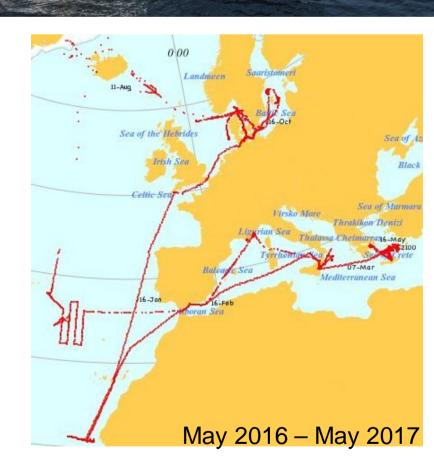
ALKOR

HEINCKE

## POSEIDON

- In 2016 the vessel became 40 years old
- In November / December 2016 docking at the ship yard of Lindenau in Kiel
- Work on the steel framework
- Electrical work at the ship's propulsion system
- Maintenance work on the deck machinery
- Upgrade to DSHIP-3
- Because of the short remaining operation time of up to 2019 no nice-to-haves were realized.





- In December 2016 / Januar 2017 the vessel was docking at BREDO ship yard in Bremerhaven
- Intermediate class survey.
- Renewal of shaft sealings.
- Major overhauls on main crane, A-frame, side boom, 4 drum winches, anchor winch
- Renewal of main deck hangar
- Sandblast of all tanks and new conservations



- Upgrade to DSHIP-3



May 2016 - May 2017



# ELISABETH MANN BORGESE





- Docking in Peene ship yard, Wolgast in January 2017
- Class renewal
- Work on the steel framework
- Cleaning and painting of tanks - Overhaul of bow thruster
- Renewal of shaft seals with inspection of propeller shaft
- Mechanical overhaul of fin stabilizers