



The Mayflower Autonomous Ship – A Demonstrator for Future Science Missions

European Marine Board
EurOcean Joint Open Session 6 November 2019, KDM, Berlin

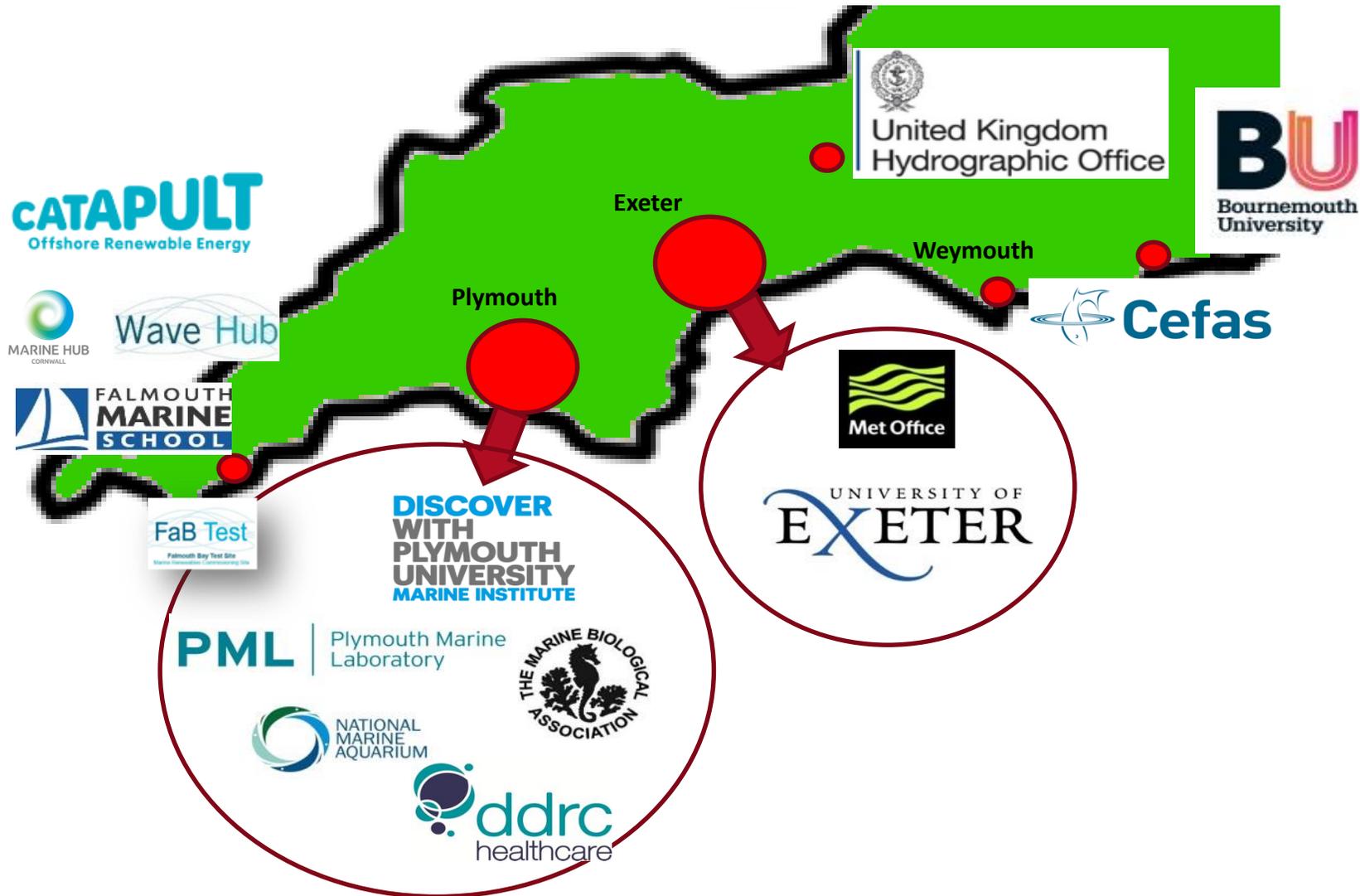
Plymouth and Marine Autonomy

- Research – University of Plymouth, PML and MBA
- Industry – Thales, Msubs, Seiche Autonaut and the FAST Cluster
- Translation to Business via MBTC
- SMART Sound
- The Mayflower Autonomous Ship



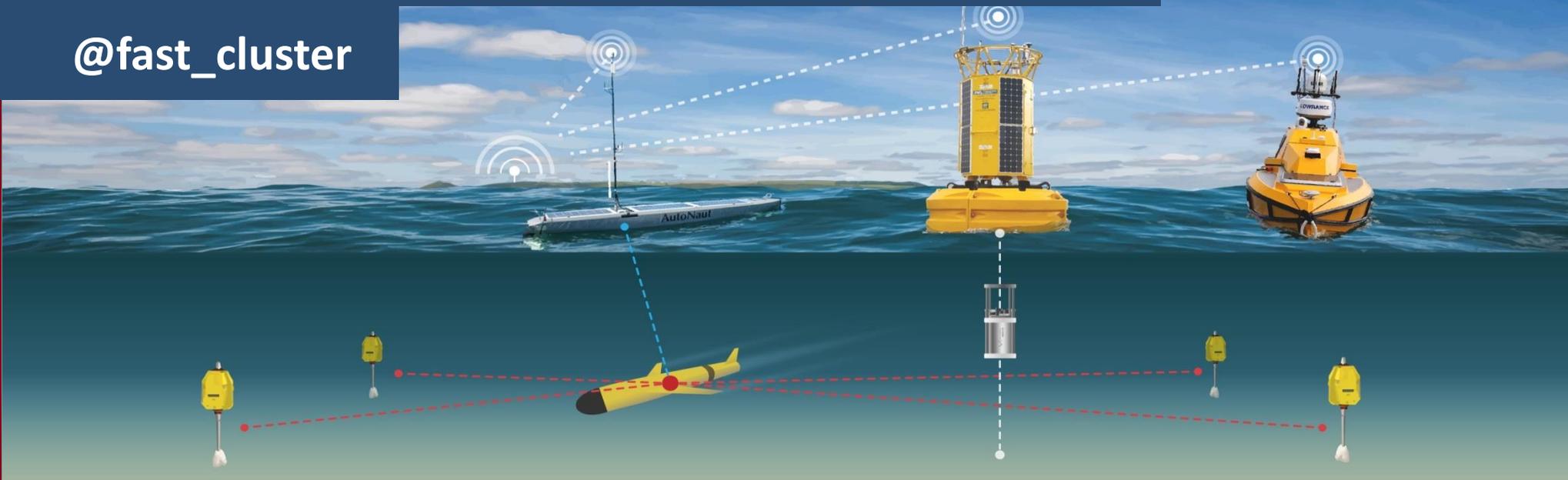


Global centre for marine research & innovation



Future Autonomous at Sea Technologies FAST - SW

@fast_cluster



- Educators
- Surface and Sub-surface Platform Manufacturers
- Advanced Power Systems
- Environmental Sensing Systems and Control Sensors
- System of Systems Integrators and End Users



Marine Business Technology Centre

- Led by Plymouth City Council
- Devon-based Conduit for Support for High-Tech Marine Development
- Based at the Oceansgate Marine EZ
- £4.5 Million of Funding to December 2020
- Coordinator of the Plymouth Smart Sound



Smart Sound Plymouth

- Advanced Marine Autonomy
- Environmental Monitoring
- Alternative Propulsion
- Advanced Materials
- Cyber Security

- >1000km² of authorised and de-conflicted water space.
- Diverse environment
- Range of water depths up to 80m
- Heavily instrumented
- Multiple assets
- Professional team
- Accessible

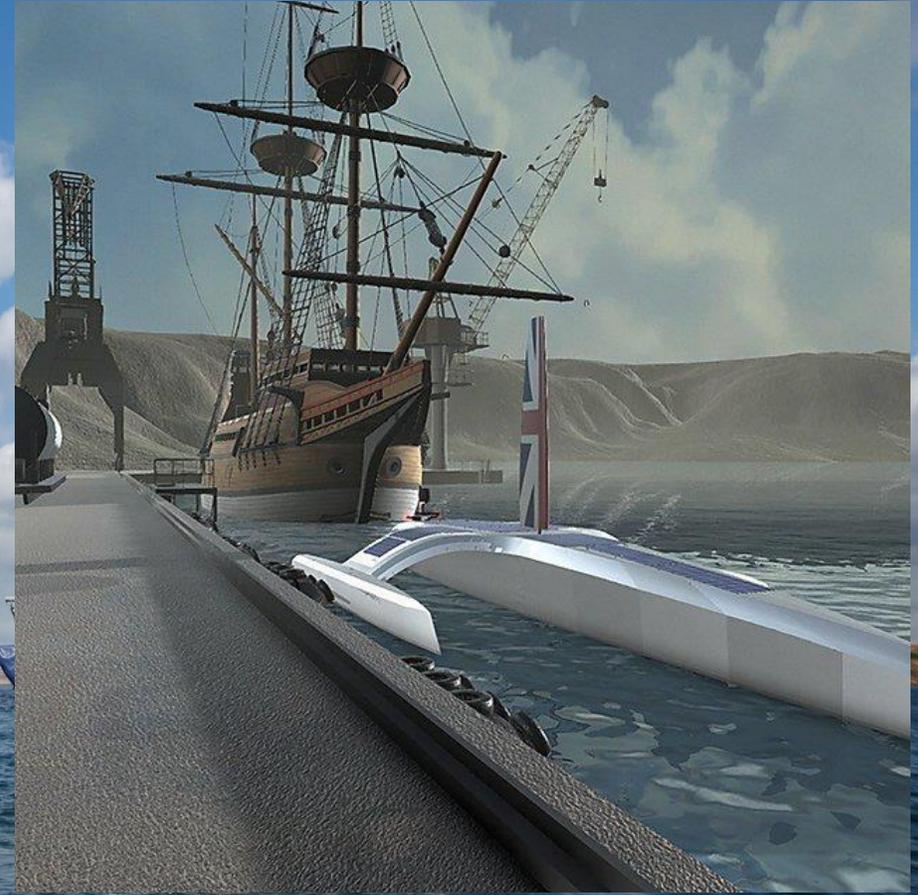


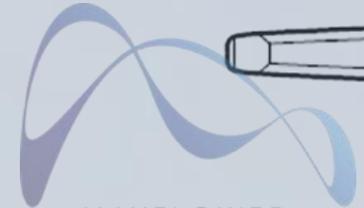
European Union
European Regional
Development Fund

Twitter: @SmartSoundPlym

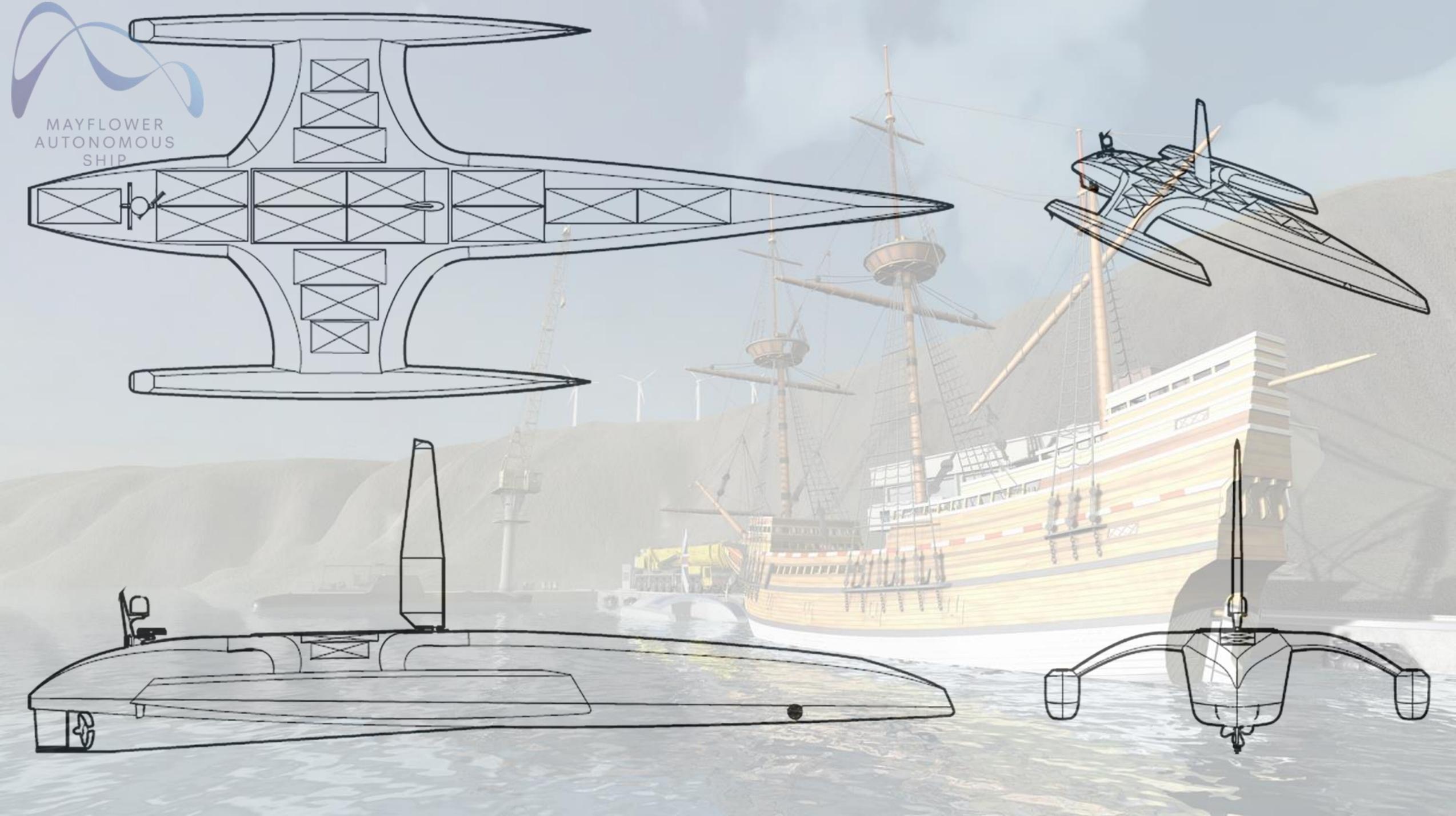
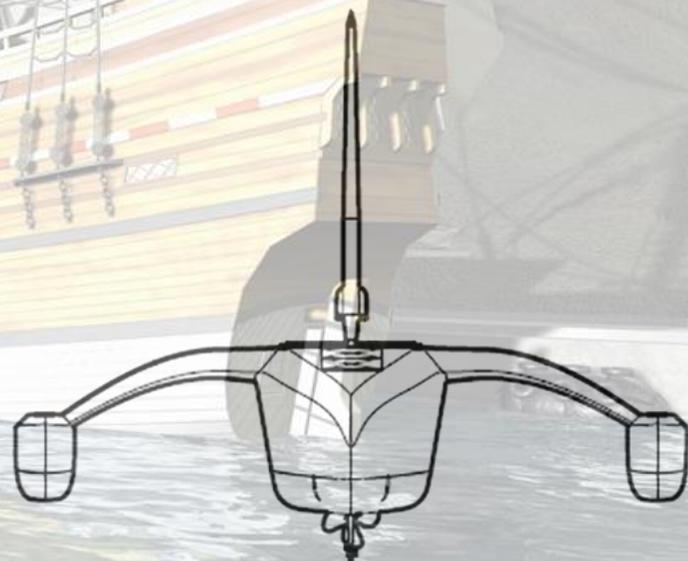
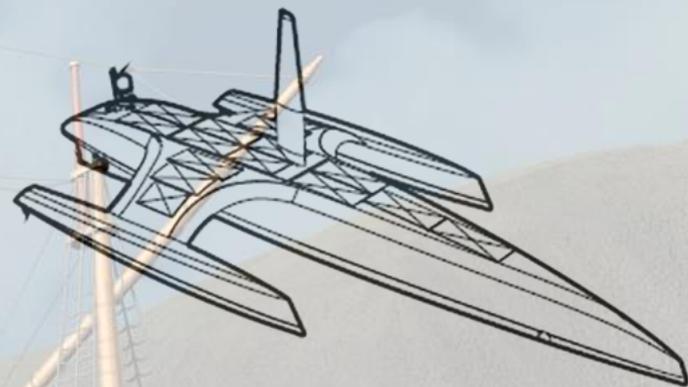
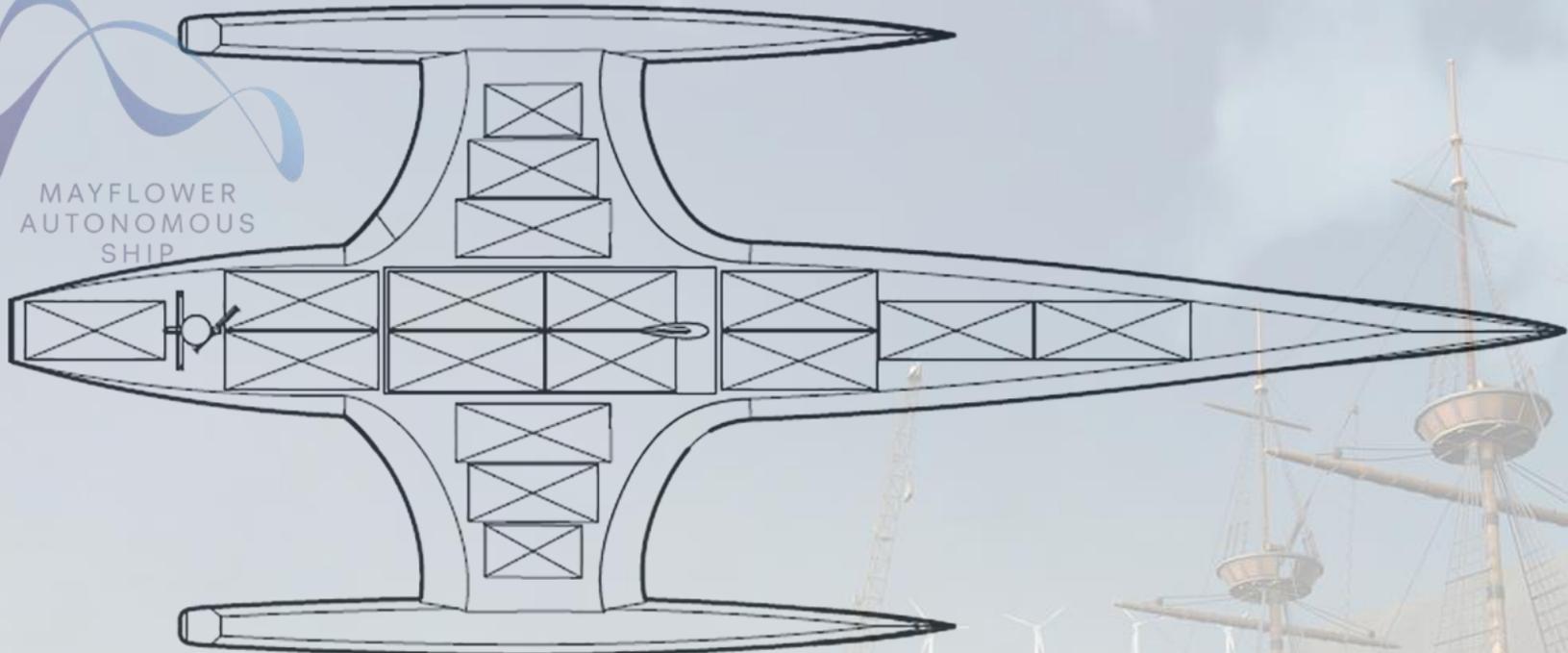
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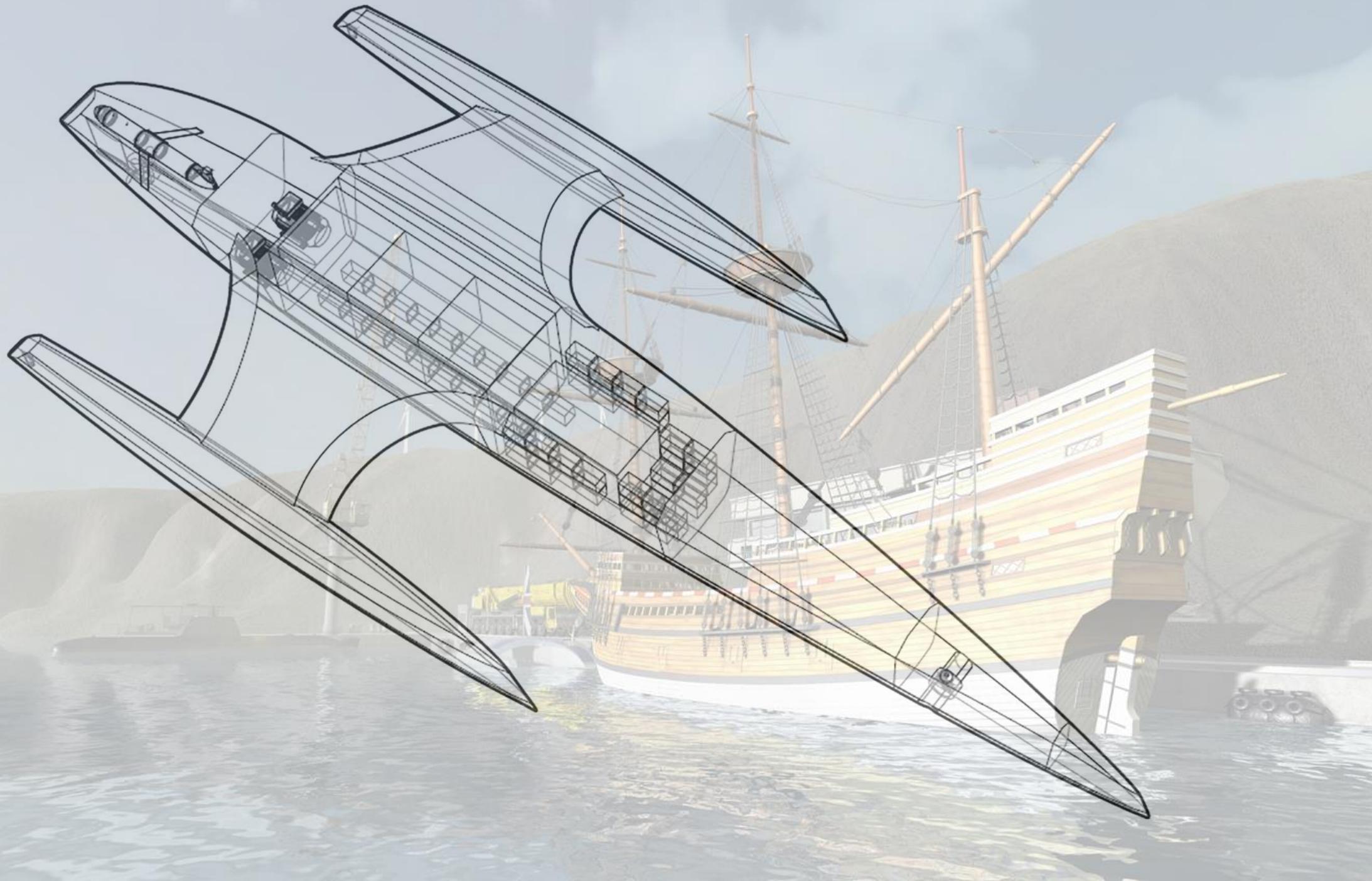
- Will begin its journey on 6 September 2020, commemorating the 400th anniversary of the Pilgrim Fathers' voyage to the new world.
- Final agreed design is for a trimaran-style vessel that includes three research pods that the University will use for scientific projects
- The hull is currently being constructed by Aluship Technology in Gdansk, Poland, and it will return to Plymouth in Spring 2020, where the final outfitting and testing will be completed under the direction of ProMare and MSubs.





MAYFLOWER
AUTONOMOUS
SHIP





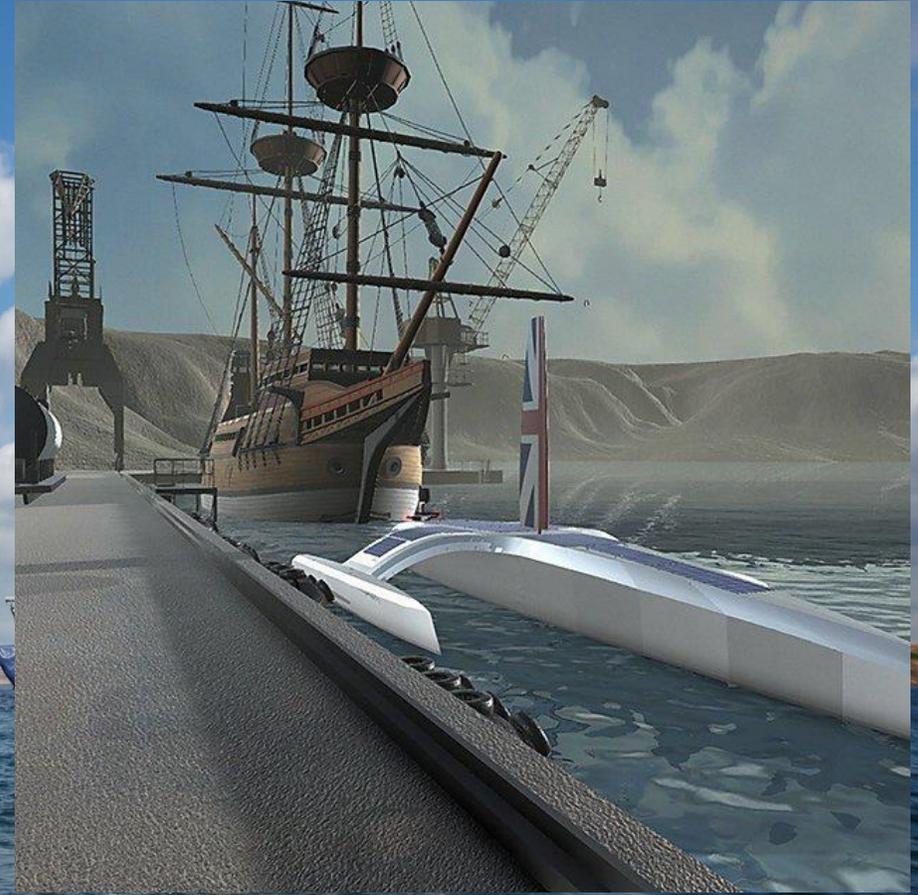
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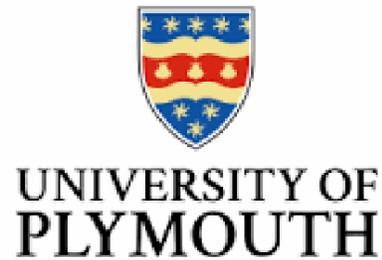
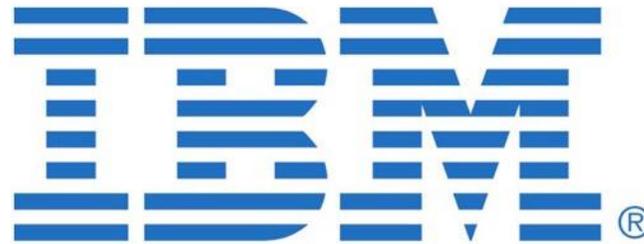
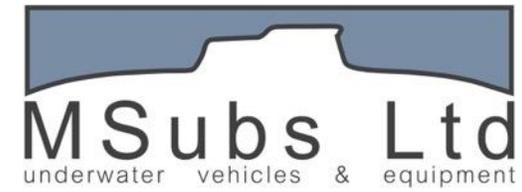
- It will carry a research pod, featuring sensors and other equipment which scientists hope will pave the way for ground-breaking research into ocean conditions, marine pollution and conservation, and autonomous navigation
- That work is being overseen by the University, with support from IBM and ProMare, and will be targeted at fields including maritime cyber security, marine mammal monitoring, sea level mapping and ocean plastics.



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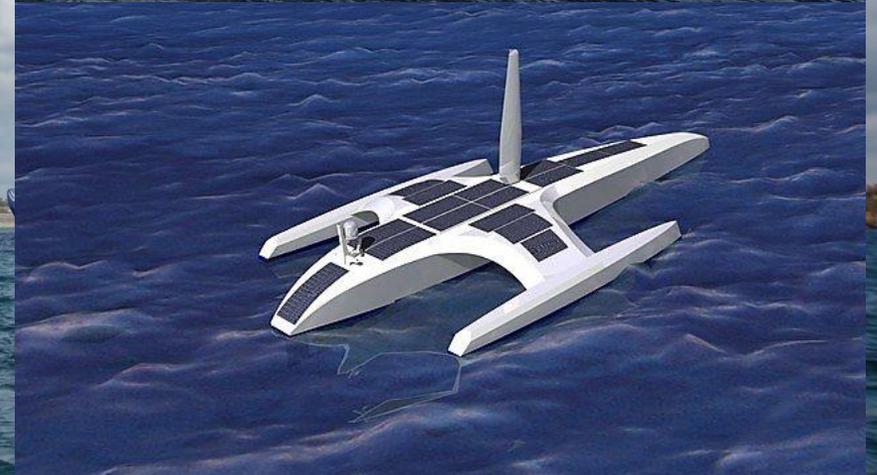
- IBM will apply servers, AI, cloud and edge computing technologies to navigate autonomously and avoid ocean hazards as it makes its way from Plymouth, England to Plymouth, Massachusetts.
- If successful, it will be one of the first self-navigating, full-sized vessels to cross the Atlantic and opens the door on a new era of autonomous research ships.





Initial Ideas for the Science Projects

- University of Plymouth is leading on Science Projects, and key areas of interest are; Marine Plastics, Maritime Cyber Security and Marine Mammal Tracking
- Currently engaging with a range of industry partners looking to support with acoustic, nutrient and temperature sensors, along with water and air samplers, that can create a picture of ocean conditions and mammal behaviour right across the Atlantic.
- Currently looking at both technical and communications aspects to see what can be delivered that is new, exciting and will inspire the public





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