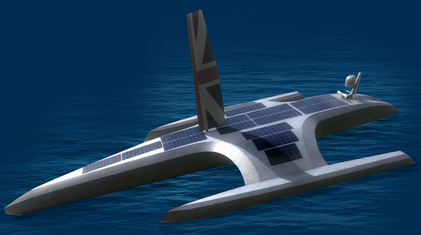
Autonomous Tech Enables a New Era of Marine Exploration

MAYFLOWER AUTONOMOUS SHIP

IBM's AI and other advanced technologies are at the helm of the Mayflower Autonomous Ship project - helping scientists to gather the data they need to safeguard the future of the ocean.



1620: Original Mayflower Ship

JOURNEY TIME – PLYMOUTH, ENGLAND TO PLYMOUTH, MA
Duration: Approximately 60 days

MISSION
Carry pilgrim settlers to the New World

HULL DESIGN
Shape: Single hull - beakhead bow
Material: Wood, flax sails

SPEED
Max: 2.5 knots

SIZE
Length: Approximately 30m
Weight: 180 tons

PROPULSION SYSTEM
Wind (three masts)

NAVIGATION SYSTEM
Compass, nautical charts, log-line, hourglass

ADVANCED TECHNOLOGIES
Cross-staff to measure elevation of Sun; 'Great iron screw'

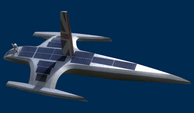
SENSORS
Eyes and ears of passengers and crew

SECURITY
12 artillery pieces

CREW
Approximately 30

PASSENGERS
102

2020: Mayflower Autonomous Ship



JOURNEY TIME – PLYMOUTH, ENGLAND TO PLYMOUTH, MA
Duration: Approximately 12 days

MISSION
Pioneer a new generation of research ships; gather data to further understanding of ocean

HULL DESIGN
Shape: Trimaran
Material: Aluminium, composite

SPEED
Max: 20 knots

SIZE
Length: 15m
Weight: 5 tons

PROPULSION SYSTEM
Hybrid power: wind/solar (with diesel generator backup)

NAVIGATION SYSTEM
State-of-the-art inertial navigation and precision GNSS positioning system. Oceanographic and meteorological instruments, SATCOM, RADAR and LIDAR

ADVANCED TECHNOLOGIES
Data processed on shore by IBM Power AI Vision and on-board by edge devices. IBM Deep Learning helps avoid hazards at sea.

SENSORS
Acoustic, nutrient and temperature sensors, water and air samplers

SECURITY
Advanced IBM Cloud and edge security systems

CREW
None onboard. Global 'virtual crew' at the command station in Plymouth, UK.

PASSENGERS
None onboard. Millions of 'virtual pilgrims' to experience the voyage online.

Journey Map

Timeline

ORIGINAL MAYFLOWER SHIP

1617
British Separatists seeking refuge in the Netherlands decide to leave for America

Sep 1620
Mayflower leaves England for New World with 102 passengers

MAYFLOWER AUTONOMOUS SHIP

Oct 2019–Sep 2020
Training of IBM AI models for hazard detection and avoidance

Oct 2019–Jan 2020
Ship's hull constructed in Gdansk, Poland

Feb 2020–Jun 2020
Ship fitted out with advanced navigation and research equipment

Feb 2020
Ship's hull arrives in Plymouth, UK

Nov 1620
Passengers write and agree to follow legal pact that would shape society in the new colony

Nov 1620
Blown off course by a storm at sea, overshoots its original target of Virginia, arriving in Cape Code

Dec 1620
The Mayflower lands in what would become Plymouth, MA, and after exploration decide to make it the location of the final settlement of the original colony

Jul 2020–Aug 2020
At-sea testing

Sept 2020
Sets off from Plymouth, UK - arrives in Plymouth, MA, two weeks later

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