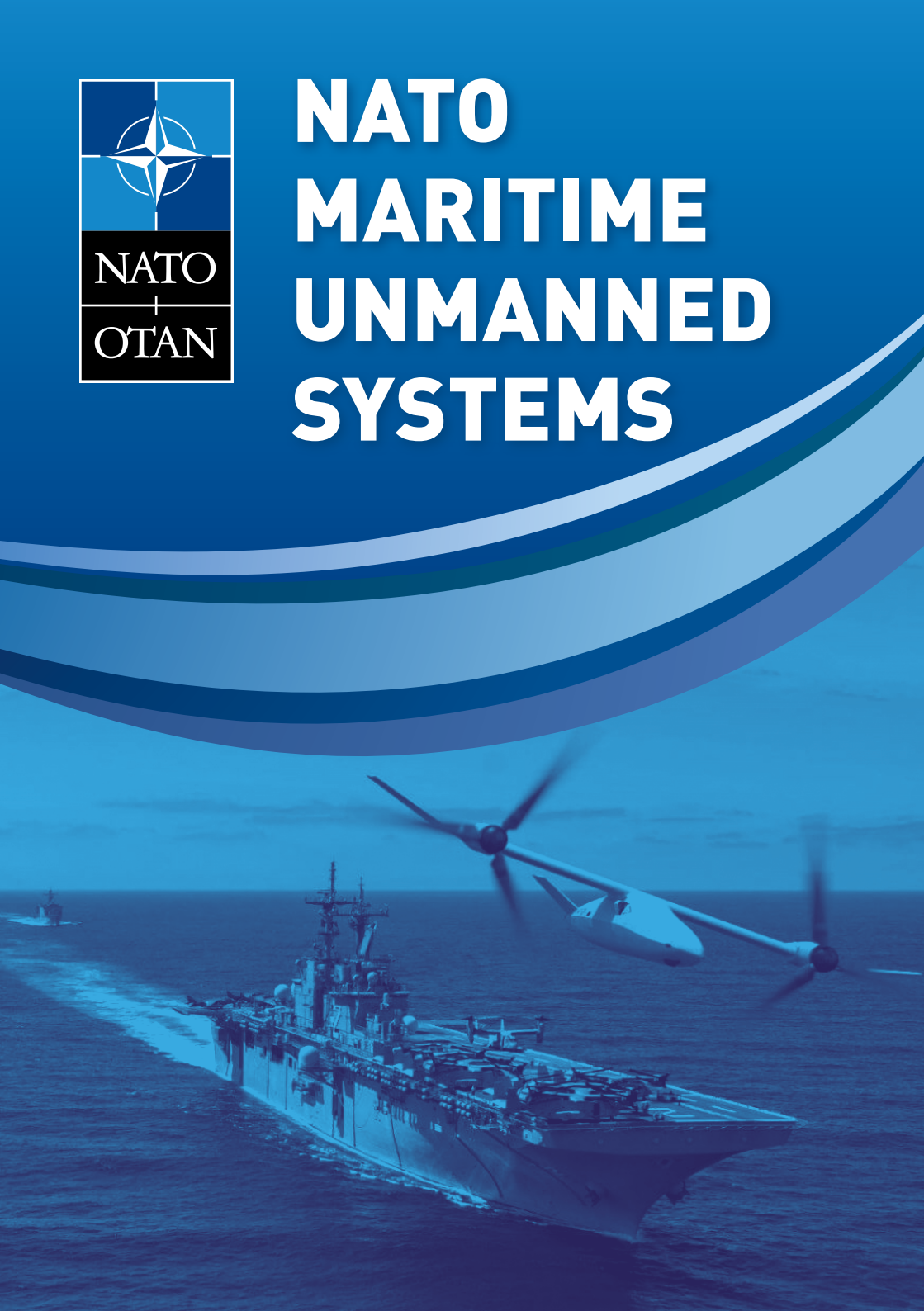
NATO
OTAN

NATO MARITIME UNMANNED SYSTEMS



WHAT ARE MARITIME UNMANNED SYSTEMS?

Maritime unmanned systems comprise all systems, subsystems, components, vehicles, equipment and logistics for the operation of unmanned vehicles. They do not carry human operators.

Members of the Office of US Naval Research launch the REMUS 600 autonomous underwater vehicle for mine search and identification operations in the Baltic Sea in 2018.

Maritime unmanned systems may include assets such as surface vessels, underwater vessels or aerial vehicles.

Unmanned surface vessels range from the big Sea Hunter, built by Vigor Industrial, to smaller assets such as Aqua Quads or Wave Gliders. Unmanned underwater vessels come in all sizes from buoyancy gliders to extra-large vessels.

WHAT ARE THE ADVANTAGES OF MARITIME UNMANNED SYSTEMS?

Maritime unmanned systems:

- are smaller and less detectable than manned platforms
- are more focused on payload (no passengers)
- reduce personnel and unit costs
- may operate independently for extended periods
- may operate in almost all water depths, in foul weather and seas, and in tropical or arctic conditions
- remove the need to staff dangerous areas

They will contribute to:

Maritime situational awareness

- Data can be captured, fused, exploited and disseminated in a timely and focused manner.

Mine counter-measures

- Navies may rapidly establish large, safe operating areas and transit routes and lanes.
- Navies can detect and clear sea mines without putting personnel at risk in dangerous situations.

Anti-submarine warfare

- Transiting unfriendly submarines may be identified.
- Friendly naval assets or sea bases may be protected from unfriendly submarines with unmanned air systems and unmanned surface vessels working in concert.
- Secure passage of maritime assets in transiting key routes will be ensured, helping NATO to ensure access and freedom of manoeuvre.
- Surveillance and detection capabilities help counter modern stealth submarines that possess long-range offensive capabilities.

An experimental trial is completed in 2019 with a BAE Systems' unmanned surface vessel, fitted with lightweight remote surface weapon. The vessel can operate for up to 10 days at 'patrol speed' or 300 nautical miles in pursuit mode, reaching speeds of up to 45 knot.

WHY ARE MARITIME UNMANNED SYSTEMS IMPORTANT?

At sea, mines, terrorist activities, smuggling and piracy are threats to NATO Allies' ability to operate freely in maritime commons.

The use of unmanned systems will enable NATO Allies to be more effective in crucial capability areas, such as detecting and clearing mines, and finding and tracking submarines. Working alongside traditional naval assets, these unmanned systems will improve NATO Allies' situational awareness and will ensure free access to the seas.

At the 2018 Brussels Summit, NATO leaders reaffirmed the strategic importance of the maritime domain and the need to reinvigorate core maritime warfighting competencies.

In response, NATO Allies are working together to develop and procure maritime technology that increases operational effectiveness, limits risk to human life and reduces operational costs.

WHAT IS NATO DOING?

Through multinational cooperation, NATO supports the rapid delivery of maritime capabilities to counter the wide range of existing and emerging threats in the maritime domain.

On 3 October 2018, Defence Ministers from thirteen NATO Allies signed a declaration of intent to cooperate on the introduction of Maritime Unmanned Systems. France joined on 11 April 2019.

Fourteen nations are currently pooling resources, talent and ingenuity to develop more flexible and interoperable maritime unmanned vehicles and systems.

These countries are: Belgium, Denmark, France, Germany, Greece, Italy, the Netherlands, Norway, Poland, Portugal, Spain, Turkey, the United Kingdom and the United States.

WHAT IS NATO EXPERIMENTATION REPMUS 2019?

NATO Allies are experimenting with innovative maritime unmanned systems in real-life scenarios such as search and rescue operations, harbour protection and anti-submarine and naval mine warfare.

WHO?

Host nation: Portugal

Participants:

NATO Allies: Belgium, Italy, Poland, Portugal, Turkey, United Kingdom, United States

NATO body: NATO Centre for Maritime Research and Experimentation

Research centres and industry: academics from the University of Porto; a range of industry participants.

WHAT?

- Autonomous surface vessels
- Autonomous underwater vehicles
- Unmanned aerial vehicles
- Secure underwater digital communications with a submarine

WHEN?

11 to 27 September 2019

WHERE?

In the North Atlantic Portuguese exercise areas near Troia

WHY?

Conducted every year, NATO experimentation REPMUS (Recognised Environmental Picture augmented by Maritime Unmanned Systems) is designed as an experimentation ground for maritime operational communities to work together to develop and test concepts, requirements and technological advances in maritime unmanned systems.

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NATO Centre for Maritime Research and Experimentation tests innovative solution for underwater acoustic networks during REP18.