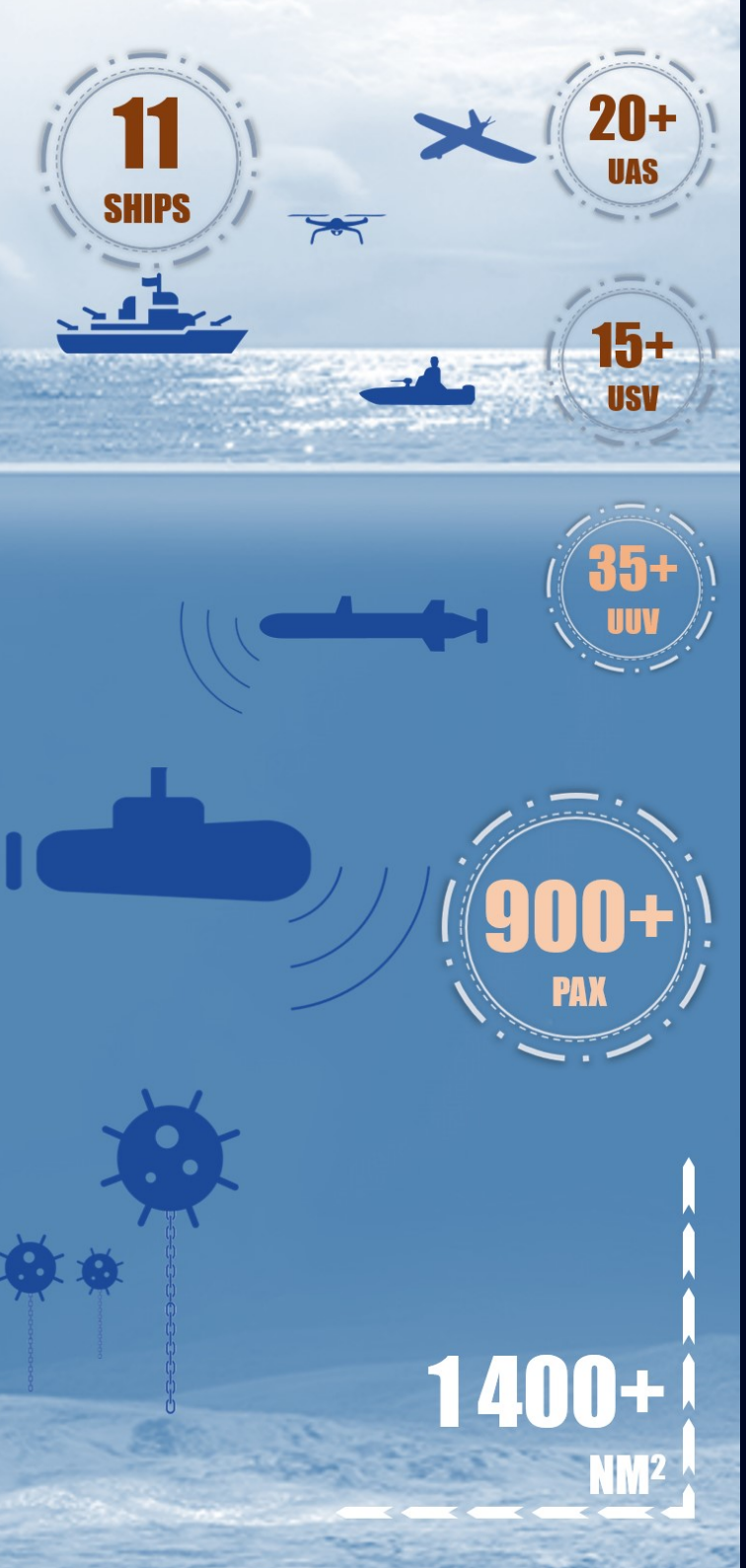

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#WEARENATO

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S&T organization CMRE

REP(MUS) 21

WELCOME ABOARD!

REP(MUS) is the acronym for **Robotic Experimentation and Prototyping Augmented by Maritime Unmanned Systems,** an international exercise focused on testing the capabilities of new generation maritime unmanned systems where Academia, Industry and Armed Forces collaborate on the testing and development of maritime unmanned systems.

The 2021 edition takes place between September 13th and 24th, 2021, in the Portuguese Exercise Areas and at the Portuguese Navy's Operational Experimentation Centre (CEOM).

With the presence of 17 Navies, 15 Research and Development companies, 1 University and 8 NATO entities, REP(MUS) is currently the main exercise for NATO Maritime Unmanned Systems Initiative (NATO MUSI), in the framework of unmanned technologies.

Maritime unmanned systems** will play a key role in **increasing capabilities** of conventional aero-naval assets by providing advantages in terms of operational **effectiveness**, **efficiency** and **safety

PORTUGUESE NAVY

The Navy is an Armed Forces Service, whose main mission, in accordance with the Constitution, is the military defence of the Portuguese Republic, with a focus on the maritime environment. That has allowed maintaining a close liaison with the nation and the people, which is dictated by the Portuguese geography, namely by the vast maritime spaces of sovereignty and jurisdiction surrounding the mainland territory and the archipelagos of the Azores and of Madeira.

In this context, the main goal of the Portuguese Navy is to serve Portugal with excellence at sea. That implies, not only the defence of sovereign rights, but also the assumption of national responsibilities in the maintenance of the stability, in which today's global activities rest. In order to accomplish that, the Portuguese Navy performs three fundamental functions:

- Deterrence, military defence and support to foreign policy;
- Security, safety and state authority;
- Economic, scientific and cultural development;

The integrated and complementary action of the Navy in these three functions guarantees the most efficient utilization of existing resources, creating vital synergies, allowing the Navy to evolve in a continuous search for excellence, with a posture **steady on defence**, **committed to security** and **partner in development**

FEUP

The Faculty of Engineering of the University of Porto develops activities in education, research and innovation at an international level. Accordingly, the results of this activity are the creation, transmission and dissemination of knowledge, the training of competent and ethical professionals, and future leaders in the engineering and related fields, as well as the promotion of the well-being of global society.

Given the advancement of scientific and technological knowledge in Portugal, it is possible to explore new opportunities, particularly with regard to knowledge transfer, entrepreneurship, innovation and applied research, in order to increase the impact of Research and Innovation (R&I) in the national economy. In line with a strategic policy in which R&I activities acquire a central importance, FEUP has had a very relevant performance in the sustained development of emerging areas of R&I and in the consolidation of scientific excellence in various domains, reinforcing its scientific and technological competences at various levels.

NATO STO CMRE

The Centre for Maritime Research and Experimentation (CMRE) is an executive body of the NATO Science and Technology Organization (STO), which operates under North Atlantic Council (NAC) authority through the Military Committee (MC) and the Conference of National Armaments Directors (CNAD).

The mission of the CMRE is to organize and conduct scientific research and technology development, centred on the maritime domain, delivering innovative and field-tested Science & Technology (S&T) solutions to address defence and security needs of the Alliance.

With over 60 years of knowledge and experience in undersea research, CMRE is a recognized centre of world-class expertise in the maritime domain. The Centre is a collaboration hub for scientists from all NATO Nations to work together to maintain NATO's maritime technological edge.

Today, the scope of the Centre's work encompasses the fields of artificial intelligence, big data analytics, underwater acoustics, oceanography and autonomous systems. Underpinning CMRE's success in maritime research over the years is its sea-going capability.

CMRE provides an outstanding at-sea research environment where internationally recognized scientists and engineers from NATO Nations share their knowledge while delivering results more effectively than would be possible by individual nations. The Centre conducts cutting-edge maritime experimentation and demonstration in extremely challenging conditions from the Mediterranean Sea to the Arctic Ocean.

ACADEMIA

INDUSTRY

NATO MUSI

The Maritime Unmanned Systems Initiative (MUSI) allows nations to pool their resources, talent and ingenuity to create better, more flexible and more interoperable unmanned maritime vehicles and systems. MUSI supports Allied navies in all aspects of developing and fielding unmanned systems, from remotely operated up to fully autonomous, working together with manned assets in order make navies more versatile and capable.

At the Brussels Summit in 2018, NATO leaders reaffirmed the strategic importance of the maritime domain and the importance of investing in new unmanned capabilities. The MUSI, a multinationally directed NATO project was initially launched by 13 Allied Defence Ministers in October 2018. Since then Australia, Canada, France and Romania have joined the initiative with Estonia and Sweden in the process of doing so, highlighting the global reach of the NATO MUSI.

The initiative partnered with Portugal in 2019 to deliver its first annual operational experimentation exercise REPMUS (19). Having lost a year due to the world wide pandemic, the MUSI is once again delighted to be partnering with Portugal for REPMUS (21) which will feature experiments and operational scenarios conducted by dozens of unmanned underwater, surface and air vehicles, belonging to 13 of the MUSI navies. It is focused on developing unmanned capabilities, integrating unmanned systems into naval operations and ensuring interoperability and interchangeability between Allied navies.

NAVIES

NATO HQ & COE

OTHER