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# Remote Passive Acoustic Barrier with Maritime Unmanned Systems: preliminary tests during REPMUS-21

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Using a Maritime Unmanned System (MUS) always involves a trade-off between the ability to autonomously accomplish tasks of increasing difficulty and the possibility for a human operator to take decisions concerning the ongoing mission. This aspect requires a communication architecture to share frequently updated information between the MUS and a Command and Control Station (C2S), capable of monitoring and supporting the system during its tasks.

Within this context, this paper describes a marine System of Systems (SoS), consisting of 3 collaborative MUSs, acting as an Anti-Submarine Warfare (ASW) passive barrier.

The preliminary experimental trials of the presented SoS took place in Sesimbra (Portugal), in September 2021, during the annual military exercise Robotic Experimentation and Prototyping augmented by Maritime Unmanned Systems (REPMUS), in which the Naval Support and Experimentation Centre (CSSN) of the Italian Navy was involved. In REPMUS-21, the capacity of the proposed system to detect artificial targets transiting in the operational area was demonstrated along with the capabilities of its multi-domain communication infrastructure, which allowed to monitor and control an underwater vehicle from a C2S exploiting a surface vehicle as a gateway.

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