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A ROADMAP TOWARDS THE AUTONOMOUS SHIP: THE MARIN PROJECT

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The “Autonomous Ship” is the new technological paradigm which will drive the trend for increasing automation of ships toward the ultimate goal of remotely-supervised ships able to handle autonomously most of the operational situations. In the recent past, the “MUNIN” EU project established the architectural basis for the Autonomous Ship and since then a few technological demonstrators of the MASS (Maritime Autonomous Surface Ship) concept have been carried out, mostly in the Scandinavian area. Following this lead, SEASTEMA launched in 2019 the MARIN (Monitoraggio Ambientale Remoto Integrato Navale, Naval Integrated Remote Environmental Monitoring) project, co-funded by Regione Puglia within the framework of “Contratti di Programma”.

The objective of MARIN project is to set-up and sea-test a technological demonstrator of the enabling technologies for autonomous navigation. The demonstrator platform is the TESEO I, an experimental trawler vessel realized by NAVTECH and Cantieri Tringali for a previous regional research project in Sicily and based in Augusta. SEASTEMA, through its R&D site in Lecce, is in charge of the auto-remote control of the vessel, including the Situational Awareness System and the Collision Avoidance System, and the overall technological integration. The other partners are RINA Consulting, through its operational site in Lecce, in charge of the realization of an innovative Acoustic Surveillance System integrating a passive acoustic surface array and a thermal camera, and CO.M.MEDIA, a ICT company based in Lecce, in charge of the operational demonstration of a tethered aerial drone acting as additional optical sensor to provide a BEV (Bird Eye View) of the vessel surroundings for “geofencing” and object identification. Preliminary tests of the separate system components have been carried out in the summer and autumn of 2021 and the final operational tests will be carried out in the summer of 2022. The paper presents a technological overview of the research project and its achievement, including the preliminary results of the 2021 tests.

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