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# ARGOS: a solution to increase security and safety of ships

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In the last years, the leisure vessels market had a very positive trend and, every year, more and more ships will be present in our waters. This is giving a push to the demand and needs of increased security, in the protection against theft, and safety, in the protection against losing the mooring while anchored with the risk of having accidents against rocks or other vessels. The ARGOS Solution is offering the capabilities and performance to answer those needs with easy plug-in installation of a device in the boat.
The ARGOS Solution is under development in the frame of the ARGOS (Anti-theft Robust Galileo-based Operational System) project co-funded by the EU Agency for the Space Programme (EUSPA) within its Fundamental Elements funding programme.
The ARGOS Solution, leveraging the services provided by Galileo and thanks to its scalable and modular architecture, provides timely alerts in case of theft or risk of losing the mooring of the anchor point. It also provides high robustness against environmental conditions, e.g. multipath, shadowing of the GNSS signals, etc…, and external factors that can be unintentional (e.g. interference sources) or intentional (e.g. jamming or spoofing attacks in order to support a theft attempt).
These differentiating capabilities are based on the new features of Galileo, the European GNSS system, specifically the Open Service Navigation Message Authentication (OSNMA) that will increase the robustness against certain types of spoofing attacks, and the I/NAV Message improvement that will increase the performance of the GNSS signal processing in harsh environments (e.g. ports, natural harbours, etc…).
These capabilities are integrated in the solution and improved with Artificial Intelligence techniques implemented in the on-board device by fusing the GNSS information with data from other on-board sensors like Inertial Measurement Unit, anemometer, temperature/humidity/pressure sensors, etc…., in order to provide timely alerts with high performance detection of risky conditions.

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