



SAFE PORT
SPACE 4.0

NAME OF THE PROJECT: SPACE TECHNOLOGIES AND APPLICATIONS 4.0

SHORT NAME: SPACE 4.0

PROGRAM: EPANEK 2014-2020, OPERATIONAL PROGRAM COMPETITIVENESS - ENTREPRENEURSHIP - INNOVATION - Action "COOPERATIVE INNOVATION FORMATIONS/ SSK - 2nd Call: Businesses".

STARTED AT: 15/07/2022

DURATION: 18 MONTHS

ALL ABOUT THE PROJECT: <https://www.space4-project.gr/>

SUMMARY: The project, as an outcome of the **Greek Cooperative Formation of Space Technologies and Applications (Si-Cluster)**, focuses on earth observation data management combined with the use of space technologies and Artificial Intelligence models to develop new applications that will help manage environmental crisis and political protection. More specifically, the main objectives of the project are the development of a system for monitoring and modeling atmospheric gusts, management of port security, and monitoring various crop parameters from UAV arrays to develop an intelligent sustainable agriculture management system.

GSH participates in EE2 entitled "**Development of an innovative port security monitoring and management system using space technologies and Artificial Intelligence: Safe Port**", as a Scientific Officer. More precisely, the main scope of this work package is to monitor the Port area and the wider maritime area through satellites to redefine the uses of the port's functions, ensuring greater safety during transport. To achieve this, a satellite data collection and processing system (Decision Support System) has been designed, which is related to both in-flight Processes and Ground Station Processes for faster processing and better analysis of the information. The main activity of GSH is associated with Ground Station Processes, where **an automatic geolocation correction framework that corrects multiple images simultaneously and 4D object-oriented detection techniques will be developed using satellite data (Copernicus, Sentinel 1-2)**. In particular, it aims at the development - optimization of an algorithm for recording and monitoring structures and objects of interest, which will be developed in open-source software based on Machine Learning. The "objects" of monitoring concern the water mass, with a radius of a few kilometers centered on the built tissue of the port for the recording of possible water contamination either from oil spills or due to eutrophication, the monitoring of the atmosphere for reasons of atmospheric pollution as well as the monitoring - categorization of Containers. The **target detection** technique will be used for monitoring and "categorization".

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CONSORTIUM:



SUBCONTRACTORS:



Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης