EUROPEAN DEFENCE AGENCY

Artificial Intelligence for Detection of Explosive Devices (AIDED)

Under the Preparatory Action on Defence Research (PADR), the grant for the Research Action call on the topic 'Future Disruptive Defence Technologies – Emerging Game-changers', subtopic (2) 'Artificial Intelligence (AI) for defence' was signed on 22 September 2021. The awarded project, called AIDED, is led by Space Applications Services (Belgium). The consortium encompasses a total of 4 participants from 3 countries. The project, which has a duration of 27 months, will receive an EU grant of roughly € 1,5 million.

PADR Call FDDT-EMERGING-03-2019 – Information on the awarded project	
Name of the project	Artificial Intelligence for Detection of Explosive Devices
Short name	AIDED
Summary of the project	
AIDED project will use a set of state-of-the-art Artificial Intelligence (AI) algorithms able to identify unconventional (Improvised Explosive Devices - IEDs) and conventional (Buried Mines) explosive devices, to autonomously plan offline and run-time missions plans and to provide positioning, navigation and mapping to control a fleet of robots that cooperate quickly to identify a safe passage in a high-risk area. AI-Machine Learning techniques such as deep learning will be designed and trained using simulated and outdoor data sets for the detection of IEDs using sensor data from GPR (Ground Penetrating Radar), EMI (Electromagnetic Induction) array, infrared or thermal cameras and LIBS (Laser Induced Breakdown Spectroscopy) and fusing them to improve the confidence of detection and classification of IEDs by removing outliers and false detection. AIDED will also develop AI-based centralized and decentralized mission planning to coordinate a swarm of small and medium heterogeneous robots (land and aerial) capable of working cooperatively towards the goal of detecting IEDs that are on the surface, buried or hidden. The Positioning, Navigation and Mapping will also be based on AI-machine learning techniques for robustness and standalone operation in GNSS denied environments.	
Project duration	27 months
Starting date	01 October 2021
Maximum foreseen EU Contribution	€ 1.546.000,00
List of participants	

#	Name of the entity	Country	EU Contribution requested by the entity[1]
1	Space Applications Services NV	Belgium	€ 596.187,50
2	City University of London	United Kingdom	€ 389.000,00
3	Ecole Royale Militaire - Koninklijke Militaire School	Belgium	€ 275.000,00
4	Spectral Industries BV	Netherlands	€ 202.000,00