

Search for a Spanish Partner for a Bilateral R&D Project

Organization	
Date of Request:	08/14/2025
Company name:	Heriot-Watt University Dubai
Contact person and title/ designation:	Dr Claudio Zito
E-mail:	C.Zito@hw.ac.uk
Phone number:	
Mobile number:	+971 (0) 585231062
Website:	https://researchportal.hw.ac.uk/en/persons/claudio-zito

SECTION 1: Entity launching the partner search

(Please give brief / to the point explanations. For more explanation on any point below, you may add a short paragraph as an annexure, with this document.)

Sector	Education / Research & Development / Robotics
Entity mission or core functions	<p>The CogWaters project aims to develop an advanced cognitive architecture for an autonomous Unmanned Surface Vehicle (USV) dedicated to collecting water debris in waterways. The primary goal is to enhance environmental sustainability by enabling waterways to remain clean and free of pollution through intelligent and efficient debris collection.</p> <p>This project leverages cutting-edge artificial intelligence, sensor fusion, and autonomous control systems to create a smart robotic platform capable of navigating complex water environments, identifying debris, and executing collection tasks with minimal human intervention. The system is designed to be adaptable, reconfigurable, and capable of integrating various external sensors for real-time environmental monitoring.</p> <p>The project aims to deliver a prototype USV equipped with a modular, fiberglass hull, integrated electronic control systems, and an accessible interface for connecting external sensors and reconfiguring the robot for</p>

	different operational scenarios. The systematic integration of hardware and AI-driven control algorithms will enable the vessel to operate reliably in diverse waterways, contributing significantly to environmental management efforts. Funded by the Dubai RDI grant initiative, CogWaters represents a significant step toward deploying intelligent maritime robots for ecological preservation, showcasing the potential of collaborative research between academic institutions and industry partners in the field of autonomous watercraft.
Date of establishment	CogWaters started on Feb 2025
Ownership (if public and traded, add stock exchange and ticker symbol)	PI is Dr Claudio Zito Public University, owned by Heriot-Watt University Dubai
Total number of employees	The projects involves 4 staff members from Heriot-Wattt and 1 PhD student
Number of employees in R&D	1
Key products sold or services provided	<ul style="list-style-type: none"> - Autonomous navigation in complex environment - Detection, tracking, and collection of water debris - Complex cognitive behaviours such as detection of failures, replanning, decision-making capability over heterogeneous data
Entity core technical competences	<ul style="list-style-type: none"> - Robotics - Machine Learning - AI
Key R&D programs and activities	Development of the cognitive architecture to enhance interoperability and cognitive behaviours of the system.
Examples of accomplishments	The current USV won the third place at the Mubadala's Higher Education robot competition in the autonomous track for debris collection in water
Company strategic orientation	Develop a next-gen tech for autonomous robots

SECTION 2: Spanish Company Profile

(Please provide a brief summary of the prospective partner company or organization. This summary may address some or all of the points below)

Profile of ideal technology partner	A mechanical engineering company
-------------------------------------	----------------------------------

	specializing in marine robotics, with proven experience in fiberglass hull construction, electronic integration, and reconfigurable robotic platforms suitable for research and development projects.
Core technological competencies and expertise	<ul style="list-style-type: none"> • Fiberglass hull fabrication • Mechanical design for watercraft • Electronics assembly and integration • Reconfigurable systems for sensors and controls • Experience with aquatic robotic systems
Other essential qualifications (e.g.: ownership, track records etc.)	<ul style="list-style-type: none"> • Strong engineering and manufacturing capabilities • Previous collaboration with research institutions or R&D projects • Ability to develop prototypes for marine applications • Adequate facilities for construction and testing of robotic vessels
If you have a list of companies with whom you are in contact or interested in contacting, please provide contact details	N/A
If you are interested in collaboration: please specify details and other important information you want to share with a potential company	We seek a partner to take our design for a catamaran robot, manufacture a fiberglass hull, integrate electronic components, and develop a system with accessible ports for external sensors. The project involves designing a reconfigurable, easily maintainable system aligned with our research objectives under the CogWaters project funded by Dubai RDI.
Interested areas of collaboration	<ul style="list-style-type: none"> • Hull manufacturing and assembly • Electronic control system integration • Mechanical and structural enhancements • Reconfigurable port and sensor interface design
Specific R&D contribution you are	Offering design specifications, technical



seeking/offering	collaboration, and a ROS2 based platform; seeking manufacturing expertise and electronic system integration for prototype development.
------------------	--

Claudio Zito

Signature
Name: Claudio Zito
Date: 14/8/2025