enterprise europe network

Partnering Opportunity

Profile status : Published

Research Development Request

H2020 FET Proactive consortium developing a technology to monitor marine biodiversity seeks an industrial partner

Summary

A French research centre will act as coordinator for a project under FET Proactive aiming to develop a new type of ultra-low power bio-acoustic sensors to monitor marine biodiversity. It is looking for an industrial company with marine operations to join the project. The partner will be involved from the very beginning, providing real operational scenarios and industry specificities, all the way to testing in-situ prototypes at the end of the project.

Creation Date	17 December 2019
Last Update	06 January 2020
Expiration Date	21 February 2020
Reference	RDFR20191216001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/d0b51a45-9272-4dee-acfb-8cb619355a9e

Details

Description

A French research center in the field of computer science, signal and electronics is coordinating a FET Proactive project under the call FETPROACT-EIC-08-2020 - Environmental Intelligence.

The project, “Ultra-Low Power (ULP) bio-acoustic sensors to monitor marine biodiversity”, aims to develop a new type of intelligent ocean passive acoustic sensors.
The radically novel approach proposed by the project will permit the design of low cost, small size ULP

hydrophones for in-situ monitoring and analysis of marine environment and related maritime activities.

The development of radically new hydrophones will be based on a fully analog frontend circuit to avoid as much as possible approximation due to digital conversion. The sensed acoustic data will be processed using analog spike neural networks (SNN), featuring learning capabilities to measure and characterize deterministic acoustic signatures, getting rid of underwater noise. Moreover, such SNN offer intelligence and reconfigurability, a requirement to comply with the specific marine environment under study. They can both count and identify various mammal species, especially sperm whales for biodiversity measure, down to individual identification. It is to be stressed that the sensor will also include a dedicated ULP localization circuit. Thanks to this ULP technology, these sensors will feature ultra-long autonomy.

The proposal will also pay attention to :
• open data accessibility of high-quality natural signals for greater scientific value
• develop cognitive and predictive models for understanding whale behavior
• design bioacoustics sensors as generic as possible to monitor any marine or non-marine activities for the evaluation of biodiversity and the preservation of species (whales, birds, insects, worms, ...).

This research program is therefore based on an interdisciplinary synergy between three distant communities: ULP electronics (artificial neurons and synapses, localization circuits), artificial intelligence (neural networks and artificial learning) and bio-acoustics of marine mammals and fishes. This synergy will allow the development of radically disruptive bioacoustic intelligent sensors, required to create dynamic models of the environment, including predictive modeling and scenario testing and tracking.

The proposal is being prepared for the next FET - Proactive call, that will open early 2020, by an international consortium represented by academic partners in France, Italy and the Netherlands that combine basic and applied research, and an SME specialised in pattern recognition and embedded electronic systems.

The consortium is looking for an industrial partner, ideally a big company with industrial sea operations in the field of oil and gas, and/or fisheries fleet operations, and/or matitime transport operations. Based on the partner profile, the consortium wishes to evaluate from the very beginning the needs in terms of biodiversity measures in the partner's economic sector and later on in the project test in-situ prototypes in collaboration with the partner.

EOI deadline: 21 February 2020
Call deadline: 23 June 2020
Project duration: 5 years

Stage of development

Proposal under development

Keywords

Technology

01002001	Micro and Nanotechnology related to Electronics and Microelectronics
01002004	Embedded Systems and Real Time Systems
10002005	Biodiversity / Natural Heritage
10002007	Environmental Engineering / Technology
10002010	Remote sensing technology

Market

05008001	Marine products
06001001	Exploration services
09005	Agriculture, Forestry, Fishing, Animal Husbandry & Related Products

Network Contact

Issuing Partner

ZACHODNIOPOMORSKI UNIWERSYTET TECHNOLOGICZNY W SZCZECINIE

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Open for EOI: Yes

Dissemination

Restrict dissemination to specific countries

Denmark, Finland, Greece, Iceland, Ireland, Italy, Malta, Norway, Portugal, Spain, Sweden, Switzerland

Relevant sector groups

Maritime Industry and Services

Client

Type and Size of Organisation Behind the Profile

R&D Institution

Year Established

0

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English
French

Client Country

France

Partner Sought

Type and Role of Partner Sought

The consortium is looking for an industrial partner to join the consortium, preferably a big company with industrial sea operations in the field of oil and gas and/or fisheries fleet operations, and/or matitime transport operations.

The partner will be involved from the very beginning : from the project preparation, in order to include its specificities in the way the project will be approached, all the way to testing prototypes.

Indeed, the consortium is looking to cooperate in the following way:
- work with the partner and the user communities to upgrade requirements and provide a system that allows easier transition to manufacturing and operations, bridging the gaps between science, industry and government.
- evaluate in real operational scenarios collaborating with pre-defined scientific and oceanographic missions, observatory maintenance and the industrial partner based on his sea operations
- test in-situ prototypes in collaboration with the partner.

The partnership will be under a research cooperation agreement under H2020.

Type and Size of Partner Sought

251-500

Type of Partnership Considered

Research cooperation agreement

Program - Call

Framework Program

H2020

Call title and identifier

FET Proactive – Boosting emerging technologies - FETPROACT-EIC-08-2020 - Environmental Intelligence

Anticipated Project Budget

4m€

Coordinator required

No

Acronym

Ultra-low power bio-acoustic sensors to monitor marine biodiversity

Duration

240 days

Deadline for EOI

21 Feb 2020

Deadline of the Call

23 Jun 2020

Weblink to the call

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/fetproact-eic-08-2020

Attachments