

PROPOSAL TEMPLATE FOR POGO WORKING GROUPS

Please send this form to ssve@pml.ac.uk by **29th May 2026**.

Important: You must first submit an Expression of Intent by 30th April and receive approval from the Secretariat to proceed with a full proposal submission, using the following link: [POGO Microgrants - Expression of Interest – Fill out form](#). Prior to submission, the full proposal must be signed by the Director or other designated POGO representative within the institution submitting the Microgrant proposal.

Note: POGO funds are very limited, and it is anticipated that Members and/or other organisations would provide additional support for these initiatives. Applications in the range 10 - 12K EUR are encouraged, and in any case should not exceed 14K EUR.

1. Title of proposed Working Group:

Resident-AUV State-of-the-Art and Innovation

Short name/acronym: Resident AUV

Proposed start date: 01/10/2026

Proposed end date: 30/09/2027

Start date should be between 1 Sept and 1 Nov 2026. End date should be 12 months after start date.

2. Background and rationale

Scientific rationale, societal benefits and policy relevance –max. 300 words:

The need for continuous, long-term, *in situ* observation of the ocean has been widely acknowledged for decades, for the sake of multiple scientific disciplines and interdisciplinary studies. This can only be achieved by the implementation of long-term *in situ* observation systems. With the exception of Lagrangian floats, which provide large-scale synoptic views of physico-chemical phenomena, these long-term observation systems are mostly fixed-point, therefore provide measurement time series only within a very limited spatial range. Gliders are invaluable tools that provide large-scale observations, but their operation durations without human intervention do not exceed a few months and they cannot dive close to the seabed. Conventional Autonomous Underwater Vehicles (AUVs) provide precisely located seafloor and water column observations across wide areas but are operated from a ship, therefore cannot observe for more than a few days running while generating important environmental and financial costs. A gap remains in this panorama: the need for reliable and affordable systems capable of long-term, long-range observation of the seafloor and water column is not fulfilled yet, whereas constant progress in robotics and vehicle autonomy suggests it could be filled by persistent operations of AUVs from permanent subsea stations.

The proposed Working Group aims to conduct a comprehensive review of the state of the art and the potential of resident AUVs for Ocean Observations, based on the organization of a workshop bringing

together a broad panel of ocean science and technology stakeholders. Looking ahead, this WG will build and consolidate a strategic partnership niche aligned with (1) the [EU Ocean Observation Initiative “OceanEye”](#), (2) the priority topics identified by the G7 Future of the Seas and Ocean Initiative (FSOI) and (3) other relevant ocean governance policy and actions such as the high-level Expert Group European Ocean Board of which the POGO representative of Ifremer is one of the [members](#).

Global context –max. 300 words:

The last decade has witnessed considerable investment and rapid progress in the area of robotics in general and drones in particular, whether in the air, land, sea or subsea domains. In the latter, this investment is mainly driven by the anticipation of growing markets for sea and subsea resource exploitation on the one hand, and by the growth of the military response to the threat to critical underwater infrastructures in a hybrid warfare context, on the other. The efforts being made are all geared towards remote operation, autonomy and residency, enabling ship-less operations as much as possible. Science must benefit from these advances and play a role in them. This is particularly true for the development and implementation of resident AUVs, which are expected to play an important role in ocean observation.

To our knowledge, the last workshop entirely dedicated to resident AUVs for scientific observation was organized by the University of Washington in 2018 (R-AUV Workshop, 9-11 May 2018, Seattle, WA, USA). It highlighted several families of use cases and concluded that “incremental technological steps toward realizing Resident AUV operations could yield revolutionary scientific and operational value.” Nine years later, after significant progress has been made in embedded intelligence and computer vision in particular, where do we stand? What are the references of actual resident AUV operation throughout the world? What experience was gained, what lessons learnt? What are the remaining technological barriers for vehicle persistency? What recent technological advances can make AUV residency more affordable, reliable and sustainable? And finally, what synergies can be expected between industrial and academic players?

The proposed Working Group will provide informed answers to all of these questions.

Relevance to POGO and fit with [POGO’s Strategy](#) –max. 300 words:

POGO aims to achieve world-wide cooperation for a sustainable, state-of-the-art global ocean observing system that serves the needs of science and society. The Resident AUV WG will have the opportunity to build a new partnership niche, driving the next innovation for a new cost-effective robotic vehicle to observe better our ocean. The key milestone of this WG is an international workshop, developed collaboratively by the members and participated by experts and users from beyond the POGO community, reaching out to industry and societal partners. The workshop hence provides a forum to take stock of the state of art in the technology and to co-create a forward-looking foresight agenda for its future evolution, including identifying the opportunity for capacity building and resources.

The WG is highly relevant to the forthcoming POGO Technology Working Group. The R-AUV WG could serve as a specialised niche task team that supports the objectives of the Technology WG. It is also desirable to seek synergy opportunities between the two groups.

Through its objectives and methodology, the proposed Working Group meets POGO's strategy by providing a Global vision on the addressed questions by bringing together a comprehensive global expert panel, including academia and industry players. It will foster innovation and development of tools that may become crucial components of the ocean observing system. Through the theme it addresses and the community it intends to reach, the proposed working Group is fully aligned with POGO's priorities of innovation in ocean observing and capacity development.

3. Funding

If you are applying for funding, please provide a breakdown of expenses. Please provide as much detail as possible.

Item (e.g. workshop hospitality, travel, publication...)	Cost (EUR)
Workshop venue rental	4,000
Workshop catering, contribution to food expenses	3,000
Contribution to travel expenses (one participant per partner + 3 invited participants)	6,000
Total	13,000

Important notes:

- *The total budget and type of expenses covered should be as indicated in your Expression of Intent.*
- *Please include in this table only the budget you are requesting from POGO; any additional costs that are being met from other sources should be described below, if applicable.*
- *Staff time and institutional overheads cannot be included.*
- *Funds will be transferred to the POGO member institution leading the proposal.*

Please include here any information about other sources of funding. These may be existing funds or funding proposals that have been submitted. If the latter, please indicate when you expect to find out whether you have been successful with other proposals.

In addition to the registration revenue, three complementary sources of funding are being sought:

- a budget is being requested from Ifremer Science Division, decision expected in Q4 2026,
- funds will be requested from ISBlue interdisciplinary graduate school, through its next call for workshop proposals, outcome expected in March 2027,
- a support will be requested from the Brittany Region and Brest Métropole, outcome expected in March 2027.

Item	POGO's contribution (EUR)	IFREMER's Science Division contribution (EUR)	ISblue funding for workshops	Financial support from Region / City	Conservative estimate of registration revenue	Total (EUR)
Workshop venue rental	4,000	-	-	-	2,800	6,800
Workshop catering and food expenses	3,000	-	2,500	1,000	5,500	12,000
Travel expenses: one participant per partner + 3 invited participants	6,000	5,000	2,500	-	11,000	24,500
Registration management service	-	-	-	-	700	700
Total	13,000	5,000	5,000	1,000	20,000	44,000

4. Work plan, deliverables and milestones

What does the WG aim to achieve and how? How will this advance POGO's mission? Describe measures of success that could be used to evaluate the impact. Max 1000 words.

The Working Group aims to

1. provide the global ocean observation community with a comprehensive picture of the potential, maturity and remaining technological gaps of resident AUV systems, as tools for ocean observation,
2. foster the emergence of actual projects involving resident AUV technology for observation of the ocean.

To achieve this, the Working Group's main lever will be the organization of a dedicated workshop that will bring together experts on resident AUV technology and its applications, with an objective to review the current state of the art and address the key questions outlined in the 'Global context' paragraph, aiming at identifying remaining challenges and consolidating international experience in the resident AUV operation. Following the workshop, the Working Group will produce a set of recommendations that could serve as a foundation for the development of resident AUV technology and its perspective under the international and European observation initiatives.

Specifically, the Working Group's missions are as follows:

A. Serving as a Scientific Committee to guide the organization of the workshop, including:

- defining the workshop objectives,
- setting the workshop format and programme,

- setting a list of key participants, including academia and industry players,
- calling/selecting presentation abstracts.

B. Producing a comprehensive workshop report and developing a concise set of written recommendations.

The working Group's achievements will serve POGO's missions by shedding light on the relevance of implementing resident systems as tools for ocean observation and if necessary producing the necessary conditions and connections to make it happen. Depending on the outcomes of the workshop, the working group might decide to submit a proposal for leading a special issue on the theme of subsea vehicle persistency in an appropriate journal. More generally, the outcomes of the Working Group will feed POGO's Technology Working Group in its various endeavours and missions. The WG activities will be integrated to the UN Ocean Decade programme "One Ocean Network for Deep Observation".

Among the measures of success:

- total number of workshop attendees
- number of industrial representatives attending
- number of student and early-career participants
- number of projects launched directly resulting from the workshop
- publication of a special issue in an appropriate journal

	Milestones	Date to be reached
1	Workshop objectives, format and programme defined	November 2026
2	List of key participants drawn up. Key participants invited. Call for abstracts released.	December 2026
3	Abstracts selected and presenters notified.	March 2027
4	Holding the workshop	May 2027
6	Releasing the report	September 2027

5. Membership

Important notes:

- *Participants should be from a minimum of 4 countries on at least 2 continents.*
- *Proposals should be submitted by a POGO Member institution, and signed by the POGO representative (e.g. Director) within that Member institution.*
- *Participants from institutions that are not part of POGO may be included as WG members to address geographical balance or gaps in expertise. The inclusion of non-members should be justified in the proposal, and should not exceed 50% of the total number of participants.*

Working Group leader:

Name: Jérôme Blandin

Institute: IFREMER

Country: France

Please describe your expertise in this area and previous experience in leading/coordinating Working Groups or projects –max. 500 words.

Jérôme Blandin, graduate in electrical engineering (INSA Lyon, 1987), began his career as a test engineer in the railway industry (Eurostar high-speed train, 1989-1991), then moved into the development of geotechnical measurement systems for an SME. He joined IFREMER in 1994 to develop electronics for oceanographic measurement systems. From 2001 onwards, he devoted most of his time to the development, implementation and promotion of long-term *in situ* ocean observation systems, often with a multidisciplinary approach, through the various projects he has led. To this end, he led the development and industrialization of critical technological building blocks for cable-less observatories: permanent seabed-to-shore near-real-time data transmission chain, optimized modular power blocks, low-power high data rate acquisition system and various subsea intervention tools adapted to observatory installation. These building blocks are now commonly used at numerous observation sites. Between 2013 and 2022, Blandin took an active part in structuring the various fixed-point observation initiatives in Europe and in setting up the European Multidisciplinary Seafloor and water column Observatory (EMSO ERIC). One of the levers used was the harmonisation of procedures and processes contributing to long-term subsea observation. This is how he came to lead the writing of a best practice handbook and the implementation of the EMSO ERIC Label, each time relying on working groups and dedicated workshops:

- Time series analysis in environmental science and applications to climate change, training and conference, Tromsø, Norway, 8-11 November 2016, 67 attendees, co-conveners Bénédicte Ferré, U. Tromsø, Ingrid Puillat and Jérôme Blandin, Ifremer
- Workshop on Interoperability Technologies and Best Practices in Environmental Monitoring, Brest, France, 10-12 October 2018, 91 attendees, co-conveners Jérôme Blandin, Ingrid Puillat and Laurent Delauney, Ifremer
- Workshop on Sea Operations for Ocean Observatories, Toulon, France, 25-26 September 2019, 61 attendees, convener Jérôme Blandin, Ifremer

In 2018, Blandin established then led for four years the EMSO ERIC Engineering and Logistics Service Group, composed of 15 representatives of EMSO Regional Facilities and aimed at coordinating and harmonizing the engineering activity across EMSO. In 2023, he launched for Ifremer the development of a resident Autonomous Underwater Vehicle (AUV) for scientific observation, designed as the mobile extension of a long-term, fixed seafloor observation infrastructure*. Jérôme Blandin participated in 21 oceanographic cruises. He directed 6 of them.

* J. Blandin et al., "Development of a Resident AUV for Scientific Observation," OCEANS 2025 Brest, BREST, France, 2025, pp. 1-7, doi: 10.1109/OCEANS58557.2025.11104752

Other participants:

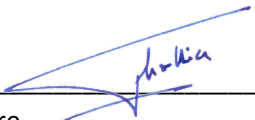
Name	Position (e.g. Director, senior scientist, etc)	Institute	Country	Brief summary of expertise and proposed role, and link to on-line biography	POGO member*? (Y/N)
Brett Hobson	Senior Mechanical Engineer	MBARI	USA	Lead designer for two previous ocean-deployed resident AUV systems. Working Group Member. https://www.mbari.org/person/brett-hobson/	Y
Michael Jakuba	Senior Engineer	WHOI	USA	Jakuba is an expert in marine robotics design, control and operations, including in the Arctic and under ice. Jakuba will participate as a subject matter expert with particular interest in anchoring and docking as a means of improving scientific access in challenging environments (deep and/or under ice). https://www.whoi.edu/staff/mjakuba	Y
Alexander Phillips	Head of Marine Autonomous and Robotic Systems Facility (Senior Principal Engineer)	NOC	UK	Alex is Head of the Marine Autonomous and Robotic Systems (MARS) Facility at the National Oceanography Centre (NOC). The MARS Facility is a UK national capability that provides the scientific community with access to world-leading marine robotic technologies and expertise in support of ocean research and innovation. With over 20 years of experience in the design, development, and operation of autonomous underwater vehicles (AUVs), Alex has played a leading role in advancing the UK's marine autonomous capabilities. His work has included oversight of the development and operational deployment of the Autosub AUV fleet,	Y

				including both long-range and hover-capable variants, supporting cutting-edge scientific and technological missions in challenging marine environments. Working Group Member. https://www.noc.ac.uk/n/AlexanderPhillips	
Dana Manalang	Senior Principal Engineer	U. Washington (Applied Physics Laboratory)	USA	Dana Manalang was a co-convenor of the first Resident AUV workshop held in Seattle, WA in 2018. She has co-authored multiple publications on scientific applications for resident AUVs and has actively participated in research programs involving the underlying technologies to achieve AUV residency, including underwater wireless power transfer, AUV docking, and wave energy harvesting for vehicle charging. https://www.apl.washington.edu/people/profile.php?last_name=Manalang&first_name=Dana	N
Antonio Vasilijevic	Senior Research Advisor	Norwegian University of Science and Technology, Department of Marine Technology, Applied Underwater Robotics Lab	Norway	PhD from University of Zagreb, Croatia. More than 25 years of experience in marine and maritime technologies across both industry and academia. Expertise includes marine and underwater robotics, subsea instrumentation, and long-term underwater persistence, with a particular focus on subsea residency and resident underwater robotic systems. Antonio Vasilijevic - NTNU	N

* The full list of POGO members can be found here: <https://pogo-ocean.org/who-is-pogo/members/>. Please check this before completing the last column of the table.

Signature of POGO representative within the institution leading the proposal:

I hereby approve the submission of this Microgrant proposal to POGO, and the receipt of the Microgrant funds from POGO in the event that the proposal should be successful.


Signature

Name of representative: François Houllier

Position: Chairman and Chief Executive of IFREMER