Position Description

1. General information

Position reference	Monodon-PF1: Underwater laser communication physical layer technologies
Research area	Developing innovative laser communication physical layer technologies that can address current escalating demands for data bandwidth and security in underwater environments
Research fields	Underwater Laser Communications; Physically Unclonable Functions; Optical Systems Engineering (hardware)
Supervisors	• Carlos García Meca (Monodon by Navantia) • Arnan Mitchell (RMIT)
Available research capabilities	Monodon, Navantia, counts on an optical communications laboratory set-up to develop and test a variety of underwater laser communication systems.
Find out more about the research groups	• https://monodon.es/ • https://www.rmit.edu.au/research/centres-collaborations/integrated-photonics-and-applications-centre
Position funded by	• COFUND, Marie Sklodowska-Curie Actions (MSCA), Horizon Europe, European Union • Monodon by Navantia • RMIT University (RMIT)
Employing entity	Monodon by Navantia
Seconding entity	RMIT University
Foreseen start date	June 2026
Gross annual salary	37,000 EUR plus complements defined below

2. Expected candidate profile

We are seeking a highly motivated and innovative Postdoctoral Fellow to join our team. The ideal candidate will contribute to cutting-edge research in underwater laser communication technologies, focusing on the physical layer and hardware aspects of the system, e.g., to mitigate absorption and scattering effects in aquatic environments.

Requirements:

- Ph.D. in Physics, Optics, Photonics, Electronic Engineering, Telecommunications, or related fields.
- Proven record of publications in the field.
- Experience in the design and characterization of laser systems.
- Knowledge of underwater optics and light propagation in dispersive media.
- Familiarity with optical signal modulation and processing techniques.
- Ability to work in a multidisciplinary team.
- Advanced English proficiency (spoken and written) for writing publications and presenting at international conferences.

- It would be desirable that the candidate is familiar with laser communication technology devices and electronics, and with the evaluation of system performance through simulation and test.

Preferred qualifications:

- Experience with optical system experimentation in aquatic environments.
- Knowledge in optical signal detection and analysis (photodiodes, APDs).
- Programming skills for experiment control and automation (Python, C++, MATLAB).
- Experience in collaborative projects with industry or defence sectors.
- Demonstrable experience in using optical and electronic simulation software (like e.g. MATLAB, COMSOL, ZEMAX, LabVIEW or others).

Important: Monodon by Navantia is a company operating in the defence sector. For reasons of Spain's national security, only nationals of NATO countries are eligible to apply for this position.

3. Employment conditions

Monodon by Navantia offers a 36-month (3-year) postdoctoral full employment contract to work at its facilities in Madrid, Spain as part of the AuSpire researcher training program, co-funded by the European Commission under the MSCA COFUND scheme. The total working hours per week are 40 and there is a probation period of 6 months.

The remuneration, in line with the European Commission rules for Marie Skłodowska-Curie grant holders, will consist of a gross annual salary of 37,000 EUR. The definite amount to be received by the Postdoctoral Fellow is subject to Spanish tax legislation.

The position will be jointly supervised by Monodon by Navantia (Employing Entity) and RMIT University (Seconding Entity), where the Postdoctoral Fellow must undertake a secondment at the premises of the latter in Melbourne, Australia for up to 12 months.

Additionally, the program includes compulsory annual in-person workshops at various locations across Spain, along with online training and networking activities.

Benefits include:

- 4,000 EUR relocation for employment stipend to cover costs associated with taking up employment (flights, visa, insurance, etc.), to be distributed monthly as a top-up to the gross salary.[1]

[1] The definitive amount to be received by the Postdoctoral Fellow may be subject to Spanish tax legislation.

- 9,000 EUR relocation for secondment stipend to cover compulsory project-related travel and accommodation costs (flights, visa, insurance, accommodation, etc.).[1]
- 3,000 EUR travel stipend to cover flights and accommodation for participating in compulsory AuSpire training and networking events in Spain over the 3 years.[1]
- 314 EUR monthly family allowance offered to candidates who meet the criteria.[1] [2]
- Flexible Working Arrangements: We support a healthy work-life balance, offering a flexible schedule and the possibility of hybrid work (home office/work in the office) where appropriate for the role
- Becoming a Marie Sklodowska-Curie fellow and be invited to join the Marie Curie Alumni Association.
- Spanish Social Security coverage.
- Sick leave.
- Parental leave.
- 22 days of paid holiday leave.
- Access to state-of-the-art laboratories equipped with advanced optical and photonic technology.
- Opportunities for collaboration with national and international researchers.
- Possibility of participating in applied projects with impact on underwater telecommunications, ocean exploration, and defence.
- Support for conference attendance and additional training.
- Flexible Working Arrangements: we support a healthy work-life balance, offering a flexible schedule and the possibility of hybrid work (home office/work in the office) where appropriate for the role.

[2] According to MSCA-COFUND requirements, Fellows with family obligations are entitled to a family allowance (i.e. persons linked to Postdoctoral Fellow by (i) marriage, or (ii) a relationship with equivalent status to a marriage recognised by the legislation of the country or region where this relationship was formalised; or (iii) dependent children who are actually being maintained by the Postdoctoral Fellow).