
**Terms of Reference for the
Group of Experts of the JPI Oceans Joint Action
'Munitions in the Sea'**



Title joint action: *Munitions in the Sea*

SRIA strategic area: *Interdisciplinary Research for Good Environmental Status*

Lead country: *IT (Science: IT; Technology: DE; Exchange of knowledge: NO)*

Involved countries: *BE, DE, ES, GR, IE, IT, NL, NO, PL, PT, SE, UK, UA*

Responsible MB member: Emilio Fortunato Campana

Responsible Secretariat member: Pier Francesco Moretti

Background – State of Play

Ammunition dumped at sea during or after wars constitutes an environmental and safety issue in many European countries. Chemical and conventional ammunition from world war I and II are corroding and the risks of spontaneous detonations or leakage of toxic compounds are increasing. The whereabouts and condition of the dumped munition is still unknown. At the same time, there is increasing pressure to use coastal areas for recreational, residential and industrial purposes. This leads to increasing challenges with societal and environmental risks.

In 2015, JPI Oceans has initiated a Joint Action on “Munition in the sea” to facilitate research coordination and exchange of knowledge across European countries. Twelve EU countries joined the action. The action mainly addresses the scientific and technological aspects which can contribute to provide solutions at EU level, including sharing experiences and the involvement of the relevant stakeholders in the process.

The end-users priorities and national offers have first been reviewed in order to estimate the feasibility and impact of joint activities.

In 2018 two workshops have been held to simulate scenarios and identify the practices and gaps to be filled. Both workshops received a financial contribution from the project CSA Oceans 2, and brought together researchers, regulators/authorities, industry, and Explosive Ordnance Disposal (EOD) operators.

Continuous interactions with representatives of the European Commission and Parliament have been conducted, as well as between national experts and operators.

In 2019, an “Operational proposal and Recommendations to JPI Oceans on the way forward” has been prepared to identify priorities, feasibility and timescales for the activities. This document

constitutes a framework for the commitments and future developments, allowing many countries with different capacities and interests to join.

In recent years, the challenge of Munitions in the Sea has therefore increased its recognition at political level and structured a dialogue between researchers and operators. Many research groups involved in the JPI Oceans action have received funds within projects financed by the European Commission, and many other countries have launched national specific programmes for Munitions. In particular, the European Commission has launched a call within the EMFF (European Maritime and Fisheries Fund) for Blue Labs. Many organizations and experts who participated in the development of the JPI Oceans Joint Action are involved in the two granted projects: Boost Applied Muniton detection through Smart data inTegration and AI workflows (BASTA), Ex-situ, near-real-time exPlosive compound deTecton in seawater (ExPloTect).

The ERANET MarTERA has introduced a specific topic on ammunitions in the sea in its calls.

At the autumn Management Board meeting in Madrid in 2019, a mixed (cash and in-kind) call was identified as the appropriate typology for the implementation of the outlined activities, taking into account the preliminary offers to join from many countries with cash and in-kind contributions, that is providing facilities and competences. The lack of funds and new emergent issues, as the covid-19, have not yet allowed to launch this call.

Establishment of a group of experts

As decided on 6 May 2020 at its spring meeting, the JPI Oceans Management Board asked for the establishment of a Group of Experts for this Joint Action.

Taking advantage of the collaboration and dialogue which research groups have initiated also with the operators, it has been decided to officially structure this dialogue through what is usually called "knowledge hub",

The aim of the Group of Experts is to build a network consisting of selected individuals who represent a critical mass of research, integration and sharing of knowledge. It will provide useful information on scientific results, available technologies, procedures, documents which will populate a sort of repository that can be accessed by end-users and industries. The access could be open, eventually with credentials to be granted by the users and depending of the typology of the required information. This information and consulting will facilitate the scouting for solutions or design interventions. It could be hopefully accessed via a web interface of JPI Oceans or another platforms.

As an operational framework for the Joint Action four overarching themes have been identified and adopted by JPI Oceans:

1. Management of underwater munition
2. Mapping and evaluation of underwater munition
3. Ecological and toxicological impact of underwater munition
4. Remediation methods

To ensure the required cross-disciplinarity of this Joint Action it is important that the Group of Experts will consist of individuals from different research areas and expertise as well as user groups (policy maker, infrastructure provider, operational services, etc.). Since the launch of the action in 2015, approximately 60 experts from 10 participating countries have been already actively involved in the process.

General timeline

The timeframe from the initial mandate for the Group of Experts is 18 months. During this period, the Group of Experts works towards providing the information and services which will feed the platform for the exchange of knowledge between researchers and operators. The platform will be operational before Spring 2022. The experts will also support the Management Board in the preparation of the joint mixed call, provided funds will be committed.

The development of the activities will be supported through meetings and workshops. A first workshop has been identified to be hosted by the Ministry of Education and Science of Ukraine in 2021 and will be held according to the evolution of the Covid-19 pandemic.

Expected impact

The Joint Action has been articulated in three main lines of activities: (A) Science support; (B) Technology Transfer; and (C) Exchange of knowledge and practices. Cooperation, involvement, and exchange among user groups (policy makers, infrastructure providers, etc.) will continuously take place to identify scientific ideas and solutions, which can be implemented and serve user needs.

A. Science Support: provision of services to support operators and provide risk-assessment, through:

the use of 3D numerical models to provide meaningful data for the risks effect of shallow/deep water explosions, chemical leakage, diver visibility, sediment transport; impacts of blast waves and underwater sounds generated from controlled and spontaneous detonations; estimate of corrosion phenomena and consequences; recognition and identification of munitions, increasing the accuracy and efficiency in the post-processing of sonar and visual data.

B. Technology Transfer: technology transfer and development of new technologies for: high resolution sea bed mapping, acoustic, magnetic and visual, measure sea conditions and marine ecosystems; mitigate effects of blast waves and underwater sounds from controlled detonations on marine life and infrastructure; autonomous and robotic systems, chemical sensors for aquatic systems and assessment of health of marine ecosystems; safety conditions for operations on the sea floor along with confirmed procedures to monitor the release of toxic compounds; protect current infrastructure and improve safety for new infrastructure; avoid the introduction of potentially harmful chemicals into the human food web via aquaculture facilities; improving defence and national security .

C. Exchange of Practices and Knowledge

Science-to-policy transfer, with knowledge support to select best options; improvement of existing knowledge base, method standardization and intercalibration; exchange of practice, standardization of guidelines; improvement of personal skills of experts.

Setting up the Group of Experts

Step 1 – Establishment of Governance and Participation from Countries

Representatives of the JPI Oceans' Management Board from the countries participating in the Joint Action will compose the Steering Committee (SC) and are intended to act as a policy hub with the funding organizations for the action. The Steering Committee will (i) harmonize the composition of the group of experts, identifying possible gaps for representative sectors or disciplines, (ii) oversee the activities of the Joint Action and Group of Experts and (iii) ensure their full integration in and complementarity with the overall JPI Oceans activities. The SC will

(iv) ensure an appropriate exchange of information between scientific experts and users (e.g. policy maker). The SC will be supported by the JPI Oceans secretariat.

The Steering Committee is constituted by the MB representatives of the three leading countries in the joint action.

Costs associated with the Steering Committee and Group of Experts activities (i.e. attendance at meetings, time, etc.) will be covered by each Funding Organisation.

Funding Organisations interested in participating in this action are encouraged to confirm their commitment through the nomination of their experts to the Group of Experts.

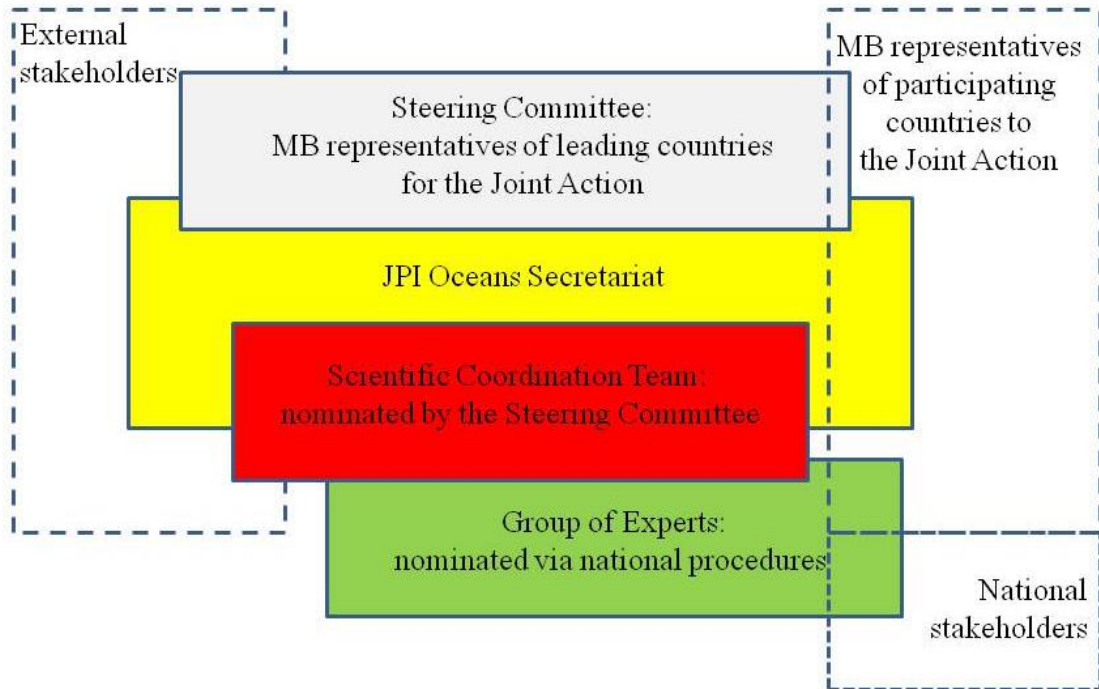


Figure 1: scheme of governance of the Group of Experts. MB representatives of the leading countries constitute the Steering Committee and will nominate the Scientific Coordination Team, who will chair the Group of Experts. Each MB representative from the participating countries will nominate their experts, who will act as hubs for widening national expertise too.

Step 2 – Selection of experts

The indicative initial membership for the Group of Experts is for 18 months.

The initial size of the Group of Experts is expected to be 1-5 experts per participating country. The experts will also act as a reference for the national communities too to guarantee the gathering of information and additional expertise.

The Group of Experts will be chaired by a Scientific Coordination Team (funded and appointed by the lead countries). The Scientific Coordination Team is the link between the experts and the secretariat, leads external relations concerning the scientific aspects of the Joints Action, is in regular exchange with the lead countries and is supported by the JPI Oceans Secretariat. It should consist between 3 and 5 experts.

Participants of the Group of Experts will be representatives of research groups, policy areas, and important user groups (e.g. infrastructure provider, operational services) that have the formal

support of their respective research organizations and institutions. Consortia of (research) groups that are represented by one coordinating expert may as well be valid partners.

Timeline:

December 2020:

- Interested Funding Organisations nominate up to **5 candidates until 30 December 2020**. The nomination can be done according to the preferred national procedures.
- These experts can address issues relevant to monitoring, scientific results, technologies, interventions and support to policy decisions.
- The Steering Committee will review the proposed list of experts to be invited to join the Group of Experts. The review will take into consideration the following criteria to decide whether additional experts are needed for a well-balanced Group of Experts:
 - a. Researchers collaboration with stakeholders;
 - b. Representation of stakeholders and their areas of interest;
 - c. Disciplines covered;
 - d. National infrastructure in place to support the group.
- Additional experts could be invited from organisations and initiatives working on relevant initiatives linked to the challenge of Munitions (e.g. European Commission (Joint Research Centre, DG Environment, DG RTD, DG MARE), European Parliament Committees.

Costs:

All Funding Organisations will finance the Scientific Coordination Team and the experts to attend at least two meetings over the 18 months timeframe. Possible mechanisms include:

- Funding Organisation allocates additional funding to the national researchers and other stakeholders involved in the Group of Experts or requests their national researchers reallocate a proportion of their current budget to cover Group of Expert related activities.
- Funding Organization cover the expenses for what is needed to establish and run the on-line platform, or part of it.
- Funding Organisation covers the costs on a trip-by-trip basis as Expert Support in the short term.
- Meeting costs could possibly be covered partly by partners.
- Meeting costs will be covered on a rotating basis, with e.g. the host countries' funding agency covering the costs of lunch and meeting room.
- JPI Oceans will provide support via the Secretariat time effort, hosting of possible meetings, travel for the secretariat members, publication on the JPI Oceans website.

Step 3 – Invitation of experts

January 2020:

- Steering Committee members will agree on an invitation template including the added value for experts as well as the expected activities and outputs sections in this document; and must agree on the invitation to the 1st Workshop taking place in Ukraine in a date to be defined, accordingly to the evolution of the Covid-19 pandemic.
- Funding Organisations will send a confirmation to the selected experts, confirming their participation in the Group of Experts and the associated financial contribution they will receive for activities related to the Joint Activity on 'Science for Good Environmental Status'.



Step 4 – Establishment of the Group of Experts and operational interface platform

The Group of Experts will be established in November 2020.

An implementation plan for a platform to constitute the interface between the experts and the end-users/operators will be drafted for approval by the Management Board.

Possible outputs, i.e. services and products, will be identified, as well as indicators of developments and outcomes.

Functioning of the platform is expected for December 2021.

Annex 1 - EXPERT NOMINATION FORM

GROUP OF EXPERTS FOR JPI OCEAN JOINT ACTION ON 'MUNITONS IN THE SEA'

Lead countries: Italy, Germany, Norway

Responsible Management Board member: Emilio Campana

Responsible Secretariat member: Pier Francesco Moretti

Nationally nominated experts:

Member country	Name	Organisation	E-mail	Expertise for the overarching theme (1,2,3,4)
...				
...				
...				

The JPI Oceans Management Board agreed on the following nomination process in previous selection of experts (e.g. for Knowledge Hubs):

- Each country can nominate a maximum of 5 experts. Nominees should be involved in relevant EU/national projects, or in scientific activities of interest for the overarching themes identified by the action Munitions in the Sea, or in operational activities in managing emergencies or operations at sea, to participate in the Group of Experts. Since this Joint Action is cross-disciplinary, it is important that experts involved in other research topics and expertise as well as other stakeholder groups (infrastructure provider, operational services, etc.) will be taking into account for a nomination, as well as trying to cover the all 4 overarching themes.