Proposal Evaluation Form

	EUROPEAN COMMISSION Horizon 2020 - Research and Innovation Framework Programme	**Evaluation Summary Report - Innovation actions**

Call: H2020-SU-SEC-2019
Type of action: IA
Proposal number: 883359
Proposal acronym:
Duration (months): 18
Proposal title: ENHANCED MARITIME SITUATIONAL AWARENESS THROUGH COLLECTION AND INTEGRATION OF MULTIPLE DATA SOURCES
Activity: BES03

N.	Proposer name	Country	Total Cost	%	Grant Requested	%
					255,000	
					651,000	
					424,375	
					378,175	
					331,625	
					647,850	
					156,625	
					359,187.5	
					150,000	
					135,625	
					135,625	
					123,750	
					134,500	
					85,750	
					153,750	
					147,000	
					145,468.75	
					315,000	
					292,500	
					180,250	
					241,250	
					209,000	
					122,325	
					84,000	
					139,825	
	Total:				5,999,456.25	

Abstract:

         will validate and demonstrate in operational settings a versatile and powerful maritime patrol platform, designed as a System of Systems, consisting of small maritime patrol vessels, unmanned aerial vehicles and unmanned underwater vehicles, both with very long endurance and an extended range of operation, which will be fully integrated into one operational platform.   will contribute to cost-effective maritime security as it will enable smaller maritime patrol vessels for the first time with beyond-line-of-site operation capabilities and employ lower cost equipment and effectively execute missions which until now were executed only by large vessels with large landing decks and expensive equipment. In other words, a small maritime patrol vessel will be able to perform as effectively as hugely expensive corvettes and frigates.

The platform will significantly enhance maritime situational awareness and sharing, decision making and operations management in the maritime domain both at the strategic level and at the tactical level. It will provide a complete operation picture through integrating data from heterogeneous sources mounted on different systems, including satellites, dynamic sensors (either seaborne or airborne unmanned vehicles), static sensors (either on land, in coastal areas, or under the water surface) and advanced modelling. It will deliver high-level information to each involved Ground Control Station (through a Multi Mission Planning and Operation System and an intelligent decision support and monitoring system, operated and accessed from each Command Centre. This will be achieved through the use of advanced algorithms to organise, homogenise and fuse the large quantities of data and information from multiple land, maritime (static and dynamic) and airborne sources.

         will be demonstrated in large scale demonstrations through a mix of simulation activities and experimental set-ups in operational settings in 4 separate scenarios.

Evaluation Summary Report

Evaluation Result

Total score: 11.50 (Threshold: 10)

Form information

  SCORING

Scores must be in the range 0-5.

Interpretation of the score:

> **0**– The **proposal fails to address the criterion** or cannot be assessed due to missing or incomplete information.

> **1**– **Poor.** The criterion is inadequately addressed, or there are serious inherent weaknesses.

> **2**– **Fair.** The proposal broadly addresses the criterion, but there are significant weaknesses.

> **3**– **Good.** The proposal addresses the criterion well, but a number of shortcomings are present.

> **4**– **Very good.** The proposal addresses the criterion very well, but a small number of shortcomings are present.

> **5**– **Excellent.** The proposal successfully addresses all relevant aspects of the criterion.Any shortcomings are minor.

Criterion 1 - Excellence

Score: **3.50** (Threshold: 3/5.00 , Weight: -)

The following aspects will be taken into account, to the extent that the proposed work corresponds to the topic description in the work programme:

Clarity and pertinence of the objectives

The proposal _____ addresses the sub-topic "Open" of BES03 very convincingly and with a good level of detail. The objectives are well described, structured and pertinent to those described in the work programme.

Soundness of the concept, and credibility of the proposed methodology

The concept of the proposal is generally sound and consistent with the objectives.
However, the technical description of the concept is presented with lack of details. For example, the AI features are not satisfactorily explained in terms of technologies/algorithms. Moreover, communication systems are not sufficiently addressed, especially regarding the robustness against threats (e.g. jamming), and data protection is not sufficiently described. In addition, the description of the maritime radar mentioned in the proposal is not fully detailed and the operational effectiveness of UUV gliders is not well described. These are shortcomings.
The proposed methodology is credible and coherent with the goals and activities of the project. The considered interoperable, modular, and generic Vessel-UAV-UUV system is effective and well argued. The proposed training and virtual validation strategies using Virtual Reality (VR) are also promising and pertinent.

Extent that proposed work is beyond the state of the art, and demonstrates innovation potential (e.g. ground-breaking objectives, novel concepts and approaches, new products, services or business and organisational models)

The proposal has very promising innovation potential, mainly in the following areas: the development of a MMPOPS integrated with a Data Management Hub, the development of an UAV landing and lift-off platform for small patrol vessels, and virtual validation strategies using VR . The proposal clearly demonstrates how it complements and does not overlap with actions undertaken in the Preparatory Action on Defence Research under topic "PADR-US-01-2017: Technological demonstrator for enhanced situational awareness in a naval environment".

Appropriate consideration of interdisciplinary approaches and, where relevant, use of stakeholder knowledge and gender dimension in research and innovation content

The interdisciplinarity of the approach is clearly demonstrated. Indeed, the project clearly takes into account different perspectives, ranging from the in-situ heterogeneous data collection and integration for the production of a complete maritime picture, to the communication both way with the _____ . It is moreover an added value that the applicants take into due consideration the legal aspects that may arise from the use of an _____-like system.

Criterion 2 - Impact

Score: **4.50** (Threshold: 3/5.00 , Weight: -)

The following aspects will be taken into account:

The extent to which the outputs of the project would contribute to each of the expected impacts mentioned in the work programme under the relevant topic

The proposal highly relevantly describes the contribution of the project outputs to the expected impacts mentioned in the work programme. The project is very convincing in demonstrating the cost-effectiveness of the platform. A further added value for the expected impacts is the use of heterogeneous data sources and the development of adequate and advanced data fusion and AI algorithms to reduce the rate of false alarms.

There are however some minor shortcomings in the outline of the expected impacts:
So it is not fully described how the impacts will be measured. In addition, the distinction between the mid-term and long-term impacts of the outputs of the project is unclear and also the standardization and use of standard protocols for the communication with and from the MMPOPS and for its interoperability with other systems is not fully described.

Any substantial impacts not mentioned in the work programme, that would enhance innovation capacity, create new market opportunities, strengthen competitiveness and growth of companies, address issues related to climate change or the environment, or bring other important benefits for society

The proposal takes into account several impacts that are outside the scope of the call, for example, the protection of critical infrastructures and maritime pollution.
The proposal is structured so that each company of the consortium will exploit and commercialize the outputs in other markets and to increase their competitiveness. The modular and generic properties of the platform will easily allow the commercialization of individual modules and the exploitation in parallel markets.

Quality of the proposed measures to:
- exploit and disseminate the project results (including management of IPR), and to manage research data where relevant
- communicate the project activities to different target audiences

The proposal presents a very good dissemination strategy which is in line with the scale of the project and with a series of actions tailored to different groups. All the specific tasks of the dissemination activities are well described.
The exploitation plan is coherent and consistent with the project activities. Each participant has indeed precisely defined its expectations in an individual exploitation analysis.
The research data management is properly described.
A plan of the management of IPR is reported in the proposal but only in general terms and the main principles of IPR management are briefly discussed.

Criterion 3 - Quality and efficiency of the implementation

Score: **3.50** (Threshold: 3/5.00 , Weight: -)

The following aspects will be taken into account:
Quality and effectiveness of the work plan, including extent to which the resources assigned to work packages are in line with their objectives and deliverables

The proposed work plan is pertinent and described in detail. The timing of the different tasks is appropriate, but their content lacks details. The description of [ ] is not sufficiently clear, for example regarding the training of AI algorithms.
The proposal justifies well the resources assigned to work packages, which are well balanced and in general in line with their objectives and deliverables. The resources allocated to the dissemination activities are not properly justified.

Appropriateness of the management structures and procedures, including risk and innovation management

The project management structure is very well suited given the scale and the type of the project and very well identified, with clear indication on the responsibility for each management task. The management procedures, including conflict resolution mechanisms, are well described and likely to be effective.

Innovation management strategies are adequately described, with a careful identification of the tasks for each member of the innovation board.

Risk management approach is fairly presented, with a comprehensive list of initial risks and sensible mitigation measures.

Complementarity of the participants and extent to which the consortium as a whole brings together the necessary expertise

The consortium is composed of partners with complementary competences. The consortium is indeed made up of an experienced group of entities belonging to different domains (industry, academia and governmental end-users) and different fields of knowledge. Therefore the different partners bring together all the necessary expertise to fulfil the objectives of the project and manage the project challenges.

Appropriateness of the allocation of tasks, ensuring that all participants have a valid role and adequate resources in the project to fulfil that role

The allocation of tasks is appropriate and reflects the capacity and the expertise of the participants. It is valuable that the participation of end-users is coherently concentrated in a devoted work package. However the proposal does not fully justify the ability of [ ] to organize a live trial demonstration [ ] and the reasons for the assignment of the leadership of [ ].
The role of each partner is clearly described and motivated. The allocation of resources between the different partners is generally balanced and justified. The resources allocated to end-users are adequate and consistent with the relevance of their role in the project. However, the resources allocated to partners [ ] are about 25% of the overall effort which appears to be excessive in view of their role and activities.

Scope of the proposal

Status: **Yes**

Comments (in case the proposal is out of scope)

Not provided

Operational Capacity

Status: **Operational Capacity: Yes**

If No, please list the concerned partner(s), the reasons for the rejection, and the requested amount.

Not provided

Exceptional funding of third country participants/international organisations

A third country participant/international organisation not listed in *General Annex A to the Main Work Programme* ***may exceptionally receive funding if their participation is essential for carrying out the project (for instance due to outstanding expertise, access to unique know-how, access to research infrastructure, access to particular geographical environments, possibility to involve key partners in emerging markets, access to data, etc.). (For more information, see the*** *Online Manual* ***)***

Based on the information provided in the proposal, I consider that the following participant(s)/international organisation(s) that requested funding should exceptionally be funded:
(Please list the Name and acronym of the applicant, Reasons for exceptional funding and the Requested grant amount.)

Not provided

Based on the information provided in the proposal, I consider that the following participant(s)/international organisation(s) that requested funding should NOT be funded:
(Please list the Name and acronym of the applicant, Reasons for exceptional funding and the Requested grant amount.)

Not provided

Use of human embryonic stem cells (hESC)

Status: **No**

If yes, please state whether the use of hESC is, or is not, in your opinion, necessary to achieve the scientific objectives of the proposal and the reasons why. Alternatively, please state if it cannot be assessed whether the use of hESC is necessary or not because of a lack of information.

Not provided

Overall comments

During the consensus stage of the evaluation of this resubsmission, evaluators were given access to the previous evaluation summary reports.