

AIRSHIP

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D1.2 Risk Management Plan and Risk Register WP1

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2			



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Abbreviations and Acronyms

Acronym	Description
WP	Work Package
CA	Consortium Agreement
SC	Steering Committee
GA	Grant Agreement
EC	European Commission
PO	Project Officer

Table 1. Abbreviation and Acronyms

EXECUTIVE SUMMARY

This document deals with the risk management and conflict resolution related to the AIRSHIP project.

An initial risk assessment was part of the project proposal, which is implemented in the work from the beginning of the project execution. This risk assessment has been updated and further elaborated during the Grant Agreement (GA) phase.

The risks listed in this document will be monitored during the course of the project, and this document will be improved and updated, if necessary, e.g., in the case of any emerging unforeseen risks.

In addition to the Risk considerations detailed in this document, it is equally important to monitor any emerging, unforeseen risks to the project. Such continuous assessment of risks during the implementation of the project will be the basis of effective risk management. During monitoring, new kinds of risks may arise which should also be measured and evaluated and proper actions need to be taken.

As for possible conflicts in the consortium, the Consortium Agreement (CA) has been prepared by the coordinator and signed by all partners, describing and defining clearly the roles and obligations of the partners, the issues concerning operational regulations, the administrative and reporting procedures and the procedures for dispute resolution. The agreement contains a detailed conflict resolution mechanism to avoid and/or solve any problems that might occur during project implementation. Efforts will be made to solve any conflicts with a full consensus. If this is not possible, decisions will be made with a simple majority of votes. In an event of a tie the Coordinator has the casting vote. Any occurring Force Majeure events will be immediately communicated to the EC Project Officer.



1 Identification of Risks, Control and Mitigation Measures

The risk management will follow an approach in three levels:

- 1- Identification of risk;
- 2- Assessment;
- 3- Response.

The identification of risks will be the duty for each partner within the consortium, and will also represent a proactive task for the Coordinator and of the WP-leaders. The assessment of a risk aims to qualify its impact(s) on the project. A minor risk (e.g., a small delay) represents an event with a small likelihood to affect/alter other activities of project. Minor risks can be fixed by a series of recommendations emitted by the Steering Committee (SC). A moderate risk corresponds to an issue that might affect significantly other activities but not the overall objectives of the project. They need to be carefully addressed by the implementation of a strategy to solve the issue. The SC will be competent for the response. A high risk can conduct to a major breach for the entire project. The SC will devise strategies to solve the issue and for its monitoring, for which the PO will be consulted.

The following table summarizes the risks identified at this stage.

Risk No.	Description
1	Disagreements with work plan or budget conflicts.
Related WPs	1
Risk-mitigation measure	
	Conflict resolution process. Extra SC meetings organised, ultimately under supervision of the PO.

Risk No.	Description
2	Budget or time exceeded.
Related WPs	1
Risk-mitigation measure	
	Strict control, timely downscaling systems and/or experiments. The project, however, geographically covers several countries in the EU. There could be changes and external risks that could affect overall planning (global pandemic, dramatic developments related to the Euro-zone, EU/foreign currency conversion rates, sudden rises in air travel prices, etc). To some extent these changes can be managed by an annual review of project spending and – if necessary - restructuring funds between cost categories and/or between partners. Should such steps become necessary, the Coordinator will liaise with the PO and together they will discuss options.



Risk No.	Description
3	Problems with project and partner performance.

Related WPs 1

Risk-mitigation measure

Partner performance will be closely monitored via interim reports, compliance with deadlines and activity logs. All these measures will provide early indicator to the Coordinator on potentially emerging issues. In the unlikely case that expectations are not met, the Coordinator will use whatever means necessary to motivate the partner whose performance may not be up to expectations and tasks may be internally re-allocated within the Consortium.

Risk No.	Description
4	Lack of interest by the stakeholder community.

Related WPs 1,9

Risk-mitigation measure

If interest for the project activities remain below expectations, additional resources will be channelled into communication and awareness raising efforts and an ad-hoc meeting will be organised between project partners and External Advisory Board representatives. Mobilisation pathways will be revised and new communication channels will be explored (more emphasis on personal interaction, increased media coverage, organisation of ad-hoc events, discussion groups, etc).

Risk No.	Description
5	Regulations and Policies.

Related WPs 1,8

Risk-mitigation measure

Flying an autonomous vehicle involves navigating complex regulatory environments, including compliance with safety regulations, marine and air traffic control requirements, privacy regulations and others. The Coordinator will ensure that the consortium has a comprehensive understanding of regulatory requirements and compliance procedures.

Risk No.	Description
6	Safety Risks during field tests

Related WPs 1,8

Risk-mitigation measure

Risks associated with system failures, malfunctions, or programming errors that could lead to accidents or collisions with other vehicles, objects, or people. Safety protocols, emergency procedures, and risk assessments will be developed to mitigate the potential for accidents.



Risk No.	Description
7	Field test difficulties and/or results not satisfactory.

Related WPs 1,8

Risk-mitigation measure

Rely on lab test results, replan/reschedule tests. In case of field test in marine environment is evaluated as too risky or inadequate, tests will be held in lagoons or lakes where navigation issues are not so strong and water conditions are much less variable.

Risk No.	Description
8	Equipment delays

Related WPs 1,8

Risk-mitigation measure

Look for new providers. Possible delays (Mitigation of this was detailed above under the Risk No. 2).

Risk No.	Description
9	Hardware/software integration issues

Related WPs 8

Risk-mitigation measure

SC tightly coordinates development and validation, monitors compliance to interfaces. Incremental integration strategy will be crucial especially if the issues are caused due to system complexity.

Risk No.	Description
10	Delays with technology development.

Related WPs 3,4,5,6,7,8

Risk-mitigation measure

The risk of delays with prototype development and assembly is already addressed to some extent by the current WP structure that starts with careful component testing/validation followed by final design, development and integration. This allows the early identification of problems and challenges and provides margin for adjustments. In the case that more substantial delays might occur the Coordinator will request a meeting with the PO and discuss possibilities for a short extension of WP activities.



Risk No.	Description
11	Localisation means ineffective.

Related WPs	6
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Risk-mitigation measure

Provide the AIRSHIP vehicle with the localisation from external sources.

Risk No.	Description
12	Limited payload for sensors

Related WPs	8
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Risk-mitigation measure

A set of sensors and their combination must be thoroughly chosen in order to take into account their weight. Vision sensors will be privileged since they have a low weight.

Risk No.	Description
13	Wave and obstacle detection failures

Related WPs	8
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Risk-mitigation measure

The speed of the AIRSHIP vehicle will be adapted, multi sensor fusion and AI techniques will be used for increasing the likelihood of obstacle detection. The operation conditions of the vehicle will be reduced according with the restrictions imposed by wave/sea conditions.

Risk No.	Description
14	Simulations too computationally expensive.

Related WPs	3,4,5,6,7
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Risk-mitigation measure

Use simplified models and simplify the level of details in the simulated environments.



Risk No.	Description
15	Communication failures with the AIRSHIP vehicle

Related WPs	8
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Risk-mitigation measure

Implement redundant communication systems, backup power supplies, use different communication technologies, and do regular testing of communication systems to ensure reliability.

Risk No.	Description
16	Draining batteries during take-off

Related WPs	8
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Risk-mitigation measure

Other methods for taking-off will be considered, such as taking off using a catapult or a slingshot.

Risk No.	Description
17	Model crash during test

Related WPs	8
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Risk-mitigation measure

Depends on a level of damage. Possible delay of further tests and higher equipment costs (Mitigation of this was detailed above under the Risk No. 2).

Risk No.	Description
18	Unavailability of test areas

Related WPs	8
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Risk-mitigation measure

Look for new testing areas. Possible higher travel costs (Mitigation of this was detailed above under the Risk No. 2).

Risk No.	Description
19	Difficulties with developing sustainable business case

Related WPs	2
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Risk-mitigation measure

Engage with external experts, specifically those with expertise in sustainable business modelling and shipping industry.

Risk No.	Description
20	Lack of aerodynamics performance

Related WPs 3

Risk-mitigation measure

Throughout research of state of the art in WIG designs will be performed and careful CFD analysis will be done upfront for various WIG designs and the optimal one will be selected as the AIRSHIP design.

2 Conflict Resolution

In the event that the Consortium Partners have been unable to amicably resolve any dispute arising out of the work on the project, a conflict resolution meeting will be organised by the Project Coordinator within 30 days following the reception of a written request transmitted by any of the project partners. Attempts at arbitration will be performed in increasing order of authority:

- SC
- SC enlarged with the responsible EC PO under the management of the latter.

