NETTAG+

WORKSHOP #6

NETTAG+ solutions

NETTAG+ Preventing, Avoiding and Mitigating
environmental impacts of fishing gears
and associated marine litter

Workshop Brief

The sixth participatory workshop is entitled 'NETTAG+ solutions' and aims to assess fishers' overall perception of the three solutions proposed by the NETTAG+ project, namely:

- PREVENT marine litter derived from fisheries activities.
- AVOID loss of fishing gear using acoustic tags and autonomous vehicles.
- MITIGATE harmful impacts by developing technology to help map and retrieving existing ALDFG.

The specific objectives of the workshop are to:

- Present the NETTAG+ technological solutions and awareness actions designed to prevent, avoid, and mitigate the harmful impacts of fishing gear.
- Evaluate the applicability and effectiveness of both technological and awareness approaches as reliable solutions for future implementation.

This workshop involves informative and hands-on exercises and will take approximately one hour and a half (see the proposed agenda).

Workshop development

Registration

The registration team welcome the participants and hand them the Participant Information Sheet, two Informed Consent Forms, and the Feedback form. Participants are asked to sign the presence list and return the signed informed consent form (each participant should keep a copy for themselves).

Welcome & Talk on the NETTAG+ solutions *(plenary)* | 30 minutes

Participants are welcomed, followed by a quick presentation of the objectives and the activities planned for the workshop. The three NETTAG+ solutions to prevent, avoid and mitigate the harmful impacts of fishing gear are presented. Following the presentation, participants are encouraged to pose questions and engage in a discussion on the NETTAG+ solutions.

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Exercise 1: General evaluation of the NETTAG+ solutions *(plenary)* | 10 minutes

The participants are asked to provide a general evaluation of each NETTAG+ solution by placing coloured dot stickers (green, yellow, or red) in the posters displayed on the wall (Figure 1). Then, the participants will randomly be divided into small groups, with a maximum of six elements.
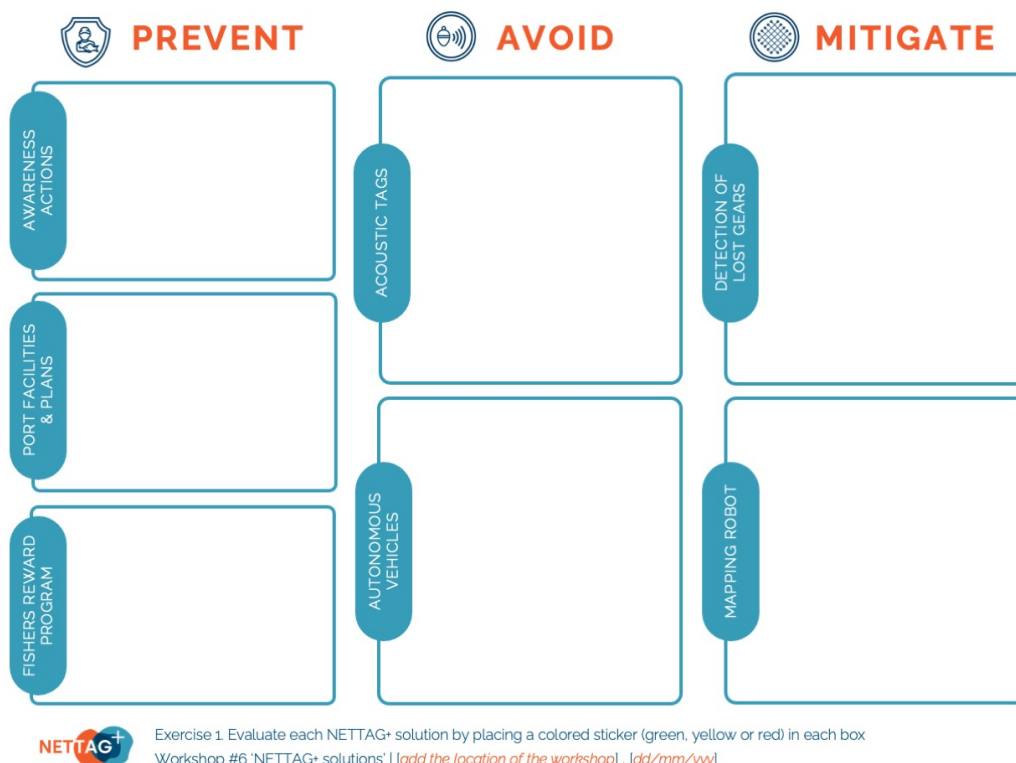

Figure 1. Example of the poster for the evaluation of the NETTAG+ solutions (workshop #6)

Exercise 2: Discussion of the NETTAG+ solutions *(group)* | 20 minutes

The participants are asked to discuss the applicability and effectiveness of the different NETTAG+ solutions as reliable solutions for future implementation and encouraging behavioural changes (e.g. is the solution easy to implement, is it affordable, is it user-friendly, will be well received by fishers, will it produce the expected results). Participants are also tasked to propose suggestions to overcome the identified challenges, as well as suggestions and upgrades to the NETTAG+ solutions. Key conclusions should be registered in the exercise sheets (Figure 2, Figure 3, Figure 4).

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Figure 2. Example of the second exercise sheet for PREVENT solutions (workshop #6)

Figure 3. Example of the second exercise sheet for AVOID solutions (workshop #6)

NETTAG+ Preventing, Avoiding and Mitigating
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Figure 4. Example of the second exercise sheet for MITIGATE solutions (workshop #6)

Presentation of results & discussion *(plenary)* | 20 minutes

Following the group exercise, participants convene in the plenary session to share and deliberate on the outcomes. Each group's spokesperson displays the exercise sheets and present the group's findings. A discussion among participants is encouraged and, at the end, moderators provide a summary of the suggestions put forth by all groups.

Workshop final conclusions *(plenary)* | 10 minutes

The workshop concludes with the presentation of final conclusions, encouraging participants to share additional insights or address any lingering questions. Participants are invited to complete the feedback form and to leave it at the registration table.

Resources and materials

A set of materials will be available to participants to fulfil the workshop exercises, namely:

- One wall poster (in A3 format) to be used in the first exercise,
- Three exercise sheets per group (in A3 format) numbered with the practical exercise to be completed,

4

NETTAG+ Preventing, Avoiding and Mitigating
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- Colourful dot stickers (green, yellow, red),

- Post-its and pens.

To introduce the NETTAG+ solutions, the project general presentation can be used and updated to incorporate developments from the work packages.

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NETTAG+ solutions

Resources

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6th WORKSHOP

NETTAG+ solutions

Agenda

Place | Date | Time

13:45 - 14:00	Registration
14:00 - 14:30	Welcome & Talk on the NETTAG+ solutions
14:30 - 14:40	**Exercise 1:** General evaluation of the NETTAG+ solutions
14:40 - 15:00	**Exercise 2:** Discussion of the NETTAG+ solutions
15:00 - 15:20	Presentation of results & discussion
15:20 - 15:30	Workshop final conclusions
15:30 - 15:50	Coffee break

NETTAG+ Preventing, Avoiding and Mitigating
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6th WORKSHOP

NETTAG+ solutions

Place

Date | Time

List of participants

Name	Role/Type Fisheries	Signature

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Feedback Form

We ask you to take a moment to provide your feedback on the workshop. Your responses will be used to improve future NETTAG+ workshops.

Name (optional): _____

On a scale of 1 to 4 where 1 is strongly disagree and 4 is strongly agree, please circle the most appropriate answer:

1. The Workshop venue was:

    a) Comfortable   1 2 3 4

    b) Well located   1 2 3 4

    c) Food and refreshments were adequate   1 2 3 4

2. The Workshop content was:

    a) Relevant   1 2 3 4

    b) Comprehensive   1 2 3 4

    c) Easy to understand   1 2 3 4

3. The Workshop was:

    a) Well paced   1 2 3 4

    b) Breaks were sufficient   1 2 3 4

    c) A good mix between listening and activities   1 2 3 4

4. The facilitators were:

    a) Knowledgeable   1 2 3 4

    b) Well-prepared   1 2 3 4

    c) Responsive to participant's questions   1 2 3 4

5. What did you like best about this Workshop?

6. What did you like least about this Workshop?

Thank you for participating, we appreciate your feedback.

Presentation of the NETTAG+ project

Partner | Date

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NETTAG+ project

NETTAG+ Preventing, avoiding and mitigating environmental impacts of fishing gear and associated marine litter

✓ Funded by the European Union's Horizon Europe program

✓ Three-year project: 01/05/2023 to 30/04/2026

✓ Coordination: CIIMAR – Interdisciplinary Centre of Marine and Environmental Research (Portugal)

✓ Contributes to the European Commission Mission 'Restore our ocean and waters by 2030'

✓ NETTAG+ aims to **upgrade** and **upscale** the integrative preventive approach that started in the previous NetTag project (2019-2021), and to replicate it in Mediterranean regions

Funded by
the European Union

NETTAG+ consortium

Multidisciplinary and international team

15 partners from **7 different countries** with a strong academia-industry collaboration
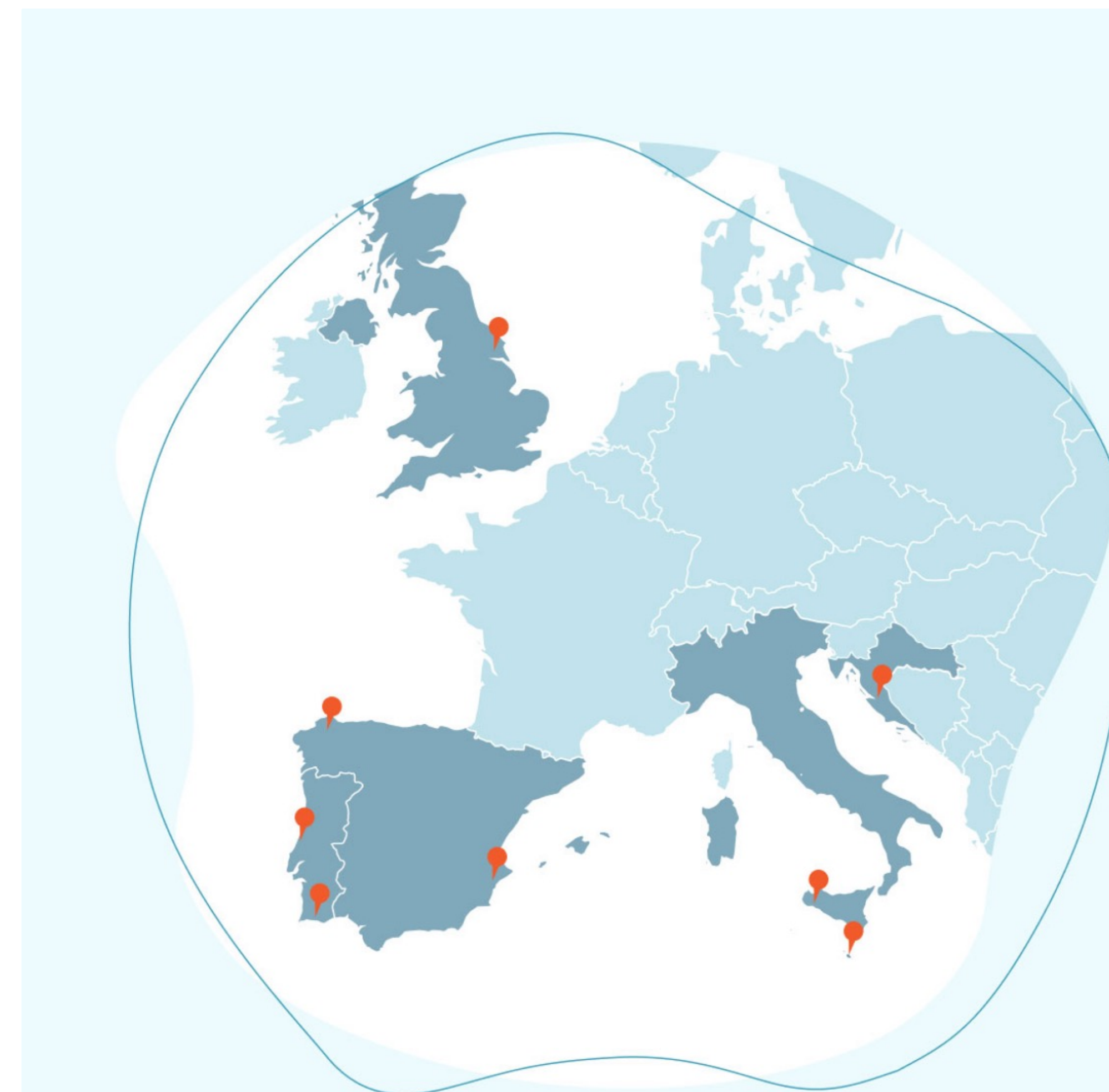
NETTAG+ overview

Based on synergistic activities between the fisheries industry, scientists and NGOs, NETTAG+ is developing three solutions to PREVENT, AVOID and MITIGATE the harmful impacts of fishing gear

PREVENT
Fishers as Guardians and Cleaners of the Ocean

AVOID
Fishing Gear Location with Acoustic Tags

MITIGATE
Detection and Removal of Abandoned, Lost or otherwise Discarded Fishing Gear (ALDFG)

NETTAG+ objectives

PREVENT

Fishers as Guardians and Cleaners of the Ocean

- ✓ **Empower the fisheries sector**, namely professional fishers, **to adopt more environmental-friendly** fishing methods, **prevent marine litter** and increase responsible user behaviour.

- ✓ **Create adequate conditions** for the reception and treatment of litter **at fishing ports**, including through recycling and reuse.

- ✓ **Recognize and reward the volunteer service** provided by fishers when retrieving marine litter that is passively collected in fishing gear.

NETTAG+ objectives

AVOID

Fishing Gear Location with Acoustic Tags

✓ Develop and engineer **acoustic tags** to be attached to fishing gear as a sustainable, low-cost and innovative low-impact solution to improve mapping, tracking and recovery of lost fishing gear.

✓ Improve a **robotic surface system** linked with the acoustic tag system for lost fishing gear location/recovery.

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NETTAG+ objectives

MITIGATE

Detection and Removal of Abandoned, Lost or otherwise
Discarded Fishing Gear (ALDFG)

✓ Develop a **system to detect ALDFG** in the Ocean water column and seabed.

✓ Co-develop, with fishers, a **robotic tool to detect, map, track and recover ALDFG**.

NETTAG+ demonstrative events

The three NETTAG+ solutions will be **tested, validated and demonstrated in real conditions** in **Atlantic** and **Mediterranean** countries: **Portugal**, **Spain**, **Italy**, **Croatia**, **Malta** and **United Kingdom**

WP2 PREVENT

Fishers as Guardians and Cleaners of the Ocean

WP3 AVOID

Fishing Gear Location with Acoustic Tags

WP4 MITIGATE

Detection and Removal of ALDFG (Map, Track and Recover)

Thank you

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Environment Executive Agency (CINEA).
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Workshop #6

A3 poster exercise

PREVENT

AWARENESS ACTIONS

PORT FACILITIES & PLANS

FISHERS REWARD PROGRAM

AVOID

ACOUSTIC TAGS

AUTONOMOUS VEHICLES

MITIGATE

DETECTION OF LOST GEARS

MAPPING ROBOT

Workshop #6

A3 exercise sheets

PREVENT

	ADVANTAGES	DISADVANTAGES	SUGGESTIONS / UPGRADES
AWARENESS ACTIONS	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓
PORT FACILITIES & PLANS	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓
FISHERS REWARD PROGRAM	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓

AVOID

	ADVANTAGES	DISADVANTAGES	SUGGESTIONS / UPGRADES
ACOUSTIC TAGS	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
AUTONOMOUS VEHICLES	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓

MITIGATE

	ADVANTAGES	DISADVANTAGES	SUGGESTIONS / UPGRADES
DETECTION OF LOST GEARS	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
MAPPING ROBOT	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓