Dibris

Title: EXPLORE Technical Trial **Responsible of the study:** Carmine Tommaso Recchiuto

INFORMATION SHEET FOR PARTICIPATION

Dear Madam/Sir,

We want to propose you to participate in a research study. It is your right to be informed about the objectives and the characteristics of the study, to allow you to take an informed and free decision if you want to participate or not. We invite you to carefully read this document. The researchers involved this study are at your disposal to answer your questions:

(Responsible of the study)

Carmine Tommaso Recchiuto — carmine.recchiuto@dibris.unige.it, +39 3480667920

(Researcher)

Davide Piccinini — dav.piccinini@gmail.com, +39 3488323110

What is the objective of this study?

This study represents the final step for the researcher's Master thesis, which is part of the RESCUEME project (Research in Emergency Scenario: Controlling UAVs with Ergonomic MEthods): the focus of this project is to ease the effort of Unmanned Aerial Vehicles pilots in stressful situations, like emergency scenarios and Search & Rescue missions. In fact, UAVs are a relatively new technology which hasn't been appropriately regulated by law yet: one of the main limitations of controlling drones is the need of piloting them in line-of-sight, which hinders their potential. To overcome this problem, the project proposes to develop a Mixed Reality or Virtual Reality interface via a Head Mounted Display, implement an exocentric (third-person) view of the UAV to have a better understanding of depth and greater map awareness, and create a simulator to easily test and analyze approaches in virtual environments.

The focus of the Master's thesis was to explore how to implement the exocentric view of a drone using Simultaneous Localization and Mapping algorithms and to develop a simulator in Gazebo to conduct preliminary tests on the selected approaches.

The purpose of this study is to compare two interfaces, one of which is the typical first-person view through the camera mounted on the drone (called EGO), and the other is the proposed exocentric one that offers richer information about the drone's surroundings (called EXO): we would like to evaluate their effects on the pilot and the control of the UAV.

Why do we propose you to participate?

We are inviting you to participate in this project because we want to collect quantitative and qualitative data about the system and the two considered interfaces to perform statistical analyses. The outcome of the evaluation will be precious to guide future research of the RESCUEME project.

In addition, in order to compare the results, it is important that participants have a similar background in terms of how familiar they are with drone piloting.

Are you obliged to participate to the study?

Your participation is completely voluntary. If you change your mind and would like to withdraw from the study at any point, you are free to do it without providing any reasons for doing so. A participant withdrawing consent will not be affected by any discrimination by the researchers/teachers involved in the study.

What will we ask you to do?

After briefing you about the study, one of the two interfaces will be randomly selected.

The first half of the experiment will consist in the following steps, carried out using the selected interface:

1. You will spend ~5 minutes getting comfortable with the drone controls and the interface.
2. You will have to find and identify a total of 5 targets in an indoor scenario; the maximum time for this task is 10 minutes.
3. You will have to find and identify a total of 5 targets in an outdoor scenario; the maximum time for this task is 15 minutes.
4. Once finished, you will have to answer some questions and fill in 3 short questionnaires about your performance, physiological condition, and the system.

The second half of the experiment will be identical to the first, but now using the other interface.

What are the possible risks and inconveniences of the study?

We do not foresee that the study will involve any risks beyond those of everyday life.

What are the possible benefits derived from the study?

There are no direct benefits for research participants. However, the study will contribute to increase knowledge in the field of Interface Development, UAV control, Visual-SLAM and Post-Disaster Assessment technologies.

What data will we collect and how?

No personal data will be collected.

We will record data about the drone's status (pose, velocity, information about the closest obstacle) and about the flight (total time to find the targets and which of them has been identified).

You will also be asked to fill in the same Google Form after using the first and the second interface.

Your answers to the questionnaires and to the questions will be completely anonymous.

Other important information.

The responsible of the study will retain the original copy of the Informed Consent Form signed by you, and you have the right to receive a duplicate of it.

We also inform you that, in the future, study findings may, directly or indirectly, be the object of commercial exploitation or a patent.

During the study, you can contact the researcher or the responsible of the study for any information.

We thank you for your time!

DECLARATION OF THE RESEARCHER

I declare that I have provided the participant with complete information and detailed explanations about the nature, purpose, procedures, and duration of this research project. I also declare that I have provided the participant with the information sheet

RESEARCHER'S SIGNATURE _____PLACE, DATE_____

Researcher's name (*capitol letters*)_____

INFORMATION SHEET SIGNATURE

I declare that I have received information that allowed me to understand the research project, also considering the further clarifications that I requested. I confirm that I received a copy of this information document.

PARTICIPANT'S SIGNATURE _____PLACE, DATE_____

Participant's name (*capitol letters*)_____

Dibris

Title: EXPLORE Technical Trial

Responsible of the research: Carmine Tommaso Recchiuto

INFORMED CONSENT

Participant Initials___

I, the undersigned,_____ hereby declare:

- that I have received exhaustive explanations regarding the request to participate in the aforementioned experimental study and sufficient information regarding the risks and benefits involved in the study, as reported in the information sheet attached here.
- that I have been able to discuss these explanations, to have been able to ask all the questions I deemed necessary and to have received satisfactory answers on the matter.
- that I have been informed of my right to withdraw from the research at any time.

Therefore, considering the information provided to me:

I, the undersigned,_____

☐	I AGREE	☐	I DO NOT AGREE	To partecipate in the study

PLACE, DATE PARTICIPANT'S SIGNATURE

PLACE, DATE RESEARCHER'S SIGNATURE