USER MANUAL

University of Aveiro
Department of Electronics, Telecommunications and Informatics

Informatics Engineering Project, 2018-2019

Project:	**Aquatic2D**
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1.0 - Introduction

With technology rapidly evolving in the world we live in, most of the efficiency problems of the past have been reduced to such a small degree that a focus shift has occurred towards safety.

In this context, there are some activities like cave exploring or fish farming that can be optimized and made safer by using remote monitoring.

Currently, remote monitoring has some issues, such as high dependency on the human vision, lack of obstacle detection and inaccurate GPS locations that can lead to environmental data collecting mistakes and equipment damage.

Even though navigation devices such as the GPS are powerful, they would not be fully trustworthy due to both the possibility of very small obstacles existing nearby and these devices having an error associated, which might bring associated a false sense of security.

2.0 - System Summary

The System Summary section provides users with a general overview of the system. It outlines the system's hardware and software requirements, as well as contingencies.

2.1 - System Configuration

The Aquatic2D dashboard is accessible from any modern computer browser and thus requires an internet connection to utilize.
The need for an internet connection is due to having to connect to the dashboard, which displays the information it gathers and treats from the Unmanned Service Drones.
Additionally, the aforementioned Unmanned Service Drones must be set at the location to be monitored, having made sure they have a fully charged power bank.

2.2 - Contingencies

In the case of lack of an internet connection, the user will not be able to access the dashboard to view any relevant data.
In the case of the Unmanned Service Drones' power bank running out while deployed, the user must gather it on their own terms.

3.0 - System Usage

The System Usage section explains how to both correctly setup and use the Aquatic2D system.

3.1 - Drone deployment

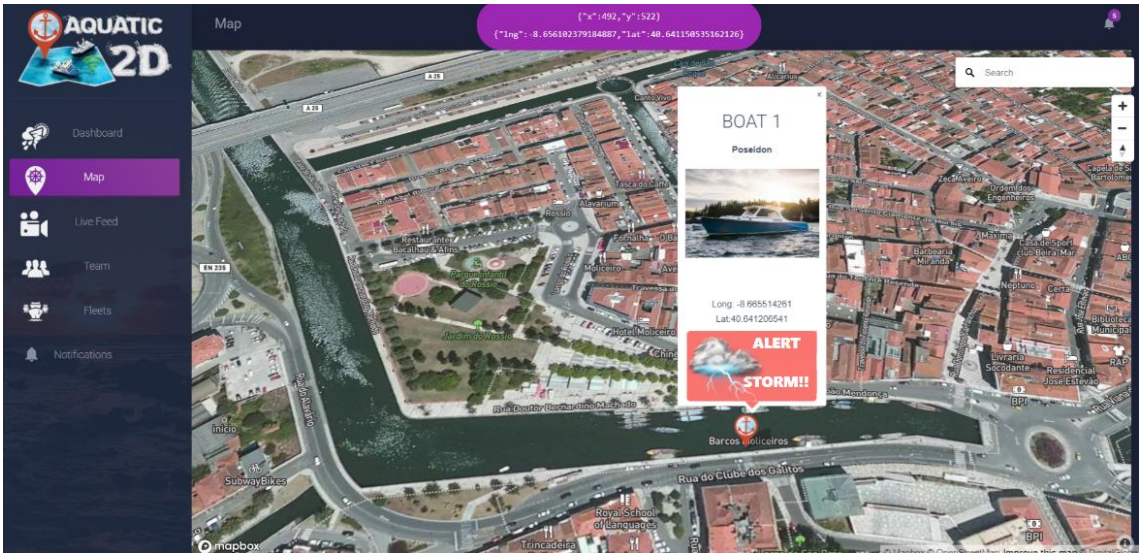
The first action that should be done when trying to get the Aquatic2D system running is drone deployment.
Start off by fully charging the power bank that will be used in the drone. Afterwards, simply add the power bank to the drone.
Upon the drone being in working conditions, set it at the location it will be working from.

3.2 - Following the drone

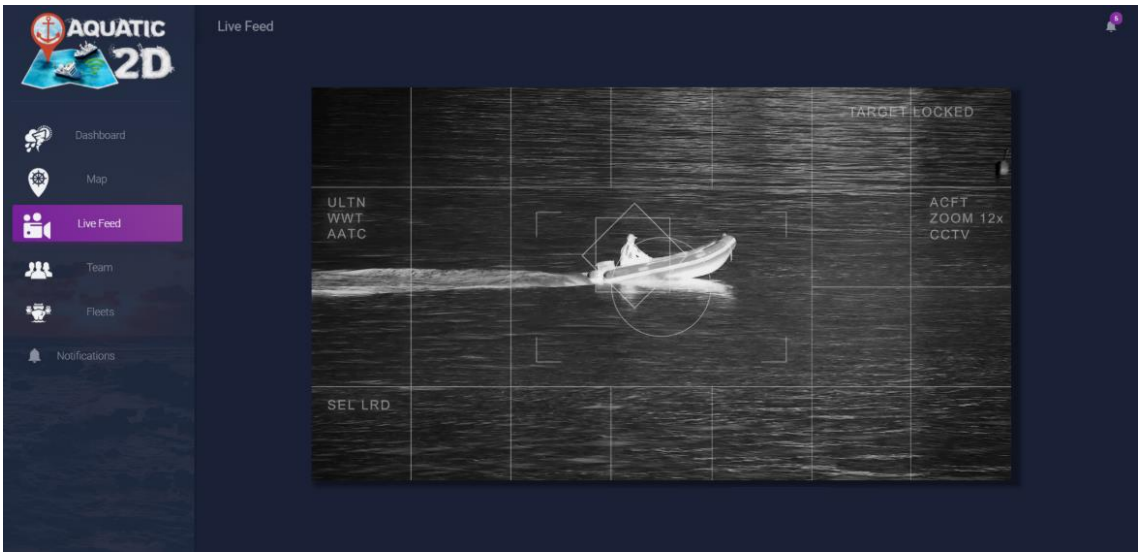
To be able to follow the drone's activities, the Aquatic2D's dashboard should be opened. The user will be greeted by the following screen.

In this screen the drone's sensor's captured values can be visualized. Furthermore, the drone can be followed by accessing the Map via the side menu.

In the Map menu, the user can follow the drone's position, as seen in the following image.



And finally, the user can also access the Life Feed page from the side menu.
In the Life Feed page the user gains access to the real-time video stream being sent by the drone, to better know where the drone is currently located.



3.3 - Dashboard Features

As explained in the previous section, the user can access the Aquatic2D dashboard to gain access to the information provided by the drone.
In the Dashboard tab, the user can view the value for every sensor the drone has equipped, as well has the last time they updated.
In the Map tab, the user can view the drone's current GPS position, as well as the map of the surrounding area. If the drone found any obstacles while operating, they will appear marked on the map as well. If the user clicks the specific marker on the map, more info regarding the obstacle appears, such as a photo captured by the drone's camera.
In the Live Feed tab, the user can see the video being captured by the drone's camera.
In the Notifications tab, the user can see any notifications the system might have sent regarding events that happened while the drone was functioning.