Review of: "Design and Fabrication of a Low-Cost Multi-Purpose Underwater Remotely Operated Vehicle"

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The article certainly demonstrates that the authors have spent time and effort in developing the prototype. However, as a scientific article, of course without disparaging the work and effort of the researchers, to my regret I must say that it is extremely poor.

In the following, I will detail all the points that seem to me, if not erroneous, at least doubtful.

The introduction goes back to the 60's when there are at present functional products, which I will not mention for obvious reasons, with a surprising level of development.

It can be said that the designed ROV is a kind of box and the study on drag does not even presents a CFD analysis, easy to perform.

The same goes for the propulsion motors and propeller design. Regarding the former, not even a photograph is shown, nor is the type of ESC that drives them indicated.

There are quite a few statements with which I disagree. For example: "The best method of underwater wireless communication is acoustic". In my opinion, acoustic communication is very limited, suffice it to say that submarine communications are currently carried out while submerged using ELF or VLF radio waves because only very low or extremely low frequencies can penetrate the water. It is true that it is indicated that the design is for shallow waters, but using a 2.4GHz link, which works with spread spectrum in a medium such as water seems to me if not impossible, risky, to the point that depending on the depth and position it is very likely to be lost.

Using an Arduino for a device that has to perform maintenance functions seems to me a simplistic approach and also unreliable.

A GPS has been installed that is defined as one of the most sensitive on the market, indeed it is, it is an ublox neo-6m. Part of my regular work consists of precise positioning, using RTK or PPK, the signals received by the GPS are of the order of 1GHz since this frequency is the one that best passes through the ionosphere. I cannot say for sure, as I have not tested it, how it works in immersion, but the UBLOX module selected is not multiband, it only reads L1 and at this moment

there are GPS receivers, which using the additional bands that do not contain the position code allow to reach much smaller positioning errors.

Finally, although a table is presented, I ignore which battery has been used, the presentation is very confusing and no mention has been made of the ROV's ability to navigate with currents which is one of the main problems of these vehicles. I insist again that I do not question the effort made by the authors and I am sorry to give such a negative opinion, the article as presented does not allow me to evaluate it better.