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PeerJ Computer Science

endorse

MeteoMex: Open infrastructure for networked environmental monitoring and agriculture 4.0

Irapuato, 25 of November 2020

Dear Prof. Reyes-Menendez and dear Peer Reviewers,

Thank you very much for reading the revised manuscript again.

Following, I reply to your comments:

Editor comments (Ana Reyes-Menendez)

Dear author, although most of the comments from reviewer 1 and 3 were addressed, reviewer 2 still has some concerns about your improvements. Address all their comments carefully if you want to proceed with the process.

RW: Dear Prof. Reyes-Menendez, I answered reviewer 2; However, converting the paper into a literature review or another form of an article (she/he leaves unclear which this could be) does not seem feasible to me.

In the revised manuscript, I clearly state the knowledge gap addressed (lines 105-116). With this clarification and the endorsement of the other two reviewers, the paper should be acceptable.

Reviewer 1 (Anonymous)

Basic reporting
ok

Experimental design
ok

Validity of the findings
ok

Comments for the author
ok

RW: Thanks again for your support and for endorsing the paper!

Reviewer 2 (Anonymous)

Basic reporting
As previously written, the article describes a technical solution for a common problem in smart farms, although it uses and describes commercial hardware modules and free software. Thus, there is no new technique, hypothesis or study.

Even though the author affirms it is a development of a scientific tool, there are several other similar tools on the market, with same low cost and different technologies. The paper do not show how significant are these changes regards the other products in the market.

The author did cite PeerJ Criteria, but I would also like to remember "PeerJ Computer Science judges articles on scientific validity and suitability to join the scholarly literature".

The author did some minor improvements but did not address the main problem in the paper as it is a scientific paper.

Experimental design
As stated before, there is no relevant and meaningful scientific contribution. It is a technical solution for a problem. The author did not made the suggested modifications.

Validity of the findings
There is no finding in the paper, although it is an excellent description of a technical solution with free software and accessible hardware.

There are several ways to deal with a technical solution with a scientific approach.

After a quick search, there are several examples below of open solutions. It also shows that this solution could have been compared with several others and it hasn't. In addition, most of these solutions have more than 5 years, are common and thus, there is no scientific validity.

"Open source hardware to monitor environmental parameters in precision agriculture" - https://doi.org/10.1016/j.biosystemseng.2015.07.005

"Irrig-OH: An Open-Hardware Device for Soil Water Potential Monitoring and Irrigation Management" - https://doi.org/10.1002/ird.1989

"Open Hardware: A Role to Play in Wireless Sensor Networks?" - https://doi.org/10.3390/s150306818

"SEnviro: A Sensorized Platform Proposal Using Open Hardware and Open Standards" - https://doi.org/10.3390/s150305555There is no finding in the paper, although it is an excellent description of a technical solution with free software and accessible hardware.

Comments for the Author

If there is no interest in adapting to a review paper, the contribution could be handled in several other ways. But the author did not address this situation accordingly.

RW: Since I want to publish a technical solution to an existing problem, converting the manuscript to a review does not make sense. I do not understand what you imply with "the contribution could be handled in several other ways."

I looked at the articles you mentioned, but none of those describes a **scalable** open IoT platform. Yes, attaching a temperature sensor to an Arduino is a ubiquitous technology. In contrast, the MeteoMex platform has the following characteristics (please check lines 105-116 of the revised manuscript :

- **Scalable**. Printed circuit boards (PCB) and standard parts allow the mass production of identical sensing units. The database server can process thousands of operations per second.
- **Flexible**. The users can connect a huge variety of commercial sensors or integrate their prototypes.
- **User-friendly**. A simple design, pre-built modules, and code examples make the platform suitable for non-experts.
- **Low cost.** Generic electronic parts, the use of existing WiFi networks, and free software reduce the installation costs. The operation is economical because of low energy consumption and the possibility of self-hosting the IoT server.
- **Open**. All relevant hardware information and the software are completely documented and freely available.

I have not found such a system in the public literature, why I believe that my contribution is original.

Reviewer 3 (Luke Miller)

Basic reporting
No comment

Experimental design
No comment

Validity of the findings
No comment

Comments for the Author
I have read through the author's responses to the reviewers and the revised version of the manuscript. I feel that my original comments have been addressed appropriately, and that the author's responses to the other reviewers' comments were appropriate. Overall the manuscript has been improved, and should be a useful contribution to the literature.

RW: Dear Prof. Miller, I much appreciate your detailed review and feedback!

In case of any additional questions, please do not hesitate to contact me.

Yours sincerely,

Prof. Robert Winkler