

## ***Interactive comment on “Open-source Arduino-derived data loggers designed for field research” by Andrew D. Wickert et al.***

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The authors present their work on designing an open source data logger. The device presented is, in my opinion, valuable to the hydrological community and the article is written clearly and concise. Apart from a few minor comments that I have listed below, I recommend publishing this work in HESS. Minor comments, numbered for easy replying by the authors:

1. A logger keeps the recorded data “on site”. For many applications, among others for operational hydrological services, (near) real time data is needed that is transmitted from the field to some (online) service. I ask the authors to add a few sentences in the introduction to acknowledge this difference and position their

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- device within the larger collection of existing communication and logger solutions
2. The article focusses on the PCB, but for this to work in the field the choice of enclosure is essential. The name “bottleLogger” hints that a bottle could be used as enclosure, but the authors never make this explicit. Recognizing that the choice of enclosure is very depended on field conditions and choice of sensors, I would still ask the authors to spend a few words on the enclosures that work well (or advice from their experience on what doesn’t work!) to help the hydrologists that want to use their device in the field.
  3. I applaud the authors for going full “Open Science” and making both their hardware and software available to the community. To make sure that the software version that is part of this publication remains available, even when a new version is published on github (or, heaven forbid, Microsoft decides to shut github down. . .) I ask the authors to
    - (a) Make a “release” of their software on github, giving it a version number
    - (b) Use a service like Zenodo to get a DOI (and a guaranteed archive) for the software and instead of providing the url in the article, provide a citation to the archived version. (Zenodo facilitates this)
  4. The authors indicate that trigger-based sensors (tipping buckets) are supported through interrupts. Please elaborate if and how interrupts work together with the sleep function and how interrupts effect the battery life.
  5. One of the main points the authors make is that their Alog is low cost (“a fraction of the cost of conventional proprietary systems”), yet they do not mention any price point or even price range. I ask the authors to indicate what it would cost, at current price points, if a hydrologist use their openly provided designs to produce an Alog (or a batch of them) and what it would cost if they buy if directly from a sales agent.

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Disclaimer on language: I'm not a native English speaker and do not check for typos or incorrect spelling or grammar. I review on the content the authors are presenting.

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