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# ***Interactive comment on “A new high-precision and low-power GNSS receiver for long-term installations in remote areas” by D. H. Jones et al.***

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Received and published: 7 March 2016

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# Modifications to “A new high-precision and low-power GNSS receiver for long-term installations in remote areas”

David H. Jones, Carl Robinson, G. H. Gudmundsson

7 March 2016

## 1 Modifications 02/03/16, in response to feedback from Anonymous Referee 1

We thank the reviewers for their very helpful and constructive thoughts and suggestions. In the following we give a point-by-point list of all comments made by the reviewers and how we have responded to them. Our responses are in italic.

- Nowadays most of electronic cards can reach temperature very low. *This is true for electronics, but battery performance tends to be significantly decreased in cold temperatures. As such we need a GNSS receiver that consumes less power, so that it can run longer in the Antarctic on batteries.*
- Moisture could be a problem and no information is given to resolve this problem. *Yes, I have updated the paper to include the line "Ubi consists of 2 PCBs that have a conformal coating to protect them from moisture."*

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- The choice of the GNSS chip ahs to be more argued. *We have added the sentence "Other GNSS receiver units exist that can record data from the GLONASS, Galileo and BeiDou satellite constellations as well as GPS. These may be appropriate for future versions of **Ubi** as the coverage of these constellations increases, but for now we rejected these receivers due to their increased power consumption."*
- It is written that the UBI consumes 2W, if you use a 12V/100Ah battery it reaches  $100/(2/12) = 25$  days. *In section 3.1. we explain that this lifetime is based on using 2 x 100Ah batteries at -30C.*
- To explain why do authors choose irridium? *We have added the sentence "The Iridium communications system was chosen over alternatives because it can be used in the Antarctic with a small antenna and a low-cost modem."*
- My last point concerns the price of each components. *We have added the sentence "The individual components of the **Ubi** receiver can be procured for less than £2000, making this potentially significantly cheaper than commercial alternatives."*

Again, we thank the reviewers for their time and efforts. The reviews have indeed been very helpful tous and we feel they have significantly contributed to the quality of the paper.

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