|  |  |  |  |
| --- | --- | --- | --- |
| **Title:** | A Low-Cost GPS based Application for Navigating Shallow Waters | | |
| **Author(s) Name:** | Sadman Shahriar Alam; Akib Jayed Islam; Md. Mahmudul Hasan; Md. Nafiz Imtiaz | | |
| **Contact Email(s):** | sadman.alam@aiub.edu | | |
| **Published Journal Name:** | 2018 International Conference on Innovations in Science, Engineering and Technology (ICISET) | | |
| **Type of Publication:** | International Conference | | |
| **Volume:** |  | Issue |  |
| **Publisher:** | IEEE | | |
| **Publication Date:** | 27 June 2019 | | |
| **ISBN:** | 978-1-5386-8525-9 | | |
| **DOI:** | 10.1109/ICISET.2018.8745598 | | |
| **URL:** | https://ieeexplore.ieee.org/document/8745598 | | |
| **Other Related Info.:** | Page 1-6 | | |
|  | | | |

|  |  |
| --- | --- |
| **Abstract:** |  |
| Parts of the Norwegian coastline have a dense population of skerries, which can easily lead to collisions of small boats. Bigger vessels have an abundance of navigation systems, Automatic Identification System (AIS), and similar systems. But smaller boats are not regulated by the same laws and are more likely to traverse shallow areas. With a low-cost GPS receiver in conjunction with digitized maps, it will be possible to classify areas as shallow and notify the user. By creating a mobile application, small boats can also get some of the information and warning systems as larger ships now have. Further, it can be possible to incorporate this into a standalone microcontroller with a GPS module. In order to maximize the number of users, the price of such a product needs to be sufficiently low in order to justify the investment. By implementing this concept with a smartphone application, the cost is reduced substantially, as the hardware is readily available. This paper will provide a mobile-based application that sends in coordinates using GPS and other information from the mobile device to the web-based server, which then returns depth data. The mobile application then decides whether you are approaching a safe or dangerous area. This application was tested on Elgeseter Bridge in Trondheim, Norway. Accuracy testing of the GPS modules on mobile phones and an external GPS module (Quectel L80) were carried out and the outcome of those tests are discussed in the result. | |