ABSTRAK

Reformasi tahun 1998 menuntut perubahan paradigma irigasi menjadi lebih transparan, akuntabel dan berkeadilan (Supadmo, 2012). Sebelumnya pada tahun 1996 di Bangkok diadakan suatu pertemuan pakar tentang modernisasi irigasi disponsori oleh FAO (Supadmo, 2003). Tuntutan Reformasi dan Modernisasi Irigasi tersebut dicoba dijawab dengan kajian perancangan sistem informasi debit jaringan irigasi berbasis mikrokontroller dan sensor ultrasonik HC SR -04. Bertujuan untuk merancang instrumen fisik serta pemrograman instrumen sistem informasi debit jaringan irigasi berbasis mikrokontroller dan sensor ultrasonik HC SR-04, perancangan ini dilakukan dengan komponen mikrokontrol Arduino Mega 2560, sensor ultrasonik HC SR-04, modul GPRS SIMCOM SIM 800L, SD Card Module, Real Time Clock (RTC) DS 1307, serta database Google Spreadsheet dan halaman web arifweb.000webhost.com. Kaliberasi terhadap sistem pembacaan debit diasumsikan dipasang di parshall flume B Bg.1 Saluran Induk Bedegolan berhasil mengonversi pembacaan sinyal ultrasonik menjadi besaran debit dengan persamaan kaliberasi Debit (Q) = 0.0107 × Tinggi Muka Air (TMA) $^{1.4696.}$ Data debit terbaca telah berhasil disimpan dalam database Google Spreadsheet serta diinformasikan dalam website arifweb.000webhost.com.

Kata kunci : Sistem Informasi Debit, Perancangan, Sensor Ultrasonik, Database Google Spreadsheet, halaman web

ABSTRACT

Indonesian Reformation in 1998 demanding the paradigm changes of in irrigation system to be more transparent, accountable, and equitable (Supadmo, 2012) .Formerly in 1996 in bangkok held a meeting of experts in irrigation sponsored by FAO. They declared irrigation modernization (Supadmo, 2003). Demands arised from the reformation and irrigation modernization tried to be attempted by doing designing study of Irrigation discharge information system based on the mikrokontroller and ultrasonic sensor HC SR-04. As it aims to design the physical instrument and the algorithm of programming of the instrument of the irrigation discharge information system based on mikrokontroller and the ultrasonic sensor HC SR-04, the design is done contains components such as Arduino Mega 2560, HC SR-04 ultrasonic sensor, Simcom SIM 800L GPRS module , sd card module , real time clock (rtc) DS 1307 module, and the Google database with google spreadsheet interface embedded on web page arifweb.000webhost.com. The calibration of the discharge reading system assumed as mounted on a B BG.1 parshall flume placed on the primary channel of The Bedegolan Irrigation Area. It successfully converted the ultrasonic signal reading to the discharge with the equation of the calibration are (Q) = 0.0107 × Water Level (WL) 1.4696. The metering results of the discharge has successfully kept in a Google database spreadsheet based and informed in arifweb.000webhost.com page.

Keywords : Discharge Information System, Design, Ultrasonic Sensor, Google Database Spreadsheet, webpageSistem Informasi Debit, Perancangan, Sensor Ultrasonik, Database Google Spreadsheet, halaman web