SELF SAFETY INSPECTING BOREWELL WITH COMBINED RTOS MOTOR

Dr K.Vasudevan[1], Mr. J.Dineshkumar[2], Daffni Merlin .M[3] Pradeepkumar.S[4] ,Saravanakumaran .S[5]

[1] *Head and Associate professor*
[2] *Assistant professor*
[3] *B.Sc.ECS-final year*
Department of Electronics and Communication Systems
VLB Janakiammal College of Arts and Science, Coimbatore, Tamil Nadu

---***---

Abstract

Bore wells play a major role both in cities and in villages they provide water for the needs of agriculture and daily needs ,bore well can be danger ,many children's are falling into the bore well and loss their life's,

Operating of bore well motor for both agriculture and vending of water for the public can be improved with the help of modern technology, intelligence system can be provided for the motor.The proposed system will ensure the safety f the bore well whether it is covered properly which will prevent falling of children and also it will monitor the fields moisture and according to the need of crop ,the water will be provided this will prevent from over usage of water or will helps crops to get water according their needs, and also the proposed system consist of GSM based remote motor controlling ,which will help us to operate and know the status of motor without physically going to the motor's location using this the water supply of public water lines also can be controlled for multiple waterlines with single device.

Key Words: GSM, RTOS Motor, sensors and are well

1 INTRODUCTION

The expected number of wells and bore wells in India is now around twenty-seven million, with bore wells accounting for more than 50 percent. Growing water scarcity is being standard as the most important problem in India. Since the water level is decreasing day by day so more number of people are affected. Bore wells are constructed to fulfill the needs. These bore wells are left unclosed after finding that ground water is not abundant in the place. Bores yielded water and subsequently got depleted are left uncovered. The bore wells in turn have started to take many innocent lives. Small children without noticing the bore well slip inside and get trapped. There is no proper technique to rescue method for such accidents. In most cases a parallel hole is dug up and then a horizontal path is made to reach to the baby. It takes nearly 30 hours to dig the parallel pit, by that time the child would have died.

2. SYSTEM IMPLEMENTATION:

A Real Time Operating System, commonly known as an RTOS, is a software component that rapidly switches between tasks, giving the impression that multiple programs are being executed at the same time on a single processing core.

In actual fact the processing core can only execute one program at any one time, and what the RTOS is actually doing is rapidly switching between individual programming threads (or Tasks) to give the impression that multiple programs are executing simultaneously.

There are well-established techniques for writing good embedded software without the use of an RTOS. In some cases, these techniques may provide the most appropriate solution; however as the solution becomes more complex, the benefits of an RTOS become more apparent. These include:

Priority Based Scheduling: The ability to separate critical processing from non-critical is a powerful tool.

Abstracting Timing Information: The RTOS is responsible for timing and provides API functions. This allows for cleaner (and smaller) application code.

Maintainability/Extensibility: Abstracting timing dependencies and task based design results in fewer interdependencies between modules. This makes for easier maintenance.

Modularity: The task based API naturally encourages modular development as a task will typically have a clearly defined role.

Promotes Team Development: The task-based system allows separate designers/teams to work independently on their parts of the project.

Easier Testing: Modular task based development allows for modular task based testing.

Code Reuse: Another benefit of modularity is that similar applications on similar platforms will inevitably lead to the development of a library of standard tasks.

Improved Efficiency: An RTOS can be entirely event driven; no processing time is wasted polling for events that have not occurred.

Idle Processing: Background or idle processing is performed in the idle task. This ensures that things such as CPU load measurement, background CRC checking etc will not affect the main processing.

GSM (Global System for Mobile Communications, originally Groupe Spécial Mobile)**,** is a standard developed by the European Telecommunications Standards Institute (ETSI).

It was created to describe the protocols for second-generation (2G) digital cellular networks used by mobile phones and is now the default global standard for mobile communications – with over 90% market share, operating in over 219 countries and territories.
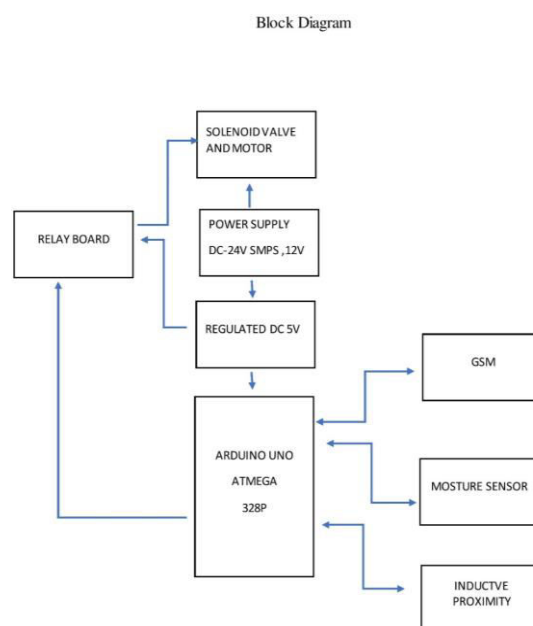

Fig. 1: Block Diagram

3. CONCLUSION:

The proposed system permits the owner or the controller, all the rights to take decisions and to prevent children's falling into the bore well Operating of bore well motor for both agriculture and vending of water for the public can be improved with the help of modern technology, intelligence system can be provided for the motor .Bore wells play a major role both in cities and in villages they provide water for the needs of agriculture and daily need

REFERENCES:

[1]Krishna Kant, "the system for mobile communications" PHI 2nd Edition,2010.

[2] Curtis D Johnson, "introduction to GSM " Pearson,1st Edition , 2015.

[3] A.K. Gupta, S.K. Arora " OP-AMPS and linear integrated circuit : An Introduction ", Kindle

Edition, 2007.

[4] Baris Yuksekkaya, A. Alper Kayalar, M. Bilgehan Tosun, M. Kaan Ozcan, and Ali Zeya Alkar "GSM and personal communication handbook", 2006, IEEE Transactions on Consumer Electronics, Vol. 52(3) , pp. 837 - 843.

[5]Arab Waheed Ahmad, Naeem Jan, Asaeed Iqbal, Chankil Lee, Ansan Korea, Implementation of ZigBee- principle of mobile communication", 2011, IEEE Symposium on Circuits and Systems (MWSCAS), Seoul, pp. 1-4.

[6] Mark Torvalds " Arduino Programming" Getting Started With Sketches (second edition),2021.

[7]Richard Blum " Arduino Programming " Pearson Education , 1st Edition, 2013.

[8]Neerparaj Rai , "Arduino Project – Engineers" BPB Publications, 1st Edition, 2016.

[9]Arduino – iSiS Proteus professional suite 8.0.

[10] Data Sheet references for regulator IC7805, moisture sensor , and HMTS 24V ,12V DC.