Dam Monitoring and Safety Protocol System

SUYASH SHARMA[1], VINAYAK SADANAND[2], MD.NOUMAN MOLLA[3], Prof. S. G. Mohite[4]

[1]STUDENT, DEPARTMENT OF COMPUTER SCIENCE ENGINEERING BHARATI VIDYAPEETH UNIVERSITY COLLEGE OF ENGINEERING PUNE, INDIA

[2]STUDENT, DEPARTMENT OF COMPUTER SCIENCE ENGINEERING BHARATI VIDYAPEETH UNIVERSITY COLLEGE OF ENGINEERING PUNE, INDIA

[3]STUDENT, DEPARTMENT OF COMPUTER SCIENCE ENGINEERING BHARATI VIDYAPEETH UNIVERSITY COLLEGE OF ENGINEERING PUNE, INDIA

[4]ASSISTANT PROFESSOR, DEPARTMENT OF COMPUTER SCIENCE ENGINEERING BHARATI VIDYAPEETH UNIVERSITY COLLEGE OF ENGINEERING PUNE, INDIA

Abstract -

The history, culture, current and future socioeconomic standing and environmental property of our country and its people unit intricately joined to the water resources that unit offered from dams. These water sources offered through dams unit one in each of the very important sources offered for the usage to industries, livestock, irrigation etc. and there is a vital ought to confirm the security of the water level at these dams against associate environmental or biological process threats and to develop an economical dam Level Management system practice IoT. This paper provides an outline for the event of associate system supported the prevailing systems with the used of some sensors and IoT. This paper together proposes a totally distinctive set up of assortment and sharing amount of your time information concerning water levels to a licensed central command main through huge field communication. The approved central command centre then takes a choice whether or not or to not unleash the water by gap dam gates or keep them closed. By doing so, the operation of dams all the country is centralized and automatic.

I. INTRODUCTION-

Dam plays a vital role in our life as they're used for purpose like irrigation control and chiefly generation of electricity. There square measure roughly 4200 major/minor dams in our country. Once it involves dams, there square measure varied parameter to be measured [1]. Currently a day's dam authorities face issues according the dam and also the weather parameters observation as major of the tiny dams square measure still mistreatment manual observation and recent technology of transmission. Manual observation and transmission end in tidy time insulating material between information determined, its transmission and for call taking. Also, this causes loss of real time information and typically become the explanation for forthcoming natural disaster.

Once it specifically towards water level measure for water discharge to generation and irrigation. it's to be live a minimum of just one occasion in twenty four hours. Most of dam's live water level manually because it not convenient to stay continues monitor on the modification of water level. There is a necessary to seem forward for a sophisticated technology. So, we tend to square measure on the brink of style such a technology that during which within which} can |we'll |we are going to} place a reflector on the water surface on which the transmitter will direct a beam on the reflector and by bound logics, the water level is calculated. This information is transmitted to dam authority and generation management authority. this technique can facilitate to cut back this treats that facing by dam authority and continuous observation on water level of dam. The project is planned to implement a system with net portal which is able to monitor all the parameters like water level, gate position, water discharge and flowing tank level. In observation portal the sensible controller provides facility of merchandising sensing element observation values directly into information with specific measure. It provides the power of SMS for providing information. because it is essentially supported on-line information sharing with the assistance of net information, dam parameters to government authority etc., the govt. of Asian nation desires to watch the important time water level of reservoirs. thence this work can facilitate in Digital Asian nation Mission.

II. drawback DEFINITION

Dams square measure the most sources of water system to cities, they to boot play a awfully necessary role overflowing management and would possibly assist watercourse.

The method Most of the dams square measure built to serve over one purpose and their edges square measure manifold. it's ought to implement some kind of communication between the metering systems and portable computer models to provide support in managing the difficult systems of the hydro power plants. Generally, the dams square measure monitored through ancient investigation techniques and conjointly the water management except the observation of level of water in a very variety of the dams that's automatic. Management of water resources through dams becomes essential as a result of the vary of users depending on dams is far and these users might have conflicting interests. this

instance gets plenty of difficult with the actual fact that the offered resources square measure restricted with high potentialities of droughts and floods. This affects the densely colonised areas. Dam observation may well be a tedious and lenghtly technique.

1.1.2 Motivation

A new system for dam water looking at and management got to be established which can supply water level in real time and will allow U.S. to come back back to quick **conclusions** regarding the safety operations of the dams. web of Things (IoT) square measure typically made public as a network of devices that area unit interconnected. It includes a gaggle of sensors, communication network equally as code enabled electronic devices that end users to amass correct information from time to time through the communication and permits for information interchange between users and conjointly the

connected devices. this technique square measure typically accustomed automatic the management of dams whereas not human interference.

III. OBJECTIVE

A. to create the foremost business and reliable dam water level detector victimization as less resources as attainable

B. Develop the dam water watching system wherever the water level mechanically detects by the device.

C. The planned system will monitor dam water level with higher information transmission speed.

D. To develop a system to observe Gate Level watching and ooze tank level watching

E. The construct of this method is to develop an online portal which can monitor and provides authentic time parameter associated with dam.

These objectives square measure ahead to develop an entire system. Not solely the reliableness this method ought to conjointly reach the cheapness such we will monitor the info of all the dams.

REQUIRMENT ANALYSIS

Hardware recruitment–

- Arduino model
- Bluetooth module
- Ultrasonic sensor
- Servo motor
- Water sensor
- Water flow sensor

Software recruitment-

➢ arduino IDE

➢ arduino studio,

II. Proposed system -

The projected system is concerning developing an automatic system for to discovered and dominant the dams mechanically. The projected system ought to permit the user the subsequent functionalities:

a. dominant and observance the dams automatically:

With the projected system, the govt. shall be intelligence to remotely management and monitor her dams. this can cut back the risks and prices that go together with physically to discovered the aforesaid dams.

b. Checking and finding out transactions:

If this technique is to be dead, then government used can have a rather easier time keeping track of transactions at the dam. The system can as an example, offer simply recoverable records on the days once the dam's gate can either have opened or closed. this can each be a price and human resource effective live

c. Alerts to be displayed once the water reaches a group most level:

The withdraw system can channelize timely alerts within the event that the dam nears overflow levels. this can relieve the govt. from having to watch the dam around the clock. International Journal of Programming Languages associate degreed Applications (The aforesaid alarm can have an operational mechanism that permits it to travel off just in case the water levels go too high. this can be terribly helpful

for the govt.
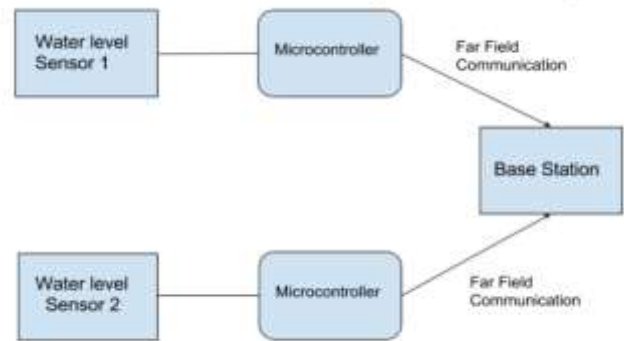
Block Diagram of the System
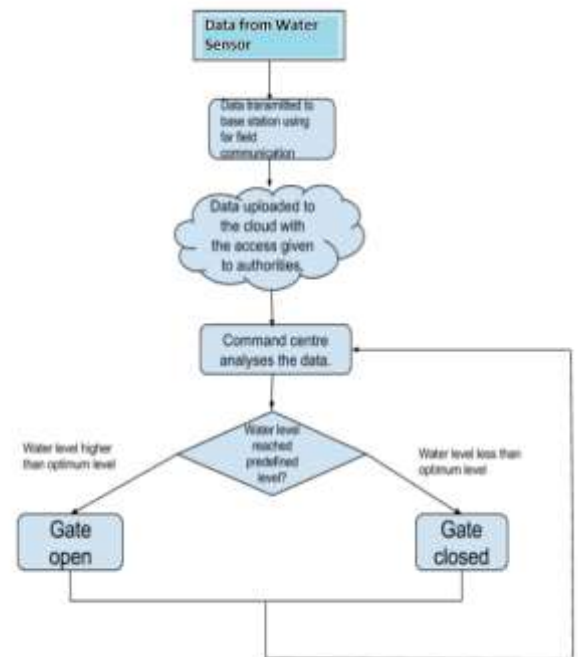
Flowchart of the System

V. CONCLUSION

Water is one in all the most resource for human survival. however sadly an enormous quantity of water is being wasted by uncontrolled use. There square measure sure automatic water level watching systems in apply however they're used for varied applications and have some shortness in apply. we have a tendency to tried to counsel ways in which to instrumentality this downside associate degreed implement an economical water level watching and management system. the most catchword of this analysis work is to ascertain a adjustable, economical and simple configurable system which may solve our water distribution downside between 2 regions and protection the low lying areas from floods etc. among several different problems. we've got been employing a small controller to manage the

information and to scale back the value. we've got been with success conducting the experiments in research laboratory and so planned a cloud primarily based water level watching and management network whose adustability would provide U.S.A. to regulate the system from anyplace via access to cloud information with totally different variety of devices. this kind of system is a lot of useful in things like swamping wherever the automatic gate lifting system can check the water levels and react according true this might have a considerable profit to the analysis work associated with the economical management of water at dams by reducing the manual work.

REFERENCES

[1] NiteenMohod, "Usability of Internet of Things [IoT] For Dam Safety and Water Management", International Journal of Studyin Advent Technology, Vol.5, No.1, January 2017.

[2] A.C. Khetre, S.G. Hate, "Automatic monitoring &Spreading of water valueby using WSN Technology and different routing methods", IJARCET Vol 2, 12, Dec 2013, pp 3255- 3260.

[3] S.M.Khaled Reza, "Microcontroller Based Water Level Sensing andMonitoring", WCECS 2010, October 20-22, 2010, pp 220-224.

[4] George Suciu, Adela Vintea, Stefan CiprianArseni, Cristina Burca, Victor "Challenges and Solutions for Progressive Sensing of Water Infrastructures in Urban Environments", 2015 IEEE SIITME , 22-25 Oct 2015, pp 349-352.