SMART MONITORING WIND PLANT USING INTERNET OF THINGS(IOT)

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***Abstract*—In order to analyze the performance of wind system, we have developed a real time expert system based on a central microcomputer used as a server and can be easily consulted from different automatic station. The developed system is able to ensure monitoring, supervision and control of wind system installed over a wide area on one hand and to create a general wind system database on the other. This system present a design of a universal data acquisition system with available components and which is easily accessible through a server. This system presents a novel procedure for fault diagnosis in wind system with. The work describes the development of a system designed for renewable power generation integration. It continuously acquires temperature, current, voltage, flex which is automatically correlated with energy parameter, obtained from renewable energy system. The developed was installed in a wind power generation. The developed application allows, in addition to the acquisition of weather and energy data, there continuous monitoring and correlation through a graphical user interface, providing a friendly interactive with the user.**

Keywords—continuous monitoring , data acquisition,windplant.server,wireless transmission.

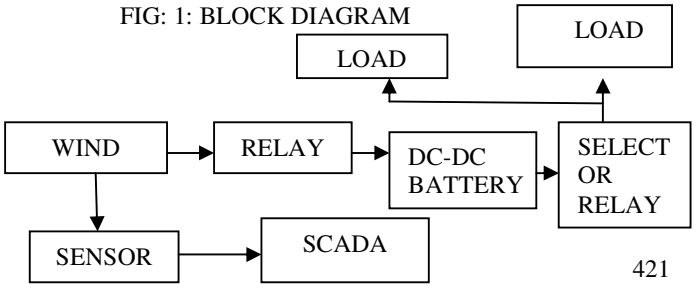
I. INTRODUCTION

In the future everything will be connected; not only our phones will access the internet but our light bulb, our doors, our heating… it is called the internet of things (IoT). IoT aims to make the internet ubiquitous and pervasive, and has the potential to affect many aspects of users quality of life. The networked heterogeneous devices connected in an IoT structure are typically equipped with sensors, a microcontroller, a wireless transceiver, and a energy source to monitor their environment and send/receive data. Wireless sensor networks, are typically scattered to cover a specific area of interest. The embedded microcontroller is generally used for collecting and processing the data taken from the sensors. Sensor elements produce a measurable response to a change in the physical world such as temperature, humidity, pressure… The wireless transceiver provides a medium to transfer information extracted from the sensors to a sink or a base station. The systems will monitor the temperature, voltage, current, flex sensor sensed by the IOT. The grid connection system also used by changing load demand.

II. EXISTING SYSTEM

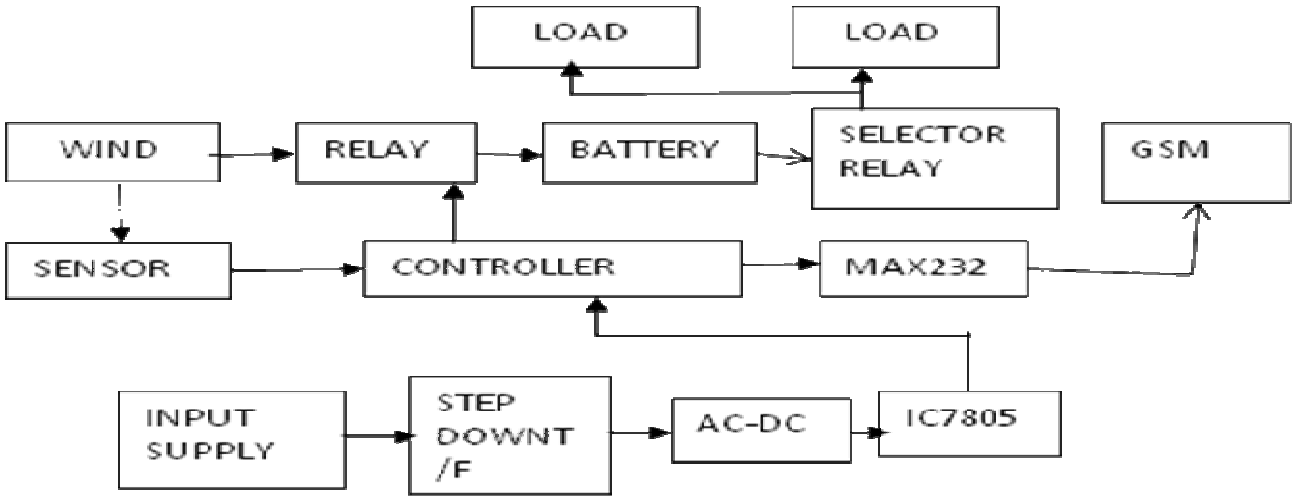
Existing system is used for the data acquisition and control the power plant by using SCADA system. That system was wired and monitored in nearer the power plant and the control room has a high temperature is presented. So not accurate performance is got it. The control room has a chemicals and some pollution occurs the wired system. So not got a full output for the control and monitored the whole power plant. The space for the equipment will be more and the cost of the system more, Complexity also more for the SCADA system. Some the burden also occurs the scada system in the over temperature for particular control room and not monitored the accurate output and the employee of the power plant of the system. There will be used for the mechanical device for monitor the whole device and all the parameter will be detected by the only one device.

FIG: 1: BLOCK DIAGRAM



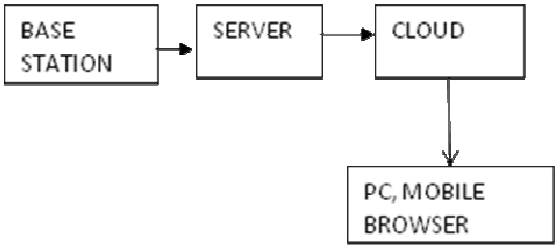
III. PROPOSED SYSTEM

The proposed system is advanced from existing system by using IOT is monitored the wind power plant and also grid connections also checked. In wind speed, voltage, current, temperature and grid output also changed in by using developing country. In server the all data's are updated in mobile. The complexity of existing system will removed in the proposed system by replace the SCADA to IOT is less cost and temperature of the system reduced by internet of things.



TRANSMITTER SIDE

The sensor is used for detected the fault and send the SMS for using GSM is sensed and the fault will be send on your mobile and over voltage is occurs the relay operated automatically and detected and sent the fault and cleared. The wind power plant system is a blade is bent and the SMS sent your mobile phone and worldwide will be used and see the all things. Then consuming energy is more required the SMS sent your mobile phone. [6] discussed about Intelligent Sensor Network for Vehicle Maintenance System. Modern automobiles are no longer mere mechanical devices; they are pervasively monitored through various sensor networks & using integrated circuits and microprocessor based design and control techniques while this transformation has driven major advancements in efficiency and safety.



RECEIVER SIDE

IV. COMPONENTS USED

COMPONENTS	VALUES
STEP DOWN TRANSFORMER	230V-5V
REGULATOR	IC7805
LEVEL CONVERTER	MAX232
GSM	SIM900A
RELAY	ULN2003
SERVER	WORLD WIDE
WIND MILL	NO VALUES
IOT	INTERNET USING
CLOUD	STORED DATA
LCD	16*8 DISPLAY

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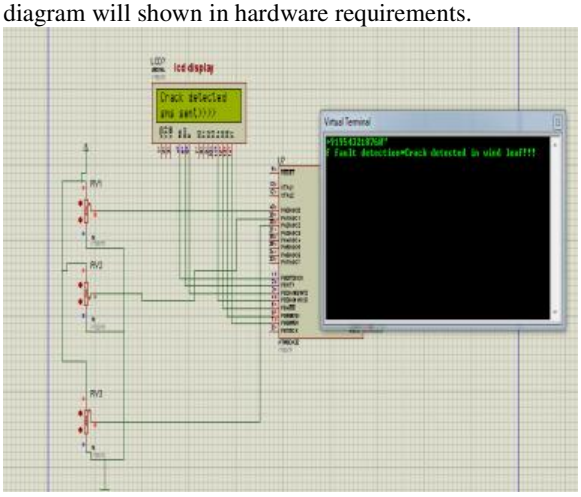
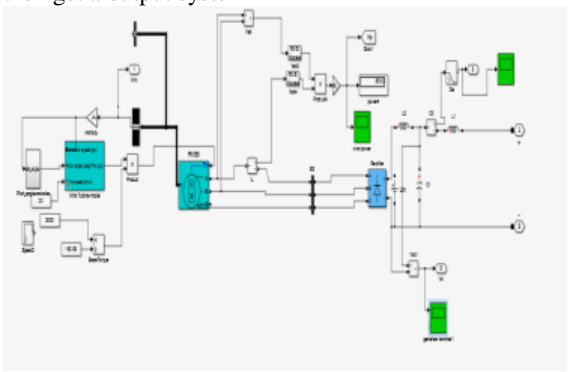
HARDWARE REQUIREMENTS

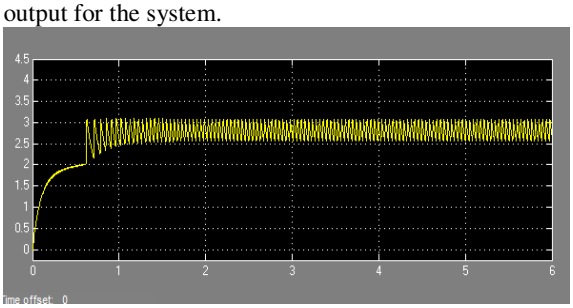
The system will be given a output for the wind power plant and monitored the whole system output is a mat lap and proteus is explained and diagram will shown in hardware requirements.



The proteus software will be given a input and shown in output will be display in a LCD is monitored. The mat lap will be given input and then get a output system



The output will for mat lap will checked and get output for the system.



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