Abstract

Today in industries we face regular problems in various electro-mechanical machines and need to wait for service engineer, to come and troubleshoot the machines, provided if engineer is local then no issue but if he/she is from abroad then the time it will take for the engineer to come from his/her country could generate tremendous process lag in industries product output so even two days delay can cause a loss in lacks etc. as all such machines are mostly imported from abroad. Our idea is to provide machine monitoring and control through WEB, so that even service engineer. Is not present with machine but he/she can be virtually in touch with machine from remote location anywhere any time.

1. INTRODUCTION

Today, in industries we face regular problems in various imported machines and need to wait for service Engineer. To troubleshoot problem we call technician from abroad. That was very big problem because they want to stop this work regarding that machine. So, just because of that reason, we are motivating or our software is doing the work of motivation. We are building there software to reduce that complexity of various companies of technical issues. It also helps to reduce the problems related to cost and time. Whenever any fault occurs in machine we can provide virtual troubleshooting for industry machine. In this system we provide Service to service user to interact with service engineer/technician. Our System provides the correct and accurate service information whenever any problem detects in machine.
2. NEED OF PROPOSED SYSTEM

2.1 Study of Existing System

In existing system there was no any kind of web based troubleshooting. The existing system was bit costly. It was very time consuming process. It was a quiet hectic process. As Machines used are very sophisticated, they involve hydraulics; electrical, electronic enabled gadgets etc., which need regular watch and maintenance. In case if they are utilised under maintenance condition, can cause a high end damage, leading to economic as well as product defects, finally hampering the outcome of industries, so as we recognize electronics as core eternal heart of industries, due to automation in machines lot of electronics is used in machine and the electronics are mostly embedded with control panels in the form of special cards, like power supply, amplifier, driver, clipper cards etc.

2.2 Proposed System

In industries we face regular problems in various electro-mechanical machines and need to wait for service engineers, to come and troubleshoot the machines, provided if engineers is local then no issue but if he/she is from abroad then the time it will take for the engineers to come from his/her country could generate tremendous process lag in industries product output so in that we loss many product. So we provide in proposed system machine monitoring and control through WEB, so that even service engineers. Is not present with machine but he/she can be virtually in touch with machine from remote location anywhere anytime.

3. SYSTEM MODEL

In architecture of our machine maintenance system is sketched in Fig. 2.1 The system consists of three parts: (1) Data acquisition and processing,

(2) Diagnosis data publishing,

(3) The client side.

Data acquisition and processing are as in other conventional remote monitoring systems. They include software which analyses the data along with necessary remote monitoring devices, such as sensors, Web, signal amplifiers or conditioners, etc. The tap points collects the machine running signals from the monitored machine and then transmit the collected signals to the amplifiers. The amplifiers condition the signals into acceptable formats so that the ARDUINO can convert them to digital signals for further fault analysis. The server will analyse the digital signals and then determine the health conditions of the inspected machine. Faults occurring in the machine parts generate a series of impact vibrations. Then it is possible to use a variety of signal processing techniques to judge the machine status.

In this architecture power supply is connected to circuit or machine and tap point connected at the particular point. If the set point crosses a limit assign graphics to web pages. If the set point is exceeds it highlight the error or generate alarm/buzzer and sent message.
i.) **ARDUINO Micro controller**: It is an open source project software and hardware extremely accessible and very flexible to be customized and extended. It is flexible, offers a variety of digital and analog input, SPI and Serial interface and digital and PWM output. It is easy to use connect via USB and communicate using Standalone serial protocol run in standalone mode and as interface3 connect to pc or computer.

ii.) **MS-SQL**: It will grab the data and stored it into SQL server on time instance. Stored data will be stored and cluster on time sequence with descending windows order.

iii.) **Private cloud**: Private cloud operated solely for an single organizational whether manage internally or by third party or hosted either internally or by externally.

iv.) **Web Page**: Retrieval of data from cloud in descending order. Separate the data for comparison because it is assigned to variable watch for step sequence. Hence we are providing machine monitoring and control service through WEB, so that even service Engineer is not present with machine but the person can be virtually in touch with machine from remote location anywhere anytime.

v.) **Maintainability and Flexibility**: In this project, with the computerized environment it is easy to entering keys and message, so system can gives quick and accurate result in minimum time. Examples of WBMC In the literature different examples from WBMC can be found as

* Web based dynamic simulators for nuclear power plants and for an industrial catalytic reactor.
* Due to the global accessibility the Internet provides us the possibility for distance learning. The advantage is that the schools don’t need to buy expensive equipment’s anymore to do experiments. Students can login to a virtual laboratory and do simulations while the data will be sent to their browser. A video can be used to give visual feedback about the status of the process.

![Figure 1: System Architecture](image)

**4. PROPOSED METHODOLOGY**

In industries we face regular problems in various electro-mechanical machines and need to wait for service engineering to come and troubleshoot the machines, provided if engineering is local then no issue but if he/she is from abroad then the time it will take for the engineering to come from his/her country could generate tremendous process lag in
industries product output so in that we loss many product. So we provide in proposed system machine monitoring and control through WEB, so that even service engineering. Is not present with machine but he/she can be virtually in touch with machine from remote location anywhere anytime.

5. SIMULATION/EXPERIMENTAL RESULTS

<table>
<thead>
<tr>
<th>S. No.</th>
<th>IC-741 parameters</th>
<th>Voltage</th>
<th>Input of Pin 2</th>
<th>Input of Pin 3</th>
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<td>1.</td>
<td>Starting Voltage</td>
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<td>1.70</td>
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<td>2.</td>
<td>Generated output</td>
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<tr>
<td></td>
<td>Output Generated Low</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Applied Voltage</td>
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<td>1.70</td>
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<tr>
<td>4.</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Output Generated High</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. CONCLUSION

In this project, the Internet based process control has been examined. Internet-based control is only an extra control level added into the existing process control hierarchy. When designing architecture the requirement specifications, user interface, and security measures are important issues. Internet technologies can provide web clients a platform, not only for remotely monitoring the behaviour of process plants, but also for remotely controlling the plants as well. One of the key problems in the Internet based process control is the Internet time delay. If the Internet is heavily loaded, the responses may be delayed and the operator corrections may take too long time for correcting the system. More advanced technologies should be implemented to properly deal with the Internet transmission delay. It looks that in the near future the attention will first go to develop web based monitoring systems. When the problem of time delay is resolved the way for Internet based control, monitoring and troubleshooting will be easier.it will be helpful to provide fastest, correct and accurate service to client. It will provide virtual touch with machine from remote location anywhere anytime.

7. REFERENCES


