[BVB college of Engineering and Technology]  
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**PROJECT PROPOSAL**

[INDUSTRAIL AUTOMATION FOR A COMPANY WHICH MANUFACTURES HEAT EXCHANGERS.]

PROPOSED BY: -

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1. Summary

THIS PROJECT PROPOSAL DISCUSSES THE FOLLOWING THINGS: -

* NEED AND REQUIREMENTS OF THE PROJECT.
* GOALS AND OBJECTIVES OF THE PROJECT.
* PROCEDURE AND SCOPE OF WORK.
* THE TIME TABLE THAT WILL BE FOLLOWED.
* THE EVALUATION PROCESS OF THE PROJECT.

1. Introduction

DURING OUR SUMMER BREAK WE GOT THE OPPORTUNITY TO WORK IN TWO COMPANIES. FOX CONTROLS PVT LTD AND UNITED HEAT TRANSFER PVT LTD.

FOX CONTROLS IS AN AUTOMATION COMPANY, IT GIVES AUTOMATION SOLUTIONS TO THEIR CLIENTS AND BUILDS SPM’S FOR THE SAME.

WHEREAS UNITED HEAT TRANSFER IS MORE OF A MECHANICAL STREAM COMPANY AND BUILDS HEAT EXCHANGERS.

NOW WE WORKED ON SETTING UP A PLC SYSTEM FOR THE APPLICATION OF ROTARY WELDING USING 2 STEPPER MOTORS. THIS IS WHEN WE REALISED THE OPPORTUNITY OF IMPLEMENTING AUTOMATION IN SUCH AN INDUSTRY AND THAT IS WHEN THE DIRECTORS OF THE COMPANY ASKED US IF WE WOULD BE INTERESTED IN DESINING A SERIES OF MACHINES WHICH HELP THEM AUTOMATE THE PROCESSES INVOLVED IN BUILDING A HEAT EXCHANGER NAMELY, STRAIGHTENING OF COPPER TUBE, CUTTING , LEAK TEST, BULLETING ETC.

AIM OF OUR PROJECT IS TO BUILD THIS SETUP AND IMPLEMENT AUTOMATION FOR THIS SETUP.

THIS PROPOSAL FUTHER DWELVES INTO THE DETAILS OF HOW WE AIM AT IMPLEMENTING AUTOMATION IN THIS FACTORY SETUP.

1. Needs/Problems

SAYING NEED OF AUTOMATION IS HUGE IS CLEARLY AN UNDERSTATEMENT. IN INDIA WHERE EVEN WITH SUCH A HUGE POPULATION THERE ARE VERY LESS SKILLED WORKERS THERE ARISES A NEED FOR IMPLEMENTATION OF AUTOMATION AND THIS IS WHERE WE STEP IN.

AS STUDENTS OF AUTOMATION AND ROBOTICS WE AIM AT TACKLING THE PROBLEM OF LABOUR SHORTAGE BY INTRODUCING AUTOMATION IN THE INDUSTRIES.

• THIS PROBLEM HAS LASTED FOR MORE THAN 50 YEARS. PEOPLE BOTH DON’T WANT TO WORK AND WANT TO GET PAID FOR LESS WORK OR THEY ARE NOT SKILLED ENOUGH TO DO THE JOB.

• THE COMPANY WHERE WE WANT TO IMPLEMENT AUTOMATION HAS 150 WORKERS BUT ONLY ABOUT 30-40 OF THEM ARE SKILLED WORKERS OTHERS ARE DAILY WAGES WORKERS.

• IN A MARKET OF CUT THROAT COMPETITION, THE DIRECTORS OF THIS COMPANY WANT TO INCREASE THEIR OUTPUT AN REDUCE THE TIME. USING MORE PEOPLE IS CLEARLY NOT THE OPTION HERE. HENCE THE NEED FOR INDUSTRIAL AUTOMATION.

1. Goals/Objectives

OUR GOAL IS TO IMPLEMENT AUTOMATION FOR THE FACTORY SETUP MENTIONED ABOVE AND HELPING THE COMPANY IN INCREASING THEIR OUTPUT.

• UNDERSTANDING THE PROCESSES INVOLVED AND DESIGNING MACHINERY TO EXECUTE THESE PROCESSES.

• DESIGNING A SYSTEM SUCH THAT THE PROCESSES FOLLOW A PREDEFINED HIERARCHY AND THE OUTPUT AT EACH SYSTEM IS INPUT FOR THE NEXT.

• SETTING UP A SYSTEM WHICH CAN BE MONITERED BY THE FACTORY PERSONNEL FROM ANYWHERE AT ANYTIME.

1. Procedures/Scope of Work

* THE INITIAL STAGE OF THE PROJECT REQUIRES US TO HAVE A DEEP AND COMPLETE UNDERSTANDING ABOUT THE PROCCESES INVOLVED IN MANUFACTURING A HEAT EXCHANGER.

THIS IS DONE BY STUDYING THE EXISTING PROCESSES AND METHODS COUPLED WITH MARKET SURVEY.

* THE SECOND STAGE INVOLVES DESIGN AND MODELLING OF THE MACHINERY AND ALSO THE DESIGN OF THE LAYOUT OF THE ENTIRE SETUP.THIS INCLUDES CAD DESIGN, FOLLOWING V-MODEL FOR PROPER CONTROL SYSTEM SETUP, ETC.
* THE THIRD STAGE INVOLVES DMF AND THEN MANUFACTURING OF THE PARTS.
* FOURTH STAGE INVOLVES ASSEMBLY AND IMPLEMENTATION OF PLC AND OTHER FEEDBACK SYSTEMS.
* FIFTH STAGE INVOLVES THE TESTING AND ERROR CORRECTION OF THE ENTIRE SYSTEM.

1. Timetable

This is just the overview of the time-table the detailed gantt chart will be generated soon.

|  |  |  |
| --- | --- | --- |
|  | **Description of Work** | **Start and End Dates** |
| **Phase One** | Market survey and project research. | 1/9/16 - 21/9/16 |
| **Phase Two** | Design and modelling. | 25/9/16 – 25/10/16 |
| **Phase Three** | DFM and complete ED process. | 25/11/16 – 15/11/16 |
| **Phase Four** | Manufacturing. | 1/2/17 – 1/3/17 |
| **Phase Five** | Assembly and testing. | 1/3/17 – 1/5/17 |

1. Budget

The project is funded by the company in its entirety.

|  |  |  |
| --- | --- | --- |
|  | **Description of Work** | **Start and End Dates** |
| **Phase One** | Unknown |  |
| **Phase Two** | Unknown |  |
| **Phase Three** | Unknown |  |
|  | **Total** |  |

1. Key Personnel

List the key personnel who will be responsible for completion of the project, as well as other personnel involved in the project.

|  |  |
| --- | --- |
| Client | UNITED HEAT TRANSFER PVT LTD |
| Sponsor | UNITED HEAT TRANSFER PVT LTD |
| Project manager | JUBIL MAHADEVAN |
| Team | BHARGAV JOSHI, BHUSHAN HURALI, SANJAY SUTHAR, TRUPTI KOTABAGI. |

1. Evaluation

THE EVALUATION OF THE PROJECT WILL BE CROSS VERIFIED WITH THE DIRECTORS OF THE COMPANY AS WELL AS THE HOD OF AUTOMATION AND ROBOTICS, MR. ARUN GIRIYAPUR.

THE PROGRESS WILL BE KEPT IN TAB WITH THE GANTT CHART AND THE TASK COMPLETION WILL COMPLETELY DEPEND ON THAT.

1. Next Steps

• THE MARKET SURVEY AND PROJECT RESEARCH WILL BEGIN SOON AFTER THIS.

• THE DESIGN PROCESS WILL FOLLOW.

• WE ARE THINKING OF IMPLEMENTING SOME INNOVATION BY PROVIDING REMOTE ACCESS OF THE SETUP TO THE FACTORY PERSONNEL BY USING IOT.