Design Doc Template

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# Introduction

## Summary

* A predictive maintenance algorithm which alerts the operations personnel on the condition of duct fan is proposed. The algorithm differentiates between obstruction to air flow and dust. Deposit on the impeller blades. Besides this, the status (running/stalled) of the duct fan is continuously logged to cloud for remote monitoring.

## Background

We visited thermal power plant at RAMAGUNDAM. There we find the problem with duct fans maintenance (schedule maintenance) which decreases the efficiency. This problem can be overcome by predictive maintenance. Good efficiency requires very small clearances between the blade tips and the duct.

## Definitions, Acronyms, and Abbreviation

# Design Overview

## Requirements

* Accelerometer
* Arduino Due
* Arduino uno
* Thingspeak cloud
* Battery
* Ductfan

### Documentation

## Future work

To maximize the accuracy level of the output.

# System Diagrams

# 

# Application Programming Interface

Industrial

commercial

# 

# User Interface

Maintenance of duct fans is predicted.



# Project Overview

## Communication and Tracking

* Business network
* Advertisement in local channels
* Social media
* Creating web pages

## Risks

If product is damaged then human health (employees and people) may be effected. Replacing of the product may be costly affair. Due to temperature accuracy of the product may be affected.

## Cost

3000

# Frequently Asked Question

Why accelerometer is used in our project?

What is the need of two microcontrollers?

References

[https://www.hackstar.io/matlab-iot/condition-based- maintenance-of-a-duct-fan-using-thingspeak-abb23d](https://www.hackstar.io/matlab-iot/condition-based-%20maintenance-of-a-duct-fan-using-thingspeak-abb23d)

[www.amca.org/whitepapers](http://www.amca.org/whitepapers)

Application Notes: vibration diagnostics for industrial electric motor drives, Bruel and kjaer