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Customer

One of India's largest engineering and manufacturing companies that focus on design, engineering and manufacturing for the sectors - power, transmission, industry, transportation, renewable energy, oil & gas and defence.

Problem Statement/Requirements

With strong competition and rapidly volatile economic environment globally, it is becoming increasingly important for manufacturers to use effective and efficient tools to increase productivity and reduce costs.

Customer needs to develop a solution that has the capability for real-time monitoring of their CNC Machine together with visualization and data analysis so that preventive maintenance programs can be implemented well before a breakdown or machine failure there by avoiding expensive post-breakdown repair and to eliminate production downtime.

Solution Methodology

SFO's industrial monitoring solution that offers enhanced control and visibility into operational parameters through remote monitoring and management of metrics such as oil temperature, level & viscosity, voltage, current, vibration and many more to enterprises such as cell tower operators or industrial manufacturers.

This IoT enabled solution designed specifically for industrial CNC machines continuously monitors the operational attributes using strategically placed sensors such as vibration, voltage and viscosity. Real-time analysis of the following set of attributes collected from the machine offers predictive maintenance through fault prediction alerts and notifications.

- ❖ Viscosity & Temperature of Oil Chamber
- ❖ Vibrations of gear box
- ❖ Current monitoring of AC main supply.



Brief description of product:

Solution Components

A. Hardware

- Processor
 - ❖ AM3354
 - ❖ 800 MHz speed
- Communication
 - ❖ Ethernet 2x 10/100 Mbit/s
 - ❖ 1 X USB 2.0 Host, 1 X USB 2.0 OTG
 - ❖ 2 X RS-232 Serial
 - ❖ 1 X Serial (UART) Debug port
 - ❖ 1XCAN
- Communication Protocols
 - ❖ Data protocol using HTTPS/SCP
 - ❖ Management protocol using HTTPS
- WiFi
 - ❖ 802.11a/b/g/n 1T1R
 - ❖ AP & STA mode operation
 - ❖ WEP, WPA-PSK, WPA2-PSK encryption standards

A. Software

- Upgrades & Updates
 - ❖ Remote Firmware upgrades via management software
 - ❖ Remote configuration updates via management software

Impact

- By analyzing various real-time operating parameters, our monitoring solution enabled the customer to get alerts on actionable predictions with respect to preventive maintenance and thereby to eliminate machine downtime, improve performance and save cost.

About SFO

SFO Technologies Pvt Ltd, the flagship arm of the diversified conglomerate, the NeST Group provides end-to-end design-engineering-software-manufacturing solutions to clients across geographies such as the USA, Canada, Europe, Middle East, South East Asia, Japan, Australia, and India. SFO has invested in building competence, scale and standards compliant process framework, in PCBA, fibre optics, Cable & wire Harness, Magnetics, High Level Assembly, VLSI design, embedded software development, etc. SFO's capabilities transcend the plain vanilla "Build-to-Spec or Build-to-Print" EMS and our ODM+ solutions are rapidly re-defining standards for the OEMs across Aerospace & Defence, Communications, Transportation, Healthcare and Energy & Industrial domains. .



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