



April 24, 2018

Customer

A global Leader and key Supplier to the rail, mining, marine, stationary power, and drilling industries. They help customers deliver goods and services with greater speed and greater savings using advanced manufacturing techniques, industry expertise and connected machines.

Problem Statement/Requirements

The customer is a leading supplier of rotary equipment for the U.S. railways sector. As part of their supplies, their key component used in locomotive braking needed a system to monitor its operation by running algorithms for fault detection and prevention.

Solution Methodology

SFO developed and manufactured an electronic system with the ability to capture the various operating parameters of component through sampling, logging, and analyzing data with a view to improve the performance through predictive maintenance, with the following features and functionalities:

- High precision simultaneous sampling of 3 phase currents and voltages at 5 KHz rate
- FFT (Fast Fourier Transform) based algorithms for fault detection
- Firmware update through USB and Ethernet
- Logs retrievable using USB mass storage
- Data logs from system can be opened and sorted using Microsoft excel
- Voltage phase imbalance detection
- Thresholds and major algorithm inputs made configurable using a PC application
- 50% of CPU loaded for simultaneous sampling; all the rest of functionalities optimized to perform within the remaining CPU time.
- Time critical tasks to be executed in parallel

Impact

- Our solution helped the customer implement Diagnostic System with the use of effective algorithm along with cost savings and reduction in time-to-market.

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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