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## Customer

The customer is India's leading provider of Automotive Power Train Solutions and Products. Specialize in Four-Wheel Drive and Synchronizer System, supplies transmission and transfer case components, subsystems, and complete systems for various automotive applications for small cars, utility vehicles and commercial vehicles.

## Problem Statement/Requirements

The customer wanted a re-engineering of some obsolete components in their ECU (Electronic Controller Unit) hardware to improve the performance and achieve cost reduction. The corresponding software (specifications were provided by the customer) to control the motor shift from the 2WD mode to 4WD mode based on user input for each terrain, and diagnostics based on error logging was also required by the customer.

## Solution Methodology

SFO leveraged their expertise in automotive hardware design and firmware design to develop and manufacture hardware and software modules for the customer's Transfer Case ECU to control the motor shift from 2WD to 4WD effectively by interpreting the values from speed and position monitoring sensors and controlling the user input accordingly. The SFO-developed end-to-end product also logged error codes and diagnostics was conducted based on the current value from the sensors. The final product had the following features and functionalities:

- Control application
- Error logging and backup Handler
- Shift motor driver and handler
- Electromagnetic clutch driver and handler
- Speed, position user input monitoring modules
- Voltage monitoring module
- Production and Sustenance support

## Impact

❖ Our solution helped the customer in the following ways:

- A plug-in ECU to replace the existing ECU with 40% BoM (Bill of Materials) enabling cost reduction.
- Multiple offerings under single roof thereby reducing vendor management overheads.

## 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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