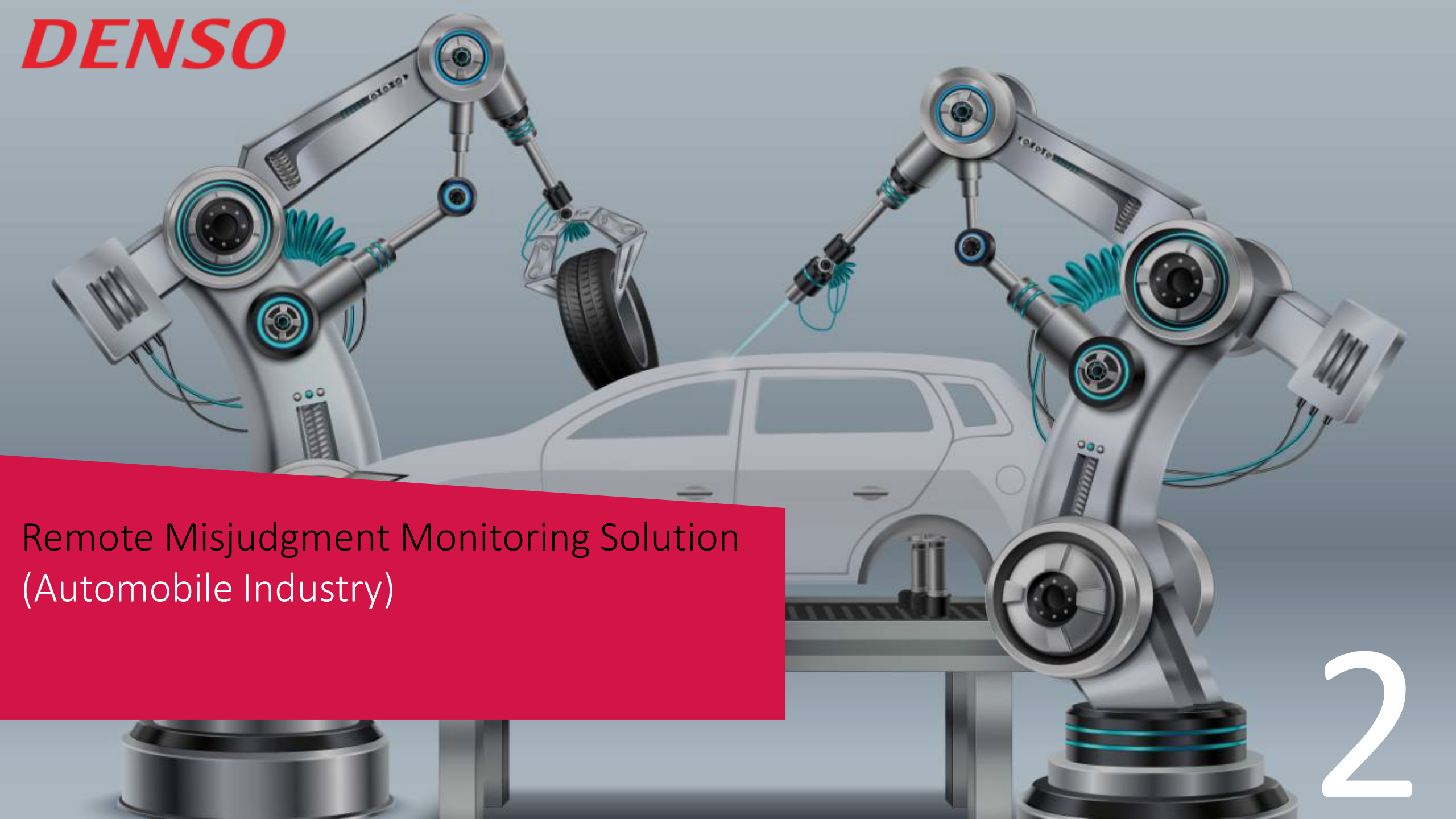
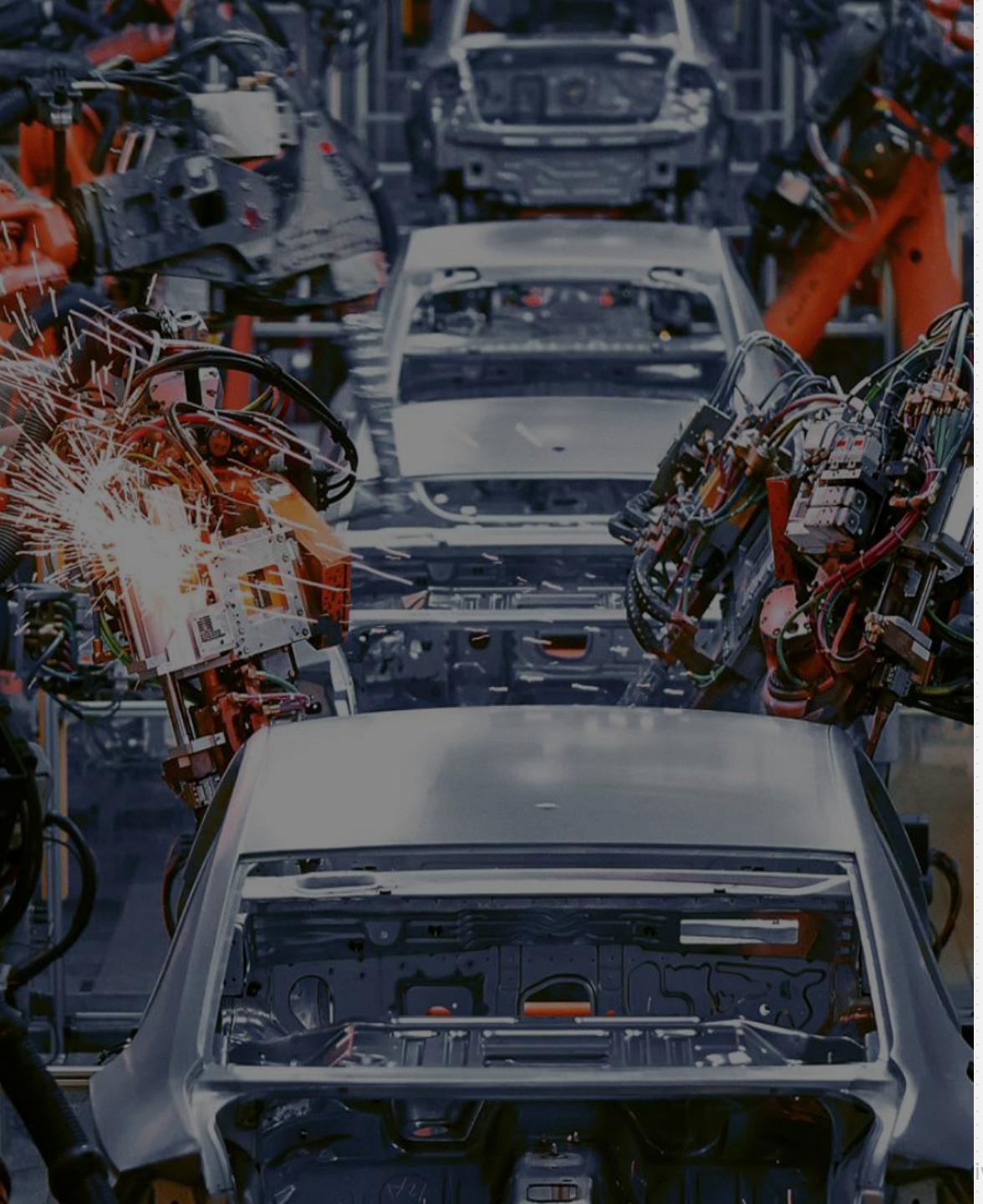
Digital Transformation – Case Study



Remote Misjudgment Monitoring Solution (Automobile Industry)

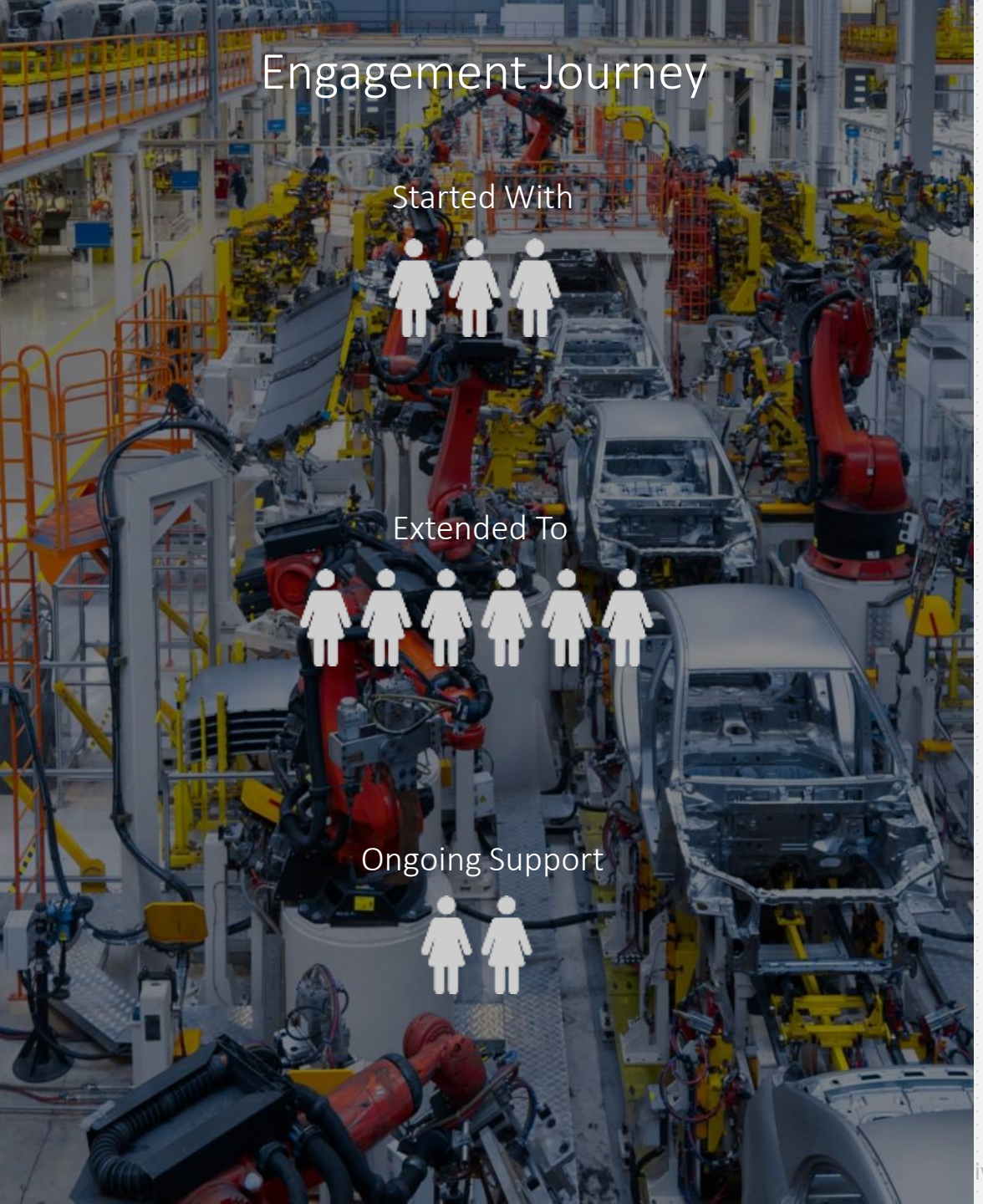


About the Client

The client is a global company focused on advanced mobility that positively changes how the world moves and contributes to greater well-being. They provide automotive service parts and are a leading global supplier to all major automakers in India.

The client owns an Automobile manufacturing facility. The client's customers include Tata, Toyota, and others. The testing centers at the client's facility perform testing on Electronic Control Units (ECUs) sometimes due to various reasons, the testing centers make judgment errors.

Therefore, a solution to aggregate the count of these judgment errors against various categories (Line wise, Model wise, Stepwise) is required.



Summary

On a day-to-day basis, the client is involved in the testing of the Electronic Control Units (ECUs) for automobiles.

During the testing, sometimes due to various reasons, the testing centers make judgment errors.

This whole task requires continuous manual monitoring at the location which makes the whole process very tedious.

Therefore, the idea is to aggregate the count of these judgment errors against various categories (Line wise, Model wise, Stepwise) and display it inside a web interface for better understanding.

Challenges

The testing centers at client's facility perform testing on Electronic Control Units (ECUs), sometime due to various reasons, the testing centers make judgment errors.

Therefore, this whole system needs to be digitally operated to aggregate the count of these judgment errors against various categories (Line wise, Model wise, Step wise)

Also, crucial protection must be provided to the whole system at the hardware edge.

Misjudgment – Remote Monitoring Solution for Denso

The proposed system is designed to aggregate and present misjudgment errors. The errors are categorized Line wise, Model Wise and Step Number Wise. The line here refers to the machine testing line. Model refers to a specific model of a machine put to test. The model number is NOT mentioned in the data but has to be inferred by the Serial Number. Step Number refers to the kinds of tests the product is subject to, examples being voltage and current. The proposed system should restrict access to authorized users only (Login Management). The application should take the path of data (CSV files) or line server from the user.

The solution should accept the label inputs against a particular Step-Number, store it and create a downloadable table.

Generate the log reports, about the status of the test (Pass/Fail). The frequency of generating log reports will be a day/shift/week.

Every time the application is executed, it has to get the summary report (Number of units tested, pass, and fail) for the designated (previous week) week of the calendar. Email Notifications of this, every time the application is run. Internet connectivity is required. Autorun function for a designated time on Sunday.

Misjudgment Remote Monitoring Solution – Technical Architecture

CSV

MSOffice 365

(Data Storage)

Python

ANACONDA

plotly | Dash

(Data Processing)

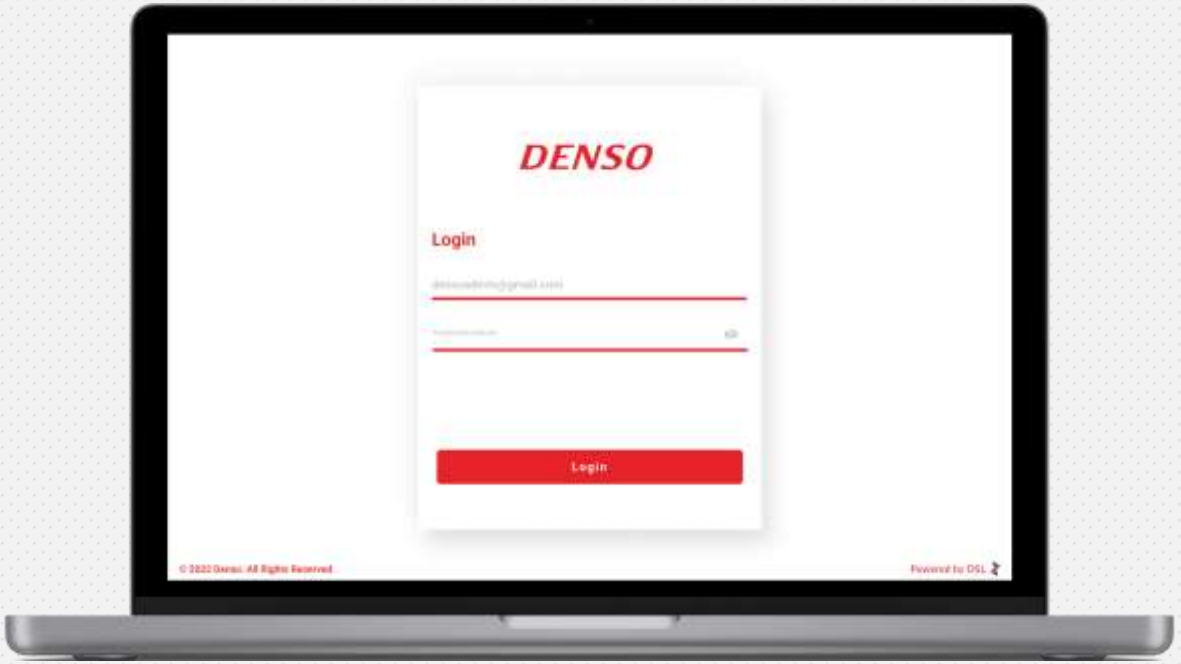
Misjudgement trend

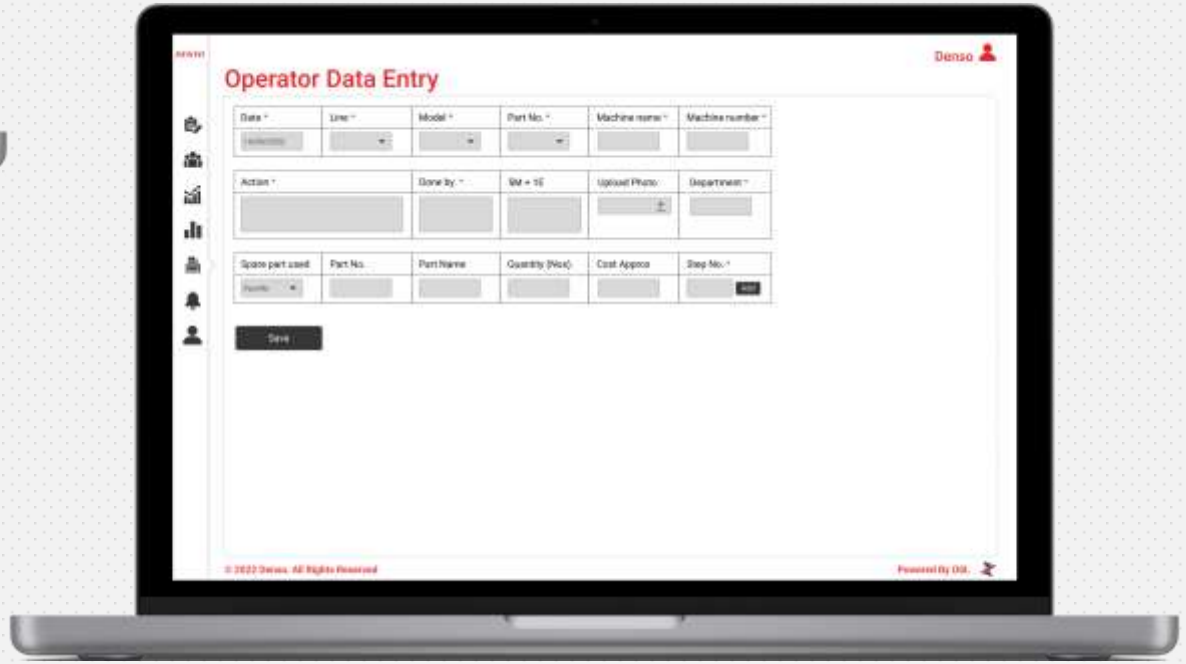
- Model wise
- Line wise
- Step number wise

(Data Visualization)

Optimized Solutions

Misjudgment Remote Monitoring Solution – Web Interface





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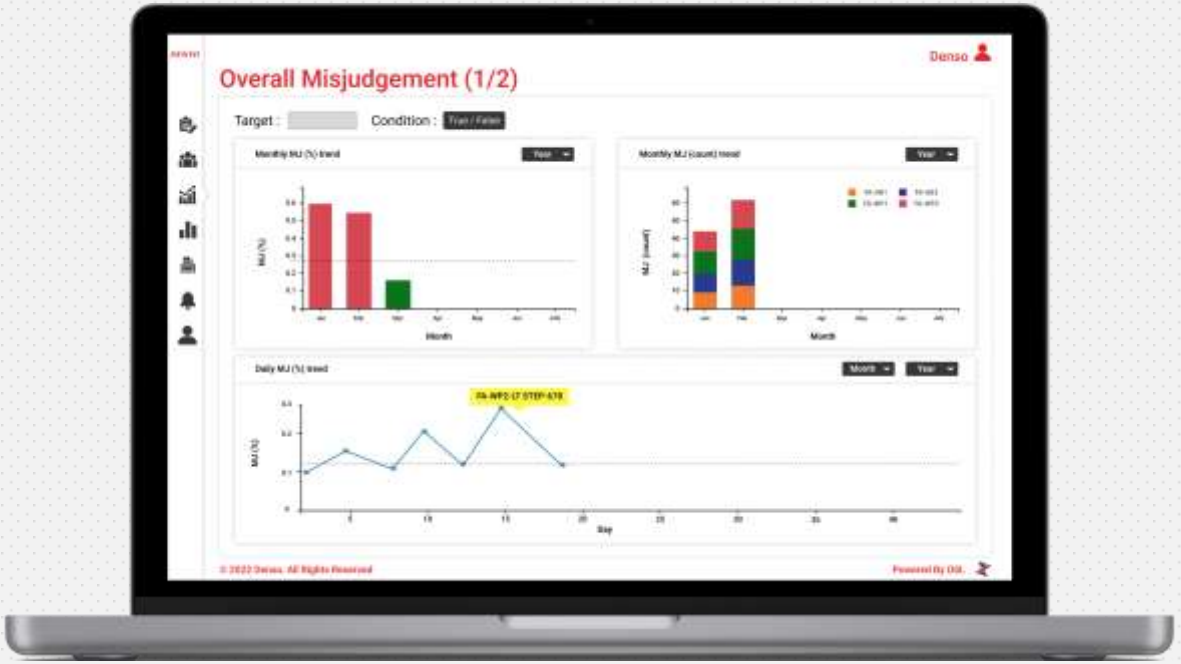
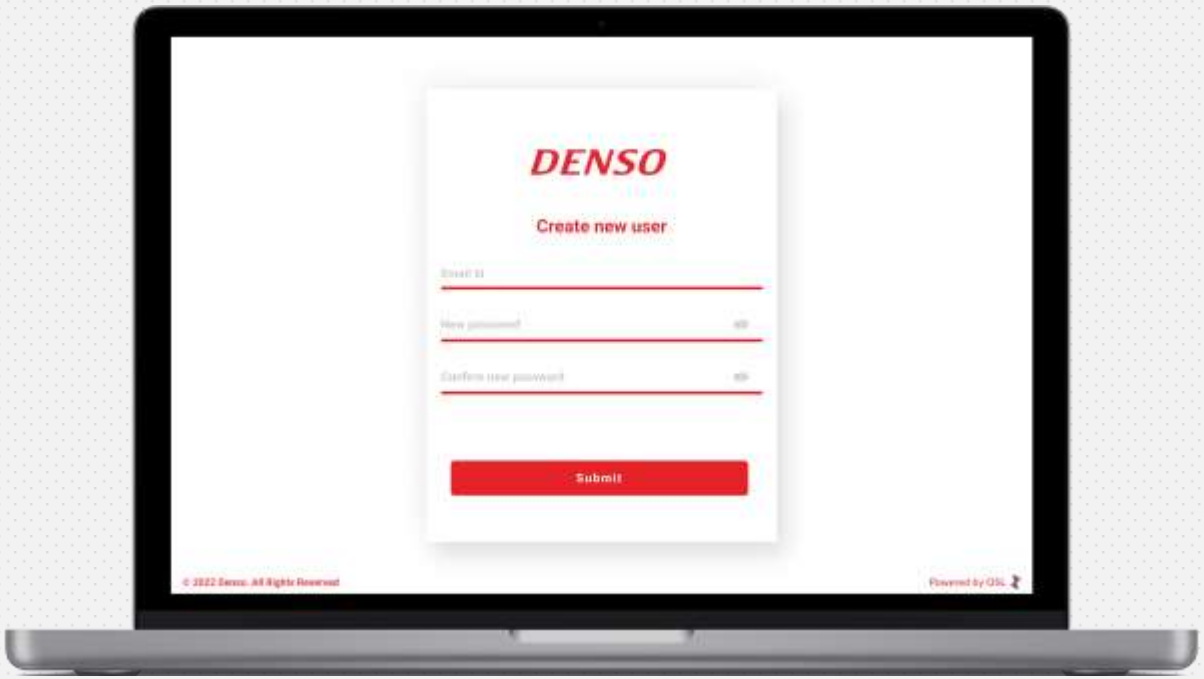
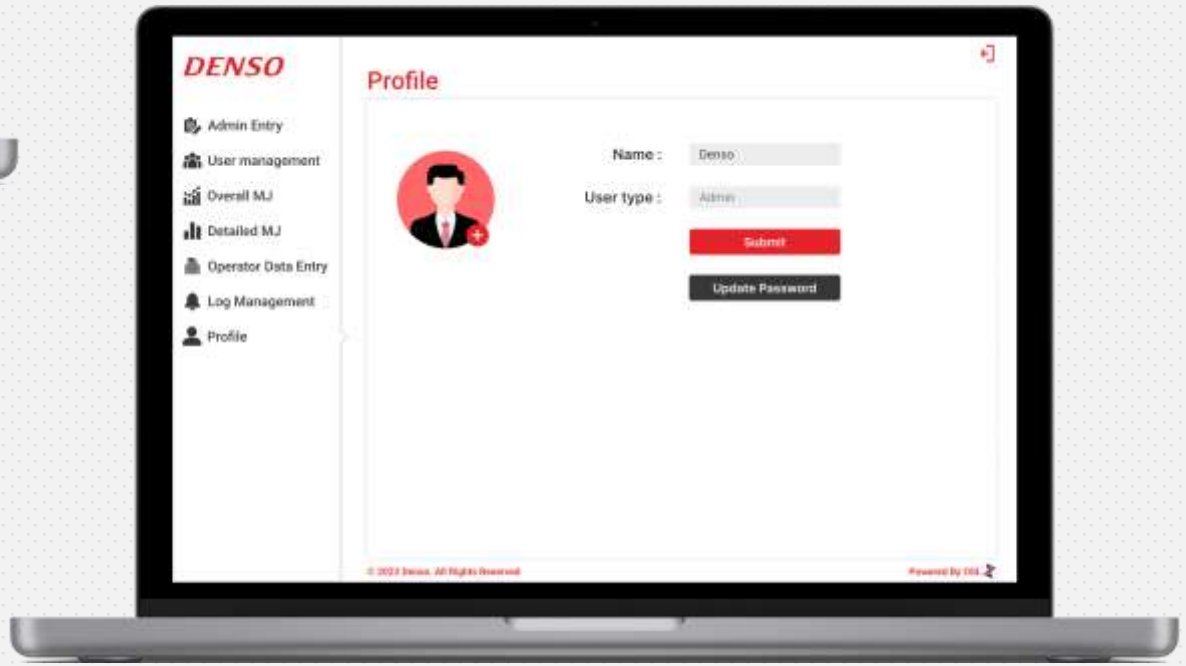
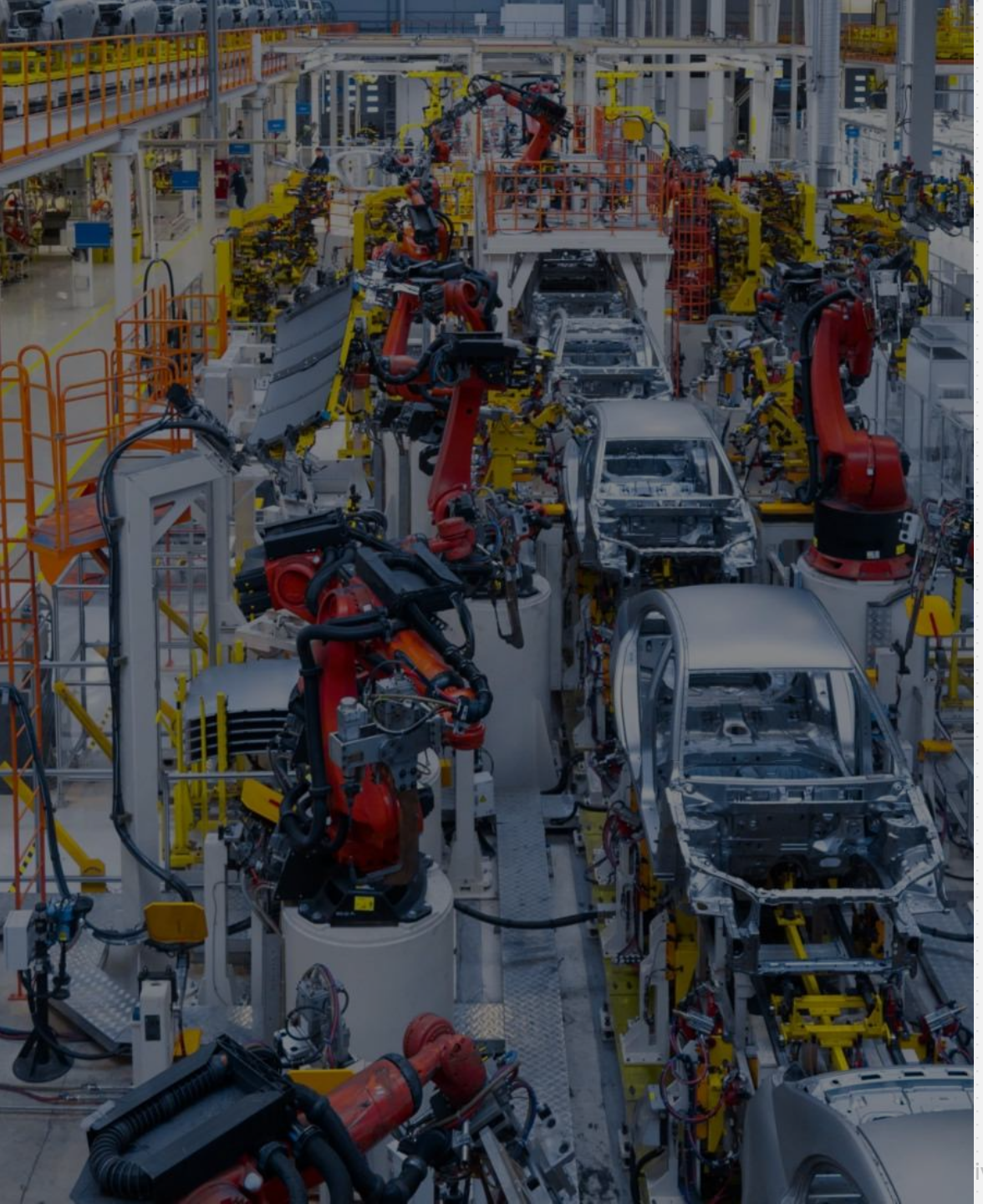


Misjudgment Remote Monitoring Solution – Web Interface







Value Proposition

Optimized Solutions has provided a system with the help of customized cloud, and Mobile application software that can handle and validate the functionalities of testing for Electronic Control Units (ECUs) on a digital dashboard.

By transforming the whole process digitally, the entire functionality of testing ECUs has been simplified, allowing the users to effectively monitor and analyze the whole process and overall plant efficiency.

Thank You