![Noesis, an Altia Company logo] ![Volkswagen logo]

CASE STUDY

Digital Shop Floor Management

A cockpit in a production line that provides **real-time visibility into key metrics**, **enabling quick issue detection** and **decision-making** by consolidating data from multiple sources to minimize downtime. It promotes accountability, **helping teams track performance** and **meet targets**.

By Highlighting deviations, it ensures rapid response and resource optimization. Ultimately, it supports continuous improvement and enhances safety compliance across the production process.

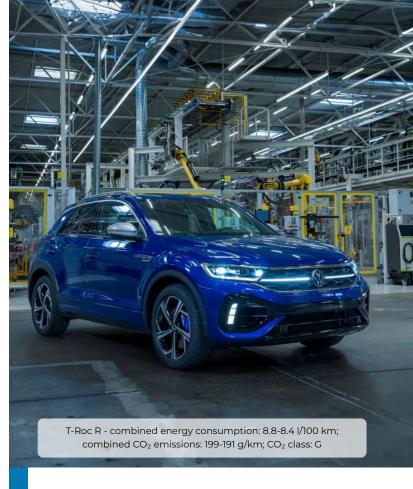| **Sector** Manufacturing | **Delivery Unit** Data Analytics & AI | **Solution** Grafana - dSFM |

5
different performance dimensions in manufacturing

23
different sources of data

~2
minutes data refresh

T-Roc R - combined energy consumption: 8.8-8.4 l/100 km; combined CO_2 emissions: 199-191 g/km; CO_2 class: G

THE CHALLENGE

Our client, challenged Noesis to implement a **web application for the production line that consolidates information** from various applications required to control the production line into one unique dashboard.

This information will be displayed along the production line on large screens and accessible from other devices, such as PCs and tablets, with an estimated total of 400 concurrent sessions.

Since it's a production line, data must be updated within 3 minutes. Another customer challenge was to find a technology that could fulfill the previous requirements with a reduced licensing cost, considering the high number of concurrent sessions.

Goals

> Refresh rate < 3 minutes;

> Consolidate data from different sources (Oracle, SAP, Files, SQL);

> 1 Dashboard;

> Low cost licensing;

> Present values from Areas (Assembly, Paint, Body, Stamping) to turn shift;

> Actual and Targets.

SOLUTION

The solution involves **implementing a dashboard that integrates data related to quality**, **volume deviation**, **safety**, **workforce**, and **budgeting for a production line**.

This information was structured across the **4 organizational levels** of each area (Stamping, Body, Paint, and Assembly), down to the level of the factory's 4 shifts, displaying current values, deviations, and targets at each level of the structure and at the respective checkpoints on the line.

As an application visible along the line on large monitors, it was **necessary to use color codes to represent deviations from the target**, and Grafana was chosen as the technology for this purpose.

It was also necessary to build a data lake to normalize all information from various independent global and local Volkswagen applications, with the capability to update within the 3-minute timeframe specified as a project objective.

RESULTS

The application provided with **Grafana technology** has allowed Volkswagen Autoeuropa to analyze near real-time data for :

› Production Quality at each antenna;

› Volume deviation at each checkpoint;

› Safety calendar;

› Manpower attendance;

› Budget for each team;

› TOP 5 defects: Evolution Daily, Weekly, Monthly and Yearly.

noesis
an **Altia** Company

Noesis is an international technology consulting company with almost 30 years of experience offering solutions to support companies' business and digital transformation. Noesis has an extensive portfolio of IT services, working in various areas including IT Ops & Infrastructure, Cloud & Security, Enterprise Solutions, Low-Code Solutions, Data Analytics & AI, DevOps & Automation, Quality Management, Enterprise Application Integration and Professional Services. The company has +1200 highly specialized talents and is operating in seven countries: Portugal, Spain, the Netherlands, Ireland, Brazil, the USA and the UAE. Noesis is part of the Altia Group, listed on the Spanish stock exchange BME Growth, with more than 3500 professionals working in eight countries and more than 20 locations.

Volkswagen Autoeuropa, a Volkswagen Group factory in Palmela, Portugal, currently produces the T-Roc model, handling all stages of production: stamping, bodywork, painting, and assembly. In 2023, the plant won the prestigious "Automotive Lean Production Award" in the "OEM" category, joining a select group of top European car manufacturers. With 4,851 employees, the factory had a notable economic impact, contributing 1.3% to Portugal's GDP, producing 220,100 units, and marking its third-best year, with 934 cars produced daily, mainly for the European market.