



Automated Analysis and Compilation of Test Reports

Toyota Material Handling Manufacturing Italy Spa

Challenges

- Automated post-processing of acquired data
- Automated application of the analysis algorithm on the acquired channels
- Automated generation of test reports

Solution

- Custom software

Resources

- Vishay 7000

The Goals

Toyota performs **tests on forklifts** on test circuits with the aim of verifying operation and parameters of the components. This analysis requires the acquisition of high-frequency signals from many strain gauge sensors. The acquisition is made through a dedicated system (Vishay 7000).

After the acquisition, given the large amount of acquired data, **critical post-processing operations** based on a complex algorithm developed by Toyota are requested.

In particular, the post-processing procedure **requires the intervention of a technician** who, channel by channel, applies the algorithm and compiles a report containing the test data and the obtained results.

Toyota **needs to fully automate the process of post-processing** of the acquired data, **the application of the algorithm** and the **generation of the test report**, so as to drastically reduce the time of analysis and report compiling.

TOYOTA

MATERIAL HANDLING

Toyota Material Handling Manufacturing Italy Spa is a group of TOYOTA Material Handling which has its Italian headquarters in Bologna, operating in the production of forklift trucks. It is active since the mid-70s and works in a multinational context by providing a complete range of technologically advanced and trolleys for indoor and outdoor.

Toyota Material Handling Manufacturing Italy Spa uses advanced technology to provide high quality and reliable products and employs a technically trained staff, both in the design department and in the production, which guarantees professional care and maintenance.

www.toyota-forklifts.eu

Toyota Material Handling
Manufacturing Italy Spa

Via Persicetana Vecchia, 10
40132 Bologna (Italy)

Solution

To meet the requirements, a **custom application** perfectly adapted to the needs of Toyota was made.

Since the analysis requires to acquire many high-frequency signals for several minutes, the file containing the data acquired by the strain gauge may have **significant dimensions**.

The realized application has to manage this file, and was therefore been **optimized to handle large amounts of data** (even several hundreds of MB).

For each channel, operator can **easily define its properties and choose the post processing operations** to be performed before the application of calculation algorithm for the data analysis.

After the channel configuration phase, the operator can start the **automatic procedure** which, without requiring other interventions, **applies the algorithm** for the data analysis on all the acquired channels and **completes the test report**.

The application also allows the operator to configure a new test that will be queued after the one that is running.



TOOLS for SMART MINDS (T4SM) is a system integrator that develops software solutions for manufacturing companies.

T4SM is Alliance Partner of National Instruments and the development team consists of Certified LabVIEW Architects (CLA) who have long experience in LV Real-Time Programming and LV-FPGA.

T4SM designs from scratch to high-quality solutions easily integrable with third-party products, which help customers to shorten time-to-market of their systems.

T4SM uses the AGILE methodology for the development of software projects and the co-design of applications with immediate benefits for customers, helping them to gain a competitive advantage over competitors.

For technical support and product information:

www.toolsforsmartminds.com

TOOLS for SMART MINDS
Corporate headquarter
Via Padania, 16
25030 Castel Mella
Brescia (Italy)

Benefits and Results

With the provided solution, the process of post-processing of the acquired data, the application of the algorithm and the compilation of the test report, **have been completely automated, drastically reducing the time** of the operations.

“Surely the best supplier we have worked with. Great attention in meeting the required specifications. Professionalism and reactivity in the resolution of any type of problem. The result, then, has saved us three working days for each test performed, with a unique flexibility of data analysis.”

G. P. Bonelli - Advanced Technology Manager - Toyota Material Handling Manufacturing Italy Spa