

Making monitoring for fuses tests easier with a single application

The goals

MTA needed a software for testing fuses during the development and production process. In order to guarantee the **best performances**, in facts, every product must have **definite electrical and physical properties** and comply with the **severe regulations** of the automotive industry. These parameters are usually checked with **cyclic, several weeks long, careful tests** and single melting tests. The MTA laboratory uses DC power supplies capable to deliver up to 2500 A. Multiple components have to be tested in the same time with different DC patterns to improve quality of the executed tests. A complete log is required to analyze data gathered during the unmonitored tests. Moreover, test stations have to be interchangeable and configured in a few clicks, to control the connected DC power supply.

MTA required a system for testing fuses and verifying their properties to be used in their laboratory.

The required solution had to:

- **Control DC power supplies** that can produce wide ranges of DC;
- Enable the operator to **monitor voltage signals** and temperatures;
- **Create DC patterns.** A wave editor with simple interface allows creating DC patterns as a composition of basic signals: square wave, tone, exponential, etc.
- **Execute tests on different components at the same time.**
- **Manage programmable safety conditions.** The software must protect DC power supply and switch it off when monitored signals go out of safety ranges.



MTA Spa is a leading company in the design and production of electronic and electro-mechanic components for the automotive, the off-highway and race industry. After about 60 years of work since its foundation, MTA has now two production units in Italy and five foreign branches and it produces and works for worldwide businesses.

MTA is well known by the most important car manufacturers for the production of fuses, power distribution boxes, connectors and terminals, radiator or gasoline caps and level sensors.

Moreover MTA has reached a prominent place in the electronics area for the production of dashboards for different and several applications, data acquisition systems, telemetry and optical detection systems.

www.mta.it

MTA S.p.A.

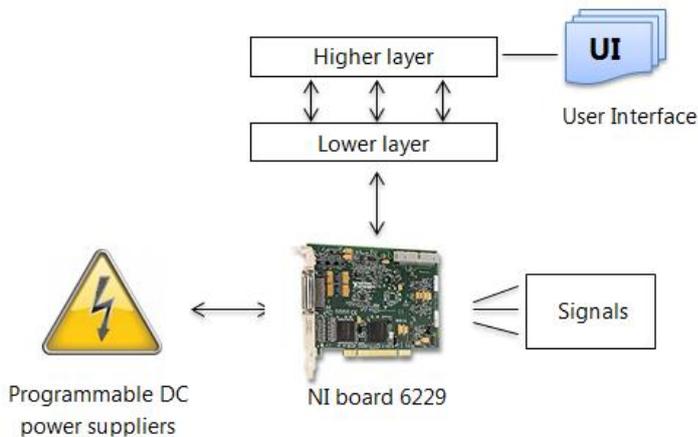
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The solution

T4SM has worked out a **single application** to fulfill all requirements listed before: the proposed solution is made by two software layers.

- **The higher one** manages different kinds of tests and handles user interfaces customizable according to the technicians' needs;
- **The lower one** interfaces with different suppliers of the laboratory through the NI board 6229.

The interaction between them and the definition of the layers interface has been very simplified by **Object Oriented Programming of LabVIEW**. Different Design patterns have been implemented to deliver a clean, easy to maintain LabVIEW code.



The recorded data of the cyclic tests and melting tests are saved in the **MS-SQL database**.

Benefits and results

MTA has installed four stations for testing and monitoring in its laboratory. Thanks to the operators' feedbacks T4SM has succeeded in improving the application UI and in making absolutely more safe and fast every testing operation.

With the application of T4SM solution, MTA has finally gained a **great time saving** and **improvement in the tests precision**.

Resources

- LabVIEW 2011
- NI 6229
- Windows 7
- MS-SQL 2008 R2

"We are fully satisfied of T4SM's provided solution because of working with them let us have a really customized and flexible tool "tailored" on our needs. Continulative follow-up, debug and feedback procedure gave us this new tool in a really short time fulfilling with all the original requirements and something more. Working with them is easy, if you need a ready to start application, with T4SM you are on the right way."

Mauro Cresta
Electric Area, Test leader
MTA Laboratory



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