



Machinery and HMI interfacing software

Cembre

Goals

- High performance measuring system
- Bidirectional communication between test bench with HMI software and project management software

The Challenge

Cembre is the leading Italian manufacturer and one of the leading European manufacturers of **electrical compression connectors** and tools for their installation.

In the production department Cembre has built an innovative test bench with the implementation of HMI software for tool testing. Test bench has been built to meet the need for a **high performance measuring system**.

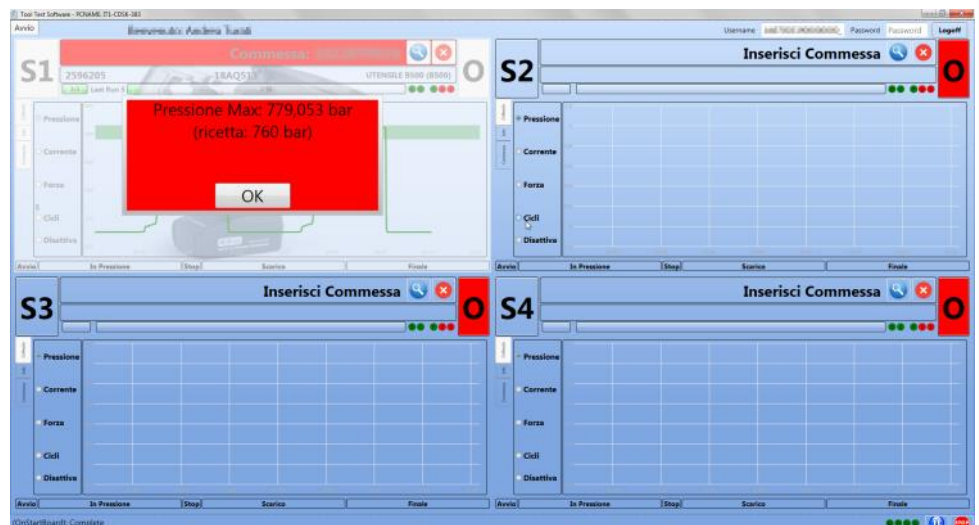
TOOLS for SMART MINDS is required the versatile reliable solution for the management of signals acquired with National Instruments circuit boards and to define a communication protocol that allows HMI written in different languages to use the

Solution

Development of a real-time, high-performance communication protocol that allows fast communication between the technological test bench built by Cembre and the project management system.

Resource

- Real-time and high-performance custom communication protocol
- National Instruments Card
- Network cable



Interfaccia HMI

The Solution



CEMBRE is a leading European company in designing and manufacturing electrical connectors and accessories for cables, tools for their installation, cable glands, industrial marking systems and supplies important markets in the railway, industrial quadrastic and utilities sectors.

The company, founded in 1969, is based in Brescia. Its offices, factories, warehouses, laboratories and services are spread over an area of 60 thousand square meters, set in an area of about 120 thousand square meters.

The rational organization of the spaces has made it possible to create comfortable working environments in safe and efficient conditions.

CEMBRE has over 700 employees distributed in the Italian headquarters and in its five branches in France, Germany, Spain, UK and USA.

Attention to quality, technological innovation and customer orientation are the main objectives that the company focuses on with commitment and passion, through a team of highly trained and qualified people.

The company offers a catalog of over 12 thousand articles and there are about 200 patents and patent applications filed.

www.cembre.com

Cembre S.p.A.

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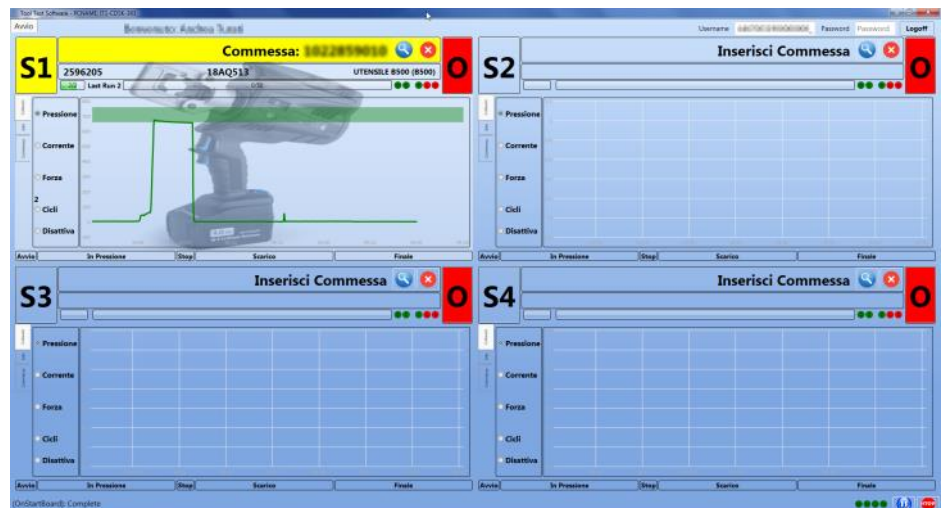
T4SM has developed a high performance real-time protocol that allows third party programs, developed with different programming languages, to control the operation of the test bench.

The main data acquired are:

- **National Instruments measuring system status**
- **Sensor signals**
- **Bench components status**

National Instruments hardware has allowed Cembre to design the test bench in a modular way, guaranteeing high reliability in measurements and high performance.

The use of different programming languages for the realization of the HMI has allowed Cembre to create a test bench with a simple,



Interfaccia HMI

intuitive and very innovative interface.

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:

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DEVELOPED BY
 TOOLS for SMART MINDS
 CASE STUDY | SOFTWARE BANCO DI COLLAUDO - CONTROLLO QUALITÀ



Diagramma della soluzione proposta a Cembre

Benefits

- **Fast system development** with the guarantee of high performance.
- **Easy two-way communication** between test bench, HMI software and project management software.
- **Automatic reconnection** and reconfiguration of National Instruments hardware in case of anomaly
- The **complete diagnostics** of the CompactDAQ acquisition system is available at the HMI.



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Client's Feedback

"T4SM was involved to identify the solution to several problems that made the realization of an innovative test bench complex. With extreme competence, concreteness and speed we were able to implement an effective and robust solution, which allowed us to finish the project successfully".

Andrea Turati

ICT Department - Business Information Manager

Cembre