T4SM
TOOLS FOR SMART MINDS

Case Study

Acquisition of seismic test data

Eucentre Foundation

Challenges

- Standardization of the systems used

- Having a general support but also robust and flexible

- Reduction of time for set-up operations of customized data acquisition systems

- Reduction of time for checking the test results

Solution

- iDaq
- EasyDatalogger
- StripChart
- Custom integrations

Resources

- iDaq
- EasyDatalogger
- StripChart
- SCXI Chassis
- Compact DAQ Chassis

The Goals

The Eucentre Foundation, **European Center for Training and Research in Earthquake Engineering**, deals with training and research on the reduction of seismic risk. The Center is divided into several research areas, among which there are **two experimental laboratories for real-scale testing of structures or components**, using the largest vibrating platform in Europe.

Since its inception, the Eucentre Foundation has focused on the continuous adaptation of its standards to the most modern technologies of experimentation, acquisition and analysis of data.

Nevertheless, the continuous internal development of software has soon led to a **need for standardization** through the use of a **sufficiently general but also robust and flexible support.**

The need was also to **reduce the time required for set-up operations** of customized data acquisition systems and **for checking the test results.**

After extensive research on products available on the market, it was decided to adopt iDaq and Easy Datalogger as data acquisition systems.

The Eucentre Foundation, European Centre for Training and Research in Earthquake Engineering, based in Pavia (Italy), is a non-profit organisation that promotes, supports and sustains training and research in the field of seismic risk mitigation. The Eucentre was founded in 2003 by the following institutions: Italian National Department of Civil Protection, University of Pavia (Italy), Italian Institute of Geophysics and Volcanology (INGV), Institute of Advanced Study (IUSS) of Pavia (Italy).

The core activities of the Foundation are: applied research in the field of earthquake engineering, with a view to improve existing practice in assessment and reduction of seismic vulnerability and risk; support work towards the development of guidance documents for both practitioners and governing bodies, bringing international state-of-the-art into Italian design codes and regulations; scientific and technological consultancy, at both national and international levels; training for practitioners and technicians.

www.eucentre.it

Eucentre Foundation
Via Adolfo Ferrata,1 – 27100
Pavia, Italy

Solution

The initial product supplied by T4SM was **iDaq**, enriched by the two additional components **Easy Datalogger** and **StripChart. iDaq** is a configurable and expandable software for the acquisition, visualization and insertion of data developed internally.

In a first phase, the product was tested according to the specific needs of Eucentre, which also included the **use of National Instruments hardware of different generations.** iDaq is the only solution that, in addition to supporting the latest acquisition systems (CompactDAQ), allows working with previous generation systems.

A series of possible developments necessary **for the complete integration of the software for the functional purposes of the laboratories** were subjected.

After some rapid iterations, T4SM has included all the required changes, making available **a customized version of the product, complete with all the necessary features.**

Control room. From the window it is visible the vibrating platform on which the buildings are built in full scale for testing; on the monitors the iDaq interface is displayed.

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
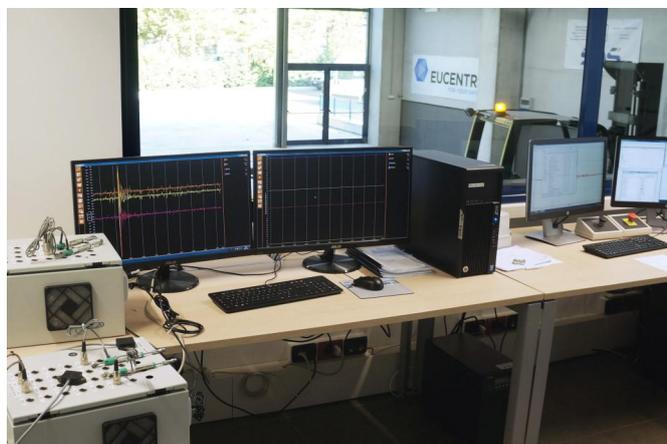Via Padania, 16
25030 Castel Mella
Brescia (Italy)

Benefits and Results

Immediate advantages were found, consisting in the **reduction of the times** both for the set-up operations of customized data acquisition systems and for the immediate control of the test results.

The gradual introduction of the T4SM systems has also led to a greater **standardization of the systems used** and to a general leveling of the capabilities of the individual operators translated into **greater role interchangeability.**

"We needed to standardize our data acquisition systems through the transition to a sufficiently general support but also robust, flexible and behind a working group ready to grasp the suggestions on possible developments based on the needs of the individual user. After extensive research on the products available on the market, it was decided to adopt iDaq and Easy Datalogger (editor's note: additional component of iDaq)."

MEng Filippo Dacarro — Director of Experimental Laboratory — Eucentre Foundation

Control room.