



TOOLS for SMART MINDS

Case Study



Interconnection for Italian National Industry 4.0 Plan with a complete and scalable software solution

Manital

Goals

- Interconnection of a machine
- Automation of data collection and history
- Compliance with legal requirements for the Italian National Industry 4.0 Plan

Solution

Based on a system consisting of iDaq, Digital Factory 4.0 and Liliium that communicate with the machines and the company ERP.

Resources

- iDaq
- Digital Factory 4.0
- Liliium

The Challenge

Since its foundation, Manital has been one of the leading companies in the Made in Italy production of door and window **handles**, thanks to the combination of quality and design with the desire to experiment and innovate.

Manital needs to **interconnect** a **new machine** to **automate** data collection, increase **efficiency** and benefit from the tax incentives provided by the **Italian National Industry 4.0 Plan**.

The challenge with Manital is to **interconnect** the machine **in a very short time**, since the request to TOOLS for SMART MINDS is made in December: one of the **requirements** for access to the hyperamortisation is in fact to interconnect **by the end of the year**.



Manital was founded in 1990 as a manufacturer of door and window handles.

By investing in design and innovation, Manital, in almost 30 years of production, has succeeded in redefining the quality and stylistic standards in the production of door and window handles. We are also proud to be 100% Made in Italy door and window handles manufacturers; every detail and every stage of production is entrusted to highly qualified specialists within the company structure.

www.manital.com

MANITAL Srl

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Solution

TOOLS for SMART MINDS was able to meet Manital's needs in **just a few days** thanks to the **software solutions for Industry 4.0** already developed and used by several customers.

iDaq, Liliun and **Digital Factory 4.0** contribute to create a **modular, scalable** and **complete solution, open** to future implementations.

They respectively serve to **communicate** with **machines**, **transfer information** and **monitor** the **entire plant** in real-time.

The machinery, a grinding robot, has been **connected** to the company **ERP** via **custom protocol**.

iDaq communicates with the machinery in direct form by taking the main operating parameters.

The acquired data are:

- Machine status
- Number of produced items
- Alarms

Digital Factory 4.0 forwards the item to be produced on the machine.

Lilium takes care of **transferring the data** to the company **database**, from which the **ERP extracts the information** for viewing and archiving.

The information that is passed to the machine at the start of the job is mainly the following:

- Code and name of the production order
- Item name
- Quantity of pieces to be produced
- Name of machine programs

CASE STUDY | INTERCONNECTION FOR INDUSTRY 4.0

T4SM DEVELOPED BY TOOLS for SMART MINDS

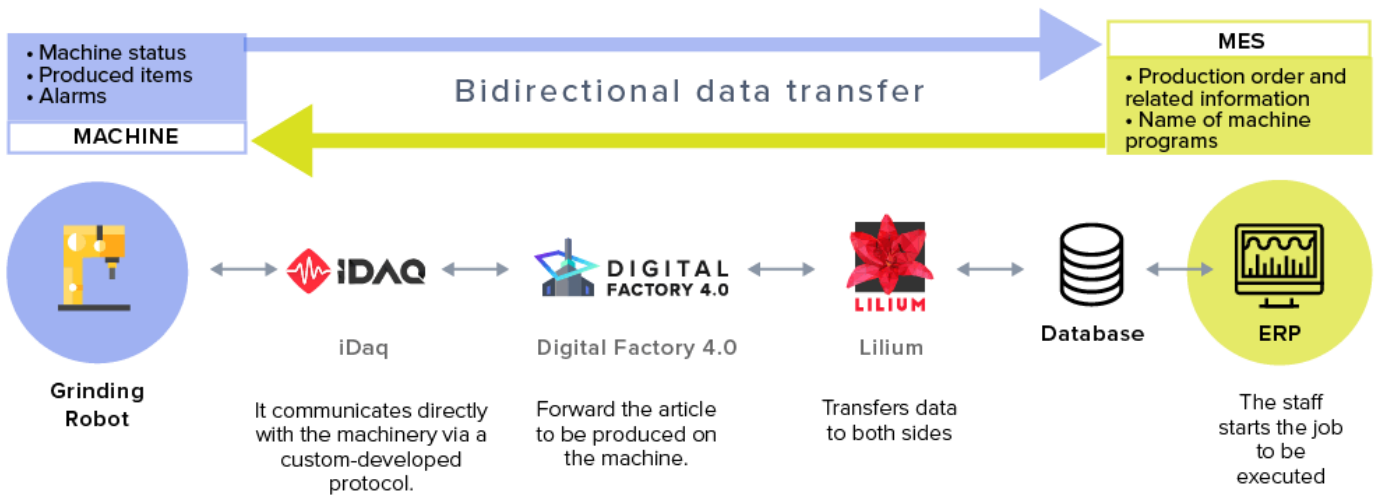


Diagram of company interconnection in industry 4.0 perspective



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

Manital's need has been achieved in an extremely short time and with a high-performance, modular, scalable solution that is open to future implementations. Manital has thus achieved considerable benefits:

- **State incentives under Italian National Industry 4.0 Plan:** all the requirements and timing required by the MISE to access tax benefits were met.
- **Determination of times and costs per production batch:** the real-time monitoring increases the efficiency of the entire production.
- **Reduction of the possibility of manual errors:** the automation of data passage allows them to increase the accuracy of the information and reduce human errors.
- **Data shared in real-time throughout the company:** thanks to automatic data acquisition, data is immediately available in all departments and offices of the company.
- **Time saving:** all the information necessary for the production of the order is sent directly to the machine when the order is started in the ESM by the personnel.
- **Production traceability:** all production cycle data is tracked allowing a history for each production order.



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Potentiality

The solution is **fully scalable**. From the field point of view, it **allows both to acquire new sizes and to connect new machines quickly**, ensuring a minimum impact on the existing system.

Thanks to the **modularity** of *iDaq* it is possible to interconnect machines with technologies and functionalities even different from those already connected.

From the management point of view, *Lilium* is open to interface with third-party software for visualization, data analysis and business intelligence.

Finally, *Digital Factory 4.0* allows to apply **Artificial Intelligence** algorithms, such as **Machine Learning, predictive analysis and process drift control** for each machine and each plant. This makes it possible to **predict stoppages and failures** in order to **intervene promptly**, thus **reducing downtime** and production costs.

Client Comment

“I am very satisfied with this new machine, which completes the workings of the cleaning department very well. I'm very happy with the collaboration with T4SM because all the collaborators have demonstrated, in addition to availability, precise and timely technical skills that have allowed me to achieve my goal in a short and unexpected time.”

Luigi Bigoloni
President
MANITAL SRL