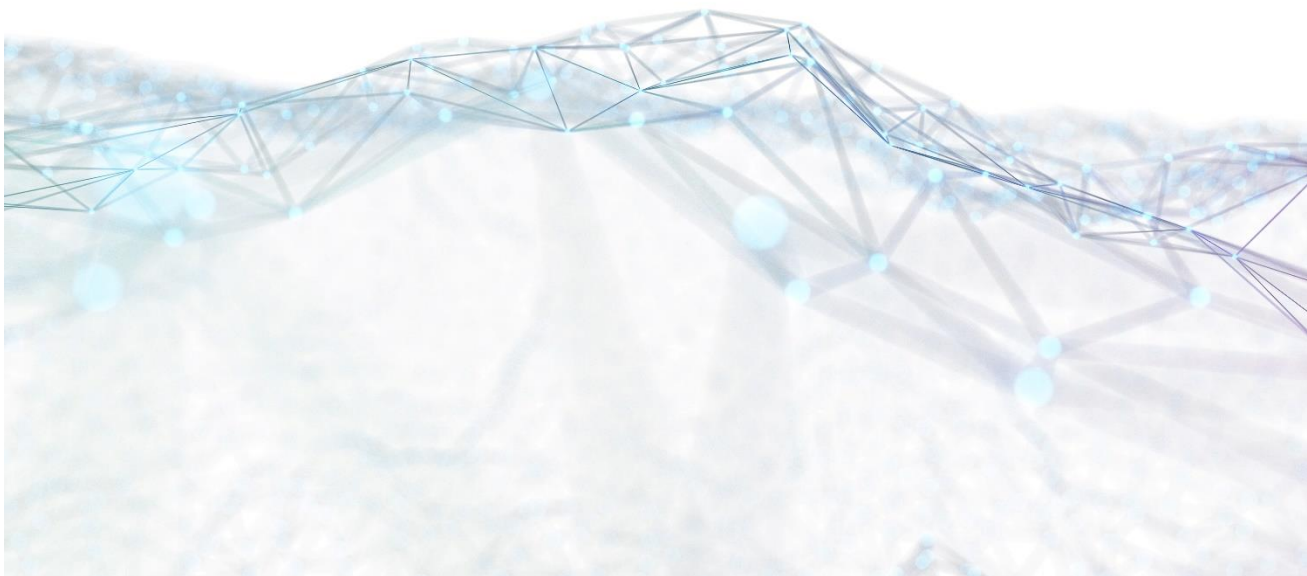


# Digital Transformation in Industry – New Solutions and Trends by Controlar



**Controlar**  
innovating industry

## Overview

With a great number of workers again in confinement and the Coronavirus crisis taking a continuous heavy toll on industry, digitalization becomes mandatory for companies that wish to keep their business running and stay ahead. The digitalization of industry means a new embedded usage of different digital technologies, which, among other advantages, ensures the reduction of human contact, thus preventing the COVID-19 spread among workers.

The use of such technologies, as the Internet of Things (IoT), Augmented Reality (AR), Robotics and Automation Systems is, therefore, becoming a top priority on many industries' management agenda.

## Benefits and Challenges of New Digital Industrial Technologies

The influence of digitalization on industry has been discussed for a few years. However, in the last few months, a greater need has emerged caused by recent challenges both for the companies and workers, i.e.:

- Exponential decrease of employees working in the field, as a vast majority of people is working from home.
- Increase in the precaution and safety recommendations that is required of those still working in the field. Among these are social distance, isolation and work safety procedures, the mandatory use of more personal protective equipment, strict rules regarding the cleaning of working tools, etc..
- Difficulties in travelling between different countries, with unexpected travel bans and restrictions being imposed without early notice.

As the remaining workers need to withstand harsh rules to keep them and others safe, and many other tasks remain undone, the use of digital tools such as IoT, AR and robotic solutions is mandatory to ensure the continuity of some activities, particularly those related to production, monitoring, maintenance and repair.

With this pandemic, new rules have emerged to encourage interoperability, ensure security, and protect workers. In such scenario, the idea of sensors and actuators connected by networks to assist in production monitoring, of remote assistance with AR, and of automated tasks, among other digitalization solutions, become desirable.

Companies that are already using these may benefit from the value of digitalization in a short term, so choosing this path becomes a significantly strategic decision for companies in all industries.

## Using the Best Approach and Choosing the Right Solution

Digital industrial technologies are expected to operate for long periods and to remain reliable. Several critical factors, such as the equipment size, the production location, environment, and network complexity, can emerge as true challenges. Still, every application has its own specifications, guidelines and requirements.

In order to address the variety of applications, Controlar has put forward different solutions of hardware and software combinations, which can be customized and tailored to each customer and context.

## Industrial Assistance with Augmented Reality (AR)

With the increasing globalization of businesses, the need to travel whenever specific machines around the world need repair or assistance is high. This situation is costly for the industry as repairing actions increase production down-time and maintenance costs.

Through AR, it is possible to perform various maintenance operations with better quality and effectiveness, and with no need for travelling, nor physical interaction. The on-site technicians' work becomes more efficient by viewing real time precise instructions provided by an off-site expert using a mobile phone, tablet or AR glasses combined with an assistance application.

Controlar is developing a system for remote technical assistance in industrial environments using AR. This innovative solution is intuitive and contains several functionalities that improve the experience of remote assistance with no difficulties. Machines' internal information (such as user manuals, 3D models, electrical schemes, ...) can also be integrated. Bearing in mind the extreme relevance of information security in this context, this platform includes an encryption module, that keeps all the exchanged information secure from both internal and external threats.

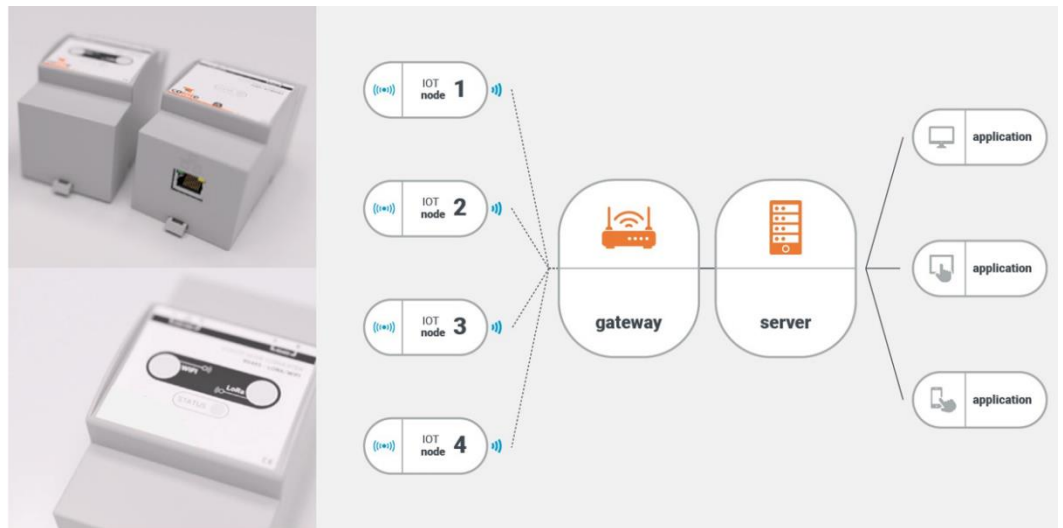


## Industrial IoT Networks

Monitoring both production and machines' status is common for most industries and factory floors. An accurate and timely monitoring of several variables can lead to the detection of malfunctions and problems in the efficiency of production. The correction of these will certainly decrease costs and increase processes' efficiency.

Controlar developed an **IoT device management platform** for industrial monitoring applications that uses LoRaWAN® and Wi-Fi communication to increase the coverage of the factory floor. This is a highly scalable solution, allowing the simultaneous use of a high number and types of sensors, actuators, and gateways. It can be used with a Cloud-based or on- premises. All the retrieved data is then centralized and can be analyzed with different dashboards in which alerts can be set for certain variables. These may be freely configurable by each customer. Controlar **IoT management platform** keeps all the information secured with the implementation of encryption modules in the communication layers and database.

Undoubtedly, this solution has great potential for a large number of industries, when it comes to be a part of the Digital Transformation movement.



## Automation and Robotic Solutions

Automation systems improve the production efficiency of industries that use them, since most of the production and assembly tasks need high level of accuracy, which become at risk when performed by human operators. In fact, human interference, i.e., human-made mistakes, is one of the main reasons for product failure.

More importantly, automated solutions will provide the social distancing as required these days.

Controlar holds high expertise in developing **automation solutions** to perform a diverse number of tasks for the industry, from assembling, screw driving, welding, greasing, visual inspection for quality assessment to haptics and leak testing, among others.

The company's industrial automation solutions include the use of advanced technology, project design, project development, planning, execution, installation, and assistance. Each project is conceptualized, designed, planned, built, and programmed by Controlar experts in each of these fields.

Nevertheless, collaborative, and flexible solutions, which are already a strong presence in the automation market, are also envisioned in the future of Controlar. Their purpose is to help operators in certain tasks, assisting them in their work, side by side, as combined forces. Such technologies, as collaborative robotics, are major players in the future of industry and can be integrated by Controlar engineers to meet any automation challenge.



## Conclusion

Industrial digital transformation is not only about changing the whole IT system, but turning interactions, communications, and business models into (more) digital ones, while transforming the organizational culture and adapting people to it. The recent events lead to a need to increase the speed of transformation, with a fast adoption of several solutions so business activities could continue. The interconnection of different systems has a special role in digitalization, in which information security is of utmost importance.

Controlar, as a technology and innovative systems provider, can be the right partner to help companies and industries to adopt this new paradigm with up-to-date and tailored solutions.

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