



# Digitalization from field to fork

The bonÀrea brand is inextricably linked to the historic town of Guissona, located in the province of Lleida (Catalonia, Spain), which has seen different cultures pass through its lands over the last 2,000 years: Iberians, Romans, Arabs, and more, all of them having lived off the region's excellent agriculture, livestock, and industry. In 1959, a group of residents from Guissona and other surrounding villages realized the enormous potential of the area and set up the Guissona Poultry Cooperative, which more than 60 years later has given way to bonÀrea Agrupa, a food corporation with a workforce of around 5,700 workers and a turnover of around 2 billion euros.

## Benefits

The main benefits of Siemens' collaboration with bonÀrea are that an industrial network standard has been designed for all of its facilities, including remote communications, mobile applications, IT connectivity, network administration, and overall cybersecurity. At the same time, the production system's efficiency has improved by more than 10%, and downtimes have been reduced substantially. Thanks to all these improvements, the new communications infrastructure has reduced response times for any unforeseen event. Changes can be made immediately and from any internal or external point in the network, which ensures that the system will not crash.

The key to the success of bonÀrea Agrupa is its ability to develop a circular economy with all the livestock, industrial, and commercial activities necessary to reach the consumer directly. They are capable of fulfilling the complete production cycle: from poultry and livestock rearing, through the manufacture of feed to the transformation and processing of products. The group has always lived by its motto "From field to fork" and intends to fulfill it to the letter with its ability to distribute its entire production and sell it through physical bonÀrea stores or via on-line business operations.

Siemens has played a fundamental role in helping the group meet its goals throughout this development process. For decades, Siemens has been helping bonÀrea to automate its processes, including the introduction of a network of automatic shuttles to manage its orders. In recent years, it has been working closely with the food producer to digitize and connect its various processes.



bonÀrea automated shuttles with Siemens technology: initial and subsequent digitalization of the group

In this great digital challenge, the first step has been to bring connectivity to industrial processes, enabling them to communicate flexibly and

effectively with each other and with corporate management and monitoring systems. The company needed a comprehensive industrial connectivity and cybersecurity standard that would efficiently connect the IT infrastructure, where its supermarket orders and platform are generated, with the OT infrastructure that supports the entire production process.

The key factor in this system had to be its scalability, since it would have to be applied to both current plants and the new production center the company is building in Épila (Zaragoza). "We are taking on a big challenge. The new plants have to be operational in 2022, and they have a surface area of 170 hectares and 13 industrial bays. The main objective of the project is that they will start out fully digitalized and integrated in the network with the rest of the current plants and services," says Sergio Otero, digitalization specialist at Siemens Digital Industries España.

The objectives were well established and Siemens, in collaboration with its solution partner otpoint, took up the challenge by integrating the current network of more than 65,000 devices with the future network that will operate in Épila, which will also have a similar number of devices, doubling the group's capacity to more than 130,000. Albert Vendrell, head of new facilities at bonÀrea Agrupa, says, "The solution proposed to us by Siemens has been more than positive, as we have managed to improve productivity by 10%, significantly reducing downtime and improving management".

When the Épila project is completed next year, bonÀrea will be able to perform all of its maintenance operations instantly, from any point in the internal or external network. "This guarantees that none of our food production businesses will go off-line," says Vendrell.







SCALANCE XC200 switches in operation at bonÀrea



A bonÀrea technician starting up the SINEC NMS monitoring system

With this digital connectivity infrastructure, we have been able to implement a series of bonÀrea network services accessible to any user profile. Among them, the solution for secure remote access control SINEMA Remote Connect stands out, which allows secure, simple, and instant management. All remote access is via VPN technology, encrypting and authenticating all connections. In addition, this system allows engineers to connect to their engineering tools from anywhere.

At the same time, the SINEC NMS network management platform provides a real-time overview of the entire network based on the ISO 10004 FCAPS standard. Thanks to the design of a highly manageable infrastructure, this solution is able to monitor all assets, diagnose, and even configure communication policies on network elements, such as switches, firewalls, and industrial routers.

bonÀrea is setting up a digitalized infrastructure with Siemens' help to service all of its facilities: factories, fuel stations, and even a water treatment plant. "In the latter, we have incorporated Siemens technology for remote control of the water treatment process," Vendrell adds. This technology is based on the use of SIMATIC control systems connected via SCALANCE SC600 industrial firewalls. All of these are visually monitored by SIMATIC WinCC Unified from Siemens.

### Highlights of the solution

- A digital connectivity infrastructure providing OT networks with flexibility and robustness
- A complete industrial cybersecurity system
- Network management platform for visibility of communications and transparency of processes
- Secure and simple management of access to the different areas of the production processes
- Standard and scalable integration of all group services

## Security information

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept. For additional information on industrial security measures that may be implemented, please visit

[www.siemens.com/industrialsecurity](http://www.siemens.com/industrialsecurity)

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But Siemens' close cooperation with bonÀrea does not end here, and the foundations have already been laid for a commitment to Industry 5.0. Marc Mases, Head of Digitalisation at bonÀrea Agrupa, explains: "Once our entire IT/OT network is integrated, this will pave the way for us to include new technologies such as Artificial Intelligence, the Digital Twin, or Edge Computing".

One of the objectives of digitalization at bonÀrea is to convert the manual picking of the 76,000 orders a day into digital. "To do this, we will equip robots with intelligent cameras that will be able to differentiate our catalog of more than 8,000 products", says Mases. Thanks to algorithms based on machine learning, this technological improvement will facilitate the multiplication of online orders.

A good harvest starts with good seeds, and thanks to close collaboration with Siemens, digital operations are already blossoming at bonÀrea.



Online orders packaging zone

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