

# Ca' del Bosco's New Warehouse Management System.

## CASE STUDY

**Ca' del Bosco** - Radio frequency (RF) amidst the aromas of wine. Ca' del Bosco exports 7,800,000 bottles of wine all over the world every year. With that kind of volume, a new distribution system was needed. The implementation of a wireless radio frequency (RF) network at Ca' del Bosco sped up the handling of the grapes at the pressing operations and contributed to improving the quality of their wines.



*The production of wine is an art with very ancient roots. It relies on the most meticulous procedures distilled by tradition. At the same time, however, it cannot overlook the resources offered by today's technology. That does not mean only having to install automatic lines for large-scale production aimed at the major retail markets, but can signify having more respect for quality in order to arouse the increasingly demanding appreciation of wine waiters: shades, colour, taste, aroma. The wine-producing firm Ca' del Bosco, in the heart of the famous Franciacorta area at the gateway to Brescia, introduced an automation island using WLAN technology within its own production lines. Via this wireless Spread Spectrum RF-network the forklift trucks are guided while collecting and transporting the grapes.*

### "Guaranteed" Quality

Ca' del Bosco is one of the very few Italian firms which was at the origin of the "Revival of Italian Oenology" and has become a standard bearer for quality Italian wine throughout the world. Furthermore, it was the first in Italy, as Luciano Bernardi, the manager responsible for quality and computer systems, explained to us, to have obtained the "D.O.C.G." certification issued by the Ministry of Agriculture, where the final "G" stands for "guaranteed". The company, whose headquarters is located in the centre of a wonderful hilly region where it owns an area of 140 hectares, is directly involved in grape growing.

Ca' del Bosco produces 13 types of wine which then form the basis of at least 200 different products according to required quality levels, vintages, types of packaging and so on. All in all, that means 7,800,000 bottles per year are exported all over the world.

### Grape Harvest and "Dew Point"

The most hectic period of the year is of course harvest time, from September to November: the tractors are arriving at the acceptance zone of the plant towing their loads of grapes, each coming from a different area of the vineyard. The load is weighed on an automatic weighing machine, which issues a barcode label at the same time. On this label the following specifications are mentioned: type of grapes, area of origin of the vineyard, day of harvest. This label is stuck on the relevant pallet.

At this point in the chain comes the helping hand of the forklift truck. Each forklift truck is equipped with a wireless LXE vehicle-mount RF computer and a long range bar code scanner. By scanning the label, the truck driver is informed of the destination of the load. The grapes have to be placed in "thermal storage rooms". These thermal storage rooms bring the temperature of the grapes to "dew point", a temperature between approximately 16°C and 17°C, also in relation to the relative humidity, at which condensation begins to form on the grapes. "This is the ideal temperature for pressing," Mr Bernardi further points out, "because it prevents secondary fermentation and, above all, it safeguards the aromas of the wine."

### No Mistakes Possible

When the drivers of the forklift truck scan the bar code labels, the specified thermal storage room to which the grapes have to be transported appears on the display of their wireless computer.

In total there are seven storage rooms, spread over several loading floors. In order to avoid mistakes, an extra security step has been added: each storage room

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is now marked with its own bar code label. Before entering the storage room, the driver has to scan this label. He will then get authorization or possibly refusal of entry.

Once the grapes have reached the required dew point in the thermal storage room, they are ready for pressing and must be conveyed to the specified line according to the type of wine (there are 17 pressing areas in total). The driver of the forklift truck receives a message on the display of his wireless-computer advising which grapes have to be collected in the indicated storage room.

## Network and Application System

This explains how the grapes are handled before processing, but what are the characteristics of the system behind it all.

First of all, the forklift trucks operate outside. This explains the choice of LXE wireless computers: they integrate a rugged designed because they are water and dustproof. These wireless computers can be easily migrated from outside to inside use, in this case the thermal storage rooms, without having condensation problems.

The wireless access point is LXE model LAN 802.11b at 11 Mbps. The wired network and the computer system are in a Fast Ethernet environment on a Windows® platform, with the wireless computers operating in a client-server mode, where the client is represented by one of the PCs connected to the same network. In the application specification of Ca' del Bosco, the fast wireless Spread Spectrum RF-network does not only take care of the storage handling and management operations, but also monitors the entire operating flow.

## The Finest Aroma

Apart from being a support to truck operations, the wireless RF-network also completes the automation of the lines. As Mr. Bernardi adds, "the actual advantages obtained are represented by the real-time monitoring of the lines and by the on-line information collected."

Not forgetting, however, the speeding up of loading and unloading operations, which was our starting point. "This is an advantage", Mr Bernardi concludes, "which further reduces the exposure times of grapes to the ambient temperature, so limiting dew point variations." This is precisely what gives wine its finest aroma.



**About LXE Inc.** LXE Inc. improves supply chain performance by applying over 30 years' experience developing wireless products and solutions. From wireless computers, advanced auto-ID technologies, and wireless network infrastructure, to our award-winning customer support - LXE's easy-to-use products are as reliable as the people who install and support them.

Based in Norcross, Georgia, LXE also offers a full range of turnkey services, including radio integration, project and installation management, network design, technical support, and repair services. LXE is a wholly-owned subsidiary of EMS Technologies, Inc. (NASDAQ: ELMG), and has offices worldwide. For more information, visit [www.lxe.com](http://www.lxe.com).