

Long-term cooperation maximizes the return on investment ABB control systems at the Syngenta plant in Kaisten, Switzerland



Buying an ABB DCS system is not a one-off purchase, but the beginning of a long-term relationship where continuous improvement and the protection of the customer's investment stand in the foreground. An excellent example of this can be found at the production site of Syngenta Crop Production AG in Kaisten, Switzerland.

The plant produces one of Syngenta's leading herbicide products. Details of the process are confidential, but the scale of the operation can be judged from the fact that the plant consumes more than half the hydrogen used industrially in the whole of Switzerland.

Long-term relationship and evolutionary upgrades

ABB's relationship with Syngenta at the Kaisten site goes back to 1994 when the SattLine DCS system was originally installed. Since then, the system has gone through a number of evolutionary upgrades, moving from the original VAX/VMS operating system to Windows XP and then to Windows 7. The application software was upgraded with each change of operating system.

Maximizing operator effectiveness

As with many other sites producing high-value products in a continuous 24 hour a day process, the number of operators required is a significant cost factor. For each operator workplace the company needs to have five operators on its payroll.

Originally, a total of 11 operators were required for each shift. Two of them were in the control room, the rest handled manual activities around the plant. In the course of the automation projects this number of operators could be reduced to five. Since then the expansion of the plant itself has resulted in this figure rising to eight. It is nevertheless a significant achievement that the total number of operators has been reduced from 11 to eight even though the production volume has been doubled.

The ergonomics of the plant operation was a key focus right from the original engineering phase and the close partnership between customer and supplier was essential in finding the optimum solution. Much of this is a matter of attention to detail. For example the control room is laid out to minimize distractions and the operators can access the company-internal administrative systems on the control system monitors so they do not have to leave their workplace. In addition, they can decide dynamically which information goes to which workplace.

Further ergonomic aspects go deeper into the ABB system. For example, when a high priority alarm occurs, the system suppresses alarms with lower priority to avoid distraction. Also, for special operations, the two workplaces can be divided into four to accommodate additional operators.

The consequence of these design aspects is that the operators can concentrate much more on running the process rather than on operating the system.

“The system has always been very reliable”

Efficient engineering

The ABB DCS system also has significant engineering advantages. For example, modifications to the system are possible without stopping the process – alarms in the affected area are disabled for the duration of the update. Syngenta electrical engineer Peter Roth, who is responsible for the entire ABB system, confirms its clear advantages:

“The system is object-oriented and programming is very efficient. It also makes it easy for the operator to get a good view deep into the process, which is wonderful support for our continuous improvement process.”

Long-term reliability

For a plant running a continuous process the reliability of the control system is clearly absolutely essential. The distributed architecture (there are over 5 km of fiber-optic cables in the system) contributes to this as there is no central server as a potential single point of failure. Additionally, both the hardware and software are extremely reliable. This too is confirmed by Peter Roth:

“In the last five years we only had to request one single out-of-office-hours service visit, and the cause of that problem was electrical and not from the system itself. The system has always been very reliable.”

Ergonomics and efficiency are certainly two factors contributing to the success of the ABB system at Kaisten, but it is the long-term aspects that really make the difference and maximize Syngenta's return on investment.

Long-term reliability of the components, continuous upgrade paths over more than two decades and long-term support from the experts at ABB have been the recipe for success. Peter Roth summarizes it in one short sentence: “we have always had an excellent relationship with ABB.”



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About Syngenta

Syngenta is a leading agriculture company helping to improve global food security by enabling millions of farmers to make better use of available resources. Through world class science and innovative crop solutions, our 28,000 people in over 90 countries are working to transform how crops are grown. We are committed to rescuing land from degradation, enhancing biodiversity and revitalizing rural communities.

The Syngenta plant in Kaisten, Switzerland, is an important production site for crop protection components.

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