

INFOCARRIER® BOXI

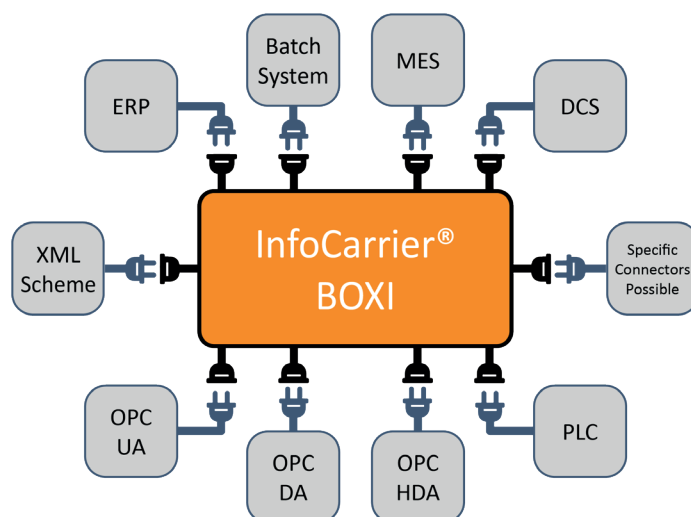


Industry 4.0 Interface

The seamless **integration** and **interconnection** of manufacturing and process control systems is now a critical success factor for efficient and future-proof production processes. In practice, however, different systems, data models, and communication protocols often collide. For this reason, SpiraTec AG has developed **InfoCarrier® BOXI**, an innovative, modular solution that significantly reduces the effort required for integration between systems. Thanks to pre-built best-practice workflows and **standardized interfaces**, typical integration scenarios can be implemented not only faster but also much more reliably, ensuring efficient coverage of various use cases.

Efficient Data Exchange

- The **requirements of the modern pharmaceutical and process industries** make it clear: Successful OT/IT integration is based on clearly defined, message-based information packets rather than purely tag-based real-time values.
- Here, **InfoCarrier® BOXI** relies on modern communication mechanisms that exchange entire information packages in a structured manner (rather than many individual PLC tags). This enables a consistent, validation-compliant flow of information, even in complex systems.
- InfoCarrier® BOXI **minimizes manual input** and clearly separates MES and PLC configuration, a significant advantage over traditional tag-based integration.



Our Services

SpiraTec AG offers comprehensive consulting services as well as the implementation and configuration of interfaces. With many years of experience in connecting a wide variety of legacy systems, we can professionally execute even complex integration projects. In addition, we develop **customized solutions** for our customers, offering a cost-effective way to make legacy systems and brownfield facilities Industry 4.0-ready. Continuous maintenance and reliable **after-sales service** round out our offering.

The Success Factors

- Universal connectors, for example for **PLCs, MES**
- Significant **time savings** and **error reduction** thanks to the extensive decoupling of the configuration of connected systems through standardized data exchange
- Efficient **commissioning** and project planning through the use of predefined, reusable best-practice workflows (e.g., creating batches, reading and writing parameters, receiving notifications)
- “Translation” of outdated interface technologies into state-of-the-art **communication protocols**
- Adaptation of existing **software and systems** is generally not necessary

Since 2025, SpiraTec has achieved the highest certification level in the PAS-X MSI Plug & Produce Partner Program at Körber Pharma Software for **InfoCarrier® BOXI**.



INTEGRATION OF MES AND BATCH-SYSTEMS



The integration of **batch** and **MES** is a key success factor for modern production processes. However, differing data models and communication logics - parameter-based MES messages on one hand, real-time tags in the PLS on the other - make rapid and error-free implementation difficult. This is exactly where **InfoCarrier® BOXI** comes in, creating a common language between the systems and revolutionizing the way systems communicate with one another.

As a modular, high-performance **interface hub**, InfoCarrier® BOXI significantly reduces integration effort and establishes a common language between MES, batch, and other systems. Standardized interfaces and pre-built best-practice workflows enable the fast and reliable implementation of typical use cases - from automated batch creation to reading and writing parameters. At the same time, individual processes can be flexibly mapped using workflow engines. The result: significantly fewer manual interventions, noticeably reduced error rates, and an integration process characterized by **speed, agility, and future-proofing**.

Another advantage: Once the information to be exchanged has been defined, InfoCarrier® BOXI enables extensive decoupling of system design. This accelerates modeling, creates **transparency**, and sustainably **reduces project effort**.

Technical Implementation

InfoCarrier® BOXI supports the exchange of the following **data categories**, among others:

- Batch ID, product and material data
- Recipe information
- Process parameters and setpoints
- Production approvals
- Process and measurement values (time- or event-driven)
- Production and step results
- Audit trail entries
- GMP-relevant exceptions such as alarm messages

Conclusion

InfoCarrier® BOXI efficiently integrates batch and MES systems, ensuring **faster project planning and commissioning**. At the same time, manual tasks are reduced and potential sources of error are minimized, resulting in higher quality. The modular system allows the integration of systems using various protocols. This enables **existing systems** to be equipped with **future-proof IT interfaces**.

Thanks to many years of experience in machine and plant integration, we combine process expertise with interface know-how. Custom-designed connectors are developed on an individual, **solution-oriented** basis as needed. With InfoCarrier® BOXI, SpiraTec underscores its expertise in **digital system integration** and sets new standards for standardized, **future-proof MES interfaces** in the life sciences industry.

