swisslog

Member of the KUKA Group

CUSTOMER SERVICE CASE STUDY

SYSTEM OPERATIONS FOR ROCHE, SWITZERLAND

A SUCCESS STORY SPANNING DECADES

"The logistics facility is 22 years old and still looks and runs like new." Thomas Seiler, who leads Swisslog's System Operations team (SO) at the Kaiseraugst site of F. Hoffmann-La Roche AG (or Roche for short), is justifiably proud of the successful cooperation with the pharmaceutical company that is spanning decades. "Swisslog has been responsible for operating, maintaining, and expanding all the associated technical systems since the complex logistics system was installed in 1994," explains Seiler whose background includes training as an electrician as well as in technical and business management. "One thing was and is especially important to us: That as the SO team for Roche, we remain a dedicated partner, always doing our best to ensure that Swisslog solution at the Kaiseraugst facility continues to deliver on every single aspect demanded of it."

GMP-TRAINED

Twenty employees – including electricians, mechanics as well as mechatronics, electrical and automation technicians – are on hand five days a week on alternating day and night shifts to ensure smooth operations. The team members span three generations, ranging in age from 25 to 60, and have diverse resumes. But they do have one thing in common: They bring passion, a heightened sense of responsibility, and absolute precision to their work because system downtime is unacceptable – particularly in the pharmaceutical sector where 100 percent product safety is vital. The team led by Thomas Seiler knows that and is therefore extremely meticulous. The SO employees are well-suited to the demanding requirements of pharmaceutical logistics, not only based on their technical qualifications and personal aptitude. "They are also GMP-trained and take advanced training courses on an ongoing basis," adds the team lead.

SEAMLESS MONITORING AND DOCUMENTATION

GMP, or good manufacturing practices, are comprehensive guidelines for quality assurance relating to the production environment and processes in the manufacture of medicines and active ingredients. As the holder of a manufacturing permit, Roche

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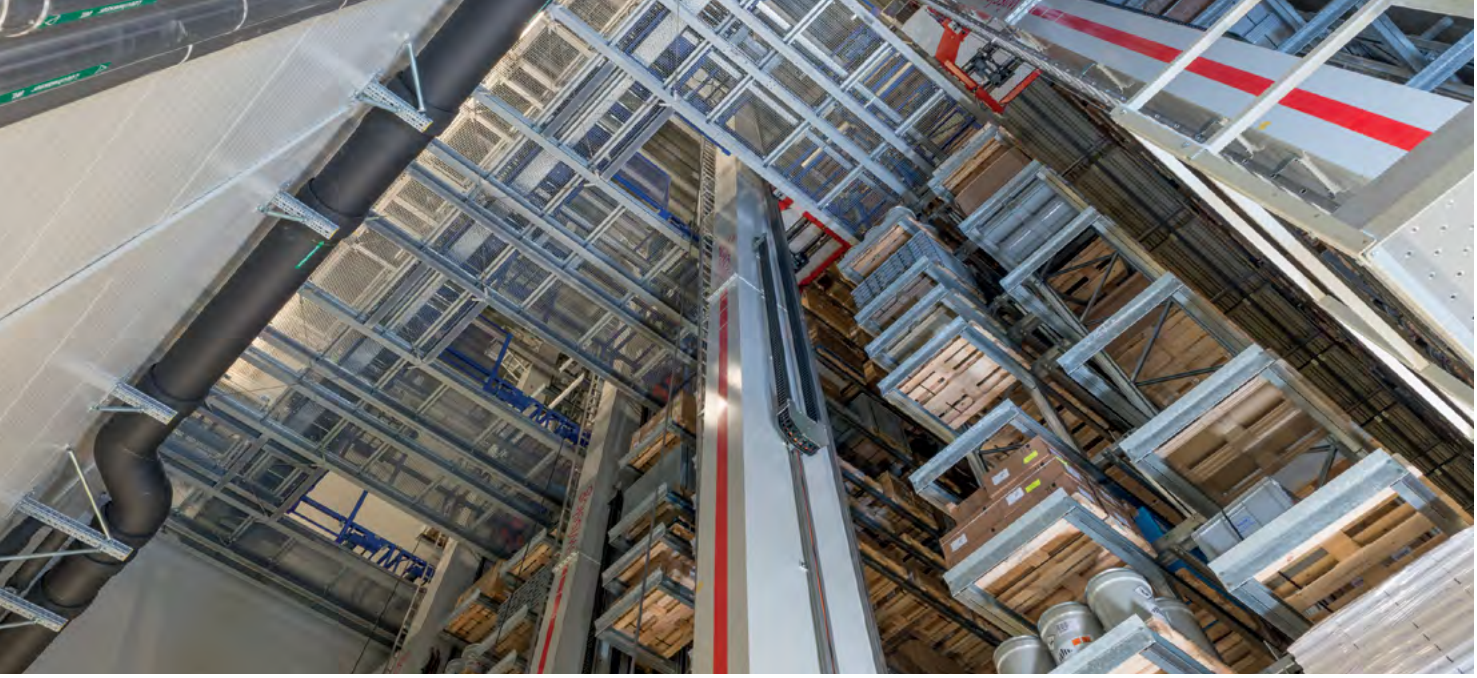
Thomas Seiler, lead of Swisslog's System Operations team



In the pharmaceutical industry, 100 percent product safety is essential. Swisslog ensures that the locistics system at Roche works reliably.

must produce, store, and ship its products in such a way that they comply with their intended use, meet the requirements set forth in the permit, and pose no risk to patients due to inadequate safety, quality, or efficacy. To continuously meet this goal, the Swiss pharmaceutical company uses a carefully planned and rigorously implemented quality assurance system based on the GMP guidelines for quality control. This system guarantees seamless monitoring and documentation, which on the intralogistics side is handled by the Swisslog System Operations team. "We know Roche logistics like the back of our own hands," states Thomas Seiler.

The Kaiseraugst site encompasses a high-bay warehouse built in the 1990s. It has 16,600 pallet locations and is used to store tablets, packaging materials, and finished goods. There is also a small-parts warehouse with 5,250 storage shelves. Both warehouses are operated at ambient temperature. A new cold-chain logistics system was added in 2014 for particularly temperature-sensitive medications. The system features a high-bay warehouse with 8,100 pallet storage locations operated at 2°C to 8°C, and a deep-freeze warehouse with 196 pallet storage locations that has an ambient temperature of -10°C.

Production, packaging, picking and shipping complete the system, along with conveyor technologies and automated guided vehicles (AGVs). Logistics at Roche is controlled in an SAP environment by a Swisslog warehouse management system and Simatic Step 7 from Siemens. WinCC is used to visualize the entire facility.

GUARANTEED AVAILABILITY

"We are responsible for all intralogistics at Roche in Kaiseraugst," underscores SO lead Thomas Seiler. This includes not only Swisslog technology, but also third-party equipment such as the gantry robots and AGVs.

The top priority is ensuring smooth material flow while adhering precisely to Roche specifications, GMP guidelines, and the specifications of component manufacturers.

System Operations employees are on duty or reachable directly by Roche around-the-clock. Swisslog performs scheduled preventive maintenance on nearly 160 systems every year, manages spare parts provisioning, analyzes and fixes malfunctions, and performs repairs. "We systematically work through our own extensive to-do lists, record all relevant events in a log book on a daily basis, and archive them. Naturally, emergency repairs are handled immediately," continues Seiler, emphasizing that "we guarantee 100 percent availability of the logistics system, and in the event of an emergency, we rely on Swisslog PLC and WMS support."

ERROR CORRECTION PER MONTH

6 000 errors

60 seconds

intervention time each

"A wealth of experience and absolute reliability are the foundation for our long-term cooperation."

Hans Reimann,
logistics project manager
and senior project manager at Roche

In spite of meticulous maintenance and refurbishment, disruptions do occur occasionally because of the extreme scope and scale of the system. Swisslog's SO team handles approximately 6,000 errors, including user errors, every month in an average intervention time of 60 seconds each. The expert offers some perspective. "This may sound like a lot, but for a facility the size of Roche's it's not unusual. Nonetheless, problems do disrupt the material flow, which needs to be optimized." For this reason, Swisslog supplemented the extensive existing control mechanisms with fully automated Condition Monitoring (CM) for logistics operations at Kaiseraugst. A pilot system went into operation in 2015.

CONDITION MONITORING

Condition Monitoring at Roche means ongoing collection, storage, and diagnosis of various data, such as event logs and transports. This data is visualized as diagrams on a dashboard that shows relevant key performance indicators (KPIs). KPIs such as mean time to repair, movements between failures, top ten problems, etc., provide information on individual systems and the performance of the entire logistics system, including third-party equipment. The

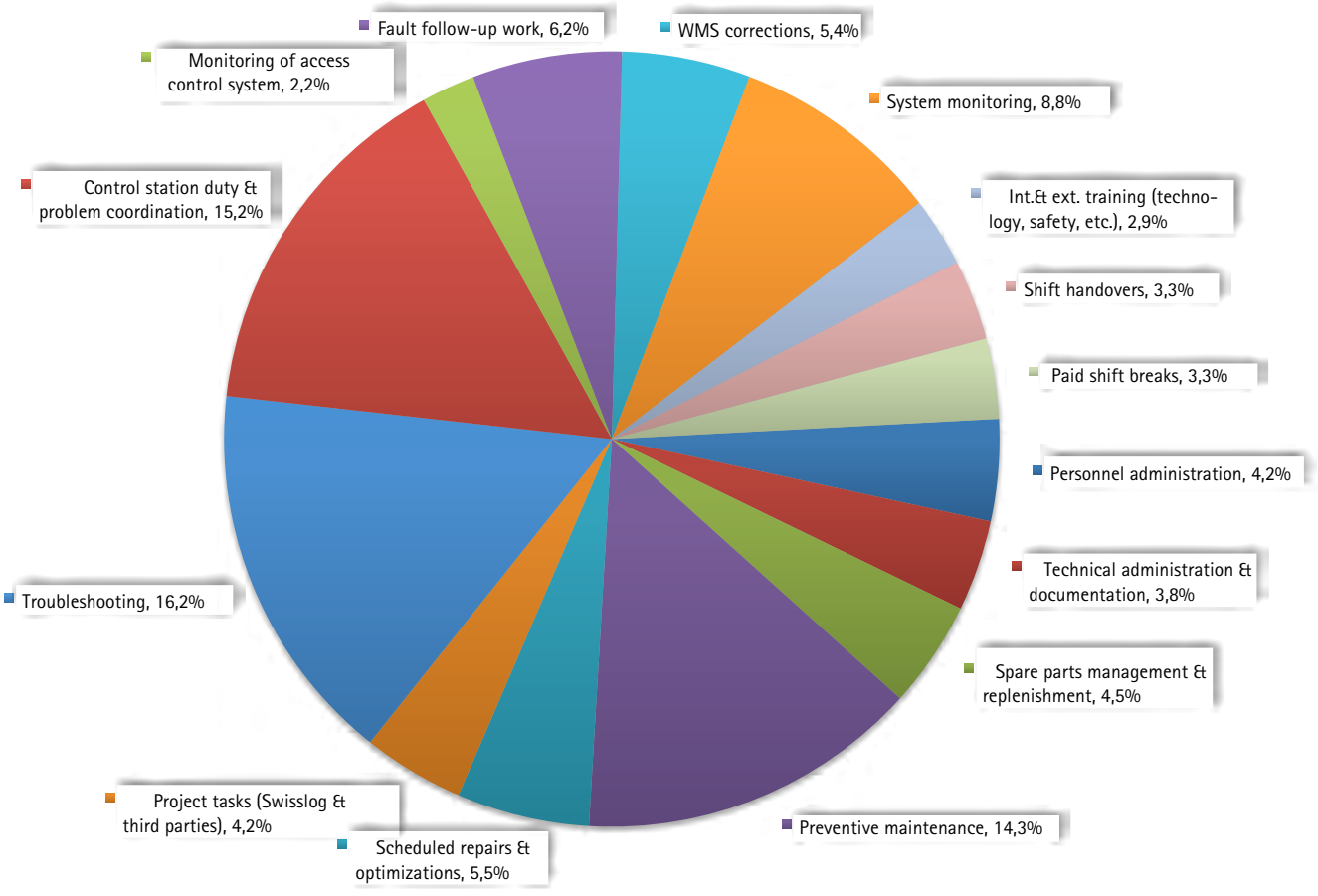
special advantage of Condition Monitoring is not only immediate detection of errors in the logistics system and other control devices, which can then be addressed reactively. Continual and comprehensive Condition Monitoring also means that the classic preventive method of maintenance can be gradually replaced with a targeted preventive strategy instead of conducting routine checks at regular intervals and performing scheduled replacement of intact parts with a specific remaining service life, maintenance and spare parts provisioning occur precisely where the actual operating data indicates they are required. Condition Monitoring therefore offers enormous cost-savings potential because the service life of critical elements can be fully utilized.

Oversight from the control station: All system data is always in view to allow for immediate response in case of disruptions.

RESPONSE TO INDUSTRY 4.0

"Condition Monitoring greatly helps us to continually improve our performance and hence that of the logistics facility," states System Operations lead Thomas Seiler. "By seamlessly recording all the relevant data flows, we are able to trace every error step-by-step." This enables the team to locate the cause of the error more quickly, address it efficiently, and ideally prevent it from happening again. "We are part of a learning system into which we continually feed our diagnostic results," explains Seiler, adding that specific plans are already in place to expand the CM pilot system at Roche. Among other things, it will monitor motor torques and operational performance of wear parts, with vibration sensors to check different handling characteristics. "The tool is being

SYSTEM OPERATIONS TASKS



Preventive Condition Monitoring reduces the error rate and optimizes the cost structure. To this end, Swisslog collects a wide array of sensor data in real time.

expanded as quickly as possible and offers our customer enormous added value," states Seiler. "CM is Swisslog's response to Industry 4.0."

RECOGNITION FROM ROCHE

22 years of Roche and Swisslog: "A wealth of experience and absolute reliability are the basis for our long-term cooperation," says Hans Reimann, logistics project manager and senior project manager at the Swiss pharmaceutical company, in appreciation. Roche has ambitious goals and plans to further improve its infrastructure and permanently expand company sites – particularly the Kaiseraugst site, the main pillar of its worldwide production and logistics network.

Swisslog has been there since the beginning and is looking forward to the future. "It's important to me that our team is able to work successfully," adds Swisslog's Thomas Seiler, looking forward to the partnership for a long time to come.

BENEFITS FOR ROCHE

- Guaranteed 100 percent system availability
- Delegation of total service responsibility to specialists
- Service employees with strong expertise in the pharmaceutical sector (GMP- and Roche-trained)
- Continuous improvement process with respect to error prevention
- Cost structure optimization

SWISSLOG SERVICES

- System operations, preventive maintenance, repairs, spare parts provisioning, and fault elimination in entire Roche logistics facility, including third-party equipment
- 20 service employees work on-site 24/5 in alternating shifts or can be reached directly by the customer at any time.
- Extensive Condition Monitoring
- Providing assistance to third-party mechanics and technicians

FACTS AND FIGURES AT A GLANCE

Systems supported

High-bay warehouse	16 600 pallet storage locations, operated at normal temperature
	8 100 pallet storage locations, refrigerated at 2°C – 8°C
Small-parts warehouse	5 250 storage shelves, operated at normal temperature
Channel storage system	196 pallet storage locations, operated at -10°C
Periphery	Production, packaging, and shipping logistics
	picking zones, 19 automated guided vehicles
Control	Swisslog WMS, Siemens Simatic 7 and WinCC, Condition Monitoring from Swisslog

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