Migration of process control systems

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To ensure the reliability and efficiency of production plants, automation technology must be updated regularly. At least when the manufacturer support for the hardware and software expires, the use of old operating systems represents a security risk.

onoff supported a well-known pharmaceutical company with a comprehensive system migration. This became necessary because subplants were operating with different, partly obsolete process control systems.

Project goals

- During the rollout of a new MES system, several sub-systems with different versions of SIEMENS SIMATIC PCS 7 had to be merged into a common multi-project.

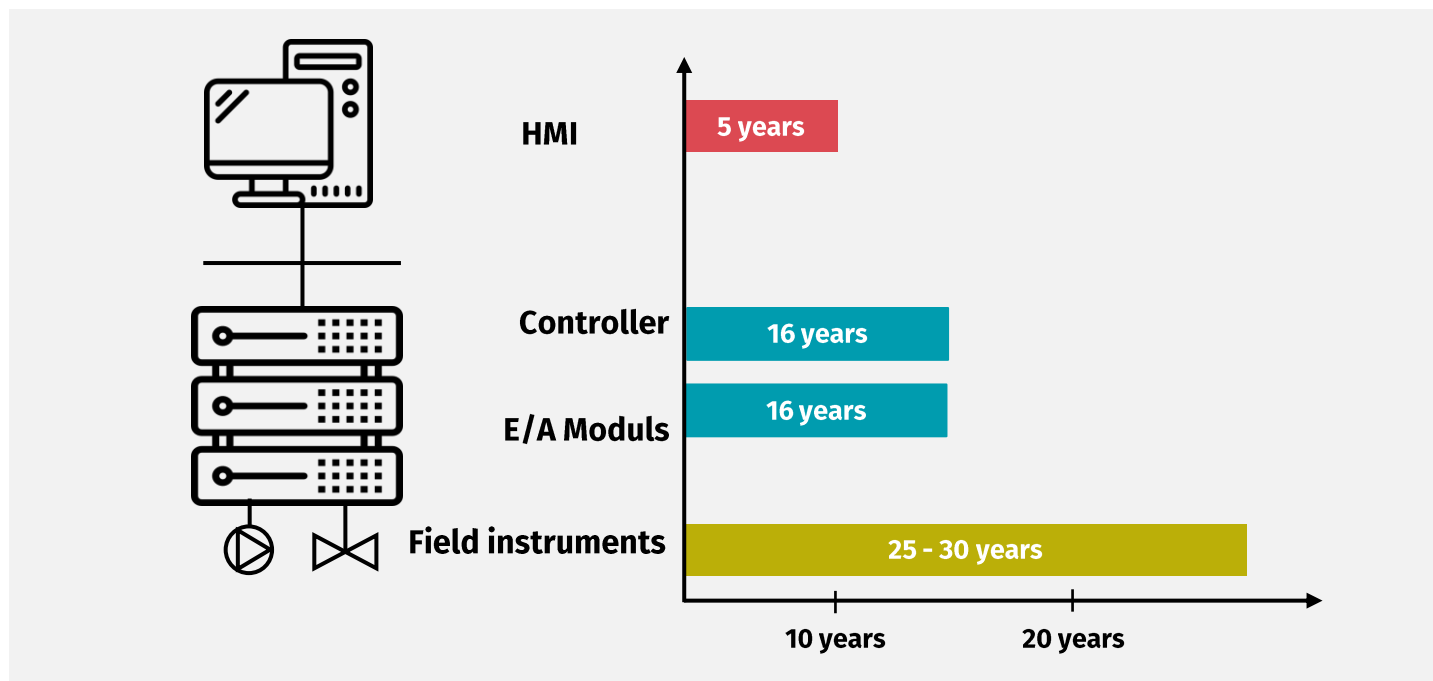- This requires an update of all systems to the same version

Technical realization

- Manual adaptation, because project functions from one of the first PCS 7 versions (V4) were still available in some plant sections

- Installation of the entire HMI system, consisting of 8 servers and 63 clients, on several virtual VMware servers

- Development of a migration strategy for a step-by-step changeover with as few production downtimes as possible (2 times 2 weeks) because the entire plant could not be shut down

- Parallel to the migration of the legacy systems, a new plant was built up at the same time, which has to be integrated into the overall PCS 7 system

- The entire changeover from old to new was carried out in a GMP environment qualification, including the corresponding documentation

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Features

- Update to the latest technology
- Qualification in GMP environment
- Migration within a short timeline

Migration of process control systems

HMI — 5 years
Controller — 16 years
E/A Moduls — 16 years
Field instruments — 25 - 30 years

10 years   20 years

The graph shows the average lifetime of components in automation technology. Hardware and software components - especially the operating systems - require regular updating and are often the reason for a project migration.

Project summary

Thanks to the plant migration planned and implemented by onoff, the entire plant is now automated by a uniform state-of-the-art PCS 7 system. The customer benefits on several levels: the number of interfaces could be significantly reduced. The use of the latest software updates ensures a higher level of safety and availability of the plant.