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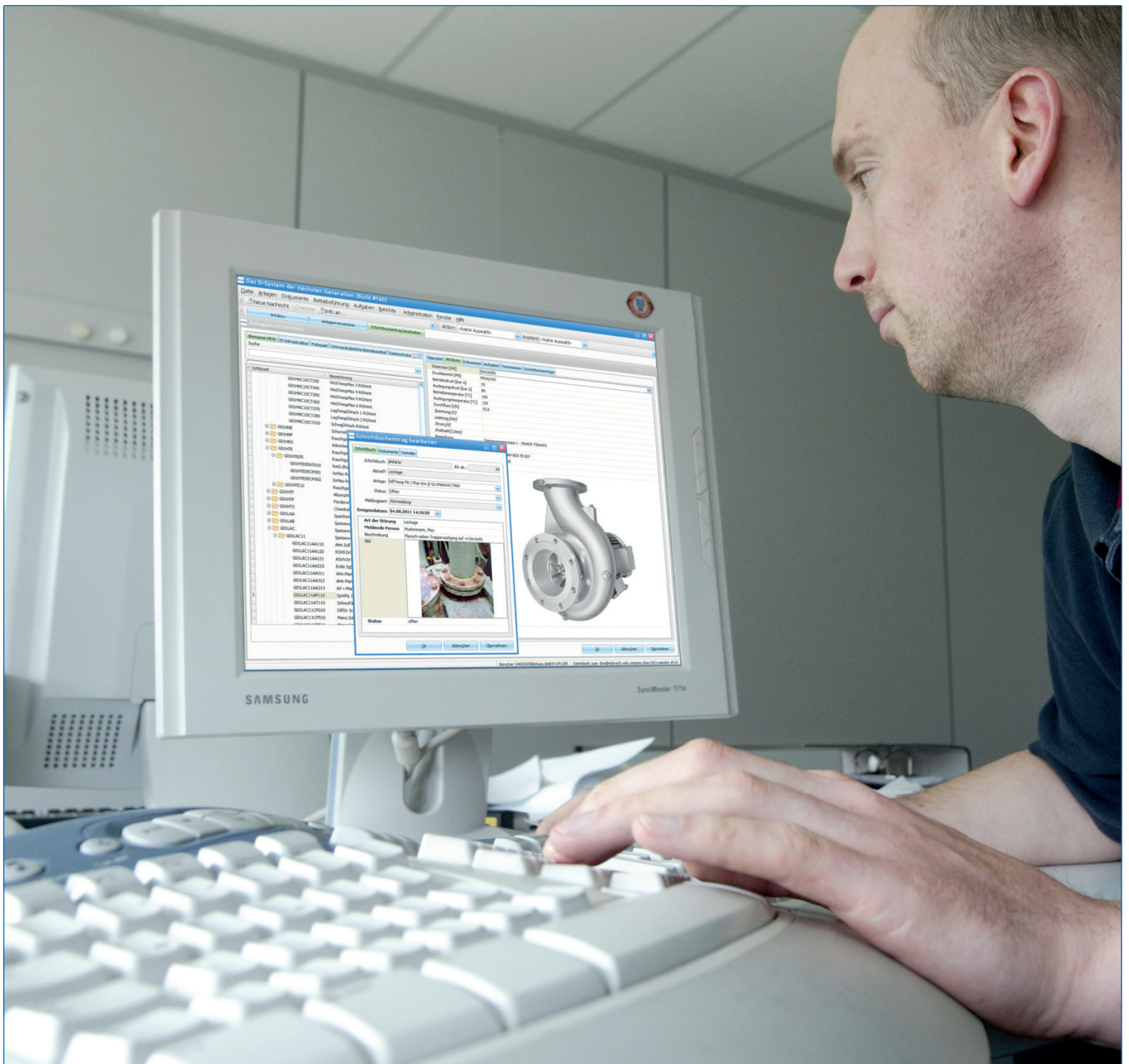
process & energy automation

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SI/PAM by Steag Energy Services is a modular CMMS system that flexibly adapts to the operational requirements and optimizes a great number of workflows

IT-Based Maintenance Offers Real Added Value

In many companies, maintenance is still treated as an orphan as its potentials regarding higher plant availability, optimized operating processes, and thus cost savings are not realized. In an interview with the editors of etz, Markus Indenbirken, head of the department Application Services of Steag Energy Services, explains why IT-based maintenance significantly contributes to the added value, which solutions are reaching their limits, and which alternatives exist.

Text: Frank Nolte

In many companies, maintenance is still regarded as a mere cost center without any added value. Why is that?

M. Indenbirken: That is true, but actually it is not reasonable. Regular maintenance and repair measures reduce the vulnerability of machinery and plants to failures, increase their availability, and therefore significantly contribute to the productivity and thus to the added value of a company. The fact that maintenance is often considered as a cost center is rather due to how it is organized and carried out.

Could you be more specific here, please?

M. Indenbirken: Basically there still is a lot of paperwork, beginning with paper-based work orders via maintenance schedules right up to logs and forms that are to be filled out. Yes, sometimes even file cards are still in use. If an IT-based maintenance is applied at all, often a classical

"multi-tool strategy" with software like Excel, Access und Outlook is used. Thus the most various data is located at the most diverse places and is therefore neither accessible for everyone nor easy to find.

In addition, there is an inconsistency of data that not only impedes the logical connection of the data but also leads to a decentralized, complex data administration. All that is neither efficient nor economical. Furthermore, regular problems are to be expected with changing versions of the mentioned office applications.

What are the solutions to this?

M. Indenbirken: So-called computerized maintenance management systems, or CMMS systems. Steag Energy Services [1] has developed SI/PAM, a modular CMMS system, based on decades of experience in the O&M management

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and control of energy plants. It flexibly adapts to the operational requirements and optimizes many workflows.

So SI/PAM is a solution for the energy industry?

M. Indenbirken: No, not exclusively. As I said, the system is flexible and therefore also suitable for manufacturing companies, plant engineering and construction, facility management, and generally for big companies with large production areas or widely scattered facilities.

What are the essential features of this system?

M. Indenbirken: It is a lean maintenance and operation management system with a large variety of functions, consisting of particular modules that can cover individual tasks in various plants. In the context of widely scattered facilities, SI/PAM as a central CMMS system can also be used with a mobile solution for on-site measures at machinery and plants.

What are the functions of these modules?

M. Indenbirken: The various software modules can be flexibly applied and adjusted. For instance, there is a module that displays all work to be executed regularly as clearly represented recurring items. It allows, for example, to control and above all to consistently prove activities required by law. Another module serves to record unpredicted events and information that requires logging; it can be used by different groups of persons for logs,

shift logs, or damage reports, for example. And in a document management you can store all important documents and link to documents stored outside of SI/PAM respectively. Thus you get direct access to all relevant files via a central GUI whenever necessary. Last but not least, one module represents all system parts in a clear tree diagram. Here, any hierarchical structure can be chosen at will. The so-called "information box" acts as a superordinate communication hub. It may be compared to an electronic mailbox that can be assigned to individual users. All activities and information relevant to the respective user will be delivered to the "information box", bringing them up to date on all activities and allowing them to react immediately if necessary.

That sounds like a high effort of implementation?

M. Indenbirken: No, not really, because our solution is provided in a field-tested standard configuration and adjusted to the individual requirements in the context of a project. The important thing here is the buildup of the master data in SI/PAM as well as the allocation of roles and the distribution of information.

What does that mean?

M. Indenbirken: The roles and their allocations as well as the central distribution of information via the information box are two essential concepts of our solution. Here the role allocations represent the responsibilities, the internal policies, as well as the

The use of mobile devices that are synchronized with the central CMMS system facilitates maintenance and repair on site

communication lines of a company. Via these allocations, SI/PAM identifies the previously stored responsible and executing persons in the daily work, according to the system part, component type, or type of activity in question. Via the information box, SI/PAM provides the individual user with precisely the tasks intended for them. The role concept and the information box thus ensure that the daily work with the CMMS system is carried out both in a fast and clear way.

You just mentioned a solution for mobile maintenance. Why would such a solution make sense and what does it look like?

   M. Indenbirken: The reach of conventional CMMS systems is limited to the site of the data processing. Therefore in the context of maintenance and repair of machinery or plants still a lot of paperwork is incurred immediately on site. Subsequently the data and feedback collected in the field have to be transfered into the central CMMS system,

which is time-consuming. For this reason, this step is often omitted. Moreover, this procedure carries the risk of errors during the data transfer. In mobile maintenance, PDAs, tablet PCs, or smartphones are used that provide the staff member on site with all relevant information, for example which object is to be maintained, where it is located, which work is to be done, and which auxiliary material and operating supply items are required. This information is previously transfered from the central CMMS system to the mobile devices via wireless LAN or docking stations. The feedback can then be entered directly on site and later be synchronized with the central CMMS system without any media disruption, bringing it up to date.

You are also using the RFID technology for this purpose and have developed it further?

   M. Indenbirken: Yes, because RFID transponders mounted on the installations allow for their unambiguous identification via a mobile device. Thus they not only increase the safety but also make work easier. All that needs to be done is to approach the RFID chip with the mobile device, and the appropriate work instructions will appear on the display. The staff member will be guided step by step through the individual tasks according to the current maintenance schedule. We have developed the V-RFID transponder, a batteryless RFID chip with an integrated display unit, based on the e-paper technology. The information stored on conventional RFID chips but invisible without a reader becomes visible to anyone at any time by means of this display. V-RFID chips are therefore particularly suitable for mobile isolation measures as the display allows to see the current plant status without a reader at any time. Among other things, maloperations or switching errors can be prevented this way.   (no)

The batteryless RFID chip with integrated display unit V-RFID is particularly suited for mobile safety isolation measures

References

[1] Steag Energy Services GmbH, Essen, Germany: www.steag-energyservices.com