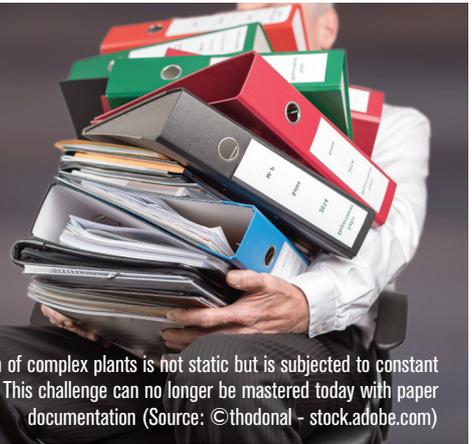


CARRY THE COMPLETE PLANT DOCUMENTATION IN YOUR POCKET

The documentation of complex plants is not static but is subjected to constant change. This challenge can no longer be mastered today with paper documentation (Source: ©thodonal - stock.adobe.com)



LiveDOK.Web, an operating-system independent, mobile documentation system from Rösberg Engineering, directly transmits documentation changes made on-site to a central online server. This means the latest information is immediately available to all users via a variety of different devices

Every innovation brings new possibilities. For process plants, too, improved sensor technology, more flexible actuator technology and Industry 4.0 concepts in general are opening up new opportunities. Products can be developed that were previously unthinkable, efficiency can be increased, cycle times speeded up, maintenance made easier – and much more. However, as a result plants become increasingly complex, shorter commissioning times are required and unscheduled downtimes have to be avoided as far as possible. These demands influence the whole of plant and project planning. Good documentation that reflects the as-built

state of the plant is essential – otherwise how can anyone keep an overview? With the advent of Industry 4.0, paper documentation can no longer keep pace with technology. Digital solutions are called for that can be used and processed directly in the plant, including on mobile devices.

The documentation of a process plant is not something static which is first drawn up and then remains the same forever. Rather, it is constantly subjected to change, from initial planning to commissioning, through operation to modernisation or dismantling. This applies particularly in situations where, in order to save time, processes take



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place in parallel that were previously mainly performed in series. For instance, changes in the documentation have to be reliably exchanged between construction team and start-up team, if the documentation is to match the real as-delivered state of the plant, as is required from a legal viewpoint for its safe and trouble-free operation. And later during the operational phase, for example, maintenance crews have to be able to record with as little difficulty as possible when components have been replaced, parameters adapted or other changes made. For this purpose, simple tools are required that can also be used by non-specialists without intensive training – because no tool is good unless it gets used.

CONSISTENT DIGITAL DOCUMENTATION

Thus simplicity of use was one of the main goals when developing LiveDOK NG, the documentation software from Rösberg that enables plant documentation to be kept up to date in real time (Fig. 1). Simplicity is the only effective approach to ensure maximum user acceptance. But in many cases – especially where commissioning or maintenance are concerned – fixed-site workstations contradict the idea of simple, flexible operation. Remarks that cannot be entered in the documentation on-the-spot are soon forgotten.

With LiveDOK.Web, the company from Karlsruhe has now created an operating-system-independent, web-based solution suitable for use on different devices and thus also for mobile use within the plant (Fig. 2), because digital documentation solutions need to be consistent, whether in or outside Ex areas, whether at fixed or mobile operating stations. With the web-based add-on for documentation tool LiveDOK NG, this is now a simple matter. LiveDOK.Web directly transmits documentation changes made on-site to a central online server. Then the latest information is immediately

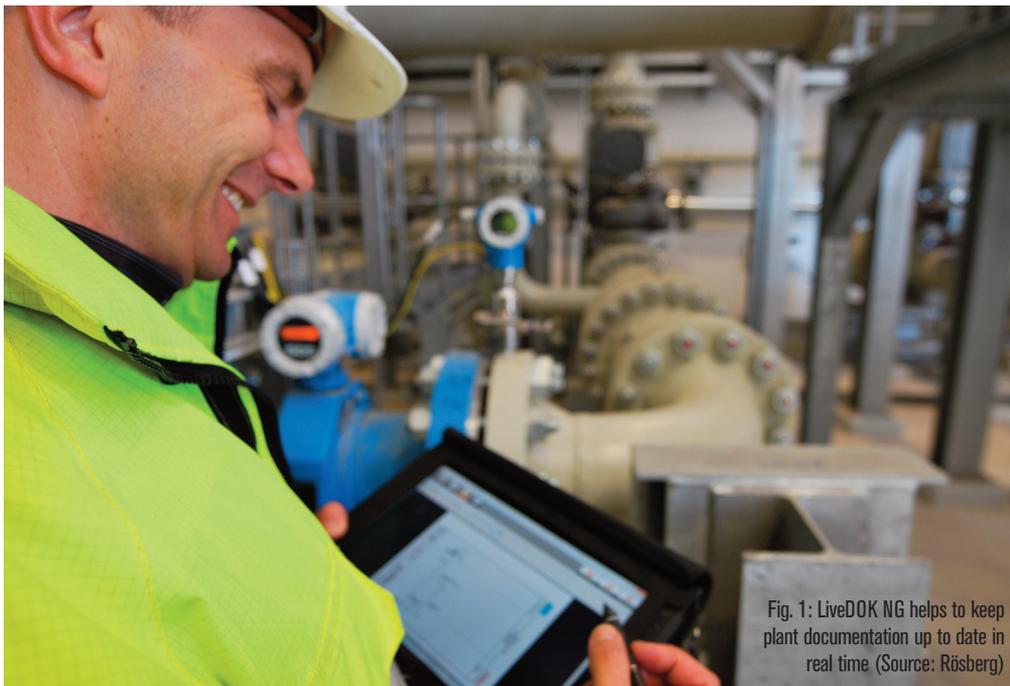


Fig. 1: LiveDOK NG helps to keep plant documentation up to date in real time (Source: Rösberg)

available to all users.

Users do not have to install any software in order to use the web application – they only need an internet browser on the device they are using. LiveDOK.Web is designed for touch operation and works independently of the type of operating system, meaning that it can be used equally well on Windows, Android or iOS devices. The user interface is responsive and thus adapts flexibly to different display sizes. So if someone wants to refer briefly to the documentation, this can now be done on their mobile phone. When entering changes, however, a bigger display in the form of a tablet should be used. The mobile variant supports the same change functions as the desktop solution.

CHANGE ENTRIES MADE EASY

Whether as a desktop version or in mobile use, flexibility and simplicity of operation are essential elements of the idea behind the digital documentation software. LiveDOK NG converts documents out of more than 200 different trade-specific data formats from the areas of CAD, Office and multimedia into PDF format. These PDF documents can then be used as a basis for further work. Thus no special programs or licenses are necessary in order to view or change the documentation. Thanks to clever indexing, the whole body of documentation can be searched in a very short time with a “Google-type” search

‘Whether as a desktop version or in mobile use, flexibility and simplicity of operation are essential elements of the idea behind the digital documentation software’

syntax, and the required documents quickly located. The structuring of the documents and views can be adapted to individual needs. A broad range of redlining functions is available, enabling a wide variety of changes to be made directly in the document.

The redlining options range from handwritten entries, marking, crossing out and many more, to the uncomplicated assigning of individual document status. Changes that have been made are available to all users straight away. The entered changes can also be filtered according to various criteria (processor's identity, date, document status etc.) and then passed on to the relevant engineering departments, who can then adapt the original documents and re-enter the updated version – without redlining – into the documentation tool. Throughout all these processes it is always recorded

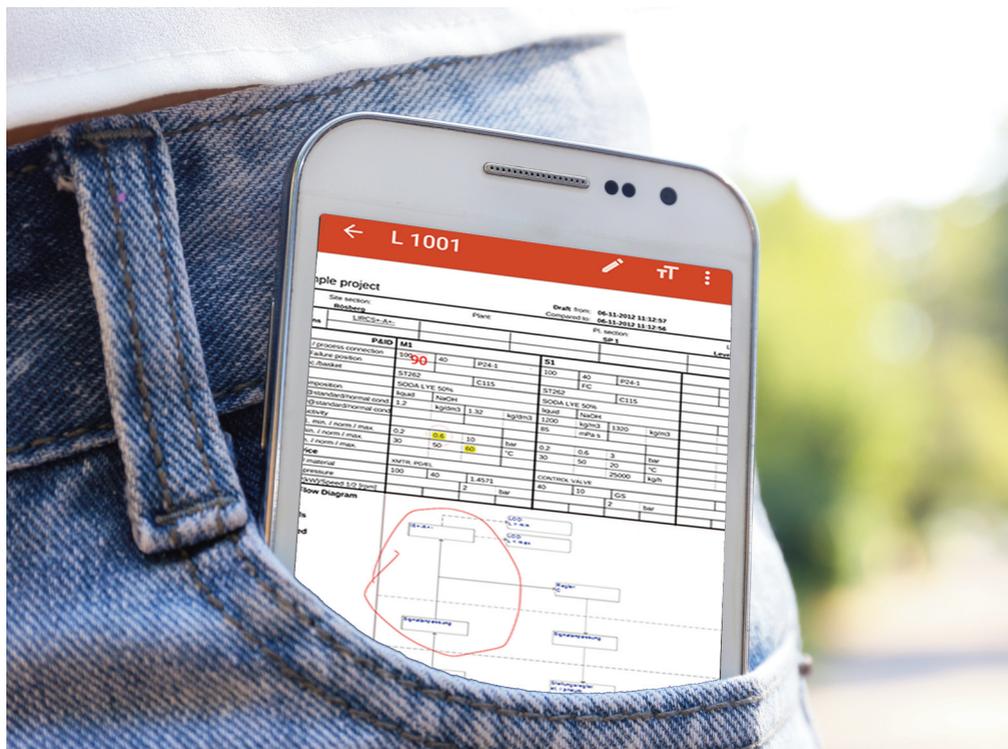


Fig. 2: With LiveDOK.Web the whole plant documentation can be carried in your pocket, so to speak (Source: Rösberg, ©Africa Studio - stock.adobe.com)

who has made what changes, and when. Thus the development of the documentation remains traceable for years.

Working with the digital documentation system is suited to all the phases of a plant's life cycle, whether for P&I diagrams, flow diagrams and loop lists in the planning phase or floor plans, storage plans and foundation plans during the construction phase. Factory Acceptance Tests (FATs) and loop checks can also be more efficiently

safety at work (for instance Directive 2009/104/EC or in Germany BetrSichV) and considerably enhances plant safety. By using consistent documentation, companies make an important contribution at the same time to the safety of their personnel and their plant, and to environmental protection. Consistent plant documentation also ensures trouble-free production processes and adherence to product specifications, thus enhancing product quality generally. Personnel can be deployed more efficiently since, apart from anything else, they no longer have to spend time tracking down paper documentation and laboriously making copies. And consistent plant documentation improves the public image of the enterprise because it is in a better position to fulfill the demands and expectations of legislators, investors and employees.

The reverse is also true. Working with documentation that is not necessarily completely up to date can have adverse effects. In less serious cases, for instance, false alarms may be triggered by wrongly-installed replacement parts. More far-reaching effects may be the increased production of NOK parts or more plant downtimes, and in the worst case incomplete or non-current documentation can lead to accidents or environmental pollution, with all the associated negative consequences.

and reliably performed with the support of the software. It is suitable for operating regulations and safety instructions. Uses in maintenance include keeping service instructions and inspection protocols up to date. In quality management, inspection requirements, qualification documents and similar can be stored and/or generated.

BENEFITS OF CONSISTENT PLANT DOCUMENTATION

With the mobile variant, digital plant documentation can now be used throughout. The consistent plant documentation resulting from this benefits companies in many ways. At all operation sites valid, constantly updated documentation is available that provides evidence of tests and changes. This fulfils all specifications on regular inspection and legislation on health and

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