



“Efficient in every aspect”

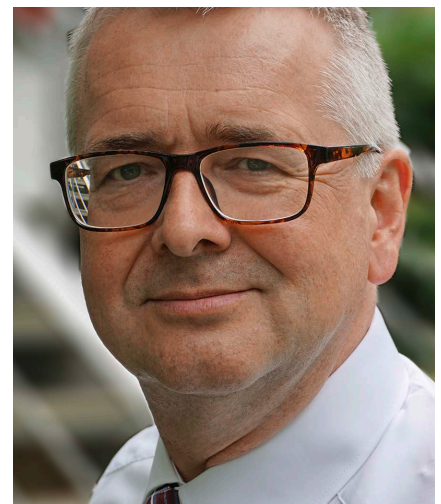
Maria Hilf hospitals set standards - not only for their medical and technical equipment, but rather also for their locking technology.

A visit to Mönchengladbach: The merger of three medium-sized hospitals created one of the most state-of-the-art health centres in the region. The new building with its high-quality medical equipment proves to be much cheaper than maintaining the old buildings. A considerable cost-efficiency factor is the high-quality security technology, which includes the CES OMEGA FLEX electronic locking system.

There is no sign of any investment backlog which can be seen in many other places. Between 2002 and 2017 alone, around 200 million euro was invested in the modernisation and expansion of the Maria Hilf hospitals in Viersener Strasse in Mönchengladbach, including new intensive care units, outpatient clinics and operating rooms. This was an investment in

the future, which has only recently earned the hospital a top ranking in the 2017 “Hospital Compass” of the Focus news magazine. Out of 348 clinics in North Rhine-Westphalia in total, only 87 made it into the list of the best clinics. State-wide, Maria Hilf now ranks 21st and has gone up 11 places compared to the previous year.

The Maria Hilf hospitals not only score with first-class medical and technical equipment, but rather also with modern utilities and operating technology, innovative room concepts and supply processes - and last but not least with a sophisticated electronic locking system. “As the hospital continued to expand, our mechanical locking system increasingly reached its capacity limits,” explains Stefan Bahun, safety engineer and



Dipl.-Ing. Stefan Bahun, safety engineer and division manager at the facility management of the Maria Hilf hospitals

division manager of the facility management. In particular the manual issuing and administration of keys required a high level of bureaucratic effort; losing a key was cost-in-

tensive, and the mechanical system did not even permit individual or time-limited access authorisations.

High expectations of the electronic locking system

After weighing up all then costs and benefits, the electronic locking technology was introduced in 2009. "As with medical technology and security infrastructure in general, we wanted to play a leading role in this segment, too," says Stefan Bahun. The specifications were correspondingly demanding: The new electronic system was designed to provide greater security and efficiency to a dynamically growing facility with thousands of doors and keys, frequently-changing users and, correspondingly, differing authorisations, while at the same time saving costs and resources. Therefore, only solutions which offered online control via a wireless network came into question. After intensive market research, the hospital opted for the Velbert-based locking system manufacturer CES. At the beginning of the 2010s, the company was one of the few suppliers which were able to meet the requirements profile. Another advantage

was the geographical proximity and the direct link between CES in Velbert, the hospital, and the contractor for the implementation, Konntec Sicherheitssysteme in Mönchengladbach. In addition, the cooperation between CES and Konntec has existed for many years now. Together the companies installed the locking system of the Borussia Park football stadium in Mönchengladbach and the Elbphilharmonie concert hall in Hamburg.

CES OMEGA FLEX - developed by experts with locking system know-how

"With its flexible application possibilities, the system components which can be extended as required, and the uncomplicated assignment of individual authorisations, OMEGA FLEX is ideal for hospital operations," says Friedhelm Ulm, Product Manager at CES. From its system architecture to the user interface and hardware: OMEGA FLEX is a 100% in-house development by CES, and the expertise of the locking system specialists flowed into all parts of the system. "As is known from the world of mechanical locking systems, we

have based the user interface on a locking plan matrix. This allows for a simple and intuitive control of the software and facilitates the transition from mechanical to electronic systems," explains Friedhelm Ulm. Moreover, the electronic CES locking cylinders and handle sets are just as easy to fit as mechanical solutions.

Simple, dynamic, flexible: The locking system in real life

Finally, no more "running from door to door": The entire locking system can be managed and controlled using a PC. The electronic locking devices - whether knob cylinders, wall terminals or handle sets - are equipped with radio modules and communicate with the master computer via Access Points. Any change to authorisations can be transferred quickly and easily to the respective doors without having to walk to the corresponding cylinder. With just a few clicks on the PC, it is possible to determine who has access when and where. It is also possible to allow access for a limited period of time and to determine the times at which the cleaning personnel has access to the operating rooms. At the same time,



The friendly and modern entry space of the St. Franziskus hospital, part of the Maria Hilf hospitals at Viersener Str. 450 in Mönchengladbach

lost locking media can be blocked immediately. In return, also the locking devices report all access events wirelessly to the central software.

Increased safety during the day-to-day hospital routine

In terms of complexity and extension of the locking system, it is one of the largest online systems managed by CES and Konntec. After the complete merger of the Maria Hilf hospitals in Viersener Strasse, a total of around 2,300 doors had to be equipped with electronic cylinders and handle sets, plus more than 100 wall terminals and 300 Access Points. Around 3,000 electronic locking media were issued to permanent hospital staff, but also to craftsmen, maintenance and service providers, as well as students and temporary employees.

While patients' rooms, which usually remain unlocked, are equipped with a mechanical CES lock, the OMEGA FLEX system is used wherever increased security requirements apply and individual access control is required. These include, in particular, functional wings such as OP rooms, endoscopy, or the cardiac catheter laboratory, as well as outpatient clinics and intensive care units. Access to doctors' and nurses' rooms, nursing administration and the office wing is also controlled electronically. The electronic locking system also includes emergency and escape route control. The authorisations concept, which regulates the access rights of the hospital staff in detail, is mapped in the CEStronics software as a virtual locking plan with an intuitive user interface.

In some functional wings, wall terminals, electronic handle sets and pushbuttons are used, which together enable access options which meet user needs and requirements. For example, staff can identify themselves at a wall terminal at the entrance to the operation room or cardiac catheter laboratory, the doors open automatically and patient beds can

pass through without any problems. Access is possible at any time when identifying oneself at the electronic handle sets, but it is limited to a certain time frame when using the pushbuttons. OMEGA FLEX can also be integrated into highly sensitive security areas: For example, a 2-factor

is a new server architecture which can process a large number of complex data sets much faster. IT security has also been improved, firstly by an integrated backup and secondly by the secure encryption of network communication between server and clients.



The CES OMEGA FLEX system is used at the Maria Hilf hospitals wherever increased security requirements and individual access authorisations are needed.

authentication is used in the IT server rooms. First, employees have to identify themselves at the CES wall terminal, but access is only given to them via the authorisation on the fingerprint reader.

Software update increases IT security

Every day, thousands of pieces of information are entered into the locking system database: Every individual access event, every battery status message is recorded. In order to ensure that the computing power can keep up with the ever-increasing data volumes, in November 2017, in close coordination with the facility management of the hospital, Konntec and CES, a considerably more powerful PC software was tested and installed. At the heart of the software

Stefan Bahun has come to appreciate the problem-solving skills of his service partners. "When transporting patient beds or wheelchairs, for example, it often happens that knobs of door cylinders break off." However, without a knob a closed door can no longer be opened electronically, and in extreme cases only by force. "With a tool specially developed by CES, which practically is an add-on,

Project partners:

The cooperation between CES and Konntec has existed for many years now.

Together the companies installed the locking system of the Borussia Park football stadium in Mönchengladbach and the Elbphilharmonie concert hall in Hamburg.

www.ces.eu
www.konntec.de



With its focus on innovative ideas, among others, also the cardiologists of Maria Hilf invite local practitioners and colleagues from other hospitals to take part in cardiological training sessions. These include live transmissions with simultaneous explanations of the operation by the operating surgeon.

we are now able to repair and replace system components ourselves directly at the door. This saves time and money,” says the facility expert.

Currently, the CES OMEGA FLEX system is still working in stand-alone mode. However, the locking system specialists at Konntec have already developed an interface to the personnel management system.

In the future, it will be possible to assign access authorisations directly at the HR department when hiring employees. Thus, the locking system is dynamically growing in line with its tasks and is contributing to further improving the safety and efficiency of the hospital routine.

Healthcare provider with a holistic approach

“Convalescence in the countryside” – this is the motto of the Catholic Maria Hilf hospitals, who already in 1908 opened the first specialised hospital for tuberculosis patients in Mönchengladbach. The 17 specialist departments with 766 beds and 12 special centres employ around 2,400 staff, who treat around 37,000 in-patients and 120,000 out-patients annually according to the latest medical findings, using state-of-the-art medical technology. The twelve operating rooms include, for example, a so-called hybrid OR, which supports the surgeons in cardiovascular surgery by means of the latest imaging procedures. At the same time, the Maria Hilf hospitals are also the

largest academic teaching hospital of Aachen University and an important contact point for prospective

doctors and renowned physicians.



The design of the inner courtyards, which are the result of the overall architectural endeavour to achieve as much daylight as possible and a good spatial/air ratio, also reflects the hospital's modernity.