Textile Management
Know where your laundry has gone

Casaques, white coats and trousers are available in the hospital Leverkusen since january. Employees get their work clothes and the system documents the name of the employee and what items he took.

Image: Leverkusen Hospital/Montag-Klose

Aim of the project
A better overview of all laundry movements by the 2.500 employees thanks to a full textile supply of the Leverkusen hospital.

Challenge
Ensuring rapid access to and availability of all required laundry items 24/7, even at peak times.

Solution
An RFID-based, fully automated room solution which registers and documents wearers and clothing.

Benefits
Efficient and reliable detection of wearers and garments & fast issuance to avoid waiting times and delays.

„texRoom" Textile Management Solution

In the following article written by Birgit Schindele, editor of the trade magazine R+W Textilservice of Holzmann Medien GmbH & Co. KG, you can read about the benefits of using RFID technology.

Lengthy waiting times for laundry issue are a thing of the past at Leverkusen Hospital. Since January, doctors, nurses and kitchen staff have been serving themselves in the "texRoom". Behind this is an RFID system, which automatically records which garments the staff are taking.

How many tunics do nursing staff need in a week? There is no need for Jörg Welter from Leverkusen Hospital to ask himself questions like this any more. He can find out with one click. In January, the Head of the Preparation Unit for Medical Products and Textile Supplies introduced a new workwear facility using RFID technology - deister electronic's "texRoom". The system behind it is simple: The chip, which allows personnel to clock in and pay for their lunch in the canteen, also opens the door to the clothing storeroom. There, the workwear for more than 2,500 employees is stored ready for use on 15 shelves. "It's

just like in the supermarket", says Mr. Welter. But instead of food, employees pick up trousers, tunics and scrubs. Holding their clothing, they leave the 120 m2 room via a revolving door. As they pass through, the door scans which garments the employee is taking with them: "It takes almost no time at all."

Things were quite different with the old facility - a hanging system: In that case, staff signed in via a terminal and used a touchscreen to select the required clothing. "It took a long time", remembers Mr. Welter. As staff had to wait while the correct garments rattled along the conveyor to one of the two issuing points. Up to seven items might need to be issued at the same time, but each garment had to be picked and moved separately. On some days, employees had to queue during shift changes.

In the "texRoom", several employees can help themselves at the same time from the shelves with 24 individual compartments. Everyone knows what their uniform looks like", says Mr. Welter. So the units are actually sorted by professional discipline, but are only labelled by size. Who should take what has been specified in the system. For example, nurses are expected to ▶

Find further information at: www.deister.com/textile-management

collect three sets of clothing at once, more precisely, three pairs of trousers and three tunics, and doctors are expected to take nine garments. Every garment is chipped", he explains. In other words, each of the 30,000 items has its own UHF transponder.

The ultra-high frequency chip includes antennae, with a range of up to seven metres. Each component can store information, such as the size and type of garment. Should such a transponder encounter a reader, the devices exchange data within fractions of a second. RFID (Radio Frequency Identification) technology lies behind this contactless exchange of data. The transmitter-receiver system connects to a computer program, which processes the information.

In addition to the data from transponders, the software also accesses the individual employee accounts that have been created. In this way, the system automatically calculates how many pairs of trousers, in which sizes, are currently in circulation. And much more: If items are in high demand, the system reports when they are running short. "There are currently 10,000 garments on the shelves", says Mr. Welter on the last Wednesday in August. The numbers change in real time, as soon as uniforms are returned to the laundry. Antennae in the two return cabinets scan the garments that have been dropped in and automatically remove them from the employee's account.

UHF chips store information

Full containers are collected by a driver from Göddecke Textilpflege. Used work wear from Leverkusen Hospital is processed by the family-owned business. Every week 220 textile professionals, on two sites, clean, wash and press a total of 115 tonnes of laundry at the company's headquarters in Olsberg, North Rhine-Westphalia (NRW) and 60 tonnes in Lippstadt.

"RFID makes our work easier", says Managing Director Jürgen Göddecke. This is why, by his own account, he has already been relying on this technology since 2016. In fact, the UHF chips don't just store information relating to the Hospital, but also allow conclusions to be drawn about textile care processes. For example, the data gathered provides an answer to the following question: How often can a tunic be laundered before the fabric starts to wear out? According to Mr. Göddecke, the advantage for him as a laundry rental service operator, is obvious: As he knows the exact lifespan of textiles, he can remove them from circulation before they fall apart. This enables him to guarantee their quality.

In addition to the lifespan of garments, the technology also solves another problem: "A lot of laundry used to go missing." Without the sewn in technology, a lot of garments ended up in the bin or were taken home. Now, should a pair of trousers not be returned, the system shows who has had them. "This means that I always know where an item of laundry is." The business currently has 1.5 million transponders in use. The plastic coated UHF chips are also bonded to the garments by pressure and heat. The roughly 4 cm large technology can be washed, dried and pressed more than 200 times. Only around 2 percent of chips stop working before that, estimates Göddecke. "They work well for us." Precisely because they simplify the in-house processes. In addition to deister electronic, other manufacturers also offer systems with RFID technology. That's not a problem for businesses like

Göddecke Textilpflege: "Once you have the scanning technology, you can incorporate them", explains Technical Director Oliver Göddecke reassuringly. Thus far, Leverkusen Hospital has only been using UHF chips in work wear. For other clients, Göddecke is also using transponders with flat linen, such as for a number of youth hostels in North Rhine-Westphalia (NRW). The business bought and chipped 20,000 sets of bed linen for the 5,000 beds.

As with work wear, it is able to see which items are in the possession of which clients - and which items are returned. If and when the laundry comes back into circulation, the system automatically updates the stock. So, should the company wash exactly 45 hand towels for a care facility, which normally needs 150 items, it actually delivers this quantity, without the individual stations needing to order extra textiles.

The transmitter-receiver system scans the chipped laundry as it is pushed through the tunnel.

Tunnels scan textiles by the container

Laundry operators push laundry containers containing clean textiles through a tunnel back into the hospital's storeroom "Am Gesundheitspark" in Leverkusen. The device automatically scans the transponders and updates the stock. Even before hospital personnel have placed the garments on the two metre high and three meter long shelves, Mr. Welter can digitally see which textiles are in the room. Tunics for nurses, scrubs for doctors, jackets for cooks and trousers for technicians are piled up in the clothing kiosk, as he calls the storeroom. "In the old facility, I didn't have either doctors or technicians", he says - i.e. non-personalised work wear. The 25 technicians also wear trousers allocated by name. This is what the group needed: The technicians wore a wide range of sizes, "from extra small to extra-large."

Should an employee take away more laundry than intended, the revolving door actually lets them out, but there are consequences to exceeding the allowance: Mr. Welter receives a notification. In addition, the chip also stops unlocking the storeroom door when an account is full or overbooked. Anyone who takes away too many textiles, as well as anyone who takes away the wrong items, triggers a message. In both cases, ▶

Mr. Welter talks directly to the staff involved. Initially, he often had to contact individual employees because of overbooked accounts, but now he rarely has a problem with this.

Mr. Welter has been working at the hospital for 18 years. Until the in-house laundry closed in 2016, he managed the operation. Since 2006, when he installed the conveyor belt, he has been relying on digital solutions. Barcodes needed to be scanned individually", he explains. Item by item, which costs time and money. It's very different with transponders: Once sewn in, the system scans all new textiles in one move. When the hanging system needed to be replaced, Mr. Welter looked around at other hospitals. deister electronic's solution won him over. In particular, he says: The revolving door. Employees simply leave through it. "With tunnels, they first needed to open the door, pass through it and close it, before the next person could come out." This saves time for staff and the laundry issue facility gains space thanks to the shelving system: It takes up more than 40 m2 less than the previous facility.

The revolving door from deister electronic has been posting laundry to employees' accounts for ten months now. Thus far without a hitch, confirms Mr. Welter. The program has only been slow to respond once on his computer. "But the IT support is excellent," he states. Specialists identified the issue very quickly. A memory was full. As Mr. Welter has had such a good experience with the room solution, he is making future plans: He wants to digitally record flat linen in future. "We want to know how much laundry each station is using." ■
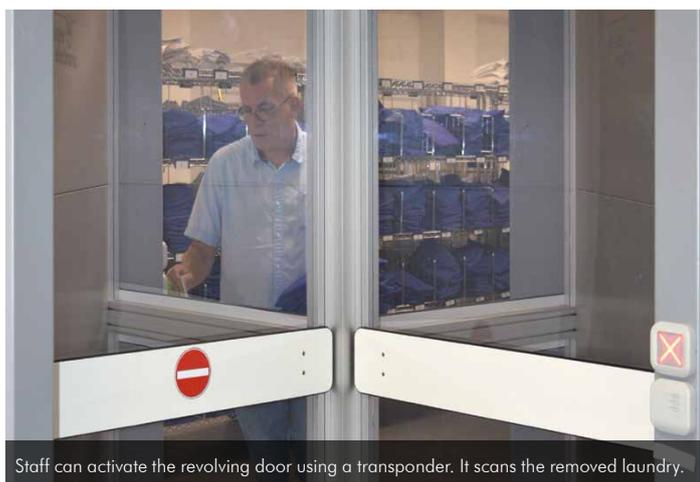
Staff can activate the revolving door using a transponder. It scans the removed laundry.

About R+WTextilservice

The IVW-tested trade magazine "R+WTextilservice" of Holzmann Medien GmbH & Co. KG Verlag offers companies and managers important specialist information on the textile care industry. Among other things, it reports on developments in the industry, new products and process technologies.

R+W Textilservice

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About Leverkusen Hospital

The Klinikum Leverkusen is a hospital of regional excellence with facilities for highly qualified diagnostics and therapy. More than 2,300 people look after the health and well-being of their patients. Doctors, pharmacists, nursing staff, therapists and other professionals are on duty 24/7.

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About deister electronic

For over 40 years, deister electronic has been operating as an international, modern and sustainably managed family business, which stands for innovative products and solutions in the field of identification and security for people, equipment and buildings. Our product portfolio is, in that respect, utilised for managing keys and valuables, identifying vehicles, and for access control, as well as in logistics and automation technology.

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