



## One of the world's most advanced CSSDs driven by T-DOC intelligence



**The Capital Region of Denmark has chosen Getinge's T-DOC sterile supply management solution as its operational backbone in their new state-of-the-art regional CSSD. The result is consistently higher quality, optimized cross-hospital workflows, and improved working conditions for staff.**





**Trine Frederiksen, Program Manager at the Regional CSSD, Capital Region, Denmark**

“The key drivers were a desire for economies of scale and increased quality across many areas – instruments, employee skills, training and management style.”

Home to 2 million people, the Copenhagen metropolitan area is a key population center in Scandinavia. The Capital Region of Denmark decided to merge their seven individual central sterile service departments (CSSDs) into a regional CSSD.

It was clear they needed a new technical solution – on a scale rarely seen elsewhere in the world. Once fully rolled out, the new regional CSSD will serve 33 surgical departments across the 7 hospitals in the region.

“We needed a documentation and surgical instrument traceability system that could ensure a coherent flow in the CSSD, out to the operating rooms, and then back again. That wasn’t available in all the region’s CSSDs at the time,” explains Trine Frederiksen. “As the project evolved, the hospitals realized they also needed complete integration with a surgical scheduling system and a logistics system to track and trace which instruments go to which hospital,” Trine continues.



#### Automation types in the regional CSSD:

Free-arm robots:	24
Automated guided vehicles:	24
Stock locations in high bay stock:	22,000

It was important that the solution had a user-friendly interface, that it was available in the local language, and that the hospitals could provide input to help develop and customize it in steps with their future needs.

The choice to meet the long shopping list fell on Getinge’s sterile supply management solution; T-DOC. And so began one of the largest IT implementation projects in a CSSD in Getinge’s history.

The Regional CSSD consists of two new purpose-built and identical reprocessing facilities, each with enough capacity to ensure service continuity via one center if the other is out of action for a shorter period of time. One is at Rigshospitalet in Copenhagen and the other is at Herlev Hospital, just outside the capital city.

“In the beginning of the project, it was really important that we had some dedicated Getinge employees, who were down to the last detail. We wanted the same people to help us develop the requested functionalities. And those were the same employees, we worked with over a long period of time”.

#### T-DOC driven automation

The two state-of-the-art reprocessing facilities rely on advanced robotics and automation, powered by T-DOC. The automatic sterile workflow allows the sterile assistants to focus on their most important tasks; to pack trays and case carts, conducting quality assurance and ensuring continuity in the production. Automation controlled by T-DOC intelligence handle the seamless movement of goods inside the CSSD lifting and maneuvering of instrument sets inside the CSSD.

## Combining T-DOC with automation is made easy with the user-friendly T-DOC interface



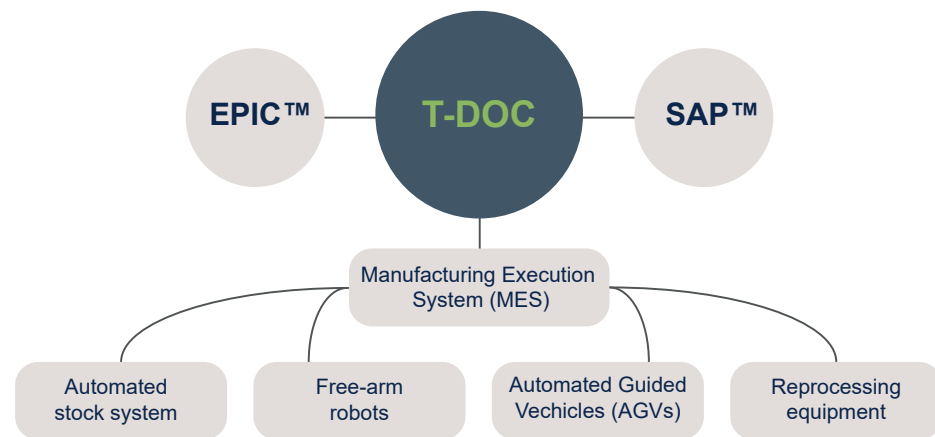
Image: T-DOC driven AGV (Automated Guided Vehicle) transports instruments to and from washing and packing tables.

“Our robotics supplier handles case cart packing and this is only possible thanks to the integration with T-DOC. Basically, T-DOC tells the robot ‘Place this item in the middle because it’s ergonomically optimal to have a heavy tray at a good lifting height’, Trine explains.

The high level of automation improves working conditions for staff and reduces strain injuries. It also means outcomes and quality are always consistent, no matter which employee is working. And where individual hospitals used to keep their own operating room instrument stocks, they now receive exactly the instruments they need in due time for each surgery, with the purpose to save time, OR storage space, and money.

“T-DOC’s integration with the automation equipment means the employee orders goods via a T-DOC panel at their washing and packing table. The panel is easy to use, and once the employee has processed the soiled or clean instruments, they send them on automatically. This removes a lot of heavy lifting, pushing and pulling for our staff. You can really say T-DOC has helped improve the working environment,” Trine says.





## T-DOC interfaces with our surgical planning, purchasing, warehousing and logistics systems

### Seamless interfacing with multiple solutions

"One of T-DOC's primary assets is its ability to interface with our range of hospital systems," says Trine. In addition to the interface with reprocessing equipment and robotic solutions, T-DOC also interfaces with the surgery scheduling, the purchasing and the logistic solutions in the hospitals. Staff can work conveniently across all these systems by simply using the T-DOC interface.

"The advantage of using interfacing with T-DOC is that the employee only has one screen and structure to deal with," Trine says. "It's so much simpler to work from one single system. This also applies to training and learning, where employees need only to work through T-DOC," Trine continues.

"T-DOC displays live updates all the time so we can see what is being produced and what is being used in the operating rooms, which is important for the CSSD production. We now know when we can expect the instrument trays back in the CSSD".

T-DOC's integration with SAP, the hospitals' material management system, further exemplifies the seamless user experience. "In T-DOC, we set minimum and maximum instrument inventory levels and orders are automatically placed in the purchasing system," Trine explains.

"We also integrate with MES, the manufacturing execution system. MES is responsible for translating tasks from T-DOC into commands for the equipment", Trine says.

### Optimized case cart delivery

When calculating and scheduling the delivery of sterile and soiled instruments to and from the hospitals, T-DOC considers the transport time and routes. T-DOC's flexibility streamlines the complex task of serving all surgical departments in all of the region's hospitals. "33 surgical departments is a lot and T-DOC helps us keep track of all our customer information and delivery locations," Trine says.

Goods are sent in patient specific case carts carrying instruments and other goods for each surgery to each operating room. Operating room staff scan the case cart barcode to easily register all its content and connect it to the patient, and no longer need to process individual instrument sets.

"T-DOC's support for dynamic preference lists on case carts is a unique strength," Trine highlights. "Users can specify case carts for specific surgery types but can also customize the preference lists to meet the specific needs of the individual hospital, surgeon, operating room or patient," Trine continues.

If a surgeon has preferences for specific surgical instruments, T-DOC can be programmed to automatically match these requirements when placing orders.

"T-DOC helps us a lot with case cart deliveries," Trine says. "Once we've made the case cart compositions, we can add special preferences for the individual surgeon or surgical procedures", she continues.

"T-DOC informs the surgeon of the instrument delivery and which surgery he or she is booked for. The OR nurses can now prepare and check which delivery is on its way and determine if additional delivery is needed for the surgery."

### Meeting hospital specific requirements

"Another key factor for selecting T-DOC is its scalability," Trine emphasizes. T-DOC can be adapted to fit sterile supply workflows of different sizes, and can be configured to manage all or part of the workflow.

"For Capital Region of Denmark, this is a key advantage given the different sizes and needs of the 7 hospitals in the region," Trine highlights.

"The hospitals' surgical departments are quite individual so it's very helpful that T-DOC can be set up individually. We have certain steps that are mandatory, for example instrument scanning on arrival in the operating room. But to a large extent, users are able to design the flow the way they want," Trine highlights.

This ease of use has helped overcome initial staff hesitation about using such an advanced solution. "There was some initial skepticism, but after some time it was reduced when it became clear how user-friendly T-DOC is," Trine acknowledges.



### Capital Region hospitals in numbers Expected once fully implemented

Surgical departments:	33
Operating rooms:	+300
Surgical procedures/year:	200,000
Reprocessed containers/year:	416,000
Reprocessed trays/year:	1,340,000

#### CSSD

T-DOC users:	60+60
T-DOC super users:	50+50

#### OR

T-DOC users (nurses):	625
T-DOC super users (nurses):	225 (6-10 per surgical dept.)
T-DOC super users (surgeons):	3-8 per surgical dept.

#### Other

Management and QA	70
IT and Tech	60

Trine has extensive experience of working in T-DOC dating back many years and has seen the solution develop from a simple tracking system to a complete sterile supply management solution. "T-DOC has advanced enormously over the years into a solution that supports surgical planning, instrument purchasing, warehousing and logistics – all the way to controlling when our trucks need to drive from one place to another to be on time," Trine says. "T-DOC's ability to calculate in relation to instrument amounts really helps us to control the production in our CSSD." Trine continues.

"Working with a leading supplier with a proven track record was a critical success factor for the entire project," Trine emphasizes. From the start through to completing the implementation of the project, Getinge specialists worked closely with Rigshospitalet, Herlev Hospital and the five other hospitals on the roll-out.

"In a project of this magnitude, it's a huge asset to have experts on hand who are ready to go the extra mile and help you to develop the solution to the level you want to reach."



### **T-DOC functionalities and interfaces**

Capital Region has a multi-site T-DOC license covering their 7 hospitals. It includes +470 production workstations with barcode readers and 150 administrative workstations for maintaining master data, ordering, reporting and more.

#### **T-DOC functionalities**

Case Cart Solution, Automation, PlanAssure, Operation Count, High Availability, Multimedia, Fast Track and Repair

#### **T-DOC interfaces**

Operation (EPIC), Material Management (SAP), and Automation Interface (MES)

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