

Fraunhofer Institute for Production Systems and Design Technology IPK

Case Study: Charité CFM Facility Management GmbH

Cir.Log[®]: A (R)Evolution for the Central Sterile Services Department (CSSD)

We are Charité CFM Facility Management GmbH, a subsidiary of Charité – Universitätsmedizin Berlin, responsible for all non-medical and non-nursing services. With 12 service areas, we manage and supply all Charité locations. Among other tasks, our responsibilities include the central sterilization with the central sterile services department (CSSD) at the Charité Campus Benjamin Franklin.

The challenge

More than 14 million surgical instruments are processed annually in the CSSD at Charité – they are cleaned, sorted, packaged, and sterilized. During packaging, one person has to sort up to 150 instruments into a sieve. The great similarity of the instruments, illegible article numbers, and time pressure can all contribute to the wrong or missing instruments being sent to the operating room.

These errors have a direct impact on patient safety. Previous solutions such as RFID technology and staff training have not been able to solve the problem completely.





To implement our ambitious zero-error policy in the CSSD, the use of an innovative product such as Cir.Log[®] is vitally important. With this state-ofthe-art system, we can ensure end-to-end error detection and prevention.«

> Ümit Ejder Head of CSSD Clinical Services Charité CFM Facility Management GmbH

Joint work

The goal was to support the packaging process in the CSSD and to implement a zero-error policy. The collaboration took place in several steps. First, a three-month feasibility study was conducted, which was very successful and provided important insights. Through the use of AI, a total of 156 adifferent surgical instruments were successfully identified with an accuracy rate of 99.9%.

Based on this, the first prototype was installed at the Charité's Campus Benjamin Franklin. The system showed a high degree of reliability when it came to identifying individual surgical instruments under real-life conditions.



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The solution

The results of the project were incorporated into the development of Cir.Log[®]. This is the first smart camera with two image sensors for sterile supply logistics. In a subsequent development phase, the AI model was further optimized so that it is now able to recognize several instruments in the image simultaneously and with precision.

Cir.Log[®] ensures that all the necessary surgical instruments are in the right place at the right time. This increases patient safety, because Cir.Log[®] checks and documents the availability of all surgical instruments, thus reducing delays in the operating room.

Further information:

www.ipk.fraunhofer.de/cirlog-en



99.9% Al detection without markers

70 % fewer complaints from the operating room

About Fraunhofer IPK

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With the help of application-oriented research, we develop solutions along the entire industrial value circle.

Our guiding idea is a digitally integrated production in which man and machine interact on the basis of data and can thus adapt flexibly and proactively to changing requirements.

Contact us

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