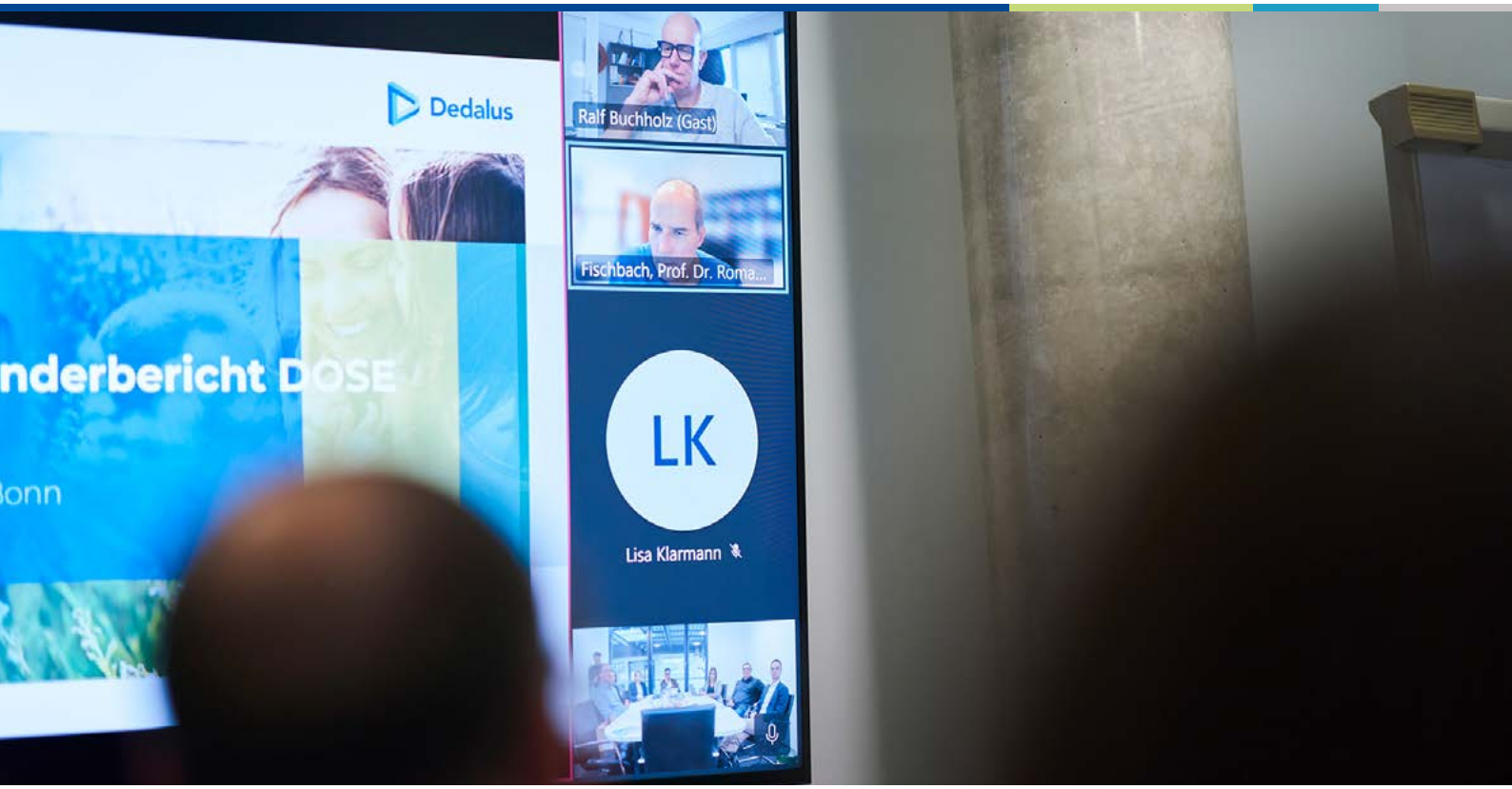
Dedalus

X-RAYS BECOME VISIBLE

ASKLEPIOS DIGITIZES DOSE MANAGEMENT AND PROTECTS PATIENTS AND STAFF WITH DOSE.



Since the revision of the Radiation Protection Act (StrlSchG) and the Radiation Protection Ordinance (StrlSchV), operators of X-ray units are required to document the radiation dose of the modalities. Asklepios took this as an opportunity to implement a dose management system and ultimately decided on DOSE.

> ***" Regardless of legal requirements, we have always aimed to examine our patients with the lowest possible radiation dose and have regularly monitored this "***
> says Prof. Dr. Roman Fischbach, Chief Physician of the Institute for Radiology and Neuroradiology at the Asklepios Clinic Altona.

Institute for Radiology and Neuroradiology at the Asklepios Clinic Altona. With the dose management, every examination can be recorded and evaluated to uncover irregularities that would not be noticed in everyday clinical practice.

> ***" Additionally, we achieve a generally higher awareness of radiation exposure "***
> adds Prof. Fischbach.

Asklepios clinics not only record high-dose devices like CT scanners or fluoroscopy and interventional devices but indeed all imaging devices. This is required by the StrlSchV, which states that the radiation protection officer must regularly evaluate and analyze the exposure figures concerning dose.

> ***" With the dose management system, we can easily meet these requirements. The regular evaluations also serve the safety of patients and staff "***
> emphasizes Dr. Manfred Mascheck, Medical Physics Expert (MPE) at Asklepios.

Customizable and Flexible

The project was initiated by Prof. Fischbach and supported by the corporate IT.

“ We were looking for a system that was easy to use and could be adapted to our requirements. It also had to be location-independent and capable of handling multiple clients since we wanted to use it across all facilities. And last but not least, it had to integrate all modalities ”
summarizes Sebastian Prokop, Team Leader of Medical Specialized Systems at Asklepios Service IT GmbH, regarding the selection criteria.

“ DOSE Brings Us Transparency, and That Is a Decisive Factor for Improvement. ”
Prof. Dr. Roman Fischbach, Asklepios Clinic Altona

From Users For Users

The Team: Stefan Licht, Nadine Vermeerbergen, Sebastian Prokop, Dr. Manfred Mascheck (left to right)

Initially, the responsible parties had chosen a different system for piloting, but it was quickly determined that it was not suitable. Subsequently, a project group consisting of IT staff and chief radiologists from several Asklepios clinics thoroughly evaluated various systems.

" In the end, we chose DOSE because the system precisely met the criteria that were important to us: multi-client capability, individual configurability, and a training team that accompanied the system's introduction. Furthermore, we gained a strong partner in Dedalus HealthCare, who is familiar with our IT ecosystem " explains Prokop the decision.

After a successful pilot operation in four facilities, DOSE is now being used in nearly all 44 clinics. Currently, around 450 modalities are integrated into DOSE, although this number constantly changes due to the size of the corporation. In addition to DeepUnity, the dose management interacts with four other image data management systems (PACS).

Making the Unseen Visible

Before the rollout, the project team first informed the radiation protection officers in the individual facilities about the project. Subsequently, the key users in the specialized departments were trained so that they could independently configure the system.

" The first task was to set up the basic configuration. The key users linked the various examination types with the corresponding dose reference values using mapping protocols. Simultaneously, the system was integrated by the IT "
explains project manager Nadine Vermeerbergen.

Afterward, all users were gradually trained.

Dr. Mascheck emphasizes the importance of convincing the staff about DOSE:

" Our employees are extremely busy with routine tasks nowadays. The dose management they were responsible for was a time-consuming additional task before the introduction of DOSE, involving a lot of paperwork and partly manual procedures. The new dose management system largely relieves them of this task. For major reference value exceedances or significant incidents, the responsible persons are automatically informed by email and can take appropriate action. "

Regular documentation often reveals things that need to be adjusted. Prof. Fischbach cites examples such as standard protocols for the timing of perfusion scans, the number of cycles, or the dose settings for CT interventions.

" We receive valid feedback even on points that are often ignored because they are not diagnostically relevant "
says the chief radiologist.

Maximum Transparency

DOSE automatically provides all data and prepares it for the responsible MPE. The report includes all relevant information, such as examination ID, patient data, and the protocol used.

“ Based on this information, we can determine the causes of a dose reference value exceedance. Often, this is due to incorrect operation, such as choosing the wrong protocol or improperly operating the modality. If there are other reasons, we can usually resolve them remotely ”
says Dr. Mascheck.

At the Institute for Radiology and Neuroradiology of the Asklepios Clinic Altona, the senior physician Dr. Raphael Gübitz also serves as the radiation protection officer. He follows up on each report immediately and clarifies inconsistencies directly with the affected staff.

“ Additionally, we receive quarterly evaluations from our supporting medical physics department with a summary report. These are also sent to the respective device managers, who, if necessary, adjust protocols or sequences ”
explains Prof. Fischbach.

He and his colleagues can state that DOSE creates maximum transparency for each radiation application.

“ This has allowed us to update outdated device parameters very early on and standardize dose values across identical systems. We didn’t have to change much, but transparency is a crucial factor for us to improve ”
emphasizes the chief radiologist.

DOSE enables Asklepios to benchmark across all facilities, allowing one clinic to learn from another.

“ We continuously compare identical devices ”
says Dr. Mascheck.
“ There are many parameters that make up an examination, such as pre-filtering, pulse duration, or image refresh rate. With DOSE, we can easily analyze these parameters, define the ideal combination, and make appropriate adjustments to the basic parameters. ”

Expectations Fully Met

DOSE not only relieves doctors and medical physicists from time-consuming tasks but also significantly contributes to improving image quality through transparent and reliable documentation. Another advantage is direct access to image archives through integration into all PACS.

> ***" For example, we can easily clarify afterward whether an examination was purely diagnostic or if an intervention was performed and a stenosis was treated "***
> explains Dr. Mascheck.

Another strength of DOSE lies in the history-based analysis of the entire patient course, allowing conclusions to be drawn about past examinations.

Asklepios Service IT GmbH has a very positive overall assessment of DOSE.

> ***" After the parameterization and mapping, the system runs very stable and reliably. It is increasingly fading into the background in everyday life while performing its work. In short, it has fully met our expectations "***
> Dr. Manfred Mascheck is more than satisfied.

DOSE is a powerful tool with many features that provide users with an overview of the modalities' performance with just a few clicks.

Dr. Roman Fischbach also praises the collaboration with Dedalus HealthCare:

> ***" We perceive it as a really pleasant partnership, and we find the staff, from sales to application support, extremely competent and solution-oriented. "***

Sebastian Prokop underlines this and goes even further:

> ***" The good cooperation with Dedalus HealthCare was a crucial component for the successful conclusion of the project. DOSE is a complex system that covers many legal aspects and would not have led to such a good rollout result without close cooperation. "***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