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BEST NEW RADIOLOGY SOFTWARE  
OF 2013

# SECTRA DOSETRACK

A complete solution for radiation dose monitoring



# SECTRA

Knowledge and passion



## DOSE MONITORING INCREASES PATIENT SAFETY

The number of examinations carried out using CT scans, nuclear medicine, angiography and fluoroscopy is rapidly increasing in medical imaging technology. These examination methods have revolutionized the healthcare sector and led to greater precision, improved image quality and more reliable diagnoses but also a greater risk of exposure to high doses of radiation, which can cause cancer.

Sectra DoseTrack is an efficient system for automatically collecting, analyzing and reporting radiation dose data to the authorities. Sectra DoseTrack enables systematic optimization and justification of radiation doses, thus increasing patient safety.



## SECTRA DOSETRACK

- An efficient tool for optimization and justification of radiation doses throughout the entire healthcare chain.
- Automated collection of radiation dose data from all types of examinations and efficient reporting to the authorities.
- Enables regional radiation safety procedures that allow hospitals to compare doses.
- Flexible and fast analysis interface.
- Integrated with the hospital's other IT systems such as PACS and RIS.
- Cost-efficient design for SaaS solutions.
- Supports DICOM RDSR, MPPS, OCR on secondary data capture and manual data entry.

# SYSTEMATIC RADIATION SAFETY PROCEDURES

More time for patients and improved quality of care

Sectra DoseTrack™ is a Software as a Service (SaaS) solution that collects radiation dose and patient data from virtually all types of modalities. Close integration with the hospital and radiology department's other IT systems, such as PACS/RIS and electronic medical record (EMR) systems, enables various types of users within the hospital to access valuable radiation dose data in order to optimize radiation doses, justify examinations and investigate radiation dose incidents.

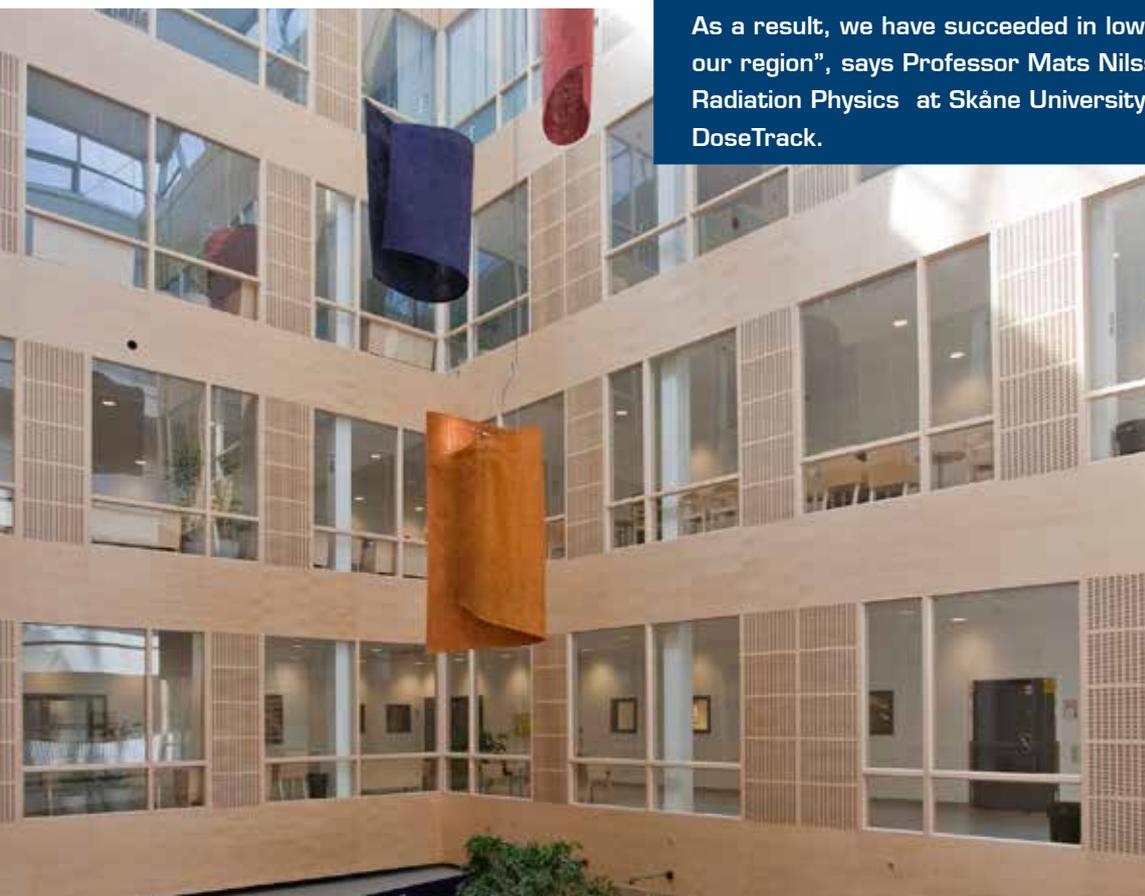
## ACCESS TO RADIATION DOSE HISTORY

Sectra DoseTrack provides personnel with access to the patient's radiation dose history when scheduling examinations in the RIS or viewing images in PACS. Sectra DoseTrack also makes it easy to submit mandatory radiation dose reports to the Swedish Radiation Safety Authority without collecting them manually, entailing considerable time and cost-savings.

## A FLEXIBLE TOOL

Sectra DoseTrack provides users with an overview perspective as well as easily accessible and detailed radiation dose data. The flexibility of the analysis tools allows comparisons between various hospitals and departments, investigations of specific patients, referral pattern analyses and personnel comparisons for training purposes. This provides opportunities, in a standardized manner, for controlling whether radiation doses are systematically optimized or whether examinations are justified.

"We have always worked to optimize radiation doses by comparing the dose levels between hospitals in our region, between various modalities and between various modalities over time. As a result, we have succeeded in lowering the dose levels in our region", says Professor Mats Nilsson, Institution of Medical Radiation Physics at Skåne University Hospital – users of Sectra DoseTrack.



## Increased patient safety

Monitoring modalities with Sectra DoseTrack enables fast detection of whether an X-ray machine is exposing your patients to unnecessary radiation. Possible errors and defects that could lead to a higher radiation dose can thus be identified.

Due to close integration with the hospital's other IT systems, a flexible analysis interface and efficient reporting functionality, Sectra DoseTrack is a powerful tool that takes control of radiation doses to patients, meets regulatory requirements and secures your radiation safety procedures.

### **BENEFITS FOR REFERRING PHYSICIANS**

The best method for lowering radiation doses is to avoid unnecessary radiology examinations. The referring physician must be able to confirm whether any prior or similar examinations can be used, and weigh the clinical benefits of ordering a new examination against the risk entailed by the associated radiation. The radiation dose must also be considered when determining the type of examination. Sectra DoseTrack enables the referring physician to make a proper justification and risk assessment of the patient before prescribing an X-ray examination.

### **BENEFITS FOR RADIOLOGISTS**

The radiologist holds a key role in achieving diagnostic image quality with the lowest possible radiation dose.

By giving the radiologist access to radiation dose data in the PACS database, images with low quality can be used to adjust examination protocols, improve methods and remedy underperforming modality equipment.

The radiologist also plays a key role in justification when prioritizing examinations. Sectra DoseTrack makes patients' radiation dose history available in the RIS and provides the radiologist with a decision-making basis for identifying non-justified examinations. High-risk patients can thus be redirected to other types of examinations with the same clinical benefit but a lower radiation dose.

Radiologists can also view and evaluate their performance in Sectra DoseTrack to systematically improve their technique and optimize examination protocols.

### **BENEFITS FOR PHYSICISTS, ADMINISTRATORS AND BUSINESS MANAGERS**

Physicists, administrators and business managers require an overview perspective to systematically improve radiation safety. Sectra DoseTrack presents clear trends and allows comparisons between departments, modalities and the relevant personnel, so that action can be taken where needed. The flexible analysis interface also makes it possible to investigate and monitor specific patients and gain access to the most detailed information.

Sectra DoseTrack also makes it easy to submit mandatory radiation dose reports to the Swedish Radiation Safety Authority in a cost and time-efficient manner.

# MAXIMUM EFFICIENCY – MINIMUM EFFORT

## Sectra DoseTrack architecture

Sectra DoseTrack has been designed to deliver maximum output for minimum input. A local server, the Sectra DoseTrack Gateway, collects information from modalities, RIS/PACS and EMR systems to generate a complete image for the user based on accurate, up-to-date information about each patient and examination.

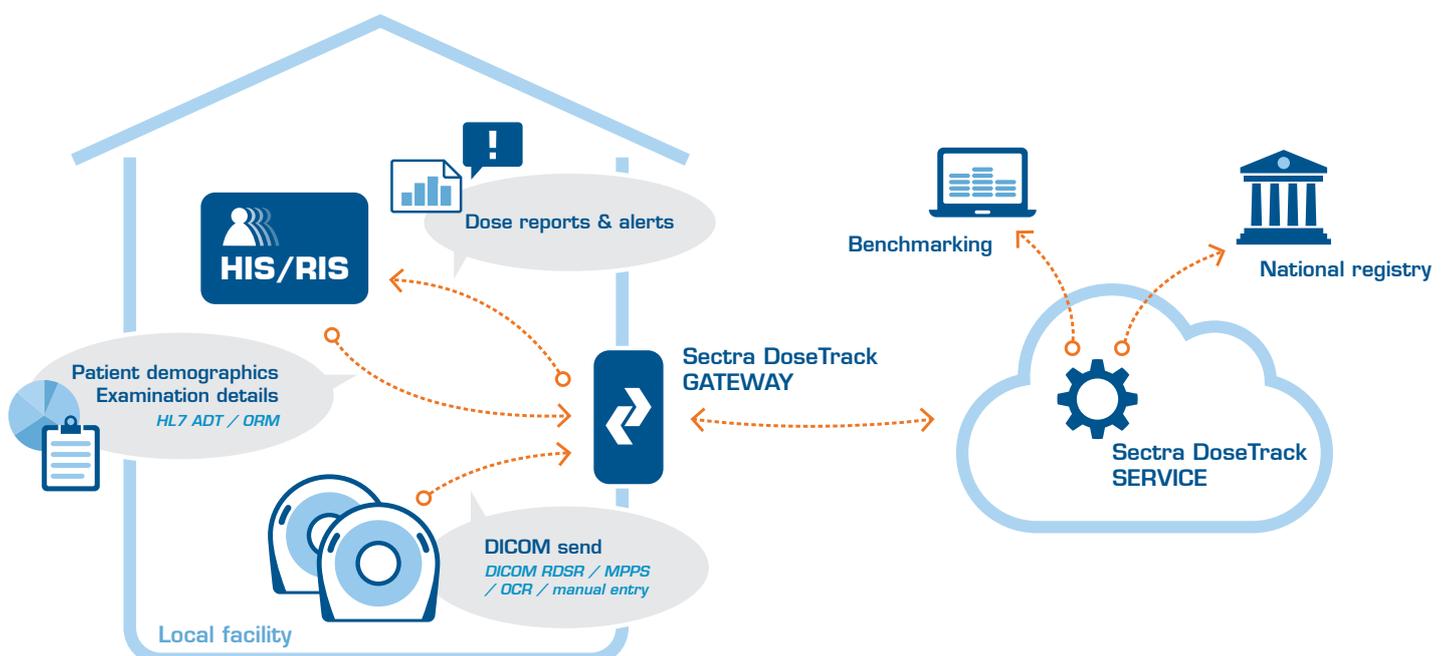
### COMBINED INFORMATION

Sectra DoseTrack Gateway is a local server that receives radiation doses, patient data and examination information from all connected radiology equipment. The local server also receives data from RIS/PACS and EMR systems to supplement with information not sent from modalities, such as a patient's weight and height. These connections also handle changes, such as name changes, and ensure that data is always up to date in Sectra DoseTrack. The messages are then encrypted and sent securely to Sectra DoseTrack Service – a central data warehouse where all calculations and transformations of logical data are performed.

### A HOSTED SOLUTION

Sectra DoseTrack has been designed as an SaaS solution to achieve high efficiency with a minimum amount of input from the organization's IT department and administration. Sectra therefore offers both hardware and software, and releases frequent upgrades so that users always have access to the latest functionality. The central data warehouse also presents opportunities for comparisons of radiation doses between connected hospitals in order to identify deviations and disseminate knowledge within a region.

Sectra DoseTrack applies role-based access control, meaning that access is determined by organization and duties, to protect patient privacy. All access to, and management of, data is logged according to current standards and regulatory requirements.





## Region-wide dose monitoring increases patient safety

Sectra DoseTrack in Region Skåne

Region Skåne – comprising a total of ten hospitals – has been using Sectra DoseTrack since 2008 as a regional quality-assurance system for collecting, saving and analysing information about radiation dose data from more than one million radiology examinations performed annually using some 100 X-ray machines.

As early as 2003, Mats Nilsson, Professor of Clinical Physiology at Skåne University Hospital in Malmö, initiated a solution for automated measurement of radiation doses in all hospitals throughout the region. What if all radiation dose data from all modalities could be registered automatically? The idea was revolutionary and soon led to a project in the form of a customer-vendor collaboration.

One year later, the first version of the dose monitoring system was available on the market and in 2008, the product won the prestigious Swedish Healthcare IT Award. This marked the starting point for what we now know as Sectra DoseTrack.

Region Skåne now collects radiation dose data from some 100 modalities, including those that support the DICOM MPPS standard and RDSR objects. Region Skåne uses this data to compare dose levels at various hospitals throughout the region, and for introducing various measures to achieve radiation dose optimization.

“Optimization of the dose level for a CT scan is at the very top of my list of priorities,” says Peter Leander, Chief Medical Officer for Region Skåne.

Sectra DoseTrack also enables detection of whether an individual patient has been exposed to an abnormally high dose of radiation. If the specified target values are exceeded, the system generates a message to initiate monitoring, which increases patient safety throughout the entire region. Optimizing the radiation dose in modalities is clearly a key component of managing the risks associated with radiation. However, both Peter Leander and Mats Nilsson stress the need for physicists, radiologists, referring physicians, and possibly patients as well, to be more aware of the issues surrounding higher radiation doses. Awareness of the radiation dose from different types of examinations and its effect on patient safety needs to increase.

“The first step is to illuminate the radiation dose issue within the organization. Historical dose data must be available to referring physicians, via the RIS for radiology nurses and in the PACS for radiologists. The data may only consist of a digit and an image or a journal, but the effect will be positive,” says Peter Leander.



## THE KNOWLEDGE TO MEET EXPECTATIONS. THE PASSION TO EXCEED THEM.

At Sectra, everything we do is driven by a desire to make a difference. Both you, and in turn, your patients will perceive this difference as added value. Since our first PACS installation in the early 1990s, Sectra has continued to focus on medical imaging IT products and innovations.

Our experienced employees are dedicated to improving your workplace environment, which will ultimately lead to improved and more efficient care for your patients. Perhaps that explains why our solutions are used so successfully by more than 1,700 care providers throughout the world.

### WHY YOU SHOULD CHOOSE SECTRA

- More than 20 years' experience as a leading innovator in medical IT systems
- High delivery reliability and extensive experience in migration and integration
- Extensive experience in complex, large-scale installations
- Customer-driven development ensures efficient solutions that make a difference for users every day
- Close collaboration with research centers and universities
- A stable, publicly traded company – founded in Sweden in 1978 – with a solid financial position

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