

# Greater Efficiency through Digital Radiography

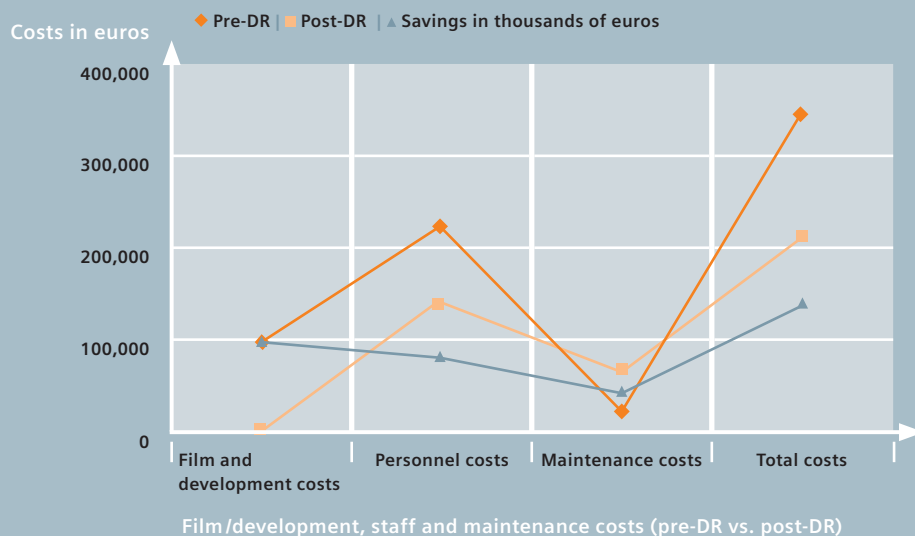
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# Greater Efficiency through Digital Radiography

AXIOM Aristos FX raises cost efficiency, boosts patient throughput and improves clinical workflows at Kaiser Franz Josef Hospital in Vienna, Austria



In today's radiology departments, efficiency and cost-effectiveness are key. But just how can X-ray facilities achieve both at the same time? The Kaiser Franz Josef Hospital SMZ-Süd in Vienna has done just that. This modern tertiary care hospital has over 745 beds and its Central Radiology Institute, under the direction of Univ. Doz. Dr. Wolfgang Kumpan, offers all the latest imaging modalities, such as X-ray diagnostics, digital FD mammography, ultrasound, interventional radiology, CT and MRI. The institute performs approx. 100,000 examinations each year.

“The reduction in the number of required work steps and associated time savings achieved with the AXIOM Aristos FX systems are a principle reason for the improvement of workflow in our radiology department.”

Univ. Doz. Dr. Wolfgang Kumpan, Kaiser Franz Josef Hospital, Vienna, Austria



## From analog to digital

The Central Radiology Institute was completely remodeled in 2003 and X-ray diagnostics equipped with two AXIOM Aristos FX digital radiography systems. Thus ended the era of analog radiology at the institute. From the four previously analog rooms emerged two fully digitalized X-ray rooms that could handle nearly every X-ray image: skeleton, extremities, lungs, and special images including lateral and oblique views.

The multifunctionality of the new AXIOM Aristos FX systems allows acquisition of all images in a single room without having to move the patient to another room for thoracic and skeletal

images, as was required for analog systems. For non-ambulatory patients, who make up approx. 60% of all the institute's patients, that was a real chore. Not only that, but changing rooms meant the patient was not finished and ready to leave the institute for at least 65 minutes. The long waiting and exam times made both patients and personnel unhappy. This is all different now. The exam times for e.g. the cervical spine in three planes dropped from 50 to 20 minutes total examination time (door-to-door time), thus cutting waiting times from a full half hour to a mere ten minutes. This dramatic change certainly improved the mood in the waiting room, thus boosting the satisfaction and efficiency of the staff. With up to

46% fewer personnel and 50% less space, the institute is able to acquire even more images than with the analog systems.

## Fewer work steps

Because of the flat detector, digital technology eliminates changing and developing cassettes, preparing preliminary images, labeling the X-ray envelope, and viewing the images on the light box. Thanks to the ceiling-mounted tube and detector stands, positioning the AXIOM Aristos FX system in the room is fast and flexible. Exam results appear on the display immediately and can be sent to the physician or other departments for diagnosis. Treating physicians can therefore produce

Step		Time in minutes (pre-DR)	Time in minutes (post-DR)
1.	Patient admission	1	1
2.	Patient registration in KIS-RIS	1	1
3.	Waiting time of the patient	30	10
4.	Cassette handling (scribor exposure)	2	0
5.	Positioning of the equipment	1	0.30
6.-7.	Placement of the patient and correct positioning for exposure	5 (for three exposures)	3 (for three exposures)
8.	Optimal collimation	1 (for three exposures)	1 (for three exposures)
9.	Program selection and initiation	1 (for three exposures)	0.30 (for three exposures)
10.	Film processing	3	0
11.-13.	Review of image quality, preparation of previous images, labeling of the film pouch	1	0.15 (only the image quality is checked)
14.	Display of the images on the X-ray film viewer, quality control by physician	1	0
10.	Period of time between the end of the patient examination and the departure of the patient from the Central Radiology Institute (ZRI)	3	3
<b>Total Time</b>		<b>50</b>	<b>20.15</b>

timely multi-modal reports of outstanding quality and edit them. They not only have immediate access to images, but the entire image archive, any hour of the day or night at any workstation in the institute, which not only increases efficiency of reporting but significantly optimizes the potential for specialist training.

### Cost efficiency through digital technology

Using flat detector technology eliminates the cost of film, developing chemicals, processing and the personnel required. Even with the annual maintenance costs for both AXIOM Aristos FX systems totaling 66,800 Euros, the Central Radiology

Institute in Vienna is still able to save 136,800 EUR, funds that can be put to other and even more beneficial uses. Digitalizing the conventional X-ray department at the Kaiser Franz Josef Hospital in Vienna markedly improved clinical workflow and efficiency and contributed to shortening the time needed for diagnostic and treatment decision-making. Improved patient comfort, lower radiation doses, higher exam throughput (multiple exams in a single appointment), and happier faces in the waiting room due to shorter exam and waiting times are all to the patient's benefit and result in higher satisfaction. But not only the patients benefit; so does the staff. Quality of work, satisfaction and motivation rose substantially. The

reasons cited included less physical labor and cassette transport, less running from department to department to accomplish tasks, less physical strain from patient repositioning, and a reduction in the daily work schedule from 33 hours (in 4 examination rooms) to 23 hours (in 2 examination rooms).

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As referenced above, healthcare practitioners are expected to utilize their own learning, training and expertise in evaluating images.

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