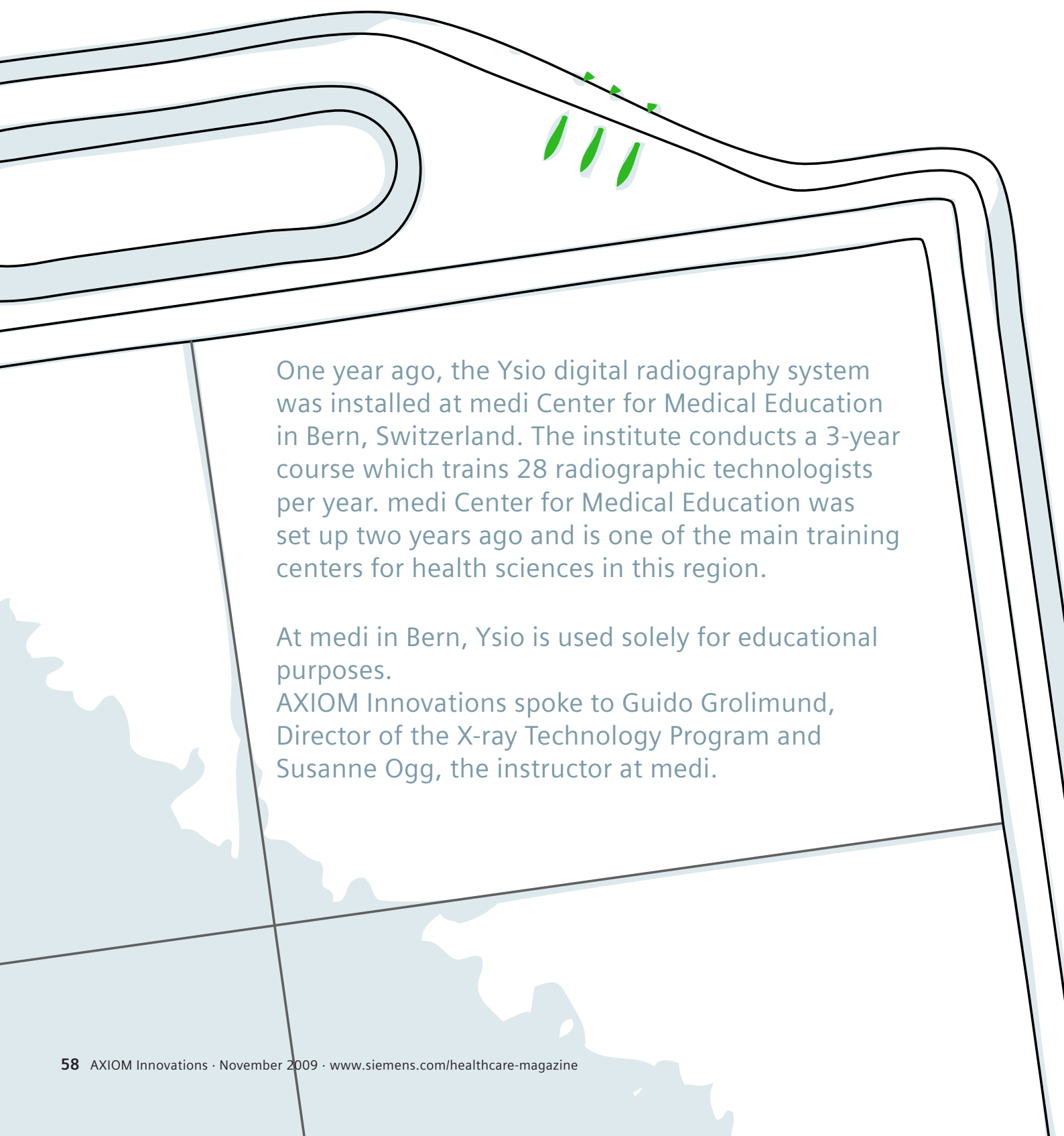


Students Train with the Latest Technology – Ysio at medi in Bern



One year ago, the Ysio digital radiography system was installed at medi Center for Medical Education in Bern, Switzerland. The institute conducts a 3-year course which trains 28 radiographic technologists per year. medi Center for Medical Education was set up two years ago and is one of the main training centers for health sciences in this region.

At medi in Bern, Ysio is used solely for educational purposes.

AXIOM Innovations spoke to Guido Grolimund, Director of the X-ray Technology Program and Susanne Ogg, the instructor at medi.



Third-year trainees with a radiographic “human dummy”

At medi, Ysio is equipped with the latest 35 cm x 43 cm mobile wireless detector, wi-D, and it offers fully automatic X-ray tube positioning via organ programs. The X-ray tube features MaxTouch, a large color touchscreen panel, that allows adjustment of examination parameters right next to the patient in the examination room. Due to the system's innovations and extensive potential as a teaching tool, Ysio was selected to offer the students an opportunity to study and practice with a state-of-the-art technology.

Ysio was installed at medi Center for Medical Education nearly a year ago. What was your first impression? Technologically advanced and, above all, clever. Our students, who grew up with WLAN and Bluetooth may not fully appreciate the benefits of wireless transmission which Ysio brings. But the dif-

ference really becomes clear once you compare Ysio to non-automated systems using CR technology.

Are there Ysio functions that you and the students particularly appreciate? We emphasize a systematic work method, especially in the basic courses. Using fictitious X-ray orders, students can plan the entire examination at the control console, thereby learning how to optimally organize the workflow. Time and again we marvel at how we can immediately review the image on the monitor and the outstanding image quality.

Do you still use CR cassettes for training? We teach exams such as chest X-rays with the patient in bed and special cases of imaging the “abdomen with the patient lying on his or her left side”,

known as a decubitus abdomen view. These views require modified system positioning technique. They are taught mainly with the use of the 35 cm x 43 cm wi-D. Naturally, for teaching purposes, we still use CR cassettes, but mainly for extremity exposures. These small cassette formats of 18 cm x 24 cm or 24 cm x 30 cm cassette forces beginners to be extremely exact in both patient and X-ray beam positioning.

Which features are suited to trauma imaging during your practical exercises? For lateral, shoot-through projections and free exposures on bed-bound patients, the flexibility of the wi-D is very practical. Such exams demand setting of exposure values without an automatic exposure chamber and teaches the students to set appropriate values for diagnostic images.



“Those who grew up with WLAN and Bluetooth can’t fully appreciate what Ysio can do. The difference really becomes clear once you compare it to CR technology.”

How do the students feel about the handling of the mobile detector, wi-D, including its weight?

Considering the size and load capacity of the detector, the weight is reasonable. The detector has ergonomic contours, so it handles very well.

Based on the selected organ program, Ysio can be positioned for the exam automatically. How do you incorporate this ability for workflow optimization into your training?

We let our students position the system automatically for the common exams, such as chest, abdomen, spine and pelvis, and teach them to focus their attention on the patient.

Students are also taught to manually position the tube rotation and tilting, this gives the students a good grasp of the required theoretical fundamentals to establish a better relationship to their work, to radiographic principles, and to quality.

Of course they understand that automatic positioning is extremely helpful in dealing with the amount of work involved in day-to-day routine.

Do you use the tracking capabilities of the tube and the wi-D – available on the table and the wall stand?

Not all students have modern equipment

in their facilities, so it’s very helpful to be able to activate and deactivate the tracking function in the organ program. The students do need to understand how to operate a system without automated tracking movements. However, it is also important that students become familiar with new technologies and the benefits they offer.

Ysio works on the basis of digital flat-detector technology. In training radiographers, how do you educate them on the different benefits delivered by film-screen or CR or FD technology?

It is important that students understand the advantages and disadvantages of all the technologies. Currently digital technology is the largest component of our teaching program.

Digital flat-detector technology offers huge image processing capabilities, such as multiscale processing (DiamondView). How do you incorporate the theoretical principles into practical exercises on Ysio?

Specifically because of its many possibilities, digital image processing will need to be a much larger part of our program in future. We see Ysio as having major potential in this area. The ability to immediately see the results helps us to better demonstrate the relationship of influ-

encing factors. Even trained radiographers are extremely interested in courses of study in digital image processing. In the last year we have used Ysio successfully in practical sessions in our continuing education class, “Digital Imaging – What’s behind it?”

Is there certain subject matter that has been easier to get across using Ysio? Thanks to the new technology, we can vividly demonstrate the theories of radiation protection during practical training, which used to be very difficult. One example is the radiation absorption behavior of 1 mm of lead. To have immediate evidence in the form of image documentation and then be able to examine it with respect to the dose-area product, this leads to discussions and better understanding.

In Ysio, we are discovering many new ways to enhance the learning of theoretical fundamentals with practical exercises. This in turn enables us to develop classes that are much more interactive and effective.

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medi Center for Medical Education was set up in the spring of 2007 as a technical college offering programs in occupational therapy, dental hygiene, medical laboratory, medical radiology, surgical technology, and paramedicine. It operates under the authority of the canton of Bern, Switzerland.

The certified X-ray technician program takes three years and covers diagnostic radiology, radio-oncology and nuclear medicine. The first year focuses on diagnostic radiology, particularly radiography and radiographic positioning. Subjects covered include equipment studies, radiation protection, image creation and image quality.

Every theoretical block of study is always followed by practical application in the X-ray training lab. The first year of study is spent mainly at the school. However, the students also complete two sessions of 4-week hospital internships in diagnostic radiology during the first year.

