

## CUSTOMER CASE

“Compared to standard radiography, the DX-S CR system for neonatology has enabled us to make a 30% saving on radiation doses. This is the most important benefit. The second aspect relates to quality of service: we can now monitor disease progression carefully from one hour to the next if need be.”

*Dr. Léon Rausin, Pediatric Radiologist,  
Head of the Radiology Department*



Citadelle Regional Hospital, Liège, Belgium

# Reduced X-ray doses and improved neonatology imaging processes in Citadelle Hospital

Agfa HealthCare's DX-S specifically calibrated for neonatology, resulting in higher quality images and a 30% reduction in radiation doses

“Agfa HealthCare made the offer that was most acceptable to both the doctors and the hospital management. After-sales service was an important consideration for us, and we already knew how effective the Agfa HealthCare after-sales department was.”

*Dr. Léon Rausin,  
Pediatric Radiologist, Head of  
the Radiology Department*



Citadelle Hospital in Liège is a public institution equipped with a high-tech neonatology unit. The hospital chose Agfa HealthCare because it was offering the solution that it determined was best suited to pediatric radiology: the DX-S Computed Radiography (CR) system and the MUSICA<sup>2</sup>® image processing software. Following a very detailed refinement process with Agfa HealthCare, the pediatric radiologists now benefit from high quality images obtained with a considerable radiation dose reduction.

Since the end of the 1970s, Citadelle Regional Hospital in Liège has dominated the north of the city. It is a public hospital with 990 beds on-site. There are also three peripheral sites attached to the hospital, bringing the total number of beds to nearly 1,400. The radiology unit employs 25 doctors, three of whom are pediatric radiologists. “Pediatric radiology is one of the hospital’s central preoccupations, as the pediatric unit has university beds,” explains Dr. Léon Rausin, Head of the Radiology Department. In 2007, the Regional Hospital’s Radiology Department saw 160,000 patients (both internal patients and outpatients), 15% to 20% of whom were children. Neonatology performs 10 to 12 exams a day, 7 days a week.

#### Special requirements regarding dose and image quality

Citadelle Regional Hospital has been an Agfa HealthCare customer for many years. “We have a very close relationship with Agfa HealthCare,” explains Dr. Rausin. “This is why we continued to place our trust in them when we switched over to computed radiography. We like working with them for various reasons. First, we have an excellent relationship with the company, and we know the entire technical team and the after-sales department. Second, we have performed quality surveys, and the DX-S system seems to be very promising, even though initially we didn’t achieve the required quality in neonatology.”



The hospital also chose Agfa HealthCare for financial reasons, as they were offering the best solutions at the most reasonable price. “Once we had made the choice, we had to review the entire system for neonatology. DX-S was perfectly set up for adult and child radiography, but not for neonatology,” explains Dr. Rausin. In fact, the parameters for using DX-S in neonatology had not yet been established.

The Citadelle team therefore calibrated the system for premature neonates, with the assistance of Agfa HealthCare. Dr. Rausin explains that this adjustment for neonatology was very delicate. “We had to balance both quality and radiation requirements, because we have neonates weighing down to 0.5 to 1 kg who undergo up to 3 X-rays per day. You can imagine the kind of dose that they end up receiving: it’s not enormous, but it’s nonetheless a worry for us.” Compared to standard radiography, DX-S equipment uses around 30% less radiation, which is a fairly significant saving.

### DX-S/MUSICA<sup>2</sup>

- The most important aspect for radiologists is excellent image quality and ease of image processing. Agfa HealthCare is in an ideal position to respond to these needs.
- The DX-S CR system offers complete image processing for pediatric and neonatal radiology. It is easily integrated into the hospital’s infrastructure and organization.
- MUSICA<sup>2</sup> enhancement software significantly improves image detail.

### Significant quality improvement with MUSICA<sup>2</sup> in neonatology

Citadelle Hospital has two DX-S CR systems: the first was installed in 2007 in the pediatric radiology unit. The second, which has been operational since last September, is reserved exclusively for neonatology. After just one month of using the DX-S CR system, the radiologists could see a major difference in the quality of the images given to the neonatologists. Images can be viewed on the workstation in the pediatric radiology unit and will soon be available on doctors’ personal computers. An additional benefit is the system’s MUSICA<sup>2</sup> enhancement software, which provides consistently reliable and better image visualization. It automatically optimizes processing and as such minimizes re- or post-processing.

## Agfa HealthCare's contribution

- The DX-S CR system, combined with the MUSICA<sup>2</sup> Platinum software, enables optimal and rapid processing of pediatric images. It produces high quality images and facilitates data sharing, image comparison and storage.

## Did you know ...

- Citadelle Regional Hospital has the only university neonatology unit in the Liège area.
- The hospital fulfils a teaching and research mandate in partnership with the Medical Faculty of the University of Liège.

## Valuable support of work processes

The DX-S CR system enables doctors to make valuable time savings. Dr. Rausin explains, "I don't think that things will change much for the staff, because what takes the time with premature babies is positioning the equipment so that the images can be produced. The babies are in incubators, connected up to equipment, ventilators, drips and so on. All of this means that we have to stick to very strict procedures. The focal distance must be respected, the image has to be taken straight on and it needs to be well screened so that we avoid radiating areas that we don't need to see.

On the other hand, for doctors' day-to-day work, it represents an amazing transformation as we can now view images and process them with the various tools on a workstation. But above all, and most importantly, we can compare the images on a linear basis, comparing day 1 to day 2 and so on. For example, it's important to be able to see how infant respiratory distress syndrome is progressing. It completely changes our way of working and considerably improves the efficiency of our workflow."

Finally, the DX-S CR system does not require time-consuming staff training because it is very user-friendly. In fact, compared to Citadelle Hospital's previous equipment, almost no training sessions were needed, which also enabled the hospital to make time savings. •

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