

Decisions, decisions...

The Contilia Heart and Cardiovascular Center in Essen, Germany is renowned world-wide for the quality of its patient care and research activities. The center has recently decided to implement a new patient-centric, all-in-one cardiovascular information system (CVIS) and is currently in the process of installing it.

We wanted to find out more about the center itself and the decision-making process behind the choice of their new CVIS, so we spoke to Dr Christoph Naber and Dr Olivier Bruder, who head up the cardiology department at the Elizabeth Krankenhaus, a member unit of the Contilia Group of hospitals.

Q. *The Contilia Heart and Cardiovascular Center in Essen must be one of the biggest cardiology units in Germany, if not Europe. Please tell us about your Center.*

Well in fact, there are three separate hospitals which are part of the Heart and Cardiovascular Center so none of these individual hospitals is the biggest, but taken together we are certainly one of the largest.



The Elizabeth Krankenhaus in the Contilia group houses nearly half of the total of three hundred cardiac beds in the group. The hospital is currently installing a new CVIS PACS system connecting processes and images of Cath Lab, ECG, Echo, EP-Lab, Cardio-Surgery and Cardio Visit. .



Heading up the cardiology department at Elizabeth Krankenhaus in Essen Germany, Dr Christoph Naber (on the left) deals mainly with intervention and emergency procedures while Dr Bruder (on the right) principally takes care of imaging.

Over the three hospitals there are three cardiology units, a large rehabilitation unit, a cardiac surgery unit, a vascular surgery unit and of course various peripheral unit and service units.

My role in this organization is as head of the biggest of the three cardiology units which is located in the central hospital, the Elizabeth Krankenhaus. There are 145 cardiac beds in Elizabeth, with a total of more than 300 cardiac beds in the whole group. I deal mostly with the interventional and emergency procedures, and my colleague Dr Bruder heads up the imaging side of things.

Q. *Talking of imaging, what modalities do you have?*

As you might expect of a modern functional cardiology unit we have all the imaging modalities: MRI and CT from Siemens, echocardiography units from GE and Philips. In addition we have intracardiac imaging possibilities, such as Intravascular ultrasound and OCT.

These are not just luxuries but are hard-working units which are indispensable to the functioning of the unit. Thus per annum we carry out approximately 3000 cardiac MRIs, 2500 cardiac CTs, 2500 interventions and perhaps about 150 valve replacements.

Of course to deal with this work-load, we have a large staff consisting of more than 100 clinicians, backed up by the appropriate number of support and nursing personnel.

Q. *And what about the high reputation that the unit enjoys? What is that due to?*

Yes, in all objectivity, it is true that we do have a good reputation of which we are of course very proud. Not that we take it at all for granted. On the contrary, we work hard to maintain the quality of our services. It is tempting to put the reasons for our good reputation simply down to hard work, but naturally there are many other factors involved in addition to the capabilities of the personnel and the technological power of the equipment we have, although these are of course vital.

One other aspect that contributes a lot to the renown of our center is the number of international research collaborations in which we take part. I spent part of my training in France and many of my colleagues have also spent time in prestigious centers abroad, so we have a large network of international contacts and participate in all the major international congresses. We have trials on-going with centers in the US, China, Singapore, India as well as in Europe.

One objective recognition of the quality of our center is the fact that we are one of only three centers in the world to have been granted the designation of Cardiology Reference Center by Siemens, the other two being in Monaco and Shanghai. The purpose of the collaboration with Siemens is to improve clinical workflows and promote innovative treatment concepts in noninvasive and invasive cardiology. We do have Siemens MRI and CT and also their PACS system for the hospital's general radiology work.

Q. *Which brings us on to the decision to invest in a new CVIS system. What was the decision-making process involved?*

As I said the hospital's general radiology department has a Siemens' PACS system. We have a local hospital information system (from the Meierhofer company) and we had a cardiology information system supplied by a local IT company, which actually functioned quite well, although it needed some serious up-dating. However in an all-too common sce-

nario, the local company was taken over by a bigger international enterprise and — at least as far as we were concerned— could no longer provide the functionalities or service that we were looking for.

So we had to evaluate other possibilities.

Basically what we were looking for was a system that was easy-to-use; that included the databases, which we need for our scientific work ; that contained all the the patient information; and finally that contained the images, which of course are very important.

Above all what we needed was an integrated system, that could bring all these elements together and quickly. For example when we are discussing cases, say with the surgeons, we need to be able to show the ECG, the echo images, a CT and MRI all at the same time. And of course we don't have time to open up different systems separately to show each part of the overall data package. So basically we were looking for a patient-centred system.

There are already other systems out there which could partially meet our requirements, e.g. some data base systems which can also handle a bit of imaging, or image-based systems which can also handle a bit of data.

However there were only a few systems that could really meet our requirements, one of which was Esaote and their Suitestensa system.

We therefore visited several of the centers that already used the Esaote system, in Italy for example and also

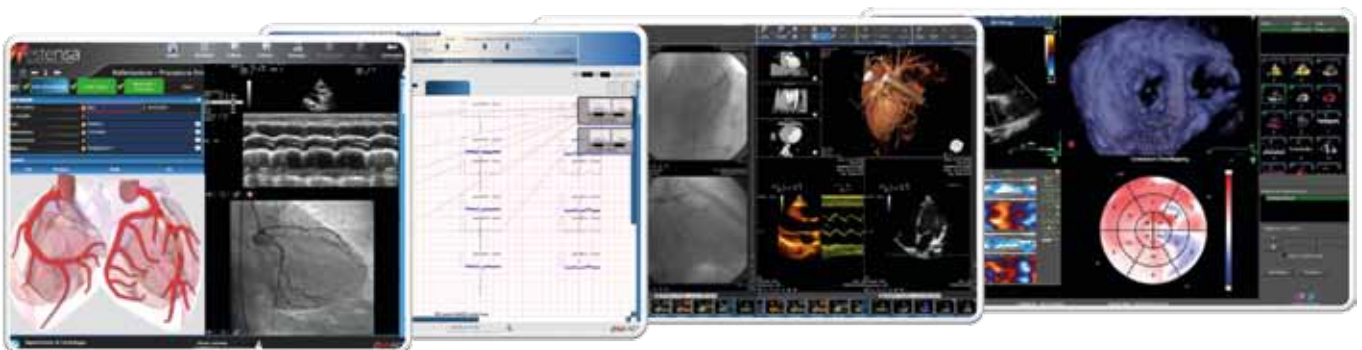
in South America. When the feed-back there was positive, we finally plumped for Esaote.

Q. *So what is the situation now?*

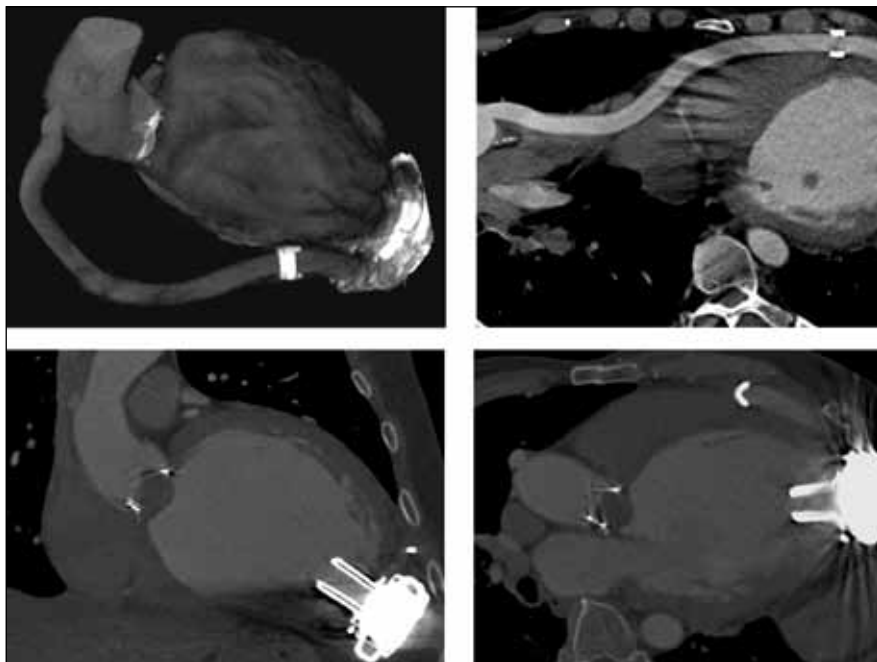
Although the basic decision to go with Esaote was taken some time ago, we didn't actually formally commit to it until relatively recently. This was principally due to in the meantime competitive systems coming up with new updates which we had to evaluate. It's a big decision so we want to make sure that we get it right. And there are financial aspects involved as well, which have to be carefully considered, for example the cost of interfaces with the current systems. Of course it's not just a question of choosing the cheapest system, rather it's a question of choosing the one that best meets our needs of having streamlined integration together with third-party software or modalities and is also cost-efficient.

Early on we decided that we needed images of all modalities to be merged into the new Suitestensa system together with all clinical data so that we can have complete patient documentation easily accessible in one, single system. In addition to this integration of images and data we wanted advanced processing tools and automatic import into the final reports.

It should be noted that all the decisions regarding the choice of systems were on our part taken collectively, with the appropriately qualified people being asked to give their opinion. For example regarding the interfaces, our hospital IT



The unique data and image management system in one single DB and user-friendly interface.



The Heart and Vascular Center in Essen carries out many advanced high-tech cardiac interventions, such as the implantation of Left Ventricular Assist Devices (LVAD) shown above.

people worked closely with the Esaote people to make sure that there would not be any major surprises.

It's not just the IT people who were involved in assessing the system, since we wanted to make sure that all users could express their opinion and have their say. And naturally everybody has a slightly different perspective. For exam-

ple some clinical researchers may want sophisticated technical functionalities, whereas for the nurses, ease-of-use is the most important aspect.

However thanks to a commonsense attitude and an ability to look at the big picture all such minor differences in priorities were easily resolved.

But you can't go on with such a con-

sultative process forever so a formal decision has now been taken and we are actively working to optimally configure the system for our requirements. For example I personally want to make particularly sure that we determine the smallest number of data fields and don't get tempted to have too many unnecessary fields which could clutter the system.

Then on April 1, we will begin a six-week testing period where everybody can have a hands-on real live test of the system, after which we will decide which modifications may be necessary. We expect this de-bugging process to be finished by the 3rd quarter this year and expect the system to be fully operational by the end of the year.

Q. *and during this process what do you expect from Esaote?*

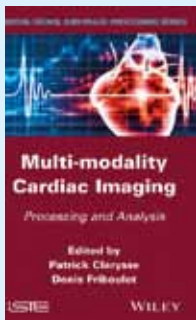
Up until now we have had an excellent collaboration with Esaote; their people are not only competent but very cooperative. I am sure this will continue and that the agreed contractual performance specifications will be attained.

But the proof of the pudding is in the eating. Please come back and visit us later in the year when the system is fully up and running and find out the next chapter in this exciting story.

Book reviews

Multi-modality Cardiac Imaging: Processing and Analysis

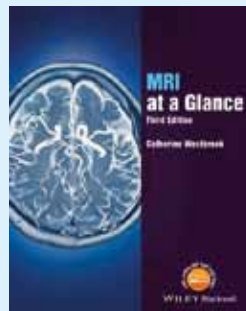
Ed by P Clarysse, D Friboulet
Pub by Wiley 2015, 370 pp € 130



The imaging of moving organs such as the heart, in particular, is a real challenge because of movement. This book presents current and emerging methods developed for the acquisition of images of moving organs in the five main medical imaging modalities: conventional X-rays, computed tomography, magnetic resonance imaging, nuclear imaging and ultrasound. The availability of dynamic image sequences allows for the qualitative and quantitative assessment of an organ's dynamics, which is often linked to pathologies.

MRI at a Glance, 3rd Edition

By Catherine Westbrook
Pub by Wiley-Blackwell, 2016, 136 pp € 22



MRI at a Glance encapsulates essential MRI physics knowledge. Illustrated in full colour throughout, its concise text explains complex information, to provide the perfect revision aid. It includes topics ranging from magnetism to safety, K space to pulse sequences, and image contrast to artefacts.

This third edition has been fully updated, with revised diagrams and new pedagogy, including 55 key points, tables, scan tips, equations, and learning points.