

# fujiXposure

fujiXposure newsletter – summer 2009

## BreastScreen NSW enhances its business operations following the transition to digital mammography technology

**BreastScreen NSW has enhanced its operations and procedures following its transition to a digital mammography environment, resulting in opportunities to develop and refine its business and service delivery model.**

In March 2007, the NSW Premier announced a \$23 million investment over three years for the state-wide introduction of digital mammography systems and a standardised information management system for BreastScreen NSW.

BreastScreen NSW has since been busy with service planning, procuring equipment, reviewing existing business processes and coordinating the State-wide digital mammography implementation.

While the process towards a fully integrated digital environment will take a few more years to complete, the digital mammography rollout is a key part of a broader transformational change program for BreastScreen NSW.

The Cancer Institute NSW is responsible for initiating this large scale integrated digital imaging project after assuming management responsibility for BreastScreen NSW in July 2005.

Cancer Screening Division Acting Director, Mark Costello, said the digital mammography transition has enabled the organisation to enhance an extremely good service to ensure it continues to meet and often exceed the needs of clients.

...the digital mammography transition has enabled BreastScreen NSW to enhance an extremely good service...

The introduction of digital mammography into the BreastScreen NSW program commenced with a phase one pilot project in early 2006.

"This enabled us to undertake an initial evaluation of the various systems as well as an opportunity to complete more comprehensive planning for the statewide rollout," Mr Costello said.

As part of the rollout, 25 FUJIFILM FCR Profect CS CR packages complete with CR Consoles (Mammography workstations) and X-Con software (protocol bridges) have been installed to date at fixed screening sites and mobile screening vans throughout NSW. Two more packages are yet to be installed in mobile sites.

- > FUJIFILM acquires information systems vendor Empiric Systems 2
- > New Direct DR Digital Mammography System – FUJIFILM innovation 3
- > New FUJIFILM FCR equipment transforms operations and imaging at the Australian Wildlife Hospital at Australia Zoo 4
- > FAQ's: Grids and Computed Radiography (CR) 6
- > FUJIFILM Medical Systems introduces improved customer service and support procedures 7
- > FUJIFILM Australia and the Environment 8

Five FUJIFILM DryPix 7000 Laser printers have also been installed with a further three yet to be installed.

With approximately 40 BreastScreen NSW fixed screening sites and 15 mobile screening vans being converted to digital mammography, Mr Costello believes this is the largest rollout of its kind in Australia incorporating an integrated imaging environment.

"On average, each site experienced approximately two weeks down-time for decommissioning old equipment; installation, testing, commissioning of new equipment, minor building works or renovations and refurbishments, staff training and applications training," Mr Costello said.

"The new technology has allowed BreastScreen NSW to review how it delivers its services across a high volume geographically dispersed program.

"We have been able to greatly enhance customer service and client access equity as well as greatly reduce inefficiencies. Overall, the technology allows us to leverage quality improvement and efficiencies across most parts of the business.



Continued on page 5

FUJIFILM

in this issue

## Message from Peter Carmody, General Manager, FUJIFILM Medical Systems



We are delighted to advise that this year FUJIFILM will introduce a new mammography DR system known as the FDR Amulet, which incorporates a revolutionary new x-ray detector allowing the world's smallest pixel pitch of 50 micron (µm) \* for an amorphous selenium (a-Se) detector.

The FDR Amulet - a Direct DR Full Field Digital Mammography (FFDM) system – will complement FUJIFILM's highly successful FCR Profect range. As well as reading about it in this edition, the FDR Amulet will also be demonstrated at the BREAST 2009 Conference from 28 - 29 March at Darling Harbour, Sydney.

BreastScreen NSW has recently enhanced its operations and procedures following their transition to a digital mammography environment - a key part of a broader transformational change program for the organisation. In this edition, we provide some insight into the project's extensive logistics for what is purportedly the largest rollout of its kind in Australia incorporating an integrated imaging environment project.

The Australian Wildlife Hospital at Australia Zoo has also recently installed new FUJIFILM FCR equipment. Our article explains how the system has since transformed their operations and imaging. Expecting to treat approximately 10,000 animals per annum in coming years, the new FCR system has suitably equipped the Australian Wildlife Hospital to accommodate their future needs.

FUJIFILM Medical Systems has also implemented some of its own changes by introducing a range of improvements to its customer service and support procedures

that aim to standardise its operations and provide a solid structural framework that will accommodate increasing market growth. We explain what changes have already been implemented and what we have planned for the future.

As always, we hope you enjoy reading about these and other stories in this Autumn edition of FujiXposure.

\* Pixel pitch is the space between adjacent pixels. The smaller the number, the higher the image definition. The "world's smallest" is based on disclosed information as at December 2008 among direct-conversion flat panel detectors."

## FUJIFILM acquires information systems vendor Empiric Systems.

FUJIFILM is pleased to announce the acquisition of Empiric Systems, LLC, of Morrisville, North Carolina. The acquisition is another significant step in FUJIFILM's growth strategy and a demonstration of FUJIFILM's continued commitment to the fields of medical imaging and health information technology.

"FUJIFILM is now a supplier of a fully integrated web-based RIS and PACS solution for the radiology department," said Peter Carmody, General Manager, FUJIFILM Medical Systems.

"To meet the diagnostic workflow, efficiency and compliance challenges of today's radiology environment, healthcare facilities need a fully integrated solution.

"FUJIFILM has already made substantial progress in integrating the Synapse PACS and Empiric RIS applications. As a result of the acquisition, we are now in a position to deliver an even deeper integration that will yield the complete imaging informatics solution that healthcare facilities are seeking. The RIS will be known as Synapse RIS and will be available fully integrated with Synapse PACS, or as a stand-alone entity."

The acquisition of Empiric Systems, LLC follows FUJIFILM's successful acquisition of Problem Solving Concepts Inc, in 2007, the manufacturer of ProSolv CardioVascular.

Together, Synapse Radiology, Synapse Information Systems and Synapse Women's Imaging build on the success of the industry's first true web-based PACS, providing a complete imaging and informatics platform to support

the needs of enterprise imaging.

Synapse RIS has also been designed for use in the veterinarian market, featuring dedicated fields specific for veterinarian use. It has been implemented in many of the leading academic institutions in the USA.

For further information on Synapse RIS or to arrange a demonstration, please contact your local FUJIFILM representative.

**SYNAPSE**  
information systems

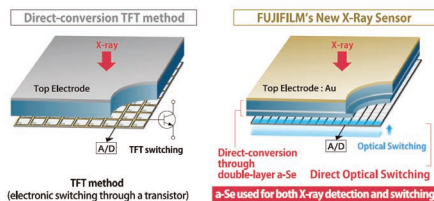
## New Direct DR Digital Mammography System – FUJIFILM innovation

FUJIFILM Australia Pty Ltd will release a Direct DR Full Field Digital Mammography (FFDM) system in 2009 to complement the already highly successful FCR Profect range.

The new DR system – FDR Amulet – incorporates a revolutionary new x-ray detector allowing the world’s smallest pixel pitch of 50 micron ( $\mu\text{m}$ )\* for an amorphous selenium (a-Se) detector.

FUJIFILM Australia’s Digital Imaging Product Manager, Ray Fenech, said the Amulet’s detector uses two layers of a-Se and patented direct optical switching (DOS) technology which eliminates the necessity for thin film transistors (TFT) (see Figure 1).

Figure 1



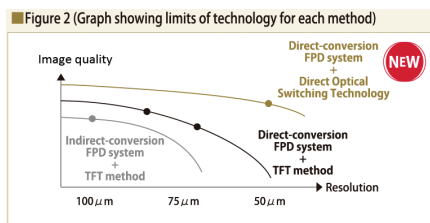
“Another benefit of the new detector is a higher x-ray conversion rate and a shorter time required to erase the residual electrical charge in the detector. This allows a faster turnaround between x-rays with the view to improved efficiency.”

“The FDR Amulet will share the same mammography image processing technology as our highly successful FCR Profect range.

“FUJIFILM is already a world leader in Digital Mammography with more than 6000 FCR systems sold worldwide. The Amulet DR system will be a welcome addition to our women’s health care portfolio,” Mr Fenech said.



“By removing the need for these transistors (TFTs), electronic noise is reduced, a pixel pitch of 50  $\mu\text{m}$  resolution is achievable and the image quality is improved (see Figure 2).



**The FUJIFILM FDR Amulet will be demonstrated at the BREAST 2009 Conference from 28 - 29 March at Darling Harbour, Sydney. FUJIFILM is a major sponsor of the event.**



\* Pixel pitch is the space between adjacent pixels. The smaller the number, the higher the image definition is. The “world’s smallest” is based on disclosed information as of the end of March 2008 for amorphous selenium direct conversion digital mammography (FUJIFILM survey).

## New FUJIFILM FCR equipment transforms operations and imaging at the Australian Wildlife Hospital at Australia Zoo

**"The new FUJIFILM FCR equipment has made operations so much better – it's a great diagnostic tool that produces astounding images. Every day we comment on how amazing it is – there is nothing we don't like about it. The image quality is fantastic!"**

Gail Gipp, General Manager, Australian Wildlife Hospital - a charity established by Steve Irwin as part of Australia Zoo Wildlife Warriors Worldwide Ltd - made this comment in response to how their new FUJIFILM FCR Capsula X and CR Workstation equipment was impacting on operations.

The Australian Wildlife Hospital, located near Australia Zoo at Beerwah in Queensland, is staffed by seven veterinarians, 14 vet nurses and volunteers who work around the clock every day of the year to treat approximately 6,000 sick, injured and orphaned native animals that come from Queensland, NSW and as far afield as Canberra.

Patients are provided with first class care and rehabilitation before being released back into the wild.

"We find the FCR equipment is particularly beneficial from an animal's perspective – due to the quality of the images, each animal can be diagnosed much more quickly and efficiently, which means its treatment can begin much sooner," Ms Gipp said.

"After capturing a full body view of an animal, the FCR equipment allows us to then zoom in on a particular area that needs attention.

"...we rarely need to conduct repeat x-rays, which means our time management practices have greatly improved..."

"We have also noticed our throughput is now much quicker and we rarely need to conduct repeat x-rays which means our time management practices have greatly

improved, allowing us to concentrate more on the needs of the animals.

"Being part of an organisation with a very strong environmental focus, another great benefit of the FCR is the elimination of chemical handling or cleaning of the developer – a significant advantage and much better for the planet."

Ms Gipp said the hospital relocated to new and larger premises in September 2008 to accommodate growing demand.

Now the world's largest wildlife hospital, the new site was officially opened on Steve Irwin Day, celebrated on 5 November 2008. The hospital has since become a benchmark facility for other vets.

"In the coming years, we expect to treat approximately 10,000 animals per annum and the new FCR system has made us well-equipped to accommodate these future needs," Ms Gipp said.

"...the new FCR system has made us well-equipped to accommodate future needs..."



"From an administration perspective, we are able to file all data easily and efficiently on soft copy and back it up to disc on a regular basis. Image storage is for 200,000 patients and once this reaches full capacity, files can be downloaded to disc enabling us to always maintain a record.

"The equipment also allows us to email images to other vets or copy them on to CD to provide to a carer. Reporting is also much simpler with a patient ID attached to each image."

Ms Gipp said she believes the hospital has been able to reduce the number of native animal deaths following the installation of the new FUJIFILM FCR equipment.

"Diagnosis is now much quicker and the digital images capture the depth we need to ensure faster treatment," she said.



## BreastScreen NSW enhances its business operations following the transition to digital mammography technology continued

...we have been able to greatly enhance customer service and client access equity as well as greatly reduce inefficiencies...

"In what is already a very good BreastScreen Australia Program, our ultimate goal is to maximise the early detection of breast cancer and save even more lives.

"While this has been a complex and very challenging program, BreastScreen NSW staff have embraced the change while adapting incredibly well to new technology and new work processes, particularly given the scale and speed of the digital mammography rollout across NSW.

"With a project of this complexity, scale and speed, it was expected that we should encounter some hiccups, but overall the digital rollout went quite smoothly" he said.

Mr Costello said the transition to a fully digital screening environment has effectively meant the elimination of a dark room and the use of film chemistry.

"Digital imaging has also led to a significant reduction in paper files, physical storage locations and courier services as a result of digital image transfer.

"The rollout has provided an opportunity to review and improve our business processes as well as the customer experience and their service perception.

"A recent Cancer Institute NSW state-wide survey of 2,300 clients who had a mammogram at a BreastScreen NSW centre in 2008 indicated there was a 95 percent overall satisfaction rating for services provided.

...the transition to a digital environment has been a very rewarding and positive experience...

"We expect further improvements and benefits will be achievable as we progress towards completion of the total project.

"From a client perspective, one of the key benefits of digital mammography is the review of radiography images available at every site at the time of acquisition, significantly reducing the chance of technical recall.

"Dose reduction plus improved image quality has also been a key benefit for clients. In time, we expect to see many more benefits for both clients and staff."

Mr Costello said the transition to a digital environment has been a very rewarding and positive experience.

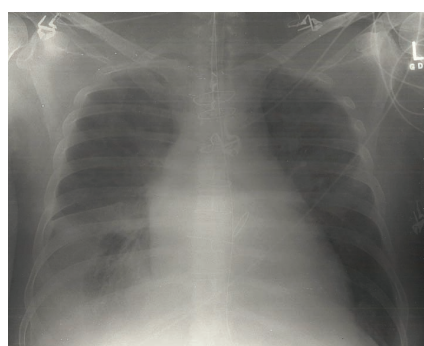
"The BreastScreen NSW program is now recognised as a premium breast cancer screening service with one of the largest digital mammography portfolios operating across such a large geographical area.

"The positive impact of the program has been significant and we believe the full benefits of the equipment will become more evident as the project progresses further," Mr Costello said.

## FAQ's: Grids and Computed Radiography (CR)

### Do I still need a grid when I use CR?

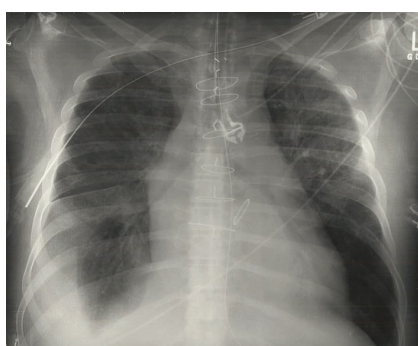
Answer: If scatter radiation is likely and you want to get the best diagnostic image the answer is YES. Please see example below for the same patient imaged over 2 days without and with a grid.<sup>1</sup>



80 kVp – Day 1 without grid

### What about grid cut off?

**Answer:** Grid cut off is always a chance if the grid is not perpendicular to the beam however if you are concerned about it, choose a grid with a lower "Grid Ratio" and keep the kVp in the recommended range. For example choose a 6:1 grid for clean up of up to 80 kVp or 8:1 grid ratio for up to 100 kVp.<sup>2</sup>



85 kVp – Day 2 with grid

### Remember:

1. The higher the kVp the more the scatter.
2. An increase of grid ratio also requires an increase in exposure factors that raises the radiation exposure to the patient and the radiographer must take this into account.<sup>3</sup>

### What is Moire'? How can I make sure that Moire' is not an issue?

Answer: Moire' is an artefact of 'wavy' appearance that sometimes occurs on CR images when a low frequency stationary grid is used. If you are purchasing new grids then choose only high frequency grids of 71 lines/cm. If you have existing grids that are in good condition then using optional software such as Fujifilm Grid Pattern Removal [GPR] software may eliminate the need to purchase new grids. Fujifilm GPR software applies a filter and also adjusts the scanning pitch of the Fujifilm CR reader unit. Check with your local FUJIFILM representative for details.

1 Dave MacCutcheon, FUJIFILM Medical Systems, USA  
 2 Bushong, S., "Radiologic Science for Technologists", Mosby, 2001 p 243  
 3 Kathy Pitura, Research Specialist, FUJIFILM Medical Systems, USA

### Important Grid Factors

#### Grid Frequency

- The higher the frequency, the less obtrusive the grid lines appear on the image – less chance Moire' pattern will occur on images.
- 32 to 71 line/cm or 80 to 178 lines/inch are common.
- FUJIFILM recommend the use of 71 lines/cm for the best results

#### Grid Ratio

- Relationship between the height of the lead strips and the space between the lead strips.

#### Focus

- Focussed grids are preferred to parallel

### Suggestions for Stationary Grids

#### Portables

- 6:1 or 8:1
- 71 lines/cm
- 100 – 180 cm FFD
- Lower kVp (e.g. 70 - 85 kVp)

#### Radiology Department

- 10:1 or 12:1
- 71 lines/cm
- 100 – 180 cm or 150 – 225 cm FFD
- Higher kVp (e.g. 90 - 115 kVp)

#### Long Length Imaging

- 6:1 (lower dose imaging, paed's etc),
- 8:1 or 10:1 (for adults), taking into account the kVp
- 71 lines/cm
- 150 – 225 cm FFD

## FUJIFILM Medical Systems introduces improved customer service and support procedures

FUJIFILM Medical Systems is currently introducing a range of improvements to its customer service and support procedures that aim to standardise its operations and provide a solid structural framework that will accommodate its increasing market growth.

FUJIFILM Medical Systems General Manager, Peter Carmody, said that as part of these changes a 24-hour call centre will be established and additional engineers and project managers will be employed.

“Once a customer has acquired FUJIFILM Medical equipment, a project manager will case manage their entire installation and training process,” Mr Carmody said.

“Project managers will be responsible for the timely installation of equipment, as well as ongoing service and maintenance.

... our goal is to clearly define an escalation process that aims to provide a faster solution for customers...

“In the event of service requirements, there is a clearly defined escalation process that aims to provide a faster solution for customers as a result of FUJIFILM Medical’s new standardised approach to training.

“In the first instance, trained call centre operators will liaise with the customer to resolve an issue over the telephone. If unsuccessful, an engineer will be made available for onsite service as soon as possible.

“To provide efficient response times, we now track exactly when a customer logs their initial service call and how long their system has been out of action.”

Mr Carmody said these changes will enable FUJIFILM Medical to respond to market demands at a superior level.

“We have experienced exceptional growth in CR and Laser Imagers so it is only fitting that we provide a service and support framework that is suitable to the needs of our customers,” Mr Carmody said.

“Our 24-hour PACS Synapse service for hospitals ensures we can respond promptly to their needs. In the future, we will be providing VPN access for all products enabling us to diagnose and resolve issues interactively online.

“Our Active Monitoring Service will also allow us to monitor customer servers and disk space in order to identify a potential problem before it arises or becomes an issue for them.

“In this instance, we can simply advise the customer to either buy more memory or delete some files before the situation becomes more urgent.”

Mr Carmody said these new procedures will make a positive impact and also provide more flexibility to manage current and future product offerings.

**FUJIFILM**  
**MEDICAL SYSTEMS**

[www.fujifilm.com.au](http://www.fujifilm.com.au)

**Service & Support 1800 060 209**

NSW	VIC/TAS	QLD	SA/NT	WA
114 Old Pittwater Road Brookvale NSW 2100	41 Jessica Road Campbellfield VIC 3061	12B Windorah Street Stafford QLD 4053	Unit 1, 297 South Road Mile End SA 5031	14 Kenhelm Street Balcatta WA 6021
Tel: 02 9466 2600 Fax: 02 9466 2678	Tel: 03 9221 4200 Fax: 03 9221 4255	Tel: 07 3552 6700 Fax: 07 3552 2456	Tel: 08 8443 8511 Fax: 08 8443 8176	Tel: 08 6241 0600 Fax: 08 6241 0699

## FUJIFILM Australia and the Environment

FUJIFILM Australia is committed to sustainable business practices and is ever mindful of its interaction with the environment.

Continuous effort is made to reduce the environmental burden of our business activities and it was to this end that FUJIFILM Australia sought and obtained environmental certification to the AS/NZS ISO 14001 standard in 2001, which specifies the actual requirements for an Environmental Management System.

Certification requires annual auditing of the environmental management system by an accredited third party, at which time, evidence must be provided that:

- demonstrates the organisation has identified all aspects where business activities impact on the environment and that appropriate steps are taken and action plans created to remove or reduce the severity of that impact;
- all legal obligations are identified, documented and managed to ensure compliance at all times; and
- demonstrates continuous improvement in the environmental management system.

Since the inception of the environmental management system, FUJIFILM Australia has reduced its environmental burden through achievements such as:

- 35% reduction in waste sent to landfill achieved and maintained since 2001
- elimination of plastic carry bags (replaced by biodegradable corn starch bags)
- Near 100% recycling of cardboard and paper waste generated onsite
- 100% recycling of toner cartridges generated onsite
- 100% recycling of plastic stretch wrap generated onsite
- 100% recycling of fluoro tubes and metal discharge lamps onsite
- Recycling of staff waste such as PET, glass & aluminium
- All purchased packaging used in the distribution of products (i.e. cartons & void fill) is now made from 100% recycled materials and are recyclable

- Cartons and void fill materials collected onsite are retained and reused in the distribution of product
- Financial support of community environmental initiatives such as OzGreen
- Survey of customer waste disposal activities, development of a laminated best practice guide distributed to stores
- Establishment of a "green purchasing" policy
- Packaging, waste and environmental awareness training delivered to all staff
- Development and implementation of best environmental and OH&S practices manual for all contractors working for or on behalf of FUJIFILM Australia
- Monitoring and quantification of packaging sold into the marketplace utilised to set targets for ongoing improvement
- Power factor correction and a number of other initiatives developed on site to minimise power consumption

### Since 2001, FUJIFILM Australia has also been a signatory to the National Packaging Covenant (NPC).

The NPC is a self regulatory alliance of industries involved in the packaging supply chain (manufacturers and users) and all spheres of government. The goals of the NPC are to reduce the volume of packaging materials in the marketplace, increase the recycled content of packaging materials, increase the recyclability and reuse of packaging and ultimately reduce the volume of packaging sent to landfill.

FUJIFILM Australia will continue to pursue environmentally sound practices and promote environmental awareness among its employees and supply chain partners.

