Case Study

Gustave Roussy Cancer Institute first to create a dermatology image bank in France

DICOM Izer: The tool for importing photos into the PACS.

Year	Nb Studies	Nb Images
2005	402	3802
2006	601	10699
2007	2474	12343
2008	3559	15969
2009	3897	19927
Total	10933	62740

Integration of images: dermatology, brachytherapy, surgery, radiotherapy…

Claude Ruelle, PACS Project Manager, IGR.

"The PACS was created for radiologists. But there's no reason why it should only be used by the Radiology Department."

Claude Ruelle

Institut de cancérologie GUSTAVE ROUSSY VILLEJUIF - www.igr.fr

Gustave Roussy (IGR) Cancer Institute is the leading cancer treatment center in Europe. As a much experienced institute, IGR is always in demand for their expertise. They play a key role in defining and taking advantage of new medical and surgery technologies in the field of cancer.

Dr Caroline Robert, Dermatology Department Head at IGR, Bruno Thuillier, Project Management Consultant, and Claude Ruelle, PACS Project Manager, are the initiators of a revolution in patients' follow-up. They created a new structure which made it possible to create the first dermatology photo database that is tightly integrated to a PACS in France. The database has already reached more than 60,000 photos!

Valuable, though unusable photos

Dermatology relies on photos to follow up the evolution of a pathology and to measure the success of a treatment. A melanoma, a suspect mole follow-up requires taking pictures at regular intervals. The role of images is critical in determining the appropriate treatment, especially in the cancer field, as a person who underwent a treatment 30 years back might come again for a consultation today.

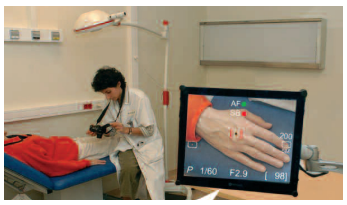
Without a reliable storing, tracing and indexing tool, photos quickly become unusable. They get lost and mixed up, which leads to a high risk of patient misidentification.

"Who's never lost their USB key or experienced a PC crash, and seen thousands of photos disappear? It happens all the time," said Claude Ruelle.

Digital cameras have made the problem even bigger as dermatologists have a tendency to take more pictures. "We have accumulated thousands of photos and slides that we haven't indexed and that are stored in "shoe boxes". An exceptional collection that we cannot use," said Claude Ruelle.

Patient record, PACS and DICOM Izer: An ingenious combination

IGR have a reputation of being a leader in technologies. They fixed the problem by implementing an image archiving and distribution solution, that is controlled from the SIMBAD patient record, and uses both the PACS and DICOM Izer, an image import software program developed by ETIAM.



In the treatment room the dermatologist takes pictures of the patient using a preset wifi digital camera that sends images on-the-fly to a dedicated folder on the treatment room computer.

Then he opens the patient's record, and DICOM Izer. This ETIAM software makes it possible to create a study that contains the photos. The dermatologist can then reorganize photos and remove the ones he does not want to keep. It is also easy to identify images through a query to a worklist server, which eliminates the need to enter patient information manually and ensures traceability.

Photos are saved in DICOM Izer database, and are then retrieved by the photographer who is in charge of checking image identifiers, numbering series, annotating them, and processing them if needed. When this is finished, he sends images to the PACS.

DICOM Izer: The crux of the solution

DICOM Izer is integrated into the SIMBAD electronic patient record, a familiar environment to the dermatologist, and acts as an image importer into the patient record.

"We have known ETIAM for a long time. We appreciate their commitment in their projects. I first used a demo version of DICOM Izer, and couldn't find any other products on the market that stand the comparison. The versatility of DICOM Izer was especially interesting for my project," explained Claude Ruelle.

The first stage of the project was to import into the PACS more than 3,000 dermatology photos from USB keys, hard drives and CDs.

Benefits to patients and healthcare professionals

The image bank offers significant benefits in the following aspects:

- **Patient treatment and follow-up**
  Their record is fully accessible from a single point, both quickly and securely, thus making it easy to compare images and follow patients up. This is a major asset for specialists in multidisciplinary meetings where they discuss diagnosises and determine patients' treatments.

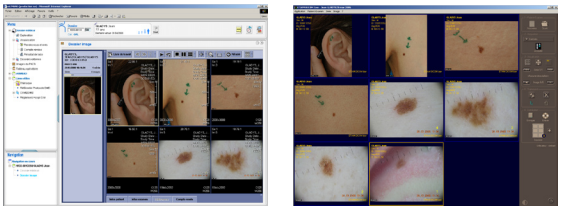


Figure 1: Patient record and associated dermatology images.

- **Optimized staff work**
  Specialists can work with quality photos and spend more time consulting patients, and the photographer spends twice as less time working on photos.
- **Expenses driven down**
  The image banks leverages the existing infrastructure (PACS and patient record), which results in reduced expenses, training time and maintenance.

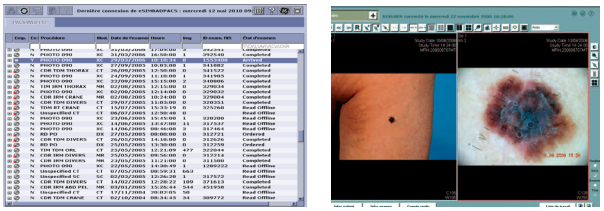


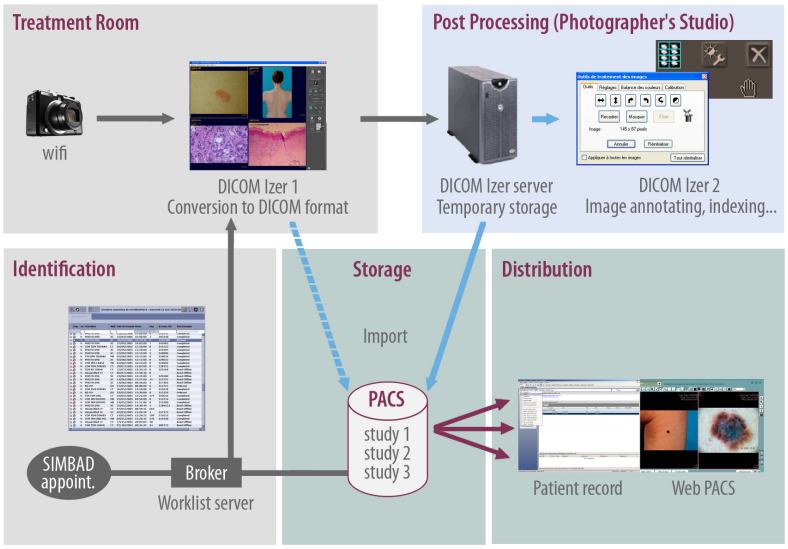
Figure 2: Study database and storage on the PACS.

- **Increased data security**
  Images are imported in compliance with the DICOM standard so it eliminates image identification errors, and ensures that data is kept overtime thanks to the worklist and the PACS.
- **Research and teaching**
  As time goes by, photos are added to the database. Image referencing and indexing are very useful for epidemiology studies, publications, conferences and teaching purposes.

"The image bank makes itself stand out as a structuring tool in the Dermatology Department and in multidisciplinary meetings."
Claude Ruelle

A success that arouses envy

The Surgery Department head is enthusiastic about the results, and would like to have the same system in his department. In the medium or long term, all non-radiological medical images (anatomopathology, brachytherapy, endoscopy…) will be stored on IGR PACS, for the benefit of specialists and patients.



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