



Since 1990 the activities of BioScan Switzerland focus on biomedical X-ray imaging and non destructive testing (NDT). BioScan designs, manufactures and commercializes really new products using cutting-edge technology.

X-VIEW CE

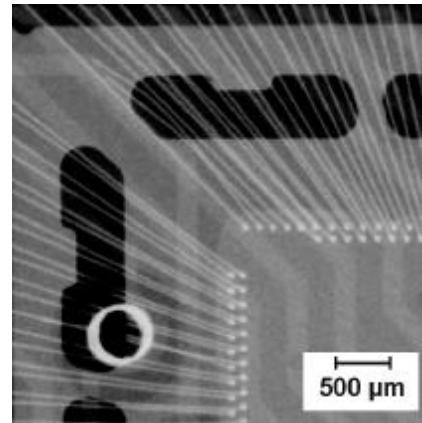
NON DESTRUCTIVE TESTING FOR ALL INDUSTRIES
X-RAY OR NEUTRON FILMLESS REAL-TIME IMAGING SYSTEM FOR NDT.

1. Market opportunities

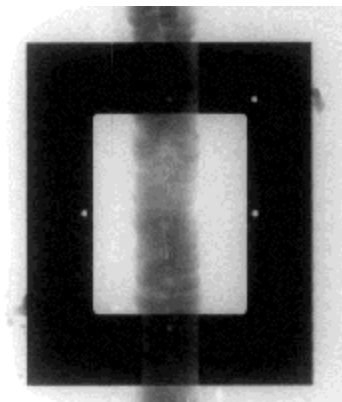
BioScan has developed a new digital imaging and control system, **X-View**, for real-time non-destructive inspection in industrial applications. The development of X-View was stimulated by a large demand from industrial end-users in the field of non-destructive tests, in particular for inspection of welding and brazing structures, in detection, identification and localization of defects in real time. A compact system, such as X-View increases cost efficiency, reliability and quality of interpretation, and decreases the exposure of the personnel to X-ray radiation.

X-View can be used in a large number of applications for quality assurance and control:

- Ø Industry: aeronautics, automotive, nuclear, electronics, space, oil and gas, including hostile environments,
- Ø Banking (detection of forged banknotes),
- Ø Medical field,
- Ø Food,
- Ø Cultural and archaeological studies, such as scanning pieces of art in museum laboratories, etc.



Printed circuit at 50 kV.



Aluminum frame soldered on a steel base.

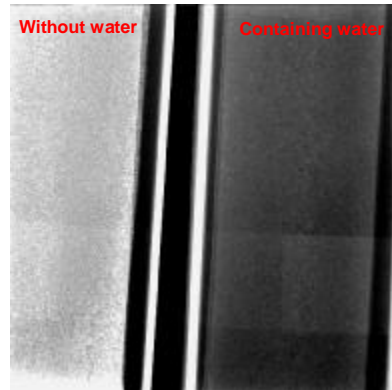
X-View can be easily integrated in all existing and future X-ray installations including hostile environments and limited space. Its characteristics (compact design, short acquisition time, high resolution and contrast, high speed and sensitivity) ensure its high competitiveness on the market of radioscopic systems.

2. Advantages of X-View over traditional technologies

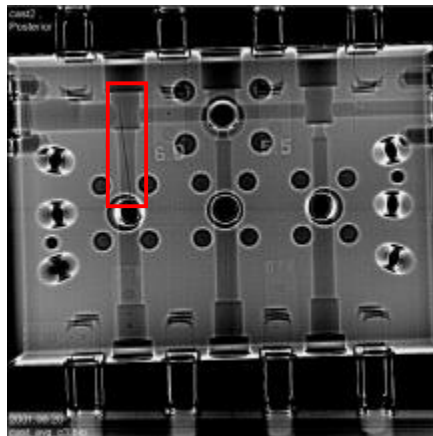
X-View has several advantages compared to traditional inspection techniques (based on film or other methods).

Traditional film cassettes used in conventional diagnosis have several disadvantages and limitations :

- . time consumption and additional processing costs,
- . uncertainties in quality of the results and interpretation,
- . frequent repeats,
- . high doses,
- . bulky storage.



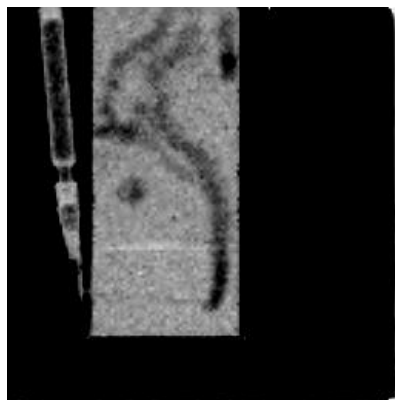
Humidity detection in a metallic structure.



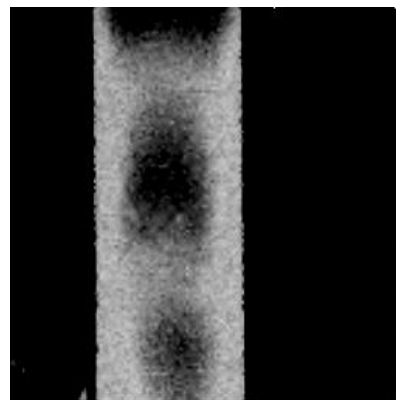
Crack detection in a 13 cm thick metal block.



X-View differs from currently available inspection techniques by rejecting scattered background and by using a large area pixel matrix based on a solid state sensor.



Neutronoscopy: air circulation in a case filled with water.



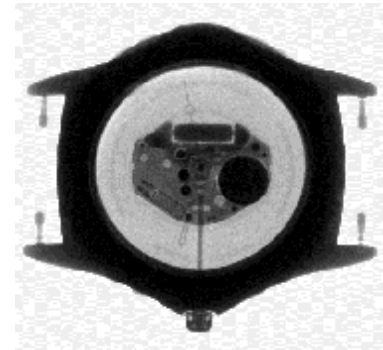
Neutronoscopy: air circulation in a case filled with motor oil.

This technology ensures:

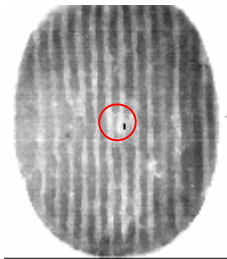
- real time digital operation,
- high image quality (high spatial resolution and contrast) and sensitivity,
- wide dynamic range and linear response,
- compact and convenient design (compared to systems based on image intensifiers and optical systems with conventional TV cameras) permitting operation in limited space,
- low weight (less than 10 kg) permitting portability for field inspection,
- storing large quantities of data in a small volume with no risk of deterioration,
- image enhancement and interpretation of results with computer tools,
- preservation of the environment and improvement of radiation protection of the personnel by reducing the exposure doses.



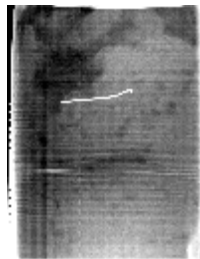
Assembly inspection



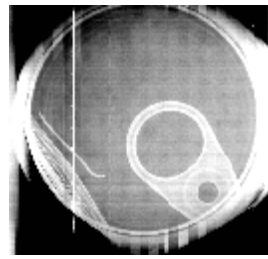
Watch mechanism



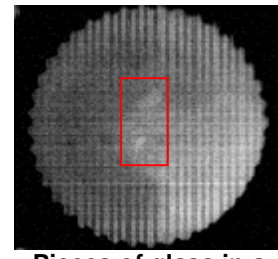
Piece of wire in a hamburger.



Nail in a can.



Can – view from above.



Pieces of glass in a cup of yoghurt.

X-View was awarded the 3rd innovation technology prize for food quality control – Altran Foundation, Palais de l'UNESCO, Paris, June 2000.

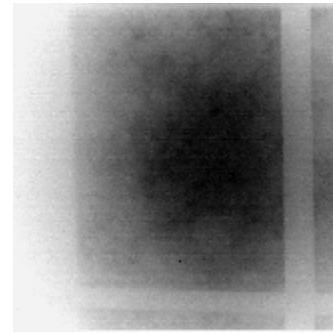
3. Technical Data

Main features of X-View :

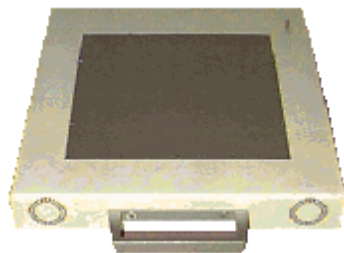
- è **Energy range:** 20keV – 400keV for standard equipment (up to 10 cm steel thickness),
400keV - 20 MeV - for thick objects,
- è **Active area:** 12 cm x 12 cm, 20 cm x 20 cm and 41 cm x 41 cm,
- è **Pixel size:** 400 µm x 400 µm down to 50 µm x 50 µm,
- è **Frame rate:** up to 30 images per second,
- è **ADC resolution:** up to 16-bits (65536 grey levels),
- è **Dynamic visualization,**

è **Compact design.**

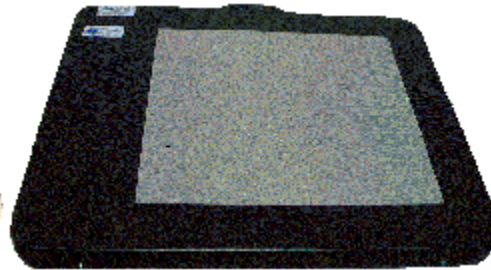
X-View uses a large area pixel matrix based on solid state amorphous silicon technology. The detection matrix works as a complete electronic camera. It is much smaller and lighter than a conventional optical CCD camera with an image intensifier. Since this detector is tolerant to X-rays, it can be placed directly in the beam.



Concrete inspection



X-View-20



X-View-41

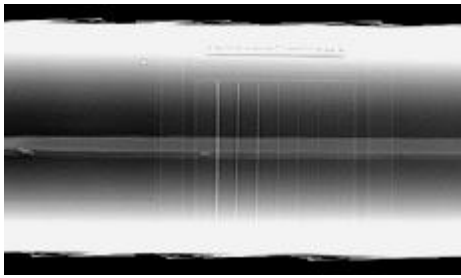
Product range :

	X-VIEW-41	X-VIEW-20
Sensitive area	41 cm x 41 cm	20 cm x 20 cm
Pixel size	400 µm x 400 µm	400 µm x 400 µm
Resolution	1024 x 1024 pixels	512 x 512 pixels
Weight	21 kg	9.5 kg

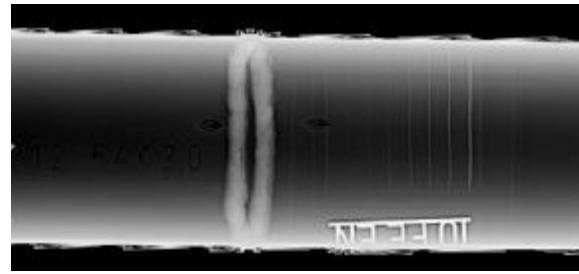
- Personal computer or laptop,
- Screen : 17" to 21" size,
- Maximal detector-computer distance : 100 m.

Computer configuration :

Personal computer with an Intel Pentium IV, PCI system interface, 1024 MB SDRAM, 120 GB hard disk, 128 MB video memory, Windows™ operating system, CDRW, modem or network card, keyboard, mouse.



Stainless steel pipe,
Ø 60 mm, thickness 3.2 mm.



Stainless steel pipe ,
Ø 54 mm, thickness 2 mm.

4. Dedicated Image Processing Software : WinX-View

WinX-View is the software used for image acquisition and processing. It is specially conceived to take images, visualize and analyze them with X-View systems in industrial environment.

WinX-View is very easy to use and runs on a PC under Windows™ operating system. A dedicated frame grabber is used for data acquisition and I/O control of the detector.

Data is digitized up to a 16-bit resolution (65536 grey levels). The input/output card uses a PCI bus for functions related to detector control and direct transfer of images in the PC memory. DMA (Direct Memory Access) ensures image acquisition without using the central memory of the PC. Thus, it is available for other control functions or image processing during data transfer, for instance - applying gain and offset corrections to the images on-line.



**Banknotes: the metal particles
contained in the ink are visible.**

WinX-View performs the following main functions :

