

Let there be light...



And there is CIT

Manufacturer's of World's Most Advanced Digital
Computed Radiography Imaging Technology



Computerised
Information
Technology Ltd.

PRODUCT SHEET

DR3000 Radiograph Film Digitisation System

Film radiography has been used for industrial Non-Destructive Testing (NDT) purposes since long. It has proven itself as one of the most suited method for inspection. However, films have to be chemically processed in dark rooms, require a lot of storage space in air-conditioned rooms. Furthermore, they degrade with time, and retrieval and duplication takes lot of time. **DR3000 Film Digitisation System** is designed to digitize the conventional radiographic film to obtain the benefits of digital images.

Objectives

- Enable digital archiving of radiographic films without loss of quality
- Reduce storage space and costs
- Improve accessibility of data
- Streamline and semi-automate report generation
- Eliminate accidental damage of films due to handling
- Extend archive life



Benefits

- Eliminates ageing of films, retaining image quality
- Physical archive storage to computer data cabinets
- Deliverables are electronic data media with 25-50 years of data life
- Associated documents such as UT, MPI and associated reports can also be archived
- Full traceability is integral to the system, with tamper-proof designing at each stage
- Radiographs can be electronically reported and archived
- Online information at different PCs in different parts of world
- The electronic information along with DR3000 browser package can be used to efficiently carry out plant integrity assessment

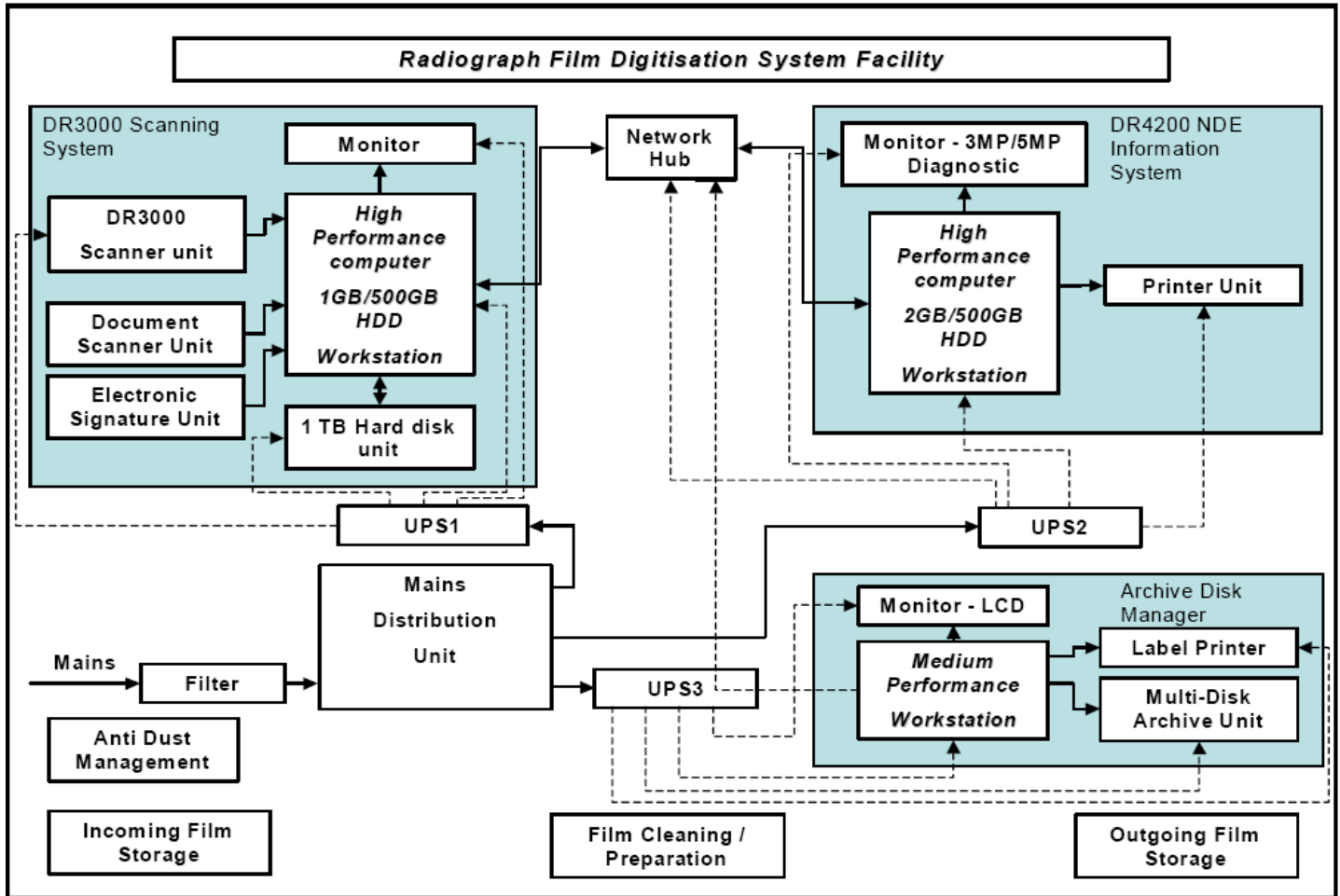
Customer Acceptance Standards and International Codes Compliance

- ASME V Article II on Digitized Radiograph Films
- NUREG 1452 Radiograph Digitization Retrieval
- Nuclear NAS 160/AES 6001/BS2633, CEN 1435
- CEN 472/473 Radiographic Training System Requirements
- API1104 ASNT and ASTM 7002, 2033, 7020 Technical Working and Practice Inspection Data Retrieval

Application Areas

- Oil and Gas Pipelines
- Compressor Pipework
- Nuclear Power Plant NDE Data
- Petrochemical Refineries
- Ship Building
- Aerospace





Salient Features of DR3000 Browser Package

- Secured cryptographic image
- Advanced radiograph analysis
- Report generation
- Audit traceability of archived images
- Integrated Archive Disk Management system
- The DR3000 system application is specifically written for NDT radiograph digitization production and QA/QC requirement.
- This is a powerful tool for interpretation, storage and reporting purposes.

CIT's DR3000 Film Digitisation System hardware and software can be customized to meet the customers' requirement.

DR3000 Radiograph Browser Package Functions

Security Features

- Login
- Password protected by different groups (Operators, Supervisors, First inspectors, Second inspectors and Auditors)
- Electronic signatures
- Cryptographic tempered proof images

Acquisition & Archival

- Scanning: different length and width – up-to 5.5 m radiography
- User customizable project/product profile & radiographic technique setup
- Document scan, photograph and digital data attachments
- Scan film and save into pending stack/restore from storage to review & authorisation
- Authorise and save straight into the preferred directory
- Preview Advanced Radiograph Image Analysis
- Reference image capture and save

Image Type

- 8 bit, 12 bit or 16 bit images
- Diconde/Dicom files storage
- Full images & thumb nail images
- Temper proof original Authorised image

Retrieval

- Retrieve product data using customized (User) search criteria
- Browse by full or thumbnail preview for speed
- Access Advanced Radiograph Image Analysis
- Retrieve multiple images of the same products or multiple images of different products
- Reference images for comparison
- Retrieve techniques

Product Reports

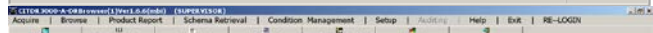
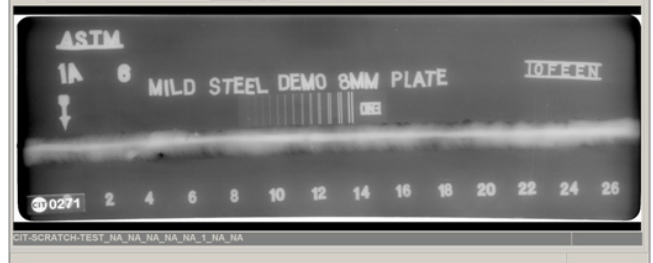
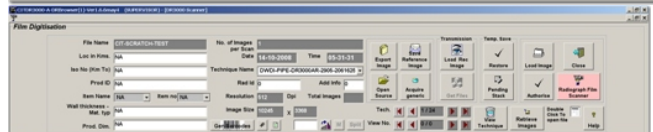
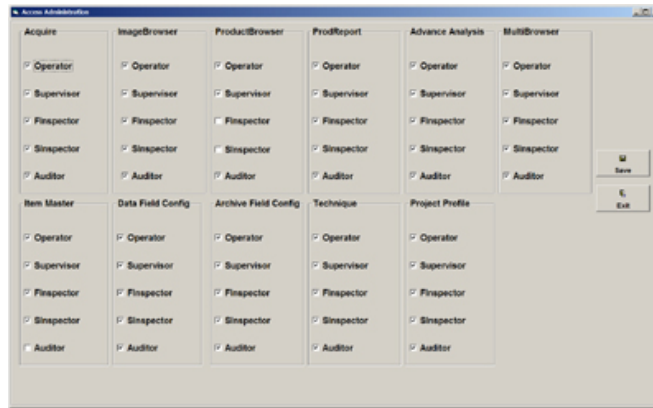
- Customized product reporting
- View all personals/engineers/inspectors who have worked on the product
- Use of electronic measurement tools of image analysis
- Save settings for product report preview of inspected film
- Display and print hard copy of the reported results
- View Inspector's multiple reports as interpreted
- View and/or attach Reference standards image, or any other product data from the twine drive application

System Administration

- Maintenance and upkeep of the system record
- Backup management
- Data integration and validation

Advanced Radiograph Image Analysis (16 bits) -Optional

- Automated location of images from the product report or browser
- Display of x-position, y-position and radiograph density at the point of interest
- Line density profile of image
- Image zoom, scroll, window shift and leveling



- Histogram plots
- Distance measurements
- Non-destructive annotation
- Image process, sharpen, smooth and edge operators
- Export and import
- Save settings with comments
- Reference images

Other Optional Software Modules

- o Corrosion & Condition Management
- o Flaw depth Measurement
- o Schema based Inspection

Other Optional Hardware

- Roll pack adaptors
- Archive disk management system
- Document ADF Scanner/Printer

Technical Specifications

Digitisation Scanner Unit

- o Resolution: User selectable 50-450 microns
- o Radiographic density 0.01 - 4.3 OD or 0.1 – 4.7 OD
- o Films: 2" X 4" up to 17" X 14"
- o Roll Pack films: 70mm with up to 5 meters (with special adaptors)

Radiograph Computer Processor (Minimum)

- o Industrial standard processor P IV 3 GHz
- o 2 TB memory; 2 TB Hard disk
- o Blue Ray Combo Drive
- o Windows XP, 2000
- o CIT digital radiography system software package - Basic or Advance software

Radiograph Computer Laptop

- 17" TFT
- Screen Resolution: 1920 x 1280 Pixels

Radiograph Display	DR3000 Basic TFT	DR3000 Med. TFT	DR3000 HD TFT
Display Size	19.6" TFT –Mono/color	20.8" TFT screen -Mono	21" MonoTFT - mono
Display resolution	1600 x 1200 (2MG)	2048 X 1536 (3 Mg) Pixels	2560 X 2048 (5MG) Pixels
Pixel Pitch	0.249 x 0.249 (mm)	0.207 x 0.207 (mm)	0.165 x 0.165 (mm)
Display brightness	910 cd/m2 with LUC	800 cd/m2 with LUC	800 cd/m2 with LUC
Contrast (Type)	750:1 WITH luc	750:1 with LUC	750:1 with LUC
DICOM Mode	Dicom, Reverse, User, off	Dicom, Reverse, User, off	Dicom, Reverse, User, off
NDT standard requirement	Calibration software	Calibration software	Calibration software
Weight - Unpacked	7.7 kg	8.9 kg	10 kg

Site working facility required- (Customer to provide)

- o Mains supply: - 110/240 Volts 50/60Hz mains - 4200 VA
- o - Line stabilization:- Recommended UPS with battery time of at least 30 minutes
- o Portakabin/Office environment: Dust proof with subdued indirect light and air conditioning to provide slight
- o Positive air pressure in room: Separate film handing area and sliding doors to minimise dust ingress