

Servicing the GE Definium Family: Definium 6000/8000, Discovery XR650/XR656 Optima XR640



RADIOLOGICAL SERVICE TRAINING INSTITUTE

Introduction

The GE Definium Family training course covers a wide variety of GE's latest DR (Digital Radiography) systems.

The Definium Family course is a skills development course designed to provide the experienced service professional with the skills necessary to fully service and calibrate these single & dual detector system. All Definium family products are built around the JEDI generator platform. Systems that will be covered in this course include:

- Definium 6000
- Definium 8000
- Discovery XR650
- Discovery XR656
- Optima XR640

Prerequisites

To attend this course, the service professional must have a good understanding of the principles gained through attending Phase II or two years equivalent experience in servicing RAD equipment.

Objectives

- Understand the similarities & difference between the Definium family products.
- Describe how factors are optimized to produce the highest quality digital images

- Describe the function of the basic components of each GE Definium family digital radiographic unit
- Demonstrate an understanding of the installation procedures associated with the GE Definium
- Perform the necessary digital performance monitoring and quality assurance procedures utilizing the GE Definium
- Perform all system calibrations and adjustments to maintain the highest quality images
- Evaluate circuit functions to facilitate troubleshooting
- Perform a complete and thorough preventive maintenance inspection on the unit
- Operations
 - Magic Workstation
- Service
- Schematics
- Lab Activities
 - Annual physicist checks
 - Image quality
 - Signal to noise
 - Resolution
 - Contrast ratio
 - MTF
 - Flatfield/phantom IQ
 - AOP

Course Outline

Day 1

- Digital imaging process overview
- Basic terminology
- Definium system overview
- Discovery system overview
- Optima system overview
- Definium system operation
- Discovery system operation
- Optima system operation
- System specifications
- Lab Activities
 - Basic system operation
 - AWS acquisition software
 - Image acquisition
 - Image viewer
 - Screen considerations
 - Technologist digital QC
- System documentation overview
- Installation

Day 2

- System service
- Lab Activities:
 - Required tools and software
 - Remove and replace covers and system panels
- AWS
- Gantry
- Operators console
- Generator
- UNIX basics
- AWS configuration
- Site planning and installation
- Network configuration
- Ethernet config
 - RT Bus
 - ArcNet Bus
 - CAN Network
 - Troubleshooting Definium internal Networks
- System calibration
- Functional checks
- System backups
- System restore
- Lab Activities

Servicing the GE Definium Family: Definium 6000/8000, Discovery XR650/XR656 Optima XR640



RADIOLOGICAL SERVICE TRAINING INSTITUTE

- o Component location
- o Schematic location
- o Physical location
- o Connector locations
- o Fuse location/identification
- o UPS Battery check/replacement procedures UNIX Telnet session

Day 3

- Preventive maintenance
- Error codes
- System diagnostics
- Lab Activities
 - o PM
 - o Diagnostics
- Image Chain - Image Detection
 - o IDC
 - Bad Pixel correction
 - Flatfield correction
- Detector Calibration
- System service procedures
 - o Software reload
 - ADS
 - Generator
 - Positioner
 - o Troubleshooting
 - o Options
 - o Networking
 - o Output devices
 - Laser printer
 - PACS
 - RWS
 - CAD
 - Media
 - o Input devices
 - Modality worklist
- Lab Activities
 - o Load from Cold (LFC)

- o Configure and test output devices
- o Configure and test input devices
- o Backup/Restore

- Final exam

Day 4

- Generator calibration
- Lab Activities
 - o AEC calibration
 - o Beam alignment
 - o Collimator format
 - o Bad pixel
 - o Detector gain
 - o Positioner calibration - Table detector
 - o Positioner calibration - Wallstand detector

Day 5

- System schematics
 - o AWS
 - o Gantry
 - o Generator
- Troubleshooting
- System diagnostics
- Lab Activities
 - o Review system diagrams and communication
 - o Troubleshooting
 - o System diagnostics
 - o Access ADS Error logs
 - o Access OS Error logs
 - o Central Listing
 - Test Points
 - LED's
 - o Networking
 - o Power Distribution/Supplies
- Course review
- Course evaluation