Servicing the GE Definium Family: Definium 5000 (Universal Radiographic System)

RADIOLOGICAL SERVICE TRAINING INSTITUTE

Introduction

The GE Definium 5000 training course covers GE's U-Arm (Universal Radiographic System) DR (Digital Radiography) product.
The Definium 5000 course is a skills development course designed to provide the experienced service professional with the skills necessary to fully service and calibrate these fixed TRAD (tethered) detector system. The Definium 5000 is built around the Sedecal X-Plus LP Plus generator platform.

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 5000 and the Definium family products.
- Describe how factors are optimized to produce the highest quality digital images
- Describe the function of the basic components of the GE Definium 5000 digital radiographic unit
- Demonstrate an understanding of the installation procedures associated with the GE Definium 5000
- Perform the necessary digital performance monitoring and quality assurance procedures utilizing the GE Definium 5000
- 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

Course Outline

Day 1

- Digital imaging process overview
- Basic terminology
- Definium 5000 system overview
- System specifications
- Lab Activities
  - Basic system operation
  - AWS acquisition software
  - Image acquisition
  - Image viewer
  - Screen considerations
  - Technologist digital QC
- System documentation overview Installation
- Operations
  - Magic Workstation
- Service
- Schematics
- Lab Activities
  - Annual physicist checks
  - Image quality
  - Signal to noise
  - Resolution
  - Contrast ratio
  - MTF
  - Flatfield/phantom IQ
  - AEC

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 5000 internal Networks
- System calibration
- Functional checks
- System backups
- System restore
- Lab Activities
  - Component location
  - Schematic location
  - Physical location
  - Connector locations
  - Fuse location/identification

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Hands-On Training Course
Course Length: 1 Weeks
CEU's Awarded: 4 CEU's
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Day 3

- Preventive maintenance
- Error codes
- System diagnostics
- Lab Activities
  - PM
  - Diagnostics
- Image Chain - Image Detection
  - Bad Pixel correction
  - Flatfield correction
- Detector Calibration
- System service procedures
  - Software reload
    - Magic PC
    - Generator
    - Positioner/Magma PC
  - Troubleshooting
  - Options
  - Networking
  - Output devices
    - Laser printer
    - PACS
    - RWS
    - CAD
    - Media
  - Input devices
    - Modality worklist
- Lab Activities
  - Load from Cold (LFC)
  - Configure and test output devices
  - Configure and test input devices
  - Backup/Restore

Day 4

- Generator calibration
- Lab Activities
  - AEC calibration
  - Beam alignment
  - Collimator format
  - Bad pixel
  - Detector gain
  - Positioner calibration

Day 5

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

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