

Siemens Aera, Skyra & MRI Family:

Aera, Skyra, Espree, & Avanto



RADIOLOGICAL SERVICE TRAINING INSTITUTE

Introduction

The Servicing the SIEMENS Aera, Skyra & MRI Family course is an advanced MRI course centered on progressing both system knowledge and troubleshooting experience. This course builds on the knowledge acquired in RSTI's MRI Principles training course.

The course teaches service engineers the advanced concepts of MRI system operations, system software (SYNGO) features, System Hardware, System Connectivity, and Service Software (SeSo).

A strong emphasis will be placed on hands-on labs to support the presentation of advanced principles.

Prerequisites

To attend this course, the service professional must have completed RSTI's MRI Principles training course or have equivalent experience.

Objectives

At the conclusion of this course participants will be able to:

- Understand the advanced operations of SIEMENS MRIs.
- Understand SIEMENS MRI trouble shooting tools & techniques.
- Understand magnet functionality & monitoring.
- Deeper understanding of MRI subsystems such as the RF chain, the Gradient chain, the cooling system & the MRI network.
- Diagnose and correct image artifacts.
- Diagnose and correct system failures.

Course Outline

Day 1

- System Overview & MRI Review
 - o MRI Safety
 - o RF Transmit Chain
 - o RF Receive Chain
 - o Gradient Chain
 - o Cooling / Patient Handling
 - o Image Quality / Artefacts
 - o Specialty Coil

Day 2

- System Software & Documentation
 - o System Software
 - o Task Cards
 - o System Documentation
 - o Workstation Management
 - o Image Analysis Tools

Day 3

- Service Software
 - o Service Access Manager (SAM)
 - o Event Log
 - o Service Software (SeSo)
 - o Service Tools
 - o Shimming

Day 4

- EPC Cabinet
 - o CAN Bus
 - o Clockbox
 - o THYRE
 - o MARS
 - o System Bootup

- o VLM
- o ISO RING

Day 5

- Hardware: RF Transmit Chain
 - o TX Box
 - o TX Box PS
 - o RFCEL
 - o Synthesizer
 - o BC DYN
 - o LC DYN
 - o MARS
 - o ISO RING

Day 6

- Hardware: RF Receive Chain
 - o RFCEL
 - o IF RCCS
 - o IF_RX32
 - o DIG_RX32
 - o ISO RING
 - o MARS
 - o Body Coil
 - o TI 4G Coils

Day 7

- Hardware: Gradient Chain
 - o XJ
 - o XQ
 - o GSSU
 - o Power Stage Supply PSS
 - o Gradient Coils
 - o Gradient Filters

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Day 8

- Hardware: Cooling System
 - o ACS inside of EPC
 - o SEP System
 - o Chiller IFP System
- Hardware: Patient Handling System (PHS)
 - o Tim Table Fixed
 - Vertical drive
 - Horizontal Drive
 - o Tim Table Dockable
 - Docking process
 - Vertical drive
 - Horizontal Drive
 - Docking assembly
 - o Direct connect coils
 - o RFCEL Satellite functions
 - o Control Panels
 - o Display
- o Refrigeration: Coldhead
- o Magnet Control Electronics:
 - MSUP
 - Alarmbox
 - ARDU
- Course Review
- Final Exam

Day 9

- System Software
 - o Backup/Restore
 - o SW Reload
 - o Ghosting & Cloning procedures
- Coil Testing
- Troubleshooting
- Error Logs
- PM

Day 10

- Magnet: General Information
 - o Super Conducting Magnets
 - o How Super Conducting works
 - o OR 98
 - o OR99/103
 - o Refrigeration: Compressor