

Ultrasound Crash Course Outline

Day 1: Ultrasound Basics

Day 2: Multivendor Accreditation PM / DICOM

Day 3: Philips iU22 / iE33

Day 4: GE Logiq 9 / Vivid E9

Day 1: Ultrasound Basics

Diagnostic Ultrasound:

Physical Principles
Applications
Transducer Types
Image Quality

Doppler:

PW
AUX CW
Steered CW
Color
Power

Enhanced Imaging Modes:

Harmonic Imaging
SonoCT
Panoramic
3D – 4D (Live 3D)

Block Diagram of an Ultrasound System:

Generic
iU22/iE33
Vivid E9
Logiq 9
Sequoia 512

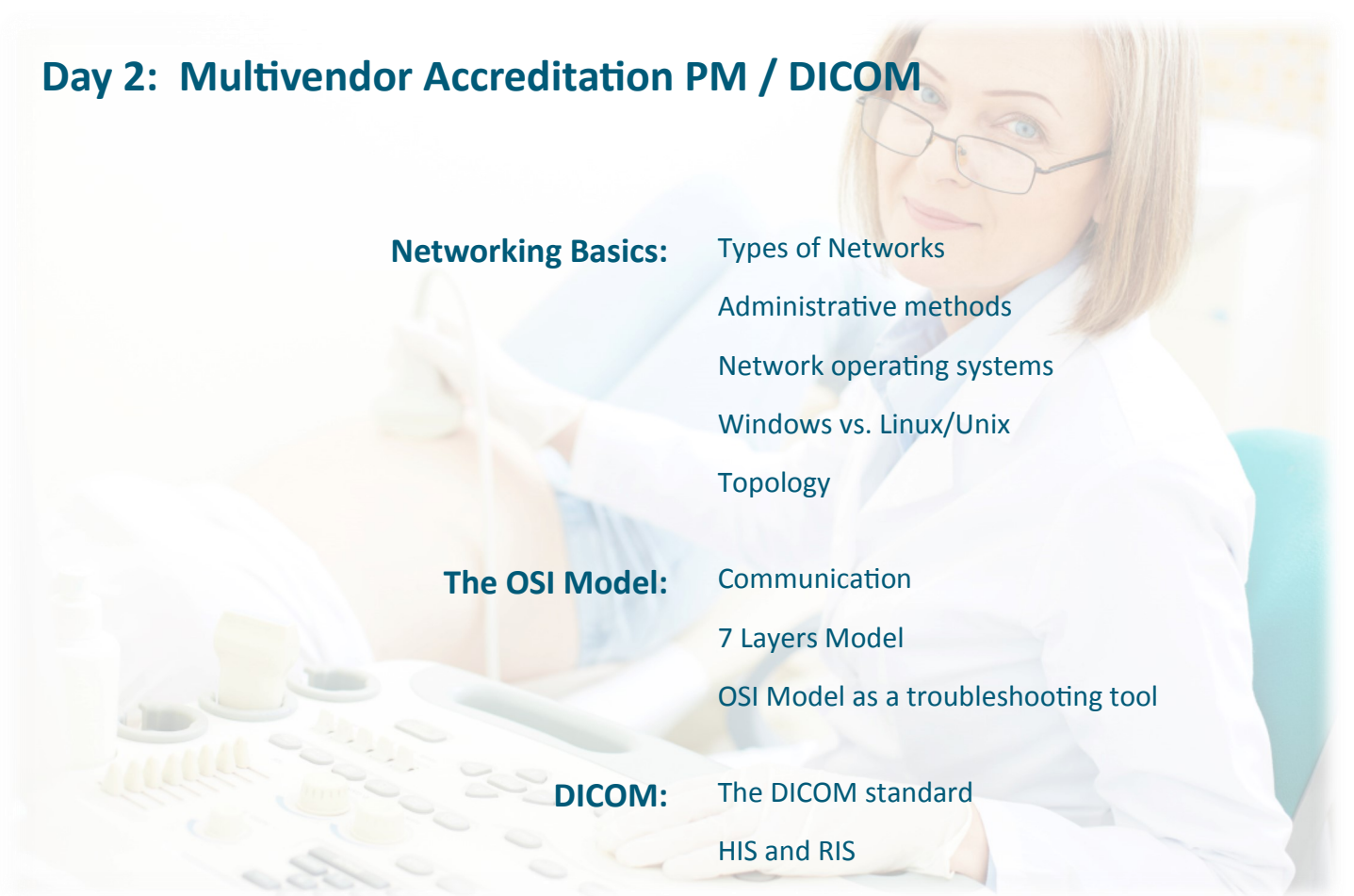
Open Forum & Review:

Class Participation



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Day 2: Multivendor Accreditation PM / DICOM

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- Networking Basics:** Types of Networks
Administrative methods
Network operating systems
Windows vs. Linux/Unix
Topology
- The OSI Model:** Communication
7 Layers Model
OSI Model as a troubleshooting tool
- DICOM:** The DICOM standard
HIS and RIS
DICOM and the OSI model
DICOM Services

- DICOM Tools:** Internal and External tools
Sniffers and Emulators
Echo and verify
Important differences between products

- Trouble Shooting:** Windows Troubleshooting
Linux/Unix Troubleshooting

- Open Forum & Review:** Class Participation



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Day 3: Philips iU22 / iE33

Overview: System Architecture
Version A thru E Chassis
Transducers
Modes of Operation
Connectivity

Operational Testing: 2DColor, CPA
PW, CW, M-Mode
Real Time 3D
Connectivity
Peripherals

Hardware Access: iU22/iE33 System Enclosures
User Interface
Acquisition Assembly
Power Supply
DVD Drive Assembly

Adjustments: Power Supply
Monitor
Touch Screen
Articulation
System Brakes

Preventative Maintenance: Fans/Filters
Casters
Articulation
Video
Patient Directory

Troubleshooting: Power Supply
Temperature
Software Tools
Test Images
Failure Analysis



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Day 4: GE Logiq 9 / Vivid E9

System: Front End Power Supplies
Test Point/Indicators
Front End Processor Theory & Operation
Back End Processor Theory & Operation

AC Power Distribution: System Wide Distribution
Peripheral Distribution

Diagnostics & Troubleshooting: Front End
Back End
System Control
Video
Power Supply

Networking: Network Programming
Network Troubleshooting

System Backups: Creating a Preset Disk
Restoring from a Backup Disk
Printouts

Software: Software Troubleshooting
Loading Software

Parts Replacement Procedures: Front End
Back End

System Adjustments: Monitor
Brakes
Keyboard Assembly

Preventative Maintenance: Filters
Safety Testing
Manufacturer Specification



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