



PACS Training Course Outline

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INTRODUCTION:

IBIS Edu (formerly ICT for Health) is the pioneer and the most trusted name in PACS training in the Middle East. With 12 successful PACS training seminars on our tribute, we have the right resources and the experience to deliver all what today's PACS Managers and Admins needs. We always bring the industry leaders and top names in PACS industry including Herman Oosterwijk, Dr. Todd Kantchev and now Clive Daniell.

With over 9 years of PACS training experience in the Middle East, we can proudly say that we have the honor to train majority of the PACS admins in the Middle East. Through this big pool of trainees we understand the changing requirements and technology advancement in PACS and we keep modifying our training courses year to year and bring the best technology and knowledge base for healthcare professionals.

Our courses are also certified by CPD (Continuing Professional Development) UK and each 8 hours attended will be eligible for 4 credits from CPDUK.

WHY IBIS?

- ✓ First company in the Middle East to award Continuing Professional Development Credits (CPD Credits) from UK.
- ✓ Teaching of the generic medical imaging and data flow management process in relation to modern technology, regardless of specific branding
- ✓ Provides clear understanding of the PACS components, their functionality and the standard interfaces used for integration
- ✓ Presents a combination of knowledge in PACS engineering, implementation project planning and service management from real life
- ✓ Up-to-date study of modern PACS technology and healthcare data management
- ✓ Well balanced subject matter for good understanding of engineering as well as management
- ✓ Comprehensive intensive learning yet ensuring gradual learning curve by introducing key terms explaining the jargon first
- ✓ High quality study materials with review questions and answers to use for study and reference after the course
- ✓ Excellent balance between academic and practical knowledge

Brief Trainers Bio:



TODD KANTCHEV, Ph. D.

INTRODUCTION: Without any doubt, Todd is perhaps the most experienced living PACS/DICOM resource on earth. With over 20 years of experience in PACS implementation, connectivity, management and training in Philips, Siemens, Merge, & Salvesta Todd is an excellent resource to enrich your PACS related knowledge.

SUMMARY: Resourceful cross domain IT experience with a good mixture of business, academic and technical skills; Strong exposure to medical devices and imaging informatics in a variety of roles at different levels; Ability to maintain processes, standards and good practices while managing, leading and inspiring;

SPECIALTIES: Healthcare Informatics; Interoperability Standards; DICOM; HL7; IHE; PACS; Medical Imaging; Medical Devices; Parallel Computing; Senior Level Management; Project Management; Consulting; DICOM Professional Training and Coaching.

KEY AREAS OF STRENGTH

- Management skills in medical devices in a variety of roles at different levels;
- PACS deployment Project Management experience;
- Advisory, consulting, training and coaching skills in healthcare interoperability standards and medical imaging technology;
- Strong DICOM and IHE PACS integration expertise;

BACKGROUND: Todd Kantchev has been working in DICOM/IHE interoperability for more than 15 years. In 1996 he developed one of the first toolkits, implementing the client and the server sides of Image Storage with lossless and lossy compression, Query Retrieve and Modality Worklist as well as Print SCU. He participated in DICOM WG11 and contributed to the community on DICOM news group during the pioneering stages of the first commercial PACS architectures and implementations. His results were reported on Radiology'98 in Birmingham [1]. Later he acquired experience in validating DICOM implementations and training for Merge Healthcare, Siemens Healthcare, Philips and other companies worldwide as well as in project managing PACS deployment. While working in the area of molecular imaging, Todd acquired knowledge and understanding in the areas of **Nuclear Medicine** (PET and SPECT imaging), RT Planning as well as Image Registration. He was one of the driving forces for improving interoperability in these areas. He participated in WG3 for Enhanced PET and was the draft author of the Image Fusion Profile (FUS) in IHE.

In 2007 Todd became an independent consultant providing training and consultancy for medical companies, healthcare institutions and individuals.

WORKED AT:

Project Manager: Philips Healthcare

Interoperability Project Manager: Siemens Molecular Imaging, Oxford

System Integration Consultant: Merge Healthcare

EDUCATION:

MBCS CITP

PRINCE2 Practitioner

DIC Medical Physics and Engineering, Imperial College, London

PhD Computer Science, Technical University, Sofia

MSc Electrical Engineering, Technical University, Sofia

WHAT INDUSTRY LEADERS SAY ABOUT HIM:

Roy Foster

Project Management Consultant - Philips Healthcare:

Todd worked for me as a Project Manager deploying PACS into London Hospitals as part of the NPfIT Programme. He was a truly excellent PM being clear and concise, empathetic to the customer but yet strong, diligent and hard working and was able to complete all his projects to the required time, cost & quality criteria. I would recommend Todd to anyone.

September 23, 2010, Roy managed Todd at Philips Healthcare

Sacha Helbig

Product Manager Service at Siemens Healthcare

Todd worked for me from 2002 to 2003 as System Integration Consultant in the MergeLink consulting organization of Merge Healthcare.

Besides Interoperability Consulting and Classes on DICOM Test Tools, Todd's main task was providing DICOM Compliance Testing Service and Interoperability Consulting. Our Client's sought third party assessments on the high quality of their DICOM implementations assuring their clinical customers of best practice in plug and play DICOM connectivity. Todd's ability to comfort our customers, collecting good feedback on his testing services, receiving recurring booking accompanied with savvy testing reports and implementation improvement recommendations supported our business.

We wish much luck for Todd in his future life looking forward on meeting him again.

November 18, 2010, Sacha managed Todd at Merge Healthcare

Publications:

1. T Kantchev, *Implementation of DICOM Message Exchange Architecture for Clinical PACS*, Radiology 1998, Imaging Science & Oncology, 1-3 June 1998, Birmingham. Programme & Abstracts, Supplement to Volume 71 of British Journal of Radiology
2. T. Kantchev, *Interoperability Issues in Image Registration and ROI Generation*, DICOM International Conference and Seminar, Budapest 2005

CLIVE DANIELL:



Clive Daniell is a qualified engineer with more than 30 years of experience in the medical imaging field. He started his career with Siemens Medical where he trained as a CT, MRI and X-ray technician. In 1996 Clive shifted his focus to PACS, RIS and Information Management systems. He was responsible for the implementation of the first digital department in South Africa at Little Company of Mary hospital in Pretoria. Since then Clive has worked continuously in the PACS, RIS industry being involved in the design, implementation, project management and training of many PACS, RIS and Teleradiology projects in Southern Africa. In 2006 Clive started his own consulting company to offer an independent view on PACS and RIS in Africa. Clive has also been involved in many training initiatives including organising the 1st and 2nd African PACS, RIS edu-conference's held in Cape Town and Johannesburg in 2009 and 2012 respectively. Clive became part of IBIS in 2014 for delivering its training courses across Middle East and successfully handled two PACS training programs in 2014 and 2015 with CPD certification.

Highlights

- Implementation of the first digital department in South Africa at LCM in Pretoria.
- Implementation of an enterprise wide web based PACS distributed solution in Sunninghill Hospital in Johannesburg.
- Software, workflow and interoperability design of a RIS/PACS solution for the South African private radiology market.
- Design and implementation of a central reporting solution incorporating 30 remote sites sending to a central PACS archive for reporting. The solution included an enterprise wide image distribution portal.
- Deployment of PACS and RIS into 3 large tertiary hospitals in the Western Cape Region of South African. The hospitals included Tygerberg, Groote Schuur and Red Cross War Memorial children' hospitals.

Worked with the following vendors

- Siemens Medical
- Philips Medical
- Agfa
- General Electric

What is accredited CPD Training?



Accredited CPD training means the learning activity has reached the required CPD standards and benchmarks. The learning value has been scrutinised to ensure integrity and quality. The importance of CPD training should never be undervalued. CPD enables learning to become conscious and proactive, rather than simply reactive to situation. The importance of CPD is to purposely enhance through a methodical and structured approach to learning. CPD empowers learning and positive change.

Why CPD Training in PACS?

The importance of CPD is to keep professionals up to date with relevant training, information, skills and knowledge to remain competent throughout their career journey. Whilst CPD has existed for some time, the importance and awareness of CPD has rapidly increased in recent years as industry standards, regulations, technological changes and consumer needs continue to become more central.

Professionals maintain a CPD log of their learning and update it with the CPD training hours completed. CPD providers should make available to individuals a Certificate of Attendance / Completion to attach to a CPD log as evidence of development once training is complete, or the desired standards of learning have been met.

IBIS membership details can be found here:

<http://www.cpduk.co.uk/index.php/cpd-members/Entry-Detail/36-Adult%20&%20Continuing%20Education/1027-IBIS%20Technologies>

To read more about our CPD course accreditation, please read the following press release:

<https://www.prbuzz.com/education/253958-ibis-edu-to-be-the-1st-company-to-offer-pacs-cpd-certification-in-the-middle-east-1.html>

Course Curriculum:

INTRODUCTION TO RADIOGRAPHY AND PACS

Learning objectives: Establish common clinical and technical (Healthcare IT) foundation in concepts and vocabulary. Introduce to the basics of healthcare IT-medical image management, interoperability standards and clinical basics.

Course Outlines:

- ✓ Computer Basics and Terminology
- ✓ Digital Image Management Basics
- ✓ Patient Healthcare Workflow
- ✓ PACS/HIS/RIS
- ✓ Medical Imaging Workflow
- ✓ DICOM and HL7 Basics, EHR
- ✓ Clinical Basics and Terminology
- ✓ Human Anatomy, Positioning, Orientation
- ✓ Principles of Imaging Modalities
- ✓ Image Quality and QA/QC

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PACS MANAGEMENT

Learning objectives: Introduce to the basics of PACS procurement, implementation project management, operations, system management.

Course Outlines:

- ✓ Exercises and Drills
- ✓ Review Questions from Day 1
- ✓ Understanding DICOM and HL7 Data
- ✓ PACS/RIS Management
- ✓ Business Case for Procurement
- ✓ Project Team and Methodology
- ✓ Main Stages of Implementing Filmless Radiology
- ✓ Site Preparation and Deployment
- ✓ Configuration Management
- ✓ Quality and Safety Regulations
- ✓ Maintenance and Administration
- ✓ Supervising Modality Integration
- ✓ Data Migration and VNA Challenges

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PACS ADMINISTRATION- INTERFACING AND DATA PROTOCOLS

Learning objectives: In depth knowledge of the interface and interoperability standards in medical image management: DICOM and HL7.

Course Outlines:

- ✓ Computer Networking Basics
- ✓ OSI and TCP/IP
- ✓ Higher Layer Protocols: FTP, HTTP/S
- ✓ Understanding IP Addressing and Masks
- ✓ Understanding Domains: DNS, DHCP
- ✓ DMZ, Firewalls, VPN
- ✓ Advanced DICOM
- ✓ DICOM Data Model
- ✓ Information Object Definitions (IODs)
- ✓ Encoding for Network and Media Interchange
- ✓ Pixel Element Encoding
- ✓ Image Geometry
- ✓ Display Pipeline
- ✓ Non-Image Objects.
- ✓ DICOM- Data Transport Services
- ✓ Association Control
- ✓ Image Storage
- ✓ Query/Retrieve
- ✓ Modality Work-list (MWL)
- ✓ Modality Performed Procedure Step (MPPS)
- ✓ Print
- ✓ DICOM Configuration
- ✓ DICOM Conformance
- ✓ Advanced HL7 V.2 Messaging
- ✓ HL7 V2 Message Structure
- ✓ MLLP; Acknowledgement Message
- ✓ Patient Visit Management
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- ✓ Results/Reports Management
- ✓ HL7 Conformance

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PACS ADMINISTRATION- COMPONENTS, PROCESSES AND WORKFLOW

Learning objectives: PACS Fundamentals: Components and Diagnostic Imaging Workflow Management, Image Quality, PACS Maintenance and Administration and the IHE recommendations

Course Outlines:

- ✓ Exercises and Drills:
- ✓ Review Questions from Day 3
- ✓ Understanding and Defining DICOM Requirements
- ✓ PACS Fundamentals
- ✓ Imaging Service data Model
- ✓ Image Management and Archiving Servers
- ✓ Imaging Modalities
- ✓ Display Workstations
- ✓ Enterprise PACS Architecture
- ✓ PACS performance
- ✓ Diagnostic Imaging Workflow
- ✓ PACS Security
- ✓ Implementation and Administration
- ✓ Image Quality
- ✓ IHE Guidelines

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SYSTEM ADMINISTRATION WORKSHOP (TROUBLESHOOTING & HANDS ON)

Learning objectives: Examine typical issues in PACS interfacing, workflow and data interoperability. Test, analyse and edit images and image management data, monitor and troubleshoot connectivity.

Course Outlines:

- ✓ Issues in PACS Interoperability
- ✓ Connectivity Layer
- ✓ Presentation Layer
- ✓ Data Mapping and Interpretation
- ✓ Exercises
- ✓ Validating Images
- ✓ Read/Edit Images
- ✓ Send/Receive Images
- ✓ Monitoring and Analysis
- ✓ Troubleshooting Exercises

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