Broadband Technologies and Multimedia Services

20 - 24 October 2014
Trinidad and Tobago

CTO

COMMONWEALTH
TELECOMMUNICATIONS
ORGANISATION

Overview

This course is designed to introduce the participants to:

- Different broadband technologies (both wired and wireless) available for today's Communications Service Provider (CSP) business requirements
- Understand importance of different technologies
- Select the best technologies that fit their requirements

Organised under

PDT

For more information
about this course, or to
register, contact us on:
Tel: +44 (0) 208 600 3800
Fax: +44 (0) 208 600 3819
Email: programmes@cto.int

OBJECTIVES

To be delivered over five days, the course aims to:

- Explain the basic data transmission concepts
- Explain the ISO/OSI (TCP/IP) stack and the operation
- Explain the different broadband technology options available
- Explain how to select the correct and best broadband technology for a given scenario
- Explain the different applications delivered over broadband networks

TARGET AUDIENCE

This course is aimed at technical staff involved in considering, evaluating, selecting and rolling out broadband networks. This course will also be suitable for Network Planners, policy and regulatory bodies and telecom operators who want to understand how best to utilise the capabilities of broadband.

EXPECTED OUTCOMES

On completion of this course, the successful participant will be able to:

- Understand the basic data transmission concepts
- Understand the ISO/OSI (TCP/IP) stack and the operation
- Understand the different broadband technology options available
- Learn how to select the most appropriate broadband technology to match the needs and requirements of your organisation.
- Explain the different applications delivered over broadband networks

OUTLINE

Explain the basic data transmission concepts
- Basic Building Blocks of Communication Technologies
  1. Core, aggregation and access networks
  2. Types of networks: Fixed (or wire-line) and mobile (or wireless) networks
  3. Circuit-switched and packet-switched networks
- Evolution of data communication technologies networks
  1. Analogue to digital
  2. TDM to IP

Explain the ISO/OSI (TCP/IP) stack and the operation
- Introduction to Internet protocol
  - ISO/OSI and TCP/IP stack and protocols
    1. Physical layer
    2. Data link layer
    3. Network layer
    4. Transport layer
    5. Session layer
    6. Presentation layer
    7. application layer
    8. comparison of ISO/OSI and TCP/IP stacks
- IP versions
  - IPv4
  - IPv6
  - IP addressing
    1. Private
    2. Public
    3. Classes
    4. Sub-netting
    5. Super-netting
- Routing and switching
  - Routing protocols
    1. RIP
    2. IGRP
    3. OSPF
    4. BGP
- Standard related to IP
  - IETF RFCs

Explain the different broadband technology options available
- Wireless
  - Mobile
    - 3G
      - UMTS
      - HSDPA/HSUPA
    - 4G
      - LTE
  - Fixed
    - LTE
    - WiMAX
    - WiFi

- Wired
  - Copper
    - ADSL/2/2+
    - VDSL/2
  - Fibre
  - AON
  - PON
- Standard related to different broadband technologies
  - ITU-T
  - IEEE
  - BB forum
- Overview and introduction to Ethernet
  - History of Ethernet
  - Basic Ethernet operation
  - Using Ethernet
    - LAN
    - WAN
    - MAN
  - Carrier/Metro Ethernet
  - MEF

Explain how to select the correct and best broadband technology for a given scenario
- Designing wireline broadband networks
  - Access network life cycle
    1. Strategy and architecture
    2. Planning and design
    3. Project and implementation
    4. Operation and maintenance
  - Selecting the correct broadband strategy
  - Bandwidth consideration and optimization

Explain the different applications delivered over broadband networks and other things to consider
- IP based applications
  1. Data
  2. Video
  3. Voice
- Network security
- Management
- QoS

FACULTY

Anuradha Udunuwara

Anuradha Udunuwara holds over a decade of experience in the Communications Service Provider (CSP) Networks in various aspects such as strategy, architecture, engineering, design, plan, implementation and maintenance using both Packet-Switched (PS) and Circuit-Switched (CS) technologies (IP/MPLS, Ethernet, FR, OTN, xWDM, PDH, SDH, xDSL, GPON and WiFi), along with legacy to NGN migration.

He graduated from University of Peradeniya, Sri Lanka with BSc.Eng (Hons) in Electrical & Electronic Engineering and gained the Chartered Engineer status from Institution of Engineers, Sri Lanka in 2008. Anuradha also holds many professional certifications including MEF Carrier Ethernet Certified Professional (MEF-CECP) and ITILv3 Foundation,

Anuradha joined Sri Lanka Telecom as an Engineer in June 2003 and has served in various capacities as Engineer / Data Services Maintenance, Engineer / Data Services Networks and Engineer / Metro Ethernet & FTTx Network Planning to achieve many significant milestones. Currently he holds the post of Engineer / Sales-Region I where he is responsible for consulting, advising, architecting, designing & planning technical solutions for Small & Medium Enterprise/Business/Industry (SME/B/I) customers. In addition, he is also involved in xWDM/OTN Backbone Networks, FTTH and WiFi implementations. His teaching experience extend to the level of guest lecturer at Department of Electrical & Electronic Engineering, Faculty of Engineering, University of Peradeniya, Sri Lanka where he conducts a short course on CSP industry to final year Electrical & Electronic Engineering undergraduates.

He has published a paper (co-authored) "Evolving Operator Network Architectures with Carrier Ethernet" in the Ethernet Academy in 2013 and has also act as a speaker and panelist at Carrier Ethernet APAC, Singapore 2013 and WDM & Next Generation Optical Networking APAC, Singapore 2014. In addition, Anuradha holds membership of various professional bodies: Member of The Institution of Electrical & Electronic Engineers (MIEEE), Member of The Institution of Engineering & Technology (MIET), Member of The British Computer Society (MBCS), Member of The Institution of Engineers Sri Lanka (MIESL), ,Member of The Internet SOCiety (ISOC), Member of The Computer Society of Sri Lanka (MCSL) and Life Member of The Sri Lanka Association of the Advancement of Science (MSLAAS) are few.

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Please fill in this application form and fax it back to +44 20 8600 3819 or return it to the CTO at the e-mail address below. Please use CAPITAL LETTERS.

Personal details

Mr/Mrs/Ms/Other .... First name .... Last name ....

Job title ....

Organisation ....

Address ....

City... Postcode .... Country ....

Tel .... Mobile .... Fax ....

Email ....

Authorising line manager's name ....

Authorising line manager's email ....

Payment options

1) Select Delegate Rate (Please Refer to the list of CTO/PDT Partners provided overleaf)

	Standard Rate	Early Registration by: 20 September 2014
CTO Members	☐ £799	☐ £749
Others	☐ £1,199	☐ £1,149

2) Payment mode (choose one option only)

☐ **Invoice**
Invoice me at the above address (Discounts do not apply, payment must be received by us prior to event).

☐ **Cheque**
Cheque enclosed, payable to "CTO HQ"

☐ Bank transfer
Make payments to: Coutts & Co.
440 Strand, London, WC2R 0QS, UK
A/C Name: CTO; A/C Number 083675071
Bank Sort Code :18-00-02
SWIFT Code: COUT GB22
IBAN Reference: GB72COUT18000208367507

☐ Credit Card: Visa / Mastercard (delete as appropriate)

Card holder's name
....

Card holder's billing address (if different from above)
....
....

Card number ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Valid from M M / Y Y   Expiry date M M / Y Y   3 digit security code on back of card ☐☐☐

Signature

Date .... Name .... Signature ....

Additional information

To help us improve our services to you and your organisation, please tell us more about yourself and your organisation.

Your role in the organisation
☐ Strategic / executive
☐ Planning
☐ Control
☐ Operational

Your area of work in the organisation
☐ Business development
☐ Corporate affairs
☐ Customer service and care
☐ Engineering and technical management
☐ Financial, purchasing & investor relations
☐ IT / IP management

☐ Marketing and sales
☐ Public relations and corporate communications
☐ Regulatory and legal affairs
☐ Telecoms network management
☐ Human resources
☐ Other

Your organisation type
☐ Government
☐ Regulator
☐ Operator
☐ Manufacturer
☐ Other

Your organisation's service areas
☐ Fixed network / services
☐ Mobile / wireless network / services
☐ Satellite network / services
☐ Internet

☐ Broadcasting
☐ Value-added services
☐ Support
☐ Other services

Commonwealth Telecommunications Organisation, 64-66 Glenthorne Road, London W6 0LR, United Kingdom