



**Australian Government**

# **ICTTEN623 Design and manage internet protocol TV in a service provider network**

**Release: 1**

# ICTTEN623 Design and manage internet protocol TV in a service provider network

## Modification History

| Release   | Comments                                                                                                     |
|-----------|--------------------------------------------------------------------------------------------------------------|
| Release 1 | This version first released with ICT Information and Communications Technology Training Package Version 7.0. |

## Application

This unit describes the skills and knowledge required to design a multiprotocol label switching (MPLS) network for internet protocol TV (IPTV) and manage delivery of IPTV services. This includes core and access networks for the service provider.

It applies to individuals with outstanding technical skills, including designers and installers of Next Generation Networks (NGN), IP networks providing fast internet, voice over internet protocol (VoIP), IPTV and internet TV services.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

## Unit Sector

Telecommunications Networks Engineering

## Elements and Performance Criteria

| ELEMENT                                                         | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Elements describe the essential outcomes.</i>                | <i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>                                                                                                                                                                                                                                                                                                                                                                                                          |
| 1. Produce and evaluate design requirements for an IPTV network | <p>1.1 Analyse major video models and the impact video challenges have on design of an IPTV network</p> <p>1.2 Evaluate IPTV against other competing TV broadcast technologies to determine optimum design approach</p> <p>1.3 Produce the topology of an IPTV network, showing network architecture from IPTV standards' bodies and determine design requirements</p> <p>1.4 Plan dimensioning of network parameters for multicast and unicast video delivery over broadband in a service provider network</p> |

| ELEMENT                                                                    | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. Design an IPTV network for video on demand (VoD) delivery               | <p>2.1 Design the content delivery system (CDS) to cache IPTV content in each major metropolitan area for broadcast or streaming VoD models to eliminate performance variability introduced by internet transport or core peering relationships</p> <p>2.2 Design a video network to provide VoD loads with network solutions using VoD design requirements</p> <p>2.3 Design a VoD application to meet bandwidth requirements and quality of service (QoS) requirements for commercial viability of IPTV network</p>             |
| 3. Design and configure an MPLS IPTV network to meet business requirements | <p>3.1 Determine IP-MPLS network design requirements</p> <p>3.2 Investigate factors that affect design considerations and ways they can be minimised</p> <p>3.3 Produce the design topology of a MPLS network to provide secure methods of transporting IP packets using layer 2 protocols</p> <p>3.4 Design a MPLS layer over the IP networking structure, to combine efficiency of multicast protocols with traffic engineering (TE) facilities to enable fast packet forwarding for real time video streaming applications</p> |
| 4. Manage delivery of IPTV services                                        | <p>4.1 Determine operational processes required to support IPTV by operators</p> <p>4.2 Produce a plan of the management and customer support model, including strategies dealing with delivery of VoD issues</p> <p>4.3 Produce a plan of a video network using video delivery strategies to deliver optimum average revenue per user (ARPU) to serve the demographic of an area and the nature of an operator's business</p> <p>4.4 Manage and monitor video across the network using a management tool</p>                     |

## Foundation Skills

*This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.*

| SKILL   | DESCRIPTION                                                                                                                                                                                                      |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reading | <ul style="list-style-type: none"> <li>Organises, evaluates and interprets standards documentation to properly evaluate design requirements</li> </ul>                                                           |
| Writing | <ul style="list-style-type: none"> <li>Prepares workplace documentation, including diagrammatic material, incorporating technical language to communicate complex information clearly and effectively</li> </ul> |

| SKILL                   | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Planning and organising | <ul style="list-style-type: none"><li>• Uses formal processes to identify key information and issues, evaluate alternative strategies, anticipate consequences and consider implementation issues and contingencies</li><li>• Experiments with possibilities of new systems, devices and applications before conducting a more sophisticated analysis of benefits and costs</li></ul> |
| Problem solving         | <ul style="list-style-type: none"><li>• Uses formal, analytical and lateral thinking techniques for identifying issues, generating and evaluating possible solutions</li></ul>                                                                                                                                                                                                        |
| Technology              | <ul style="list-style-type: none"><li>• Uses digital tools to access and organise complex data and analyse multiple sources of information for strategic purposes</li></ul>                                                                                                                                                                                                           |

## Unit Mapping Information

Supersedes and is equivalent to ICTTEN612 Design and manage internet protocol TV in a service provider network.

## Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>