

Analogue to Digital Broadcasting Switchover

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Johannesburg, South Africa



COMMONWEALTH
TELECOMMUNICATIONS
ORGANISATION

Overview

This course explains the fundamentals of television broadcast systems and explores the advantages of digital TV, both for production and transmission. The course highlights the value of a national digital transition plan that has to involve all stakeholders in any successful transition from analogue to digital TV before going on to illustrate analogue to digital switch over with a couple of specific case studies. The course concludes with a review of second generation digital TV standards exploring their advantages over the older first generation standards.

For more information
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OBJECTIVES

- Gain a better understanding of TV broadcasting as a one to many communication systems.
- Obtain a better insight of digital and analogue transmission technologies and indicate their advantages.
- Enhance your knowledge of first and second generation DTTV systems, and become aware of TV broadcast regulatory issues.
- Indicate the benefits of a national digital broadcast plan that incorporates analogue to digital TV switch over (ASO).
- Case studies assessment.

TARGET AUDIENCE

This course is designed for system planners, broadcast systems engineers, telecommunications engineers, as well as communication policymakers and regulators.

COURSE OUTLINE

Fundamentals of analogue and digital communications

The Analogue TV signal

Analogue Terrestrial TV broadcast system: “From lens to screen”

- Studio production and production equipment
- Distribution network
- Broadcast network

Digital TV Fundamentals

- **Analogue to digital conversion review**
- **Digital video: MPEG2, MPEG4/AVC, SVC, HEVC etc**
- **Digital sound : MPEG, AC3, AAC etc**
- **Need for meta-data**
- **MPEG transport stream multiplexing**

Digital Terrestrial (DTTV) Broadcast Systems: “From lens to screen”

- Digital production
- Digital distribution networks
- DTTV broadcast and reception issue
- DTTV first generation broadcast standards
- DTTV broadcast network topology
- DTTV reception issues
- Anatomy of a DTV receiver
- Domestic aerials, down lead, aerial connector
- DTV reception equipment
- Provision of EPG
- Pay TV enablers
- Mobile TV
- Interactive TV

Analogue to Digital Switch over (ASO)

- DTTV value chain: content provider service provider (broadcaster) multiplex operator
- Setting a national ‘Digital Broadcasting Policy’
- Provision of HDTV or large multiplex of SDTV services
- Pay TV versus free to air models
- Public interest needs
- Cost-benefit analysis of ASO
- Regulatory issues
 - Technical issues
 - Take up issues
- ASO Examples
 - ASO in Europe
 - ASO in Japan and America
 - Case study: UK
 - Case study: Tanzania

Other DTV Transmission Standards

- Cable: DVB-C
- Satellite: DVB-S
- Second generation standards: S2, C2, T2
- Future

COURSE TRAINER

Dr Sam Atungsiri

Dr Atungsiri holds a BSc in Computer Systems Engineering from University of Wales, Cardiff in 1987, an MSc in Digital Communications in 1988 and a PhD in Mobile Communications from University of Surrey in 1988 and 1991, respectively. Dr Atungsiri has taught postgraduate Communications courses at University of Surrey and at The Open University Faculty of Technology. He is a Chartered Engineer of the UK Engineering Council, a Member of the Institution of Engineering and Technology and also a member of the College of Peers of the UK Engineering and Physical Sciences Research Council (EPSRC). Dr Atungsiri is one of the world’s foremost DVB-T2 technologists. He has played a central role in the DVB technical committees that developed the DVB-T2 specification and holds several patents on essential technologies within DVB-T2. He works as a Broadcast Technologist for a major multi-national consumer electronics company where his team developed the world’s first commercial DVB-T2 receiver chipsets.

