



**2011/2012 CTO/TRB PROJECT WORKSHOP
FORM**

Request Number/ID: 3541

Part 1. Description of Workshop

Title/Subject: Analogue to Digital TV Switch Over

Submitted by: Telecommunications Regulatory Board, Cameroon

Duration: 5 days **Number of Participants: 30+** **Number of Experts: 1; Moderators: 2**

Target Dates: (1) August (1) December 2011

Proposed Activity

Loan of trainer Attachment Course Loan of consultant Course with attachment Distance/online learning

Description

Course Overview

In 2006 countries in ITU region 1 committed to a transition to digital television by the year 2015. After this year, digital TV broadcasters have no obligation to protect continuing analogue broadcasts from interference. This course first explains the fundamentals of television broadcast systems and then explores the advantages of digital TV both for production and transmission. A substantial part of the course then explores in detail the four main digital TV standards highlighting in each case the technological and economic advantages. The course highlights the value of a national digital 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.

Learning Outcomes:

- Understanding of TV broadcasting as a one to many communication system
- Review of digital and analogue transmission technologies and advantages of digital transmissions
- Broad knowledge of first and second generation DTTV systems
- Awareness of TV broadcast regulatory issues
- Appreciation of the need for a national digital broadcast plan that incorporates analogue to digital TV switch over (ASO)
- Awareness of the need for detailed planning of ASO
- Understanding of need and possible means to facilitate ASO
- Assessment of example ASO processes through case studies

Course Objectives

- To review analogue TV broadcasting
- To introduce delegates to digital TV technology
- To overview the different of first and second generation terrestrial digital TV systems available
- To overview digital TV broadcasting
- To explore with delegates the formulation of a national digital broadcasting strategy leading to ASO
- Overview of ASO planning and execution
- To overview advances in audio-video delivery systems and evolution of digital broadcast TV

Who Should Attend?

- System planners
- Broadcast systems engineers
- Telecommunications engineers
- Communication/broadcast policy executives
- Communication regulator executives

Course Content

1. Fundamentals of analogue and digital communications
 - Information transmission and reception
 - Broadcast - one to many communication systems
 - Analogue versus digital signals

- Signal modulation for transmission
 - Radio propagation
 - Reception of analogue and digital signals
 - Error control coding
 - Advantages of digital communications
- 2. The Analogue TV signal**
- Generation of analogue TV signal
 - Components of analogue TV signal
 - Colour TV Systems: PAL. SECAM. NTSC
 - Other broadcast technologies: Satellite. Cable. Terrestrial
- 3. Analogue Terrestrial TV broadcast system: “From lens to screen”**
- Studio production and production equipment
 - Distribution network
 - Broadcast Network
 - Reception equipment
- 4. Digital TV Fundamentals**
- Analogue to digital conversion review
 - Digital Video
 - Digital soundtrack
 - Need for meta-data
 - MPEG Transport Stream multiplexing
- 5. Digital Terrestrial (DTV) Broadcast Systems: “From lens to screen”**
- Digital production
 - Digital distribution networks
 - DTTV broadcast and reception issues
 - DTTV first generation broadcast standards:
 - DTTV Broadcast Network Topology
 - DTTV Reception Issues
 - Demo of DTTV transmission and reception
- 6. DTV Service Provision**
- Provision of EPG
 - Pay TV enablers
 - Mobile TV
 - Interactive TV
 - HDTV
 - Audio services
 - 3D-TV
 - Non-linear TV
 - IPTV
- 7. Analogue to Digital Switch Over (ASO)**
- Setting a national ‘Digital Broadcasting Policy’
 - Regulatory Issues
 - Technical Issues
 - Take up Issues
 - ASO Examples
- 8. Other DTV Transmission Standards**
- Cable: DVB-C
 - Satellite: DVB-S
 - Second Generation Standards
 - Future

Part 2. Costs (1\$ ~ 450 FCFA)

Cost Type	Quantity	Unit Rate (FCFA)	Amount (£)
Fee (including any material)	1	350 000	350 000
Accommodation (Hotel le Ranch)	1	25 000 – 50 000	25 000 – 50 000
Food	free	free	free
Transportation from port of entry to workshop venue for international delegates	free	free	free

Part 3. Additional Information

Workshop delivery date ; **1st to 5th of August 2011.**

Part 4. Expert Profile(s)

Dr Sam Atungsiri PhD, CEng MIET

Principal Consultant, Communication System

TMG Consultancy Ltd for

Telecommunication Regulatory Board, Cameroon

Work experience

Dr Sam Atungsiri has worked for Sony since 1998 firstly as a design engineer and then as a technologist. In his current role as a Senior Broadcast Technologist he has deep knowledge of digital broadcast standards having played a central part in the creation of many DTV standards within DVB. From 2002 to 2004 he led Sony's mobile DTV strategy within both the DVB Commercial Module and Technical Module (TM-H) groups. The work of the commercial group culminated in the drawing up of Commercial Requirements for DVB's first generation mobile DTV system (DVB-H). Working within TM-H, Sam was the main promoter of key technology that improved DVB-T capabilities for mobile reception.

From 2007 to 2009 Dr Atungsiri again led Sony's strategy in the creation of the DVB second generation DTTV system DVB-T2. He was a member of the expert group that undertook the study mission that concluded that a second generation system would bring significant benefits over the first generation DVB-T. After Commercial Requirements were published by CM-AMT, he played a key role in defining the DVB-T2 specification introducing key essential technologies in the standard for which he holds patents. Since 2009, Sam chairs the "Framing, Sounding and Synchronisation" subgroup of TM-H in the ongoing work to standardise a DVB's second generation mobile DTV system (DVB-NGH).

In his design career, Sam gained deep knowledge of non-DVB broadcast standards through designing receivers for use in these markets. During his long career as a broadcast technologist, Sam has also represented Sony at groups setting TV receiver specifications such as the Digital Television Group (DTG) and Digital Europe. He was a member of the team that reviewed national DVB-T2 field trial results to recommend the DVB-T2 parameters used for introducing FreeviewHD broadcasting via DVB-T2 in the UK.

Sam earned a BSc (Computer Systems Engineering) from University of Wales, Cardiff in 1987, an MSc and 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. As a Principal Consultant for TMG Consultancy Ltd and TRB, Cameroon, he also previously trained on GSM Technologies within the PDT with highly favourable feedback.

He has been course assessor and is a regular MSc and PhD external examiner for universities in the UK. Dr Atungsiri 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) refereeing research proposals on in the areas of mobile communications, multimedia coding, digital broadcasting and information theory.

Part 5. Signature

Submitted by: Dr Sam Atungsiri

Job Title: CTO/TRB Consultant

Signature:

