

DIGITAL BROADCASTING MIGRATION STRATEGY

Contents

1.0. INTRODUCTION	1
2.0. BACKGROUND	1
3.0. OBJECTIVES OF THE STRATEGY	2
4.0. DIGITAL BROADCASTING	2
5.0. BENEFITS OF DIGITAL BROADCASTING.....	2
6.0. IMPLICATIONS OF DIGITAL BROADCASTING.....	3
7.0. STAKEHOLDERS IN COMMUNICATION SECTOR.....	3
8.0. PUBLIC AWARENESS INFORMATION ON BROADCASTING MIGRATION	4
9.0. TIME FRAMES FOR MIGRATION	6
10.0. CONCLUSION	7

ACRONYMS

ITU	International Telecommunication Union
SADC	Southern African Development Community
ICT	Information and Communications Technologies
DTV	Digital Television
HDTV	High Definition Television
TV	Television
DTT	Digital Terrestrial Television
DVB-T	Digital Video Broadcasting-Terrestrial
VCR	Video Cassette Recording
DVD	Digital Video Disc
LCD	Liquid Crystal Display
SDTV	Standard Digital Television
IMT	International Mobile Telecommunications
RRC-06	Regional Radiocommunication Conference 2006
GE-06	Geneva Agreement of 2006
GE-89	Geneva Agreement of 1989
STB	Set Top Box
PAL	Phase Alternating Line
NTSC	National Television System Committee
SECAM	Sequential Colour with Memory
IP	Internet Protocol

1.0. INTRODUCTION

Digital Broadcasting Migration is a process by which broadcasting services offered on analogue networks are transferred to digital based networks over a specific period. The main purpose of the migration process is to ensure that all analogue services will be replicated on the digital networks with the aim to switch-off the analogue services at a specific point in time. While the migration process is applicable to both television and radio broadcasting services, this paper addresses in the main issues concerning television broadcasting.

The Regional Radiocommunication Conference (RRC-06) that was held in 2006 in Geneva developed digital terrestrial broadcasting plan in the frequency bands III (174-230 MHz) and IV/V (470 – 862 MHz) in Region 1 countries being Europe, Africa, Middle East and the Islamic Republic of Iran. The RRC-06 established the Geneva Agreement of 2006 (GE-06) by which countries party to this agreement are required to replace the existing analogue television broadcasting under the GE-89 Plan for the same frequency bands on 17 June 2015 when digital broadcasting should be fully implemented. This is why there is a need for the Government of Lesotho to have a migration strategy and an implementation plan for digital broadcasting to facilitate the switch-over from analogue to digital broadcasting technology.

2.0. BACKGROUND

The spectrum of digital broadcasting is currently highly fragmented into relatively narrow bands, scattered over many frequencies, and intertwined with digital broadcasting channels. This is a consequence of spectrum planning options adopted by various countries based on traditional use of broadcasting spectrum. The Geneva agreement provided flexibility to open up the spectrum for other uses. However, this flexibility is limited under the existing technical conditions and, in practice, the current situation is not conducive to the allocation of this spectrum to more efficient alternative uses.

The switch-over from analogue to digital broadcasting by mid-2015 will free up a significant amount of spectrum. This is as a result of techniques used in digital broadcasting which require less spectrum for the transmission of a television signal of a higher quality. The migration process offers a unique opportunity to meet the fast growing demand for wireless communication services by utilizing freed spectrum to ensure that other important social and economic uses, such as broadband applications have access to this valuable resource.

3.0. OBJECTIVES OF THE STRATEGY

The objectives of this strategy are to:

- i. Increase understanding and awareness on the impact of the migration to digital broadcasting by key stakeholders in Lesotho;
- ii. Increase awareness to service providers regarding new business opportunities brought about by the introduction of digital broadcasting.

4.0. DIGITAL BROADCASTING

Digital Broadcasting, the transmission and reception of moving images and sound by digital signals in contrast to analogue, is applicable to both television and radio broadcasting services. Digital television refers to the use of modulation and compression to transmit video, audio and data signals to the receiver sets (consumer access devices). Whereas digital radio (digital sound broadcasting), refers to the use of modulation and compression to transmit audio programmes (music, news, sports etc) only. However, the proposed strategy focuses on terrestrial television broadcasting since radio is not affected by the transition, at this stage.

5.0. BENEFITS OF DIGITAL BROADCASTING

The following are the benefits that accrue from the use of digital over analogue:

- i. Digital transmission technology supports the simultaneous transmission of several television programmes on an equivalent spectrum currently occupied by a single analogue programme. This implies that one to eight TV programmes can be broadcast in a single channel. In this manner, there will be an increase in the range of services available to television users;
- ii. Radio spectrum is a scarce resource which needs to be efficiently managed in the public interest. With digitization, a single channel can carry a number of programmes which allows for spare frequencies to be used for other services. The freed frequencies are referred to as “digital dividend” which can be realised after analogue switch-over;
- iii. Digital television offers better quality of picture and sound.
- iv. Digital broadcasting can be integrated into Internet Protocol (IP) based networks. This implies that IP based telecommunications networks can facilitate access to TV broadcasting and other IP based services.

- v. Digital broadcasting will lower the costs to broadcasters as it enables the creation of alternative business models such as signal distribution providers and content providers. In this regard, an investor does not have to be assigned a frequency and/or roll-out infrastructure before becoming a broadcaster. The broadcaster will concentrate only on content development as the broadcasting infrastructure will be provided by the signal distributor (s). The licence classification will be amended accordingly to cater for the new categories of players.

6.0. IMPLICATIONS OF DIGITAL BROADCASTING

i. To consumers

In order to receive digital television transmission/signals the consumer will need either to:

- a) Replace the analogue TV set with a set equipped with a digital tuner; or
- b) Adapt the current analogue TV set by means of an external Set Top Box which will convert digital signal to analogue.

ii. To Broadcasters

In order to transmit on a digital platform, broadcasters should consider that:

- a) Digital transmission offers opportunities for more programmes and services, which can result in new business models. In case of a signal distributor, there will be a need for substantial investment in both equipment and human resource training before the full potential of digital television can be realised; and
- b) When the digital television is realised, there will be increased revenue through reduction of transmission costs and provision of superior technology for storage and processing of content.

7.0. STAKEHOLDERS IN COMMUNICATION SECTOR

The digital switch-over is an involving process that impacts on consumers, policymakers, regulators, and industry players. The policymaker and the regulator pursue the switch-over process for various reasons such as improving the quality and diversity of broadcasting services; promoting the convergence of ICTs and therefore promoting information society; and also

deploying efficient technology and consequently attain optimal use of radio frequency spectrum. Whilst the industry players are looking for new business opportunities, the consumers are looking forward to improving their television experience through enhanced, varied and quality programmes. It is critical that the strategy should not only identify tangible outcomes but also focus on engendering long-term relationships among stakeholders if effective and efficient migration to digital broadcasting should become a reality.

8.0. PUBLIC AWARENESS INFORMATION ON BROADCASTING MIGRATION

The SADC region decided that simulcast/dual illumination period in the region should commence in mid-2011 while the analogue switch-off is targeted for end of 2013 for all television broadcasting.

Consumers' frequently asked questions:

i. Why Are Broadcast TV Stations Switching to Digital?

ITU mandated the conversion to digital television broadcasting, also known as DTV transition because digital broadcasting is a more spectrum efficient transmission technology. This allows broadcast stations to offer improved picture and sound quality, as well as offering more programming options for consumers through multiple broadcast streams (multicasting).

In addition, some of the freed up frequencies will be used for advanced commercial mobile services (IMT) for consumers and for public safety communications (such as police, fire, and emergency services).

ii. What Do I Need To Do To Be Ready For DTV Transition?

What you need to do depends on the source of your television programming, whether you receive terrestrial free-to-air TV programming (aerial) or from a subscription service provider such as a satellite TV company.

iii. How Do I Receive Digital Broadcasts If I Don't Subscribe To Satellite TV?

If you receive only terrestrial free-to-air television programming, the type of TV set you own, that could either be a digital TV set (DTV) or an analogue TV set, is very important. Consumers who receive only terrestrial free-to-air

television may view digital programming through a TV set with a built-in digital tuner (integrated DTV).

If you have an analogue TV set, you will have to purchase a digital-to-analogue converter (Set Top Box) to connect to your TV set to enable viewing of terrestrial free-to-air digital programming.

iv. How Do I Receive Digital Broadcasts If I Subscribe To Satellite TV?

Assuming that you own an analogue TV set, the existing connection already enables you to enjoy digital television. Assuming that you own a digital TV set, the connection from the decoder to the TV set need to be changed to an appropriate connector.

v. How Do I Know Whether I Own a DTV?

DTVs equipment will have the following labels or markings on them: “Integrated Digital Tuner” or “Digital Tuner Built-In”.

If your television set is labelled as a “Digital Monitor” or “HDTV Monitor,” or as “Digital Ready” or “HDTV Ready,” this does not mean it actually contains a digital tuner. Thus, you will most likely need a separate Set Top Box which contains a tuner in order to view programmes in the new digital TV transmission standard (which includes HDTV formats) on such a set.

If your television set is labelled as “analogue” or “PAL” or “NTSC” or “SECAM”, but it does not bear a digital tuner label, then it contains an analogue tuner only. It will therefore not receive digital broadcast signal

If you cannot determine whether your television set or other television equipment contains a digital tuner, you are advised to check your equipment for the manufacturer name and model number, and then contact your consumer electronics retailer, or the manufacturer, to determine whether it contains a digital tuner. This information may also be available online through the manufacturer’s website.

Finally, consumers should then ensure that their televisions are set up to receive free-to-air programming (as distinguished from the signals of a subscription service provider such as satellite TV service), and then tune to the free-to-air digital channels to see if they can receive the digital broadcast programming.

vi. What about my Analogue TV? Will It Still Work?

After analogue switch-off date, you will be able to receive and view free-to-air digital programming with an analogue TV set only by purchasing a digital to analogue converter Set Top Box.

vii. If I Buy a DTV, Will My VCR, DVD Player, Camcorder, Video Games, Or Other Equipment Still Work?

VCRs, DVD players, camcorders and video games will continue to work, even if they are only analogue-capable. Such equipment, however, may not provide digital-quality picture and sound. Manufacturers are producing varied types of connectors to link equipment together and improve picture and sound quality. Check with your equipment retailer to determine the types of connectors that will work with your equipment.

viii. How Much Will DTV Improve my TV Viewing?

While picture quality will vary according to whether you watch digital programming in high definition (HDTV) or standard definition (SDTV) format, free-to-air digital programming provides a better viewing experience than free-to-air analogue programming, as long as you have good quality signal reception through your aerial.

9.0. TIME FRAMES FOR MIGRATION

Even though the international deadline for analogue switch off is June 2015, the SADC Ministers responsible for Telecommunications, ICT and Postal Services made a decision that the region should migrate from analogue to digital broadcasting technology by the end of 2013. The time table for digital broadcasting migration is as follows:

Mid 2009	Stakeholder consultations
Mid 2010	Finalisation of technical standards for STB
Early 2011	Licensing and conducting DTT trials
Mid 2011	Simulcast/dual illumination period
Mid 2012	Digital dividend review
End 2013	Analogue switch-off.

10.0. CONCLUSION

The general public should be wary of businesses purporting to sell “digital-ready” television sets. Television sets which would receive digital broadcasting shall be clearly labelled as “Integrated Digital Tuner” or “Digital Tuner Built-in as outlined in “8.0 (v)” above.