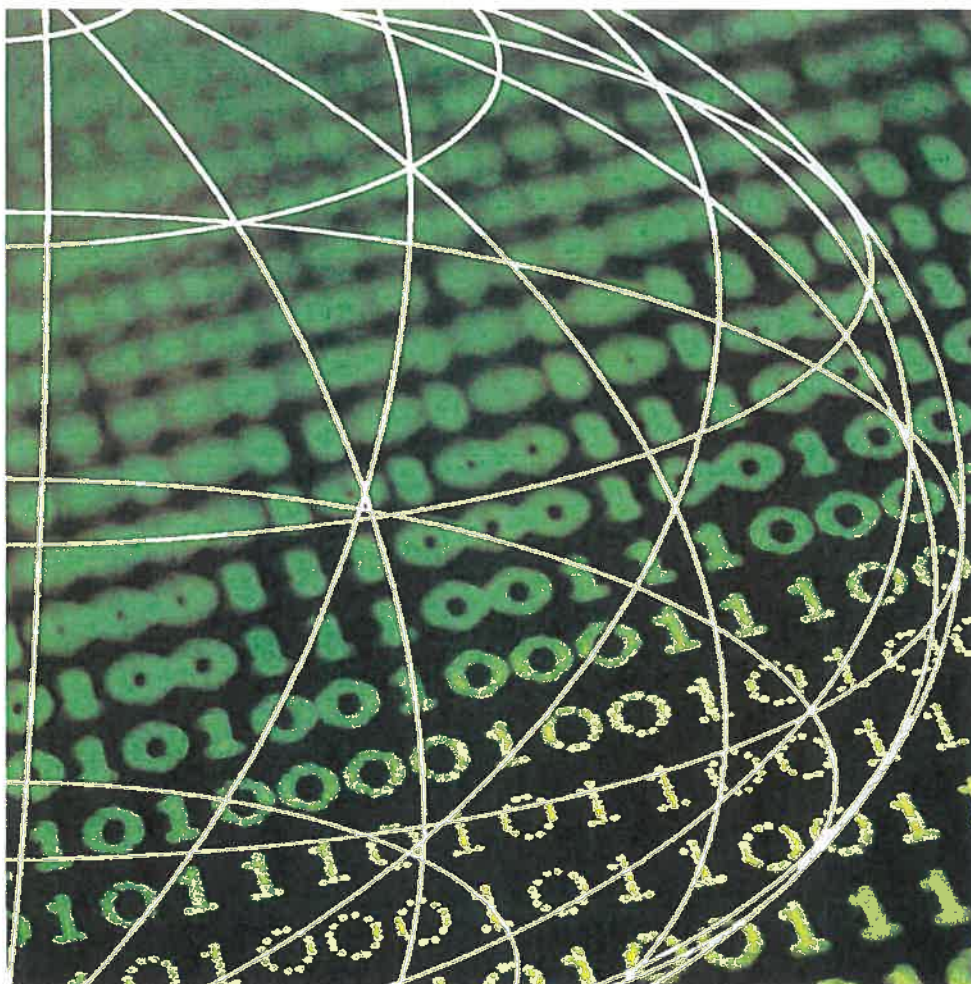


**M3****REPORT****THE PROPOSED SWITCHOVER  
FROM ANALOGUE BROADCASTING  
TO DIGITAL BROADCASTING IN SOUTH AFRICA****DIGITAL BROADCASTING MIGRATION WORKING GROUP**

Final version - 17 November 2006

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### Document Status

The preparation of this report has been facilitated by the Digital Broadcasting Migration Working Group ("WG"), established by the Minister of Communications. The report has been compiled by acknowledged industry experts with the aim of providing recommendations on specific terms of reference set by the Department of Communications. While every effort has been made to ensure accuracy and to provide a consensus view when required, it should not be assumed that all member organisations of the WG support all aspects of the report. The views expressed in the report are those of the industry experts working in the WG and are not necessarily binding on the organisations that the experts represent in the WG.



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## Acronyms

<b>3G</b>	Third Generation Mobile Technology capable of carrying voice, data and multimedia
<b>AM</b>	Amplitude Modulation; often used to refer to medium wave broadcasting
<b>API</b>	Application Programme Interface
<b>ATSC</b>	Advanced Television Systems Committee
<b>BEE</b>	Black Economic Empowerment
<b>BFN</b>	The Black Filmmakers Network
<b>CA</b>	Conditional Access
<b>CAM</b>	Conditional Access Module
<b>CODEC</b>	Encoder/Decoder
<b>COFDM</b>	Coded Orthogonal Frequency Division Multiplex
<b>CSN</b>	Community Services Network (TV channel operated by M-Net)
<b>DAB</b>	Digital Audio Broadcasting (usually applied to Eureka 147)
<b>DBAB</b>	Digital Broadcasting Advisory Body
<b>DMB</b>	Digital Multimedia Broadcasting
<b>DR</b>	Digital Radio
<b>DRM</b>	Digital Radio Mondiale
<b>drm</b>	Digital Rights Management
<b>DSB</b>	Digital Sound Broadcasting
<b>DTG</b>	Digital TV Group
<b>DTH</b>	Direct to Home satellite delivery of content
<b>DTT</b>	Digital Terrestrial Television
<b>DTV</b>	Digital Television
<b>DVB</b>	Digital Video Broadcasting
<b>DVB-C</b>	Digital Video Broadcasting – Cable
<b>DVB-H</b>	Digital Video Broadcasting-Handheld
<b>DVB-S</b>	Digital Video Broadcasting – Satellite
<b>DVB-S2</b>	Digital Video Broadcasting – Satellite version 2
<b>DVB-T</b>	Digital Video Broadcasting–Terrestrial
<b>DVD</b>	Digital Versatile Disk
<b>ECA</b>	The Electronic Communications Act, No. 36 of 2006
<b>EDTV</b>	Enhanced Definition Television
<b>EPG</b>	Electronic Programming Guide



<b>ETSI</b>	European Telecommunications Standards Institute
<b>FCC</b>	Federal Communications Commission
<b>FM</b>	Frequency Modulation; sound broadcasting system in the VHF-band
<b>FTA</b>	Free-to-air
<b>HD</b>	High Definition
<b>HDTV</b>	High Definition Television
<b>IBOC</b>	In-Band On-Channel
<b>ICASA</b>	Independent Communications Authority of South Africa
<b>ICT</b>	Information & Communication Technology
<b>IPO</b>	The Independent Producers Organisation
<b>IPTV</b>	Internet Protocol Television
<b>ISDB-T</b>	Integrated Services Digital Broadcasting for Terrestrial
<b>ITU</b>	International Telecommunication Union
<b>ITU RRC-06</b>	ITU Regional Radiocommunication Conference for the planning of digital broadcasting
<b>LSM</b>	Living Standards Measure
<b>MAPPP-SETA</b>	Media, Advertising, Publishing, Printing And Packaging Sector Education Training Authority
<b>MBMS</b>	Multimedia Broadcast/Multicast Service
<b>MediaFlo</b>	Media Forward Link Only
<b>MFN</b>	Multi-frequency Network
<b>MHP</b>	Multimedia Home Platform
<b>MPEG</b>	Moving Picture Experts Group
<b>MPEG-2</b>	Compression technology developed by MPEG currently in use for digital broadcasting
<b>MPEG-4</b>	Improved compression technology developed by MPEG currently being introduced globally for digital broadcasting
<b>MW</b>	Medium Wave
<b>OS</b>	Operating System
<b>The PANSALB Act</b>	Pan South African Language Board Act, No.59 of 1995
<b>PDA</b>	Personal Digital Assistants
<b>PPV</b>	Pay-Per-View
<b>PVR</b>	Personal Video Recorder
<b>QAM</b>	Quadrature Amplitude Modulation



<b>RCT</b>	Return Channel- Terrestrial return path from viewer to broadcaster in interactive broadcasting
<b>QPSK</b>	Quadrature Phase Shift Keying
<b>RDS</b>	Radio Data System
<b>RF</b>	Radio Frequency
<b>RRC</b>	Regional Radiocommunication Conference for the planning of digital broadcasting services
<b>SABC</b>	The South African Broadcasting Corporation
<b>SADIBA</b>	The Southern African Digital Broadcasting Association
<b>SATFA</b>	South African Table of Frequency Allocations
<b>SDMB</b>	Satellite Digital Multimedia Broadcasting
<b>SDTV</b>	Standard Definition Television
<b>SFN</b>	Single Frequency Network
<b>SMS</b>	Subscriber Management Service
<b>STB</b>	Set Top Box
<b>SW</b>	Short Wave
<b>TBN</b>	Trinity Broadcasting Network
<b>TDN</b>	The Digital Network Group
<b>TV</b>	Television
<b>VHF</b>	Very High Frequency; sound and television broadcasting services in the band 88- 254 MHz
<b>VOD</b>	Video on Demand
<b>VOIP</b>	Voice Over Internet Protocol
<b>UMTS</b>	Universal Mobile Telecommunications System
<b>UHF</b>	Ultra High Frequency; broadcasting services in the band 470-3000 MHz
<b>WG</b>	Digital Broadcasting Migration Working Group
<b>WARC</b>	ITU World Administrative Radio Conference



## 1. INTRODUCTION

Digital technologies are changing the way services are delivered, leading to a blurring of the boundaries between types of services and the means of delivery, and eroding the traditional distinctions between text, audio and video. This process of change is often referred to as convergence, alluding to the convergence that is taking place between the previously separate sectors of print media, data, telecommunications and broadcasting. The pace of change is not uniform across all sectors. In South Africa, for example, convergence first took place at the level of transactions where digital technology allowed consumers to carry out a number of familiar activities such as banking, buying and selling in new ways. This led to the promulgation of the Electronic Communications and Transaction Act, No. 25 of 2002, to regulate this new way of transacting electronically and create certainty in the market on the use of electronic transactions. The next area where convergence has been active is that of telecommunications, which has grown to be more than just the provision of voice services and value added services to include broadcast content delivery. This convergence between telecommunications and broadcasting led to the promulgation of the Electronic Communications Act (ECA), No. 36 of 2006, and the Independent Communications Authority of South Africa Amendment Act, No. 3 of 2006 (ICASA Amendment Act). However, as mentioned previously the pace of change is not uniform and this convergence between telecommunications and broadcasting is likely to be a protracted affair if left to market forces alone unless specific steps are taken to ensure that the current public, commercial and community terrestrial broadcasting services switchover<sup>1</sup> from analogue transmission networks to digital transmission networks, thus opening the doorway to an enhanced and perhaps interactive broadcasting experience for the public.

The Minister of Communications ("the Minister"), in her Budget Speech in 19 May 2005, announced the establishment of a Digital Broadcasting Migration Working Group ("WG") **to develop recommendations and contribute towards the development a national strategy for the migration of broadcasting systems from analogue to digital.** The Minister indicated that the WG would consist of representatives from the broadcasting industry, Independent Communications Authority of South Africa (ICASA), government, civil society, organised labour and consumer groups.

The WG was mandated to assist government in creating a digital agenda that informs broad communication policy in South Africa, as well as key national economic policy that integrates the knowledge economy into the vision of the information society.

The first meeting of the WG was held on 26 August, at the Indaba Hotel in Fourways, Johannesburg. This inaugural meeting focused on setting the terms of reference for the WG and organising the WG into working committees. At this plenary meeting four committees were established, namely the:

- Policy Working Committee;
- Content Working Committee;
- Economic Working Committee; and
- Technical Working Committee (the terms of reference of each working committee are set out in Appendix A).

<sup>1</sup> Switchover, for the purposes of this report, is defined as the progressive migration of households from analogue-only reception to digital reception of broadcasting transmissions



Given the differing terms of reference, each committee determined the research and drafting process it would follow in developing its recommendations. In respect of the technical and policy working committees, the broader working committee divided the work among smaller task teams who then provided drafting for discussion and agreement.

In respect of the content working committee, a questionnaire was developed and completed by members of the independent production sector, in order to assess the level of production readiness. Both the Independent Producers Organisation (IPO) and the Black Filmmakers Network (BFN) were asked to consult their members on their state of readiness for digital production. The BFN subsequently provided a report and briefing to the committee. Broadcasters were also asked to make a presentation outlining their state of readiness for a digital domain. Presentations to the committee were made by the SABC, M-Net and e.tv. The committee also approached the MAPPP-SETA to provide advice on its training and development activities for a digital domain. Finally, the committee was of the view that a specialised legal expertise was required to make meaningful recommendations on intellectual property issues. Consultants were briefed to advise the committee in relation to various matters arising from the migration of broadcasting services from analogue to a digital.

In respect of the work of the economics working committee, the need was identified for an economic modelling exercise in order to determine the economic viability of digital switchover in South Africa. The economics working committee subsequently drew up a task directive and approached the Department of Communications (DoC) for funding in order to engage economic experts to conduct the above study. Consultants were engaged to provide an economic model that would allow for scenario planning taking into account the costs and benefits to government, the consumer, broadcasters and the signal distributors.

The scenarios presented in the economics report provide a broad framework for the impact of Digital Terrestrial Television (DTT), based on three alternative timeframes. The model that has been developed by the consultants is appended to this report and should be used to develop further scenarios in managing the digital switchover process on an ongoing basis.

The WG would recommend that the Minister not disband the WG immediately after the handing in of the report on digital switchover in South Africa. This would put government, the regulator and even the proposed independent body in a position to access or utilise the collective expertise of the WG in developing a digital switchover strategy and managing the switchover process.



control or managing of the decoder will be possible. No value-add applications can be provided on the decoder, and no over the air upgrades will be possible. In order to ensure that the market is not flooded with low quality equipment, it is proposed that STB's should be subject to some form of quality control to ensure that a reasonable quality of STB is ensured. A minimum standard for the equipment will have to be set. It is suggested that this could be done through Standards South Africa, the standards-generating arm of the South African Bureau of Standards (SABS).<sup>14</sup> This would make sense as SABS already publishes national standards which it prepares through a consensus process in technical committees (made up of a variety of stakeholders).

- Free-access systems use more advanced STB's which provide the option of implementing conditional access. The basis of this option is that viewers will have to acquire a STB as well as a smart card (or decoders with embedded CA) to be able to watch the programmes. Apart from a normal TV licence fee, no additional monthly cost will be required. Although more expensive initially, this option offers broadcasters full control over their viewers as well as the introduction of advanced value added services. It will be possible for example to control TV license fees paid or institute pay-per-view services, with the necessary supporting infrastructure. The activation of embedded CA in order to deliver a free access system would necessitate that there be call centre established for all the STBs in the market and that consideration be given to who will cover the cost of regularly updating the CA for the purposes of ensuring that security is not compromised. In addition, this step would require that royalties be paid for the use of the proprietary CA, and if the principle that no additional cost is imposed on the consumer is applied, then it would have to be covered in the operating budget of broadcasters on an annual basis.
- Fully encrypted services can be used to ensure monthly payments for programmes viewed etc. This model is based purely on commercial principles and full control of subscribers is essential. Once one provides full encryption services on a DTT platform, the same platform can be used for free-access as well as FTA services. Activation of CA for fully encrypted services would require the same support infrastructure as in free access systems with the addition of subscriber management systems.

The cost of the STB poses the most critical barrier to entry in terms of getting the viewers to accept a digital switchover process. The entry level STB has to be as cheap as possible. However, it is also necessary to ensure that more sophisticated STBs are available which are flexible enough to provide value added services.

<sup>14</sup> SABS is a statutory body that was established in terms of the Standards Act, 1945 (Act No. 24 of 1945) and continues to operate in terms of the latest edition of the Standards Act, 1993 (Act No. 29 of 1993) as the national institution for the promotion and maintenance of standardization and quality in connection with commodities and the rendering of services



However, such subsidies are controversial and have raised competition concerns in Germany and other countries.

- Allowing FTA DTT incumbents an opportunity to compete against alternative platforms such as cable and DTH pay offerings. The UK for example revised its stance that FTA DTT could not offer pay services in addition to FTA broadcasting services.

However, an observation of the European market did make it clear that there is no single answer or approach to incentives, as the appropriate incentive or mix of incentives used depends upon the dynamics of the broadcasting market of each country and the value of the DTT commercial opportunity.<sup>71</sup>

Broadcasting signal distribution is a key component of a successful switchover to digital transmission and existing signal distributors in South Africa will need to be accommodated and incentivised. In Europe, governments have subsidised the roll-out of infrastructure by signal distributors in order to accelerate in some cases the speed at which switchover (e.g. Berlin) takes place.

#### RECOMMENDATIONS:

The WG makes the following recommendations, namely that:

1. government should consider implementing a mix of incentives (preferential treatment in terms of access to frequencies for the purposes of initiating digital transmissions, reductions in licence fees, lowering of SA content requirements for additional digital broadcasting services offered by existing broadcasters, signal distribution subsidies or lower tariffs, etc), appropriate to South Africa, to facilitate the switchover to digital broadcasting by television broadcasters and broadcasting signal distributors; and
2. incentives should also be considered to assist existing television broadcasters to retain viewers during the switchover; and
3. consideration should be given to the use of contributions made to the Universal Service and Access Fund to be used to promote roll-out of DTT by subsidising STBs.

#### e) *Key factors influencing market take-up*

The following key factors have been identified in Europe as impacting on the successful take-up of DTT:

- Attractive offering – the DTT platform must provide viewers with tangible benefits at an affordable cost. This of course differs from country to country, but is dependent upon three things, namely content that is not already available in terms of quality and quantity; technology improvements in sound and picture; and the total cost of the platform (including once-off costs such as the STB).

<sup>71</sup> However, while there may be debate on the mix of incentives, there is no debate on the fact that they are needed. In Spain the lack of incentives for commercial broadcasters has led to a slow-down in the process of digital migration in that country.



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- Low-cost and widely available STBs – this is dependent on market conditions, including business model, subsidies and technology developments.
- Strong communication – clear market communications are essential for take-up and are only possible where a clear and stable regulatory regime is in place.
- Co-operation – the success of DTT requires the co-operation between stakeholders.<sup>72</sup>

### 5.3.2 Policy and Licensing of Digital Sound Broadcasting in Europe

The WG considered a benchmark of coverage, technology, services offerings, licensing and regulation of Digital Sound Broadcasting in Europe (table below) Although significant differences exist in the policy and licensing approaches followed in Europe the following commonalities could be established.

#### (a) License Period

The capital costs of deploying new DAB transmitter networks and the fact that it takes approximately between five and seven to recoup the associated capital means that a longer license period is required to encourage investment and to sustain Digital Sound Broadcasting services. The Southern African Digital Broadcasting Association (SADIBA) drawing on the analysis of the licensing approaches in the EU further recommends incentives such as, long-term term licences, an administrative licensing and renewal process on “beauty contest” basis and limiting license fees to an administration fees.

#### (b) Programme Content

DAB Digital Radio enables the delivery of exciting new stations, both audio and data. The data services can be either “stand-alone” or related to audio content. All of these provide the potential for a true multimedia listening experience via DAB Digital Radio. While the laws regarding delivery of data services vary substantially across the EU, data and multimedia services are generally accepted as one of the major advances that can be delivered by DAB. Based on an analysis of the licensing approaches followed the SADIBA recommends that existing and new services including audio, video and data services be accommodated. Commercial services be introduced first as stimulus for receiver sales. Public services can subsequently be considered as frequency capacity is released in Band III.

#### (c) Bit-rate of Audio Services

The technology of DAB packages a finite number of kilobits into audio and data services on a multiplex. It is possible to broadcast 10 or 11 audio stations on one multiplex, but only if legislation permits them to be carried at lower bit-rates.

<sup>72</sup> Analysys. Public Policy Treatment of digital terrestrial television (DTT) in communications markets. Final Report for the European Commission (Madrid: Analysys, 2005) pp.33-35



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# APPENDIX C

**INDIVIDUAL WG MEMBER POSITIONS ON THE SELECTION OF A BASIC  
MINIMUM STANDARD FOR THE SUBSIDISED STB**



*CPM*

### e.tv POSITION ON THE SET TOP BOX

e.tv's position on the entry-level set-top box for DTT is based on the following over-riding principles:

1. Allowing the consumer the greatest possible choice. This is based on the principle that the consumer is being compelled to purchase a box to continue to watch television.
2. Ensuring that the box is as cheap as possible to ensure that as many people as possible can afford it. This is based on the fact that most South Africans simply cannot afford to buy a box and will need to be subsidised in one way or another.
3. Limiting government's exposure to high subsidy costs. Once again, the cheapest possible box will achieve this purpose as in this case more people will be able to purchase the box and the cost of the subsidy will be lower.
4. Making the box (including repairs, maintenance and upgrades) the responsibility of the consumer as would be the case with a normal television set. The box is merely a bridging mechanism to allow analogue television sets to receive a digital signal – when digital television sets are available on a large scale, the box will no longer be required. In this sense, the use of the term "box" is misleading in the free-TV as opposed the pay-TV environment. It would be more appropriate to refer to the box as a "digital adapter". The notion of such a basic box is in line with international experience including the United Kingdom.



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5. In this context, the inclusion of conditional access in the entry level box runs contrary to all of the above-mentioned principles. It adds costs to the box, it inhibits consumer choice and increases the subsidy cost to government. In addition, any box which incorporates conditional access will require a call centre and subscriber management system to manage the box. To achieve this with eight million households is an impossibility. Over and above this, it raises the following serious competition issues:

- a. Including embedded CA in the STB ultimately provides an automatic market of 7.7 million households for pay-TV operators in circumstances where they would otherwise not have such access. In effect, if a subsidy is involved, government would be subsidising one industry player ahead of others.
- b. As the CA would be in all STBs, this would effectively result in South Africa adopting a CA standard using a particular CA and excluding all others, to the benefit of the company which owns the CA system. Given the likelihood that the basis box will be subsidised through public funding, this raises serious competition issues – in effect the government would be subsidising the profits of a single CA provider in circumstances where CA is unnecessary for the purposes of digital migration.
- c. STBs are a temporary mechanism for DTT reception and encoding. Eventually, all television sets will come with integrated digital decoders. These television sets do not include CA. There is no rational justification – from an economic or technological point of view - for including CA in the standard STBs.
- d. Even if all of the above-mentioned issues could be resolved, there is a fundamental difficulty with including CA in the box. In effect, if government subsidises the boxes in any way, this will



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be an indirect subsidy to the broadcasting industry at the expense of consumers.

6. e.tv submits that, as in the United Kingdom, the entry-level box should meet the following requirements:
  - a. Ensuring that consumers can purchase a decent-quality STB with the basic features – and no more than the basic features – which allow them to watch free digital TV.
  - b. This basic STB should be subsidised by government to the greatest extent possible and therefore the manufacture and design of the boxes must be as simple and cost-effective as possible while meeting certain minimum standards. The government subsidy should not be affected by unnecessary additional expenditure.

Keeping the box cost as low as reasonably possible will enable a higher rate of take-up and a shorter dual illumination period which will be of benefit to both the broadcasting industry and consumers. Achieving this objective does not prevent operators from rolling out more sophisticated boxes or pay-TV decoders in the normal course of their business. Also, those consumers who so choose will still be able to purchase more sophisticated devices, including PVRs, which will undoubtedly be made available in the market on a commercial basis (without any government subsidy).



**SABC VIEW ON MINIMUM SET TOP BOX SPECIFICATIONS**

The SABC is of the view that the minimum set top box specifications should be decided having regards not only to cost issues but also to the additional services and uses offered by STBs.

In this regard, the SABC does not support the roll-out of the "entry level" box (as laid out in Table 1" STB Options) as it is our understanding that this would allow neither for e-government services nor for assistance in TV licence fee collection.

The SABC rather supports Level 1A DTT which would allow for dormant CA.



## MNET AND ORBICOM STANCE ON THE BASIC STB STANDARD

### 1. INTRODUCTION

A free-to-air broadcaster, etv, raised an objection, in the context of the Digital Migration Working Group sub-committee meetings, to embedded Conditional Access Systems (CAS) in the basic digital free-to-air set-top box (STB).

M-Net and Orbicom have agreed to make a joint representation on this issue of the STB standard. M-Net and Orbicom have noted the concerns raised by the etv and without debating the veracity of the statements made about the advantages that could accrue to M-Net if CAS was embedded in the basic free-to-air STB, agree that it could cause a perception in the market that such a step would be to the benefit of any commercial broadcasting licensee in South Africa.

It is the view of the M-Net and Orbicom that the primary focus of the Digital Switchover process in South Africa is to transition existing viewers and broadcasting services from the current analogue broadcasting transmission environment to a digital broadcasting transmission environment. The minimum benefits of this are that:

- viewers will be able to access more channels and have an improvement in video and audio quality;
- broadcasters will be able to offer multi-channel services on a single frequency instead of a frequency per channel as in an analogue environment, resulting in a saving on transmission costs and new business opportunities;
- electronic communication network services will be able to distribute broadcasting signal in a more spectrum efficient manner and potentially access new revenue streams by offering broadcasters value added services (electronic communication services); and
- government will be able to make more efficient use of the frequency spectrum, as the freeing-up of spectrum will enable the introduction of potentially new broadcasting services, non-broadcasting services and the use of new innovative technologies in the traditional television frequency bands.

### 2. SETTING MINIMUM SPECIFICATIONS FOR DIGITAL TUNERS

It is the view of M-Net and Orbicom that when it comes to setting a STB standard, government needs to be mindful of the following factors:

- affordability;
- interim nature of the set-top box (STB) solution in a digital switchover; and
- future e-government needs in South Africa.



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## 2.1 Affordability

Depending upon the price of the basic STB, TV households can be divided into those who will be able to afford the basic STB and those who will not be able to afford the basic STB. The threshold for splitting households can be based on the basic STB price as a proportion of annual income. This means that the higher the price of the basic STB is the more households slip below the threshold and will require some form of subsidy from government in order to make the switchover to digital. The cost of the basic STB will also result in the level of the subsidy having to be higher resulting in the government incurring a greater cost not only in terms of the numbers requiring assistance, but also in terms of an increase in the amount being subsidized.

M-net and Orbicom would therefore on the basis of affordability suggest that the minimum standard for the STB be no more than what is required to enable free-to-air viewing in a multi-channel digital broadcasting environment. This means that the basic STB should not include enhancements such as an embedded CAS as the majority of TV households would not make use of such a feature and government should not be required to subsidise a feature that essentially is aimed at commercial applications (provision and protection of exclusive content) that benefit commercial broadcasters. The setting of a basic minimum standard would not preclude commercial broadcasters or manufacturers from making available STBs or similar devices that enable conditional access on the market and will allow consumers to make an informed choice based on their needs and financial ability on which STB they prefer to purchase.

## 2.2 Interim nature of the STB

The requirement to introduce STBs in the market so that free-to-air viewers can access digital free-to-air broadcasting services, should be viewed as an interim measure to address the fact that analogue television sets (ten year lifespan) currently in TV households will require a STB to convert digital content to analogue for viewing purposes.<sup>1</sup>

M-Net and Orbicom would suggest a digital switchover path and the setting of basic minimum standards that allows new and existing TV households a choice to receive free-to-air DTT by means of either:

<sup>1</sup> It is acknowledged that the combination of an analogue television and a STB is not the optimum combination to view digital television as the viewer will lose out on some of the benefits of a digital TV transmission in terms of video quality, as well as the fact that the broadcast will be widescreen (16:9) and the analogue TV sets are generally in 4:3 format. This is why digital television sets with inbuilt digital tuners are in demand in other markets as they generally support 16:9 widescreen formats, higher display resolutions and have the necessary connections (e.g. HDMI), to benefit in terms of video and audio quality from digital transmissions.



- the purchase of a separate basic or advanced STB for each television set in the household; or
- the purchase of a digital TV with an integrated digital tuner.<sup>2</sup>

### 2.3 e-Government

Electronic government or e-Government refers to government's use of information and communication technology (ICT) to exchange information and services with citizens, businesses and other arms of government. In order to achieve this it would require adding to the basic requirements for the reception of DTT, a further requirement for open middleware standard. The inclusion of MHP, for example, in the selection of the basic STB or idTV (digital tuner) standard would significantly increase the cost of the digital switchover, however unlike the inclusion of embedded CAS which has been opposed by a free-to-air broadcaster, the subsidy of STBs with MHP capability can be justified on the grounds of e-government and enabling access to government information by the public on other platforms.<sup>3</sup>

The decision to mandate an interoperable open middleware standard for the basic STB to promote e-governance and interactive television for all is a government decision and M-Net together with Orbicom do not presume to make a recommendation in this regard.

## 3. RECOMMENDATION

M-Net and Orbicom would recommend that government set a basic standard for STBs and integrated digital tuners in TV sets in South Africa. This step should be coupled with a labeling scheme to ensure that consumers can make an informed choice, as well as prevent the flooding of the South African market with "cheap and nasty" STBs or non-compliant digital TV sets.

<sup>2</sup> In the United States (US), the Federal Communications Commission (FCC) began a systematic plan to gradually include digital tuners in all new television sets. All new television sets with 25 inch or larger screens were required to be sold with digital tuners that could receive terrestrial Digital Terrestrial Television (DTT) signals as from 1 March 2006, and sets 13 inches and larger are required to have digital tuners by 1 March 2007. In addition, manufactures and retailers were obliged to adequately inform potential buyers before these compliance dates that TVs without DTV tuners will not receive over-the-air broadcasts after February 2009 when analogue broadcasting will be switched-off in US. An added benefit of most idTVs is that most of them also allow the reception of analogue signals in PAL, SECAM or NTSC allowing them to be used prior to a digital broadcasting switch-on. A government decision in South Africa to mandate Integrated Digital TV (idTV), a television with an inbuilt digital decoder capable of receiving a DTT transmission without needing a separate STB, would benefit from having the same basic standard as that in place for the STB. If the basic standard for STBs and TV digital tuners included conditional access (CA) functionality it would raise the cost of the television set and potentially reduce the lifespan of the set as conditional access requires constant updating to protect security integrity. Most idTVs in countries that are introducing DTT do not inherently support CA to keep the costs of the basic TV low, there are high-end idTVs that are fitted with Common Interface slots that allow the insertion of a conditional access module to receive terrestrial or satellite subscription broadcasting services.

<sup>3</sup> It is also worth noting that conditional access (CA) is not required for interactivity or e-government services as it related primarily to the provision/security of exclusive audio or video content.



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M-Net and Orbicom propose that government consider the inclusion of the following basic features into any minimum standard set for entry level STBs and integrated digital tuners in TV sets in South Africa:

- DVB-T and MPEG-4 AVC (H.264) compliant
- OpenTV middleware ready
- Over the Air secure software download capable
- Support Now/Next 8 day Electronic Programme Guide (EPG).

The basic features highlighted above can be supplied in an STB from between \$70-\$90 dollars (VAT excluded) by various STB manufacturers.<sup>4</sup> M-Net and Orbicom would support the request by etv that embedded CAS and a smart card reader not be included in the minimum standards for the entry level STB that potentially could be subsidised by government.

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<sup>4</sup> It should be noted that the basic features highlighted above would be for the reception of standard definition digital transmissions. If government wishes they could add to the basic standard recommended above to make the STBs ready for High Definition digital transmissions. To make the STB HD capable would require the upgrading of the core chip and memory requirements and the inclusion of a HDMI output. This step would increase the price of basic STB by \$16 to \$20.

