

5.4 APPROACHES TO NEW BROADCASTING SERVICES, ICT ACTIVITY AND BROADCASTING ON NON-TRADITIONAL NETWORKS

The WG endeavoured to define what is meant by:

- New broadcasting services;
- ICT Activity; and
- Broadcasting on non-traditional networks.

New broadcasting services are seen by the WG as being a very broad term that can be used to refer to interactive or data services that have not been offered by broadcasters previously because of the limitations of analogue transmission or it can refer to new broadcasting services, utilising the terrestrial frequency spectrum, to broadcast to mobile or portable consumer devices (enabled cellular phones or PDAs) other than the traditional television set.

ICT activity within the traditional broadcasting spectrum was viewed by the WG as being activities other than broadcasting that utilise broadcasting frequencies for delivery networks, these could be wireless broadband or mobile telecommunication services.

Finally, the WG defined broadcasting on non-traditional networks to be broadcasting content made available primarily on telecommunications networks operating outside of the UHF/VHF Bands.

Services such as those defined above reflect the current technological trend towards convergence of services, devices or networks. The primary legislative vehicle for addressing convergence in South Africa is the ECA and this served as the primary tool used by the WG in approaching this subject matter. The WG also took specific note of the fact that one of the objects of the ECA pertaining specifically to licensing required the creation of a technologically neutral licensing framework.

5.4.1 New Broadcasting Services

There are two aspects to new broadcasting services, firstly those services which will be offered by either existing broadcasters or new service providers based on the degree of interactivity allowed on the digital platform and secondly, new broadcasting services that target mobile audiences not households.

Digital television has the potential to offer the following electronic services⁸⁸:

- Interactive content – the ability by pushing the red button on the digital remote to access interactive content from selected TV programmes;
- Shopping – digital television shopping sites which will allow electronic purchasing over the television;
- Information services (Data) – weather, Johannesburg Stock Exchange, yellow pages, news, Bus timetables, etc.
- Banking – online banking;
- Games – interactive games and quizzes;
- TV email – ability to send and receive email with personalised email address.

⁸⁸ Please note that some of these services are dependent on the STB standard adopted.

In terms of the ECA these services would not fall within the scope of the Broadcasting Service licence, as the definition of broadcasting service specifically excludes services which provide no more than data or text whether with or without associated still images. These services for the purposes of the ECA fall within the definition of an electronic communications service and would require in terms of the law that the broadcasting service would also have to apply for an electronic communications service licence in addition to the broadcasting service licence they would hold in order to provide these additional services to their viewers.

The WG are of the view that this complicated licensing process is not reasonable and unduly burdensome when the primary purpose of the broadcasting service is to provide television programming services not electronic communication services. A far simpler process would be for ICASA, in terms of section 6 of the ECA, to exempt broadcasting service licensees from applying for an electronic communications service licence for the provision of additional services on digital multiplex (frequencies) that has been reserved for television. Bearing in mind, that the exemption from applying for a licence does not exempt such additional services from regulation it is further proposed that ICASA put in place a regulatory limit on the percentage of the digital multiplex (frequencies) capacity that can be used for non-broadcasting services.

Mobile broadcasting services using the DVB-H standard can broadcast to enabled mobile cellular phones, laptops, PDAs and television sets in moving vehicles (e.g. public transport) using the frequencies in the bands traditionally assigned to broadcasting services. The WG acknowledges that the primary market of mobile broadcasting services are not households, but rather mobile users, and the revenue model is subscription not advertising so the impact on existing broadcasters would not be significant. It was also noted that mobile broadcasting services would contribute to the status of South Africa when hosting the World Cup 2010. The nature of mobile broadcasting using DVB-H would seem to necessitate different regulatory treatment to traditional broadcasters.

It is important to note that Digital Radio (T-DAB according to Eureka 147) and Terrestrial Multimedia Broadcasting (T-DMB based on T-DAB) were designed for mobility and like DVB-H have the ability of delivering services to a variety of enabled devices. Radio has however always been a mobile service delivered to mobile users as opposed to households and the licensing procedure that extends rights to digital spectrum to existing licensees and new players is supported. A limit on the percentage (approximately 20%) of the digital radio multiplex (frequencies) capacity that can be used for non-broadcasting services would be sufficient in ensuring that the licensed services delivers the primary broadcast applications.

RECOMMENDATIONS:

The WG makes the following recommendations:

1. that ICASA exempt broadcasting service licensees from applying for electronic communications service licences for additional non-broadcasting services offered on the digital transmission networks (television and radio);
2. that ICASA place a 20% limitation on such services in terms of the capacity of the digital broadcasting transmission network used to provide such additional services;
3. that ICASA should promote the licensing of mobile broadcasting services (on DVB-H, T-DMB, or other standards) before World Cup 2010;
4. that ICASA either conduct an inquiry on the appropriate mix of content regulation for mobile broadcasting services (television and radio) or exempt mobile broadcasting services (television and radio) from SA content regulation to promote the growth of these services. The exemption could be for a fixed period, for example for World Cup 2010, within which ICASA could consider the appropriate mix of content regulation for mobile broadcasting taking into consideration that it is a complementary service to television broadcasting to the household; and
5. in the event that mobile broadcasting services were to attract advertising or be offered FTA they must be subject to the same market feasibility study as for the introduction of channels in DTT (Fixed/Portable).

M-net and Orbicom have suggested a different formulation for recommendation 5, namely *“in the event that FTA mobile broadcasting services were to attract advertising, they must be subject to the same market feasibility study as for the introduction of channels on the two national digital transmission networks.”*⁸⁹

5.4.2 ICT Activities within the traditional broadcasting spectrum

The ECA is clear that it is the Minister who makes policy, in terms of section 3(1), on the radio frequency spectrum, the Republic's obligations and undertakings under bilateral, multilateral or international treaties and conventions including technical standards and frequency matters. This is supported by a reading of section 34(1) and (2) in the ECA where it highlights the Ministers role in representing South Africa in the ITU and approving the national frequency plan developed by ICASA. In contrast ICASA's role is spelt out as being controlling, planning, administering and managing the use and licensing of the radio frequency spectrum⁹⁰. It is very clear that the role of developing a national spectrum policy resides with the Minister, despite the use of the word “may” in section 3(1). If the Minister did not exercise his or her right to make a national policy on frequency spectrum, it would result in ICASA determining national policy on frequency spectrum indirectly through the development of the national radio frequency plan and this could have never been the intention of the legislature when it clearly drew this distinction between the role of the Minister and ICASA in regard to radio frequency spectrum.

The WG, against this background, took the view that before the licensing of any “non-broadcasting” ICT activities within the broadcasting frequency bands can take place, a coherent national spectrum policy is required. This will need to set national priorities in respect of the various communication services, and then allocate spectrum to such services based on the ITU allocations for ITU Region 1.

⁸⁹ ICASA has already done an inquiry on subscription broadcasting and advertising, there is no need therefore to extend the ambit of the market feasibility study in fashion that captures subscription broadcasting and leads to duplication of effort.

⁹⁰ See section 30(1) of the ECA.

For example, the frequency band 470-790 MHz is exclusively allocated to the broadcasting service by the ITU. Therefore, no non-broadcasting services can be allocated in this band. At RRC-06 it was agreed that a plan entry could be used for non-broadcasting services so long as they cause no more interference than the digital broadcasting service plan entry using the same frequency, and that such non-broadcasting service is in accordance with the Table of Allocations contained in Article 5 of the ITU Radio Regulations. In order for ICASA to plan, manage and licence non-broadcasting services in the UHF/VHF Bands the Minister needs to issue a policy direction indicating that this is desirable and in line with national policy.

The frequency band 790-862 MHz is allocated to the fixed and broadcasting services, with equal rights. Therefore national policy must clearly spell out which of these services enjoys priority in this band as it is not possible for the two services to share spectrum in the same geographic area at the same time. In terms of the ITU Table of Allocations, no mobile services could be licensed in this band.

On 31 October 2006, ICASA gazetted its decision on the sharing of the frequency band 822-838 MHz (TV channels 65 & 66). In terms of its decision, ICASA will allocate the band 822 -838 MHz to non-broadcasting services on a secondary basis, and in accordance with the provisions of No 4.4 of the ITU Radio Regulations, which states:

“Administrations of the Member States shall not assign to a station any frequency in derogation of either the Table of Frequency Allocations in this Chapter or the other provisions of these Regulations, except on the express condition that such a station, when using such a frequency assignment, shall not cause harmful interference to, and shall not claim protection from harmful interference caused by, a station operating in accordance with the provisions of the Constitution, the Convention and these Regulations.”

In the South African digital frequency plan adopted at RRC06, there are 18 digital television broadcasting assignments in channel 65 and 20 assignments in channel 66. These include transmitter stations like Johannesburg, Nelspruit, Cape Town, Port Elizabeth, Durban North and many other significant transmitter stations. ICASA's decision could, therefore, have adverse consequences for the switch-over from analogue to digital broadcasting in South Africa. Broadcasting transmitting stations, in some cases, employ an effective radiated power of 100 kilowatts or more, whilst mobile devices may only operate on a few milliwatts. This could mean that an adjacent or near adjacent broadcast frequency at high power could interfere with the CDMA2000 equipment, even though the out of band interference is in conformance with the prescribed ITU regulations. It is, therefore, important that good co-ordination (and effective policing) takes place between broadcasting and non-broadcasting services during implementation and operation of these services. The ITU World Radiocommunication Conference to be held in 2007 will consider studies on the suitability of the 800 MHz band for IMT-2000 (3G Mobile) systems. This means that in the very near future the following services could all be competing for the same portion of spectrum:

- Analogue TV broadcasting (until the end of the transition period)
- Digital TV broadcasting
- FWA applications by USAL's
- IMT-2000 mobile services

Clearly, all of these services cannot co-exist in the same frequency band, and a national spectrum policy is therefore urgently required that will give priority to a particular service. The WG would propose that this priority should be for the introduction of DTT. Based on such a national policy ICASA would be in a position to plan for services in such a way that interference is avoided to other services planned in accordance with ITU RRC-06.

A national spectrum policy would have to be forward looking as most non-broadcasting services will not be able to enter the traditional broadcasting bands until the switch-off of existing analogue broadcasting services that will result in the surrender of that spectrum to ICASA and the so-called Digital Dividend. The frequencies planned at RRC-06 for the digital switchover phase in South Africa leading up to 2015 were based on what was available in the television frequency bands, rather than what was optimum for digital broadcasting and potentially non-broadcasting services. This means that after the implementation of the all digital frequency plan in 2015 there will need to be a re-planning exercise that will result in all terrestrial broadcasting services being assigned with new optimum frequencies to replace those that were used for the purposes of the digital switchover. This means that if a policy decision is taken to introduce non-broadcasting services in the traditional broadcasting bands prior to the second frequency migration, it will have financial impacts on such non-broadcasting services and will unduly complicate the planning of this frequency migration of digital broadcasting services.

RECOMMENDATIONS:

The WG makes the following recommendations, namely that:

1. that the Minister issue a policy direction on national frequency spectrum policy to guide ICASA in developing a national radio frequency plan; and
2. that non-broadcasting services should not be introduced in the traditional broadcasting frequency bands until analogue switch-off and the second frequency migration has taken place and ICASA has planned properly for their introduction in a manner that will not cause interference to digital broadcasting.

5.4.3 Broadcasting on non-traditional networks

Digital Broadcasting is broader than digital terrestrial broadcasting and can also be done via cable, satellite and in the converged context via broadband services operating on traditional telecommunications networks. The ECA, which was designed to address convergence of services, networks and devices, changed the definition of broadcasting service in a critical respect, namely the deletion of the concept of point-to-point services being excluded from the definition. The implication of this is that broadcasting on traditional telecommunications networks even where the connection between the subscriber and the service is point-to-point, such as in IPTV on a broadband connection (e.g. ADSL) or mobile television on a 3G connection may now fall within the definition of broadcasting and broadcasting service. Central to this understanding is an analysis of a number of key definitions in the ECA, namely:

- broadcasting;
- electronic communications;
- broadcasting service;
- sound broadcasting service; and
- television broadcasting service.

This is a new situation created by the ECA as in previous broadcasting legislation, point-to-point and on-demand services were excluded from the definition of broadcasting service and such services operating on traditional telecommunications networks were either

unlicensed or licensed in terms of the Telecommunications Act, which has subsequently been repealed.

What this means, is that from a legal perspective, the elements which are essential for a service to be deemed a broadcasting service in terms of the ECA are that the transmission of the signals is unidirectional (as per definition of term “broadcasting”), that the service is provided by means of an electronic communications network (whether this is done on the broadcasting service radio frequency bands as defined by the ITU is not really relevant for the definition of the term “broadcasting service”) and the nature of the content transmitted (definitions of television broadcasting service and sound broadcasting service and what is excluded from definition of broadcasting service). However, whether the transmission of the signals is on a point-to-multipoint basis or is taking place on-demand does not appear to be an essential requirement for exclusion from broadcasting anymore.

A critical policy question is whether government or ICASA want to license or regulate broadcasting services offered on broadband connections in South Africa. An obstacle that arises if the decision is not to licence or regulate such services is that the exemption powers given to ICASA do not contemplate a situation where the regulator would exempt a broadcasting service. A power is created in the definition of broadcasting service under section 1 of the ECA for ICASA to exclude a service or class of service from falling within the definition, but the exercise of this power should be approached carefully as it would mean that broadcasting regulation pertaining to codes of conduct and South African content would not apply to such services if they are deemed not to be broadcasting services.⁹¹ In other jurisdictions where these services are excluded from broadcasting on the basis of the wording of legislation, this matter is being hotly debated on the grounds that it creates regulatory anomalies that the services provide the same broadcast content, to virtually identical devices and compete directly with each other, but are being regulated differently by virtue of technology or frequency used.

RECOMMENDATION:

The WG recommends that ICASA conduct an inquiry before licensing new broadcasting services on non-traditional broadcasting networks or converting the licences of existing telecommunication licenses operating such services to assess whether such services fall within the definition of broadcasting service and if so establish a regulatory framework to inform such licensing or conversion or exclusion from the definition of broadcasting service.

5.5 IMPACT OF TRANSITION ON EXISTING BROADCASTING SERVICES AND PROTECTION OF RIGHTS

The WG was tasked with looking at the impact of transition on existing broadcasting services and the protection of the rights of existing broadcasting services.

5.5.1 Impact of Transition

In its economic model, the economics working group, among other issues, analysed the following:

- The financial position of incumbents in the today’s broadcasting market

⁹¹ This would not mean that such a service if it is deemed not to be a broadcasting service would not be regulated in terms of content, as once declared not to be a broadcasting service it would no longer be exempted from the application of the Film and Publications Act.

- the impact of digital terrestrial migration on the current market and its consequent effect on the achievement of national policy objectives as set out in the ECA.

Based on the economics group's findings, the WG can already make various assumptions about the market:

- In the absence of significant new revenue opportunities, there is little or no incentive for incumbents to migrate to digital;
- The transitional period will not yield significant additional revenue for incumbent broadcasters. Their business will be adversely affected as costs increase while their revenues are fragmented among competing players in an environment where the total television advertising pool does not grow sufficiently to sustain their profitability;
- Channels introduced by new players in the marketplace will enjoy all the benefits of the multi-channel digital environment while not carrying the burden of switchover; and
- Incumbent broadcasters and broadcasting signal distributors will shoulder the burden of the digital switchover process and will feel the effect of higher costs. This may be aggravated by the length of the dual illumination period which will depend on the rate of take-up of STBs by the public which may in turn depend on pricing and subsidies. The public interest objectives of the legislation require universal service, connectivity for all and open and non-discriminatory access to communications. Switchover can happen only if the consumer access objectives of the legislation are met.

Under these circumstances, existing broadcasters and broadcasting signal distributors should be incentivised in digital terrestrial broadcasting policy – both during the switchover process and after analogue switch-off. To ensure the stability of the broadcasting industry, it is important that existing players continue to meet public interest objectives and that they remain viable enough to do so. Such incentives will assist existing broadcasters and broadcasting signal distributors in playing a constructive role in the implementation, marketing and rollout of the STBs and in encouraging members of the public to switch to digital. Such incentives could include, for example:

- allocating frequencies to incumbent broadcasters and broadcasting signal distributors on a preferential basis for the purposes of providing existing and new channels;
- limiting content obligations during dual illumination to the primary service (i.e. the existing analogue service and its digital counterpart); and
- financial incentives, such as subsidies, tax breaks, reduced licence, fees, reduced Universal Service Fund contributions.

RECOMMENDATION:

The WG recommends that existing broadcasters and broadcasting signal distributors should be incentivised in digital terrestrial broadcasting policy – both during the switchover process and after analogue switch-off.

5.5.2 Protection of rights in transition

The WG submits that the protection of existing broadcasting and broadcasting signal distribution services during the initial stages of the digital switchover is critical to a smooth transition. When digital broadcasting is introduced in South Africa, it will take some time before we see the significant take up of these services by consumers. The reality of the South African market is that most consumers will not be able to afford the digital receiving

equipment and will continue to utilise analogue terrestrial broadcasting services. In order to ensure a smooth transition to digital and minimal disruption to consumers, it is critical that all existing analogue broadcasting services and transmissions are maintained up to the date of analogue switch off.

Existing broadcasting and signal distribution licensees currently hold licences, which provide for both services and frequencies. The maintenance of these existing services would therefore extend to both the broadcasting services and the frequencies on which those services are offered. However, it is acknowledged that the maintenance of analogue services cannot continue indefinitely as this would defeat the purpose of migration. In the next phase of migration, existing broadcasters will start to roll out their digital services. This roll out will require broadcasters to offer their existing content offering and additional enhanced digital content. For the purposes of this roll out, broadcasters and broadcasting signal distributors must be granted access to additional digital spectrum to allow for the broadcast of both analogue and digital transmissions during the period, which is referred to as dual illumination. In addition, the WG recommends that existing broadcasters and broadcasting signal distributors are granted preferential rights to frequencies for the purposes of introducing enhanced digital services which are necessary to drive the take-up digital receivers by consumers.

Existing analogue transmissions must be protected from harmful interference by digital transmissions during the switchover period. The migration process will be very costly for broadcasters and it would not be advisable to require broadcasters to change the frequency of their analogue transmissions to accommodate new digital services while at the same time preparing for the switchover of their own services to digital. This would place unnecessary financial burdens on broadcasters and their broadcasting signal distributors.

The period of dual illumination will be very costly for broadcaster and will place severe limitations on the amount of frequency available for new services. For this reason, this period should not be unduly prolonged, taking into account the interests of both broadcasters and viewers. In order to achieve the spectrum efficiencies sought in the migration to digital, the switch off of analogue must be facilitated. However, analogue switch off is only advisable if consumers have adopted digital receivers to an extent sufficient to warrant switch off.

The national digital switchover strategy should also address the transitional provisions applicable to signal distributors. As with broadcasting services, the starting point of any discussion on transition should be the protection of existing rights guaranteed in a licence. The WG proposes that existing broadcasting signal distribution licensees are protected during transition and that their rights to switchover the provision of services in a digital environment are guaranteed.

RECOMMENDATION:

The WG makes the following recommendations, namely that:

1. the national digital switchover strategy must protect the rights of existing sound broadcasting licensees to apply for digital radio licences and existing television broadcasters to switchover to digital broadcasting;
2. the protections for analogue frequencies from interference continue until the final phase of the migration process, which is analogue switch off or 2015 whichever comes first; and
3. the broadcasting signal distributors rights are protected during the switchover process.

6. IMPLEMENTING DIGITAL BROADCASTING IN SOUTH AFRICA

There is worldwide race by countries to be at the cutting edge of digital change, the benefits of this race accrue to the market leaders rather than the followers. Although South Africa was among the last countries in Africa to introduce analogue television broadcasting, it took the first steps towards digital broadcasting in 1994 when Sentech complemented its C-Band analogue satellite broadcast linking network, used for the delivery of broadcast services to its terrestrial transmitter sites, with satellite linking in digital. At that time radio services were already being distributed by satellite and in digital. The first digital subscription broadcasting service in Africa was launched on satellite by MultiChoice with the launch of DStv in 1995. At the same time Sentech also started their satellite Ku-Band DTH service in analogue as Astra. In 1996 Sentech also started a satellite Business TV network, in digital. As digital decoders became cost effective, the Sentech Astra platform was converted to digital during 1998, and branded Vivid. This conversion heralded the first market driven switchover from analogue to digital in South Africa and Africa of a free access broadcasting service on a satellite platform.

Digital broadcasting can be achieved by migration to a variety of platforms and consumers can exercise their choice to migrate to any available licensed digital platform (see Figure 13). However, for the purposes of the digital switchover process, although monitoring of consumer take-up of digital broadcasting will need to include all platforms, the primary focus of transitioning the existing terrestrial television broadcasting households should be to the digital terrestrial television (DTT) platform.

FIGURE 13: DIGITAL BROADCASTING ON MULTIPLE PLATFORMS

Multimedia services to the home – with a choice of delivery mechanisms.

(NB: the bit-rates shown on the diagram are typical, and not exact, for each of the delivery methods.)



Source: EBU Technical Review 2000: p.6

6.1 OPTIONS FOR DIGITAL SWITCHOVER

Internationally, there are two streams to a digital switchover process. The first stream is a market driven-technological migration where a progressive replacement of analogue technology with the better digital technology is taking place. In the arena of broadcasting this market cable and satellite subscription broadcasters have driven driven technological migration globally. This migration has been facilitated by the fact that consumers of their services already have STB in the home and are used to paying for premium services. Another component of this stream are early adopters of digital FTA broadcasting once it is offered in the market. The second stream is a policy driven migration primarily focused on FTA terrestrial broadcasting services. The second migration stream is happening because governments are interested in achieving better use of spectrum and using released spectrum to drive new services. As a result, policy makers (i.e. Governments and/or regulators) are likely to accelerate the introduction of digital transmission, and to encourage digital reception penetration, in order to achieve a faster switch-off, especially for terrestrial television. Market players (broadcasters, network operators and consumers) do benefit from the switch to digital, so this switch is likely to happen under market forces, though at a moderate speed, which will be determined by transition and switching costs (like the upgrade of networks to support digital broadcasting or the equipment of every household with digital-compliant receivers). However, the possibility to switch-off as soon as possible which results in better spectrum efficiency would benefit entities that are not directly involved as players in the television market, like Governments, non-television spectrum users and society as a whole. This lack of incentive for digital switch-off in the market driven model is what leads to a policy driven migration with a firm switch-off date.

A study of digital switchover reflects that there are usually three phases of digital adoption:

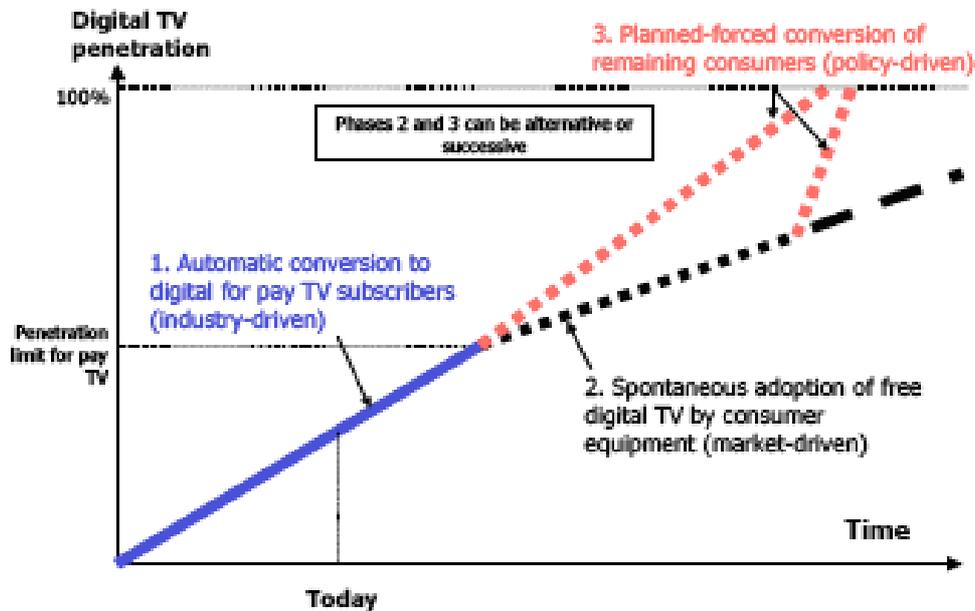
- In the **first phase**, some television viewers (subscribers to subscription broadcasting services) are being “digitised” by their service provider, who supplies them with digital decoders when they subscribe to a subscription broadcasting service⁹². Phase one, has occurred on satellite platforms in South Africa, but not in respect of terrestrial subscription broadcasting platforms
- In a **second phase**, following the switch-on of digital FTA broadcasting services other consumers (early adopters) consider the characteristics and new services provided by FTA digital broadcasting services as sufficiently useful to justify purchase of the necessary equipment. In South Africa, based on STB affordability, this would be limited to only 2.7 million television households out of the total existing 7.2 million television households, however as this figure includes households who already have subscription broadcasting services (analogue and digital) there may be little incentive for early adoption of DTT.
- In a **third phase** (which may also be taking place simultaneously with the second), a significant proportion of consumers (the reluctant) will remain indifferent to the new functionality offered by digital TV technology. They can only be migrated to digital reception within a planned policy framework. The situation requires an organised technological migration and a planned switch-off based on a change of infrastructure (including reception equipment), in contrast to the preceding two phases where the emphasis is put on a change of service with market forces driving the process (see Figure 14)⁹³. In South Africa, approximately 4.4 million

92 An example of phase one, is that in the United Kingdom, BSkyB turned off its analogue satellite service in September 2001. An intensive marketing campaign was launched to remind analogue subscribers of the forthcoming change and the digital equipment was offered free of charge.

93 BIPE. 2002. Digital Switchover in Broadcasting. A BIPE Consulting Study for the European Commission (Directorate General Information Society. Brussels pp. 30-31

television households will not be able to afford a basic STB, at a projected retail price of R850 for 2008, and this will require government involvement in the form of subsidies and setting a firm switch-off date for analogue television broadcasting.

FIGURE 14: THREE PHASES OF DIGITAL ADOPTION⁹⁴



PROPOSAL:

In the interests of achieving a swift digital switchover and freeing-up frequency spectrum for other uses, such as HDTV, during the switchover process, the WG would propose that the terrestrial subscription broadcasting service investigate options to switchover its existing subscribers to digital as rapidly as possible.

Similarly, it would be the right of any other commercial broadcasting service or the commercial division of the public broadcaster to do a digital switch-on and an analogue switch-off based on commercial and market-related reasons.

The WG would also propose that rather than government depending on a market-led phase for the adoption of FTA digital broadcasting in South Africa it consider implementing a policy driven migration approach to digital switchover from the switch-on of digital broadcasting in South Africa.

⁹⁴ BIPE. 2002. Digital Switchover in Broadcasting. A BIPE Consulting Study for the European Commission (Directorate General Information Society. Brussels p.31

The WG has identified the following options for the introduction of digital broadcasting in South Africa:

- **The Big Bang Approach** – Government identifies a “hard target” date for the termination of analogue television transmissions and broadcasters continue analogue broadcasting up to that specific time/date and on that time/date switch-off analogue transmission and initiate digital television and radio broadcasting. An advantage is that if a three-year period is set it addresses the problems of digital radio being introduced in Band III prior to a 2015 switch-off. However, there are also tremendous disadvantages to such an approach, amongst others, firstly, it does not take into consideration consumer behaviour with the result that nobody may have purchased an STB at the point that analogue broadcasting services cease resulting in social upheaval; secondly it does not give broadcasters an opportunity to test the right mix of digital services or additional channels that will be attractive to the market prior to the switch-off of analogue television broadcasting services; thirdly it creates no scope for any new channels into the market until analogue television broadcasting switch-off occurs. This approach should be a last resort and only considered where there are no frequencies available to support dual illumination of existing analogue broadcasting services and introduction of new digital broadcasting services.
- **The Modified Big Bang Approach** – The government identifies a “hard target” date for the termination of analogue television broadcasting transmissions, the existing broadcasters and broadcasting signal distributors are assigned frequencies which can be used to establish a digital broadcasting transmission network (in line with the ECA) or broadcasting services are carried as a channel by a digital multiplex operator (new licence category), licensed through a beauty competition (this would require the amendment of the ECA), while at the same time continuing to broadcast on their existing analogue frequencies up to a specific time/date and on that time/date switch-off analogue transmission and continue only with their digital broadcasting service. The advantage once again if a three year period is set is that it would address concerns of Digital Radio in Band III being implemented before 2015. It allows broadcasters to test digital broadcasting services and there is some scope for new channels. However, once again there are tremendous disadvantages to such an approach, amongst others, firstly, it does not take into consideration consumer behaviour with the result that a large proportion of households may not have a STB at the point that analogue television broadcasting services ceases resulting in social upheaval; secondly it does not consider technical problems which might ensue during the switch-off resulting in households being left without access to any television broadcasting services at a national level.
- **Market-led approach** – this is where industry takes collective action or agreement on the implementation of digital broadcasting and manages the switchover from analogue to digital broadcasting as a market-led transition. The problem with this approach is that it is based on market decisions and ignores the important national role played by FTA television in a democracy. From a government perspective it might also delay the benefits that might accrue from a digital dividend when analogue television switch-off occurs by delaying such switch-off beyond 2015.
- **The Managed Switchover Approach** – government establishes a national forum, comprising representatives from government, broadcasters, broadcasting signal distributors, manufacturing sector and the retail sector to manage and co-ordinate the switchover from analogue to digital broadcasting with switch-off occurring on a region by region basis in line with established criteria and a project plan. This

approach would take into consideration consumer behaviour and manage the transition not on the basis of hard target national date, but according to a region-by-region timetable in accordance with acceptable levels of STB penetration in those areas. This is the approach preferred by the WG and which will be discussed in more detail in the following section.

RECOMMENDATION:

The WG recommends that South Africa follow a managed transition approach to digital switchover.

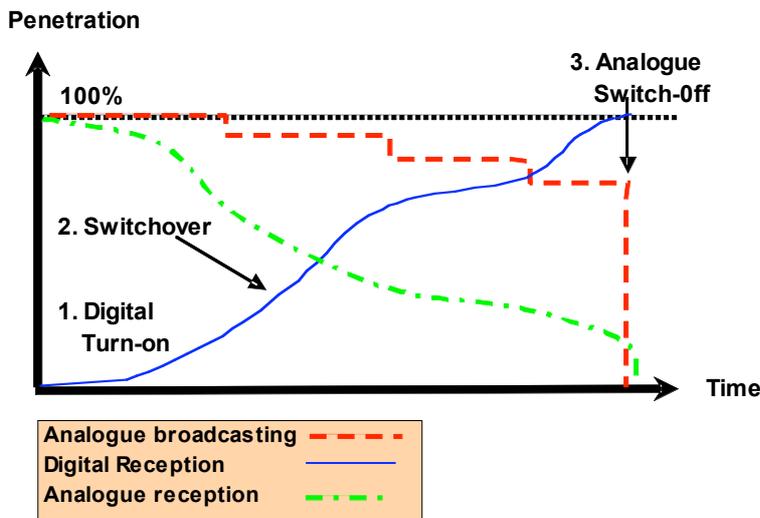
The Managed Switchover Approach will require that government issue a national strategy on the transition from analogue to digital broadcasting. The National Strategy should have the following objectives:

- To provide guidance to broadcasters, signal distributors and producers on the adoption of new digital television and radio technology;
- To promote the continued viability and growth of the South African broadcasting industry and independent production sector, and ensure that South African cultural objectives are maintained;
- To provide specifically for the continued viability and growth of South African television and radio broadcasting industry and ensure that South African cultural and language diversity be maintained and presented in the digital broadcasting environment.
- To encourage the production, broadcast and distribution of high quality South African programming services;
- To ensure that South African viewers benefit from technological advances to the fullest possible extent; and
- To facilitate the orderly and timely switchover to advanced digital television services.

The WG proposes that in approaching digital switchover it be divided into three distinct phases, namely:

- **Digital Switch-on** : the introduction of digital broadcasting, involving the upgrading of the infrastructure and consumer awareness campaigns.
- **Digital switchover** : the digital migration process, involving a gradual replacement of analogue broadcasting (transmission and reception) by digital broadcasting (transmission and reception).
- **Analogue switch-off** : termination of analogue transmission which assumes the completion of the switchover process, so that it won't occur, in principle, before almost all households can receive digital signals on their different receivers.

FIGURE 15: THREE CONCEPTS TO DESCRIBE THE DIGITAL SWITCHOVER⁹⁵



6.2 ECONOMIC MODELING OF DIGITAL SWITCHOVER IN SOUTH AFRICA

The WG was tasked with building a business case for Digital Switchover, considering the economics, fiscal, consumer and social impacts. This entailed;

- outlining cost factors, potential benefits and identifying economic risks and mitigating factors;
- establishing mechanisms or options of funding mechanisms the digital migration process;
- considering dynamics that would facilitate consumer access, network expansion and service provision;
- identifying incentives and factors to stimulate demand and market uptake; and
- defining and assessing the current (and potential market)

The WG obtained the services of a consulting firm to conduct market and feasibility modelling in order to determine the economic viability of digital migration.

There was an assumption that digital switchover would involve a period of dual illumination of existing analogue services together with the introduction of new services. Based on this assumption three scenarios were developed for this dual illumination period:

- A short defined dual illumination period which will begin in 2008 and terminate in 2010 to finalise the process prior to the World Cup;
- A longer defined dual illumination period, which will begin in 2008 and possibly terminating in 2012;
- A longer defined dual illumination period with a delayed start date of 2010 and terminating in 2015. The purpose of the delayed start date is to allow STB pricing to decline to more affordable levels to the benefit of government and consumers (see Appendix B: Economic Model and Report).

⁹⁵ Adapted slightly from BIPE. 2002. Digital Switchover in Broadcasting. A BIPE Consulting Study for the European Commission (Directorate General Information Society. Brussels p.17

6.2.1 Scenario One

The WG based on economic modelling found that a short dual illumination period is costly for government as they must subsidise STBs for those households who cannot afford to adopt. Regardless of subsidisation strategy selected, these costs are large because they are brought forward (increasing the net present value [NPV] of the costs) and because the drop in STB costs have not been fully realised. From the broadcaster's perspective, this approach is preferable because households will have adopted by 2010 regardless of the number of channels offered. This implies that broadcasters do not have to entice households to migrate by offering new channels and hence do not have to incur the additional costs associated with additional channels. A second benefit for broadcasters of a short dual illumination period is the reduction in transmission costs as broadcasters will incur both analogue and digital transmissions costs for a shorter period of time.

6.2.2 Scenario Two

The WG based on economic modelling found that a longer period of dual illumination reduces government subsidy costs to households who cannot afford STBs. Since broadcasters need to offer new channels to motivate consumers to adopt, broadcasters bear the burden of migrating those households who can afford the STB. Additional channels negatively impacts broadcasters as they incur additional content costs. Moreover, their advertising revenue will be split amongst more channels. A longer period of dual illumination also implies increased transmission costs.

6.2.3 Scenario Three

With the delayed approach, all households will have adopted by 2014, that is, within five years. The advantage of delaying the commencement of digital migration is that the STB price is reduced, which will naturally speed up the rate of adoption, with a reduced subsidy cost to government. A further advantage is that growing incomes will move households above the threshold. Furthermore, fewer channels need to be offered: even if the number of new channels is reduced to 5, all households will adopt by 2014. This is because the lower-priced STB will induce take-up, lowering the number of channels needed to get everyone to migrate. In terms of subsidy costs to households below the affordability threshold, this delayed approach is also preferable. The delayed approach appears to mitigate the negative impact of digital migration for both government and broadcasters.

Based on purely economic considerations scenario three appears to be the most attractive option. It will reduce costs to both government and consumers in respect of the STB in circumstances where using the latest technology (MPEG-4) would no longer be a barrier to entry. It also allows for some take-up by early adopters during the 2010 World Cup and has the advantage that DTT transmission networks would cover most of the country by the start date.

However, there are national policy objectives that need to be taken into consideration. In the event that the 2010 World Cup requires migration to start earlier, then Scenario 2 is preferable to Scenario 1 as it allows for some reduction in costs as well as providing for adequate time for all stakeholders to plan the rollout.

RECOMMENDATION:

The WG notes that although scenario 3, which contemplates a longer defined dual illumination period commencing only in 2010 and terminating in 2015, appears to be a preferred option; in the event that the 2010 World Cup requires switch-on to start earlier, the WG is of the view that scenario 2 is the optimal scenario.

6.3 LICENSING AND SURRENDER OF ANALOGUE FREQUENCIES

The WG proposed, for a number of reasons, that digital sound broadcasting and digital television require two distinct policy approaches. In the case of digital television a switchover process is required from analogue to digital transmission networks with a firm switch-off date for the analogue transmissions, in the case of digital sound broadcasting a licensing process can commence where there are frequencies available.

6.3.1 Digital Radio

A key difference between digital television and digital radio is that there is no surrender of frequencies as there is currently no analogue switch-off envisaged for AM/FM frequency bands. The licensing process is thus a new licensing application that can be made by existing broadcasting services or new entrants to the market in terms of the provisions set out under the ECA. The digital radio broadcasting service would manage a bouquet of channel offerings and additional data/interactive services, the adding of any new channels to the service would require authorisation by ICASA. In order to encourage pluralism a percentage of the capacity of the digital transmission network should be reserved for the use of third party broadcasters.

The WG holds the view that ICASA should put in place a licensing regime that encourages analogue radio stations to broadcast as channels on digital transmission networks. In the United Kingdom, national analogue licences are automatically renewed if the licensee broadcasts a programming service on a digital broadcasting transmission network. ICASA should also consider mechanisms to ensure that applicants will behave in a way likely to ensure fair and effective competition in contracting with local radio stations or data services which wish to appear on the bouquet of the terrestrial digital sound broadcasting service.

RECOMMENDATION:

The WG recommends that the licensing of digital radio in Band III and L-Band should be done in a manner which does not derogate from the rights of existing radio frequency spectrum licensees in those bands.

6.3.2 Digital Television

The WG wish to point out that the introduction of DTT is a replacement of the current analogue broadcasting system and will necessitate the switch-off of analogue transmissions following a process of switchover from analogue to digital in the South African market. These digital transmissions can only be received by new digital TV sets

(which have an integrated decoder) or on analogue TV sets equipped with an STB that can convert digital signals to analogue. In order to ensure that FTA television viewers without new digital TV sets or STB are not deprived of existing FTA signals the current analogue and new digital transmission systems will have to be broadcast in tandem for a period of years.

This has two implications; firstly that government should require a period of dual illumination so that existing FTA viewers are not deprived of television during the period of switchover, whilst acknowledging that at some point analogue transmission will have to be switched-off and secondly, that as DTT is a replacement technology and not a new licence category the digital switchover should respect the existing rights of broadcasters operating on a terrestrial platform. Furthermore, there will be an expectation from viewers that they will be able to receive the existing analogue programming of broadcasters when they transition to DTT or alternatively that they can expect to continue to receive existing programming services on the analogue terrestrial platform until switch-off.

In South Africa, the UHF/VHF Bands are close to spectrum saturation, which prompted ICASA to identify in the absence of a national strategy enough frequencies to allow the introduction of DTT. At ITU RRC-06 a plan was developed that allocated frequencies to two national terrestrial digital transmission networks and two metropolitan digital transmission networks. The WG proposes that these frequencies should be assigned to the main national terrestrial broadcasting services for the analogue/digital simulcast of their existing programming services and the introduction of new programming services to drive consumer take-up of digital broadcasting. The remaining frequencies for one metropolitan digital transmission network should be assigned through a public process to a new entrant in order to launch some additional broadcasting/multimedia services, after ICASA has conducted a market feasibility study to determine the impact of licensing a new entrant on the digital switchover process. In Australia, a decision was taken not to licence new entrants until the digital switchover process was completed.

This step would lead to the rapid roll-out of digital broadcasting in South Africa. The existing broadcasters will be incentivised through a voluntary amendment of their licences to keep old installations and the old frequencies for analogue broadcasting in place until the analogue switch-off, while at the same time adding equipment for digital transmission and ensuring that the coverage area of digital transmission equates to that of the legacy analogue transmission. The amendment to the licences of existing broadcasting service licensees can make provision for the surrender of the analogue frequency rights at the time of analogue switch-off. A further financial incentive could be added that terrestrial broadcasters who switch to digital within 36 months of their licence being converted in the conversion process contemplated in the ECA to allow for digital broadcasting will not pay their annual licence fee for the use of terrestrial frequency for a period of six years.⁹⁶

⁹⁶ This financial incentive was adopted in Italy to drive a rapid roll-out of DTT within a period of four years. In South Africa, such a step is in line with section 5(7)(a)(iii) of the ECA which indicates that ICASA must prescribe regulations setting out the licence fees applicable to licences issued in chapter 3 of the Act, taking into consideration any policy directions issued by the Minister.

RECOMMENDATION:

The WG recommends that:

1. Existing broadcasters and broadcasting signal distributors receive preferential treatment by the conversion of their licences and assignment of additional frequencies to allow for the rapid introduction of DTT in South Africa;
2. The Minister issue a policy direction on licence fees for digital broadcasting services aimed at incentivising the broadcasting services to switchover to digital transmission networks, and
3. ICASA through a public process and after an economic impact assessment consider the licensing of the remaining frequencies for one metropolitan digital transmission network to allow for the introduction of new digital services by new entrants to the market.

DISSENTING VIEW:

Sentech, does not agree with recommendation 1 above, according to Sentech a broadcasting service licensee who utilises another entity for the provision of broadcasting signal distribution does not need radio frequency spectrum to be assigned to it. A broadcasting service licensee who self-provides broadcasting signal distribution may provide a broadcasting service utilising any portion of the radio frequency spectrum by first obtaining a radio frequency spectrum licence in terms of the ECA.

Orbicom shares Sentech's view that frequencies should be assigned to the Electronic Communication Network Service licensee instead of the broadcaster in a digital environment. .

(a) *Practical implementation for Television Broadcasting Services*

The existing licensed FTA terrestrial broadcasting services (SABC 1, SABC 2, SABC 3 and etv), the existing terrestrial community television broadcasting service (TBN) and the existing subscription terrestrial broadcasting service (M-Net, which has two programming services M-Net and CSN) have to be migrated from analogue to digital broadcasting transmission networks. This will entail a period of dual illumination followed by the switch-off of analogue television broadcasting and the surrender of the analogue frequencies (the so-called Digital Dividend) held by television broadcasters to ICASA.

An examination of the introduction of DTT in Europe would suggest that the incumbent broadcasters would require as an incentive to migrate a significant stake in DTT. It is proposed that as in Italy the existing broadcasting services be offered the option of having their licences amended to allow for digital broadcasting and that they are assigned sufficient frequencies as reflected in the National Frequency Plan to establish at least a single digital transmission network for multi-channel digital broadcasting. This would mean that the existing licences will have to be amended to make provision for the surrender of existing analogue frequency rights when analogue transmission cease and the inclusion of the frequencies required for a national or metro-level digital broadcasting transmission network. This step would be in the favour of the state as multiple channels can be broadcast on a single frequency as opposed to the analogue situation of a channel per frequency, meaning that the surrender of analogue frequency rights will result in a digital dividend for the state upon switch-off of analogue transmission. This option is the

most feasible for a smooth transition to digital broadcasting as it deals with the issue of broadcaster's existing rights being deprived in the move to DTT.

A problem that arises of course is that there are five national television broadcasting service licensees and a community television broadcasting service licensee in South Africa. This is a challenge as the current frequency plan, as mapped out at the ITU RRC-06 for introducing digital broadcasting, only envisages sufficient frequencies to allow for two national digital broadcasting transmission networks and two metropolitan digital broadcasting transmission networks (each comprises four metropolitan areas in South Africa). The ITU-RRC-06 plan was a result of the fact that currently there is a scarcity of frequency spectrum in the UHF/VHF Bands and there was only sufficient frequency spectrum to accommodate two national and two metropolitan digital transmission networks until switch-off of analogue broadcasting transmissions. The original requirement submitted by industry to the DoC, when the South African submission to the ITU was being developed, was that the future requirement was likely to be sufficient frequencies to accommodate ten digital broadcasting transmission networks (a mix of national, regional and local level broadcasting services).

➤ **Core Principle for Broadcasting Services in switchover**

There appears to be agreement in the WG, with the exception of Sentech and Orbicom, that there be a principle put in place that each licensed broadcasting service should receive, when surrendering analogue frequencies, sufficient frequencies to roll-out a digital transmission network that is similar in coverage to the analogue transmission network of the broadcasting service. There is also agreement in the WG that the current frequency plan is meant to be for the switchover phase only and that post-switchover, in an all digital plan, any licensed broadcasting services that have been constrained through frequency availability to share a digital transmission network with another licensed broadcasting service during the switchover phase will be able to roll-out their own digital transmission network if they wish to do so in line with principle articulated above.

➤ **Awarding of frequencies in switchover phase**

Based on RRC-06 digital plan, there appears to be common consensus, amongst the WG that there are two options for implementation once the principle articulated above has been accepted.

In **Option 1**, the frequencies for one national digital broadcasting transmission network should be awarded to the public service channels of the public service broadcaster (SABC) and the frequencies for the second national digital broadcasting transmission network, as an interim solution until switch-off, could be identified for use by commercial broadcasting services and it could potentially carry SABC 3, etv and M-Net. These broadcasters would then have to form an association for the operation of the network and select a broadcasting signal distributor. There would also have to be some planning to accommodate TBN perhaps by means of interleaving in the Eastern Cape. This interim solution would mean that after switch-off the SABC, etv, TBN and M-Net would have to receive frequencies to roll-out individual digital transmission networks similar to the analogue coverage enjoyed under their broadcasting service licences prior to the digital switchover process commencing.

In **Option 2**, the frequencies for the one planned (RRC-06) national digital broadcasting transmission network are assigned to the public service channels of the public service broadcaster (SABC) and that the SABC be allowed to use the existing frequencies assigned in the analogue plan for SABC 4 and SABC 5 to roll-out a third national digital broadcasting transmission network to be used by its Commercial Division. This would then enable etv to be assigned the frequencies for the second planned (RRC-06) digital broadcasting transmission network. Under this scenario, M-Net could be assigned planned (RRC-06) frequencies to establish metropolitan digital transmission networks and provide a hybrid (DTT/DTH) subscription broadcasting service to its subscribers. This would have cost implications for M-Net as they may have to subsidise the difference between the DTT and DTH consumer premise equipment for their existing subscribers in rural areas when migrating their subscriber base to DTT/DTH.

The benefit of this second option is that it would lead to there being enough frequencies to create three national digital broadcasting transmission networks in the switchover phase instead of only the two that have been planned for thus far. It would also mean that etv and M-Net would be able to switchover from their existing analogue frequency rights to frequencies enabling roll-out of digital broadcasting transmission networks similar to the current analogue coverage enjoyed by the broadcasting service licensees. The SABC would still need frequencies for at least one more digital broadcasting transmission network post switch-off in order to retain the rights currently accorded to it by being the holder of three broadcasting service licences. TBN of course will still need to be accommodated by means of interleaving during the switchover phase in the Eastern Cape and post switchover may have to be accorded frequencies to roll-out a digital transmission network. It would make sense in order to drive STB take-up in the Eastern Cape, to in a digital environment, extend the coverage of TBN to cover the whole province.

➤ **Addressing Pluralism Concerns**

There is of course the need to balance the rights of existing broadcasters against the need for pluralism/fair access to spectrum and this could be achieved in the switchover-over phase, as approached in Italy, by setting in place a requirement that a certain percentage of the channels on the commercial digital broadcasting transmission networks be set aside for third-party channels (i.e. not channels of the licensed broadcasting service). In the case of digital terrestrial subscription broadcasting ICASA has already stated in the Subscription Broadcasting Position Paper that a channel must be reserved for public access television.⁹⁷

97 Id, p.75

RECOMMENDATION:

The WG therefore makes the following recommendations, namely that:

1. ICASA during conversion or at a later date amend the broadcasting service licences of existing television licensees to make provision for the surrender of existing analogue frequency spectrum rights upon analogue switch-off and to assign frequencies that will allow each existing licensee to broadcast on a digital transmission network in accordance with a national strategy for digital switchover and the national frequency spectrum plan;
2. a principle be put in place that each licensed broadcasting service should receive, when surrendering analogue frequencies, sufficient frequencies to roll-out a digital transmission network that is similar in coverage to the analogue transmission network of the licensed broadcasting service; and
3. If the principle articulate in recommendation 2 above cannot be accommodated in the switchover phase it must be done so at switch-off and the introduction of the all digital plan for broadcasting in South Africa.
4. a portion of the capacity of the commercial digital broadcasting transmission network be set aside for 3rd party channel usage including (a) Government Information and Data Services and (b) regional and/or community TV.

DISSENTING VIEW

Sentech has placed on record its dissenting view to similar recommendations in this report, namely that in the migration process from analogue to digital broadcasting, frequencies must not be assigned to broadcasters. The two national network of frequencies submitted to the ITU during the RRC-06 should both be assigned to the electronic communications network service licensee, in particular Sentech.

Orbicom shares the Sentech dissenting view that frequencies should be assigned to the Electronic Communication Network Service licensee instead of the broadcaster in a digital environment. Orbicom has no objection to the frequencies assigned at RRC-06 for the purposes of creating two national digital transmission networks being assigned to Sentech on a preferential basis, so long as it does not include the frequencies for digital broadcasting transmissions already undertaken by Orbicom and the frequencies for the metropolitan digital transmission network which it has been proposed will carry the M-Net broadcasting service.

(b) Radio Frequency Spectrum

The ECA defines radio frequency plan as:

“radio frequency plan” means a national plan that includes, but is not limited to:

(a) a table of frequency allocations for all bands below 3000 GHz taking into account the ITU table of allotments, in so far as such allotments have been

adopted and agreed upon by the Republic, which may include designations of certain utilisations; and
(b) a plan, as applicable, for the migration of systems and equipment of existing users within specific radio frequency bands, including radio frequency bands for security services, to different frequency bands;”

This definition poses a number of difficulties. In spectrum management, the terms allocation, allotment and assignment have very specific meanings that are defined in the ITU Radio Regulations. No 1.16 of the ITU Radio Regulations defines allocation as follows:

“allocation (of a frequency band): Entry in the Table of Frequency Allocations of a given frequency band for the purpose of its use by one or more terrestrial or space radiocommunication services or the radio astronomy service under specified conditions.

This term shall also be applied to the frequency band concerned.”

Allotment is defined in No 1.17 of the ITU Radio Regulations as:

“1.17 allotment (of a radio frequency or radio frequency channel): Entry of a designated frequency channel in an agreed plan, adopted by a competent conference, for use by one or more administrations for a terrestrial or space radiocommunication service in one or more identified countries or geographical areas and under specified conditions.”

No 1.18 of the ITU Radio Regulations defines assignment as:

“assignment (of a radio frequency or radio frequency channel): Authorization given by an administration for a radio station to use a radio frequency or radio frequency channel under specified conditions.”

Subsection (a) of the definition makes reference to the “ITU table of allotments”. The ITU does not publish a table of allotments, but a **table of allocations** (own emphasis), which is contained in Article 5 of the Radio Regulations. As a consequence, paragraph (a) in the definition of a “radio frequency plan” is rendered meaningless as there is no Table of Allotments, there is only a Table of Allocations. This error should be corrected in any future amendments made to the ECA.

Section 34 of the ECA deals with the radio frequency plan in detail. S 34(2) states that the frequency plan must set out the specific frequency bands designated for use by particular types of services. This therefore implies that the national frequency plan is an allocation plan. Similarly, S 34(6)(a) states that the national radio frequency plan must designate the radio frequency bands to be used for particular types of services. Section 34 makes no mention at all of a broadcast frequency assignment plan which ICASA was empowered to develop in terms of the now repealed IBA Act. This may mean that there is now no longer a legislative requirement for ICASA to publish a frequency assignment plan. It is acknowledged that this is probably an implicit power of ICASA to publish such a plan as and when it deems fit. It is recommended that the ECA be amended to include this requirement that previously existed in the IBA Act.

The perceived need for ICASA to develop a frequency assignment plan should not hold up the process of digital broadcasting switchover. The digital broadcasting frequency plan developed by the ITU at RRC-06, and contained in the Final Acts of GE-06 is an assignment plan in respect of digital television broadcasting, and an allotment plan for digital sound broadcasting. In the absence of a national television broadcasting frequency assignment plan, any assignments for digital television during the switch-over phase, and thereafter can be made in accordance with the provisions of the ITU GE-06 Plan until such a time as clarity is obtained on frequency planning in South Africa.

RECOMMENDATION:

The WG recommends that as the ITU RRC-06 adopted a frequency assignment plan for digital television broadcasting and an associated allotment plan for sound broadcasting in Band III, the assignments in these plans must be used for the implementation of digital broadcasting during the digital switchover process and after analogue switch-off.

See Figure 16 for a diagram reflecting the understanding of the WG on the practical implementation of digital switchover in terms of the ECA.