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Independent Communications Authority of South Africa
Block D Pinmill Farm
164 Katherine Street
Sandton

4 June 2018

By email: ndana@icasa.org.za

Attention: Mr Ndumiso Dana,

Dear Mr Dana,

INVITATION TO PROVIDE WRITTEN REPRESENTATIONS ON THE DISCUSSION DOCUMENT ON DIGITAL SOUND BROADCASTING (DSB)

- 1 On the 29th March 2018, the Independent Communications Authority of South Africa (ICASA) published in the government gazette number 41534 an invitation for the public to make written representations on the Discussion Document on Digital Sound Broadcasting (DSB). Interested parties are given 45 working days from the date of publication of this notice in the Government Gazette to make written representations.
- 2 This submission is made by ClassicFM one of the original Greenfield stations licenced in 1997 to provide a classical music radio format in its licenced area of Johannesburg and environs. It was the only application to receive a unanimous approval by the full Council of the then IBA to be awarded a commercial broadcast licence.
- 3 ClassicFM welcomes the opportunity to make a submission on the discussion document on Digital Sound Broadcasting.
- 4 ClassicFM is prepared to participate in any oral hearings/presentations of the Authority regarding the discussion document.



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Background and Context

- 5 ClassicFM which commenced broadcasting in South Africa as Classic FM was first introduced to terrestrial Digital Sound Broadcasting as far back as 1999 through its 20% owned foreign shareholder Classic FM UK plc. Classic FM UK plc had started broadcasting nationwide using the 1st generation DAB standard across the UK. Interest in DAB in SA started with Sentech commencing a low power DAB transmission at its Helderkruijn site in 1997. These first transmissions consisted of a continuous loop CD. After a higher power trial licence being granted the transmission at Helderkruijn was closed and moved to the Sentech Tower in Brixton. Initially two transmissions were put on air. A VHF one on channel 13F 239.200MHz and a L Band frequency. These transmitters were 250 watts with limited coverage. The signal on the VHF transmission could be heard quiet easily on a 20km radius but the L Band transmission was very limited. Actual broadcast services were added to this early mux with consisted of PBS and commercial radio services. After constant transmitter failures with the original equipment the VHF transmitter was replaced with a Hirschman 1kW plant. The L Band transmission was eventually closed. ClassicFM was among the first of 8 stations to participate on this trial and did so for the 9 years it ran before it was eventually closed. Enthusiasm in the 1st generation DAB was limited as broadcasters were aware that a new audio codec which would change the dynamics of DAB was on the cards and it was pointless in continuing with technology that was destined to be replaced. The original DAB standard used the less efficient MPEG 1 layer 2 audio codec (Musicam) and uses punctured convolutional coding for its ECC. (error correction). The main disadvantage of this type of error correction is that when the signal becomes weak listeners will experience a burbling effect or as its affectionally known as “bubble and squeak”. The new DAB+ standard uses Reed Solomon ECC which is far stronger than the 1st generation DAB. The DAB+ system an upgraded version of the DAB system was adopted in February 2007. This system uses the more efficient HE-AAC v2 audio codec. This was the catalyst that changed how



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DAB+ was to become the choice for many broadcasters mainly in Europe in moving to terrestrial Digital Sound Broadcasting. The adoption of DAB+ in Australia in 2009 and its subsequent adoption by broadcasters and the public acceptance encouraged broadcasters in South Africa to start taking notice. In 2012 a joint SADIBA/NAB Digital Radio DAB+ Trial Work Group was established to bring the 3 sectors of broadcasting together and carry out a DAB+ trial in Gauteng. The trial was open to members of SADIBA and the NAB. Currently 77 members participate in the work group. Sentech SOC was chosen as the signal distributor for this project. The SABC successfully applied for a Trial licence on behalf of the SADIBA/NAB broadcasters. A Rules of Operation document for the trial was compiled and signed by all participants. The purpose of the trial was to test and evaluate DAB+ technology against the following criteria: -

- End to end technical functionality (studio to receiver)
- Extent of portable mobile coverage (moving vehicle)
- Signal permeability – building penetration
- Effects of vehicle penetration loss
- Interference and clutter on coverage (high rise buildings)
- Demonstrate value added services, Dynamic Label System (DLS) and Slideshow
- Field testing typical professional and consumer equipment
- Testing Audio quality at different data bit rates

ClassicFM has participated in DAB+ trial in all its phases and with this valuable experience wishes to participate in this very important process in moving terrestrial radio into the digital domain. It also understands that this is not seen as a migration from analogue to digital as in the case of Digital Terrestrial TV but the introduction of an additional technology to enhance and future proof radio.



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Question 1

Is there a need for the introduction of DSB technologies in South Africa? Motivate your answer?

Digital sound broadcasting technologies are already used in South Africa, either via satellite broadcasting services or via IP. These services are only available in homes where there is satellite receiving equipment and generally not very portable. Listeners are on the move via various means be it by train, taxi or by car. The traffic congestion in South Africa's metropolises contributes to high radio listening in cars. The importance of morning and afternoon drive shows highlights the importance to broadcasters of this audience. Broadcasters must be able to deliver their programmes and listeners must be able to easily receive a full range of programmes especially during these peak driving times. This can be achieved by terrestrial digital radio. Terrestrial broadcast radio is the only media that hasn't completed the move to the digital domain and for radio to remain relevant it needs to. Today in the connected world the opportunity exists for users to gain access to excessive quantities of information and entertainment. Listeners want the content they want, when they want it and where they want it. This has become extremely difficult for broadcasters to deliver on traditional analogue radio. FM spectrum congestion in the three major metropolises in South Africa makes it impossible for either existing broadcasters to improve their signal with the addition of gap fillers or extend their reach and for new entrants to enter the market and are therefore prejudiced. If we use the following example with reference to the 3 original greenfield licenced stations, none of them in approx. 21 years of operation have been able to secure good coverage in and around their existing licence areas with the use of gap fillers nor have they been able to apply to extend their coverage to Pretoria and environs where they all have a poor signal but have developed a sizeable audience due to the content offered. ClassicFM has a niche audience that doesn't just live in Johannesburg and environs and these listeners will go to many lengths to receive a usable signal at home. There are no high power or low power interference free FM frequencies available and so broadcasters cannot expand their reach and growth. It's the desire of the community for more and diverse radio services as well as being able



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to listen to their station of choice that clearly provides a major driver towards digital radio especially DAB+. With its spectral efficiency and lower operating cost, it makes an ideal choice.

QUESTION 2

Do you think the list of technical standards to which the DSB equipment must conform are exhaustive? Motivate your response and suggest other equipment technical standards?

Section 3.2 of the discussion document provides an overview of currently legislated standards to which digital broadcast transmissions should comply. These are:

EMC standards:

- SANS 301 489-11, which is equivalent to ETSI TS 301 489-11 which applies to AM, FM, T-DAB and DRM30 transmissions
- SANS 213, which is equivalent to CISPR 13. This standard applies to EMC of multimedia equipment. It was withdrawn on 5th of March 2017 and replaced with CISPR 32

Technical standards:

- SANS 62104:2003 (IEC 62104) – Characteristics of DAB receivers;
This standard was updated in 2015 to IEC 62104:2015
- SANS 62105:1999 (IEC 62105) – Digital audio broadcast system –Specification of the receiver data interface (RDI);
This standard is current
- SANS 300 401:2005 (ETSI EN 300 401) – Radio Broadcasting Systems; Digital Audio Broadcasting (DAB) to mobile, portable and fixed receivers
This standard was updated in 2017 to ETSI EN 300 401 v2.1.1 (2017-01)

With reference to these standards many of these have been updated and it is suggested that the SANS standards be updated and referenced accordingly. It is also suggested that the following ETSI standards be added:



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- **For DAB+**

TS 101 756 v2.2.1 (2017-08): DAB Registered tables

This covers important codes and identifiers to ensure correct operation in both in-country and international operation for terrestrial broadcasting and hybrid radio operation

TS 102 563 v1.2.1 (2010-05): Transport of Advanced Audio Coding (AAC) audio

- **For DRM**

ES 201 980 v4.1.2 (2017-04): Digital Radio Mondiale (DRM); System specification

This is the DRM core standard

- **For DAB+ and DRM30/DRM+**

TS 101 499 v3.1.1 (2015-01): Hybrid Digital Radio (DAB, DRM, RadioDNS); Slide Show; User Application Specification

- This covers MOT slideshow and hybrid delivery

TS 102 818 v3.1.1 (2015-01): Hybrid Digital Radio (DAB, DRM, RadioDNS); XML Specification for Service and Programme Information (SPI)

- This covers service and programme information delivery by broadcast and IP mechanisms

Question 3

In the absence of a policy directive for providing standards for DSB, should the Authority provide licences for other DSB technologies? Please motivate your answer

South Africa has standards for the operation of DAB+ and DRM. Numerous trials using these two standards have been done or are on-going.

DAB+ and DRM were designed for specific purposes:



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- DAB/DAB+: low, medium to high density areas which use / require many services,
- These are typically 9 (DAB 1st generation) and up to 24 services DAB +
- DRM30: wide area service with only 1 or 2 services.

DAB and DRM standards cover the full range of operating environments. ClassicFM considers the introduction of further DSB technologies as unnecessary and potentially destabilising. The addition of further standards will confuse the broadcast and supporting industries and slow the introduction of digital radio in South Africa.

The two trialled standards not only provide state of the art terrestrial DSB technology but have been designed to complement each other.

Question 4

South Africa through its international agreements at ITU and SADC level agreed on DAB+ and DRM systems. Please indicate which other digital sound broadcasting technology(ies) if any should be considered for South Africa? Please motivate.

Further to the comments in Question 3, ClassicFM recommends that no further DSB technologies should be considered for South Africa. The other optional DSB standards are discussed below:

DRM+:

DRM+ is less cost effective than DAB+ in medium to high density areas but is suitable for low power community (e.g. a few channels) and isolated area local coverage. When used in the FM band (VHF Band II) care must be taken with co-channel and adjacent channel interference with existing analogue FM services. This will limit the availability of channels in most channel limited areas as well as the coverage that can be obtained.

In-band cross modulation can occur in analogue FM receivers as well as adjacent band above 108MHz OFDM interferences into aeronautical radio navigation



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devices. DRM+ will be well suited for the FM band when analogue FM frequencies have been switched off. There are currently no commercial DRM+ receivers available.

HD Radio:

HD Radio (IBOC) needs to operate in the already crowded FM band

Receivers are more expensive than DAB+ typically being over \$60USD but prices are coming down

No economies of scale for additional content until the analogue is switched off

IBOC won't work in Region 1 as it does not fit in the 100khz frequency band plans

Region 2 (the Americas use 200khz FM Channels and HD radio needs 400khz to work correctly.

HD Radio is only being deployed in North America with focus on FM due to issues experienced with AM (Medium Wave) operation.

ISDB-T:

No receivers

Development initially focused on smartphones and car receivers. There has been no evidence of home receivers or integrated car receivers

Even though South America has indicated that they will adopt this standard there has been little/no progress

ISDB-T radio although invented in Japan is not used there.

South Africa has significant cross border traffic and people movement between SADC member countries, mainly by car. It will be very valuable to have common terrestrial DSB standards to allow radio receivers, both car and portable to operate in those countries.



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Question 5

To use the spectrum efficiently, the digital sound broadcasting network can be planned on a Single Frequency Network. Do you think that it would be applicable for purposes of digital sound broadcasting? Please Motivate

Yes, Single Frequency Network (SFN) operation is essential for spectrum efficiency and robust transmission network area coverage. It allows for repeaters / gap fillers to operate in poor reception areas on the same frequency without the need for alternative frequencies as would be required for FM. SFNs can also be used to provide wide area coverage however care is needed in the design of the transmission network to ensure appropriate transmitter power, antenna site spacing and timing synchronisation to avoid self-interference.

DAB+ networks are designed using a combination of Multi-Frequency Networks (MFN) and Single Frequency Networks. Often the SFNs are in specific areas of a MFN to ensure suitable area and population coverage.

MFNs are necessary when coverage areas carry different content, In South Africa the Draft Frequency Plan 2013 provided for two multiplexes per province throughout the country. While this looks ideal for DAB+ there are some frequencies in the plan that are used in adjacent provinces i.e. the Eastern Cape and the Free State. Existing Sentech high sites give overlapping coverage and it is highly unlikely that these would carry the same programming, hence the need for MFNs. It is anticipated that the SABC would use one mux and the other could be reserved for Commercial and Community services.

It has been observed that where DAB+ has been introduced the number of digital services has increased far above the current existing analogue. This is due the ease at which dynamic bit rate allocation can be implemented within a typical mux and more services can be introduced. Johannesburg / Pretoria, Cape Town and Durban have high populations compared to the rest of the country with Gauteng having approx. 21% of the total population of South Africa. The allocation of 2 multiplexes in these areas will not be sufficient when planning for the next 40 years or so. This will require the frequency allotment process to be revisited to determine whether a total of 8 frequency



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blocks is sufficient to provide the required number of multiplexes and whether an additional VHF Band III television channel should be allocated to DAB+.

Question 6

6.1 Should the Authority consider one or more mux operator(s) for DSB? Please motivate.

Yes. There are many ways to provide multiplex and transmission services. All countries are slightly different but use a mixture of the basic separation of services and ownership models, each of which has its own advantages and disadvantages. A basic description of the models are: -

a. **Network operator** i.e. Sentech as the Common Carrier provides multiplex and transmission services:

- The network operator does not generate any content.
- Charges the broadcasters a fee for capacity on each multiplex that they have services.

b. **Broadcasters own and operate** the multiplex and transmission system

- When more than one broadcaster has services on a multiplex the multiplexer and transmission systems can be owned by a Joint Venture Company (JVC) which in turn is owned by the broadcasters.
- The JVC may sub-contract some transmission services to network operators, e.g. for access to the antenna tower on a high site.
- The JVC would have to either build their own sites a costly exercise and could be deprived of access to high sites owned by the network operator unless they sub-contract as in b..



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c. Mixed model where the broadcasters own and operate the multiplex system and contract transmission services.

Commercial broadcasters are more likely to use an owner/operator approach where possible. However, the decision is usually dependent on the initial Capex required to set up the transmission network versus the long term financial gain of self-ownership and operation and easy access to high sites.

ClassicFM recommends that commercial broadcasters be allowed to select their model of choice.

6.2 Would you propose a total switch – off of the traditional analogue AM and FM sound broadcasting? Please motivate.

No, it is not envisaged that traditional analogue AM and FM broadcasters should switch off at this time. We view the introduction of terrestrial DSB services as an added delivery medium, but it will become an unnecessary expense in time with possibly the SABC and commercial broadcasters being the first wanting to close their analogue services due to the costs of dual illumination. The savings by both these sectors will be massive. The cost to deliver a DAB+ service is approximately one tenth of analogue FM. Broadcasters do not achieve the full benefits of going digital if they do not switch off their analogue services over time. The position with AM broadcasters wishing to switch to DRM30 may prove more difficult due to prohibitive costs to establish new infrastructure to run dual illumination. MW sites are expensive to establish, and it would be very cost effective for them to switch to digital immediately. This of course would be very dependent on receiver take up in the market. They generally use the same frequency for analogue as digital and would need to possibly run in simultaneous operation using the adjacent frequency to widen their bandwidth to 18khz. Although this was done in India, this might be a challenge in Region



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1 with 9khz channel spacing and would possibly require extensive modifications to existing antenna/ combiner infrastructure.

It can also be argued that switching off analogue services will help promote the switch to digital and encourage the take up of new digital radio capable receivers. It is essential that a national policy of when analogue switch off should take place be proposed. There are numerous examples of countries that have introduced DSB and when they intend to cease their analogue transmissions. We don't see this being short term in South Africa but a switch off date should be proposed to encourage digital radio take up.

Question 7

Should the Authority adopt the strategy used in other international markets of licensing DSB services in the primary markets first and then a nationwide rollout? Pls motivate.

Rolling out and new DSB network is a major undertaking and will need to be done in a phased approach. This was done in South Africa with the roll out of the original analogue FM network. It took years as in all cases it required new transmitter facilities to be established at high sites that would provide good coverage of services throughout the country. This was done in terms of the FM plan for region 1 starting way back in the 1960's. While this was done trying to achieve the best coverage, it was not always achieved, and numerous FM gap filler sites were eventually established to achieve better coverage. Most of these sites were used again with the introduction of analogue TV in 1976. A major advantage for the introduction of DAB+ is, that DAB+ uses the same VHF antenna systems that analogue VHF TV currently uses, and this could be reused at a large number of sites reducing installation costs. As some sites use horizontal polarisation it may be necessary to have these antenna systems changed to vertical in due course. The SA DAB+ trial has carried out tests whether one can use horizontal polarisation and whether the changes are in fact needed. The current channel 13F could be used in 7 metropolises



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immediately without analogue TV switch off. Although Channel 13F is not earmarked for DAB+ in South Africa it is in fact a valid DAB+ frequency and could be used during the analogue TV to digital migration. All DAB+ receivers can tune to channel 13F and it's a fairly simple process to initiate a retune to the new frequencies when they become available without user intervention. A retune can be initiated via the mux. ClassicFM recommends that DAB+ be rolled out in the primary markets first, followed by a phased approach to the secondary markets leading to an eventual country wide rollout.

The roll out in primary markets provides several benefits. It will drive the take-up of the sale of receivers which will benefit all in the radio ecosystem. It maximises the take up and broadcasters should be able to get a return on their investment in a shorter period. The SABC has a mandate to provide all its services to every corner of the country and DAB+ will allow it for the first time to be able to broadcast all its services nationally terrestrially. Gone are the days when its language services are regionally based. South Africans live and work in all corners of the country and they should be able to listen to at least one radio station in their mother tongue which is achievable via DAB+.

Question 8

Can the current sound broadcasting market afford new DSB licensees in community, commercial and public service? In your answer, explain your reasons and/or choice for any of your submission.

Existing Radio Broadcasters are currently under threat by IP audio services e.g. Apple Music, Spotify, Google Music and even Voox in South Africa, plus a host of other local unregulated IP audio services. These are all eating into radios listening share. Listeners can listen to international news broadcasts and many are turning to specialist music streaming services which will be impacting on local radio services. DAB+ offers additional capacity and services which can be



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used to reduce this trend and ensure a healthier local broadcast industry by offering additional services to compete.

The ability of DAB+ to offer more services in an area than can be achieved using traditional analogue means makes it an obvious choice to deliver more public, commercial and community radio services. The broadcasters who are already established are best placed to provide the initial simulcast services and to develop new digital only services. Public service broadcasters reap a benefit from the introduction of additional services through being able to offer the public that they serve with more content types and higher quality content.

Commercial and community broadcasters will need to justify the cost of establishing DAB+ and providing additional services, which can be very challenging in a market place due to increased competition from international sources. Internationally it has been found that a package of incentives is sometimes offered to ensure that the existing broadcasters participate. Some of these incentives are as follows:

- a. Free spectrum with no licence fees at least until analogue services are switched off. There may also need to be some agreement as to what the licence fees will be when that happens in the distant future.
- b. No new entrant broadcasters for a specified period, this is to protect the incumbent broadcaster's business while they invest in DAB+ and build the market. In Australia this was set at 6 years before any new incumbent would be considered. In South Africa we would propose that commercial radio be protected for a period but there is also a need for ultra-niche services e.g. services for the visually impaired. Educational services (School on the Air) and existing AM services wishing to switch to DAB+ be given the opportunity to enjoy the benefits of DAB+ without having to



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wait a protection period. It is vital that some additional services are provided to encourage the take up by listeners of the new medium.

- c. An amount of multiplex capacity be allocated to existing AM or FM services. Australia for example allocated 128kbps per broadcaster and were told use it or lose it. This encourage existing broadcasters in most cases to split the 128kbps into two 64kbps channels and most started additional stations within their brand. This provided listeners with more content to encourage the take up of DAB+.
- d. Financial assistance to help establish equipment, facilities and talent. This often occurs for community broadcasters, e.g. in South Africa via the MDDA.
- e. Commitment from government to legislate support in the form of requiring all radio receivers which are either locally manufactured or imported to have at least the capability of receiving one of the two adopted digital standards from a specific date. This includes car receivers. This legislative support is usually easier where a country has adopted one digital terrestrial broadcast standard. In South Africa where it is highly likely that both DAB+ and DRM will be adopted this may present an issue with regards to DRM30 technology being readily available in receivers as currently most international manufactures only cater for DAB+ and FM. This should not be used to delay the introduction of both technologies as even with DRM receivers most do not cater for DAB+. To force all radios to cater for both technologies although an ideal (the multi standard radio) it may not be economically practical as increasing manufacturing costs could make receivers prohibitively expensive and not all listeners may want the capability of tuning to both standards. Their requirement will depend on what content is offered on which. If we look at analogue FM receivers not all have AM or shortwave and various combinations have always been offered although the most



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common combination was FM/AM. Listeners don't usually ask for AM only. The choice of receiver must be left to the consumer. Ideally if such an announcement is proposed it should come before the switch on of the first permanent services, Importers and manufacturers need to time to prepare. This could be two years or more.



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ANNEXURE A: Additional Questions

4 June 2018

For Consumers

1. What is your understanding and expectations of digital sound broadcasting?

As a consumer I believe digital radio especially DAB+ will bring several great improvements to the radio listening experience.

1. Consumers want choice, more choice. Why do people sign up for foreign music IP based music services? It is because they offer more choice. Digital Radio has the ability to offer more choice and it's still free to air. Our mobile operators will provide data to enable audio streaming, but it will never be free. Costs may come down but due to the large investments in infrastructure it will still attract some costs. Data is a cash cow for mobile operators and ISPs. Radio is traditionally free to air.
2. Interference free, CD quality reception. Mobile multipath reception especially in cities and built up areas will be a thing of the past. FM was a major improvement to Medium Wave but it's not perfect and suffers from transmission artefacts which will be 98% eliminated.
3. Has the ability to offer in addition to traditional radio, data services which can be used by a station to offer better communication and interaction with its listeners.
4. A greater listening experience.
5. Ease of tuning



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6. The SABC will for the first time in its history be able to provide all its services nationally via a terrestrial network to all corners of the country cheaper than it currently does with its existing network.
7. Will make it easy for niche broadcasters to obtain a national footprint. Currently only PBS services have access to national terrestrial coverage.

2. What impact do you think DSB will have on your experience of radio?

Besides the convenience of ease of use of the technology my listening habits of listening to radio will change. Should there be more choice will have a direct bearing on this.

3. What concerns do you have regarding the implementation of DSB?

Receiver costs were one of my first concerns, but my own research on the availability and choice of receivers worldwide is no longer a concern. Receiver prices are dropping almost daily as more become available in the international marketplace. DSB receiver availability in South Africa is currently almost non-existent in retail stores. This is understandable as no commercial launch of DSB has taken place and retailers will not bring in receivers they cannot sell. Having said that there are some receivers in stores. They are DAB/ FM receivers that are offered. Obviously, the focus is on the analogue FM part and other features i.e. Bluetooth connectivity so there are sales and there are receivers out in the marketplace. In the motor industry however, many new imported models of cars have OEM DAB+/ FM receivers already built in.



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4. Do you believe that the cost associated with acquiring DSB devices is worth it considering that you already utilize analogue radio?

A BIG YES. When acquiring DSB devices with a few exceptions most offer more than just an FM/DAB+ radio. It is common practise to offer Bluetooth connectivity on even the smallest of receivers. This gives the user more features. The receiver will do FM/DAB+ but now you can stream your music collection or on-line streaming from your mobile phone, pc or tablet through the loudspeaker or headphones of the DSB device. The DSB device suddenly becomes a digital hub capable of playing a multitude of audio services. The more expensive receivers will also offer wi-fi streaming and in some cases iPhone connectivity. All DAB+ receivers offer DLS and can display text providing not only track titles but news, sports, business, weather bulletins.

5. What are your expectations from broadcasters and manufacturers?

I would like to see broadcasters take up the technology especially DAB+. I would like them to utilise the full data capabilities of the technology for the benefit of their listeners. By doing this they will not only be embracing digital radio by keeping it relevant in the modern world but will offer their content on a medium that will provide easier tuning, interference free, eliminate multipath reception and provide listeners with a high-quality listening experience.

For manufactures they must provide a variety of receivers ranging from basic entry level to top of the range bristling with features that meet the required international receiver manufacturing standards of DSB at competitive prices.



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6. Do you have any suggestions to provide to the Authority with respect to the implementation and regulation of DSB?

I would like to encourage the Authority to implement the introduction of DSB services into South Africa asap using channel 13F in the areas where it can co-exist with analogue TV (currently 7 metropolises have been identified) before the completion of analogue TV switch off. After the analogue tv switch off process has been completed then switch seamlessly to the proposed DAB+ channels which will become freed up. The introduction of DSB must **NOT** be dependent on Analogue TV switch off. It's not fair for the radio broadcasting industry to be linked to the DTT migration process. The introduction of DSB should start with the major metropolises and the Authority should encourage the roll out leading to eventual nationwide coverage over time. It is necessary to offer some form of protection to existing broadcasters. To encourage them to dual illuminate incentives must be offered. New niche services like radio for the visually impaired and education (school on the air) should be encouraged and MW broadcasters should be given the opportunity to go DAB+ as the advantages of the technology will help those broadcasters give better quality audio, static and interference free reception and by doing so will offer stability to their businesses. MW listening is becoming really outdated and manufacturers are in many cases omitting MW capability. To build a receiver with DSB capabilities with analogue FM and add MW requires serious screening to eliminate digital interference from affecting the MW section of the receiver. This increases the input costs to manufacture which will make the receiver expensive for the consumer and is considered not worthwhile. Static interference and summer thunderstorms do not encourage listeners to stay with a station that crackles during its broadcast and MW broadcasters are extremely disadvantaged.



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7. Please provide the Authority with any further information you deem necessary and asked herein.
8. Will you be willing to trade your traditional analogue radio receiver for a digital radio? Motivate your answer.

YES, no doubt I have been fortunate and had the opportunity to listen to DAB+ broadcasts of the South African DAB+ trial both on a portable and in a car travelling from Johannesburg to Pretoria and it's amazing. My observation was that once experienced in a car I did not want to go back to listening to FM stereo broadcasts. Mobile reception, free of multipath is truly amazing.

For Broadcasters

1. What is your understanding, expectations and concerns as broadcasters with respect to DSB?

The first concern is can broadcasters afford it. Will government be able to subsidise or offer other incentives i.e. free spectrum, a licence fee rebate to broadcasters for a certain period. How do broadcasters encourage other broadcasters to participate? It has been shown that the more participants the lower overall cost per broadcaster. Do we set up an organisation of broadcasters /signal distributors mux operators to promote and market DSB to encourage take-up by the consumer?

2. How will DSB impact your sound broadcasting services business?

There will be a cost impact. There could be listenership increases especially if niche broadcasters are able to expand their existing coverage. If incentives allow



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a station to start another service this will have cost implications regarding setup etc. International experience has shown that broadcasters who are offered this incentive jump at it. There will also be a need for a coordinated marketing plan to inform the radio industry and listeners of the introduction of DSB and encourage the take up. This will increase costs, but these will be recovered over time.

3. What are the projected financial implications associated with DSB, considering that Digital Terrestrial Television (DTT) is to be implemented prior to DSB?

This is not an easy one to answer. It is not necessary to wait for Analogue TV switch off as channel 13F has been identified for use in 7 metropolises prior to the introduction of DTT. The DTT switch over is critical to full implementation of DSB but as it would be a phased approach DSB could exist in the major metropolises while DTT is being switched off. Again, it is not fair for radio to wait for a total DSB switch off. The biggest population centres should have coordinated installation and switch on to maximise receiver sales and minimise costs. Ongoing deployment will also minimise receiver costs by creating confidence in the retail and auto manufacturing sectors

4. What issues of concern should the Authority be wary of when implementing and planning for the regulation of DSB, with respect to competition, spectrum concerns, financial considerations etc.;

Broadcasters will need to justify the cost of establishing DAB+ and providing additional services, which can be very challenging in a market place due to increased competition from international sources. Internationally it has been found that a package of incentives is sometimes offered to ensure that the existing broadcasters participate. Some of these incentives are as follows:



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- a) free spectrum with no licence fees at least until analogue services are switched off. There may also need to be some agreement as to what the licence fees will be when that happens in the distant future.
- b) No new entrant broadcasters for a specified period, this is to protect the incumbent broadcaster's business while they invest in DAB+ and build the market. In Australia this was set at 6 years before any new incumbent would be considered. In South Africa we would propose that commercial radio be protected for a period but there is also a need for ultra-niche services e.g. services for the visually impaired. Educational services (School on the Air) and existing AM services wishing to switch to DAB+ be given the opportunity to enjoy the benefits of DAB+ without having to wait a protection period. It is vital that some additional services are also provided to encourage the take up by listeners of the new medium.
- c) An amount of multiplex capacity be allocated to existing AM or FM services. Australia for example allocated 128kbps per broadcaster and were told use it or lose it. This encourage existing broadcasters in most cases to split the 128kbps into two 64kbps channels and most started additional stations within their brand. This provided listeners with more content to encourage the take up of DAB+.
- d) Financial assistance to help establish equipment, facilities and talent. This often occurs for community broadcasters, e.g. in South Africa via the MDDA.
- e) Commitment from government to legislate support in the form of requiring all radio receivers which are either locally manufactured or imported to have at least the capability of receiving one of the two adopted digital standards from a specific date. This includes car receivers. This legislative support is usually easier where a country has adopted one digital terrestrial broadcast standard. In South Africa where it is highly likely that both DAB+ and DRM will be adopted this may present an issue with regards to DRM30 technology being readily available in receivers as currently most international manufactures only cater



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for DAB+ and FM. This should not be used to delay the introduction of both technologies as even with DRM receivers most do not cater for DAB+. To force all radios to cater for both technologies although an ideal (the multi standard radio) it may not be economically practical as increasing manufacturing costs could make receivers prohibitively expensive and not all listeners may want the capability of tuning to both standards. Their requirement will depend on what content is offered on which. If we look at analogue FM receivers not all have AM or shortwave and various combinations have always been offered although the most common combination is FM/AM. Listeners don't usually ask for AM only. The choice of receiver must be left to the consumer. Ideally if such an announcement is proposed it should come before the switch on of the first permanent services, Importers and manufacturers need time to prepare. This could be two years or more.

- f) Enough Spectrum for DAB+. The two mux allotments for DAB+ for each province may be insufficient to plan a network on a provincial basis and may not be enough spectrum to provide all services. Current DTT T2 Multiplexes have not been allocated or planned for VHF although there is spectrum reserved from 174 to 214 MHz Additional spectrum could be made available on a provincial basis to meet this additional requirement.
- g) It is vital that some additional services are also provided to encourage the take up by listeners of the new medium.

5. Do you believe DSB will encourage growth in your business or will it create unnecessary financial pressure on your business?

YES, it will encourage growth as it will provide another exciting terrestrial platform to provide listeners with coverage they don't currently enjoy or have poor signals. Advertisers will be encouraged to spend on a station that can be heard clearly and with ease. Initially the cost of dual illumination will increase



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financial pressure, but broadcasters will find a way as they currently pay for satellite broadcasting services to give them national coverage which is regarded as a service to listeners without getting any real financial reward from doing so.

6. Have you conducted research on DSB and the implementation and regulation of same that you can share with the Authority?

ClassicFM has participated in the Joint SADIBA/NAB DAB+ Trial in Gauteng and through this process has gained enormous technical research. Since this was a technical trial, participants were encouraged not to involve the general public in the process so not to cause unnecessary expectations when the service would be either technically interrupted or when a trial licence would expire. This meant that little research was done directly with the general public, but we were able to glean research from countries already on the path to digital. We did however find that there was take-up from members of the public either by word of mouth or accidentally discovered a DAB+ receiver fitted in their cars. ClassicFM found that several Pretoria listeners who could not receive a usable FM signal of the station had purchased receivers and were enjoying the benefit while it lasted. We only received praise from these listeners. The move to DAB+ is gaining fast momentum in Europe particularly eastern Europe and in Arab states. Even Russia is now considering the adoption of DAB+

7. Please provide the Authority with any further information you deem necessary and asked herein.

It needs to be pointed out that currently there is no provision in the EC Act for a mux operator licence category. The Authority may want to consider developing a framework to determine who can be licenced as a mux operator and set out



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the requirements should it deem it necessary to licence separately a mux operator.

8. How would the introduction of digital sound broadcasting benefit the service providers?

There are a multitude of service providers who will benefit. Firstly, the broadcasters themselves. They will have another platform to reach their target audience through a clear interference free terrestrial broadcast. This will create new interest in radio. Sentech will be well placed to start an initial nationwide rollout thereby allowing it to join and benefit financially from DAB+. Data service providers will benefit from carrying encoded audio and data services from broadcaster's studios to transmitter sites. Independent "licenced" mux operators could provide transmission facilities to commercial and community broadcasters. Smaller "licenced" independent mux operators could provide low power DAB+ services for community broadcasters in smaller geographic areas. All of this would lead to additional job creation in the broadcast sector.

For Manufacturers

As a commercial radio broadcaster, the questions posed in this section are not our core business, but we would like to comment on them holistically. ClassicFM fully supports any move to encourage local manufacture of DSB receivers and in doing so creates the provision of meaning full work provided that after the necessary business investigation it is commercially viable. Experience has shown that without financial assistance it would be highly unlikely that local manufacture would be able to compete with the manufacturing capability of countries from the east. Although receivers are designed in many parts of the world, manufacture currently takes place mainly in China and it's against this background a local manufacturer would need to consider before



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coming up with a viable business plan. The introduction of DSB is not seen as digital migration of radio and therefore the consumer is not required to acquire a DSB receiver to receive what is currently available but with the offer of more programming choice and better reception, will in time switch to DSB.

The history of radio manufacture in South Africa offers an interesting insight. With the introduction of analogue FM in the sixties radio manufacture was encouraged and local manufacturing plants were established. Even two Japanese brands namely Sanyo (Teltron) and National Panasonic (Barlows) were manufactured locally. These sets even carried the SANS mark (SABS) to indicate whether the receiver was restricted band RB or multiband LH receivers. Factories i.e. (Supersonic) were established in Polokwane and in Bulawayo Zimbabwe. Local brands like Tempest, Marilyn, and international brands like Blaupunkt, Philips, PYE, Telefunken were all manufactured locally in SA factories. We even had the local manufacture of the Baygen wind up radio (FM/AM) which was manufactured in Cape Town during the 1990's employing people with disabilities. The sad reality today is that none of these factories exist. All FM/AM receivers with international brand names are all manufactured in the east and are brought into the country and landed at a price that cannot be competed with locally. It is only in the past few years that we have seen the reintroduction of TV set manufacturing by Hisense and Samsung, after SA having had quite a thriving local TV manufacturing industry. If we compare the mobile phone market. It was introduced in 1994 using the GSM standard, initially considered elitist but today an absolute necessity. Currently all handsets are imported although there has been some indication from Hisense to manufacture locally but this has still to happen. The demand for phones is not the problem. It's the cost of local manufacture.



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CONCLUSION

ClassicFM wishes to thank ICASA for the opportunity to make input into this important process.

Yours faithfully

A handwritten signature in black ink, appearing to read "Dave Cherry", is written over a horizontal line.

Dave Cherry
ClassicFM SA (Pty) Ltd