



the westbury community development centre
IT 4455/00

06 June 2018

Attention: Mr. Ndumiso Dana

ICASA

Block A, Pinmill Farm, 164 Katherine Street, SANDTON, South Africa

e-mail: ndana@icasa.org.za

Dear Mr Dana,

Discussion Document on DIGITAL SOUND BROADCASTING

The Westbury Community Development Centre Trust would like to thank ICASA for the opportunity to make a submission on the above subject. Our submission is attached as part of this letter.

Yours sincerely,

Thembeke Khaka

A handwritten signature in black ink, appearing to be 'Thembeke Khaka'.

Head of Regulatory and Compliance

Johannes von Weysenhoff

A handwritten signature in black ink, appearing to be 'Johannes von Weysenhoff'.

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Westbury Community Development Centre Trust (WECODEC)

SUBMISSION to The Independent Communications Authority of South Africa

ON

Discussion Document on Digital Sound Broadcasting

June 2018

1. Background

WECODEC is the license holder of Kofifi FM 97.2, a licensed community radio station, located in Wetsbury and servicing our communities in Westbury, Sophiatown, and other western and southern areas of Johannesburg, reaching an audience of up to 200,000 listeners. Kofifi FM 97.2 has been in operation since October 2012.

To empower our community and other previously disadvantaged South Africans, WECODEC aims to develop and promote innovative technologies that can serve the whole country to uplift communities, create jobs, improve education and help fighting poverty. For this purpose, WECODEC is involved in the evaluation of digital radio and television technologies and builds part of the technical environment around WECODEC.

The Discussion Document on Digital Sound Broadcasting Services of 2018 addresses various matters that we believe we can make constructive contributions to. Therefore, we are delighted to use this opportunity to respond.

2. WECODEC Response to the Discussion Document.

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1. Introduction and Purpose

1.2, 1.3 (explaining GE-06), also 3.1.1 and 4.1, 4.4.1(a) etc.

The author of the document stresses on many occasions throughout the document that South Africa is “bound by” and “a signatory to” etc. the GE-06 Plan which leaves an impression that the 13-year-old outcome of this conference was irrefutable and unmovable. In reality, at the time when this conference took place, most countries were not even aware of the main purpose of the digital migration in the future: to unlock spectrum for the digital dividend.

In the following years there have been several follow-up conferences and resolutions worldwide including South Africa that already reversed large portions of the GE-06 resolutions in favor of releasing spectrum that is desperately needed to bridge the digital divide and provide universal access to ICT services to the disadvantaged communities. This has become a major part of South Africa’s National Development Plan (NDP) and the recently published ICT Policy and, surely, is more relevant than a technical guidance that was elaborated in Europe almost 15 years ago.

Meanwhile not only the demand and purpose for usage of spectrum has changed – also technologies have progressed so that the then-relevant DTT technology has already been replaced already a while ago. Therefore, we would like to point out that spectrum plans and associated technologies from that time must not be considered unchangeable.

But we absolutely agree with the statement that one of the main purposes of this document is to “improve radio frequency spectrum efficiency and management” which is also one of our major concerns.

Question 1: *Is there a need for the introduction of DSB technologies in South Africa? Motivate your answer?*

Answer: **Yes, there is, for various reasons:**

- **South Africa, like most emerging markets, has a high demand of ICT broadband capacity, in order to fulfil its mandate on universal access to information of all citizens – also in rural areas – to bridge the digital divide;**
- **Digital migration of sound broadcasting has a potential of more efficient spectrum utilization and, therefore, supports the concept of more ICT broadband (of course only if applied with this objective); in actual fact digital sound broadcasting makes already available a lot of the advantages of broadband availability.**
- **Until ICT broadband is available offering 100% coverage (this will take many more years, if not decades) DSB can be used as carrier for the distribution of information including e-learning, e-government, digital employment exchange, environmental/weather reports for farmers etc., disaster warning at zero charge for the end consumer as unlike broadband DSB is free, using the great benefits of terrestrial, one-to-many distribution;**
- **As long as DSB will be introduced as innovation and avails itself of the latest technology, it has a great potential for job creation, skills development and economic stimulus for a number of industrial sectors with the prospect to even export technology and proudly offer South African products to other markets.**

2.5. In an effort to examine the potential feasibility and impact of DSB services in South Africa, the Discussion Document will consider the following aspects:

(...)

(c) International agreements that impact DSB with organisations to which South Africa is a signatory, i.e. ITU, ATU and CRASA; as well as DSB Systems on a global level including existing standardisation and frequency bands for DSB;

In this context we believe that “BRICS” also should be mentioned as an important economic community of countries with similar economic interests and challenges.

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3.2 Legislative/Regulatory framework

In an effort to examine the potential feasibility and impact of DSB services in South Africa, the Discussion Document will consider the following aspects:

(...)

3.2.2 DAB is likely to be introduced in Band III after completion of digital migration for television. Ideally, digital audio broadcasting should augment and not replace AM and FM. Channel 11 and 12 (216 – 230 MHz) have been included as allotments in the TBFP, and this is replicated in Annexure A.

As explained earlier, we believe that South Africa’s demand of ICT spectrum with the aim of providing Universal Access and Bridging the Digital Divide are more relevant than the fact that some frequencies have been assigned for a specific purpose many years ago.

Another aspect is that, for compatibility purposes, South Africa’s 8MHz raster of VHF Band III has been cut into pieces and harmonized only for channels 11A to 12B with the European 7MHz raster. This will leave this broadcast band in some sort of mess, which, of course, did not concern the 2006 planners as long as they could impose their DSB agenda on South Africa and other countries.

If Band III will soon be needed for other purposes, such as accommodating DTT in order to release more UHF spectrum for ICT broadband, this will be very difficult to implement (we will elaborate on this point later more detailed).

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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?

Answer: **Currently the above list does not contain any receiver specifications for DRM compatible receivers, so it is definitely not complete.** DRM the full ITU and ETSI recommended standard includes all bands and is being referred to as DRM for large coverage (DRM30) and DRM for local coverage (DRM+). There was a motion within TC74B at SABS to review the relevance of standards relating to DSB but it was agreed that any further activity should be done after the publication of a policy directive so that the focus would be on such standards that are part of that policy.

For the time being, the “Digital Radio Mondiale (DRM) Minimum Receiver Requirements for DRM Receivers (DRM30 and DRM+)”, Version 4.0, 20th April 2017, should be added. It can be found here: http://www.drm.org/wp-content/uploads/2017/05/MRR_v4.0.pdf.

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3.3 Digital Sound Broadcasting Trials

(...)

3.3.8 The Authority granted the Third Trial Licence to WECODEC on 02 February 2017 to trial the DRM+ technology. The main objectives of the trial were to test the co-existence of analogue FM signals together with DRM+ signals in the same

FM band (87.5 – 108 MHz), and to test DRM+ in the VHF Band I (47 – 68 MHz) for the community living in the SKA area in the Northern Cape Province. The DRM+ trial results were as follows:

As this trial was conducted by us, we would like to take advantage of this opportunity to point out the main objectives and outcomes as per our interim as well as now available final report:

(a) Already 100kHz separated from the center frequency, the DRM signal was clearly down to <-70dB on both sides;

(b) With only 250kHz separation to both sides, the DRM transmission caused no visible or audible interference to both adjacent FM channels even when near the DRM transmitter;

(c) Also, both adjacent high-power FM stations had no impact on the DRM signal, as the DRM signal propagation was always according to field strengths predictions or above and also correlated constantly with an FM audio control signal on a neutral FM frequency;

(d) Applying these results to Joburg's congested "full" FM Band shows that DRM can immediately provide space for approximately 50 extra radio services within the existing FM Band in Johannesburg, without restacking or changing any of the existing analogue broadcast services in that band (and, accordingly, more services in less congested areas);

(e) This means that opening up each 1MHz of any FM Spectrum (e.g. in VHF Band I or III) would provide space for 30 additional radio channels plus 10 independent data services such as traffic and weather information; news, health and educational Journaline services, or even basic news and even educational video services based on Diveemo live video DRM application. An extension of the FM Band like in the BRICS partner country Brazil to 75.2MHz would

accordingly provide space for over 350 additional radio stations – almost the double amount of the DAB+ capacity in a region (referring to footnote 108 of this document) and without touching valuable Band III spectrum.

To get full Wecodec report please go to: www.wecodec.org.

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Question 3

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

Answer: **A DRM/DAB+ multi-standard policy (just to clarify that DRM is one single standard enjoying the same features and benefits above and below 30 MHz, for large coverage and local coverage too in both DRM30 and DRM+) will be an important instrument for the industry to start implementing DSB – specifically for the receiver rollout. It will support the kick-off of that industry and also give confidence to affiliated sectors such as the automotive industry.**

As DRM and DAB/DAB+ technologies were invented by the same engineers, share features and are largely compatible at application level, both being open and organic standards, the industrial development and introduction of DRM/DAB/DAB+ receivers is relatively unproblematic and can be managed by the South African industry, without excessive foreign facilitation. What would be fatal and contra-productive would be the introduction of proprietary standards such as HD-Radio (IBOC) that could cause large market insecurity and lead to endless delays (remembering the lessons learned in DTT). HD/IBOC is not suitable or recommended in ITU Region I and it does not suit the channelization and frequency management structure for the region.

Licenses could , therefore, be provided for DRM and DAB+ with preference, and perhaps prior to a final policy directive, to community radio stations that are ready for a pilot DRM rollout , as they are suffering the most pressure at the moment (you already mentioned the moratorium).The commercial rollout of DSB may require some additional consideration before implementation anyway.

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4.5. Digital Sound Broadcasting Systems

(...)

4.5.1 DAB system¹⁶ has been developed for satellite and terrestrial broadcasting applications to allow for a common, low-cost receiver to be used. It provides vehicular, portable and fixed reception with low-gain, omni-directional receiver antennas located at 1.5 metres above ground. DAB allows for the complementary use of satellite and terrestrial broadcast transmitters resulting in better spectrum efficiency and higher service availability in all receiving situations.

DAB satellite was actually only designed for L-Band which has been discontinued by WorldDAB so this feature no longer exists.

4.5.3 (...) DAB+ is approximately twice as efficient as DAB due to the adoption of the AAC+ audio codec. DAB+ can provide high-quality audio with bit rates as low as 64 Kbit/s. (...).

At this point, we believe that it should be mentioned that DRM is approximately 4x as efficient as DAB+ due to the adoption of the xHE-AAC+ audio codec, the only digital sound broadcasting system to have done so, aligning itself thus to the mobile industry and its demands DRM can provide high-quality audio with bit rates as low as 16 Kbit/s.

4.5.5 DRM+ also known as Mode E system was of official broadcasting standard with the publication of the technical specification by the European Telecommunications Standards Institute on 31 August 2009. This is effectively a new release of the whole DRM spec with the additional mode permitting operation above 30 MHz up to 174 MHz²¹. (...). - Also applicable to 4.5.6

The quoted source is a private blog of an MBA student and the way it is quoted leaves the impression that DRM+ has a limitation to 174MHz.

In 2011 ITU recommended the extension of DRM to bands I, II and III, beyond 174MHz. Indeed, DRM for local coverage, **DRM+ has been successfully tested in all the VHF bands**, and this gives the **DRM** system the **widest frequency usage**; it can be used in band **I, II and III**. DRM+ can **coexist with DAB in band III** but can already be introduced in the band II.. The ITU has published three recommendations on DRM+, known in the documents as Digital System G. This indicates the introduction of the full DRM system (DRM30 and DRM+). ITU-R Rec. BS.1114 is the ITU recommendation for sound broadcasting in the frequency range **30 MHz to 3 GHz (Wikipedia)**. This means that DRM can be used in the entire VHF Band III which in South Africa goes up to 254MHz (DAB+ ends at 240MHz).

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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.*

Answer: **Please, no other standards. As mentioned before, DRM and DAB/DAB+ technologies are (largely) compatible at application level, and both are open and organic standards. The industrial development and introduction of DRM/DAB receivers is relatively unproblematic and can be managed by the South African industry without excessive**

foreign facilitation. Fatal, unadvisable without known costs would be the introduction of proprietary standards such as HD-Radio (IBOC) that could cause large market insecurity and lead to endless delays (remember the lessons learned in DTT). Apart from this, HD-Radio (IBOC) is not compatible with the spectrum in ITU Region 1 and is not recommended officially for Region I, a decision that has been voted on by ITU member countries, including South Africa.

The Chinese CDR or Russian RAVIS are only national initiatives of individual countries with uncertain future of development and deployment, and ISDB-T is a television and not a radio standard.

If considering a Digital Television Standard for DBS, we wonder why DVB-T2(lite) was not listed or even mentioned in this document, as this should be the first option. However, also with a look at the automotive industry, where DRM/DAB/DAB+ chipsets are now becoming worldwide standards, these two standard families are exhaustive and more than able to serve the South African market, so there is no need for additional confusion.

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Table 3: Comparison of different radio systems

L-Band: Discontinued for DAB+ by WorldDAB (WECODEC has demonstrated that the L-Band should rather be used for digital community television).

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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.*

Answer: **Surely, SFN should be considered, wherever possible and meaningful. Both the DRM and DAB/DAB+ family are SFN capable – in DRM it has even been implemented over thousands of kilometers in**

shortwave SFN. However, the requirements on spectrum are different for different applications, such as local coverage for community radio stations, and if DBS is only deployed in large SFN's, such applications will be compromised. It needs, therefore, to be a "good mix".

Another important consideration in this (spectrum) context is the fact that BRICS partner countries like Brazil and even China are considering the extension of their FM Band to frequencies below 87.5MHz. Brazil has concrete plans to go down to 76MHz, China even to 64MHz. A similar approach could help South Africa to utilize spectrum that is not relevant to any ICT broadband requirements and even useful in the SKA area, as it does not fall under the SKA restrictions. Even the smaller Brazil variant of the extension of the FM Band to 75.2MHz would accordingly provide space for over 350 additional radio stations – almost the double amount of the DAB+ capacity in a region (referring to footnote 108 of this document) and without touching Band III spectrum.

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Question 6: *6.1 Should the Authority consider one or more mux operator(s) for DSB? Please motivate.*

Answer: **The idea of large DBS multiplexes was never an objective when the technology was introduced. When DAB was first deployed, it could only cater for 6-8 radio services per MUX. Only the lack of flexibility to split DAB+ multiplexes into smaller spectrum slices have led to the handicap of mandatory MUX operation in countries where DAB+ is the only broadcast standard. With a combination of DAB+ and DRM, there is now a versatile instrument that allows for large multiplexes (e.g. containing all SABC channels) or individual small multiplexes – even multi-lingual standalone radio stations with extended data services s in self-operation are possible. This is a great opportunity for a**

competitive market, self-operation of community radio and new business models, all contributing to job creation and skills development.

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

Answer: If a switch-off day for analogue radio is considered, it will need many years to prepare. It should only happen if the majority of the population, including and specifically those in rural areas, have access to DSB and it had become part of their daily life.

For the time being it should not be a consideration at all as it would only cut off the poorest again. Alternately announcing the digital radio policy for the country and “a launch-date of digital radio” would encourage all stakeholders (broadcasters, industry, the Authority itself etc.) to focus and start working towards this national project.

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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? Please motivate.

Answer: Of course, there are many international deployments of DSB which differ from country to country, and the examples given in this document are only a small snapshot (mainly informed by the DAB/DAB+ experience) of what is going on in the world. Apart from the incomplete Australian portrayal, which should mention that DAB+ can only cover 0.4% of Australia’s geographic territory and therefore nationwide digital coverage can never be achieved without the introduction of a technology like DRM, there are two other important examples to mention:

1. India

India has the World's second largest population and suffers from the negative effects of the digital divide more than most other economies in the world. 70% of India's population live in rural areas and have almost no universal access to information. The only source of information for almost 500 million Indians is exclusively through listening to AM radio. To efficiently remedy this situation, the National Broadcaster, All India Radio, on decision and financial support from the government started to roll out the world's largest digital radio deployment, now covering up to 0.6 billion Indians with less than 40 DRM transmitters. Meanwhile, all the top car manufacturers in India, including Hyundai, Maruti-Suzuki, Mahindra and Mercedes-Benz have developed DRM capable car entertainment systems for the Indian market. In May the number of cars with line-fit DRM/analogue receivers was nearing one million! The increase in India has been faster and more remarkable than in any European country to date. There are Indian made receivers and about half a dozen solutions of high-end, low-end and SDR receivers aimed at the Indian market alone.

There is a lot more to say about India such as it is a very important trading partner for South Africa which would open great opportunities thinking of common markets for DRM receivers etc. also in the light of BRICS. If the authority wishes more information we can provide such.

2. Sweden

On February 3, 2016 Sweden's parliament has rejected the DAB+ proposal consequent to an overall negative response by relevant authorities, academics, and organizations as well as a critical report on the (former) government's process for a proposed transition to DAB+. Besides many other aspects of why the

proposal was rejected, we would like to highlight one for our understanding highly critical aspect which significance should not be underestimated. In a document *"The Facts Behind the DAB Radio Failure in Sweden"*, published by the Public Service Council on 07 March 2016 (Rev. 2016-03-23), it says:

"In step with increasing mobile broadband demand for space in the UHF band, on frequencies higher than 450MHz, digital terrestrial broadcast television (DVB-T2) will increasingly need relocation back to the VHF band III (174-240MHz). Allotment for DAB (T-DAB) in this band will partly block such future measures".

One of the main objectives of this discussion document is to establish "How the implementation of DSB services can improve radio frequency spectrum efficiency and management". Other than in most European countries, South Africa will require a lot more frequency spectrum for last mile connectivity, specifically in rural areas, as large scale optic fibre networks in such areas are economically difficult to deploy. Therefore, it is more than likely that in the near future the entire UHF spectrum might be required to provide universal access through ICT broadband capacity throughout the country. In this case it would not be advisable to block Band III with DAB+ as suggested in the above article as it might have to accommodate DTT.

This by the way is also the same consideration Finland took in rejecting DAB+ and trying to save space for future DTT needs.

Generally speaking, each country has its own challenges; also the time of a deployment is important. 20 years ago, there was no alternative to DAB, a technology that predates the internet. Today the situation is different e.g. as DRM receivers are much easier and cheaper to manufacture than even a few years ago.

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.*

Answer: **Alone the fact that a moratorium was necessary to make the public understand that there is currently a problem with the availability of frequency spectrum shows that the demand is massive, and the market potential is great, specifically in communities. The matter was largely discussed last year and WEDODEC has also submitted and presented to the matter of Community Media. In summary we believe that community radio and television are great instruments to overcome illiteracy, poverty, crime, drug abuse and many other social and economic challenges, as many examples show.**

Therefore, our answer is definitely yes: It can afford new licensees, and it will lead to more innovation, job creation and a better lifestyle specifically for the youth and women, as well as new opportunities to address the specific challenges e.g. of the disabled.

ANNEXURE A: Additional Questions

For Consumers

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

Answer: **More programmes and choice in different appropriate languages and scripts, better sound, many added value services.**

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

Answer: **Perhaps I would listen more often to the radio, use the screen as an information device with free data and spend less time with expensive and data consuming apps.**

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

Answer: That the decision will take a long time to be taken and then that the usual monopolists will try to hijack it and take the magic away.

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

Answer: The new receivers are so much more than the current analogue radios. They are a true, modern information point at relatively low cost when compared with other digital devices. I do not believe that in truth it will be more expensive. Considering the savings in data cost when consuming free value-added data services will actually save costs.

5. What are your expectations from broadcasters and manufacturers?

Answer: From Broadcasters: To provide exciting content offerings and from manufacturers to come up with innovative Proudly South African products! DRM can support both as it is an open standard and can be adopted, refined, improved and made South African by the many clever, hungry minds of the inventive people in the country.

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

Answer: Please learn from the DTT disaster. Don't allow lobbyists to delay this great opportunity with their agendas until it is dead and buried. Publish informed policies and regulations in the shortest possible time and allow the industry and the market to prosper.

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

Answer: We have already made a couple of comments above as direct responses throughout the document which you may consider as further information as requested in this question. Any other question you might have will be answered promptly and objectively as we in Wecodec have implemented and experienced the DRM technology in a true South African context.

8. Will you be willing to trade your traditional analogue radio receiver for a digital radio? Motivate your answer.

Answer: As I would consider every digital radio also having the option to receive analogue radio as well, it can only be a win. Therefore, please make sure that every radio on sale in South Africa will have analogue and digital radio. This is actually true of any digital radio on sale anywhere in the world.

For Broadcasters

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

Answer: We understand that DSB offers lots of opportunities for us; we are excited and cannot wait to expand our portfolio with DSB and have absolutely no concerns. This is why we have taken a lot of effort to respond to this document and in return we would appreciate the support and encouragement from the Authority.

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

Answer: First of all, we are a bilingual radio station, as our community members speak mainly English and Afrikaans. DSB will allow us to broadcast in both languages simultaneously instead of sequentially which will be a huge advantage for the station and its listeners. Secondly, as our trial has shown, there is a great interest in innovation in our community so we are looking forward to elaborate on innovative digital value-add services that DSB can provide.

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

Answer: We strongly dispute the statement that DSB must wait for DTT first. This would delay the whole digitization of the country even further. The two processes can run in parallel. As we have learned, there is plenty DSB spectrum available today – for over 250 new radio

stations in the FM Band gaps, unused spectrum between 240 and 246MHz (previous TV Channel 12, but excluding DAB Channel 13F) and in free spectrum 63-66MHz for DRM in the VHF Bands. Additionally, there is even more spectrum for DRM30 in the short and medium wave bands.

We have been lucky enough to test the technology and found that it has actually very little financial implications. Much of the equipment is available in the public domain and operational costs are minimal.

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.;

Answer: **As stated before, for DSB, today (not only after DTT) there is plenty of spectrum available to allow for a prospering new media market place around DSB. Market entry barriers should be kept as low as possible to allow new innovative initiatives to make use of this opportunity and not limit the field to the incumbent monopolists.**

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

Answer: **It will definitely grow our business and never create any financial pressure on us. Thanks to DRM this is of course also because we are able to self-provide DSB signal distribution instead of being dependent on a third party, costly multiplex operator.**

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

Answer: **We have recently submitted our final DRM Trial Report and would like to invite the Authority to diligently peruse it, as well as the quoted sources.**

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

(Same answer as in section "For Consumers")

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

Answer: Speaking of Sentech and alternative signal distributors, DSB is introducing a new digital information platform that will benefit all interested service providers.

For Manufacturers

1. What is your understanding of DSB and the impact it will have on your business model and financial projections in South Africa once implemented?

Answer: As part of our trial, WECODEC has designed and manufactured its own multi-standard DSB receiver capable of receiving DRM (in the AM and VHF Bands) and DAB+ as well as analogue FM and AM. We were surprised how easy it was and are now looking forward for DSB being implemented to start our own community based digital radio manufacturing plant that will help to create sustainable jobs and even license our designs to other potential manufacturers.

2. What financial, competition, manufacturing etc. challenge do you anticipate having with respect to DSB?

Answer: We believe that the market potential, specifically with our eyes directed to India where the current market demand is over 100 million DRM receivers, is of such extent that competition will rather be helpful than challenging.

3. Do you plan on building and manufacturing equipment for DSB in South Africa in partnership with state or regulatorily assigned Broad-Based Black-Economic Empowerment and Historically Disadvantaged Groups?

Answer: We are already a black and historically disadvantaged community and definitely have plans to create manufacturing facilities. However, we are more than happy to share our experience with other Broad-Based Black-Economic Empowerment and Historically Disadvantaged Groups.

4. What is your business plan, if any with respect to preparing yourselves for manufacturing and selling DSB equipment for South African consumers?

Answer: As long as the Authority considers either a DRM-only or DRM/DAB multi-standard DSB approach, the South African consumer market for such receivers will be a lucrative market which we are looking forward to and so should every South African consumer electronics manufacturer. Of course, in case of a DAB-only approach, local manufacturers would have a challenge to compete with international players in the industry.

5. What pricing negotiations are you open to discussing with relevant bodies, including the Authority, to make the said DSB equipment affordable for consumers?

Answer: We believe that such consumer equipment must be affordable and even at launch not exceed the R500 mark at least at entry level product portfolio. Our market entry strategy is therefore driven by the concept of maximum turnover, not maximum profit.

6. Will the introduction of DSB create more jobs for South Africans in your sector?

Answer: Yes, many, many more jobs!

If not why, if yes, how will this impact the statistics on job levels in the South African economy?

Answer: We as a community-based initiative would not presume to predict such statistics in detail but it will definitely contribute to the current hype in the ICT sector and strengthen specifically the employment statistics of the youth and women.

7. What projected impact do you believe that DSB will have on your business in terms of growing same and enhancing operations in South Africa?

Answer: DSB will be the trigger to start such business!

8. Would you be prepared to partner with the Authority or the state in ensuring the success and uptake of DSB in South Africa?

Answer: **We have done this in the past and will gladly do it again in the future.**

9. Have you conducted any studies or research with respect to the manufacturing, distribution and marketing of DSB internationally? If so can you share same with the Authority?

Answer: **Yes, we have, and we are already sharing some of this information in this document as well as we are making references in our trial report. However, we believe that we have a lot more to share so we will gladly do so in order to contribute to a better South Africa!**

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

(Same answer as in section "For Consumers")

11. How would it impact the car and radio manufacturers business if the Authority had to develop regulations making it mandatory for radio receivers they manufacture to have at least one digital interface?

Answer: **The big car manufacturers have the digital radio solutions at hand. They are only waiting for a policy and implementation decision to roll out cars with digital radios in South Africa. The car industry is the best prepared to face the challenge of DSB. They are just waiting for sign to start.**