

03 February 2016

Attention: Mr Makgotlho Richard Manyapelo

ICASA

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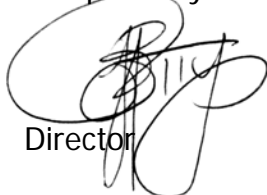
Dear Mr. Makgotlho,

Draft National Radio Frequency Submission

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,

Joseph Cotty



Director

Westbury Community Development Centre Trust (WECODEC)

SUBMISSION to The Independent Communications Authority of South Africa

ON

The Draft National Radio Frequency Plan

February 2017

1. Background

WECODEC is the license holder of Kofifi FM 97.2, a licensed community radio station, located in Roodepoort and servicing communities in Westbury, Sophiatown, and other western and southern areas of Johannesburg, reaching an audience of up to 400,000 listeners. Kofifi FM 97.2 has been in operation since October 2012.

WECODEC is also part of the organizations introducing Kofifi TV as a new television channel following the notion of the community radio station but visualizing the programmes and making them available nation-wide via platforms like OpenView HD (OVHD) and DSTV. Beyond its associated community 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 that purpose WECODEC is involved in the evaluation of digital radio and television technologies and builds part of the technical environment around WECODEC.

The Draft National Radio Frequency Plan 2017 takes various WRC2015 resolutions into considerations. However, the implementation of the Broadcast Digital Migration (BDM) Project in South Africa has experienced and is experiencing significant delays that cannot be ignored when considering changes of the frequency spectrum plan. The primary objective should be to support the success of the BDM project so that, once it has been successfully rolled out, eventually the benefits of the digital dividends can be harvested.

WECODEC believes that community broadcasting is one of the most powerful promoters of digital broadcasting as their audiences will be ready to adopt new technologies as long as they enable them to consumer the community programs.

The following submission will introduce some technical solutions that can solve current issues related to community broadcasting and enable digital capacity to cater for plenty of community broadcasting services on existing frequency spectrum even before analogue switchoff.

2. WECODEC Submission on L-Band

The WECODEC submission consists of a technical background, including quotations from official ITU and EBU publications, a requirement specification, endorsements by other stakeholders and a request to amend some technical specifications within the draft National Radio Frequency Plan.

2.1 Technical Background

In January 2011, the Minister of Communications of South Africa has officially confirmed DVB-T2 as the Standard for Digital Terrestrial Television (DTT). It has been superseded by the previously confirmed standard DVB-T after extensive discussions about the DTT standard.

Other than DVB-T, which only operates in bandwidth modes of 6, 7 and 8MHz (of which 8MHz is the matching bandwidth in South Africa), DVB-T2 has been designed to also operate in a 1.7MHz mode which corresponds to the channel bandwidth of a Digital Audio Broadcasting (DAB) multiplex. In South Africa, broadcast spectrum has been allocated for DAB in the VHF Band III (after Digital Switchover (DSO)) and the L-Band which is currently available and vacant.

The Nature of a Digital Migration process of broadcasting is to replace existing analogue broadcasting with the transmission of digital broadcasting signals, including a dual illumination period where at the same time analogue and digital signals are broadcasted

within the same spectrum. Therefore all digital broadcast standards have been initially designed in a way that one or several digital signals exactly fit into the space of an analogue broadcast channel.

At the time when DVB-T has been implemented (with MPEG-2 video and audio compression), one DVB-T multiplex was able to carry 4-5 standard definition television programs which was a great improvement towards spectrum efficiency. When the DVB-T standard was enhanced by the utilization of H.264 video compression and AAC audio compression, this number was even doubled.

The latest and most efficient standard DVB-T2 which has been chosen for South Africa is now able to carry up to 20 standard definition television services which is without any doubt a great improvement. But with the same spectrum assignment of 8MHz now being able to cater for such a big amount of services, the originally intended application – to replace one analogue television channel with a few number of television services – has now become different. Whereas the footprint of an analogue television channel or a few digital channels could be adjusted individually by the location and technical properties of the transmitter, the situation within DVB-T2 is that a large number of broadcasting services will have to share the same footprint, which is indeed not always wanted. Under these circumstances it is for example more and more difficult to include local (e.g. community) broadcasting within a multiplex which addresses a different footprint. It even can become a legal issue if the only available multiplex is broadcasting into a region where the local broadcaster is not licensed to broadcast into. On the other hand it would economically be insane to waste a whole 8MHz channel for the distribution of only one or two broadcasting services, especially with regards to the digital dividend.

To provide a solution to this problem, a 1.7MHz mode has been implemented into the DVB-T2 standard which can, dependent on the desired protection level, carry 1 to 4 standard definition television services. The bandwidth of 1.7MHz has been chosen to

match spectrum which has originally been allocated to DAB, including a matching spectrum mask.

As mentioned before, DAB spectrum has been allocated within the South African spectrum band plan in VHF and the L-Band and is currently available in the L-Band.

With regards to DVB-T2 within the L-Band, the EBU Report *Tech 3348 - Frequency & Network Planning Aspects of DVB-T2*, Geneva May 2011, describes that e.g. "The 1k FFT mode which offers the highest Doppler performance is intended primarily for operation in the L-band (about 1.5 GHz)...". It further confirms "*ITU-R Rec. BT.1877 [BT1877] indicates that the 7 MHz and 8 MHz channel variants of DVB-T2 are compatible with the GE06 Plan for digital television broadcasting and the 1.7 MHz channel variant is compatible with T-DAB frequency planning*". Another relevant document, the DVB Document A133, "*Digital Video Broadcasting (DVB); Implementation guidelines for a second generation digital terrestrial television broadcasting system (DVB-T2)*", June 2011, which is also an official ETSI document (ETSI TS 102 831 V1.1.1 (2010-10)) states "*To allow DVB-T2 to be used in narrower RF channel assignments in e.g. band III and in the L-band, the bandwidth 1,712 MHz is also included*".

Further it should be noticed that the DAB assignment already has been extended to Digital Multimedia Broadcasting (DMB) which can be seen as an interim technology which has now finally be superseded by DVB-T2.

2.2. Requirement Specification

2.2.1 Community Broadcasting and its Relevance in the Production of Local Content

In post-colonialism Africa the preservation of African customs and heritage is an essential responsibility of every African nation. The media industry is playing a key role

within this responsibility. Whereas mainstream media often struggle to fulfill this requirement as they often have to maintain business objectives by matching with more demand on popular international content, especially community broadcasting has been identified as one of the core sources of real local content. As heritage is generally preserved within communities at a higher focus than in urban regions where people merely just share space because of economic than cultural reasons, the South African government is promoting the relevance of community broadcasting as one of the key elements of media at all, whereas it must be stated that every day more and more cultural assets disappear with the disappearance of individuals who can tell the stories. On the other hand currently there are a lot of exiting cases of demand for the introduction of community broadcasting – both radio and television – which cannot be catered for due to lack of broadcast spectrum.

The production of local content can and will happen within the communities where local African spirit is still alive. Therefore it is essential that there is an existing broadcast industry, even if driven within a simple environment. At the end of the chain of any media production is the publication; without publication there will be no motivation to continue the production. This is the reason why community broadcasting must be on air which requires spectrum.

2.2.2 Digital Migration and Community Broadcasting

Although the introduction of DVB-T2 as most spectrum efficient technology is quite promising, at the second sight it will not cater for the needs of community broadcasting if smaller assignments, as defined in the DVB-T2 1.7MHz mode, will not be made available. The footprints of the 8 MHz assignments with more than 15 TV channels will not meet the requirements of individual local broadcaster's requirements – not the existing ones and by far not the future ones. The space of local 8MHz assignments will never be filled and such implementation will be, technically absolutely applicable, seen

as a pure waste of bandwidth which can monetize much easier if it is assigned to multichannel broadcasters or becomes part of the digital dividend.

The only way to ensure that community broadcasting will have a local platform and can grow – vertically and horizontally –, is the provision of small spectrum assignments, and this needs to take place at the launch of DTT and not only after DSO. As VHF Band III spectrum is currently occupied by analogue television which will remain until DSO, the L-Band is the only spectrum available for such application. In South Africa the L-Band (1.452-1.495GHz) is a dedicated broadcasting band for DAB which is compatible with DVB-T2, as already demonstrated in the previous chapter “Technical Background”. Because of its frequency properties, the L-Band is also ideal for the utilization of local broadcasting. It is therefore a requirement of community broadcasting to make use of the L-Band for television and sound broadcasting in the L-Band (1.452-1.495GHz). However, as the previous television channel 12 had been vacated to avoid interferences with international aviation distress frequency 243MHz, there is some spectrum within this previous assignment remaining which could at least temporarily be used for DVB-T2 1.7MHz transmissions.

2.3 Conclusion – Request for Amendment of National Frequency Plan

WECODEC proposes that ICASA extends the existing assignment of the broadcast spectrum 1.452-1.492 (Page 3-95) as follows:

- Column 2: To remain BROADCASTING; remove “BROADCASTING-SATELLITE” (system never existed in Region 1);
- Column 3: Digital Audio Broadcasting (DAB+), Digital Multimedia Broadcasting (DMB), Digital Video Broadcasting (DVB-T2 or DVB-T2 lite) (1 452 –1 492 MHz); remove “Satellite Digital Audio Broadcasting (S-DAB) (1 479.5 – 1 492 MHz)”.

3. WECODEC Submission on DRM

Similar to television, also the digitization of radio is increasingly paid attention to, specifically after Norway made some headlines by being the first country starting to switch off analogue FM services in January this year.

Although no country in Africa has considered any timelines or even strategies for a digital migration of sound broadcasting, new radio services are struggling to find available spectrum for new licenses. There have been several representations of different broadcast standards for digital radio and the general conclusion at national and also SADC level is to adopt DAB+ (Digital Audio Sound Broadcasting Plus) and DRM (Digital Radio Mondiale) as complementary standards whereas the focus on DAB+ is seen on the commercial side where a higher number of sound services are combined in multiplexes and offered to audiences in highly populated areas whereas DRM's focus is to cover rural areas (DRM30) and serve geographic community radio stations with the requirement of an individual coverage footprint (DRM+).

The current national radio frequency plan does not or incompletely mention these technologies and therefore WECODEC proposes to amend in this regard. The affected frequency bands are:

1. Long Wave (148.5-255 kHz) (DRM) Page 3-30;
2. Medium Wave (526.5-1,606.5 kHz) (DRM) Page 3-33;
3. Short Wave (various bands between 2 and 30MHz) (DRM) Page 3-35 to 3-57
4. VHF Band I (47-68MHz) (DRM) 3-62 and 3-63
5. VHF Band II (DRM) Page 3-65
6. VHF Band III (DRM, DAB+) Pages 3-75 to 3-76 and
7. L-Band (DAB+) Page 3-95.

Long Wave: Although Long Wave is a standardised broadcast band in ITU Region I, it has never been used for broadcasting on the African continent. Due to expensive

antenna structures and the cheaper alternative of the “tropical band” in short wave, it obviously was not attractive to broadcasters and by the time broadcasting became more relevant in Africa, FM was already established and audiences were not any more attracted by the poor sound quality of analogue AM broadcasting. However, digital use of AM bands including Long Wave may open a new era for this band and should not be restricted by a frequency plan except the spectrum is still needed for other applications.

WECODEC would therefore request to review if

- 160-200kHz (FIXED) and
- 200-255kHz (AERONAUTICAL RADIONAVIGATION) is still relevant/in use or the whole Band 148.5-255kHz can be dedicated to BROADCASTING.

Medium Wave and Short Wave: The current National Frequency Plan does not specify the nature of broadcasting in the broadcast bands (AM, DRM etc.) and therefore don't need to be amended in the eyes of WECODEC.

VHF Band I: The originally broadcasts band has been used for television broadcasting before this application has disappeared from this band and more and more frequencies have been dedicated to other applications. With DRM now being able to supply additional sound services in this band, WECODEC would like to emphasise that the application BROADCASTING remains in column 2 and a dedicated digital sound broadcasting section (e.g. 62.95-65.95MHz) may be considered for column 3 or at least be reserved at this time until the regulatory and policy framework for digital radio is finalized.

VHF Band II (87.5-108MHz): Also this band can be used for digital radio. Therefore WECODEC requests “FM” to be removed from column 3 so that it reads “Sound Broadcasting (87.5-108MHz)”.

VHF Band III: Both DAB+ and DRM broadcasting is possible in VHF Band III whereas preference should be given to DAB+ for spectrum already allocated to DAB in GE06 (214-230MHz). Once this is implemented, it can be assumed that at least above the current South African Television Channel 8 will switch to a 7 MHz raster to accommodate DAB Channels 11A to 12D and television in an 8MHz spectrum above would be not practical. Therefore, WECODEC would like to propose that the extended DAB channels 13A-13F (230-238MHz) may be applied here as well and Sound Broadcasting added to the last row, column 3, on page 3-76, whereas the term "Sound Broadcasting" should either not be specified further or both applicable technologies (DAB+ and DRM) should be mentioned.

L-Band: Please refer to the first part of our submission (television).