SOUTHERN AFRICAN DIGITAL BROADCASTING ASSOCIATION

Independent Communications Authority of South Africa

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By email: ndana@icasa.org.za

7 January 2021

SADIBA SUBMISSION ON THE DRAFT DIGITAL SOUND BROADCASTING SERVICES REGULATIONS

Dear Mr Dana,

1. On the 13th November 2020, ICASA published notice 639 of 2020 in the Government Gazette No 43900 declaring its intention to make regulations for DSB in line with section 4(1), read with section 30 (2) (d), and 34 (6) of the Electronic Communications Act No. 36 of 2005 (“ECA”) and invites interested parties to make written representations thereon.

2. The closing date for written submissions was gazetted as no later than 16H00 on 29 December 2020. Following stakeholder requests for an extension, the closing date was amended to the 8 January 2021.

3. The Southern Africa Digital Broadcasting Association (SADIBA) comprising the following members Altech UEC, African Union Communications ,ATTAC Distribution, Broadcom International, Citek, Divitek, Ellies Electronics, Hisense, Kagiso Media, LM radio, LS of SA, Mikrovisata, MNET Broadcast Services, NAB, Orbicom, Multichoice Support Services, Platco Digital -ETV, Protea Test & Measurement, Radio Pulpit, Rhode & Schwartz Liaison, SABC, Samsung Electronics , Sentech SOC and Space Television welcomes the opportunity to comment on the Draft Digital Sound Broadcasting Services Regulations, 2020 as there is a dire need for the introduction of spectrum efficient technologies which will serve as an additional platform for sound broadcasting services.

BACKGROUND

4. SADIBA has contributed to research in digital sound broadcasting since 1997. Next to numerous technical trials and demonstrations the Association and its members have contributed to consultations on development of policy and associated regulatory frameworks. Amongst these are the first recommendations on Terrestrial Digital Radio for South Africa submitted to the Digital Broadcasting Advisory Body (DBAB) in 2002[1]. SADIBA and its members are subsequently delighted at the policy and regulatory progress made and thanks the Authority for the opportunity to comment.

Analogue Switch-off

5. SADIBA wishes to direct ICASA to the numerous submissions made throughout the years on the drivers for Digital Radio and Digital Sound Broadcasting and how these differ from Digital Terrestrial Television (DTT). Unlike the digital migration of television from analogue to digital, making use of the same frequencies more efficiently, digital radio should be the introduction of a new service which can co-exist with the analogue FM transmissions. This was proven to be the case during the numerous digital radio trials undertaken in South Africa.

6. In particular, SADIBA and the industry at large submitted that DSB is not driven by analogue switch-off as is the case for DTT[2] [3] [4] [5]. It is therefore unclear why the Authority links the framework to an analogue switch off date.

7. SADIBA is of the view that references to an analogue switch-off date that keeps on moving and repeatedly gets reviewed are more harmful rather than helpful to the introduction of a new technology and system. Industry and the public at large tend to mistrust any new dates announced and the purpose and drive to

[1] SADIBA Recommendations on Terrestrial Digital Radio for South Africa available on-line at https://www.sadiba.org/images/PDFfiles/DR_Recommendation.pdf
[2] SADIBA Recommendations on Terrestrial Digital Radio for South Africa, page 8, available on-line at https://www.sadiba.org/images/PDFfiles/DR_Recommendation.pdf
[3] Consolidated Report of the DBMWG, pages 31, 33, 139, as available on-line at https://www.sadiba.org/images/PDFfiles/CONSOLIDATED-REPORT-OF-THE-DBMWG-VER-17-November-2006-v2.pdf
EEC report 141, page 6 available on-line at
[4] EEC report 141, page 6 (amongst others) as available on-line at https://docdb.cept.org/download/cb9bd30d-dc8d/ECCREP141.PDF
[5] Future of Radio Broadcasting in Europe, RSPG10-349, page 8 available at https://rspg-spectrum.eu/wp-content/uploads/2013/05/rspg10_349_report_futureradio.pdf

achieve a transition is undermined. In light of the negative impact of a constantly moving DTT switch-off date SADIBA urges the Authority not to duplicate this into DSB, especially as DSB is not driven by the requirement to transition or release spectrum.

8. Linking DSB to an analogue switch-off date seems out of place, irrational and not aligned to best practice nor the common industry understanding or perspective on the subject. It seems important to reconsider this reference or ensure clarity on the rational of arriving at this position.

9. Most citizens of South Africa access public, community and commercial radio content through analogue FM radio services. Due to this fact the large number of portable, as well as car receivers, in the market should be taken into account, when considering the short- or medium-term framework of switching off these analogue transmissions in South Africa. The estimated number is in excess of 30 million FM only receivers.

Disconnect between DSB framework and frequency plan

10. The Authority makes mention of the Terrestrial Broadcasting Frequency Plan 2013 (TBFP 2013) with regard to multiplex allocation but does not clarify what frequency resources are available nor the amount of broadcast services that can be accommodated in the frequency plan for the respective technologies identified and the three tiers of broadcasting.

11. Clarification of the approach is required by spectrum band and technology in order to give comfort and clarity to broadcasters on the spectrum available to deliver on the DSB framework. In particular it should be clear what spectrum and service capacity is considered available in the short, medium and long term per frequency band and technology identified by the Authority.

12. In addition, the DSB framework should provide clarity on how the Authority would prioritise and differentiate in the event that the number of applications exceed the available spectrum and capacity. It would seem critically important that information on the number of frequencies available in the short, medium and long-term and the number of broadcasters that can be accommodated in the three frequency bands and via the technology standards identified by the Authority, is available at the outset of introduction of the DSB framework.

DRM30 (535.5-1606.5 kHz)

13. Annexure C of the TBFP 2013 provides details of Medium Wave Frequency assignments. It is unclear if the Authority intends licensing these frequencies for DRM30 (535.5-1606.5 kHz).

14. The current frequency plan would not readily allow the optimal implementation of innovative and cost-effective features provided by the technology.

15. The Authority is requested to consider the ability to deploy DRM30 services on adjacent frequencies to those used for analogue broadcasting as well as the ability to deploy DRM30 in multiple 9 kHz blocks to allow greater capacity for quality and service expansion. This would allow for significant reduction in complexity and cost, as the same transmitter and antenna systems could be used to deliver both analogue and DRM transmissions.

16. The ERPs listed in Annexure C of the TBFP 2013 would have been based on analogue broadcasting and require revision regarding requirements e.g., the appropriateness of the ERPs listed for digital broadcasting.

DRM+ (87.5-108 MHz)

17. Annexure A lists of the TBFP 2013 lists the VHF FM frequencies. The Authority is silent on how it intends to license and accommodate DRM+ services in this highly congested frequency band, also on how it plans to judge which applicant might be accommodated if any, on the very limited capacity available.

18. SADIBA is concerned that ICASA is silent on protection criteria and the prerequisite limitation of transmission powers - and most importantly co-location of DRM+ transmissions with analogue transmissions to guarantee protection of analogue FM services.

19. Although a low power trial was conducted on DRM+ in South Africa[6] the interference issues highlighted in EBU Tech 3357 from trials including Germany[7] were in SADIBA's view, not sufficiently studied in South Africa. These interference aspects require careful assessment before licensing with significant risk to analogue FM receivers and potentially air traffic navigation above 108 MHz.

20. SADIBA respectfully directs ICASA to ITU-R BS.1114-9 that provides details of frequency spacing and power limitations that need to be complied with in order to avoid interference from DRM+ to FM listeners[8].

[6] Final Report of a DRM Trail in the FM-Band, Westbury, Johannesburg, South Africa, 29 June 2018 – ICASA Edition, available on-line at https://www.drm.org/wp-content/uploads/2019/08/Final-Report-for-DRM-Mode-E-Trial-in-South-Africa_2.6i.pdf

[7] Case Studies on the Implementation of DRM+ in Band II, EBU Tech 3357, available online at https://tech.ebu.ch/docs/tech/tech3357.pdf

[8] Recommendation ITU-R BS.1114-9, Systems for terrestrial digital sound broadcasting to vehicular, portable and fixed receivers in the frequency range 30-3000 MHz, page 81, available on-line at https://www.itu.int/dms_pubrec/itu-r/rec/bs/R-REC-BS.1114-9-201506-S!!PDF-E.pdf

21. It is further unclear what power ICASA intends to authorise for DRM+. It is apparent from ITU-R BS.1114-9 and EBU Tech 3357 that significant measures including lower power and changes to antenna patterns had to be applied to allow coexistence between DRM+ and FM transmissions. ICASA should publish Annexures to the TBFP in which the appropriate powers and frequencies under consideration are clearly identified.

22. It is unclear how ICASA would prioritise between an application for FM sound broadcasting and DRM+ for an available frequency and what criteria would be applied to approve or deny the respective applicant. SADIBA respectfully requests that the DSB framework be expanded on to ensure a fair and consistent process with predictable outcomes.

DAB+ (174-230 MHz)

23. The frequency range ICASA listed for T-DAB (DAB+) services, 214-230 MHz does not reflect the available frequency range in which DAB+ services may be deployed. The Radio Regulations clarify that the band 174-230 MHz has been allocated to broadcasting on a primary basis in ITU Region 1[9]. The SADC Frequency Allocation Plan confirms that the band 174 MHz-254 MHz is allocated to broadcasting. The GE-06 plan clarifies that T-DAB (DAB+) is provided for in the entire band 174-230 MHz[10]. The National Radio Frequency Plan 2018 (GG 41650) clarifies that the band 174-240 MHz is being planned and considered for digital sound broadcasting[11].

24. In addition, ICASA is aware of the availability of channel 13F (239.2 MHz) and has repeatedly licensed this frequency for T-DAB (DAB+) trials and has been petitioned to license DSB on this frequency ahead of Band III analogue television switch-off[12] [13].

[9] Radio Regulations, pages RR5-48 to RR5-51, available on-line at https://www.itu.int/dms_pub/itu-r/opb/reg/R-REG-RR-2020-ZPF-E.zip

[10] Final Acts of the Regional Radiocommunication Conference for planning of the digital terrestrial broadcasting service in parts of Regions 1 and 3, in the frequency bands 174-230 MHz and 470-862 MHz (RRC-06), Table A.3.1-15, page 211, available on-line at http://handle.itu.int/11.1002/pub/801af205-en

[11] National Radio Frequency Plan 2018, GG 41650, page 3-90 to 3-91, available on-line at https://www.icasa.org.za/uploads/files/National-Radio-Frequency-Plan-2018-41650.pdf

[12] Consolidated Report of the DBMWG, pages 15-16, as available on-line at https://www.sadiba.org/images/PDFfiles/CONSOLIDATED-REPORT-OF-THE-DBMWG-VER-17-November-2006-v2.pdf

[13] SADIBA Recommendations on Terrestrial Digital Radio for South Africa, page 7,18-20, available on-line at https://www.sadiba.org/images/PDFfiles/DR_Recommendation.pdf

25. The requirement for additional Band III 174-240 MHz capacity for DSB post analogue switch-off has been communicated since 2002[14] [15].

26. It would be overly restrictive to consider T-DAB (DAB+) allocations only in a sub-section of the band allocated (214-230 MHz as is in the DSB framework). SADIBA is on the view that significantly more spectrum than currently planned will be required for T-DAB (DAB+).

27. ICASA in its planning for T-DAB (DAB+) should consider licensing services in the short term on 239.2 MHz ahead of analogue television switch-off and subsequently ensure additional spectrum for T-DAB (DAB+) across the full band 174 MHz-240 MHz to ensure diversity of services, choice, and unhindered growth.

28. In view of harmonisation and cost of transmission equipment it is not considered prudent to plan the long-term operation of T-DAB (DAB+) services beyond 240 MHz.

29. In view of only 1 Band III frequency (239.2 MHz) being available in the short-term, it is unclear how ICASA intends to accommodate interested broadcasters across the three tiers of broadcasting. As shown in Table 1 one T-DAB frequency can accommodate 18-20 services depending on the quality and capacity that the respective services require.

[14] SADIBA Recommendations on Terrestrial Digital Radio for South Africa, page 7 available on-line at https://www.sadiba.org/images/PDFfiles/DR_Recommendation.pdf

[15] Consolidated Report of the DBMWG, pages 32, as available on-line at https://www.sadiba.org/images/PDFfiles/CONSOLIDATED-REPORT-OF-THE-DBMWG-VER-17-November-2006-v2.pdf

Table 1: Service list: Gauteng DAB+ trial

Count of services	Programme Name	Country Service id / detail	Standard Length (CU)	CU	Bitrate (kbps)	Mode
1	Power987	A001	0	48	64	stereo
2	Jacaranda DAB+	A006	48	48	64	stereo
3	Classic DAB+	A002	96	60	80	stereo
4	-947-	A003	156	48	64	stereo
5	Y FM	A004	204	48	64	stereo
6	Metro DAB+	A005	252	48	64	stereo
7	Radio 2000	A007	300	48	64	stereo
8	-702-	A008	348	36	48	PStereo
9	UkhoziFM	A009	384	36	48	PStereo
10	Jafm DAB+	A00A	420	36	48	Pstereo
11	KayaFM DAB+	A00B	456	48	64	Stereo
12	Hot 91.9	A00C	504	24	32	PStereo
13	Radio Pulpit	A00D	528	24	32	PStereo
14	SAfm	A00E	552	48	64	Stereo
15	FIVE FM	A00F	600	48	64	Stereo
16	LM Radio	A010	648	30	40	PStereo
17	Pretoria FM	A011	678	24	32	PStereo
18	Radio Today	A012	702	30	40	Mono
19	Mix FM	A013	732	24	32	PStereo
20	Radio Veritas	A014	756	24	32	PStereo
*	Radio Islam	Rotating		24	32	PStereo
**	Spoken Word	Pop-up		18	24	Mono
***	DLS on each service	Data			1	DLS
****	Slideshow on all 20 services	Data			8	SS

30. SADIBA's assessment of the number of current radio services that would need to be accommodated in Gauteng and the Cape Town is shown in Table 2.

Table 2: Number of existing services to be accommodated in DSB

	Gauteng	Cape Town
SABC	18	18
Commercial	9	5
Community	55	32
Total	**82**	**55**

31. Three to four T-DAB (DAB+) multiplexes will be required to service current broadcasters in key metropolitan areas in South Africa. Many more would be required in order to accommodate growth and new services or new DSB services as envisaged in the DSB framework.

32. ICASA refers to the TBFP 2013 for mux allocation, it is however unclear how ICASA intends to facilitate the implementation of the stated DSB framework within the restrictive confines of the TBFP 2013. It's important

to note that the frequencies listed in Annexure D to the TBFP 2013 are not available for T-DAB (DAB+) until analogue television has been switched off.

33. The listed frequencies for T-DAB (Annexure D of the TBFP 2013) constitute 2 allotments per province. This implies 2x 20 services with bit-identical transmission across the province.

34. The frequency plan for T-DAB (DAB+) as contained in Annexure D of the TBFP 2013 does not provide or allow for differentiation between primary or secondary markets, nor for regionalised or local geographical area coverage. This seems in discord with the fundamental DSB framework outlined by the Authority. It's unclear how community and market based commercial services are to transition to DSB. There are possible unintended consequences (large coverage, increased signal distribution costs) where commercial and community services are allocated to share the same high-power mux.

35. With only one T-DAB (DAB+) frequency available (239.2 MHz) pre- analogue television switch-off, there is insufficient capacity available to accommodate all the radio services currently on air in Gauteng and the Western Cape. It is unclear how the Authority is planning to prioritise allocation of capacity in accordance with the DSB framework and how fairness and consistency would be guaranteed.

36. ICASA is urged to identify additional VHF spectrum to allow deployment of amongst others, low power geographical area coverage, as well as smaller metro-based networks. The Authority is encouraged to license in the short term (pre-analogue television switch-off in Band III) one national DAB+ mux using 239.2 MHz. In addition, the planned allotments may be deployed as soon as analogue television allows. However, in licensing allotments the Authority must keep in mind that services must be identical across the entire allotment area.

Mux capacity and the role of the Multi-channel distributor

37. The process described potentially establishes the multi-channel operator or mux operator as gatekeeper to DSB platforms - with the power to determine who gets access. This is undesirable especially under conditions of under supply of spectrum and capacity.

38. It is unclear how such an approach would deliver with reasonable equity, fairness, and balance between the three tiers of broadcasting and it would seem that the DSB framework needs to be expanded on to outline how ICASA intends achieving this.

39. A key consideration would be the allocation of sufficient spectrum capacity to accommodate all current services as well as capacity for new services, pop-up channels and growth of data services. It is also vital that ICASA considers the different requirements for public, commercial and community broadcasters in making this spectrum allocation.

40. ICASA does not in the DSB framework present the planning done to confirm that sufficient spectrum is available to ensure competition in the provisions of Multi-channel platforms and capacity to accommodate all current and future demand for services.

41. It must be pointed out that DRM30 and DRM+ technologies typically serve a single broadcaster with one stereo service and would not require a Multi-Channel operator. Broadcasters using these technologies may self-provide. The current DSB framework introduces disparate licensing processes based on the respective DSB technology which may not be intentional.

42. Broadcasters on DAB+ are likely to share a multiplex and require a multi-platform mux operator that will actively drive and market the services delivered.

43. Examples of successful commercial launch of DAB+ services show an integral role of the mux operator in compiling and marketing a compelling service offering and doing so with optimal allocation of capacity, number and type of services and quality of the audio. In many cases these DSB Multi-channel operators are owners of radio services and have a vested interest in marketing and rolling out the DAB+ services. These are not "neutral" network operators that merely operate and deploy infrastructure. There is scepticism on the ability of an uninvolved network provider to "operate, and market and compelling content offering" as is required for DAB+[16].

44. In the context of petitions to parliament on DTT costs and charges, SADIBA members express concern on the role and power of the Multi-channel operator as envisaged in DSB specifically on how this applies to DAB+. The authority is requested to clarify how oversight will be provided and how competitiveness of rates would be policed in the context where insufficient competition may apply. As a guide the EBU study that benchmarks FM DAB+ and OTT costs[17] can be applied as benchmarking tool for network costs and the fairness of tariffs.

[16] SADIBA recommendations on regulatory measures, The Multiplex operator, page 3, available on-line at https://www.sadiba.org/images/PDFfiles/interim_position.pdf

[17] Cost-benefit analysis of FM, DAB, DAB+ and Broadband for Radio Broadcasters and Listeners, EBU Technical Review, July 2017, available on-line at https://tech.ebu.ch/docs/techreview/EBU_Tech_Review_2017_Cost-benefit_analysis_of_FM_DAB_and_Broadband.pdf

45. SADIBA members would like to see more than one multiplex operator licensed and see a clear differentiation between the network provider and the multi-channel operator with the latter purely focusing on distribution functions.[18].

46. Considering the limited spectrum available and the risk of dominance and control of the multi-channel operators the DSB framework would be greatly enhanced by including such measures that would ensure a vibrant DSB sectors with a roadmap synched to the release of spectrum that would spell out how and when capacity would be released to accommodate all current services, new DSB services for incumbents and new applicants and the Authority will ensure than new spectrum would ensure that the three tiers of broadcasting are accommodated.

Section specific comments: "4. FRAMEWORK FOR DSB SERVICES"

47. The regulations indicate that the introduction of the DSB services will be in a phased approach. Phase 1 for introduction in the primary markets and phase 2 in the secondary markets. The definitions of Primary and Secondary markets are given in the Definitions.

48. Considering primary markets separately from secondary markets is not aligned to what is provided for in terms of spectrum resources to serve applicants, nor how this spectrum has been planned and coordinated internationally. The frequency plan provides only for uniformed and identical province wide coverage via two muxes.

49. In the context of the frequency plan and the structure of provincial allotment areas, it makes no sense to have this differentiation between primary and secondary markets in the DSB framework. SADIBA respectfully submits that differentiation between primary and secondary cannot be accommodated within the frequency plan provided.

50. SADIBA notes that no timeline is given for how long the phased approach for Phase 1 will last and be considered complete before phase 2 commences. Commercial broadcasters operating in the Free State and Eastern Cape provinces, considered to be Secondary Markets are of the view that the DSB unfairly discriminates against them. They have a valid sound broadcasting licence and there is no evidence of any rational reasoning why they have to wait for phase 1 to be completed before they can be allowed to use digital sound broadcasting services in those provinces.

[18] SADIBA recommendations on regulatory measures, page 3, available on-line at https://www.sadiba.org/images/PDFfiles/interim_position.pdf

51. Throughout the DSB process an analogue switch off date has not been a prerequisite but it is considered that both analogue and digital will coexist for many years to come. This could be anything from 5 to 40 years. Due to the cost of dual illumination some broadcasters may wish to switch off analogue sooner than others. Public broadcasters who could save huge signal distribution costs in time, are usually the first broadcasters wanting to close some of their analogue services. Adoption by community broadcasters may be slower due to the nature of their business. Although a proposed date for Analogue switch off may be determined, we believe that broadcasters should decide when it is right for them.

52. SADIBA notes that the Authority will consider Applicants without existing sound broadcasting licences two (2) years after the effective date of these Regulations.

53. SADIBA had in the past communicated the critical role of new services on digital platforms as experienced across the globe[19]. SADIBA supports simulcasting of existing services and recommends that new digital only services be launched by the incumbent licensed radio broadcasters.

54. It is unclear what informs the two-year period and what rational facts underlie this regulation. SADIBA believes that publication of a schedule for the release and coordination of additional VHF spectrum to accommodate new and additional services would be important and may assist with determining timelines towards licensing new services.

55. SADIBA supports the establishment of DTAG provided that it is sufficiently empowered to serve the intended purpose, would be managed efficiently and consulted appropriately. Additional clarity is required on what is expected from DTAG and the extent to which this can be productive and contribute positively to the establishment and growth of a vibrant DSB environment.

56. SADIBA is concerned about similar advisory bodies having been established but the Authority struggling to schedule regular meetings or to engage and consider inputs from the advisory group ahead of publication of documents and decisions. It is important in the DSB framework to articulate exactly what the Authority may plan to achieve from establishing an advisory group that could not be achieved through existing measures and to what extent such an advisory committee may create a parallel and conflicting structure to the public consultative processes required.

57. SADIBA notes the reference to the switch off date for analogue sound broadcasting services will be published by the Minister in the Government Gazette. While many will see a switch off date as a positive measure to

[19] SADIBA Recommendations on Terrestrial Digital Radio for South Africa, pages 8-9, available on-line at https://www.sadiba.org/images/PDFfiles/DR_Recommendation.pdf

ensure the speedy take up of DSB there is no mention of how many years this could be. It is left undefined and could be anywhere between the initial rollout to 10, 20, 30, or even 40 years or longer. An initial possible time frame of 20 years could be proposed and his could be reviewed closer to the time to see whether certain targets have been met. The introduction of DSB should not be seen as a hard digital migration like DTT.

Section specific comments: "5. MULTI - CHANNEL DISTRIBUTOR FOR DSB SERVICES"

58. SADIBA notes the link between Multi-channel distribution services and ECNS licence. SADIBA is concerned with the lack of clarity on measures envisaged to avoid potential dominance and undue influence of a Multi-channel distributor over what broadcast services get capacity and how much - especially within a context of scarcity and competition.

59. There is further concern how the capacity in a multiplex would be managed and the extent to which broadcasters will be able to contract and determine the bandwidth and quality they desire rather than this being determined by a multi-channel operator squeezing in channels driven by revenue seeking motives. Measures need to be put in place that allow for escalation and remedying of concerns on capacity allocation as well as bandwidth hogging by broadcasters and the Multi-channel operators.

60. SADIBA notes that the Authority shall issue an invitation to apply (ITA) for a RF spectrum licence to applicants who hold an ECNS licence and intend to be a Multi-channel distributor. The Association is concerned about the apparent disconnect between available spectrum, how that spectrum is planned, the 3- part spectrum implications for the various technologies and bands as well as the view that insufficient spectrum is available to serve the current and future needs.

61. SADIBA supports that roll-out targets are set. In addition, SADIBA recommends that ICASA requires presentation of commercial terms for the respective DSB networks and that an oversight role is provided to ensure fairness and viability. SADIBA foresees that rollouts would have to focus on the key metropolitan areas in South Africa.

62. While this applies to each licensee it does not indicate how long phase 1 of the roll out process will be before phase 2 in the secondary markets can begin. Again, our comments in 50 above apply.

Conclusion:

The Southern Africa Digital Sound Broadcasting Association (SADIBA) wishes to thank ICASA for the opportunity to make input into this important process and makes itself available should the Regulator require any further clarification on the input made.

Yours Sincerely

David Cherry

Chairperson Joint SADIBA/NAB Digital Radio DAB+ Trial Work Group