

Commtronix Ltd was formed in 2008 by two ex-Arqiva employees and aims to provide technical services to the broadcast and telecomms industry.

In early 2015 Commtronix Ltd was delighted to have been approached by Angel Radio of Havant who were seeking a technical partner for their Small Scale DAB Licence application. With a knowledge and involvement of DAB dating back to the early experimental “ntl London” multiplex in 1998 (which later became the London 1 commercial multiplex) Commtronix directors believed they could offer substantial benefits to Angel Radio.

Angel Radio were subsequently awarded the SSDAB trial licence for Portsmouth and with our technical expertise we helped them launch well within the permitted timeframe, and indeed Portsmouth was the second of the trial services to take to the air back in August 2015.

With the experience gained from providing technical partnership to the Portsmouth operation Commtronix has subsequently provided support and advice to 7 of the 10 current SSDAB trials.

We believe Commtronix is currently the only UK participant of the OpenSource DAB project software to subscribe to the AAC+ patent licencing platform. An AAC+ patent licence is required as an integral component of the DAB+ encoding process.

In conjunction with Angel Radio we built the source encoders for and launched the UK's first permanent DAB+ services in February 2016 (just 5 months after the trial licence went on air).

With Commtronix development the Portsmouth trial multiplex was also one of the first multiplexes in the UK to offer slideshow graphics transmission to radios with suitable displays.

Portsmouth multiplex was the first multiplex in the UK to offer more than 20 separate services, all in stereo.

In early 2019 we were delighted to have been selected by Nation Broadcasting to provide engineering support to their newly acquired Glasgow SSDAB service.

We also provide engineering resource to a number of AM and FM community and local stations in addition to DAB.

Your response

Question

Question 1: Do you agree with our proposed changes to the ACI/blocking procedures?

We welcome the proposed process and timescales for acknowledgement and objections to proposed new sites amongst other operators.

We believe that further discussion is required about any costs that existing operators may raise against new applicants for analysing proposed sites. We acknowledge that operators, particularly national ones, will need to expend considerable effort on checking a multitude of proposed new sites. Equally, if they are able to charge an uncapped amount for this work, and if all operators in an area charge accordingly, the costs to a new operator for proposing any new site could be prohibitive. Ideally the initial analysis should be provided free of

charge, or a one off fee for all sites submitted as part of one proposed new service. Additional costs should only be generated when the incumbent operator needs to undertake their own drive-by tests for validation, or similar.

We believe the apparent default classification of most urban sites as “red” to be too restrictive (ie, close to residential areas or main roads). SSDAB operations are likely to be lower powered and more select in their target areas than regional and national operators and are therefore likely to favour urban sites where they can deliver a good signal to the majority of their potential listeners. Such sites may further have an advantage to be much more economically attractive to operators than existing broadcast infrastructure.

Experience of the existing trial SSDAB operations, which typically use urban sites in residential areas has proved that ACI may not be as much a major issue as was first anticipated.

We believe the typical definition of a “green” site for low power use should include sites which are not immediately surrounded by significant numbers of residential properties (for example a school or college, surrounded by playing fields though nominally in a residential area), and sites which are in areas where existing field strengths are high (for example elevated ground), not just close proximity to existing services.

We believe sites should be classified as “amber” when a significant number of properties (or vehicular traffic) are within a defined radius, the signal strength of existing operators falls below a defined high level, and the radiation characteristics of the proposed antenna and mounting height may subject those properties to a substantial difference in signal strength as per the established protection margins.

We believe a site should only be classified as “red” and discarded only when the proposers initial investigations have shown it is not suitable – for instance weak signals from one or more existing operators. If these weak signals are in an urban area which is screened from and poorly served by existing services and thus has poor reception, this by its nature would not make a good site for a new service.

The consultation further infers “low height of transmission antenna” as being one further possible cause of ACI and blocking, but no proposer with sensible engineering advice would likely propose such an arrangement.

As part of proposing a site we believe it should be upon the proposer to identify suitable sites and ensure they fall into the green or amber, by using suitable methods, such as prediction software comparing other operators, or field based drive-tests using suitable equipment and expertise before they are notified to other operators.

We believe urban sites are likely to be on block of flats or other tall buildings, which may well be on high ground, where the elevated nature of the close-by properties means they probably have much better signal strengths than forecast at road level or the standard 10 metre service planning height. Further, the use of high gain transmission antenna such as omni directional colinear antennas will reduce the “downward” radiated power into the immediate vicinity.

We believe the process of listener impact tests, such as described in the document may be too stringent. For the purposes of selecting a suitable site and minimising interference it may be necessary to test a number of sites in the proposed area for all of which the test transmitter installation may only be temporary. Such tests should obviously be notified/agreed to OFCOM and other operators in advance, but not necessarily

licenced/commissioned per se. Perhaps a suitable test licence for a particular area could be issued, running for a pre-determined time and operating hours allowing multiple sites to be tested in that timeframe. Such tests may need to be carried out overnight to avoid potential interference. Testing may need to be carried out with a PRBS source, or a “dummy” multiplex.

As an aside, we believe there are far more significant sources of localised signal blocking and loss of reception to DAB, such as poor quality SMPSU's and the widespread adoption of LED lighting using such PSU's in the home – affecting both the homeowners and adjacent premises.

Question 2: Do you have any comments on the adoption of the new ETSI mask characteristic and on the potential use of the non-critical spectrum mask?

We welcome the alignment of OFCOM masks with ETSI masks as this should enable Europe-wide production and sales of suitable filter assemblies.

We also welcome the possible relaxation of the mask characteristics in some circumstances as this could bring a significant cost benefit to new operators.

We believe the presence and limits of the mask could be determined on a site-by-site basis giving consideration to the adjacent channel separation to existing services and the power of the proposed transmitter. The bandwidth of the proposed transmission antenna may also play a part in this analysis, as could the relative strengths of other the other services.

However, we accept that the current technology of SSDAB is to use broadband linear amplifiers driven from a broadband exciter, so careful engineering is required to ensure out-of-band products and broadband noise are at an acceptable level. For example, poor quality cabling from the exciter to the PA could result in the system attempting to amplify and retransmit VHF PMR signals from a nearby installation.

Question 3: Do you agree with our proposed changes on DAB+ audio encoding?

Yes, we believe widespread adoption of DAB+ and AAC coding will benefit the radio industry. It will do much to negate the consensus amongst many listeners that legacy DAB implementation offers poor aural quality and mono reception of many stations apart from those with suitable budgets for stereo. Consumers accept that expensive devices such as mobile phones have a limited life expectancy, so it should be acceptable that DAB radios from 10+ years ago will in future have less choice of stations as operators move to more modern technologies. It is noteworthy that the UK is about the only country in the world with widespread use of legacy DAB.

However, we believe any form of AAC coding which is accepted within the wider DAB specifications should be allowed, and not restricted to aac v2 or HE variants.

Question 4: Do you agree with our other proposed revisions to the Digital Radio Technical Code outlined in Section 6 of this document? Do you have any views on alternative models for dealing with the administration of Sid and TII codes?

We believe that an installed directional coupler should still be a requirement for transmitter systems. Not only does this make any OFCOM inspection less intrusive, it also allows for easier routine maintenance checks. Given that a DAB multiplex may be carrying 20+ stations, even a short break can require considerable negotiation. Whereas a dummy load does not necessarily need to be specified as part of the installation, the multiplex operator or their engineering contractor should be able to provide one on request.

We believe that TII and SI code reuse could be acceptable where there is no chance of services overlapping or being confused. In the analogue domain listeners understand that a frequency stored on a radio preset in one area may give a completely different station in another area. Possibly SI re-use may be more appropriate where programme content and format are broadly similar and that each particular station does not hold any ambition to expand into other regions. For example, an SI code used for a rock music station in Manchester could be reused for a similar music service in Birmingham and a stored preset on a car radio would bring up either station. The Pty function is supposed to be able to support similar functionality, but in general it is not widely supported or implemented in receivers.

As all new multiplex and station DSPS licences must be obtained through OFCOM we believe OFCOM are best placed to centrally administer SI and TII codes. Any other body would likely require extra costs to be paid by applicants.

Question 5: Do you agree with our other proposed revisions to the Technical Policy Guidance for DAB Multiplex Licensees document outlined in Section 7 of this document?

Yes.

Please complete this form in full and return to broadcast.technical@ofcom.org.uk or mail to:

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