

## Response to: Radio - Licensing Policy for VHF Band III, Sub-band 3

I do not agree that these proposals represent optimal use of the spectrum.

Technology has moved on from the pioneering days. If the UK continues to go it alone with expanding the present Version 1 DAB it courts another disaster in the tradition of the BSB "5 Channel TV" squarial satellite system and ITV Digital.

A sense of scale: Each DAB multiplex uses 1.71MHz. 32 DAB channels exist in the 56MHz of Band III. Seven (22%) of these channels are presently used in the UK. Very roughly, 4MHz, if reserved for DRM stereo would provide capacity equivalent to the 20.5MHz of FM Band II.

These remarks concern strategy for both Sub Band 3 and the whole of Band III.

### **DAB**

DAB certainly has merits, most markedly for national and regional networks, but Version 1 DAB is too spectrally inefficient to survive.

I can imagine just one strategy which would create long term confidence in DAB, transfer to the same standard that other countries will use and provide extra services:

Ofcom should only permit new services using Version 2 DAB, with efficient modern coding. Version 2 DAB multiplexes broadcast all the existing services in better quality and also carry a few new programmes.

In four or so years the Version 1 DAB transmitters amalgamate and reduce digi quality prior to eight or so years switch off, when they are all released and switched to Version 2 DAB.

Even more new programmes can be carried and every service can now be broadcast in beyond-reproach quality, some even with surround sound.

We then have rugged coverage, super quality and more services.

### **Merits**

On quality and spectral efficiency criteria the UK creates a system for the long term.

Existing operators face the gradual addition of new programmes over the years, rather than a dramatic increase in competition.

Public interest is maintained as long as some new programmes are starting (the actual number is not particularly important).

Marketing opportunities arise immediately for 'even better digi quality' Version 2 DAB, offering more programmes as well.

Later on, there are more promotion opportunities for 'ultra digi quality', extra services and flagship stations launching in surround sound.

Attractive new Version 2 DAB programmes and the progressive quality reduction gently encourages Version 1 owners (a limited fraction of total listening) to upgrade.

### **Drawbacks?**

Fewer programmes would be available immediately.

After 8 or so years, any Version 1 DAB set still working will become useless unless upgraded.

*A tough decision, but such a move by the UK would revitalise Eureka 147 DAB internationally.*

## **DRM - and why the door should not be closed to space in Band III while DRM is still developing**

It is already clear that DRM is set to be a successful world standard, both for better-than-AM quality and in due course for better-than-FM-stereo quality, and the UK must create a viable band for use by local, hospital, university and RSL stations.

Existing broadcast bands with DRM stereo potential:

**Band II:** 87.5-108MHz is unlikely to be available for around 20 years.

**26MHz:** Nobody with extensive experience of HF propagation would regard 26MHz as attractive for domestic broadcasting.

Drawbacks include the urban band noise level, receiving aerial difficulties and obtaining clean polar plots from practicable transmitting sites.

In addition, there are a large number of days, predominantly in summer with Es propagation and, at all times but following the 11 year solar cycle, F2 propagation, both of which are mechanisms which leave services vulnerable to wipeout for hours at a time from transmitters thousands of miles away.

A satisfactory walkman radio is unimaginable without unlikely transmitter powers.

This part of the spectrum has never been greatly used locally beyond low grade services like Citizens Band, Model Control and experimentation. Indeed, all the reasons why I applied in 1987 for an experimental licence in the empty 26MHz band to provide an unprotected third grade service for the Radiofax short wave project ([www.radiofax.org](http://www.radiofax.org)). The government stated that 26MHz was “not suitable for domestic broadcasts”.

**Band I:** 47-68MHz. The high frequency end, around 65MHz, experiences reduced Es and F2 disruption, while noise levels and aerial problems are ameliorating.

The best band, bar VHF Low Band 68-83MHz, but only if Doppler issues mean that 120MHz proves the final limit for DRM development.

**Band III:** 174-230MHz. An appealing piece of spectrum, both here and worldwide, providing DAB is not allowed to consume all of it.

Allocating business radio, etc., was a mistake and clearance of non broadcast users should continue.

All of the drawbacks lower down the spectrum have reduced and been exchanged for variations in tropospheric propagation, which will affect the fringe areas of service on a small percentage of days each year, rather akin to what we are used to with FM.

Dual DAB/DRM sets, a single roof aerial, short ‘rubber duck’ aerials, car radios and walkmans are all easy.

*If 120MHz does not prove the last word in DRM, Version 2 DAB and DRM sharing Band III would create an elegant and efficient radio system for the next 50 years.*

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Trevor Brook

Surrey Electronics

[s.e@ndirect.co.uk](mailto:s.e@ndirect.co.uk)

01483 205 400

After working in the film industry, the author established Surrey Electronics Limited in 1973 to research and manufacture high performance broadcast and studio products. His experience of radio ranges from medium wave to meteor scatter and he has designed installations up to 30kW. He devised and edits the website and deals with engineering for Radio Jackie.