We here provide a very simple two statements that I believe will greatly assist your process for work in this band.

These two points are as follows:

1. It is NOT TRUE that these bands give reliable very long range coverage.
A combination of various atmospherics and the rise in noise floor make these bands very useful over a 5 to 10 mile range for mobiles (not portables) but much less reliable thereafter.

During our review of this consultation it emerged that our members are unanimous on this fact. furthermore, it is our expectation that the noise level in these lower bands will continue to rise and so the range could diminish still further.

The simple theoretical analysis as has been done for many years is thus quite misleading.

What is certainly true is that even though a reasonable Grade of Service may not be feasible over such ranges at a high level of availability, the area sterilized and thus removed from potential uses by others WILL be very large.

2. Rather surprisingly, the low usage range characteristic noted in point 1 is actually an advantage in the context of the Internet of Things. It means that it is now possible (through careful design) to use these bands in new ways to provide systems that support innovative systems, including data systems, on-site / in building.

At least one FCS member is actively pursuing this approach and has even demonstrated such a solution to a customer (this response respects their commercial confidentiality).

To answer the questions in the consultation:

Q1. Do you agree that the spectrum we have identified (in figures 4.2 and 4.3 above) is suitable for M2M applications for remote and rural locations?

Please provide as much information as possible on likely applications.

Response: We suspect the attraction of these bands in the eyes of some commentators is based on the assumption of the very long ranges predicted by analysis. However, we make no further comment on this beyond our first point above.

We would merely comment that properly resilient M2M/IoT applications have for decades formed part of the Business Radio portfolio of services provided and so we see no contention in this proposal. Our concern would be whether any service provided under the commercial terms usually associated with professional radio would actually meet the customers' expectations over such long ranges.

Conversely, were the work currently in progress to develop into actual product offerings, we could see these bands supporting a good level of utilization because "re-use" becomes a real possibility, massively increasing the potential value derived from the band.

Q2. Do you agree with our analysis that encouraging new IoT uses in the bands 55.75625-60 MHz,

62.75625-64.8 MHz and 64.8875-66.2 MHz, 70.5-71.5 MHz and 80.0-81.5 MHz should still leave sufficient spectrum to meet demands for Business Radio in the VHF range?

Response: In responding to this question we take the VHF quoted to mean Band 1.

The FCS agrees that data services could usefully be located in this band. However, we would again point out that a service over a very wide area would be most unlikely to be resilient. Thus a "best efforts" service with possible outages of many hours, or even days, might result.

However, the Business Radio community are becoming concerned that the rise of data-service demand is currently not met adequately. We hope that new innovative systems could be located in this band to provide resilient local services. This is a very exciting opportunity which we confidently predict some of our members will continue to pursue.

Q3. Do you think the conditions associated with the current range of BR licences available now should change to facilitate new IoT services uses? If you do, what should these changes be?

Response: It is quite difficult to see what changes are immediately necessary. We would suggest that the existing protections and limits must remain, complimented by rigorous field inspections of the installations.

The FCS notes that whilst the very long range communications may only provide service on a best efforts basis, they will continue to transmit power all the time in the hope that service might resume. Thus the possibility exists that even though they themselves are not achieving useful service, they will still harmfully interfere with others, were the protections removed.

This leads the FCS to conclude on the general principle that NO long-range service should move to a licence-exemption regime. That would be against the Communications Act.

Q4. Do you think we should create a new licence product specifically for IoT services?

Response: No. However, it may be prudent to reconsider the Technical Assignment Criteria for these services in some parts. An example might be to change the service threshold to -92dBm.

I hope this contribution is useful to you. None of these points are confidential.

Best regards

Tim

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