

# Ofcom/CAA joint communication on PMSE sharing in the 960-1164 MHz band

As a nation we must make the best use of the scarce resource that is the radio spectrum. That means more sharing of specific frequency bands, including some used for aviation. But we are very clear that this will only happen in a way that remains sustainable to aviation and in no way affects the high safety standards of the aviation industry.

As the UK civil aviation regulator the Civil Aviation Authority (CAA) oversees aviation safety through performance-based regulation where it develops a comprehensive risk picture with the organisations it regulates to build knowledge and data to make sure regulation is targeted in the areas where it will make the biggest difference.

The CAA recognises the evolving environment inside and outside the radio frequency bands allocated to aviation and is aware that this scarce resource must be managed in a way that remains sustainable to the aviation sector in the long-term but also serves the wider social and economic benefits associated with radio spectrum sharing.

Where evidence illustrates the potential of spectrum sharing with an acceptably low level of risk of interference to incumbent systems, the CAA is open to the prospect of radio spectrum sharing in a specific band.

Ofcom, the UK's communications regulator, with the agreement of the CAA, has decided to allow low-power audio PMSE users access to the frequency band 960-1164 MHz, sharing with incumbent aeronautical systems. The CAA and Ofcom worked closely throughout the coexistence analysis to ensure that sharing in this band does not compromise the safe operation of aeronautical systems.

## **Supporting Technical Annex**

### **Part 1 – Overview of spectrum sharing in aviation bands**

Based on the technical evidence generated the CAA is able to develop a picture of the risk level posed to incumbent systems with spectrum sharing safely managed through the development of suitable processes (including a baseline safety case) and spectrum management rules (SMRs).

The SMRs have been agreed between Ofcom and the CAA to include interference thresholds, protection criteria and a modelling approach to minimise the risk of harmful interference to incumbent aeronautical systems in the 960-1164 MHz band.

### **Part 2 – Matters specific to the PMSE spectrum management rules**

The SMRs are designed to safely enable the sharing of the band with low-power audio PMSE systems. In this case rules have been developed which are based on the results of a comprehensive testing programme, existing band sharing exercises and the regulated minimum performance of aviation equipment with respect to resilience against adjacent band interference.

The SMRs stipulate:

- PMSE equipment sharing the band is suitably segregated in distance and frequency (based on equipment tests) from operational DME transponders and interrogators to minimise the risk of any impact on operational navigation equipment
- Agreed DME transponder parameters
- Agreed DME interrogator parameters
- A substantial guard band around SSR based systems at 1030/1090 MHz is in place to protect airborne and ground based equipment operating in this band. This guard band is based on a combination of testing and the required minimum performance of systems residing in this band
- Agreed PMSE equipment parameters
- Protection of DME stations according to the allocated DOC, adapted to incorporate the Figure of Merit as defined in ARINC 424, the specification for the Navigation System Database
- Modelling parameters considering interference into the DME band which exclude building attenuation and clutter loss

All licences issued will be time, location and frequency bound to ensure operations are conducted within the prescribed SMRs. This will be further protected through monitoring and compliance measures. In the case with the present PMSE campaign the CAA is content that the developed SMRs mitigate much of the risk of PMSE operations interfering with aviation systems in the DME band to an acceptable level.