



## **DTG Working Group**

### **Draft Terms of Reference v0.1**

- Name:** Implementation Group for Future PMSE Audio
- Introduction:** For many years, PMSE audio applications have enjoyed secondary access to the UHF spectrum that is allocated on a primary basis to Digital Terrestrial Television (DTT). In response to the changes in UHF spectrum availability which have occurred already (800 MHz band re-allocation), those that are still to happen (700 MHz band re-allocation – due in 2020), and to the new spectrum recently identified by Ofcom for PMSE audio (960 – 1164 MHz), a number of stakeholders perceive the need for an Audio PMSE Implementation Group to consider and address strategic issues raised by these changes.
- Mission:** The aim of the Implementation Group for Future PMSE Audio is for its members to collaborate to achieve timely enhancements both to PMSE audio equipment available in the market and to the operational arrangements that will enable its use to be maintained while safeguarding existing spectrum users.
- Context:** PMSE wireless audio equipment is used extensively in theatres, television studios and at special events such as concerts as a means of allowing presenters and performers the freedom to move around uninhibited by cables and for backstage and off-camera logistics and communications. Analogue equipment is predominantly used and it has demonstrated its capability to deliver ultra-reliable, very high quality wireless audio links. Digital compression is not feasible for this application owing to the unacceptable latency that it would introduce, however equipment which uses digital modulation has been available for some years. This digital equipment offers the potential to make more efficient use of spectrum and be part of the solution to spectrum availability changes, however it has not to date achieved significant market penetration owing to questions of functionality and cost.
- Target audience:** Membership of the group will be open to anyone with an interest in the overarching aim of the group. We expect the group to be of interest to the following stakeholder groups:
- PMSE users;
  - PMSE equipment manufacturers;



- Primary spectrum users;
- Regulators;
- Government departments;
- PMSE equipment vendors.

Objectives:

The overarching aim of the group is to collaborate to ensure that at least the current level of wireless audio PMSE activity can be maintained over the longer term after 700 MHz clearance, making best use of the newly allocated 960-1164MHz band while ensuring that primary spectrum user rights are respected. The group will organise and coordinate investigations into the following: - spectrum sharing arrangements, equipment functionality enhancements and operational implementation. Based on its analysis of these investigations it will produce reports identifying key issues and make recommendations as to how these are addressed. Implementation of the group's recommendations is intended to ensure that current PMSE audio applications can be maintained and can be developed for the benefit of users whilst providing appropriate safeguards for primary users of spectrum allocated to PMSE on a secondary basis. User needs for wireless audio link requirements and the spectrum context in which they are operating will be taken into account. Each report will be created in a style appropriate to its target audience. Target audiences may be governments and their agencies, manufacturers and international committees deliberating on PMSE applications and related spectrum matters.

Topics for consideration:

- Spectrum availability and usability – co-existence with aviation and defence, DTT and IMT applications, future usage plans for primary and secondary spectrum users and trends, and band organisation;
- Investigating adoption of tuning ranges to encompass the 960 to 1164 MHz band and spectrum exclusions while also considering effects on size of equipment and cost;
- Functionality enhancements to digital equipment to improve its suitability for the post 700 MHz clearance market – e.g battery life, cost, cliff-edge effect, latency;
- Market gaps – e.g. in-ear monitors;
- New functionality and techniques to aid usability –e.g. geo-location, collision detection and avoidance;
- International aspects.



Top 3 issues:

1. Spectrum sharing arrangements;
2. Equipment functionality enhancements;
3. Operational implementation.

Deliverables:

- Production of a roadmap for investigating usage of 960MHz to 1164MHz for PMSE audio;
- Coordinated investigations into the key issues;
- Reports on the key issues;
- Recommendations to target audiences on how the key issues are addressed. Target audiences may be governments and their agencies, manufacturers and international committees deliberating on PMSE applications and related spectrum matters.

Operational principles:

The group will be for DTG members only including New Entrant PMSE members. The operational principles are as defined in the DTG Working Group Guidelines and Policy Documents [here](#), which covers such things as, membership, IPR policy, competition law compliance, guidelines for DTG chairs, minimum attendance for a meeting, and decision agreement.

Meeting schedule:

The meeting frequency is likely to be every 4-6 weeks but can be decided by the members according to their needs; on-line participation will be provided for all meetings whenever possible.

Reporting requirements:

To DTG Technical Oversight Group.

Internal interfaces:

DTG TOG and Working Groups.

External interfaces:

As required.

Resources:

From participants, with secretariat support from DTG.

Timescale:

The group is an on-going activity and a DTG member benefit.