Outcome of International Working Groups and Consequences for PMSE
Result of Spectrum Activities of CEPT, ETSI and ITU-R for Audio and Video PMSE

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European regulations on radio equipment and spectrum

EU spectrum regulation & wireless equipment standardisation is a complex task
CEPT – European Conference of Postal and Telecommunications Administrations – Structure Relating to PMSE - 1

- **CEPT** comprises of representatives from **48 Member States’** spectrum regulators who all, to a lesser or greater degree, contribute to the **various ongoing work programmes**.

- Under the ‘**Top-Level**’ umbrella of CEPT there are several organisations and groups that consider and **develop policies** in a European context, taking into account **European and international legislation and regulations**.
CEPT recommends decisions on standardisation and regulation to the European Parliament – after agreeing them in relevant working groups.

After a parliament decision the national implementation has to actioned.

APWPT is a member of CEPT via a Letter of Understanding (LoU).
Immediately below CEPT sits the **Electronics Communications Committee (ECC)**. As the name suggests, this ‘sub-umbrella’ group concerns itself, primarily, with electronic communications. This, inevitably, involves considering **technical developments**, any resulting issues and **policy development** with regards to spectrum.
The next ‘layer’ down from the ECC consists of Working Group Frequency Management (WG FM) and Working Group Spectrum Engineering (WG SE).

Sitting below each of these and other Working Groups are dedicated Project Teams where the baseline work is conducted.
Additionally, there is the European Communications Office (ECO). ECO’s role is to provide advice and support to CEPT as a whole, in order to help it develop and deliver its policies and decisions, in an effective and transparent way.

The ECO is staffed by employees from multiple CEPT spectrum regulators who work for the ECO on a fixed term secondment basis. The office is based in Copenhagen, Denmark.
Finally, as far a spectrum issues within CEPT are concerned, there is Com-ITU. Com-ITU is responsible for organising the co-ordination of CEPT actions for the preparation for and during the course of the ITU activities of the Council, Plenipotentiary Conferences, World Telecommunications Development (WTDC), World Telecommunication Standardisation Assembly (WTSA) and other meetings, as appropriate.
EU Spectrum related Structures of interest to PMSE
‘Outside’ of CEPT

- Outside of CEPT there is the **Radio Spectrum Policy Group (RSPG)**. This is a high-level advisory group that assists the **European Commission (EC)** in the development of radio spectrum policy, at a strategic level.

- The RSPG is comprised of **high-level representatives** from **multiple** CEPT administrations.
EU Spectrum related Structures of interest to PMSE ‘Outside’ of CEPT

- The RSPG have recently produced a document entitled; “[Draft] Opinion (DO) on a long-term strategy on future spectrum needs and use of wireless audio and video PMSE applications”.

- This DO was developed as a result of a request from the EC – and is not yet finalized due to ongoing consideration of public consultation responses.
Within the EC exists the Radio Spectrum Committee. The RSC assists the EC with the specific technical measures required to implement the broader Radio Spectrum Policy. The RSC is composed of Member State representatives and is chaired by the EC. A powerful body, the RSC is integral to implementing any Mandates issued by the EC to CEPT on ensuring harmonisation and the efficient use of radio spectrum.
Standardisation Bodies - ETSI

- The **European Telecommunications Standards Institute (ETSI)** produces **globally-applicable standards** for Information and Communications Technologies (ICT), including fixed, mobile, radio, converged, broadcast and internet technologies.

- In ETSI, the technical committee Electro-Magnetic Compatibility and Radio Spectrum Matters (**ERM**) deals with **standardisation of radio technologies and related topics**.
Standardisation Bodies - ETSI

- Within ERM the **TG17WP3** is the **relevant working group** for PMSE.
- The core standard for audio PMSE equipment is **EN 300 422 (Parts 1 to 3)**.
- On request of the EC this standard was updated for the Radio Equipment Directive (**RED**).
- Currently audio PMSE equipment is exclusively **narrow band** and the majority transmit within a **200 KHz mask per audio link**.
Potential new **Wireless Multichannel Audio Systems (WMAS)** may offer greater spectral efficiency (more audio links per MHz) and more robust performance in the future.

Relevant technical parameters for WMAS general conditions **have been agreed for inclusion** the current revision of EN 300 422.

A **liaison statement** from ETSI and an **ETSI Technical Report (TR 103 450)** will be delivered to the next WGFM.
Other Spectrum related Structures of interest to PMSE ‘Outside’ of CEPT

- **ITU-R**
- **Global Organisation** – part of the United Nations Organisation and forms binding decisions
- “Allocates *global radio spectrum and satellite orbits*” (at World Radio Conferences held every 3-5 years)
- “Develops *technical standards that ensure networks and technologies seamlessly connect*”
- “Strives to improve access to *Information & Communication technologies to underserved communities worldwide*”
Ongoing Activities
Current Activities Within ECC

- **WGFM** – Has liaised with **WGSE** in order to ask SE to commence **sharing and compatibility studies** in the ‘Air-Band’ – 960-1164 MHz.

- **WGSE** – agreed that the studies should be started – selected **WG SE7** to conduct the studies.

- Studies were started at the **beginning of October, 2017**.
Current Activities Within ECC

- **FM51** – the ‘official’ working group dealing with PMSE issues – audio and video – from a **frequency management perspective**.

- Currently tasked with producing a report looking at whether there might be any **legal and/or regulatory issues** that would **prevent** low power audio PMSE equipment from **sharing in the band 960-1164 MHz**.

- Also developing a report on **body-loss** to determine an **agreed set of figures** that can subsequently be used in any **future sharing studies**.
Current Activities Within ECC

- **FM51 – Video PMSE**
- Developing an **ECC report** looking at the development of **best practices** for the use of Video PMSE in the **2.7-2.9 GHz** band.
- Part of the report will focus on how a system for **Licensed Shared Access (LSA)** might work in the future.
Current Activities Within RSPG

- **Draft Opinion** published for public consultation.
- PMSE community **responded**.
- Request from the PMSE community to **expand the mandate** beyond ‘peak demand’ and provide **concrete security** for PMSE for the future in light of the continuing threat from the IMT community.
- Currently awaiting **reaction** from the RSPG.
- Currently awaiting **reaction** from the EC.
Current Activities Within ETSI

- ETSI EN 300 422 (Parts 1 to 4 – Pt 4 relates to Assistive Listening Devices – ALD’s) published in the **Official Journal (OJ) of the EU** in early 2017 in order to conform to the RED.

- Now a request from the EU to **re-combine Parts 1-3 into a single part**.
Current Activities Within ETSI

- Desire by Ofcom UK to exclude 1030 and 1090 MHz (+/- 15 MHz – within ‘Air-Band’ 960-1164 MHz) in EN 300 422.

- Exclusion of specific transmission frequencies in the radio mic standard, if it happens, would be a first - frequencies or specific bands have never been excluded before.
Current Activities Within ITU-R - 1

ITU-R Working Party 5C

- Before WRC-15 the Radio Assembly (RA-15) updated ITU-R Resolution 59-1. This Resolution invites all ITU members to seek a world-wide identification of radio spectrum for wireless production tools in Broadcast and Event Production.
Current Activities Within ITU-R - 2

ITU-R Working Party 5C

- **WP5C** is the mandated group for this task. Currently the work is ongoing in a related ITU-R Report F.[PMSE].
- CEPT has already contributed for this task. APWPT is looking for further region’s contributions.
Current Activities Within ITU-R - 3

ITU-R Working Party 6A

- Under the mandate of WRC-12 the Joint Task Group 4-5-6-7 studied the situation of PMSE (SAB/SAP) in the 700 MHz band.

- The output was summarized into ITU-R report BT.2338 “Services ancillary to broadcasting/services ancillary to programme making spectrum use in Region 1 and the implication of a co-primary allocation for the mobile service in the frequency band 694-790 MHz”.
Finally, this was considered by WRC-15 under Resolution 232.

This Resolution allocated the **700 MHz guard bands and duplex gap** to PMSE.

Despite this Resolution, **most** CEPT administrations have **failed to implement** this locally.
Resolution 232

- Some have chosen to completely ignore the resolution and allocate the sub-bands to other services instead.

- **UK example** – interim DTT multiplexes likely to be followed by **Supplemental Downlink (SDL)**.
Current Activities Within ITU-R - 5

ITU-R Working Party 6A

- WP6A of Study Group 6 considered this work in the updated **ITU-R Report BT.2069** “Tuning ranges and operational characteristics of terrestrial electronic news gathering (ENG), television outside broadcast (TVOB) and electronic field production (EFP) systems”

- BT.2344 **considers** “Information on technical parameters, operational characteristics and deployment scenarios of SAB/SAP as utilized in broadcasting”
Summary
Summary

- Work is **complicated** and spread across **multiple** platforms.
- **APWPT** will **continue** to represent the **interests of it's members**.
- Secure, long-term access to a suitable quantity and quality of radio spectrum for wireless production tools remains our goal.
And To End On A Positive Note…

- Recently, after a long and complicated process, **some success**.
- **ECC Recommendation 70-03** now lists the frequency bands 1518-1525 MHz and 1350-1400 MHz as suitable for PMSE use (local administration dependent)
- **ECC Recommendation 25-10** also now lists the frequency bands 1518-1525 MHz and 1350-1400 MHz as suitable for PMSE use (local administration dependent)
And Finally…

- **In Germany** the 1350-1400 and 1518-1525 MHz bands have been included in the **National Frequency Allocation Table** as a band for use by PMSE (licence required).

- This is a **major achievement** and can be held up as an example to other CEPT administrations.

- This would not have been possible without the **financial support** of all **APWPT members** – to the APWPT membership – **a Big Thank You !!**
Thank You For Listening…

…Any Questions?

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