ÖSTERREICHISCHE THEATERTECHNISCHE GESELLSCHAFT
Theater • Film • Fernsehen • Mehrzweckhallen

Per E-Mail to: CNECT-RSPG@ec.europa.eu

To
Radio Spectrum Policy Group - Secretariat
DG CNECT 84: Spectrum - Office: BU33 7/55
European Commission, B-1049 Bruxelles, Belgium

Vienna, 29.9.2017

Subject: **Public Consultation to the draft „RSPG Opinion on a long-term strategy on future spectrum needs and use of wireless audio and video PMSE applications“**

Dear Sir or Madam,
the **OETHG (Österreichische Theatertechnische Gesellschaft)** comments the above paper in the name of the Austrian PMSE-community as follows.

Since ist foundation in 1984, the OETHG is looking for the interests of the Austrian Theatre- and Event-Community by discussing problems with authorities and the government. The OETHG is also in charge of working out standards and norms for PMSE. Members oft he OETHG are the Austrian theatres (all great theatres including the Vienna Burgtheater), the most important festivals (Salzburger Festspiele, Bregenzer Festspiele, Seefestspiele Mörbisch, etc.), production companies in the film- and event-field and trading companies for PMSE-equipment.

Already since 2007 the OETHG fights not only in Austria but in Europe against the loss of frequencies, which are essential for PMSE-production. During the last years there was growing up an excellent connection between the OETHG, the Austrian Ministry of Traffic (BMVIT) and the Office of the Austrian Federal Chancellor. A result of this productive cooperation was the strategy of the Austrian government with regard to future PMSE spectrum requirements.

First of all we would like to declare, that we are very glad, that there exists now – after so many years – a draft of an RSPG Opinion concerning questions of frequency-policy for PMSE. By this paper we could reach our target, to bring to EU-commission the serious discussion oft he requirements of PMSE within EU.

A. General Statements:

1. In this draft RSPG deals in principal **with peak demand situations** and different **possibilities to manage this demand**. This may probable have been the mandate given by the EU-commission to focus on the challenges of satisfying peak demand requirements.
We cannot find in this draft of RSPG any consideration of the daily ordinary PMSE-production, which – beside of events with peak demand – needs already a great part of the frequency spectrum from 470 – 694 MHz, which will be available in the future.
We will discuss the possibility of using frequencies beside of UHF-spectrum later in this statement.

By this fact the RSPG draft does not describe the total need of frequencies of PMSE production! If – for example – there is in Vienna during 3 days the „Donauinsel-Festival“ with 11 stages and more than 2 millions of spectators, there is given a tremendous need of frequencies. But at the same time the PMSE users have to produce in Vienna beside oft the great festival.

Büro & Postanschrift:
OETHG
Taubergasse 60
A-1170 Wien

Telefon & Fax:
+ 43 (1) 505 51 18/ DW 80 Fax
Mail: sekretariat@oethg.at
www.oethg.at

UID Nr. ATU 40323501
ZVR- Zahl: 810701640
IBAN: AT32 4105 0301 8181 0001
BIC: VOFWAT21XXX

Therefore we believe, that the EU-commission has to extend the mandate for RSPG to take into consideration the real need of frequencies for PMSE production !!

2. **The RSPG-Opinion is based on the decision oft he EU-commission, that a baseline of about 60 MHz should be sufficient to meet recurring ordinary needs of wireless PMSE audio.**
Even in taking into consideration, that technology advances will improve the spectrum efficiency of PMSE, **these 60 MHz cannot meet the real need of spectrum under the aspect of producing on high level of quality**. (Even if – as in Austria – there must be available two additional TV-channels for PMSE-audio!)
One oft he reasons is the **In-Ear-Monitoring.** Today there are in use almost more audio channels for IEM as fort he main-mics oft he actors on stage!
Beside this it is a fact, that **only 29 MHz of these 60 MHz are harmonized** (and the national authorities are **„invited“,** to find additional 30 MHz !!).

3. **What we miss in the RSPG-Opinion is any precise proposal, which frequancy-bands should be harmonized within EU.** A proposal with defined frequencies would allow to produce within EU with the same, very expensive equipment and to plan investments for the future.

4. The RSPG-Opinion always has in mind, **that there will be a review of the use of the UHF-Band at the next WRC and once more in 2025**, as suggested in the Lamy report.
That ist he reason, why PMSE has no security in planning for the next 6 to 8 years.
This is not very helpful !

5. RSPG proposes in this opinion very often, to organize on national level **a better coordination of frequencies** for great events with peak demand. **Unfortunately this is not a helpfull advise for the future, because PMSE is forced to do so already since years!**

6. It is necessary to take into consideration the **5G technology. But as there exist no exact parameters or details oft he 5G-system,** PMSE is not in a position to estimate the advantage of this new system. We do not expect any gain of frequencies for PMSE by this technology.
Please hold in mind, that most of spectators at any event are using a handy (beside a handy in the future possibly other wireless devices). **This requires additional need of spectrum.**

B. Audio PMSE:

1. PMSE equipment with larger tuning range
We support the recommandation of RSPG towards manufactors of PMSE equipment, to enlarge the tuning range of their devices and to bring by this way the possibility to PMSE users **to spare expenses in their investments**.
But we want to point to the fact, that – refering on our experience in using equipment with large tuning span – **there is given the danger of intermodulation!**

2. It should be out of any discussion, that the UHF-band in the ranges of 470 – 694 MHz and 733 – 758 MHz will be at least until 2030 - and if possible some years more - continue to be exclusive frequency bands for audio PMSE.

3. The use of duplex gaps within the whole UHF-band is possible, but will not be used very often by PMSE-user because of the fear of interferences if there are many spectators at an event. Beside this the PMSE-user will avoid the expensive costs of equipment for this frequencies.

Büro & Postanschrift:
OETHG
Taubergasse 60
A-1170 Wien

Telefon & Fax:
+ 43 (1) 505 51 18/ DW 80 Fax
Mail: sekretariat@oethg.at
www.oethg.at

UID Nr. ATU 40323501
ZVR- Zahl: 810701640
IBAN: AT32 4105 0301 8181 0001
BIC: VOFWAT21XXX

4. Alternative frequency bands for the use by PMSE:

VHF- band: 174,000 – 216,000 MHz
232,825 – 234,625 MHz (only for Austria, could be harmonized)
235,675 – 249,900 MHz (only for Austria, could be harmonized)
There exists already digital equipment for these frequency bands, but it can only be used for VHF. Therefor the PMSE user have to buy additional special new equiment. **This ist he reason, why it can not be decided, wether the PMSE user will accept the VHF-Band**.

Frequency bands below 2 GHz: 1350 – 1400 MHz
1427 – 1492 MHz
1492 – 1518 MHz
1518 – 1525 MHz
1785 – 1805 MHz
The use of these higher frequencies brings problems to the user due to physical features:
Within the Frequency range of 470 MHz – 862 MHz there exist extremly good conditions for radio communication because of the fact, that wave a able to penetrate walls, buildings and obstacles. The UHF-frequency range is therfore the best for TV and wireless PMSE audio. **The use of higher frequencies includes the problem, that these waves cannot penetrate obstacles. Therefore it is necessary, to habe free sight between transmitter and receiver**. **By this fact PMSE users have to use more equipment** because of the obstacles on stage (scenery) or walls in buildings to have wireless contact without interruptions. This is not always to realize at artistic productions and at great events like for example reports concerning government elections!
Beyond this, wearing small transmitters and antennas dirctly at mens body is not practicable without problems because of the strong absorbing of waves at high frequencies.

But these high frequencies can probably be used at „Open Air“ events because in most cases there is given free sight between stage and audio control room. The same situation is given in **ENG**: Between mobile wireless camera and reporter there is always free sight.

The following frequencies of this range should be harmonized for PMSE all over europe:
1350 – 1400 MHz and
1518 – 1525 MHz.

5. 5G technology:
We would like to inform you of an official statement oft he Austrian Minister of Economic Affairs: „Many of applications are just now in the stadium of development. Therefore we cannot really estimate, where and how this technology will be used. But it is a fact, that – looking at the exponential growth of data amount - the 4G standard can no longer meet the need. Especially if looking at the development of IoT („internet of things“), when for example each coffee-machine will have ist own SIM-card. If Austia can reach to become the pilot-country for 5G mobil communication standards, Austria could get til 2027 about 30 to 40 billions Euro more for ist national brutto value added and about 30.000 – 40.000 new jobs.“

It is our opinion, that these forecasts are not provable. As a fact, the PMSE community, which is producing on highest level, seems now to be forced to battle for their essential frequencies even against coffee-machines. This shows the ignorance of most politicians concerning the really important problem oft he use of frequencies all over the world.

Büro & Postanschrift:
OETHG
Taubergasse 60
A-1170 Wien

Telefon & Fax:
+ 43 (1) 505 51 18/ DW 80 Fax
Mail: sekretariat@oethg.at
www.oethg.at

UID Nr. ATU 40323501
ZVR- Zahl: 810701640
IBAN: AT32 4105 0301 8181 0001
BIC: VOFWAT21XXX

To take advantage of the new 5G technology for the PMSE sector, it should be necessary – beside the needs of mobile communication and IoT – to specify the 5G standards in accordance to requirements of PMSE, to allocate additional frequency bands to PMSE and to harmonize these bands.

C. Video PMSE:

In PMSE production wireless cameras on stage and in public areas are used without any exception in a way, that there is given free sight for the point to point radio links.
Therefore there is given no danger of interference by using the band of 2010 – 2025 MHz, which has been harmonized by the EU-commission in 2016 for wireless cameras. But because of the growing quality standards in video production there can be brought into action only 2 – 3 video cameras. Therefore **it is a „MUST“ to harmonize additional frequency bands for wireless video cameras.**
The problem: The frequency band from 2300 – 2400 MHz will be allocated to mobile communication and the other suitable band from 2700 – 2900 MHz is used in many countries for aviation requirements.

Final fundamental statement:

The requirements oft he PMSE community have to be taken in consideration in any case by the EU commission, because PMSE is producing most oft he contents which are offered by the mobile broadband networks. This ist he reason for our demand, that in the future at all consultations and discussions of RSPG or EU-commission, dealing with the use and allocation of frequencies for PMSE an expert of the PMSE-field, coming from activ production has to be present as consultant, because the discussions and decisions require a high level of competence and experience concerning PMSE production.

Yous sincerely

Dipl.-Ing. Günther Konecny
Member of the OETHG committee
By order of the entire Austrian Theatre- and Event Community

Dipl.-Ing. Günther Konecny
Reisenbauer Ring 8/4/15
A-2351 Wiener Neudorf
Tel/Fax: +43-2236-47200
Mobil: +43-664-145 89 49
E-Mail: guenther.konecny@netway.at

Büro & Postanschrift:
OETHG
Taubergasse 60
A-1170 Wien

Telefon & Fax:
+ 43 (1) 505 51 18/ DW 80 Fax
Mail: sekretariat@oethg.at
www.oethg.at

UID Nr. ATU 40323501
ZVR- Zahl: 810701640
IBAN: AT32 4105 0301 8181 0001
BIC: VOFWAT21XXX