



Saving Cultural Frequencies

in order to protect the sovereignty
of the cultural sector

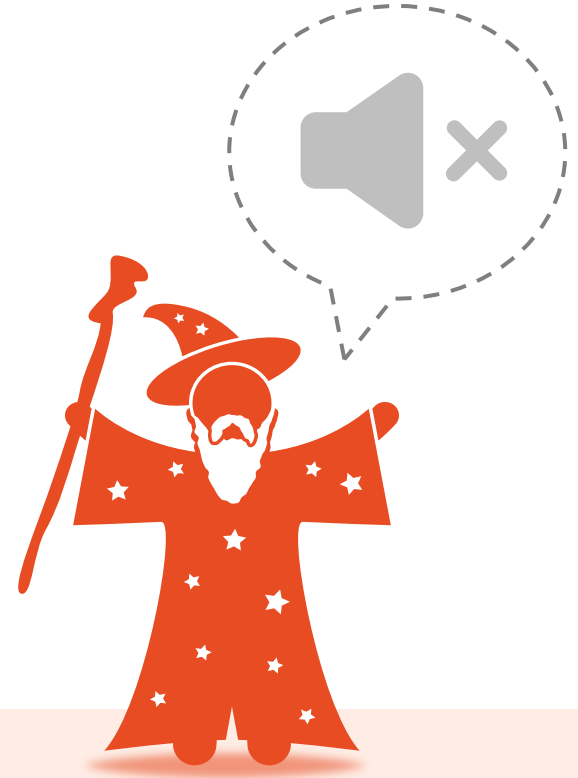
2022 edition

Without wireless production equipment, our fans can't hear us.

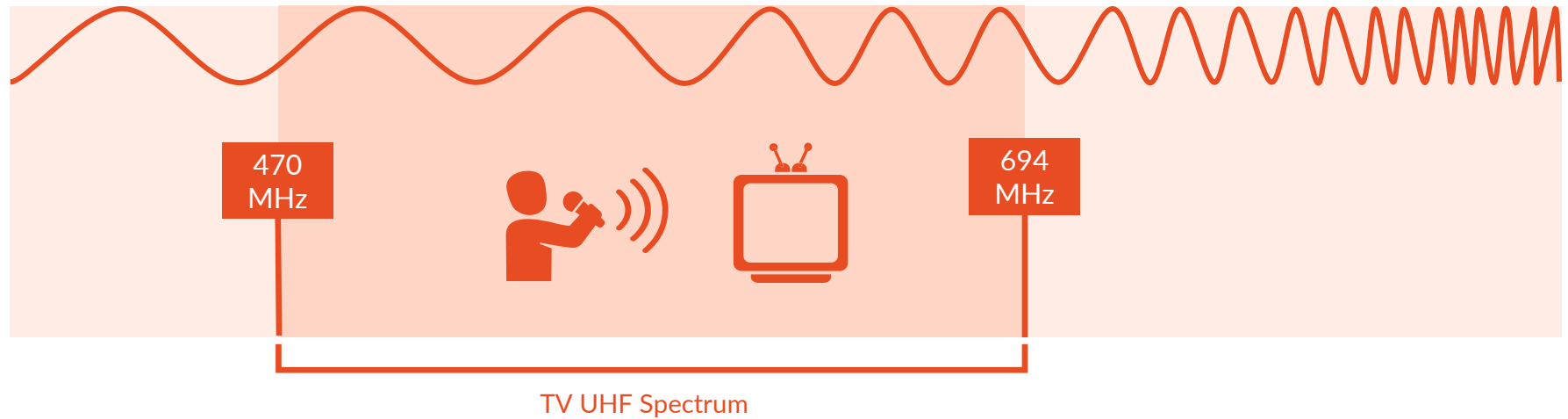
Our initiative, [supported primarily by artists and musicians](#), aims to secure an interference-free frequency spectrum for wireless microphones, in-ear systems, talk-back systems and audio links. Without these wireless production tools, our fans can't hear us. But the number of frequencies available is limited, and the

rights pertaining to their use are constantly being renegotiated. This concerns many different groups and sectors: broadcasting, mobile communications, the military, industry, astronomy, etc.

The cultural and creative industries must not be left empty-handed.



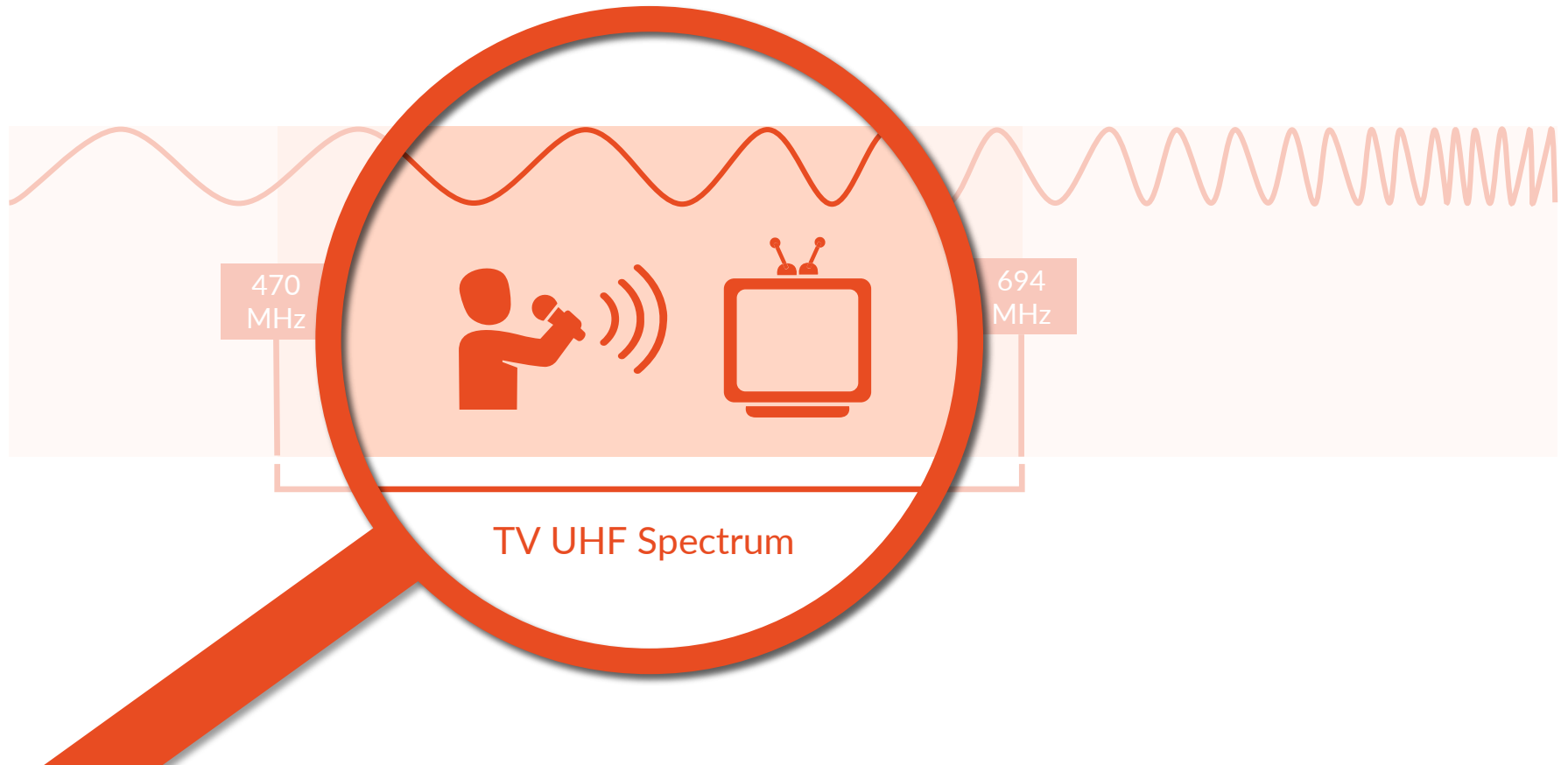
We need the “cultural frequencies”.



What are often called the “cultural frequencies” consist of the frequency range used for radio microphones and other wireless production equipment. The international technical term for this production equipment is “Programme Making and Special Events (PMSE)”. The frequency in question ranges from 470 to 694 MHz,

known as the “TV UHF spectrum”. This is also where terrestrial television transmission takes place, i.e. what is received via the household antenna. For more than 60 years, terrestrial television (broadcasting), the arts, weather services and astronomy have been using the frequency range together in good partnership. We intend to keep it that way.

Why frequencies from the TV UHF spectrum?



Only the TV UHF spectrum adequately prevents disruptive body interference.



Artists want to move freely on stage with their radio microphone. This is possible only at 470 to 694 MHz, since body interference is minimal within this frequency range (it's not for no reason that pacemakers use the frequency band around 400 MHz).

Body interference increases at higher frequencies. This causes unwanted directional effects to occur. The artist may end up in dead spots while moving around on stage.

Physically, the wavelength must be longer than the diameter of the body. This does not occur at higher frequencies. Only TV UHF can do this.

Radio waves in the TV UHF spectrum can penetrate stage structures.

Theatre decorations are made of complicated steel or aluminium constructions, which strongly impair the transmission of radio waves.

The radio waves are transmitted and spread so well in the UHF range that they reach the receivers on the mixing console undisturbed by such setups.

Higher transmitting power cannot compensate for this, because the transmitting power of our microphones is limited by law. It would also significantly reduce battery life. Larger batteries and transmitters are not an option. The audience would see them on the costumes.



Only the TV UHF spectrum allows for touring artists to travel throughout Europe with their own sound system.

Musicians on tour use the frequency range between 470 to 694 MHz.

Most sound equipment is produced for this spectrum. This range is harmonized in Europe.

Those who go on tour can simply take their sound equipment with them.



In Europe, we are recognized as secondary users of the UHF spectrum.

Hitherto, we have been able to use the range between 470 and 694 MHz in the TV UHF spectrum everywhere in Europe. Footnote 5.296 of the “Radio Regulations” for this region of the world (which also includes Africa, Arabia and Russia) makes this possible by naming us secondary users of this frequency spectrum, the primary user being radio broadcasting.

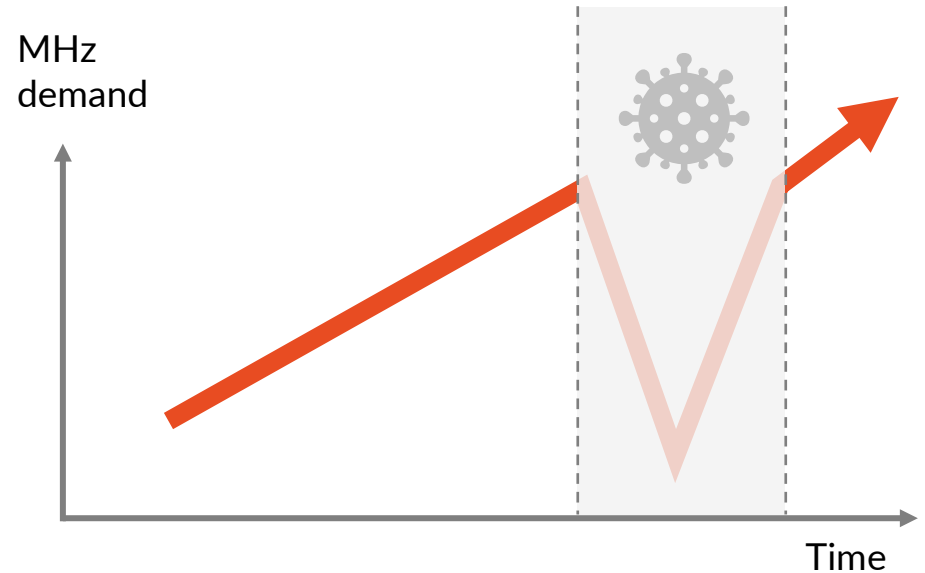


How much interference-free spectrum do we need?



The pandemic has only temporarily interrupted the increasing demand for access to this frequency spectrum by the cultural sector.

In 2014, point 5 of the [European Union's official decision](#) ruled that cultural events (PMSE) have a daily spectrum need of 96 MHz. We assume an annual increase of about 2 MHz, interrupted by the coronavirus pandemic in 2020 and 2021. This means that we now need about 110 MHz. This demand, which can appear anytime and anywhere (unexpected media events, etc.), can only be satisfied by the frequencies in the TV UHF spectrum.



Why are we calling for support now?



Technicians already have to work their magic behind the scenes.

In some places, sound designers and sound engineers can only solve these problems with a large number of personnel and a lot of creativity, not to mention the resulting costs: Sometimes the frequencies used during events have to be changed! Due to spectrum shortage, only 68 radio links are available for the Friedrichstadt-Palast theatre in Berlin to use. (Further radio links are also available to the security sector).

A number of fantastic events are possible with 68 radio links – however, this is also close to the limits of what the theatre can feasibly do. Being able to use more radio links to make the choreography even more sophisticated and performances more extraordinary would be a great advantage. Unfortunately, this is no longer possible.



We face the threat of losing the TV UHF spectrum in 2023.



Our frequency band used to be larger, but the so-called “Digital Dividend 1” and “Digital Dividend 2” allocated the 700 and 800 MHz bands to mobile communications. Now the loss of the small remainder (470-694 MHz) is also imminent. The mobile communications sector and its lobbying bodies are making strong demands for the use of this band.

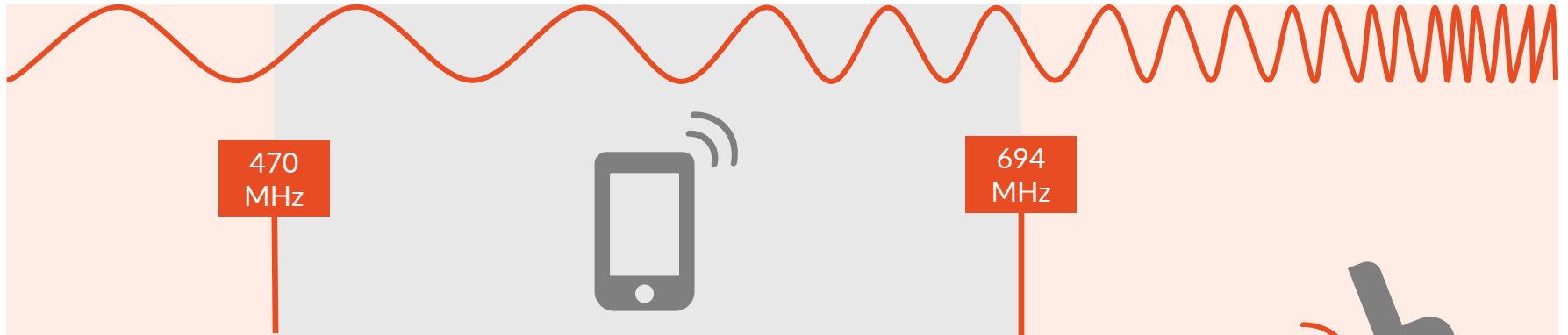
At the next World Radiocommunication Conference, which will take place in 2023, they want to be awarded this band.

From our point of view, this is more frequency band than mobile communications needs. It already has about 1300 MHz of frequency spectrum, which it is far from using up.



For physical reasons, the TV UHF frequency band would only give mobile networks 3 percent more spectrum, but would mean a 100 percent loss for our cultural sectors. Meanwhile, there is an increasing demand for events, theatres, fairs, opera houses and concert halls.

We don't want to be dependent on mobile phone companies.



Mobile telephony has one decisive disadvantage: it cannot share its spectrum. It always reserves it for itself exclusively. This leaves no room for our needs. We would only be able to use the spectrum if we commissioned mobile

communications. But we don't want to do that. That would make us lose our sovereignty and become dependent on the big mobile communications companies. **We want to retain the sovereignty of the cultural sector.**



The problems of mobile communications can be solved differently.



The problem for mobile communications is not a lack of frequencies, but a lack of infrastructure. [This graphic shows](#) that mobile communications do not need our cultural frequencies.

Problems like dead spots can be solved by building more mobile sites and national roaming. This might cost a bit

more than new frequencies, but would secure the cultural frequencies and thus at the same time preserve Europe as an attractive location for events, and our sector's sovereignty. In the meantime, the mobile communications sector already receives a lot of help to solve its problems.

Will there be any frequencies left for **culture** in the medium term – or only for other sectors, like mobile communications?





Visit our website

www.sos-save-our-spectrum.org

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