



26 MARCH 2021

DIGITALEUROPE views on draft RSPG Opinion on Spectrum Sharing



Introduction

DIGITALEUROPE supports the Radio Spectrum Policy Group's (RSPG) efforts in evaluating future spectrum management techniques that can increase the effectiveness and efficiency of radio spectrum usage by assessing the potential for new usages to flourish, while ensuring that coexistence with adjacent services is possible. We therefore welcome the RSPG's initiative to further investigate how to improve spectrum sharing.¹

While sharing cannot be the only solution to the need to accommodate conflicting spectrum users and sectoral requirements, it is an important tool to increase spectrum efficiency. We invite the RSPP to consider the following points in its final Opinion:

- ▶▶ The need to correctly distinguish between inter-service and intra-service spectrum sharing schemes;
- ▶▶ The importance of ensuring a case-by-case approach for both licensed and licence-exempt technologies, taking into account the nature of new and existing users, the risks of harmful interference and a cost-benefit analysis of spectrum sharing; and
- ▶▶ The need to improve interference modelling and to foster a European-scale ecosystem.

¹ *Draft RSPG Opinion on Spectrum Sharing – Pioneer initiatives and bands*, available at https://rspg-spectrum.eu/wp-content/uploads/2021/02/RSPG21-006final_Draft_RSPG_Opinion_on_Spectrum_Sharing.pdf.



Table of contents

• Introduction	1
• Table of contents.....	2
• General considerations	3
• Spectrum sharing schemes	3
Inter-service spectrum sharing	3
Intra-service spectrum sharing	4
• Identifying sharing solutions and approaches	4
Licensed technologies	4
Licence-exempt technologies.....	4
• Improved modelling and European scale	5



General considerations

Spectrum scarcity, the growing demand for wireless connectivity and continued technological innovation make spectrum sharing a regulatory priority. This is especially the case in bands where spectrum clearing and repurposing may be unsustainable as well as in the higher band ranges where, given radio frequencies' propagation characteristics, sharing is more appropriate.

Spectrum sharing, both inter- and intra-service, is seen as an important tool for regulators and stakeholders around the world. It can help respond to the increasing demand for spectrum from existing and new industries and applications, and is seen as a key enabler of certain 5G and Industry 4.0 use cases.

We agree with the draft Opinion that sharing should not be seen as a solution to all frequency shortages. Predictable access to spectrum, uninflated and predictable costs of spectrum and a stable interference environment (both co-channel and adjacent channel) are all essential to incentivising investment in capacity and coverage. This is key for both public and private networks.

On the other hand, spectrum sharing can be considered, where appropriate and useful, as a solution to increase spectrum efficiency in current and next-generation communications systems.

It is important to recognise that spectrum can be broadly authorised in two ways, addressing different existing and new markets, depending on the use case requirements:

- ▶▶ Through licensing, e.g. used by nationwide or local MFCNs; and
- ▶▶ Through licence exemption/general authorisation, e.g. used by WAS/RLANs.

Both the licensing and licence-exemption authorisation models can incorporate various forms of spectrum sharing.



Spectrum sharing schemes

Inter-service and intra-service spectrum sharing are separate schemes that often get conflated. To avoid any misunderstandings, we provide definitions below.

Inter-service spectrum sharing

Inter-service spectrum sharing refers to the co-channel sharing of spectrum between a wireless network, e.g. IMT network or RLAN, and existing users of

other services in a given band, i.e. between different services as defined by the ITU-R (mobile, FS, FSS, MSS, etc.).

Intra-service spectrum sharing

Intra-service spectrum sharing, on the other hand, refers to the co-channel sharing of spectrum between different wireless networks, e.g. between IMT networks or between RLANs, in a given band.



Identifying sharing solutions and approaches

DIGITALEUROPE agrees that ‘spectrum sharing should not be considered the answer to any shortage of frequencies when addressing conflicting demands by various spectrum users or sectoral needs.’²

The viability of sharing solutions and approaches in different bands should be considered on a case-by-case basis, accounting for the nature of new and existing users, the risks of harmful interference and an analysis of the costs and benefits of spectrum sharing.

Licensed technologies

Licensed technologies, e.g. IMT networks, are designed to deliver a predictable and managed quality of service at the network level. They require individual licensing to deliver the challenging technical requirements as set out by the ITU-R.

IMT networks can support intra-service spectrum sharing with other IMT networks via network slicing, multi-operator core network (MOCN), spectrum leasing and local licensing. They can also support ‘static’ inter-service spectrum sharing with incumbents such as FS and FSS.

Licence-exempt technologies

Licence-exempt technologies, e.g. WAS/RLAN, are adaptive by nature and can therefore operate in a less predictable sharing environment.

Licence-exempt technologies are well suited for dynamic/opportunistic spectrum sharing (both intra- and inter-service). Due to their technical characteristics and subject to regulatory conditions, they are also suited for ‘static’ inter-service spectrum sharing with incumbents such as FS and FSS. Coexistence between

² P. 3 of the draft Opinion.

Wi-Fi and 5G NR-U is a prime example of intra-service sharing between licence-exempt technologies.



Improved modelling and European scale

Adherence to worst-case interference modelling assumptions has been an issue in the past in developing least restrictive technical conditions, and has hindered inter-service spectrum sharing between new and existing users. Improved modelling of radio propagation and increased use of terrain maps could, to some extent, assist in improved coordination and more efficient inter-service spectrum sharing.

A European-scale ecosystem to ensure successful deployment

DIGITALEUROPE agrees that keeping the development of spectrum sharing concepts sufficiently generic to adapt to sharing conditions in various frequency bands may bring benefits in terms of economies of scale. Nonetheless, it is important to stress that the availability of a European-scale ecosystem is a prerequisite to successful deployment.

We acknowledge that specific spectrum sharing rules may need to be adapted to take account of national circumstances. Nevertheless, it is desirable to maintain harmonisation for specific opportunities at European level and to ensure that spectrum sharing is implemented in a consistent – ideally uniform – manner throughout Europe.

DIGITALEUROPE believes that the selection of appropriate spectrum sharing mechanisms should be conducted at European level, with clear targets for national availability. Specific sharing rules compatible with such harmonised framework can be selected at national level to take into account local specificities.

FOR MORE INFORMATION, PLEASE CONTACT:



Alberto Di Felice

Director for Infrastructure, Privacy and Security

alberto.difelice@digitaleurope.org / +32 471 99 34 25



Zoey Stambolliu

Policy Officer for Infrastructure and Spectrum

zoey.stambolliu@digitaleurope.org / +32 498 88 63 05

About DIGITALEUROPE

DIGITALEUROPE represents the digital technology industry in Europe. Our members include some of the world's largest IT, telecoms and consumer electronics companies and national associations from every part of Europe. DIGITALEUROPE wants European businesses and citizens to benefit fully from digital technologies and for Europe to grow, attract and sustain the world's best digital technology companies. DIGITALEUROPE ensures industry participation in the development and implementation of EU policies.

DIGITALEUROPE Membership

Corporate Members

Accenture, Airbus, Amazon, AMD, Apple, Arçelik, Atos, Autodesk, Bayer, Bidao, Bosch, Bose, Bristol-Myers Squibb, Brother, Canon, Cisco, DATEV, Dell, Dropbox, Eli Lilly and Company, Epson, Ericsson, Facebook, Fujitsu, GlaxoSmithKline, Google, Graphcore, Hewlett Packard Enterprise, Hitachi, HP Inc., HSBC, Huawei, Intel, Johnson & Johnson, JVC Kenwood Group, Konica Minolta, Kyocera, Lenovo, Lexmark, LG Electronics, Mastercard, Microsoft, Mitsubishi Electric Europe, Motorola Solutions, MSD Europe Inc., NEC, NetApp, Nokia, Nvidia Ltd., Oki, OPPO, Oracle, Palo Alto Networks, Panasonic Europe, Philips, Pioneer, Qualcomm, Red Hat, Ricoh, Roche, Rockwell Automation, Samsung, SAP, SAS, Schneider Electric, Sharp Electronics, Siemens, Siemens Healthineers, Sony, Swatch Group, Technicolor, Texas Instruments, Toshiba, TP Vision, UnitedHealth Group, Visa, VMware, Workday, Xerox.

National Trade Associations

Austria: IOÖ

Belarus: INFOPARK

Belgium: AGORIA

Croatia: Croatian
Chamber of Economy

Cyprus: CITEA

Denmark: DI Digital, IT
BRANCHEN, Dansk Erhverv

Estonia: ITL

Finland: TIF

France: AFNUM, SECIMAVI,
Syntec Numérique, Tech in France

Germany: BITKOM, ZVEI

Greece: SEPE

Hungary: IVSZ

Ireland: Technology Ireland

Italy: Anitec-Assinform

Lithuania: INFOBALT

Luxembourg: APSI

Netherlands: NLdigital, FIAR

Norway: Abelia

Poland: KIGEIT, PIIT, ZIPSEE

Portugal: AGEFE

Romania: ANIS

Slovakia: ITAS

Slovenia: ICT Association of
Slovenia at CCIS

Spain: AMETIC

Sweden: Teknikföretagen,
IT&Telekomföretagen

Switzerland: SWICO

Turkey: Digital Turkey Platform,
ECID

United Kingdom: techUK