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**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND  
THE COUNCIL**

**Second Report on the operation of Radio Equipment Directive 2014/53/EU**

# 1 Introduction

## 1.1 The Radio Equipment Directive

The Radio Equipment Directive <sup>1</sup> (RED) ensures a single market <sup>2</sup> for radio equipment by setting essential requirements for safety, health, electromagnetic compatibility and the efficient use of the radio spectrum. It also provides the basis for further regulation governing some additional aspects.

Article 47(2) of the RED requires the European Commission to review the operation of the RED and to [report](#) thereon to the European Parliament and to the Council by 12 June 2018 and every 5 years thereafter. This report fulfils that requirement for the period until 12 June 2023.

## 1.2 Political context

This report covers a period where ‘A Europe fit for the digital age’ was one of the priorities set by the Commission political guidelines for the 2019-2024 term. Of relevance for radio equipment is the fact that those guidelines mentioned the Internet of Things; joint standards for the EU’s 5G networks; standards for new technologies; and high standards for privacy, (cyber)security, safety and ethics.

This period was also marked by the COVID-19 pandemic, which substantially increased the demand for remote access, thereby also accelerating the adoption of related radio equipment technologies and the need to promote cybersecurity.

Regarding the UK’s withdrawal from the EU, any EU-based economic operator that purchases a product from the UK become an importer. Additionally, UK notified bodies lost their status as EU-notified bodies and were removed from the Commission's information system on notified organisations (the [NANDO database](#)).

Russia’s illegal invasion of Ukraine has raised awareness of the role of telecommunication equipment in cybersecurity and the need to increase the level of resilience of radio equipment products on the EU market. The importance of high-precision radio equipment such as drones or dual-use products for both military and civil use (including a number of wireless devices) must be highlighted.

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<sup>1</sup> Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC.

<sup>2</sup> The references in this report to ‘single market’, ‘EU’ or ‘Member States’, should, wherever necessary, be read in conjunction with section 2.9 of the [Blue Guide on the implementation of EU product rules 2022](#),) and section 1.2.2.1 of the [Guide to the RED](#),).

## **2 Legislative developments**

Since 2018, several pieces of legislation relevant to the RED have been adopted and more are under preparation.

### **2.1 Regulation (EU) 2018/1139: civil aviation (airborne equipment, drones)**

Regulation (EU) 2018/1139<sup>3</sup> (EASA Regulation) modified the RED and, in particular, the regime applicable to the placing on the market of aviation radio equipment.

### **2.2 Delegated Regulation 2019/320: access to emergency services from smartphones using the Galileo system**

Delegated Regulation (EU) 2019/320<sup>4</sup> made the essential requirement set out in Article 3(3)(g) of the RED applicable to smartphones as from 17 March 2017. Smartphones, when accessing emergency services, must support technical solutions for the reception and processing of WiFi data, data from Global Navigation Satellite Systems (GNSS), compatible and interoperable with at least the Galileo system; and for making that data available for transmission in emergency communications.

In the absence of harmonised standards, manufacturers must have the conformity of their radio equipment products with this essential requirement assessed by a notified body.

### **2.3 Regulation (EU) 2019/1020: market surveillance and compliance of products**

Regulation (EU) 2019/1020<sup>5</sup> applies since 16 July 2021 to products that are subject to the EU's harmonisation legislation, including the RED.

### **2.4 Delegated Regulation (EU) 2022/30: cybersecurity**

The Commission adopted on 29 October 2021 Delegated Regulation (EU) 2022/30<sup>6</sup>, which will make the essential requirements set out in Articles 3(3)(d), (e) and (f) of the RED applicable to certain categories of radio equipment. An [impact assessment](#) has been performed by the Commission.

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<sup>3</sup> Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency .

<sup>4</sup> Commission Delegated Regulation (EU) 2019/320 of 12 December 2018 supplementing of Directive 2014/53/EU of the European Parliament and of the Council with regard to the application of the essential requirements referred to in Article 3(3)(g) of that Directive in order to ensure caller location in emergency communications from mobile devices.

<sup>5</sup> Regulation (EU) 2019/1020 of the European Parliament and of the Council of 20 June 2019 on market surveillance and compliance of products.

<sup>6</sup> Commission Delegated Regulation (EU) 2022/30 of 29 October 2021 supplementing Directive 2014/53/EU of the European Parliament and of the Council with regard to the application of the essential requirements referred to in Article 3(3), points (d), (e) and (f), of that Directive.

More specifically, the Delegated Regulation will improve network resilience, better protect consumers' privacy and reduce the risk of monetary fraud.

The Delegated Regulation covers internet-connected wireless devices and other devices, such as radio toys, radio childcare equipment and radio wearables.

The Delegated Regulation will become applicable on 1 August 2025. Hence, the manufacturers will have sufficient time to adapt their products <sup>7</sup>.

The Commission issued on 5 August 2022 a standardisation request <sup>8</sup> to the European Committee for Standardisation (CEN) and to the European Committee for Electrotechnical Standardisation (CENELEC) to develop relevant harmonised standards by 30 June 2024 <sup>9</sup>. This will help manufacturers to comply with the new requirements.

The [Cyber Resilience Act](#) will constitute the evolution of Delegated Regulation (EU) 2022/30, because it will cover all digital products and will address their whole life cycle.

## **2.5 Directive (EU) 2022/2380 (the Common Charger Directive)**

Several options regarding the implementation of [common charger](#) were studied in an [impact assessment](#). The RED was amended by Directive (EU) 2022/2380 <sup>10</sup> (the Common Charger Directive), that introduces the requirements of the 'common charging' solution into the RED, particularly:

- USB-C will be the harmonised charging port.
- Harmonisation will stop different producers unjustifiably limiting charging speed and will ensure that the charging speed is the same when using any compatible charger.
- Consumers will be able to purchase a new electronic device without a new charger.
- Producers will need to provide relevant visual and written information about charging characteristics.

These requirements will apply from 2024 to all handheld mobile phones, tablets, digital cameras, headphones, headsets, portable speakers, handheld videogame consoles, e-readers, earbuds,

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<sup>7</sup> The deadline established in Commission Delegated Regulation 2022/30 has been postponed from 1 August 2024 to 1 August 2025, following a formal request from CEN and CENELEC. The amending Delegated Regulation (2023/2444) has been adopted and published in the OJEU.

<sup>8</sup> Commission Implementing Decision on a standardisation request to CEN and CENELEC as regards radio equipment in support of Directive 2014/53/EU of the European Parliament and of the Council and Commission Delegated Regulation (EU) 2022/30.

<sup>9</sup> The initial deadline was established on 30 September 2023 and has been postponed to 30 June 2024, following the formal request of CEN and CENELEC.

<sup>10</sup> Directive (EU) 2022/2380 of the European Parliament and of the Council of 23 November 2022 amending Directive 2014/53/EU on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment.

keyboards, mice and portable navigation systems. They will also apply to laptops from 28 April 2026. This scope of application of products may be extended in the future.

The “Common Charger” Directive will be complemented by corresponding requirements under a review of the [Ecodesign Implementing Regulation](#) for External Power Supplies (EPS). The main options put forward are to:

- Inform consumers by marking the “common chargers” with a corresponding logo and pictogram.
- Prevent non-compliant proprietary chargers being sold with RED devices.
- Scale up the benefits of interoperability by extending the scope of “common chargers” to equipment other than the RED devices.

The regulatory review is expected to be completed in 2024.

The Commission will report whether an extension of the unbundling requirements and/or mandatory unbundling to cables should be considered.

### **3 Non-legislative developments**

#### **3.1 RED notified bodies**

One of the main consequences of the increasing number of the RED’s requirements is that notifying authorities have to assess the competence of notified bodies to meet the newly activated essential requirements.

The NANDO system has been adapted to show which essential requirements a notified body can meet.

#### **3.2 Radio equipment not subject to national restrictions**

In accordance with Article 1(3) of Commission Decision 2000/299/EC<sup>11</sup>, the Commission published in 2020 a list of equipment that falls within the scope of ‘[Class 1](#)’ (i.e. equipment that can be placed on the market and put into service without restrictions). This list is currently being updated in order to reflect the modifications to the EU and national radio spectrum access regulations.

#### **3.3 Update of the RED guide**

The RED guide is a non-binding document that helps market surveillance authorities, industry and notified bodies to implement the RED consistently.

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<sup>11</sup> It remains valid under the RED, with the exception of the provisions of Commission Decision 2000/299/EC that refer to the ‘alert sign’.

The latest version of the RED guide was issued in December 2018 and is publicly [available](#). An update of the RED guide is currently being considered.

## **4 Harmonised standards in support of the RED**

### **4.1 Citations of standards**

Since 2018, the Commission has published references of 72 harmonised standards in the Official Journal of the European Union (OJEU). Standards published in the OJEU L series provide with presumption of conformity to the RED essential requirements when properly used.

A number of discussions of legal nature have taken place with the relevant technical committees of CEN, CENELEC and the European Telecommunications Standards Institute (ETSI). The following main topics have been proactively clarified by the Commission services so that the standardisation could continue to develop:

- Implementation of receiver parameters to increase the resilience of radio equipment and avoid the production of harmful interferences.
- Objectivity and verifiability of standards to avoid giving an excessive degree of freedom to the manufacturer to implement technical specifications.
- Innovation and competitiveness of the testing industry in the EU.
- Tolerances and measurement uncertainties to avoid artificial modifications of the technical limits and to foster more accurate measurements.

### **4.2 Standardisation requests**

Since 2018, the Commission has adopted two standardisation requests for harmonised standards supporting the RED.

#### **4.2.1 Access to emergency services from smartphones – Article 3(3)(g) of the RED**

To support the implementation of Delegated Regulation (EU) 2019/320, the Commission adopted a standardisation request<sup>12</sup> addressed to ETSI, who decided not to accept.

To ensure a consistent approach and given that participation of a notified body will be required in order to perform the conformity assessment, the Commission has published [guidelines](#) for notified bodies.

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<sup>12</sup> Commission Implementing Decision on a standardisation request to ETSI as regards handheld mobile phones in support of Directive 2014/53/EU of the European Parliament and of the Council in conjunction with Commission Delegated Regulation (EU) 2019/320.

#### **4.2.2 Cybersecurity – Article 3(3)(d), (e) and (f) of the RED**

The Commission has supported manufacturers in complying with the new requirements on cybersecurity by requesting CEN-CENELEC to develop three harmonised standards<sup>13</sup>. CEN-CENELEC accepted the request in September 2022.

#### **4.3 Harmonised standards in support of Article 3(1) of the RED**

There only a few harmonised standards in support of Article 3(1)<sup>14</sup> of the RED. This is because they have either not been proposed for citation by the European standardisation organisations or because they did not meet the RED legal requirements to be cited. In any case, the involvement of a notified body is not required in order to demonstrate conformity with these essential requirements.

### **5 Member States' activities**

#### **5.1 Member States' reports under Article 47(1) of the RED**

The Member States submitted reports on the implementation of the RED in 2021 and 2023, highlighting the following points.

- Most Member States informed stakeholders and other authorities on RED's latest developments.
- No issue was reported regarding cross-sectors cooperation of authorities.
- Some authorities participate in national and European standardisation bodies. Other forums for cooperation on standards include the Telecommunication Conformity Assessment and Market Surveillance Committee (TCAM), the RED administrative co-operation group (ADCO RED) and the Committee on Standards.
- To assess conformity assessment bodies that are seeking to become notified bodies, most Member States rely on national accreditation bodies (NABs)<sup>15</sup>. Some Member States have suggested establishing a coordination mechanism even at the European Co-operation for Accreditation (EA) and harmonising the assessment of notified bodies across the EU by only allowing assessment via accreditation.
- The emerging risks and challenges include artificial intelligence, reconfigurable radio systems, refurbished products, drones, digital labelling, imports from non-EU countries, regular revision of legislation and standards, capacity to perform tests, e-commerce and installation of products.

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<sup>13</sup> Commission Implementing Decision on a standardisation request to CEN and CENELEC as regards radio equipment in support of Directive 2014/53/EU of the European Parliament and of the Council and Commission Delegated Regulation (EU) 2022/30.

<sup>14</sup> Requirements on safety and electromagnetic compatibility.

<sup>15</sup> See Regulation (EC) No 765/2008.

## **5.2 Update of activities of ADCO RED**

Since 2011, ADCO RED has been publishing annual statistics on market surveillance activities. The number of inspections rose to 11491 in 2022 with a non-compliance rate of about 60%. This result does not represent the overall compliance of radio equipment on the market because most MSAs concentrate the inspections in problematic sectors.

Between 2018 and 2022, ADCO RED carried out two campaigns (IoT devices and private mobile radio (PMR) and PMR 446 products).

In 2021, ADCO RED started its participation in the EU-funded joint actions: JAHARP 2020 (specific absorption rate (SAR) on connected devices, IoT-connected devices in cooperation with customs, and a harmonised approach for the assessment of the administrative requirements for product sectors under Regulation (EU) 2019/1020); and JAHARP 2021 (Wireless Local Area Network WLAN 5GHz and radio equipment in cars).

ADCO RED has prepared and published several guides or other sources of information sources for stakeholders on a number of topics, including the applicability of the RED to specific products.

Regarding the internet-supported information and communication system for the pan-European market surveillance (ICSMS), ADCO RED has worked with the Commission on preparing the implementation of the RED interface.

## **5.3 EU Testing Facility**

In accordance with the procedures for designating the EU Testing Facilities (EUTF) set out in Implementing Regulation (EU) 2022/1267<sup>16</sup>, the Commission [appointed](#) Lithuania's Communications Regulatory Authority as the EUTF for radio equipment. The EUTFs are required, within the area of their designation, to perform the duties established by Article 21 of Regulation (EU) 2019/1020<sup>17</sup>.

# **6 Implementation and enforcement**

## **6.1 Risk assessment**

Manufacturers of radio equipment must perform risk assessment before carrying out the conformity assessment. In particular, they have to evaluate the risks and the likelihood of them occurring in order to carry out concrete technical mitigation measures. The RED does not establish any particular risk assessment methodology.

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<sup>16</sup> Commission Implementing Regulation (EU) 2022/1267 of 20 July 2022 specifying the procedures for the designation of Union testing facilities for the purposes of market surveillance and verification of product compliance in accordance with Regulation (EU) 2019/1020 of the European Parliament and of the Council.

<sup>17</sup> Regulation (EU) 2019/1020 of the European Parliament and of the Council of 20 June 2019 on market surveillance and compliance of products.



In addition, the evaluation of the risk assessment performed by the manufacturers is under the remit of the Member States. A common approach by authorities is, therefore, part of the coordination activities of ADCO RED.

## **6.2 Access to emergency services by autonomous maritime radio devices (delegated regulation)**

The expert group has considered how to ensure the appropriate use of the automatic identification system (AIS) and the global maritime distress and safety system (GDMSS) for autonomous maritime radio devices (AMRD) to access emergency services, including avoiding interference with other maritime equipment.

Its preliminary conclusion is that the essential requirements<sup>18</sup> set out in the RED can address the nature of topics in the recently issued ITU-R<sup>19</sup> recommendations. Detailed specifications can be integrated into relevant harmonised standards.

## **6.3 Formal objection to the SAR measurement standard**

In 2022, France formally objected to a harmonised standard on SAR measurement<sup>20</sup>. France considers that it is necessary to revise this standard because the current version allows the manufacturer to freely choose a measurement distance between 0 and 5 mm. It considers that the standard should specify the measurement distance at which the maximum level is reached. The current approach allows the manufacturer to use a distance with a lower SAR level.

The Commission requested a technical report from CENELEC, which concluded that the highest SAR usually occurs at a distance of 0 mm. The expert group on radio equipment has broadly agreed with this approach. CENELEC will update the relevant standard accordingly.

## **6.4 Radio equipment in vehicles**

The Commission has drawn attention to the fact that vehicle manufacturers must ensure (via a risk assessment) that the RED-compliance of a wireless device is not altered after it has been installed in the vehicle and is being operated with other pieces of radio equipment.

## **6.5 Interference with meteorological radars caused by 5 GHz RLAN equipment**

Interference of 5 GHz radio local area network (RLAN) equipment with meteorological radars is a long-standing problem. Such interference is one of the main concerns of the weather radar

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<sup>18</sup> Article 3(2) and Article 3(3)(g) of the RED.

<sup>19</sup> Recommendation ITU-R M.2135-0.

<sup>20</sup> EN 50 566:2017. Product standard to demonstrate the compliance of wireless communication devices with the basic restrictions and exposure limit values related to human exposure to electromagnetic fields in the frequency range from 30 MHz to 6 GHz: handheld and body-mounted devices in close proximity to the human body.

community because interference can impair data quality and post-processing algorithms. The sources of interference are difficult to track because they are so short-lived.

The Commission asked the Joint Research Centre (JRC) to conduct a [study](#) to analyse the problem and propose solutions. None of these options provides a complete solution, however, because the frequency band is shared by both services. Furthermore, the most feasible solutions would require improved coordination among national authorities. The harmonised standard EN 301 893 V2.1.1, implementing the DFS <sup>21</sup> mechanism, has been demonstrated to be a way to avoid interference when properly used. There are not shortcomings either regarding the current EU regulation on RLAN at 5 GHz <sup>22</sup>.

## **6.6 Access to the emergency services using the VoLTE technology**

In 2022, the Netherlands raised the issue of the lack of interoperability of VoLTE <sup>23</sup> technology for voice calls. Quite often voice calls cannot be established when a smartphone is used in the network of a different operator (roaming service) that has shut down 2G and 3G networks. This issue is especially problematic for the access of emergency services (E112) because there is no alternative to a voice call.

The technical specifications of the cellular network are developed by 3GPP, a global partnership in which ETSI participates. ETSI has presented a report which concludes that this issue is mainly due to the lack of commercial agreements between network operators, which in turn prevents the VoLTE service from being fully operational.

The Commission's provisional conclusion services is that the RED is not the right tool to address this issue because the RED cannot impose any obligations on network operators.

## **6.7 eLabelling**

The industry has proposed implementing requested marks and information in digital format. The aim is to improve the industry's competitiveness by ending the need to provide printed information. It would also be consistent with the EU's green approach.

Several Member States are concerned that this might make it more difficult to perform MSAs because it would be more complicated to access information in a digital format. They also consider that this measure might be burdensome for some economic operators such as distributors.

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<sup>21</sup> Dynamic frequency selection is a technical element that automatically shifts the transmission to another frequency if it is detected that the channel is occupied.

<sup>22</sup> Commission Implementing Decision (EU) 2022/2307.

<sup>23</sup> Voice over LTE (Long-Term Evolution). This is the technology used by the fourth generation of cellular networks (4G) to implement the voice service.

## **6.8 Products subject to refurbishment, remanufacturing and repair**

Refurbishment, remanufacturing and repair is a fast-growing market, especially in the field of smartphones. It contributes to the circular economy through product life extension.

Regarding the RED, operators that make changes to products legally qualify (according to the Blue Guide) as manufacturers if they substantially alter the equipment in such a way that its compliance with the essential requirements might be affected. A way needs to be developed to reconcile the requirements for the circular economy with the requirements for the protection of consumers and public assets established in the RED.

## **7 Update on REDCA's activities**

The Radio Equipment Directive Compliance Association ([REDCA](#)) is the association of notified bodies performing conformity assessments under the RED.

In 2018, the REDCA discussed 5G technology, the SAR and risk assessments. The 'RED NB refused certificate' database was implemented on CIRCABC system. In addition, a guidance note (TGN)<sup>24</sup> on risk assessment was discussed and a new version published.

In 2019, the REDCA discussed on the identification of fake test reports. A discussion on active antenna resulted in the revision of the relevant TGN. The REDCA had a preliminary discussion on cybersecurity.

In 2020, the REDCA rules for the voting process on TGNs were revised, so that only RED notified bodies can now vote. There were further updates on cybersecurity as a general topic and further discussions on 5G active antenna.

In 2021, there were further discussions on radio equipment in vehicles. In addition, the REDCA ran a series of E112/Galileo webinars.

In 2022, based on comments from the Transparency Register, the REDCA rules were updated.. Discussions on tolerances and measurement uncertainties in standards took place.

In the first half of 2023, REDCA ran a workshop with CEN/CENELEC on the standardisation request for Delegated Regulation on cybersecurity.

## **8 Report topics required by Article 47(2) of the RED**

Article 47(2) of the RED requires reporting by the Commission to the European Parliament and Council on 6 specific objectives. The Commission gathered input by surveying the members of the Commission expert group on radio equipment.

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<sup>24</sup> The aim of the TGNs is to address the lack of clarity regarding the RED and/or the RED Guide as perceived within the REDCA.

## **8.1 Objective 1. Coherent system at EU level for all radio equipment**

Survey respondents raised the following issues:

- Ensuring consistency with many other relevant pieces of legislation is a challenge.
- The lack of a fully harmonised spectrum access regulation in the EU creates market fragmentation.
- Remaining differences between Member States should be removed.
- The essential requirements established by Article 3(3) of the RED are not related to interferences and electromagnetic immunity, and should therefore be regulated elsewhere.
- The RED should be transformed into a regulation.

## **8.2 Objective 2. Convergence of telecom, audio-visual and IT sectors**

Respondents to the survey considered the increasing number of wirelessly connected products and the growing body of related legislation as an obstacle to applying the RED. One suggestion was to merge the RED, the Electromagnetic Compatibility Directive and the Low Voltage Directive. It was proposed to establish requirements and harmonised standards for combinations of radio and non-radio electrical products. There was also a call for more active guidance on cybersecurity.

## **8.3 Objective 3. Regulatory measures to be harmonised at international level**

Survey respondents raised the following issues:

- Consistency between pieces of legislation is of paramount importance.
- It is necessary to consider how the circular economy will be implemented in the RED sector (for example, refurbished products).
- Standards are considered important in the international perspective. Their citation should be must faster. After the Commission tightened its rules for the citation of standards to increase legal certainty, some international standards were no longer harmonised standards.
- Electronic CE marking and digital documentation should be studied.
- Market surveillance actions and enforcement should be more harmonised.
- Harmonisation of the requirements for radio equipment between the EU and North America is considered to have great potential.
- International cooperation on market surveillance and on accreditation is important.

## **8.4 Objective 4. High level of consumer protection**

Survey respondents raised several issues.

- Self-assessment based on harmonised standards creates a dynamic and self-adapting framework. However, compliance is too dependent on the integrity of the manufacturers

and has led to low levels of compliance. A register in which exclusively notified bodies could register products would help improve compliance.

- The safeguard procedure is not easily applicable (in particular, when a decision is challenged in court).
- SAR values should be printed on the package so that the consumers are informed.

### **8.5 Objective 5. Portable radio equipment interworks with accessories, in particular with common chargers**

The survey respondents welcomed the adoption of the Common Charger Directive and noted that:

- The Common Charger Directive will need to be updated in the future to accommodate technical and legal developments and to regulate further aspects.
- The reduction of electrical waste and the renewal of the Ecodesign Directive need to be considered when developing further rules on common chargers.
- Product manuals should contain information on the interworking with accessories.

### **8.6 Objective 6. Display of required information on integral screen**

Most respondents saw the benefits (especially in terms of reducing (paper) waste) but were aware of the challenges that this would pose for market surveillance authorities, customs control and final users. Respondents pointed out complications (e.g. the products have to have a battery that is at least partially charged; the need to open the package and to remove the screen protection film; and the need for information to be unchangeable). They therefore called for this to be regulated as well.

Some respondents pointed to potential solutions, such as providing a QR code or having the CE marking on the package.

## **9 Conclusion**

The Radio Equipment Directive has been applicable for more than 8 years. During this period, it ensured a level playing field for the radio equipment sector and protected the health of the users as well as the radio spectrum in order to prevent harmful interferences from occurring.

The RED has been designed in a neutral way that allows adaptation to new risks and technological evolution by using two mechanisms. First, the harmonised standards are continuously updated to cater for state-of-the-art and new telecommunication technologies. Second, the adoption of delegated acts under the RED responds to needs as regards access to the emergency services and cybersecurity protection.