Information Law and Policy Lab

Policy brief on the legal obstacles to the Right to Repair

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It has been written in partnership with the Bureau Européen des Unions de Consommateurs (BEUC). This position paper reflects the recommendations and conclusions of the authors of the ILP Lab. We are grateful for the input received from our supervisors Ot van Daalen (IViR) and João Quintais (IViR). Expert interviews were conducted with Balázs Bodó (IViR), Paul Keller (IViR) and Anthony Rosborough (European University Institute).

Executive summary

The European right to repair refers to a set of policies and regulations aimed at ensuring that consumers have the ability to repair and maintain the products they purchase. These policies are designed to counteract a trend toward products becoming more difficult to repair due to e.g., design choices, software locks, and a lack of access to spare parts and repair information.
There are several intellectual property (IP)-related issues that so far have received too little attention in the ongoing policy debates. These IP-related issues can be complex and multifaceted, and finding the right balance between protecting IP rights and enabling the right to repair is an ongoing challenge. Addressing these IP-related issues however will be crucial to the success of the right to repair movement.
In this policy paper, we discuss three such issues:

- The introduction of an EU-wide repair clause in the proposed amendment of the Design Directive
- Technical protection measures as obstacles to product repair
- The role of device-generated data and the upcoming Data Act

For each subsection, we discuss the legal obstacles and make concrete recommendations for legislative amendments that can contribute to an effective right to repair for European consumers.

First, we emphasize the advantages of implementing an EU-wide repair clause in the Design Directive and stress the need to safeguard it from potential conflicts with copyright protection. Additionally, we propose a reduction in the specified 10-year transition period for existing design rights holders.

Regarding the Ecodesign for Sustainable Products Regulation (ESPR), we call for addressing digital obstacles to repair, specifically Technical Protection Measures (TPMs). Our recommendations include recognizing TPMs as part of product design, integrating them into performance and information requirements, and considering their relationship with existing EU laws on copyrighted works or software.

In the final subsection, we discuss the importance of access to device-generated data for repair purposes and offer suggestions for amendments to the proposed Data Act to ensure data usability for repairers, address compensation for data transfer, and clarify the obligations of data holders, especially in cases of repair. We recommend introducing a repair exception regarding the circumvention of technical protection measures.

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1. Introduction

Europeans are the biggest producers of electronic equipment waste; according to recent numbers, in 2018 approximately 4 million tons of e-waste were discarded in the European Union.[1] This comes down to more than 16 kg of e-waste per capita per year.[2] Common sources of e-waste include televisions, computers, mobile phones and different types of home appliances, from fridges to dishwashers.

One way to reduce our e-waste is to repair broken electronics, instead of throwing them away. According to a Eurobarometer survey, 77% of EU consumers would rather repair their goods than buy new ones.[3] Yet many consumers still throw away electronic devices because repair costs are high, or repair is impossible. Information on repair is often lacking, products are designed to be difficult to repair, spare parts are not standardised, the cost of repair is generally high, or repair can only be done by the manufacturer itself. And this is sometimes done by relying on intellectual property (IP) rights and alleged confidential business data.

Meanwhile, the European Commission has proposed measures aimed at introducing a 'right to repair', hoping to make repairs more accessible for European consumers. The right is seen as a key step in achieving the circular economy plans within the European Green Deal, a broader package of policy initiatives designed to help the EU become climate neutral by 2050. Encouraging repair can promote the circular economy, contribute to industry's sustainability ambitions and match changing consumer needs.

The legislation concerning the right to repair is evolving rapidly, and there is a lot of attention to it from all corners of society, but the IP- and IP related-aspects receive too little attention in the legal discussion. In this project, the Information Law & Policy Lab worked together with the B*ureau Européen des Unions de Consommateurs* (BEUC) to explore how the Commission's right to repair-initiative relates to aspects of IP, technological protection measures (TPMs) and device-generated data.

NB: This policy paper is based on the initial legislative proposals and not on the text resulting from the different stages of the legislative process that were reached in the meantime.

[1] Eurostat Data Browser, 'Waste electrical and electronic equipment (WEEE) by waste management operations', 1 March 2022, ec.europa.eu
[2] 'Global E-waste Monitor 2020', itu.int
[3] 'Why is the EU's right to repair legislation important?', 7 April 2022, europarl.europa.eu

2. Structure and content

This policy brief covers three different topics, all of which have a connection to the right to repair in a general sense. Each question addresses a separate problem, so every section can be read independently. The paper concludes with a summary of our findings.

Regarding IP protection of designs, we examine the following question:

I. *What does the Repair Clause in the proposed amendment of the Design Directive entail for the right to repair for consumers and what are its practical implications?*

Regarding the prohibition of circumventing TPMs, we examine the following question:

II. *How can the EU's proposed Ecodesign for Sustainable Products Regulation (ESPR) be amended to address the challenges posed by TPMs in the context of third-party repair?*

Regarding the gatekeeping of device-generated data, we examine the following question:

III. *In which ways can holders of device-generated data undermine the possibility of repair for consumers and to what extent is this issue effectively mitigated by the proposed Data Act?*

To answer each sub-question, the relevant legislative initiatives are analysed and assessed for their merits. We will make concrete recommendations that can contribute to a more effective right to repair for European consumers. We will do so mainly through literature review and legislative research. Additionally, interviews were conducted with various legal experts.[4]

[4] Balázs Bodó (IViR), Paul Keller (IViR) and Anthony Rosborough (European University Institute).

3. The Repair clause in the proposed amendment of the Design Directive

3.1 Problem analysis

Let's consider a product that consists of multiple parts, such as a car. The car as whole will most likely be protected under design law. This enables the manufacturer of the car to prevent others from designing a car that is overall too similar in appearance. In addition, separate components of the car such as the headlights, the rims, the grill, head mirrors and the hood of the car can also enjoy design protection. As these are *must match*-parts[5], the so called 'original equipment manufacturer (OEM)' has a monopoly on the production of those spare parts. The absence of competition in the spare parts-market results in high prices for consumers looking to repair their product.

This is where the repair clause becomes relevant. The repair clause limits the rights of the design right holder; replacement parts are excluded from design protection, allowing independent manufacturers to enter the repair market. As a result, consumers will not only have access to a wider range of available spare parts, but due to increased competition these parts will also be lower in price. Such repair clauses already exist in some Member States but attempts to introduce it on an EU-wide basis have so far been unsuccessful due to the political sensitivity of the subject.

With the announcement of the EU Design Reform Package in November 2022, the introduction of an EU-wide repair clause is on the horizon. Even though the proposals are part of the IP Action Plan[6], the discussion on spare parts protection is also of significant importance in view of the current work on the EU's green transition, in particular following the European Green Deal[7] and the Circular Economy Action Plan[8]. The availability of affordable spare parts is key for consumers to effectively exercise their right to repair.

While we strongly encourage the introduction of an EU-wide repair clause, several issues are likely to remain unresolved. The most important issue is the cumulation of protection between design rights and copyright, which could potentially undercut the effects of the repair clause. Additionally, a few critical comments can be made on the wording and scope of the repair clause, such as the explicit limitation to 'must-match' parts and the introduction of a 10-year transitional period in the Directive.

3.2. The legal framework: a patchwork of repair clauses in design law

Design rights provide protection to the appearance of a (part of a) product. The appearance, or ´design´, of a product is determined for example by the colour, shape, ornamentation or use of materials.[9] Although the visual appearance is central, an aesthetic aspect is not required for a product to be eligible for design right protection. Provided they meet the legal requirements, both

[5] Component parts whose appearance is dependent on the appearance of the complex product concerned.
[6] European Parliament resolution of 11 November 2021 on an intellectual property action plan to support the EU's recovery and resilience (2021/2007(INI)).
[7] COM (2019) 640.
[8] COM (2020) 98.
[9] art. 1(a), Directive 98/71/EC.

utilitarian objects and objects with a purely decorative function are covered by design protection, such as vehicles, clothing, furniture and home appliances.
There are two main legislative instruments dealing with the protection of designs in the European Union. First, there is the **Design Directive**[10] which harmonises the main material aspects of *registered* design law within the EU, such as the definitions, conditions and scope of protection. As the Directive does not have direct effect, it has been transcribed into the national design regimes, with each Member State adopting its own approach to implementing the Directive. One key aspect that is not addressed by the Directive is how to deal with spare parts. Member States therefore retained their existing laws on whether spare parts do or do not benefit from design protection, which has resulted in a patchwork of conflicting national legislation and lack of legal certainty on this particular point.[11]

Repair clause introduced	**Repair clause not introduced**	**Shorter term of protection**	**Other regimes**
Belgium, Germany[12], Hungary, Ireland, Italy, Latvia, Luxembourg, Netherlands, Poland, Spain	Austria, Bulgaria, Croatia, Cyprus, Czechia, Estonia, Finland, Lithuania, Malta, Portugal, Romania, Slovenia, Slovakia	Denmark, Sweden (15 years in both countries) France[13]	Greece (repair clause combined with a five-year protection period and remuneration)

Source: Commission Staff Working Document Evaluation of EU legislation on design protection, SWD (2020) 265 final - adopted to the 2023 situation.[14]

Second there is the **Community Design Regulation**[15] which provides for a unified system for obtaining design rights to which uniform protection is given throughout the entire territory of the European Union. The Design Regulation oversees the protection of both *registered* and *unregistered* Community Designs; for registered rights, protection is always granted for 5 years and is renewable up to 25 years. The Regulation came into effect three years after the Directive and superimposed a novel European system alongside the national systems.[16]

Unlike the Directive, the Community Design Regulation does contain a repair clause. Art. 110 provides that Community design protection 'shall not exist for a design which constitutes a component part of a complex product used within the meaning of Article 19(1) for the purpose of the repair of that complex product so as to restore its original appearance.'

[10] Directive 98/71/EC of 13 October 1998 on the legal protection of designs.
[11] BEUC recommendations for reform of EU design protection legislation, p. 3.
[12] Germany has recently introduced a repair clause in 2021 in view of the upcoming proposals for an EU-wide repair clause.
[13] France has adopted a partial repair clause; most visible spare parts are still subject to a (reduced) protection period of 10 years.
[14] ecar-alliance.eu
[15] Regulation 6/2002 of 12 December 2001 on Community designs.
[16] D. Stone, ´The Design Directive´, in: *European Union Design Law: A Practioners Guide*, New York: Oxford Academic 2016, academic.oup.com

The repair clause is one of the most politically controversial aspects of design law. As mentioned, Member States were unable to agree on the introduction of a repair clause when negotiating the Directive. This has resulted in an interim provision, often referred to as the 'freeze plus clause', stating that any Member State which changes its law relating to the use of visible spare parts to repair a complex product may only do so if 'the purpose is to liberalise the market for such parts'[17]. Those interim provisions were designed to apply until amendments to the EU legislation are adopted based on new proposals from the Commission to address the issue of spare parts protection.[18]

The EU design legal framework has remained virtually unchanged since it came into force over 20 years ago. As part of the New IP Action Plan, the European Commission presented in November 2022 proposals for a revised Regulation and Directive on industrial designs to 'modernise the existing Community design framework and parallel national design regimes.'[19] With excessive protection still granted in some Member States, one of the key aspects is the introduction of an EU-wide Repair Clause in the Design Directive (Art. 19) and the confirmation of a permanent Repair Clause in the Design Regulation (Art. 20a). The new rules will, in the words of the Commission, 'help to open up and increase competition in the spare parts market, allowing consumers more choice in repairing complex products such as cars in particular.'

3.3 Towards an EU-wide repair clause

When assessing the proposed repair clauses, several observations can be made.

3.3.1. Limiting the scope to form-dependent spare parts

Products that consist of different parts such as cars, but also household appliances or electrical appliances are, in the words of the law, ´complex products´. Their components can be replaced, so that the product can be disassembled and reassembled. Without those components, normal use of the complex product would not be possible. Again, think in this context of automotive components such as a bumper, grille or rim. These parts have their own market, and they can be protected separately as designs. For a component part to be eligible for separate protection, it is required that the part remains visible during normal use of the complex product. The visibility requirement is consistent with the function of design law and is mainly intended to exclude from protection mechanical interfaces and spare parts that have a technical functionality, such as those under the bonnet of a car.

The scope of the repair clause is then explicitly narrowed down to cover only "must match" or "form-dependent" parts, i.e., parts whose shape and configuration are dependent on that of a complexproduct.[20] Parts which are not determined by the appearance of the complex product are excluded from the benefits of the repair clause. If the part is indeed form-dependent, no design alternatives are possible. This necessarily means that the repair clause applies only to component parts of a complex product that are visually identical to the original parts; parts which

[17] Art. 14 of the Directive and art. 110 of the Regulation.
[18] SWD (2020) 265 final, p. 65.
[19] ec.europa.eu
[20] By limiting the scope to must-match spare parts, the Commission deviates from the CJEU C-397/16 (*Acacia*) judgement. In this judgement, the CJEU rejected the 'design dependence' as an additional condition to which a complex product's appearance would be subject under the repair clause (par. 29 ff.).

are meant for upgrading, accessorising or customising the product do not fall under the repair clause. To invoke the repair clause, it is necessary for the manufacturer of non-original spare parts to show that there is an objective necessity to imitate the original spare part to enable the restoration of the original appearance of the product. [21]
Some warn that very few spare parts may actually fall under the must-match clause.[22] By limiting the scope of application of the repair clause to component parts whose shape is determined by the appearance of the complex product, design holders will retain their monopoly in respect of component parts whose shape is *not* determined by the appearance of the complex product.[23] Wheel rims are an example of parts that are not form-dependent; their design is not dependent on the appearance of the rest of the vehicle and consumers can choose from among different styles. From the point of view of the consumer, should a repair be required, this limited liberalisation however does not offer him the possibility of purchasing e.g. a replacement wheel rim manufactured by a third party which is a replica of the original, damaged wheel rim.

We note that, while this may be the case, this does not necessarily have to be considered problematic. Adding the must-match component to the repair clause better reflects its purpose, which is to ensure that the original equipment manufacturer (OEM) cannot monopolise the aftermarket where the consumer has no realistic alternative to replacing the part with one of the same design if the original part becomes damaged. These are spare parts for which the design is necessary to restore the original function or appearance of the product; in the case of a car, this means parts such as body panels, bumpers, windows and headlights. There are other spare parts for which it is *not* imperative that the original design feature is used to repair a product because it has a standard shape or function.[24] The replacement of, for example, wheel rims of one design with wheels of a different design is a perfectly realistic option that is unlikely to cause any real problems for consumers in terms of price or available options.[25]

In short: the existence of a 'captive market' for component parts that are not design-dependent appears to be unlikely. The addition of the must-match requirement in the repair clause will therefore not cause significant problems for consumers in effectively exercising their right to repair.

3.3.2. Information requirements

Paragraph 2 of the proposed repair clause stipulates a duty of diligence, requiring manufacturers or sellers of spare parts to duly inform consumers about the origin of the product to be used for the purpose of the repair of the complex product, so that they can make an informed choice between competing products.

The information requirement essentially confirms the 2017 *Acacia*-judgement where the CJEU decided that downstream users must be informed 'through a clear and visible indication' on the product, packaging, in catalogues or sales documents that the relevant part incorporates a design

[21] R. Brtka, 'Focus on the automotive industry: the protection of spare parts using Community designs', 22 March 2015, designwrites.law
[22] See e.g. beuc.eu, ecar-alliance.eu & figiefa.eu.
[23] Opinion A-G Saugmandsgaard Øe, joined Cases C-397/16 and C-435/16 (*Acacia/Audi & Porsche)*, para. 46.
[24] COM(2004) 0582 final.
[25] High Court of Justice Chancery Division 27 July 2012, [2012] EWHC 2099 (*BMW/Round and Metal*).

belonging to another party and is intended only for repair.[26] If parties fail to do so, they can not invoke the repair clause. A common method is by indicating on the part that it is ´not OEM´, meaning that it is not by the original equipment manufacturer, and accompanying documents and information indicating that the parts are sold exclusively for the purposes of repair. A question in this context is whether visual references to a protected design should be admissible. In C-500/14 *Ford Motor Company*, the CJEU held that the applicability of the repair clause does not confer any right for third parties to use a trademark of the original manufacturer. This will reduce the possibility that consumers will be confused as to the origin of third-party spare parts.

We however suggest that, in the interest of clarity and legal certainty, it must be expressly stipulated in par. 2 of the repair clause **that visual references to a protected design are admissible if it is done for purposes of presenting one's own product as an alternative spare part** to the product of a competitor, as long as the use is in accordance with honest commercial practices and the interests of the design right holder are not unreasonably prejudiced.[27]

3.3.3. Transitional period

As for the Directive, a transitional period of 10 years has been proposed to safeguard the interests of existing design rights holders in Member States that currently allow design protection for spare parts. The length of this period has already been criticised by numerous (consumer) organisations.[28]
For the repair clause to effectively contribute to the right to repair of European consumers in the near future, it needs to cover both new and existing designs. Although the introduction of a repair clause does indeed interfere with the rights of existing design right holders, a transitional period of 10 years appears excessive.

We argue that **a shorter period of 2 or 3 years** should be sufficient to adjust to the new situation. The European Commission itself recognised after all that there is 'no broad economic justification' for maintaining design protection on visible spare parts.[29]

3.4. Cumulation with other forms of IP-protection: copyright law

The repair clause constitutes a statutory limitation on the rights of a design holder. Manufacturing spare parts by third parties for example would not constitute an infringement of the original manufacturer's design rights, thereby liberalising the spare part-industry. Design law, however, is not the only IP regime regulating this topic. The overlap with other IP regimes could prove to be problematic. We examine below the interface with copyright law; issues could also arise from the perspective of trademark law, which is however outside the scope of this policy brief.[30]

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[26] Joined Cases C-397/16 and C-435/16 (*Acacia/Audi & Porsche*), para 86.
[27] See also: A. Kur, ´Unité de l'art is here to stay - Cofemel and its consequences´, *MPI Research Paper* no. 19-16, p.17.
[28] See: Clepa.eu, insuranceeurope.eu, beuc.eu, ecar-alliance.eu & smeunited.eu.
[29] SWD (2020) 265 final, p. 66.
[30] Using a trademark in repair scenarios could present various challenges, particularly when the trademark belongs to the original product manufacturer, and the replacement part comes from an independent source. Trademarks can serve to market spare parts and convey their intended function. The authors of the following article argue that the absence of specific limitations on trademark rights for mark reproduction in

Component parts that pass the threshold for design protection will likely also be a protected ´work´ within the meaning of copyright law.[31] Cumulative protection under design law and copyright law remains possible according to art. 96(2) of the Draft Regulation and art. 23 of the Draft Directive.[32] Since EU copyright law lacks a corresponding repair-limitation[33], this means that in practice the repair clause could be rendered ineffective if the original manufacturer is still able to stop the production of non-original spare parts by invoking his copyright.
This aspect has received little attention in the policy debate so far.

We therefore strongly urge the European legislator to consider the difficulties that could arise when introducing a repair clause for design rights, while failing to consider a similar provision for copyright. A possible solution could consist of **adding a clarification in the Design legislation that the benefit and effectiveness of the repair clause cannot be negated by other types of IP-protection** that may potentially extend to the object of repair. In this way, liberalisation efforts of the spare part-market will not be undercut by the effect of cumulation with copyright.

3.5 The impact on consumers: conclusions, recommendations and policy options

The right to repair is aimed at providing consumers with easier and cheaper options to repair products that are technically repairable. From the perspective of moving towards a sustainable, circular economy through consumer-friendly means, widespread access to affordable spare parts is essential. The existing patchwork of national legislations results in a complex system with unequal chances for companies in the spare parts sector (SMEs[34] in particular), and different offerings of products available to consumers across the Member States.[35]

The European Commission substantiates its proposal for introducing an EU-wide repair clause in design law with several studies done on the impact on price and price dispersion.[36] These studies show that exempting the spare parts market is good for consumer choice and their wallets. The introduction of an EU-wide repair clause would help open up the market for spare parts, creating competition and leading to more and cheaper options. Ideally, this in turn will positively impact product reparability, contributing to the objectives and development of the circular economy.

repair parts prompts a reevaluation of existing trademark protection mechanisms. See: A. Tischner & K. Stasiuk, 'Spare Parts, Repairs, Trade Marks and Consumer Understanding', *IIC* 2023, afl. 54, p. 26-60, link.springer.com

[31] SWD (2020) 265 final, p. 67.

[32] The wording of the proposed art. 96(2) refers to “Union copyright law”. This is somewhat misleading as copyright law is not fully harmonised so there is no Union copyright law in the true sense of the term. It is therefore argued that it would be more precise to retain the wording pursuant to which national copyright law applies, see Max Planck Institute position paper, p. 3 deliverypdf.ssrn.com.

[33] The Information Society Directive 263 (Article 5(3)(l)) gave Member States the possibility to introduce a copyright exception for use in connection with the demonstration or repair of equipment, but the majority of the Member States have not introduced this exception in their legislation, see: SWD (2020) 265 final, p. 67.

[34] Small and medium-sized enterprises.

[35] SWD(2020) 264 final, p. 68.

[36] SWD(2020) 264 final, 5.5.2. ff.

The main questions are whether the current wording of the repair clause will contribute to the effective exercise of the right to repair, and how it relates to other forms of IP protection. As noted in para. 3.3.1, the scope of the proposed repair clauses is narrowed down to cover only must-match spare parts. We argued that the addition of the must-match requirement in the repair clause will not cause any problems for consumers in effectively exercising their right to repair, as the existence of a 'captive market' for component parts that are not form-dependent appears unlikely. The information requirements laid down in paragraph 2 of the proposed repair clause will also pose little or no problems.

The first important point of critique is the transition period of 10 years that is stipulated in the Directive to safeguard the interests of existing design rights holders in Member States that currently allow design protection for spare parts. This should be significantly reduced. In addition, considering the overlap with other IP regimes is essential. Especially copyright protection has the potential to render the repair clause toothless in practice. This is an unsatisfactory outcome that should prompt the European legislator to include language in the 'repair clause' that allows its effective application despite potential copyright protection of the object of repair.

4. Technical protection measures as obstacles to product repair

4.1 Problem analysis

The internal functioning of complex devices is becoming less and less accessible to consumers. Whereas fifteen to twenty years ago mobile phones had visible screws and could be opened from the back, today's smartphones are monoliths that show no way to access the inside of the product. We also see this trend in the automotive industry, where an engineer used to have direct access to the car's engine, it now has a sturdy plastic casing. It is clear from the design of these products that the consumer or an independent repairer is not meant to have access to the actual functioning of a device.

The obstacles that producers put up to block access to their products take different forms. They can be physical or take the form of a 'digital lock'. In the latter cases, access to the product or to a part of the product is only possible with the right software.

Manufacturers have different reasons? to equip their products with digital locks that restrict access to a product. These for example could be: protecting trade secrets, ensuring cybersecurity, safeguarding product safety, making repair more difficult, protecting copyrighted works or protecting software. The last two incentives are specifically codified in two EU-directives. Circumventing technical protection measures (TPMs) that protect illegal access to copyrighted works is prohibited in article 6 of the InfoSoc Directive.[37] A similar prohibition with regard to software that is not protected by copyright is provided in Article 7 of the Software Directive.[38] Legislation that discourages or forbids the use of TPMs in the designs of electronic devices might clash with this protection of TPMs.

In this section we examine how the current proposal regarding the Ecodesign for Sustainable Products Regulation (ESPR) should be amended to deal with the problems that TPMs cause with regard to repair.[39] In this examination, we also consider the relationship these amendments should have with the prohibitions regarding the circumvention of TPMs described above.

But first a few observations can be made about the impact of TPMs on the right to repair. First, TPMs form an obstacle to a market for third-party repair shops. It is increasingly difficult to repair a device independently, purely by means of knowledge of a certain product. Second, TPMs form an obstacle to a market for third-party spare parts. Manufacturers have a monopoly on spare parts because third-party spare parts bump into TPM’s. And third, TPMs make consumers less autonomous regarding repairing their products. Digital obstacles that can only be removed by the manufacturer create a relationship of dependency with that manufacturer. A legal solution that tackles TPMs should ideally consider all these facets.

To highlight the necessity of a policy change regarding TPMs and understand the concept of TPMs better; we first discuss two cases in which TPMs have a significant impact on the consumers' possibility of repair. Subsequently, we discuss current EU policy that affects this impact, and we analyse the proposed Ecodesign for Sustainable Products Regulation. Finally, we

[37] Directive 2001/29/EC (InfoSoc directive), Article 6.
[38] Directive 2009/24/EC (Software Directive), article 7.
[39] COM/2022/142 final, proposal for Ecodesign Regulation.

propose some amendments that can make the proposed ESPR more effective in countering the practice of TPMs.

4.2 The impact of TPMs on the consumers possibility of repair

iPhones and part pairing

TPMs are often placed in complex digital devices such as smartphones or laptops. An example of this practice is a technique called part pairing, common in the smartphone industry. In short, it means that a device only recognises, approved original parts. This works via software integrated in the device which must recognise the digital key of the other parts. In practice, this could mean the following: the battery of my iPhone X breaks down, and even though, in theory, I would be able to replace it with an identical battery from another iPhone, my iPhone X will not recognise this battery, which blocks the working of an otherwise perfectly functioning battery.[40] This practice hinders the repair of, in this case, smartphones. As a result, consumers may be more inclined to purchase a new product. This, in addition to the ecological impact of producing a new iPhone, has an economic impact on consumers since the costs of buying a new smartphone are usually higher than the potential costs of a repair.

John Deere tractors

Another industry that incorporates TPMs is agriculture. Tractors, for example, used to be purely analogue devices, which farmers could tinker with themselves. But today, tractors of the John Deere brand, among others, are packed with software that controls and regulates the machine. Tractors of this brand have a central computer connected to all kinds of sensors that measure all processes under the tractor's bonnet. If the computer detects a problem, the entire tractor is switched off.[41] To find out what problem the onboard computer has detected, you need cables and software that are only in the hands of John Deere itself. Farmers are therefore dependent on John Deere to repair their tractor.

Farmers trying to repair their tractor on their own encounter TPMs that prohibit access to the board computer. Thus, even if farmers can fix the problem on their own tractor, they cannot restart their tractor because the software that disables it cannot be accessed.

4.3 The legal framework

4.3.1 The InfoSoc Directive and the Software Directive

EU legislation prohibits the circumvention of TPMs in two different directives. On the one hand, there is Article 6 of the Infosoc Directive and, on the other, there is Article 7(1) (c) of the Software Directive. The Infosoc Directive prohibits circumvention of TPMs installed to protect copyrighted works. The Software Directive prohibits this with respect to TPMs protecting computer programs.

[40] 'How Parts Pairing Kills Independent Repair' 17 January 2023, ifixit.com
[41] New High-Tech Farm Equipment Is a Nightmare for Farmers, (5-02-2015), wired.com

The InfoSoc and the Software Directives differ in scope, prohibited practices, and exceptions. The InfoSoc Directive covers all copyrighted works with broader restrictions, while the Software Directive focuses on computer program protection with fewer restrictions. The most significant difference is that the InfoSoc Directive includes exceptions with regard to access despite the presence of TPMs, whereas the Software directive does not. In practice, this distinction can blur due to new technologies, making it challenging to categorize TPMs exclusively under one of the directives.

An example that highlights the differences between the two prohibitions and illustrates the problems this bifurcated approach causes under the current technological circumstances is the *Nintendo vs. PC Box* case before the CJEU. [42] In the case involving Nintendo's TPMs in their consoles, the Court faced a dilemma in deciding whether to apply the Software Directive or the InfoSoc Directive. This is because video games are considered complex works encompassing both software and unique audiovisual elements. Ultimately, the court opted for the InfoSoc Directive, emphasizing the "unique creative value" of video games, and highlighting the challenge of distinguishing between the two directives. This complexity also extends to the digitisation of more and more products that used to be purely analogue via the rise of so-called "smart" devices. This poses concerns about consumer rights and product repairability that necessitate policy solutions.

The existing rules on TPMs and copyright and software protection are relevant to new legislative instruments that deal with product repair because repair does in many instances require circumventing TPMs. Policies that discourage or prohibit the implementation of TPMs, or policies that encourage the circumvention of TPMs will have to take the prohibitions in the copyright *acquis* into account.

4.3.2 Proposal for the Ecodesign for Sustainable Products Regulation

On 30 March 2022, the European Commission published the proposal regarding the Ecodesign for Sustainable Products Regulation (ESPR)[43] This proposal is supposed to replace the current Ecodesign Directive and includes a legal framework for design requirements for almost all products on the European market. The overall aim of this proposal is to reduce the negative impact that products have on the environment and repair can contribute to reduce this impact. Additionally, TPMs are part of the design of many electronic devices. It is therefore important that this proposal also considers the existence of these digital obstacles to repair. To understand whether and to what extent it does so, we first explain the context in which the Ecodesign proposal was drafted and then the proposal's legal regime.

The context of the Ecodesign for Sustainable Products Regulation proposal

As mentioned, the European Commission wants to reduce the environmental impact of products with this proposal. This is in line with the rationale of the European Green Deal and the plans the commission has set out in the Circular Economy Action Plan (CEAP). These policy agendas are comprehensive and look at sustainability in all areas of the economy. They additionally try to link 'green' policies to economic growth. This broad approach is also reflected in the ESPR proposal.

[42] C-355/12 *(Nintendo vs. PC BOX)* 23 January 2014.

[43] European Commission, Proposal for a Regulation of the European Parliament and of the Council establishing a framework for setting ecodesign requirements for sustainable products and repealing Directive 2009/125/EC, COM/2022/142.

The Commission explicitly stresses that improving the internal market is also a goal of the proposal. This is relevant for repair because, as indicated earlier, TPMs partly hinder the market for repair.

The broad approach of the ESPR proposal can also be found in the framework for future design requirements that this proposal sets out. Future requirements based on the ESPR can apply to almost all products on the European internal market, but the proposal also provides the possibility to establish product-specific requirements. The structure of the legal framework and how it addresses the problem of TPM's is discussed below.

The legal framework Ecodesign for Sustainable Products Regulation proposal

With the Ecodesign Regulation, the European Commission creates for itself the power to adopt 'delegated acts' on establishing Ecodesign requirements for, or in relation to, products to improve their environmental sustainability. The most important part of this proposal concerns the framework within which these acts may be adopted. In other words, on the basis of which parameters may requirements be imposed on products. Articles 4 to 7 set out the specific properties and parameters the Commission can use to impose requirements in a layered and structured way. Below we review the structure of this legislation and indicate where TPMs play a role.

The aspects and parameters of product design

In Article 4, as mentioned, the EC creates the possibility to adopt delegated acts in which it imposes requirements on the design of products, these are so-called Ecodesign requirements. Article 5 then lists fourteen aspects that these requirements may cover. These are, for example: the durability, reliability, reusability, upgradability or reparability of a product. Paragraph 2 of this article then states that such requirements must always apply to a certain product group, e.g., smartphones. In Articles 7 and 8, the possible requirements are divided into performance and information requirements. These are, on the one hand, requirements that concern the design itself or, on the other hand, the information that the manufacturer must provide about the product.

Paragraph 2 of both articles provides the final, and most concrete, limit of the framework in which the Commission must move when it wants to introduce an Ecodesign requirement. The Commission has created two lists of parameters that requirements regarding performance or information must meet. *Performance requirements* must fall within the parameters of Annex 1, listing 17 concrete parameters on which a design requirement can be based. *Information requirements* can relate to either the performance standards established by performance requirements, or the information parameters specified in Annex 2.

This is where TPMs can concretely come into play in decision-making on a design requirement. The parameters in Annex 1 offer the European Commission the most specific tool for establishing design requirements. Explicitly naming TPMs in the list of parameters would underline the importance of this issue with regard to repair and give the Commission a clear basis for future policy on TPMs. The list of parameters is divided into different properties of a device. Sub b of Annex 1 deals with the 'the ease of repair and maintenance'. A specific parameter related to TPMs and repair would therefore best placed under this subcategory.

In summary, the legal framework within which Ecodesign requirements can be imposed has the following boundaries. First, Article 5 lists fourteen different aspects of a product that can be covered by the requirements in general terms. Next, the degree of improvement of these aspects

is assessed using the parameters in Annex 1 or 3 of the proposal. The lists of aspects and parameters are extensive. But due to the specificity of the parameters, the European Commission's policy options are relatively constrained. The possibilities of reducing the use of TPMs should therefore be optimally formulated in the proposal. Below, we list the ways in which the solutions offered by the Ecodesign proposal regarding TPMs and repair fall short and could be improved.

4.4 TPM's in the Ecodesign Regulation: shortcomings and possible improvements

I. The aspects of design

Article 5 of the proposal states that the European Commission will adopt Ecodesign requirements for all aspects of products listed in paragraph 1. These aspects are thus indirectly important for the final content of the restrictions. The reparability of products is also one of the aspects on which the Commission will impose requirements. In addition, the possibility of maintenance and refurbishment is an aspect that is included and related to repair. The question is whether these aspects address the issue of TPMs sufficiently. TPMs, after all, do not exclusively aim to hinder repair. Manufacturers may argue that TPMs are unrelated to repairability but are present to protect other, non-sustainability-related, interests.

Explicitly naming TPMs as an aspect of product design can contribute to more specific design requirements regarding TPMs because this drags TPMs away from being only seen as a repairability issue. This gives the Commission more options in tackling TPMs and can ultimately lead to better repair possibilities for consumers. But also on its own, improving this aspect adds to the sustainability of a product. Having fewer TPMs means a more accessible product, allowing consumers to research for themselves what is wrong with their product. One example of this problem can be found in the way John Deere designs their tractors, as mentioned earlier. This ultimately gives consumers more autonomy over the product they own.

Proposed amendment I: add 'Presence of technical measures blocking the integration of spare parts' to the list of product aspects in article 5(1) of the Ecodesign regulation proposal.

II. The parameters of the requirements

The parameters established in Annexes 1 and 3 for both performance and information requirements could ultimately be of great importance for the content of the European Commission's future Ecodesign requirements. For example, Annex 1 lists very specific properties, such as the minimum technical lifetime a product must have, of products to which the Commission can impose requirements. Paragraph (b) Annex 1 also provides several parameters that deal with the reparability of products. These parameters are relevant for both performance and information requirements. We think this paragraph should be amended to give the European Commission more options regarding future policy against the use of TPMs that hinder repair.

The most important concern regarding the current list of parameters is that some parameters may indirectly point to integrating TPMs into designs, but an explicit reference to TPMs as digital blocks for spare parts is missing. We therefore propose to add the following parameter to sub b of Annex 1 of the Ecodesign regulation proposal: 'the use of physical or digital technical measures that could block the integration of spare parts.'

This addition could also give the European Commission a better starting point for developing policy against manufacturers that install TPMs under pretext of copyright or software protection. Based on such a parameter, the commission could, for instance, develop policies that allow repairers to work around these digital obstacles.

Proposed amendment II: add 'the use of physical or digital technical measures that could block the integration or replacement of spare parts.' to Annex 1 (sub b) of the proposal.

5. The role of device-generated data

5.1 Problem analysis

NB: The analysis and amendments in this chapter are based on the proposal for the Data Act (2022/0047(COD)) this proposal differs from the formally approved version that is supposed to be published on 14 December 2023.

As today's society becomes more and more digitized, the volume of data generated by humans and machines has been increasing exponentially.[44] All kinds of data are being monitored, exchanged, transmitted and monetised across many markets. Data has become a valuable, if not indispensable asset, but so far there have been no rules on how to handle questions regarding the ownership; who owns the data that is collected/produced and who decides for what purposes it may be used?

The Data Act[45] addresses these issues by clarifying ´who can create value from data and under which conditions'[46]

The ratio behind the Data Act is multiple. Firstly, it aims to achieve an economic goal, namely stimulating innovation and competition in the European industry by exploiting the full potential of all data collected. In addition, it sets rules that protect the interests of 'users' (which can be both consumers and companies), by giving them more meaningful control over their (non-personal) data. Our focus here is on the importance of access to data for the possibility to repair products, thereby contributing to an effective right to repair for European consumers.

In what follows we first outline how access to data can determine the possibility of repair on the basis of two examples. Subsequently we will discuss the shortcomings the Data Act proposal has regarding repair. These shortcomings are an addition to the ones BEUC has identified in a recent policy paper.[47] Finally, we try to find solutions to these shortcomings in the form of specific amendments. In respect to the amendments, it should however be noted that the European Parliament and the Council of the EU reached a political agreement on the Data Act proposal on 27 June 2023. The proposal does still need to be formally approved by the European Commission and Parliament.

5.2. The impact on consumers: how access to data can determine the possibility to repair

As opposed to traditional products where the buyer becomes the legal owner of all the parts and accessories of said product, this remains unclear with 'smart' or 'connected' products that generate data. Since there used to be no rules to prevent this, manufacturers or similar parties with significantly stronger bargaining positions would often impose unfair contractual terms to enforce (exclusive) access to and use of device-generated data. When a product needs repairing, only the original manufacturer can access the data, leaving no alternative for the consumer but to turn to them for repairing. It is therefore essential to recognize that the data generated by

[44] eu-data-act.com
[45] COM(2022) 68 final.
[46] 2022/0047(COD), Data Act proposal
[47] Giving Consumers Control of their Data: BEUC position paper on the Data Act proposal, beuc.eu

connected products belongs to the owners or ´users´.

A prominent example is that of agricultural data. John Deere, the world's largest agricultural machinery maker, recently went as far as stating that when purchasing their products, farmers do not become owners , but rather receive "an implied license for the life of the vehicle to operate the vehicle''.[48] The same goes for the agricultural data it produces; in effect, John Deere is asserting that it has the exclusive right to control, amalgamate and sell the majority of key digital agricultural data from individual farmers. This results in a situation where farmers do not have the right to access the agricultural data, they generate on their own farms using their own farming machinery. Furthermore, in this way their right to repair and the ability to maintain their own equipment is being denied.

The same goes for more common types of vehicles such as electric bikes or cars. Nowadays, many cars are equipped with a 'vehicle telematic system', which collects and processes a variety of data from the moment we step foot in the vehicle, including information about location, speed, fuel efficiency, tire pressure, engine performance, maintenance data, and more. This data is collected in real-time or periodically. Historically, OBD-2 ports have provided vehicle owners and mechanics with access to vehicle data for maintenance- and repair purposes.[49] In the case of modern 'connected cars' however, vehicle data is transmitted wirelessly and exclusively sent directly to the manufacturer.[50] The exclusive access enables them to act as gatekeeper, deciding who can access the data and at what cost. This situation poses several disadvantages to consumers, including potential increased expenses and limited choices in selecting maintenance and repair services. When manufacturers refuse to unlock telematics info, car-owners could essentially be locked into only using their franchised dealers.[51] Moreover, the example of Tesla's service centers shows that licensed repairers aren't always able to handle the demand; in the USA, Tesla customers are currently suing the company claiming ´they've been forced to deal with long wait times and high prices at the electric-car maker's service centers´.[52]

The same problem applies to connected household appliances like fridges, dishwashers and washing machines; independent repairers are often unable to obtain the diagnostic data they need to finish a repair job.[53] On top of that, manufacturers are mostly unwilling to share such information, even when offered payment. This all translates to longer waits and higher repair prices for consumers, who in turn may end up replacing their appliances instead of fixing them.[54]

The Data Act includes rules that will give users of smart devices direct access to the data generated by their own usage, and they can decide to share it with third parties, including independent garages or repair shops. Empowering consumers with direct and easy access to

[48] 'We can't let John Deere destroy the very idea of ownership', 21 April 2015, wired.com
[49] 'National Right to Repair', statement by Autocare Association, autocare.org
[50] According to a report from McKinsey, in 2021, 50% of cars possessed these connected capabilities, and this number is expected to rise to approximately 95% of new vehicles sold globally by 2030, see: autocare.org
[51] 'You'll likely pay more and wait longer for repairs to your electric car', 10 March 2023, businessinsider.com
[52] 'Tesla owners sue the carmaker, claiming they've faced long waits and high prices at service centers', 15 March 2023, businessinsider.com
[53] 'How fridge and dishwasher makers restrict repairs – and enable more e-waste', 31 August 2021, fastcompany.com
[54] A 2015 United Nations University study found that large appliances, such as dishwashers and washing machines, made up nearly two-thirds of all e-waste worldwide, see: theguardian.com

device-generated data will ideally lead to a more competitive market with enhanced customer choice and lower repair- and maintenance pricing. The question is if the Data Act in its current wording will actually contribute to an effective right to repair.

5.3 Problems regarding repair in the Data Act

Chapter two of the proposed Data Act covers the free access consumers have to data collected by their devices. However, as illustrated above, the possibility of repairing a device also sometimes requires that a third party has insight into that data. In a recent position paper, BEUC has argued that the regulation of the portability of the data to third parties is not optimal.[55] In what follows, we highlight some additional shortcomings in this respect, subsequently we try to translate these shortcomings into possible amendments to the Data Act. The first two proposed amendments address two shortcomings that BEUC has also identified: the form in which the data is provided and the compensation that data holders can seek. In addition, we think the articles that deal with sharing data with third parties fall also short in the following areas.

Article 5 of the proposal states that the user of a device has the right to share the data it can access, based on Article 4, with third parties. The sharing of data with third parties is further regulated in, inter alia, articles 6 to 9. The first general point that stands out regarding repair is that the subject of repair is not mentioned once explicitly in the legal text. While it is mentioned twice in the recitals as relevant in relation to data sharing. In recital 19 of the proposal, the problem regarding access to data and repair is very clearly outlined by the EU legislator. It is unfortunate that this consideration is not reflected more concretely in the legal text. A specific embodiment of this position would mean that the user of the product would have more possibilities to enforce repair.

Furthermore, there are some specific points where the Data Act proposal falls short concerning repair. First, the Data Act provides too many incentives to provide suboptimal data to repairers. The proposal leaves the data holder free to decide with the third party and the user how data will be provided. For example, Article 5(7) already seems to mention that it is also possible for the third party and the data holder to disagree on how to provide the data. In addition, the very strict wording of Article 5(8), the provision on trade secrets, is a potential stumbling block to the transmission of data to repairers. Indeed, as mentioned in the examples in section 5.2, some of the data needed for repair is very specific. Thus, possible sensitive information may well have to be made available from the perspective of data holders.

Second, a more specific comment regarding the Data Act rules regarding the TPMs discussed in sub-question 2 of this policy paper. Article 11(1) of the proposal states that the data holder may take technical measures to prevent unauthorised access to the data. Paragraph 2 then states that circumvention or breach of these measures will result in the immediate deletion of the data or the immediate stopping of the services offered as a result of obtaining the data. As highlighted earlier, the solution to the problem of data accessibility and repair is primarily to create a positive right of access for users. But another policy option is to exempt unauthorised access to data in specific cases. In what follows, we discuss more precisely how these policy options can take shape.

[55] Giving Consumers Control of their Data (BEUC position paper on the Data Act proposal), 7 October 2022, beuc.eu

5.4 Possible amendments to the Data Act

Proposed amendment I:

The first possible amendment relates to the form in which data is provided to third parties, as BEUC also concluded this is insufficiently regulated. The data holder has great freedom to determine the form in which it provides the data. This is potentially negative for repairers who need specific information for repairs and the form in which it is provided to consumers is not necessarily useable for the repairer.

We therefore propose that Article 5(1) of the proposal is amended to:

Upon request by a user, or by a party acting on behalf of a user, the data holder shall make available the data generated by the use of a product or related service to a third party, without undue delay, free of charge to the user, of the same quality as is available to the data holder, where applicable, continuously and in real-time and provided in a form that is compatible with the third party's intended use.

Proposed amendment II:

The second possible amendment deals with the optional compensation that data holders can request when transferring data to third parties. This is regulated in Article 9 of the proposal. We propose that an exception to this possibility should be made with regard to repairers. This can be done by adding an extra paragraph to this article:

Article 9

Compensation for making data available

(…)

5. *In cases where data is provided solely for the purpose of repairing a product, the data holder is responsible for the costs of providing the data.*

Possible amendment III:

The third possible amendment addresses the shortcomings we have identified with regard to Article 5. First, it is important to remove any possible suggestion in Article 5(7) that providing data to third parties is optional. In doing so, we do not want to remove the value that paragraph 7 has for the data subject, namely securing rights under the GDPR. In order to achieve this, we propose to amend Article 5(7) to:

7. *Any agreement, or provision of an agreement, between the data holder and the third party on the arrangements for transmitting data shall not hinder, prevent or interfere with the exercise of the rights of the data subject under Regulation (EU) 2016/679 and, in particular, with the right to data portability under Article 20 of that Regulation.*

Second, it is important to ensure that the strict wording regarding trade secrets of Article 5(8) does not get in the way of providing relevant data in the case of repair. We are trying to do this by including a so-called 'best-efforts obligation' in the paragraph on trade secrets:

8. *Trade secrets shall only be disclosed to third parties to the extent that they are strictly necessary to fulfil the purpose agreed between the user and the third party and all specific necessary measures agreed between the data holder and the third party are taken by the third party to preserve the confidentiality of the trade secret. In such a case, the nature of the data as trade secrets and the measures for preserving the confidentiality shall be specified in the agreement between the data holder and the third party. In cases where the third party solely needs access to such trade secret for the purpose of product repair, the data holder is obliged to make a reasonable effort to provide the data.*

Possible amendment IV:

The final amendment deals with the rules set by the Data Act proposal regarding TPMs and their circumvention. As discussed earlier, an exception could be made regarding the circumvention of technical protection measures by repairers. Article 11(3) already gives two exceptions, the repair exception can be added to these.

3. Paragraph 2, point (b), shall not apply in either of the following cases:

(a) use of the data has not caused significant harm to the data holder;

(b) it would be disproportionate in light of the interests of the data holder.

(c) the data is used solely for repair purposes

The side note to this possible amendment is that it is a back-end solution. As argued, the primary focus should be on formulating a positive and precisely defined right to data in the context of reparation.

6. Conclusions

In this policy brief, we investigated three different topics that are each related in some way to the European right to repair. To answer each sub-question, we analysed the relevant legislative initiatives and flagged any potential legal obstacles. Addressing these issues will be crucial to the success of the right to repair movement.

The forthcoming introduction of an EU-wide repair clause in the Design Directive will help open up the market for spare parts, creating competition and leading to more and cheaper options. However, regarding the IP protection of designs, we urge the European legislator to consider **including a clarification in the Design legislation** that the benefit and effectiveness of the repair clause cannot be negated by other types of IP protection that may potentially extend to the object of repair. In this way, liberalisation efforts of the spare part market will not be undercut by the effect of cumulation with copyright. Regarding the scope and wording of the repair clause we argue that the focus on "must-match" spare parts and the information requirements should pose minimal problems. A key critique pertains to the 10-year transition period specified in the Directive to protect existing design rights holders in Member States that currently offer design protection for spare parts. We argue that **this transitional period should be significantly reduced**.

With the Ecodesign for Sustainable Products Regulation (ESPR), the European Commission creates the possibility to establish Ecodesign requirements for products to improve their environmental sustainability. Since TPMs are part of the design of many electronic devices, it is important that the Ecodesign Regulation also considers the existence of these digital obstacles to repair-possibilities. We argue that the Ecodesign Regulation in its current wording addresses the issue of TPMs insufficiently. We flagged several shortcomings and for each we proposed an amendment that should effectively deal with the problems that TPMs cause for product repairability. First, we recommend **explicitly naming TPMs as an aspect of product design** on which the European Commission will impose requirements. Secondly, we propose **adding an explicit reference to TPMs as digital blockades for spare parts in the list of parameters** for performance and information requirements.

In the last subsection, we established the importance of access to data for the purpose of repair possibilities. We flagged several shortcomings in the proposed Data Act which sets new rules for the access to device-generated data by users, rather than leaving this data under the sole control of manufacturers. The first possible amendment relates to the form in which data is provided to third parties. The Data Act currently leaves great freedom to the data holder to determine the form in which the data is presented, which leaves open the possibility to provide it in a way that is not necessarily useable for the repairer. We therefore propose adding a sentence in art. 5(1) stipulating that **the data is provided in a form that is compatible with the third party's use**. The second possible amendment deals with the optional compensation that data holders can request when transferring data to third parties. We propose that **an exception to this possibility should be made with regard to repairers**. Furthermore, it is important to remove any possible suggestion within the text of the Data Act, that providing data to third parties is *optional* for the data holder. To this end, we propose changing the wording of art. 5(7). In addition, it is important to ensure that the strict wording of art. 5(8) regarding trade secrets does not get in the way of providing relevant data in the case of repair. This could be achieved by **including a so-called 'best-efforts obligation**', meaning that the data holder is obliged to make a reasonable effort to

provide the data. Finally, we suggest including **a repair exception** regarding the circumvention of technical protection measures.