



**RIGHT TO REPAIR**

# Comments

## on the proposed approach to smartphone & tablet repair scoring

Brussels, 5 October 2021

Following the stakeholder meeting on 7 September 2021, the environmental NGOs and repair actors hereby submit their views on the proposed approach to reparability scoring of smartphones and tablets.

We strongly support the introduction of a mandatory point-of-sale reparability score for this product group and believe that a repair score would work best if added as a parameter on the new Energy Label. However, for the score to have the desired effect of driving consumers towards the most durable and repairable products available on the market and thereby extending product lifetimes, we believe that the currently proposed narrow focus of the score on reparability alone must be extended. In alignment with the views of a number of Member State and industry representatives, we believe that excluding from scoring such factors as OS update provision or the possibility to reset software and firmware – both of which are covered under the French reparability index<sup>1</sup> – will result in missed opportunities and lost savings. This is supported by previous analysis by the JRC with such aspects such as spare part price, software/firmware update availability and extended guarantees having been included in the previously developed general method for reparability scoring<sup>2</sup>. A proposal on how to comprehensively capture aspects that have a strong influence on the likelihood of repair is detailed below, together with a recommendation on how to make the scoring more suited to assessing foldable and rolling phones.

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<sup>1</sup> See <https://www.indicereparabilite.fr/>

<sup>2</sup> Table 5 of Cordella M, Alfieri F, Sanfelix J, (2019), *Analysis and development of a scoring system for repair and upgrade of products – Final report*, JRC, <http://dx.doi.org/10.2760/725068>

## Making the score fit for foldable phones

Further adjustments are needed in priority part weighting in relation to folding and rolling phones. The table from the repair scoring study below demonstrates that external connectors, buttons, microphone and speakers (level 3b parts) are of high functional relevance, underlining the need to retain these in the weighting for hinged phones. Connector failures are particularly common to consider in this context, constituting some 6% of all repairs seen by community repair initiatives<sup>3</sup>. The proposed replacement in the scoring of these components with mechanisms for display rolling / hinges in foldable devices (level 4 parts) is, we believe, entirely unjustified, given that the level 3b parts will continue to be of high functional relevance regardless of whether the phone folds or not.

Table 1: Classification of priority parts by their functional relevance and failure likelihood<sup>4</sup>

Relevance value		Failure Likelihood		
		Low	Medium	High
Functional relevance	Low			
	Medium		Front-facing camera Rear-facing camera	Back cover (assembly)
	High	External connectors Buttons Microphone Speaker	Hinge assembly or mechanical display folding mechanism mechanical display rolling mechanism	Battery Display assembly

  

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
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Our updated scoring approach (also presented as an excel worksheet) contains a proposal for an approach more suited to capture the specificities of foldable phones. It allows for 4a and 4b level parts to be added to the scoring without however impacting the balance of the weighting. The approach entails specifying weighting priorities for different parts by allocating a score rather than a percentage. This is proposed to be done as follows:

Table 2: Proposed part weighting prioritisation

	priority	points
LEVEL 1	H	30
LEVEL 4	M-H	20
LEVEL 2	M	10
LEVEL 3	L	5

<sup>3</sup> Analysis of 1900 repairs from Open Repair Alliance (2021), Repair Database, <https://openrepair.org/open-data/insights/mobiles>

<sup>4</sup> JRC (2021), Draft Repair Score Study: Product specific application to Smartphones and Tablets, European Commission

The approach proposed above would allow to select the type of phone (non-foldable, foldable, rollable), and whether there are any other priority parts not present. The spreadsheet would then automatically calculate an adapted (dynamic) weighting factor while at the same time maintaining all proportions of weighting between the different components. The output to be used for the rest of the scoring calculations is provided in column H.

## Recalibrating the score to duly capture likelihood of repair

While we recognise that considerable work has gone into the development of the disassembly depth aspects of the reparability score given that this was not proposed to be addressed as a minimum requirement under Ecodesign, we believe that far too much weight has been placed on this parameter at the expense of other aspects that have been weighted much lower or not included at all. It is, we believe, important to clearly focus the scoring on aspects that have most influence on the repair and lifetime extension of a product. As a result, we propose that a weighting process similar to that of our proposal for priority parts is followed, defining scores for each parameter based on its priority grouping, and subsequently rationalising these into percentages.

Table 3: Proposed repair score parameter weighting

	<b>Disassembly depth (PER PART)</b>	<b>Priority</b>	<b>Points</b>	<b>Adjusted Weighting</b>	<b>Original Weighting</b>
<b>LEVEL 1</b>	DISASSEMBLY DEPTH	H	40	20%	40%
	SPARE PART AVAILABILITY	H	40	20%	15%
	<b>FREEDOM FROM PART PAIRING</b>	H	40	20%	0%
	<b>SOFTWARE / OS UPDATE AVAILABILITY</b>	H	40	20%	0%
<b>LEVEL 2</b>	REPAIR INFORMATION COST	M	15	7%	15%
	TOOLS	M	15	7%	15%
<b>LEVEL 3</b>	<b>EXTENDED RANGE OF SPARE PARTS (PCB)</b>	L	5	2%	0%
	<b>ABSENCE OF BUNDLING</b>	L	5	2%	0%
	FASTENERS	L	5	2%	15%
				<b>100%</b>	100%

As presented in the table above, we propose to add some parameters that were neglected in the current study report and for which we believe there is notable scope for improvement over the minimum ecodesign requirements. The rationale for including these aspects and for their weighting is detailed below:

Table 4: Justification for repair score parameter priority weighting

<b>LEVEL 1 / HIGH</b>	DISASSEMBLY DEPTH	<b>Key parameter</b> for ease of repair and upgrade which is not addressed by a minimum requirement. It has an <b>important influence on repair cost</b> , provided spare parts are available and are not paired.
	SPARE PART AVAILABILITY	Availability of spare parts to wider target groups has an <b>important influence on the likelihood of repair</b> . Price of spare parts has an <b>important influence on the likelihood of repair</b> . <b>Shorter delivery times can increase the likelihood of repair</b> . Availability of spare parts for longer time periods has a <b>critical impact on ability to repair</b> after 5 years.
	<b>FREEDOM FROM PART PAIRING</b>	<b>Critical to likelihood of repair</b> and should be tackled by means of a dedicated ecodesign requirement. We suggest the inclusion here as an absolute minimum, pending changes to the proposed draft regulation.
	<b>SOFTWARE / OS UPDATE AVAILABILITY</b>	Critical to likelihood of repair. The repair score study considered it “a paramount parameter for reparability of smartphones and tablets.”
<b>LEVEL 2 / MEDIUM</b>	REPAIR INFORMATION COST	<b>Important to increase the likelihood of repair</b> . The more widely available the information is, the more likely the repair.
	TOOLS	<b>Important to increase the likelihood of repair</b> . The more easily available the tools are, the more likely the repair.
<b>LEVEL 3 / LOW</b>	<b>EXTENDED RANGE OF SPARE PARTS (PCB)</b>	<b>Important for some less-common repairs</b>
	<b>ABSENCE OF BUNDLING</b>	Less bundled components have an <b>influence on repair cost</b>
	FASTENERS	Easier to remove and reuse fasteners have an <b>influence on repair cost</b>

As can be seen from the above-presented tables, we propose to separate the different parameters according to their influence on the likelihood of repair, and to allocate a number of points accordingly (Level 1 = 40 points, level 2 = 15 points, level 3 = 5 points). Further detail on the considerations relevant to the scoring of different parameters and the rationale behind their prioritisation is presented below.

## Spare part availability

Building on the JRC's general method (Table 3 and section 3.1.1), the scoring on spare part availability should, we believe, aggregate the following aspects into the score in addition to target group: availability of spare parts for a specific period of time, spare part delivery time, and spare part price.

- 1. Availability of spare parts for a specific period of time.** The requirements of the draft regulation in relation to spare part and repair information provision are currently not aligned as repair information is to be provided for 7 years but spare parts only for 5 years. In light of this, we propose the following scorings in relation to spare part availability: 5 years = 1 point, 6 years = 2 points, 7 or more years = 3 points
- 2. Spare part delivery time:** The proposed minimum ecodesign requirement is to limit delivery time of spare parts to 5 working days. Shorter delivery times are, however, both possible and are likely to significantly reduce repair times and likelihood, given that most of the consumers today are heavily reliant on smartphones for day-to-day activities and a waiting time of over a few days is likely to prompt a purchase of a new device. We propose the following scorings in relation to spare part delivery times: 5 days (120 hours) = 1 point, more than 48 but less than 120 hours = 2 points, more than 24 hours but less than 48 hours = 3 points, less than 24 hours = 4 points
- 3. Spare part price.** The draft Ecodesign regulation does not define minimum requirements for the cost of spare parts but instead requires for the maximum pre-tax price to be made publicly available. While price transparency is both necessary and important, for a repair to be feasible, it is important to ensure that the cost of all spare parts is below 30% of the value of the product.<sup>5</sup> The French repair score already addresses the ratio of spare parts in relation to product price, and the European scoring approach should, we believe, adopt the same approach. We propose to define three parameters in relation to spare part price:
  - The price of the most expensive spare part – x
  - The average price of the other spare parts – y
  - The price of the product – z

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<sup>5</sup> Cordella M, Alfieri F, Sanfelix J, (2019), *Analysis and development of a scoring system for repair and upgrade of products – Final report*, JRC, <http://dx.doi.org/10.2760/725068>

The spare part and product price ratio is then proposed to be calculated according to the following formula:  $0.5 \cdot (x+y)/z$ . In order to address issues related to price variations across regions and over time, it is proposed that product and part prices declared should be average EU recommended retail prices (RRP) at the time the product is placed on the market. The part prices should include the price of pairing operations and purchase of any other repair information, in case relevant. The scorings for the spare part and product price ratio should then be allocated as follows:  $>30\% = 0$  points,  $25\% < \text{ratio} < 30\% = 1$  point,  $20\% < \text{ratio} < 25\% = 2$  points,  $15\% < \text{ratio} < 20\% = 3$  points,  $10\% < \text{ratio} < 15\% = 4$  points,  $< 10\% = 5$  points.

The approach detailed above would, we believe, allow for considerable differentiation between products, stimulate competition driving down spare part prices, and, given that multi-part components are likely to be more expensive, discourage part bundling. It would, moreover, help balance the false incentive created by the currently proposed disassembly depth criterion which indirectly encourages part bundling due to the fact that bundled parts can be disassembled in less steps than multiple separate parts.

In order to combine the four sub-parameters for spare parts availability to determine a total score for this parameter, we suggest the following weightings in line with our previously proposed points system:

- Target group: H (40 points => 40%): Availability of spare parts to wider target groups has an important influence on the likelihood of repair.
- Spare part price: H (40 points => 40%): Cost of spare parts has an important influence on the likelihood of repair.
- Spare part delivery time: M (15 points => 15%) Shorter delivery times can increase likelihood of repair compared to draft regulation.
- Time period of availability: L (5 points => 5%): Availability for longer time periods has a critical impact on ability to repair after 5 years (albeit lower volume of repairs).

## Freedom from part pairing

The current draft Ecodesign regulation for smartphones and tablets fails to sufficiently address the critical issue of part pairing, as the text in information clause xi on remote authorisation of serial numbers establishes the OEM as the sole decision maker on whether a part is accepted or not. OEM control of part pairing restricts the consumer's right to repair and enables OEMs to dictate which repair operations they would like to be possible, and which defects they would rather result in the consumer buying a replacement product. Not only does this go against the intention of the draft regulatory requirements to ensure more widespread user and professional repair, but it also represents a serious competition concern. In the absence of changes to the regulatory text, it is essential that repair scoring addresses this aspect. The proposed scoring approach could follow the following logic, [detailed in Table 5](#).

Table 5: Proposed scoring approach in relation to part pairing

Score	Entity with access	Tools available	Type authorisation	cost
1	professional repairers	software tools, firmware and similar auxiliary means required for full functionality of the spare part and device after repair	For remote (e.g. OEM) authorisation or pairing of serial numbers	at a reasonable and proportionate fee
2	professional repairers	software tools, hardware tools, firmware and similar auxiliary means required for full functionality of the spare part and device after repair	For independent authorisation or pairing of serial numbers <sup>6</sup>	at a reasonable and proportionate fee
3	professional repairers and end-users	software tools, hardware tools, firmware and similar auxiliary means required for full functionality of the spare part and device after repair	For independent authorisation or pairing of serial numbers <sup>6</sup>	at a reasonable and proportionate fee
4	professional repairers and end-users	software tools, hardware tools, firmware and similar auxiliary means required for full functionality of the spare part and device after repair	For independent authorisation or pairing of serial numbers <sup>6</sup>	free of charge
5	Replacement of all parts requires no special hardware or software tools and no authorisation. Product is designed to ensure no compatibility issues with after-market and reused parts.			

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<sup>6</sup> with informed end-user consent as appropriate

## Software / OS update availability

The operating system is frequently cited as one of the main reasons for the failure and early obsolescence of smartphones and tablets. OS upgrades (for both functionality and security) should, we believe, be considered as a spare part, and therefore should be subjected to the 7-year availability period requirement. 22% of devices brought to community repair initiatives today are 5 to 10 years old, which underlines the need for long-lasting software support as a pre-requisite for repair.

While recognising OS upgrades as “a paramount parameter for reparability of smartphones and tablets”, the repair study proposed no scoring approach on this parameter. However, manufacturers that wish to provide updates for longer periods of time should, we believe, be rewarded in the repair score calculations. Pending alignment of time periods for the provision of spare parts and OS updates in the draft Ecodesign regulation, we propose that as a minimum these aspects are included in the repair score. In light of the current draft Ecodesign requirements, the scorings are proposed to be calculated as follows:

- 5-year security updates and 3-year functionality updates = 1 point
- 5-year security updates and 5-year functionality updates = 2 points
- 7-year security updates and 5-year functionality updates = 3 points
- 7-year security updates and 7-year functionality updates = 4 points
- more than 7-year security and functionality updates = 5 points

## Tools

The tool scoring proposed by the JRC could be improved, as a repair with basic tools will have lower overall environmental impact compared to repair where a tool is manufactured and shipped with each product or part just in case a repair is necessary. In addition, a repair is more likely to be successful if the tool is provided with the part rather than the product, as in the latter case by the time the repair is necessary the tool may have been mislaid. Bearing this in mind, we would propose to revise scorings in relation to tools as follows:

- commercially available tools = 1 point
- tools supplied with the product = 2 points
- points for tools supplied with the part = 3 points
- basic tools = 4 points
- no tools required = 5 points



## Extended range of spare parts

Facilitating printed circuit board-level repairs increases the range of repair operations that are possible and increases likelihood of repair. This would require specific board-level part provision, accompanied by the relevant suite of repair information. The list of parts which would facilitate board level repair include the following: USB controller, charging controllers, audio, backlight, LCD/OLED power ICs, RF components, SMC, MOSFETs of power related components, RAM, NAND and FPC connectors. Scorings in relation to this parameter should be designed as follows: no board-level parts = 0 points, provision of board level parts for 5 years = 2 points, provision of board-level parts for 7 years = 3 points.

## Absence of part bundling

Availability of parts only when combined within a larger, more expensive assembly can present a substantial barrier to repair due to increased costs of the respective parts and have significant impacts on the resources used for part replacement. Such bundling of parts should, in our view, be made explicitly non-compliant with the regulatory requirements. However, pending such changes in the draft regulation, we consider it important that part bundling is specifically addressed in the scoring approach as a minimum. This is particularly a concern if price is not addressed in the scoring, in order to balance against the disassembly depth criterion which would encourage bundling. Scorings for this parameter are proposed to be calculated as follows:

- presence of assemblies i) combining level 1 and/or level 2 parts together, or ii) combining level 1 and/or level 2 parts with level 3 or level 4 parts, or iii) combining 4 priority parts or more = 0 points
- no assemblies combining level 1 and level 2 parts with other parts, but presence of assemblies combining a maximum of three level 3 and/or 4 parts = 1 point
- all assemblies containing only one priority part (but including other non-priority parts) = 2 points
- provision of parts without any wider additional assemblies combining other non-priority parts = 3 points

## Fasteners

The same-reusable criterion should be clarified to make it clear i) if it accounts for all the fasteners in the disassembly path or only those of the component, and ii) if different screw heads and different screw length would be considered same-reusable. In addition, a distinction could be included in relation to residue. Currently, adhesive is reusable (3 points) if a new adhesive is supplied with the part, which is scored at the same level as assembly with a screw or a snap fit. However, some fasteners (welds, certain types of adhesives) leave residue which are cumbersome and time consuming to clear, thereby making the repair longer and more expensive. We propose the following alternative scorings for this parameter: **removable fasteners = 1point**, **reusable fasteners but with residue = 2 points**, **reusable fasteners without residue = 4 points**, **well-defined same-reusable fasteners without residue = 5 points**.

## Other proposals

### Accounting for multiple priority parts of the same type

It should be clarified in the instructions for scoring that in cases where multiple priority parts of the same type are present (e.g. multiple connectors, buttons or cameras), the part with the lowest score is to be used for the calculation purposes. This, we believe, is necessary to both provide clarity to manufacturers and to ensure robustness in the scoring.

### Correcting the definition of fasteners

The currently proposed definition of fasteners contains an error as it reads “welds and some glues are in contrast to permanent fixings”. This should be corrected to “welds and some glues are, in contrast, permanent fixings.”

### Ensuring transparency of repair scoring

End-users should, we believe, have full access to the details of the repair score in order for it to be considered trustworthy and robust. Therefore, it is important to ensure that the details for each repair parameter of each product should be included in the public part of the European Product Database for Energy Labelling (EPREL).

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