governance

version

standard

November 06, 2020

Contents

Open Repair Data Standard

This is the technical documentation of the Open Repair Data Standard. The standard is produced by the Open Repair Alliance.

About Open Repair Alliance

Goals and ORDS Use Cases

The initial objective of the Open Repair Alliance is to help organisations involved in community repair to better harmonise the way we collect and share information about successes and challenges in repairing small electrical and consumer electronic devices, to increase the visibility and the impact of the work we all do.

Specifically, we aim to:

- **Create a joint approach to documenting successes and challenges with**
  post-warranty repairs
- **Promote it as a standard available to other community repair**
  networks, and in the future to commercial repairers and others collecting repair data
- **Enable coalition members and others to use the data from our joint**
  work to produce insights, with the objective of demanding more repairable products, improved support and access to better repair services
- **Jointly explore additional information we can all collect to help**
  make a stronger case for increased repairability

Governance and Membership

Founding Members

Open Repair Alliance's founding members are: Anstiftung Foundation, Fixit Clinic, iFixit, The Repair Cafe Foundation and The Restart Project.

All founding members have a strong commitment to repair and to documenting the challenges and opportunities that we face. Most groups are non-profit organisations promoting community repair initiatives. The Alliance also contains a commercial organisation, iFixit, because of its commitment to sharing repair data as part of the Alliance and for its active role and strong voice campaigning for repairability in the United States and in Europe.

The work of the Alliance is facilitated by a coordinator organisation, The Restart Project as of November 2017. The role will rotate between founding members.

Additional Membership

Alongside founding members, we will increase membership both via additional core members and via an Advisory Group of other organisations and individuals interested and active in issues around repair. These include: consumer rights organisations, environmental NGOs, networks and universities. The rationale for their involvement is to seek advice, support and insights from groups which might also benefit from our work.

Additional organisations interested in our work will be able to follow developments and to apply to join the Alliance as core members or in an advisory role. Existing core members will review applications quarterly and accept them unless one or more existing members have objections.

Decision Making

Decisions on the standard are made through consensus between the core members. Any founding members may veto a decision, in the case that discussions do not reach an agreeable consensus. Advisors will share insights and advice, but will not take part in voting.

As the group will grow in the future, we plan to revise decision making by October 2018.

The Standard

Guiding Principles

As members of the Open Repair Alliance, organisations are committed to share data that is accessible, useful and useable for a range of partners.

To ensure this, organisations are expected to consider that their Open Repair data is:

- **Structured - data is valid in line with the requirements of the** standard
- **Comparable - data can be linked across publishers through codelists** and shared references
- Open - data is appropriately licensed and published
- Accurate - data is as accurate as possible
- Timely - data is kept up-to-date and updated regularly

The standard is focused on collecting and sharing information about repair of small electricals and consumer electronics. Due to the open nature of the standard, it could in the future lead to adaptations to cater for other areas of repair information.

Collected Data

This section describes the data that we collect as part of the standard.

There is a wide variety of data that can be and is being collected on the topic of repair. We recognise that not all organisations have the need or capacity to collect all of this data, and further we recognise the tension between the ideal scenario of all the data we would like to have, and the ability to expect that data to be collected in busy repair environments, often by volunteers.

As such, the standard is grouped into logical ‘modules’ that group together related questions, and within these modules questions are classified as required or optional. Modules are described as either primary or additional. To be fully compliant with the standard, data must aim to include all required fields in the primary modules.

Organisations may optionally choose to collect and share data in additional modules. In order to be fully compliant with the standard, if an additional module is collected, then all required fields within that module must be included.

Primary and additional modules, and required and optional questions, are decided upon following the governance process of the Alliance. The decision to define a question as ‘required’ is based on a number of factors - around use cases and benefits of the data the question would produce, and the complexity of data collection for that question (including who is being asked to collect the data and how - for example, we wish to avoid overloading volunteers with data collection). Every required question should be traceable back to a particular use case and goal.

Modules

The following outlines the primary and additional modules, and lists the required fields within each of these. The Alliance aims to release further information on all the considered questions (those which are optional and those that are in additional modules) in due course.

Primary

Module	Description	Required fields	Optional

Product related	Information about the product/device that someone has attempted to fix. To help relate repair issues to particular groupings of product.	• Product Category • Model • Brand • [STRIKEOUT:Model] • Year of Manufacture
Repair related	Information about the attempted fix and its outcome. To help ascertain common ways in which devices fail and the results of repair attempts.	• Problem • [STRIKEOUT:La • Repair Status
Session related	Information about when the repair took place and through which entity, e.g. a specific community repair group on a particular date. To help verify the provenance of the repair data.	• Group Identifier • Country • Date
Provider related	Information about the data provider, i.e. which organisation collected and submitted the data.	• Data provider • Creation date • Provider product category

Additional

Module	Description
Impact related	Information about the wider environmental or social impact of the repair - e.g. waste weight diverted, hours volunteered, etc. - This information can be calculated based on other information, e.g. product category, number of repairers at a session.
Repairer related	Information about the person that undertook the repair.
Participant related	Information about the person that owns the device/brought it to be fixed.
Feedback related	Information asked of the participant about their experience of the repair attempt/event. Also feedback from the repairer on the ease of the repair, the repairability of the product etc.

Please note that there currently are no agreed questions for additional modules.

Fields

This section provides detailed information on each of the fields included in the standard.

Repair-related

Repair Status

Description: This is the outcome of the repair attempt that was undertaken on the device at the event. It can be one of Fixed, Repairable or End-of-Life.

Fixed - the owner left the repair event with a device that was functional and they were happy to continue to use.

Repairable - the owner left the repair event knowing that the device could be repaired, but with more effort required. For example, spare parts were not available at the time, but once acquired the device can be repaired. Sometimes device owners go home ready to finish the repair themselves, or others are referred to professional repairers.

End-of-life - the repairer and the owner decided together that it is not cost-effective or realistic to repair the device.

Use cases: The repair status allows us to report on rates of repair on the devices we see at repair events. In conjunction with product category and barriers to repair, we can investigate which types of products are most difficult to repair in a community context, and why.

Ease of collection: Most providers currently record information on the repair outcome. Mapping is required to go from current partner values to the ORDS recommended values - see Appendix E. Repair groups are keen to record this information already, as they can report on their own repair success to volunteers and funders.

Barriers to Repair

Description**:**

- Spare parts not available
- Spare parts too expensive
- No way to open the product
- Repair information not available
- Lack of equipment

Session-related

Country

Description: This is the country where the repair event (and thus the repair attempt) took place.

Use cases: The inclusion of this field allows for the breakdown and comparison of information by country. For example, does the fix rate vary between countries? What are the relative occurrences of different barriers to repair per country?

Ease of collection: providers should find it easy to provide this information, if they are recording the group who undertook the fix, and know where the group is based.

Creation date

Description: The date on which the record was added to the provider's database. Note: this is not necessarily the same as the date the repair attempt took place. The data may have been uploaded after the repair event.

Use cases: The inclusion of this field can help to simplify the aggregation process by flagging which data has been newly created since the last aggregation process.

Ease of collection: if using an electronic system, providers should be able to easily record a creation date when the data is entered into the system.

Data types and codelists

For data to be comparable, the values recorded for each field need to be of the correct type. For example, for a date field, an agreed representation of the date is needed.

For a categorisation field, an agreed selection of options needs to be agreed. This is a 'codelist'. An *open codelist* provides suggested codes, but publishers can extend these lists with new codes on the basis of consensus with other publishers, or by using a codes prefixed with 'x_' to indicate that it is a local 'eXtension' to the codelist. A *closed codelist* provides mandatory codes and publishers should only use values provided in the official list. Changes to closed codelists should take place through the governance and revision process.

This section lists the expected data types and codelists for the required fields.

Question	Field Name	Type

ID	*id*	Unique identifier from the partner organisation, i.e. does not have to be unique across all partner data.
Product Category	*product_category*	Option from open codelist.
Brand	*brand*	Free text.
Model	*model*	[STRIKEOUT:Option from open codelist.]
Year of Manufacture	*year_manufactured*	Year. YYYY
Problem	*problem*	Free text free from personalised data, e.g. email addresses.
Fault Type	*fault_type*	Option from open codelist.
Fault Category	*fault_category*	Option from open codelist.
Solution	*solution*	Free text free from personalised data, e.g. email addresses.
Solution Type	*solution_type*	Option from open codelist.
Repair Status	*repair_status*	Option from closed codelist.
Group Identifier	*group_id*	String. Unique. A unique identifier across all members that identifies the group responsible for the repair.
Date	*date*	Date. YYYY-MM-DD format. The date of the repair event.
Data provider	*data_provider*	Option from open codelist.. Name of partner organisation.
Country	*country*	String. 3 letter ISO code, e.g. “GBR”.
[STRIKEOUT: Language]	*[STRIKEOUT:language]*	[STRIKEOUT:String. Official list of languages, non-ISO code.]

Producing and Sharing Compliant Data

Compliant data is data that:

- contains the required data as agreed per this standard
- **is formatted using the correct data formats as agreed per this** standard
- is publicly available for download
- is licensed correctly

Data Format

Initially, each member will publish its data in CSV format, where each row represents a single repair attempt, and will contain the values for all of the required fields listed above. The first row will be a header row, with the column titles matching those names listed above. Additional optional fields can be included in the CSV should any member wish to do so.

An example reference file of data in the required format can be found here: *https://drive.google.com/open?id=1epzElEmzG4Y5Fu43amM1uFtjI18ivWoj*

The Alliance will review the data format as the standard evolves.

Data Collection Tools

The Alliance does not prescribe a particular tool with which to collect the data, however individual members are encouraged to share advice and help on using and expanding existing tools.

Data Publishing

Organisations will host their own CSV data files, in a publicly accessible and downloadable location such as their website. A public registry listing the URL of each of these datasets is maintained at *openrepair.org*.

In order to ensure that the Alliance makes available up-to-date data on repair, each member commits to updating the ORDS data that it publishes at least on a monthly basis, by the end of each calendar month.

Data Versioning

Further discussion by the Alliance is needed to determine the requirements of keeping the history of the data collected through the Open Repair Data Standard. At present, members commit to maintaining their own historical records and to amend previously released data points only to ensure increased accuracy.

Data Licensing

Data must be licensed under the Creative Commons Attribution-ShareAlike 4.0 International (CC BY-SA 4.0) (*https://creativecommons.org/licenses/by-sa/4.0/*).

As we develop the standard further, we plan to revisit the licensing of data to best address the potential commercial use of the data by third parties.

Document Information

Version

Number: 0.2

Description: Initial version agreed by Open Repair Alliance founding members.

Published: DD MM 2020.

License

Changelog

V0.1 - Initial version agreed by Open Repair Alliance founding members, published on 14 November 2017

V0.2 - October 2020.

- Recommended options for Repair Status.
- Addition of Barriers to Repair fields.

Appendix A - Product category

Desktop computer
Flat screen display
Laptop
Paper shredder
PC Accessory
Printer/scanner
Digital Compact Camera
DSLR / Video Camera
Handheld entertainment device

Headphones
Mobile
Tablet
Hi-Fi integrated
Hi-Fi separates
Musical instrument
Portable radio
Projector
TV and gaming-related accessories
Aircon/Dehumidifier
Decorative or safety lights
Fan
Hair & Beauty item
Kettle
Lamp
Power tool
Small kitchen item
Toaster
Toy
Vacuum
Misc

Appendix B - Fault type

Boot
Case/chassis
Configuration
Damage (internal)
Keyboard (integrated)
Media component (integrated)
Multiple
Operating system
Optical drive (internal)
Other
Overheating
Performance
Pointing device (integrated)
Ports/slots/connectors
Power/battery
Screen (integrated)
Storage (internal)

System board
Unknown
Virus/malware

Appendix C - Fault category

Hardware
Software
Unknown

Appendix D - Solution type

Cleaned
Reinstalled
Repaired
Replaced
Unknown/None
Upgraded

Appendix E - Repair status

This appendix outlines the repair statuses currently collected by partner organisations, and how they map to the ORDS values.

ORDS

Fixed
Repairable
End of life
Unknown

Restart Project

Mapped from column “Repair Status”

Repair Status	ORDS Status
Fixed	Fixed
Repairable	Repairable
End of life	End-of-life
Unknown	Unknown

Repair Cafe Foundation

Column: “Gerepareerd, ja, half/advies, nee” (“Repaired, yes, half / advice, no”)

Dutch	English	ORDS Status
Nee	No	Unknown
Ja	Yes	Fixed
Half en/of advies gegeven	Half and / or advice given	Repairable

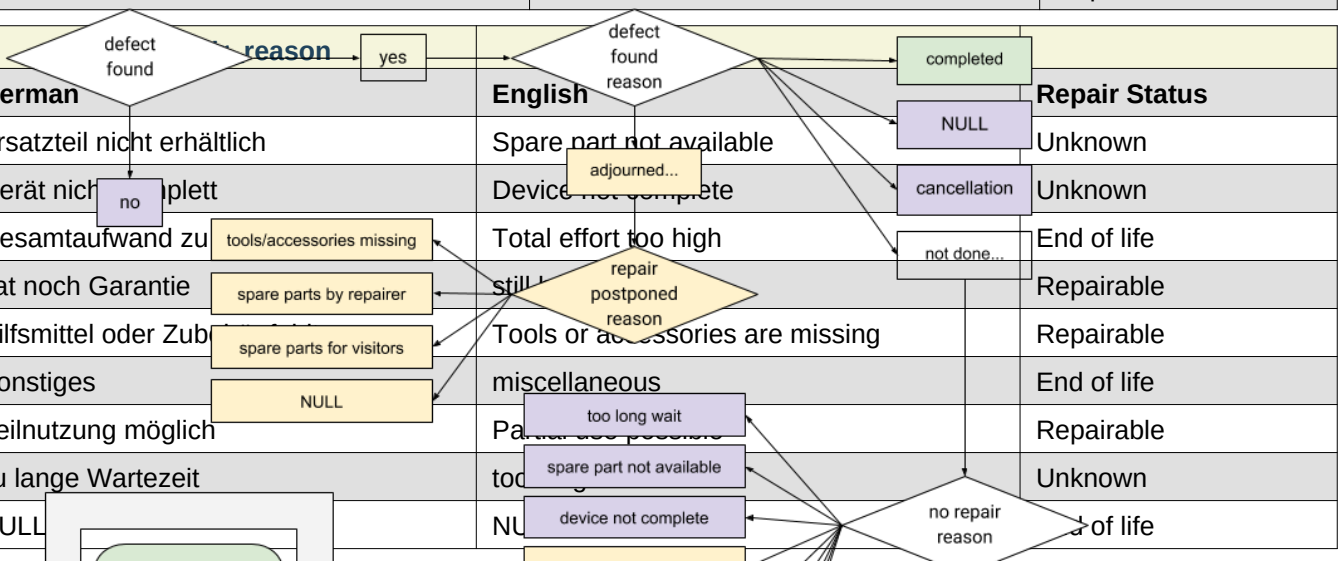
anstiftung

Repair status is determined by evaluating the content of a number of fields.

defect_found_name		
German	**English**	**Repair Status**
ja	yes	(reason…)
nein	no	Unknown

defect_found_reason		
German	**English**	**Repair Status**
Abbruch: Gerät darf nicht mehr genutzt werden	Cancellation: Device may no longer be used	Unknown
erfolgreich abgeschlossen	successfully completed	Fixed
nicht erfolgt, weil…	not done, because …	(reason…)
vertagt, weil…	adjourned because …	(reason…)
NULL	NULL	Unknown

repair_postponed_reason		
German	**English**	**Repair Status**
Ersatzteilbesorgung durch Besucher	Spare parts for visitors	Repairable
Ersatzteilbesorgung durch Reparateur	Spare parts by repairer	Repairable
Hilfsmittel oder Zubehör fehlt	Tools or accessories are missing	Repairable
NULL	NULL	Repairable



reason		
German	**English**	**Repair Status**
Ersatzteil nicht erhältlich	Spare part not available	Unknown
Gerät nich[illegible]plett	Device not complete	Unknown
Gesamtaufwand zu	Total effort too high	End of life
hat noch Garantie	still	Repairable
Hilfsmittel oder Zub	Tools or accessories are missing	Repairable
Sonstiges	miscellaneous	End of life
Teilnutzung möglich	Pa	Repairable
zu lange Wartezeit	too	Unknown
NULL	NU	of life

be_used_anymore		
Germ	**English**	**Repair Status**
NULL	NULL	
<not e pty>	*<not empty>*	End of life

** The d be_used_anymo ve no values other than NULL. The assumption is that if a hat the `repair_s e “End of life”.

Fixit Clinic

Mapped from column “At this point: what’s the disposition of this item?”, containing a number of unique, white-space trimmed values. As free-text can be entered, a number of these are not mappable automatically - those that can are listed below.

Original	Repair Status
Fixed (hooray!)	Fixed
Repairable and I’m going to keep trying	Repairable
Unserviceable (End-of-Life)	End of life
End-of-Life	End of life
Unknown	Unknown