Dependability of New Products Containing Reused Parts and Life-Extended Products

IEC 62309: 2024 ED.2

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by

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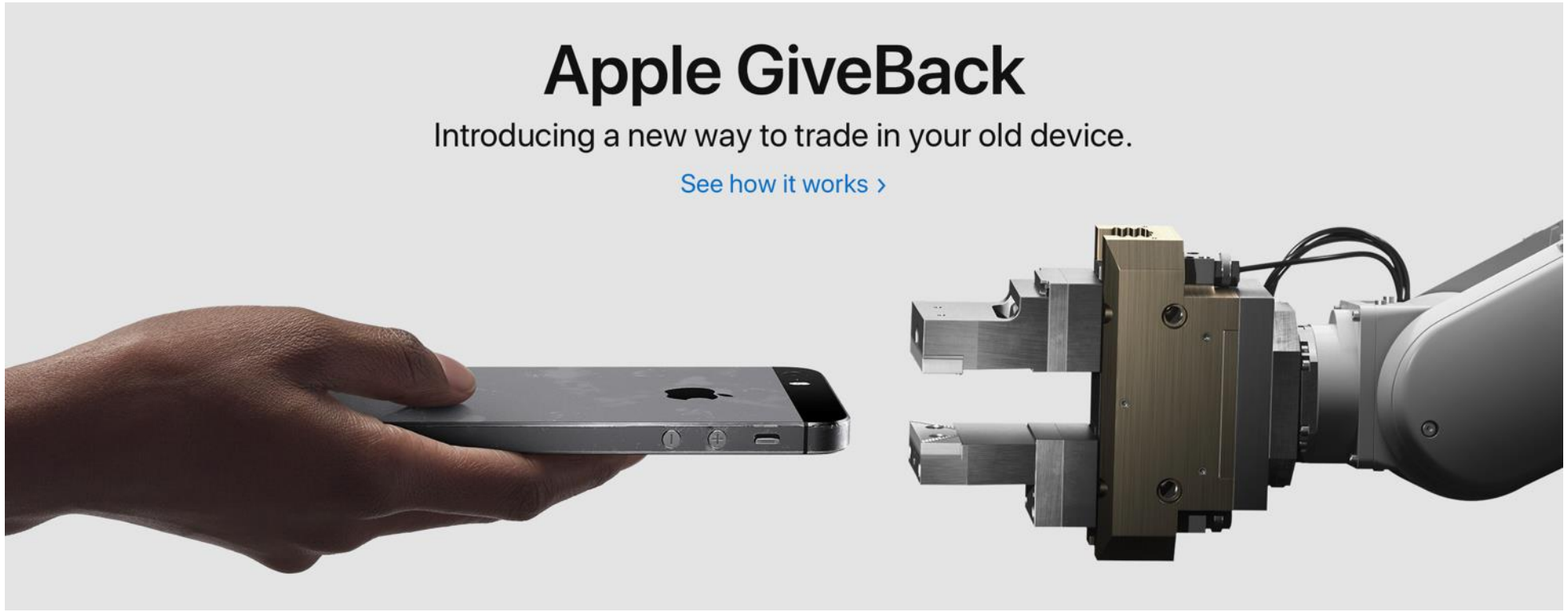
IEC TC56 Dependability

Produce and maintain appr. 60 International Standards within:

- **Reliability**
- **Availability**
- **Maintainability**
- **Maintenance support**
- **Technological risks (but not safety)**

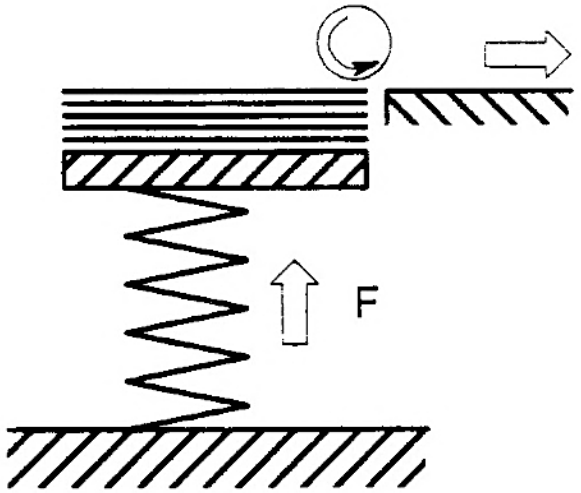
We produce more waste
than we can reuse
WEEE directive
Take back or pay for scrapping



Advantages:

- Get old products out of market – sell new
- WEEE directive – scrap it yourself
- Customer loyalty – did not experience a failure
- Possibility of reuse of parts

Photo Copier
Reuse of
Optical system ?
Scanning System ?
Paper feed System ?



BUT
Then it can not
Be sold as new !

IEC 62309:2004 ED.1 Dependability of products containing reused parts – Requirements for functionality and tests

Project leader: Prof. Fevzi Belli

“as new” according to IEC 62309

Containing reused parts (QAGAN) according to IEC 62309

Product tested the same way as a new product and fulfilling current regulatory and safety requirement. Product life the same as new product.

As new (used)

“Qualified Good As New” parts (QAGAN parts):

- Have been used previously in a similar product
- Have a remaining life sufficient for the new product
- Have been tested as required and checked for wear etc.
- May have been cleaned, repainted etc.
- Is qualified for a specific application only
- Can not be sold for any application
- Have been qualified for use in the previous product
- May be mixed with new parts with same form, fit and function
- Traceability if required (individual part number)

As new (used)

IEC 62309: 2024 ED.2 Dependability of New Products Containing Reused Parts and Life-Extended Products

Project leader: Thomas Young Olesen, Grundfos

Part 1: New products containing reused parts (IEC 62309: 2004 ED.1 Updated)

Part 2: Annex A - Life extension – Used products containing new or QAGAN parts

Life Extension

- Extend the useful life of a product in use
- Save scrapping and reusing materials
- Save energy costs, CO_2 and pollution from manufacturing of new product

- May cause problems with new regulatory and safety rules
- New product may be more energy efficient
- Change in customer preferences (e.g. exterior design)

- Often an advantage to extend life instead of buying new
- Life extended products have to fulfil stated specifications and warranties
- Life extended products have to fulfil current regulatory and safety requirements
- If it contains QAGAN part this has to be declared

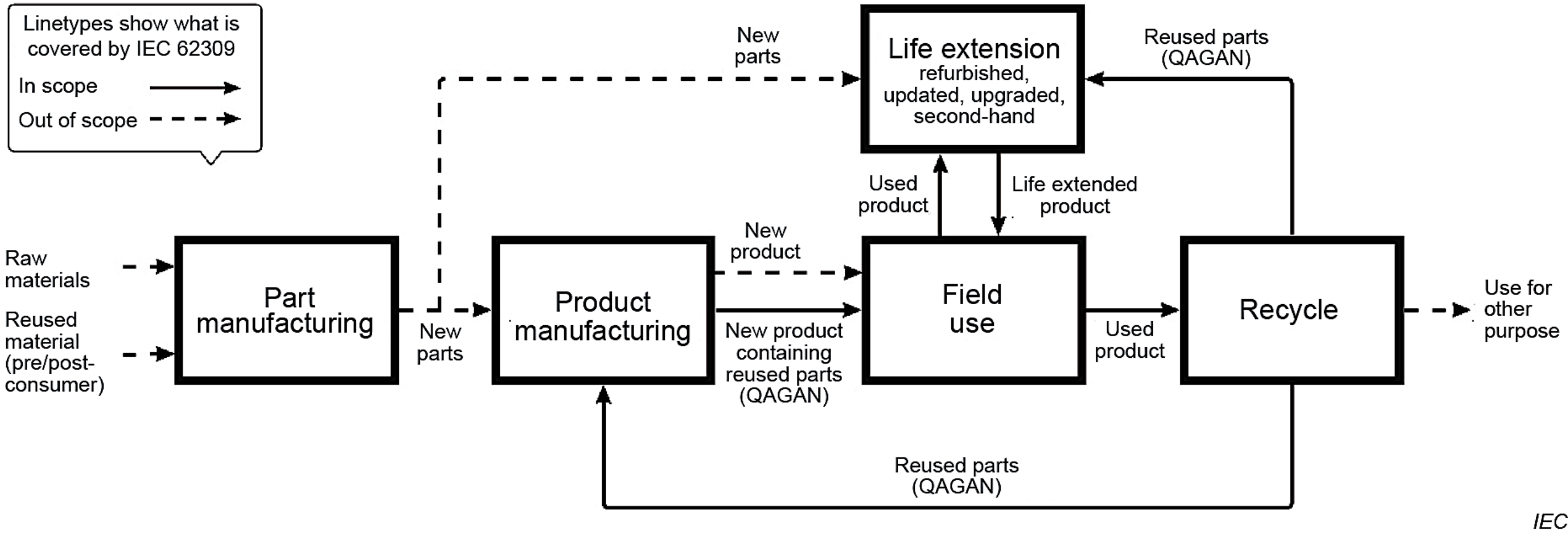


Figure 1 of IEC 62309:2024 ED.2

Repaired according to IEC 62309:2024 ED.2

- **The most common means of life extension.**
- **Can be made by the user, the manufacturer or a third party.**
- **Often require support for example spare parts, maintenance instructions, special tools, test equipment and software (Ecodesign directive).**
- **Worn parts and parts with a limited life may be replaced (corrective or preventive maintenance)**
- **After repair the product has to be function tested.**

Refurbished according to IEC 62309:2024 ED.2

- **Process made by a “refurbisher” which restores the used product to a configuration released by the manufacturer.**
- **Can include repair, rework, replacement of worn parts and update of software and hardware.**
- **The refurbisher can be the manufacturer or an organisation approved by the manufacturer.**
- **Compliance can be checked by analysis, testing and inspection of the product and its documentation.**
- **IEC 63120:2020 (62A/1424/CDV) Refurbishment of medical electrical equipment, medical electrical systems and sub-assemblies and reuse of components as part of the extended life-cycle.**

Updated according to IEC 62309:2024 ED.2

- **A product can be updated by the manufacturer while it is in use.**
- **The product is brought to same specifications as the current production of the products of the same type.**
- **A product can be declared as updated based on the following activities: change of appearance, change of display menus, new software versions.**
- **Correction of problems in use e.g. intermittent failures or nuisance problems.**

Upgraded according to IEC 62309:2024 ED.2

- **A product in use can be declared as “upgraded” if the appearance, performance and functions are significantly improved compared with the original specifications of the product.**
- **The product should only be upgraded by the manufacturer or an operator authorized by the manufacturer.**
- **The product shall comply with the updated specifications and documentations.**
- **A product in use can be declared as updated based on the following attributes: new functionality, improved performance (e.g. improved energy efficiency) or improved dependability**

Second hand according to IEC 62309:2024 ED.2

- **A used product can be declared “second hand” if it is sold to a new owner.**
- **The vendor or buyer may undertake minor service work.**
- **Only minor parts with a wear out failure pattern should be changed.**
- **The product may be readied for resale by the manufacturer or by another organisation.**
- **Examples of work: cleaning and painting, replacing worn out parts, repairing minor damage (dents, scratches and cracks), checking for remaining life, checking performance, changing worn connectors and change of optical components e.g. lamps and LED’s.**