

ELECTRIFICATION SERVICE

Life-Cycle Management

Best practices and key information for medium and low voltage equipment

ABB products are designed for continuous evolution. The Life-Cycle Management process supports ABB and our customers to properly manage products' transition through the different life-cycle phases.

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Life-cycle process

Life-Cycle management (LCM) is the process that enables ABB to innovate and manage the products and related services throughout the entire business life cycle – effectively and efficiently.

ABB's Life-Cycle Management process is aligned with the IEC Application Guide about Obsolescence Management, IEC 62402. ABB takes these guidelines even further by leveraging the company's extensive expertise on product life-cycle management and applying it to the LCM process.

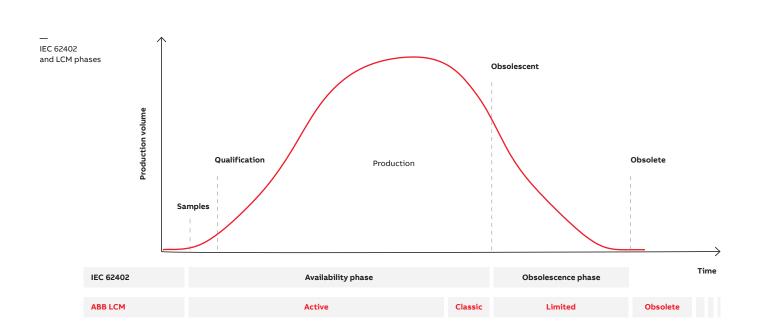
Four stages define life-cycle policy for all ABB medium and low voltage products:

- 1. Active
- 2. Classic
- 3. Limited
- 4. Obsolete

The Product life cycle, owned by ABB, is deeply related to the Asset life cycle, which is characterized by co-ownership of ABB and the Asset owner.

Splitting the product life cycle into four steps allows both ABB and the customers to properly manage the transition from Active to Obsolete in a long term way and avoid a too short swap which may generate critical situations for the complete Asset.

Availability of the full equipment, spare parts and replacement or retrofit solutions after the Active phase make the change a soft process for all stakeholders.



Life-Cycle stages

Active phase

A product is Active once it has been released in the market. It is actively marketed for new installations and modernization projects. Product and spare parts are available without limitations at this stage. ABB will not remove any Active product from sale until an equivalent replacement to that product is available. Exceptions to this may occur if components or technologies needed are no longer available to ABB.

Classic phase

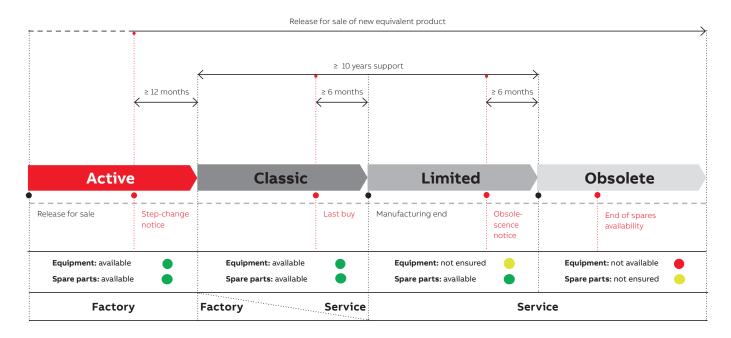
A product becomes Classic when it is removed from active sales. A step-change notice is provided at least 12 months prior to the transition. During this phase, product and spare parts are available, but production is limited. ABB is committed to provide support with products for at least 10 years after the start of the Classic phase, although exceptions to this may occur if components or technologies needed are no longer available to ABB.

Limited phase

A product enters the Limited phase after manufacturing has been stopped. A last-buy notice is provided at least 6 months prior to the transition. During this phase only spare parts are guaranteed and retrofitting solutions will be granted. It is ABB's intention to provide support for as long as there are significant customer needs after the Manufacturing End through field service, workshop repair and by making replacement spares available.

Obsolete phase

A product enters eventually the Obsolete phase. An obsolescence notice is provided at least 6 months prior to the transition. During this stage, product is not provided any longer and spare parts are not ensured, as their availability reduces over time. Starting from the Limited phase, retrofitting equipment will be not only granted, but strongly suggested. ABB is always available with consultancy services to guide through the transition towards new solutions.



Life-Cycle Management process

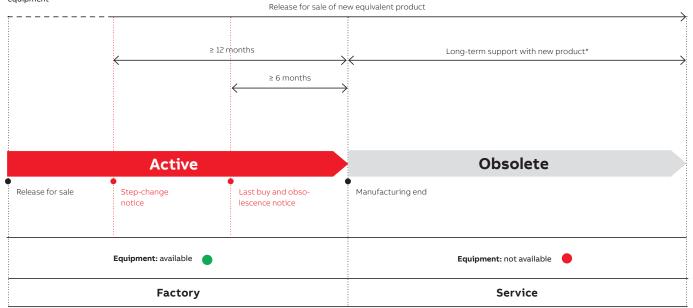
Life-Cycle Management for discrete equipment differs from the previous one: Classic and Limited phases are not foreseen.

These products are characterized by a long and stable life time and no spare components requirements (instrument transformers and sensors, fuses and cut-outs).

When they are no longer available, they can be replaced by new interchangeable products or upgraded with the use of adaptation kits.

This approach ensures long-term support to obsolete discrete equipment.

Life-Cycle Management process of discrete equipment



^{*}New products fully interchangeable with the previous range or upgradable with the use of adaptation kits will ensure the long-term support of obsolete discrete equipment.

Life-Cycle Policy covers all medium and low voltage equipment and components





Active

- Classic
- Limited
- Obsolete

- Equipment: available
- Spare parts: available
 - · Released for sale
 - · In full manufacturing
 - · Actively promoted in assigned markets
 - · Available to all customers
 - Fully supported both technically and via after-sales network
 - · Periodically enhanced
- Equipment: available
- Spare parts: available
 - Product is not extensively promoted by the sales force
 - Product is still available for sale, mainly for expansions of existing systems, supply under frame agreements, in the case of space constrains or required functionality not yet covered by the new product, license agreements
 - No further enhancements and developments
- Equipment: not ensured
- Spare parts: available
 - Product is no longer promoted by the sales force
 - Service support is ensured
 - Product is no longer manufactured
 - Very limited and selected production might be done
 - · Life extension solutions are granted
- Equipment: not available
- Spare parts: not ensured
 - No longer manufactured as a complete product
 - $\bullet\,$ Spare parts availability diminishes over time with decreasing installed base
 - · Life extension solutions are granted

Life-cycle services and best practices

ABB and IEC stress the importance of managing equipment through its life cycle. To each of the four life-cycle phases, ABB suggests a series of best practices to ensure customers get the most out of their installed base.

Active

- Request ABB to install and commission the product to avoid issues down the road.
- Protect your investment and operations with a Power Care Support Agreement.
- Consider setting up an IoT-powered Monitoring & Diagnostics system on those switchgears with the highest system impact.
- Leverage ABB expertise to train your personnel and make sure they are prepared for emergencies.

Classic

- Opt for a Power Care Support Agreement that provides extensive coverage, including 24/7 callout or remote support.
- Make sure to purchase your spares. ABB spare parts stock management can be a convenient solution during this phase.

Limited

- Maintain and if necessary, upgrade your Power Care Support Agreement.
- Make sure you have spares in stock and get in touch with ABB to find the best retrofitting solution for your system.

Obsolete

- Obsolete products have come to the end of the phase-out process. Get in touch with ABB for retrofitting your equipment.
- Our consultancy services are always available for supporting cost-effective and optimized investments. Special care is given to obtain a soft shift to new applications and solutions.

Active	Classic	Limited	Obsolete
Service agreements			
Installation and com	missioning		
Training			
Replacemen	ts		
Spar	e parts and consumables		
	Maintenance		
Tech	nical support and repairs		
Eng	ineering and consulting		
Advanced services			
Extensions			
	Upgrades		
		Retr	rofits
			End-of-life Services

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For further information on the life-cycle status of your equipment and further advisory, request from ABB representatives a **Life-Cycle Assessment** of your installed base.

For customers using Power Care Agreement, ABB offers access to advanced analytics on the life-cycle of installed base, available via <u>ABB Connect Partner Hub portal</u>.

Life-Cycle Management webpage will also feature information on the life-cycle status of ABB products.

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Your contact center: abb.com/contactcenters More service information: abb.com/service

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