



GUTOR SERVICES

gutor.com

GUTOR

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INTRODUCTION

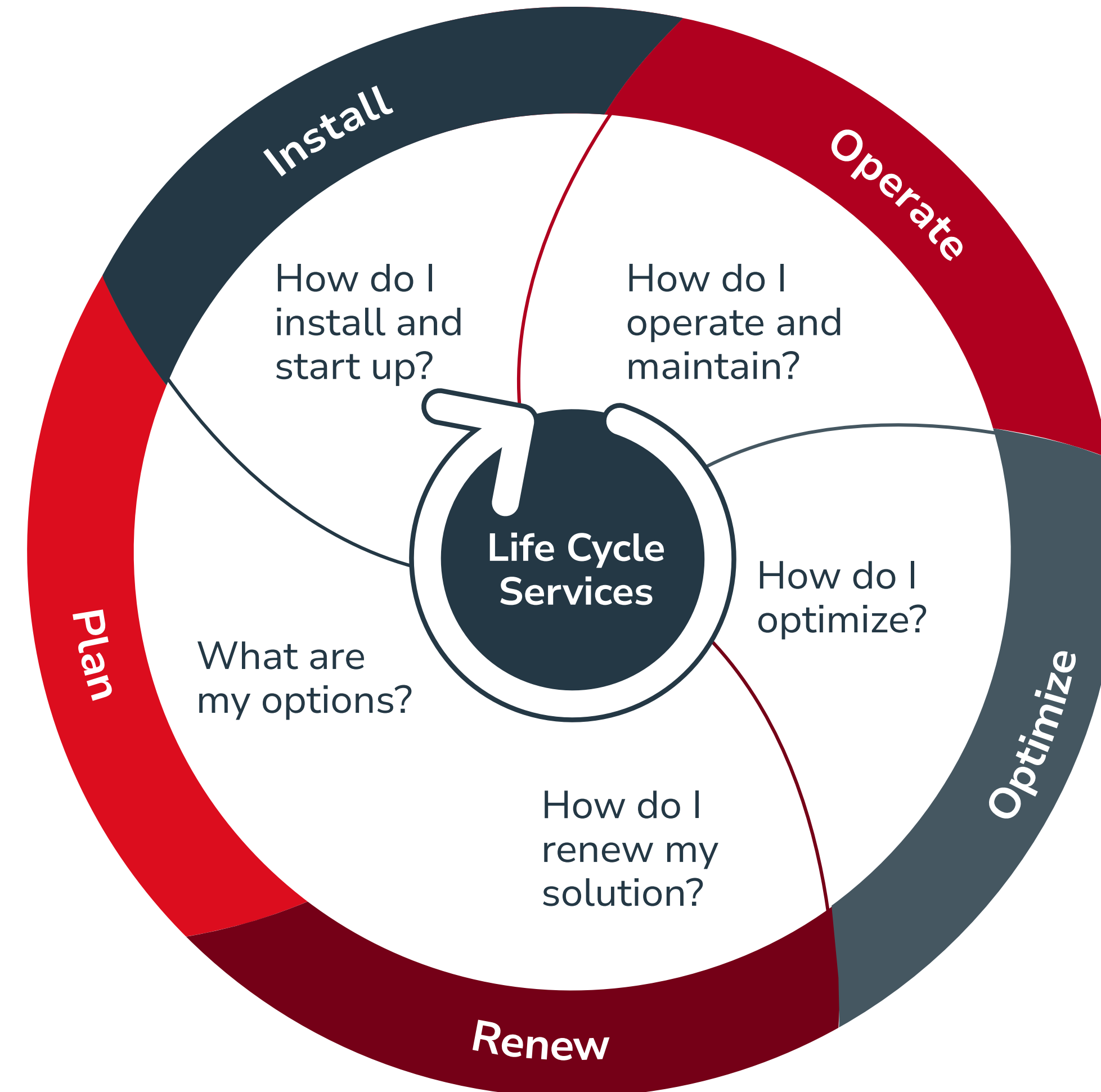
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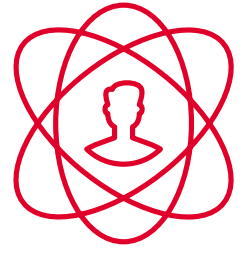
GUTOR LIFECYCLE SERVICES

Gutor understands that each **customer is unique**; hence the business and operational requirements vary individually.

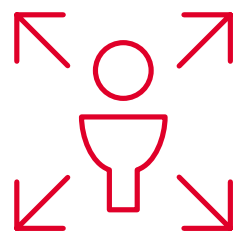
We offer a complete portfolio of customizable services designed to focus on people and asset **safety**, power **reliability**, operational **efficiency** and **security**, maximizing your business **continuity** and **optimizing your operations**.



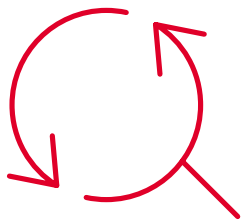
GUTOR KEY DIFFERENTIATORS



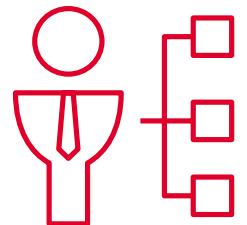
Gutor Certified Field Service **experts** are highly trained and specialized who provide the highest quality service



Customizable services that provide flexibility and adapt to customer specific needs



Lifecycle management service strategy



Dedicated customer service organization trained for best in class customer experience

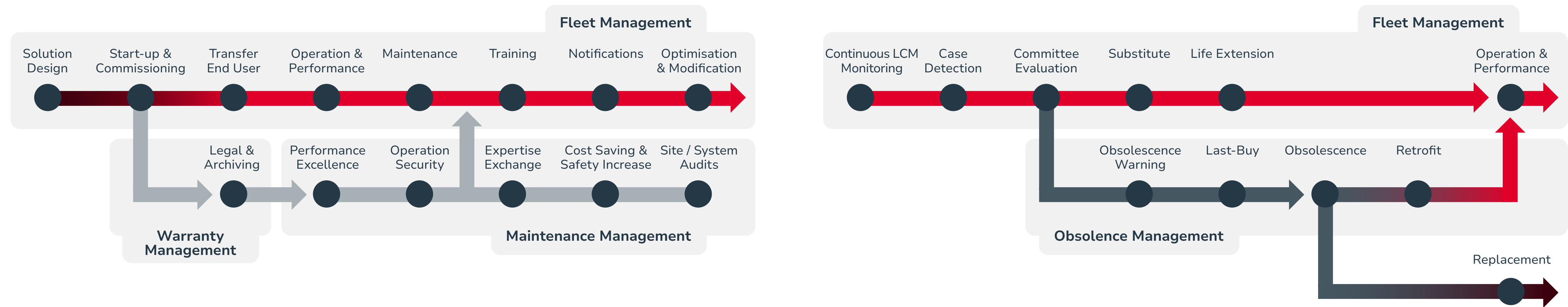


One-Stop Battery Solution that provides battery services, replacement and highly reliable battery management system



GUTOR LIFECYCLE MANAGEMENT STRATEGY

A solution-driven business model



Gutor Approach:

Lifecycle Management involves managing the entire lifecycle of a product, from inception to the time it needs to be recycled or replaced. As a supplier, it is our duty to ensure that different milestones are monitored and managed to optimize your product experience and also maximize your operational efficiency.

We Provide:

- Continuous offer monitoring and improvement
- Open communication
- Fleet management tools
- Preparing for predictive and financial based model

Key Benefits

- Increased reliability & risk reduction
- Reduce, optimize & predictable OPEX
- Obsolescence avoidance
- Improved lifetime of installation



TRAINING



GUTOR CUSTOMER TRAINING

Gutor offers multiple levels of **standard**, **customized** and **remote** training courses to meet the specific requirements for your systems installed on site.

- Training courses are designed to
 - **Optimize safety** operation
 - Ensure **confident decision making**
 - **Improve efficiency** during correction and maintenance intervention
- Four Training Centers are located in:
 - Switzerland
 - Malaysia
 - United Arab Emirates
 - United States



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IN-PERSON CUSTOMER TRAINING

STANDARD COURSES

Training name	Target audience	Content	Participants	Duration	Location	Structure
Gutor System Introduction	Employees with no prior UPS knowledge	<ul style="list-style-type: none">• Introduction to Gutor UPS• Topologies and configuration• Batteries	min 4 persons	1.5 days	Training center or customer site	100% Theory
Gutor System Care	Employees who require theoretical maintenance info	<ul style="list-style-type: none">• Operational mode of system• Basic Maintenance• Batteries	min 4 persons	2 days	Training center or customer site	100% Theory



IN-PERSON CUSTOMER TRAINING

CUSTOMISED COURSES

Training name	Target audience	Content	Participants	Duration	Location	Structure
Level 1: Operators	Operation Staff	<ul style="list-style-type: none">• Operational modes of Gutor system• System principles• Practical exercises demonstrating safe operation	3-8 persons	2-3 days	Training center or customer site	70% Theory 30% Practical
Level 1-2: Maintenance	Operation and maintenance staff	<ul style="list-style-type: none">• Operational modes of Gutor system• System principles and function of major components (monitoring and system control)• How to perform maintenance work and basic troubleshooting• Replacement of components and parts• Hardware and settings• Batteries	3-8 persons	4-6 days	Training center or customer site	60% Theory 40% Practical
Level 1-3: Advanced Maintenance	Operation and maintenance staff looking to perform most repair works	<ul style="list-style-type: none">• Operational modes, system principles and function of major components• Hardware and settings• Replacement of components and parts• System configuration and calibration• Maintenance and repair• Batteries	3-5 persons	5-10 days	Switzerland or Malaysia Training Center	50% Theory 50% Practical

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REMOTE CUSTOMER TRAINING

Available Courses

L1- Remote introduction to system operation

- Targeted towards operation staff
- Up to 10 participants
- Duration is 2-4 days
- 70% theory, 30% virtual practical
- Learn about operational modes, system principles, and practicing safe operation

L1-2 Remote fundamentals to system maintenance

- Targeted towards operation and maintenance staff
- Up to 10 participants
- Duration is 4-6 days
- 60% theory, 40% virtual practical
- In addition to L1 content, you will learn how to perform maintenance work and basic troubleshooting, replacement of components, hardware and software settings and batteries

Key Benefits

- Provides flexibility
- Allows employees at various locations to attend
- Lower Cost



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MAINTENANCE, SPARE PARTS AND SITE INSPECTION



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INSTALLATION SUPERVISION AND COMMISSIONING

Gutor ensures the proper set up of your system once it has arrived to your site. Utilize our well-trained engineers with years of experience who will:

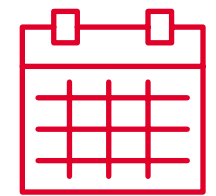
- Secure the continuity of Gutor's guarantee and guarantee extension
- Uphold the highest quality and globally recognized standards
- Complete proper documentation including Site Acceptance Test (SAT) and Customer Field Service Reports
- Store all information for work performed on-site in Gutor's database which facilitates future troubleshooting and technical support



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PREVENTIVE MAINTENANCE

Regular Preventive Maintenance on your Gutor system is required to ensure safe and reliable operation. We recommend you perform monthly checks and suggest a Gutor specialist for annual maintenance work.



Monthly Checks

– Client

- Monthly checks according manuals
- Voltage measurements
- Current measurements
- Alarm and operating status recorded
- Event log check
- Visual inspection



Annual Checks

– Client and Gutor

- Monthly checks according manual
- Voltage measurements
- Current measurements
- Alarm and operating status recorded
- Event log check
- Visual inspection

Key Benefits

- Ensure safe and reliable operation of your UPS systems
- Extend the lifetime of Gutor systems



PREVENTIVE MAINTENANCE

Replacement Work

- Some components within the system have limited operational lifespans and thus must be replaced to ensure the best operation.
- Replacement cycles may vary based on environmental and site conditions.
- Gutor provides recommendations specific to your needs and installed base.

*highly recommend to replace for installation in Nuclear Power plants, seismic requirements, offshore or mobile applications



SERVICE CONTRACTS

Gutor offers a variety of fully customizable maintenance contracts and we can make the best recommendation for you based on:

- Criticality of systems
- Number of systems
- Budget
- Outage schedule

Key Benefits:

- Predictable OPEX
- Discounted rates
- Extend system life

Services under contract	Remote 24 (ex call off)	Preventative plus	Preventative advanced	Preventative select
Applied manpower and spare part rates for contract and additional works	standard	reduced	reduced	reduced
Technical support and hot line 24h / 7d	✓	✓	✓	✓
On-site response under 72h*	option	✓	✓	✓
Comprehensive preventative maintenance visit		✓	✓	✓
Software update (excluding hardware)		✓	✓	✓
Priority access to the supply chain		✓	✓	✓
Assets management throughout life cycle, recommendations		✓	✓	✓
Manpower for preventative replacement of SP with limited lifetime**			✓	option
Spare parts with limited lifetime**, excluding battery			✓	option
Manpower for corrective works (all or package of work days)				option
Hardware update		option	option	option
Spare parts for all corrective works (excluding battery)		option	option	option
Battery replacement		option	option	option
Load bank for battery discharge test (rent or sale)		option	option	option
Manpower for battery discharge discharge test		option	option	option
Additional preventative visit or inspection visit		option	option	option
"Manpower bundle" : 5, 10, 15, or 20 days of preventative or corrective works***	option			

* When available, upon confirmation. Geographical or specific restrictions may apply. Upgrades 24 hour on-s

** Fans, capacitors, RAM2, PSU, DC CT, systems with easy access conditions

*** Package of work days to use during 1 year contract period. Not refundable or transferable. Subject to av





SPARE PARTS

Gutor recommends maintaining a stock of spare parts for your system during the 20 year lifespan. We have categorized the spares into three groups:

Start-up Spares

A set of recommended fuses and parts that should be available during commissioning.

Critical Spares

A set of parts recommended for stock which are essential for troubleshooting and repair. These are the parts that could cause a system shutdown upon failure.

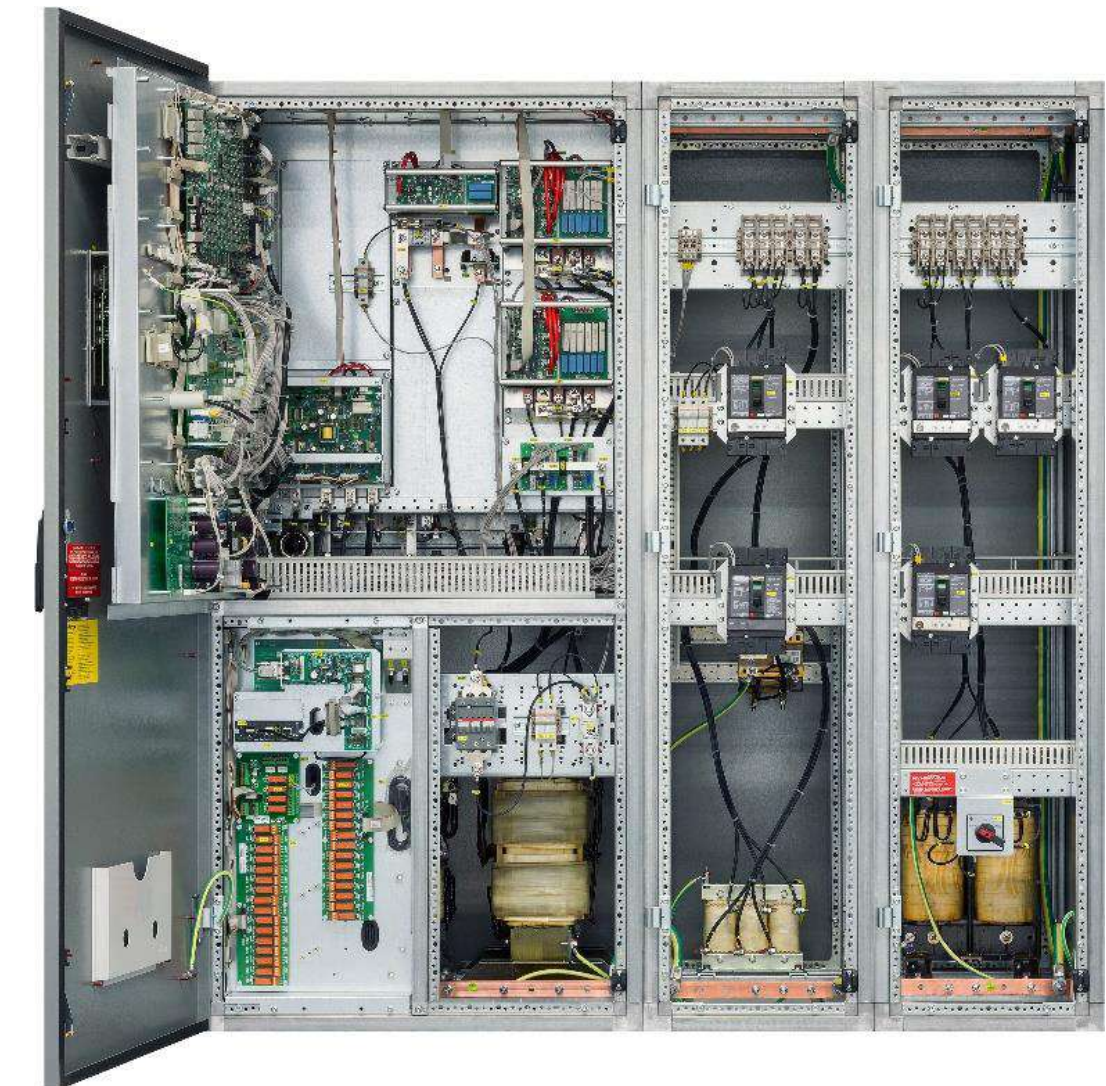
Consumable Spares

Spares that have limited operational life and must be replaced at certain intervals. These are under preventive maintenance such as fans, capacitors, batteries, power supplies etc.

We also provide spare parts and interchangeability list - allowing you to easily view all the common parts, including any or all of the parts listed above. These parts may be used in more than one system.

Key Benefits:

- Minimize downtime and speed up recovery times
- Reduce maintenance planner's workload
- Ensure around-the-clock peace of mind



GUTOR's Model / Type		SPARE PARTS LIST AND INTERCHANGEABILITY RECORD (SPIR)															
GUTOR's Serial No.	No. of units	Note: - All prices are on DAP basis, with standard tagging - Prices are exclusive of any certificates, reports, taxes and duties - Parts with programmings / preadjustments need one pos/set per main unit Please follow our recommendation!										Spare Parts for 3-8 Years	Spare Parts for 3-15 Years	Va			
		Description of spare parts													Recommended by manufacturer	Recommended by	Recommended by manufacturer
		Item number	Total of identical parts installed	Old Part No.	New Part No.	Position number on schematics											
1100395001	1	1100395001	1														
1100395002	1	1100395002	1														
1100395003	1	1100395003	1														
1100395004	1	1100395004	1														
1100395005	1	1100395005	1														
1100395006	1	1100395006	1														
1100395007	1	1100395007	1														
1100395008	1	1100395008	1														
1100395010	1	1100395010	1														
1100395011	1	1100395011	1														
1100395012	1	1100395012	1														
	2		24														
	3		36														
	1		12														
	1		12														



SITE INSPECTION AND AUDITS

With Gutor's 20-year design lifespan and customizable service solutions, you may be unaware of the health of your system as it stands today.

- Gutor provides a full health check and technical assessment to help organize install base data and prepare future service recommendations.
- System inspection helps you to plan for replacement or retrofit when your systems are reaching the end of its expected life.
- Site environment can be reviewed to determine if there are any factors causing an adverse effect on your Gutor systems.
- Gutor provides useful information for you to make the best informed decision for your site.



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CUSTOMIZED BATTERY SOLUTIONS AND BATTERY MANAGEMENT SYSTEM



BATTERY MANAGEMENT SYSTEM

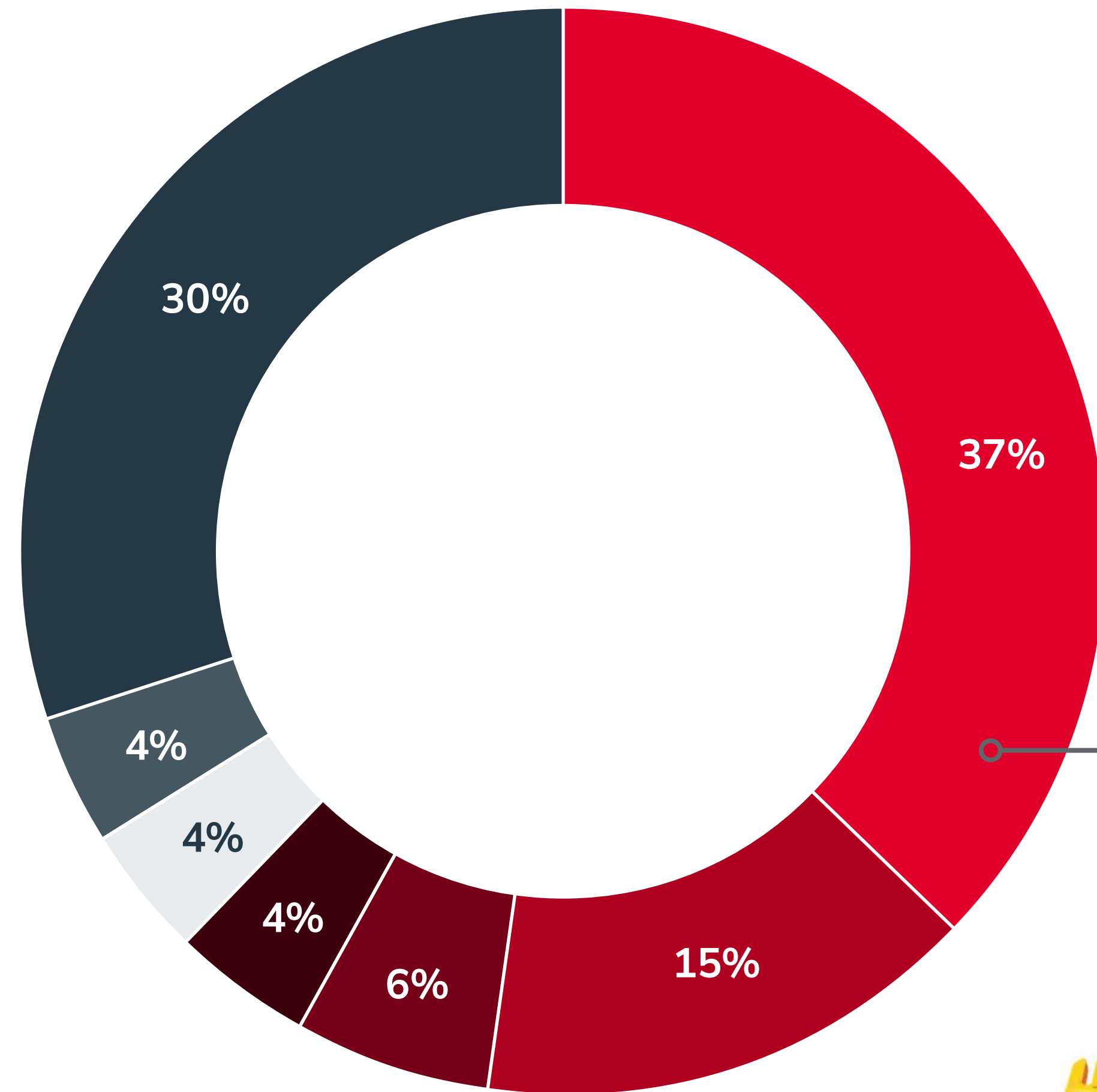
Traditional maintenance service around the batteries

Non-Automatable Tasks

- Simple visual check

Automatable Tasks (labour impacting)

- Offline discharge testing using dummy load
- Active mass activation
- Checking terminal voltage
- Charge/discharge trending and analysis
- Cell resistance testing
- Electrolyte testing



- Batteries
- Human error
- Other external
- Utility / generator
- Logic
- Circuit breaker
- Other

Counter measures to largest pain-point



GUTOR BATTERY MANAGEMENT SYSTEM (G.BMS)

The Gutor Battery Management System (G.BMS) is a stand-alone battery monitoring and management system designed to maximize your operational availability. It monitors your batteries and utilizes an automated warning system to ensure they are always in a perfect state of health.

- Non-intrusive and non-disruptive
- 24h/7d monitoring
- Provides continuous performance information on cell/block voltage, temperature, block impedance and currents
- Supports to reach design life time of battery banks
- Direct replacement from existing APC BMS
- Reduce battery turnover rate (up to 70% for each lifecycle)
- Performance and trending analysis
- Programmable alarm management
- Cost effective remote monitoring due to less required man hours
- Ability to extend the battery life time up to 30% by voltage equalization across each cell/block



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G.BMS INSTALLATIONS

Power and Grid, and Energy and Chemicals, CA



G.BMS CONNECTIVITY



Gutor UPS industrial AC / DC ups

NMC

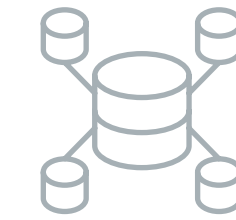


G.BMS webmanager budget TYP4

Signal



Hard wired



Local Network (On-Premise)

SNMP Monitoring Client, open source

Dry contact (alarm), included

Build in Webserver, HTML, included

Dry contact (select SNMP alarms), option 950-6520

MODBUS, TCP/IP, included

SNMP, TCP/IP, included

Email and email traps, TCP/IP, included

BACnet, TCP/IP, included *

RCCMD, TCP/IP, included *



BATTERY SERVICES

One-Stop Battery Solutions by GUTOR

Batteries are one of the most critical parts in your secure power solution. The lifetime of batteries varies between 4 and 20 years, depending on the battery type, ambient conditions and maintenance. Unplanned and inconsistent maintenance leads to a shortened service life. Eventually, the battery banks will lose their capability of supplying power to the load and will require replacement. Because of this, we offer the following services:

Battery Testing

- Discharge test recommended during yearly preventative maintenance

Battery Replacement

- Replacement of individual battery cells or strings

Battery Life Optimization

- Addition of battery management system



UPDATES, UPGRADES AND MODIFICATIONS, LIFE EXTENSION AND MODERNIZATION

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UPDATES, UPGRADES AND MODIFICATIONS

Gutor prides itself on offering fully customized solutions throughout the UPS's lifecycle. We are always striving for improvement and accommodating new customer requests. We offer a variety of upgrades and modifications to meet your latest needs.

Updates and Upgrades

- Software update (to latest revision) with latest features
- Controller upgrade (to latest revision) with latest new functions
- Upgrades to latest design rules or industry standards

Modifications

- Add Battery Management System (G.BMS)
- Add connectivity with Network Management Card (NMC)
- Change redundancy concept or system performance
- Increase autonomy time of the UPS solution
- Add Automatic Transfer System (ATS)
- Add active or passive harmonic power filters



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**INNOVATIVE UPS
SOLUTIONS**

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