



# Life Extension Upgrade

Extend the life of your UPS system  
and your warranty

# Chloride® Life Extension Upgrade

The components of your electrical distribution system will eventually become worn or obsolete. When that happens, Chloride can help you upgrade and retrofit your existing electrical assets with the latest technology at a fraction of the cost of replacement.

Our life-extension services can transform your older equipment, regardless of age or manufacturer, to like-new condition. From preventive maintenance to complete retrofits, rebuilds and replacement breakers, we have the expertise necessary to improve the reliability and performance of your equipment on your site without interruption to your critical load.

Upgrading the UPS control system involves upgrading it to the latest digital technology in addition to upgrading all relevant PCBs and parts to their modern equivalents. This eliminates the risk of parts becoming obsolete, as outdated and redundant parts are no longer used, this also allows for a short lead time for parts when spare are required.

This is an ideal solution to upgrade UPS systems located in challenging-to-reach areas, such as remote shelters and locations with space-restricted access or when time is critical. This solution eliminates the need for civil work when replacing the UPS systems - a significant time and cash saving

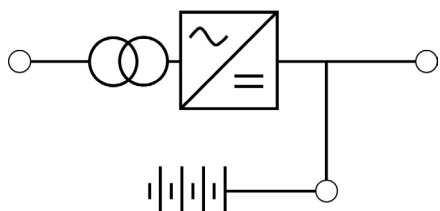
## Key benefits

- Capability to extend the lifespan of your system at the lowest overall costs
- Improve system operation, including new features previously not available such as full integration with the latest Sodium Metal Chloride (SMC) batteries
- Remove the risk of parts obsolescence
- Reduce the leading time for spare parts
- Minimal impact on plant operations



# Upgrade suitability

A full range of DC and AC systems are candidates for upgrades, however, there are some restrictions, in general, any rectifier with a 3 phase input with a DC bus of 110V, 220V or 400V will be suitable candidates, equally, Inverters or DC/AC converters will also be suitable as long as the DC bus has the same characteristics as noted below. Single or Dual systems can both be upgraded.

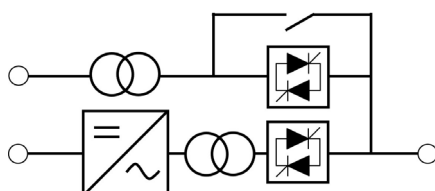


## Rectifier, Battery Chargers & DC UPS

Input: 3-phase

Output: DC (110, 220, 400 VDC)

Configuration: Single or Dual

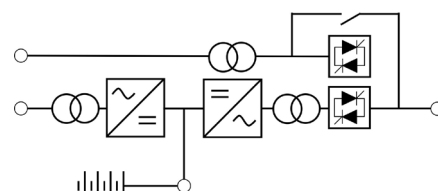


## Inverters DC/AC Converters

Input: DC (110, 220, 400 VDC)

Output: 1-phase or 3-phase

Configuration: Single, Dual  
centralised or Dual distributed



## Uninterruptible Power Systems (AC UPS)




Input: 3-phase

Output: 1-phase or 3-phase

Configuration: Single, Dual  
centralised or Dual distributed

## What range of Chloride® systems can be upgraded ?

Chloride Industrial systems manufactured from 2003 onwards are highly suitable for an upgrade. While older systems may also benefit from an upgrade, it is possible that a full system replacement would be more cost-effective. However, this does not rule out the possibility of an upgrade, this can be evaluated and discussed with our Chloride experts. Newer ranges such as the 2nd generation CP60Z, CP70Z 2015 and CP70Z 3rd generation (2019) will also be candidates in the future when upgrades are required.

	Excor Apodys Excel Apodys Exond Apodys	Excor Apodys2 Excel Apodys2 Exond Apodys2	Chloride® CP60Z Chloride® CP70Z Chloride® CP70R Chloride® CP70i
			
	2003	2008	2012
Ratings	1-ph: up to 200 kVA 3-ph: up to 400 kVA	1-ph: up to 250 kVA 3-ph: up to 500 kVA	1-ph: up to 250 kVA 3-ph: up to 500 kVA
Technology	<ul style="list-style-type: none"> <li>Thyristor rectifier</li> <li>IGBT inverter</li> </ul>	<ul style="list-style-type: none"> <li>Thyristor rectifier</li> <li>IGBT inverter</li> </ul>	<ul style="list-style-type: none"> <li>Thyristor rectifier</li> <li>IGBT buck-boost up to 60 kVA</li> <li>IGBT inverter</li> </ul>
Control & Communication	<ul style="list-style-type: none"> <li>Full Digital Vector Control</li> <li>Digital Graphical display</li> <li>Volt-free contacts</li> <li>Serial RS232/485 Modbus</li> </ul>	<ul style="list-style-type: none"> <li>New Digital control of the charger</li> <li>Full Digital Vector Control</li> <li>Digital Graphical display</li> <li>Volt-free contacts</li> <li>Serial RS232/485 Modbus</li> </ul>	<ul style="list-style-type: none"> <li>Full digital Control</li> <li>Digital Graphical display</li> <li>Volt-free contacts</li> <li>Serial RS232/485 Modbus + others</li> </ul>



# What is done during the Upgrade ?

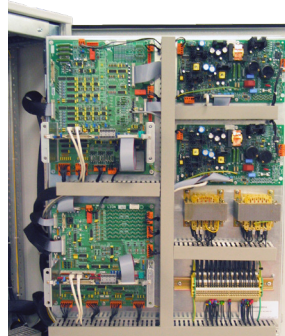
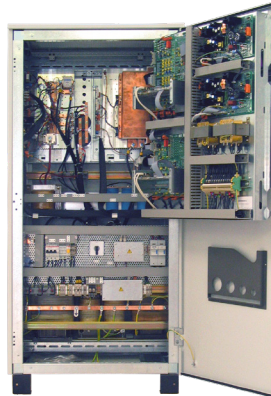
A holistic upgrade ensuring system life expectancy is extended by 10-15 years

The works carried out vary depending on what system is being upgraded, below are typical examples of an Excor Apodys (2003) and an Excor Apodys 2 (2008) / Apodys2 CP70Z gen 1 (2012) being upgraded.

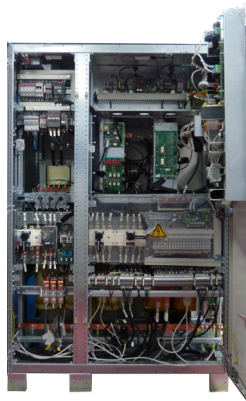
Although the change to the user interface and the replacement of electronics controls are the most noticeable aspects of the upgrade, it encompasses much more than just these changes. In addition to upgrading HMI and controls, UPS upgrade can include other enhancements:



*Excor Apodys*



*Excor Apodys2 /  
CP70Z generation 1*



*Replacement of Control Electronics sub assembly*



*New User interface (HMI)*

## Benefits

- **Replace or refurbish all aging parts** affected by temperature, mechanical usage, environmental conditions.
- **Replacement** of fans, capacitors, commutators, relays, contacts and resistances
- **Refurbishment** of the Power bridges and replacement isolation plates
- **Perform all modifications** and retrofits required by the evolution of your needs
- **Communication** to external systems; modifications of system architecture
- **Cleaning** of the Power bridges and replacement isolation plates
- **Retest and requalify** the upgraded system
- **New Operating manual** with updated electrical drawings
- **Basic training** on operation with the updated User Interface

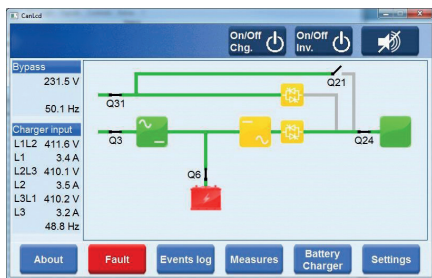
## Installation & Testing

Works are carried out without significant interruption to site operations and without the need for full civil engineering works therefore reducing or potentially removing any downtime on site

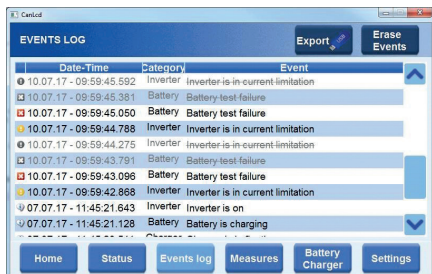
# Significant advantages with latest HMI

Brings your UPS up to date with latest features

An upgraded Chloride product brings the benefits of the latest generation of digital electronic control system. These are embedded in your new system and includes a large, colour touchscreen with intuitive graphical interface that simplifies system setup, operation, and troubleshooting



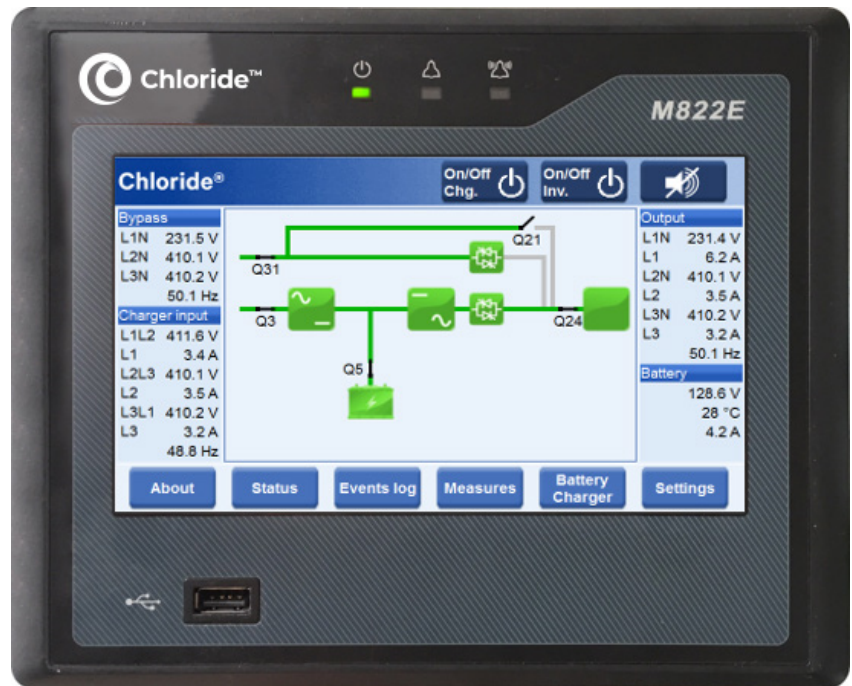
The HMI includes a smart single line diagram, and colour coordinated system status allowing for operator to quickly identify the system operation status.



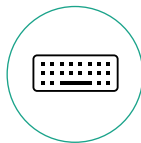
2000 time stamped event log



MBCS compatibility for SMC batteries



Chloride CP70Z - Human-Machine Interface (HMI)



## Latest colour touchpad display

Improved graphical touch pad display



## New Event log capability

Including 2000 time stamped event log. Can be extracted via USB and issued to the Chloride experts for enhanced support



## Enhanced remote support options

Updated settings can be issued by Chloride, and used to remotely support site

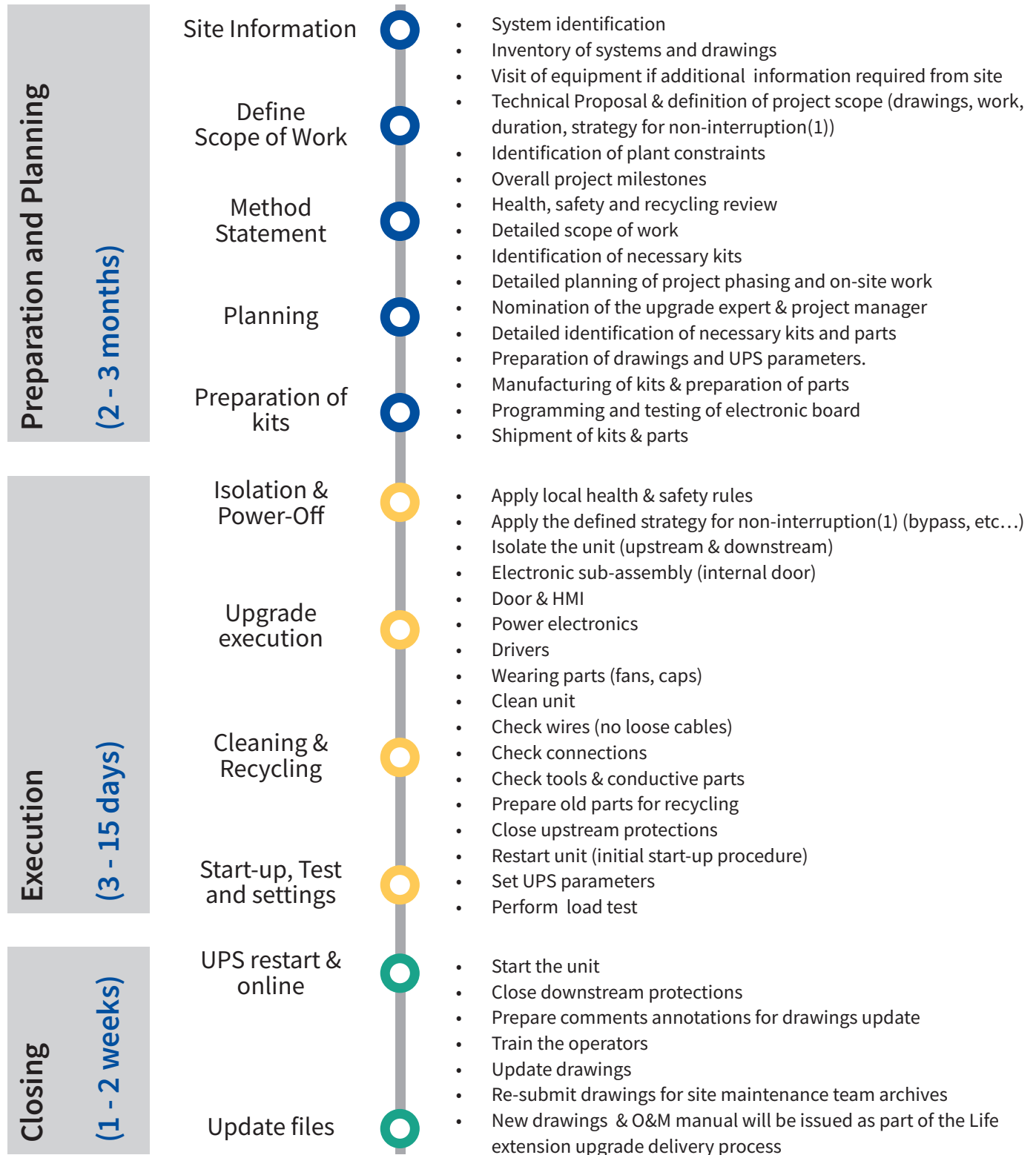


## Full integration capability for SMC

Once your UPS is upgraded, the SMC internal battery monitoring can be fully integrated into the control screen of the UPS allowing for superior monitoring and control

# Typical Life Extension Upgrade planning and scope of work

All systems and sites are different, however the team at Chloride will work with you to ensure that upgrade works are carried out to meet your requirements.



(1) if applicable, otherwise planned and anticipated interruption according to site conditions

# Life Extension Advantages

Life Extension Upgrade extends the lifetime of your system while providing access to the latest technology benefits.

- Life expectancy of UPS after upgrade is extended by 10+ years
- Upgraded equipment has two years warranty once works are complete
- Installing the latest parts ensures that issues with spare parts availability are resolved, resulting in the best possible lead time for spare parts.
- Enhanced HMI installed allows for greater technical support and full integration with SMC batteries, allowing enhanced integration and controls for this revolutionary battery technology



Full integration with SMC batteries

The upgrade of a Chloride industrial UPS system prevents the costly and complex project required for a system replacement.

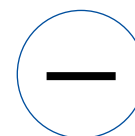
- It is possible to carry out the upgrade without interruption to the plant load by utilising system bypass, replacing the complete system would likely require lengthy and full isolation.
- Since the UPS enclosure remains in place, opting for an upgrade rather than a complete product replacement can result in an average saving of up to 30% on OPEX.
- Additionally, there is no need for civil engineering works, which further reduces installation costs and time
- A single point of contact ensures your turn key upgrade project is executed quickly and efficiently
- Allows for UPS to be upgraded rather than replaced which may not be possible in restricted access areas



**0 min plan interruption  
(1)**



**0 \$ on civil work**



**- 30% on OPEX vs.  
a complete product  
replacement (2)**

The upgrade of a Chloride industrial UPS system prevents the costly and complex project required for a system replacement.

- Fewer parts are produced, ensuring a less unnecessary waste
- Reduced weight is transported, resulting in less CO2 emissions and less cost
- Many of the existing parts can be reused, resulting in less waste, and all parts removed can be recycled



**Energy savings**



**Reduce gas emission**



**Reduce reuse recycle**

## Summary of Advantages

- The Life Extension Upgrade supports the life extension of your site, adding 10-15 years of useful life to your critical equipment
- One single point of contact ensures efficient turn-key upgrade project execution
- Chloride Life Extension Upgrade reduces waste by reusing what can be reused, and by recycling what is replaced

(1) If applicable, else planned and anticipated interruption according to site conditions

(2) Up to 30% savings on OPEX versus a complete product replacement, calculation example on a 50 kVA unit





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Power to Protect

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