



# GEMDRIVE-MICRO DC Drives Upgrade

Cost effective solution for extending the lifespan of your drives

At GE, we support our customers with modernization and upgrade programs to keep your system up-to-date with the latest advancement in drive technologies, without undertaking a full-blown replacement. A critical component of any drive is the controller and GE has devised an upgrade path for the existing controllers installed on older drives to the advanced PECe controller systems which provides more precise control, advanced diagnostics and remote monitoring enablement.

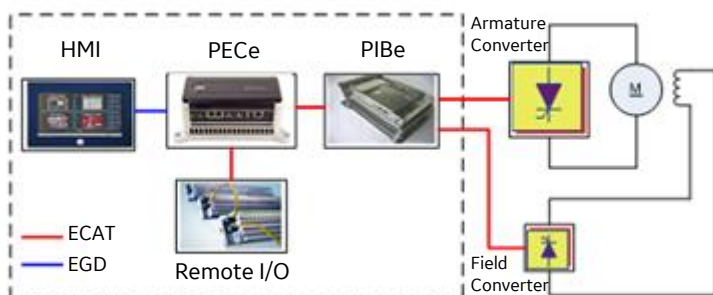
PECe is a compact, powerful, rugged and cost-effective controller that helps the existing drive systems to meet stringent production demands.

GE is also committed to support equipment installed at your location under various legacy names i.e. GEC, ALSTOM, CEGELEC, and CONVERTEAM.

## BENEFITS

- Increased reliability, performance and maintainability
- Reduced unplanned plant operational downtime
- Easy availability of spare parts
- Improved drive control capabilities
- Cost effective and reliable upgrade path
- Extended life of critical power equipment

## PROPOSED UPGRADE SOLUTION



**Typical PECe System basic network**

Due to extensive experience in drive upgrades and retrofits, GE makes all upgrades very simple, affordable and with fast commissioning. GE proposes to replace the existing control circuit boards and associated drive control system equipment with the latest PECe controllers while keeping the existing thyristor stacks, cabling, switchgear and transformers.

## ENHANCING THE OPERATIONAL FLEXIBILITY

Our Low risk upgrade approach not only simplifies the system, but adds flexibility for any future enhancements. We built this upgrade to suit your drives around the proven controller system works on our real-time operating system running P80i software. This combination provides a highly modular unit that combines the power and flexibility of a PECe controller with improved great performance.

## ADVANCED ONSITE DIAGNOSTICS

GE's advanced diagnostic capabilities offer insights into your equipment and enable you better follow up drive behavior by measuring and analyzing the condition of your drives on-site. Our Quick Panel+ HMI incorporates the latest display and multitouch operator interface that can be mounted on a drive panel door to help you manage drive operation and take relevant actions to avoid shutdowns.

## REMOTE MONITORING AND SUPPORT

Our Visor Remote Monitoring and Diagnostic Solution provide a safe and secure through the Visor Service Portal (VSP) that enables a secure real-time remote access to a 24/7 hot line to log an outage/event. Visor provides support for troubleshooting the problem, cares remotely to keep your process interruption to a minimum all the time.

Further, GE offers a long term service contract to support your drives along with our Visor tool.

## FEASIBILITY

GE can also conduct a feasibility study of your existing equipment before making a recommendation to confirm suitability of the proposed upgrade solution.

Our experts fully understand your business needs and match drive features and program timing to meet your specific requirements reusing as much of the existing components as possible.

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## RELIABLE & COST-EFFECTIVE UPGRADE PATH

At GE we understand that the main expenditure of an upgrade are the costs of code conversion, an extensive test and the risks associated with any upgrade if carried out. With minimal changes of the replacement PECE controller we can import the P80i software along with comments, making it the ideal choice for upgrades.



**Proposed hinged swing-out controller mounted on the existing power module**

During the upgrade, GE would replace the existing swing-out hinged door with a new hinged control door which houses the HMI in front of the power stacks and PIBe on the rear side. For larger drive units, we can mount the controllers remotely away from the power stack.



**Proposed hinged control door assembly**

## TECHNOLOGICAL BENEFITS

This PECE controller upgrade solution includes minimal hardware and standard software tools.

PECE System	Salient Features	Benefits
PECE Controller	One microprocessor can control multiple drives functionality with suitable hardware interfaces.	Reduced installation space, time and cost.
	Dual Core 2.5GHz Intel i7 Quad Core 2.1GHz Intel i7	Delivers High performance computing & storage large amount of data, or to handle multiple communication ports in real time.
	Fan Less Operation	A Robust reliable solution with no moving parts and minimized dust contamination
	5 Gigabits Ethernet Ports (four with time sync IEEE1588 and 802.1AS)	Network implementation flexibility Multiple high speed Ethernet links for communication-centric application with support for deterministic of data/ commands
PIBe	Real Time EtherCAT Link Interface	Easy to interface with SCR gate drive for low to High speed motor control application due to fast data exchange by ECAT.
	Provision for factory fitted fibre or copper firing pulse output stages.	Easy to interface with existing SCR
Networks	Multiple external communication interface link	Easy to interface with customer PLC to exchange the large number of data
HMI	Quick Panel+ incorporates latest display & multi-touch technology to enhance the user experience.	Easy and fast to use. Fast setup.
	Multifunctional capability.	Easy commissioning and configuration.
	Full function browser & multimedia access. Flexibility & Interoperability	Rapid fault diagnostics.