

# CONTROL SYSTEM UPGRADE





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Achieving the fastest Control System is critical to be competitive in the power industry today. Renewing your system means overcoming design and technological limits with new cutting-edge solutions.

Ansaldo Energia offers new functional system upgrades as well as control system migration to more updated platforms, which guarantee the latest state-of-the-art standard and provide competitiveness and cost-reducing effectiveness to the power plant.

**Preserve  
obsolescence**



*Anticipate  
faults and  
reduce stops*

**Enable  
connectivity**



*Built  
interconnected  
factory*

**Implement new  
functionalities**



*Respond to  
market  
changes*

**Improve  
safety**



*Comply  
with  
safety*

The control system modernization, if implemented together with other Ansaldo Energia power plant upgrades, (e.g., performance, flexibility & digital products) leads to the optimum gain and advantages.

# Why you need to update your existing Control System

Existing Control Systems coupled to gas turbines typically lack three main features: speed, spares, and space:

- insufficient hardware performance (CPU, memory, peripherals, etc.)
- increase in maintenance costs
- physical obsolescence of the system and consequent lack of spare parts
- difficulty in connecting the system with new elements
- difficulty adopting new technologies, such as Internet TCP/IP connections, etc.
- cyber security threats



## How You Benefit

This package is applicable to all Ansaldo Energia and OEM-like gas turbine models controlled by any third-party Control System. The Control System Upgrade is a retrofittable package that can also be applied during planned maintenance, saving resources, time, and money.

## Customer benefits

- Maintain high standards of productivity and quality; achieve greater energy savings and higher levels of safety
- Significant reduced cost of ownership and reduced long-term personnel training costs
- Preserved operator experience and comfort by keeping the original HMI philosophy
- Reduce commissioning time thanks to system pre-test and simulation in our laboratories
- Facilitate maintenance
- Eliminate downtime
- Make plants compliant with network connectivity requirements

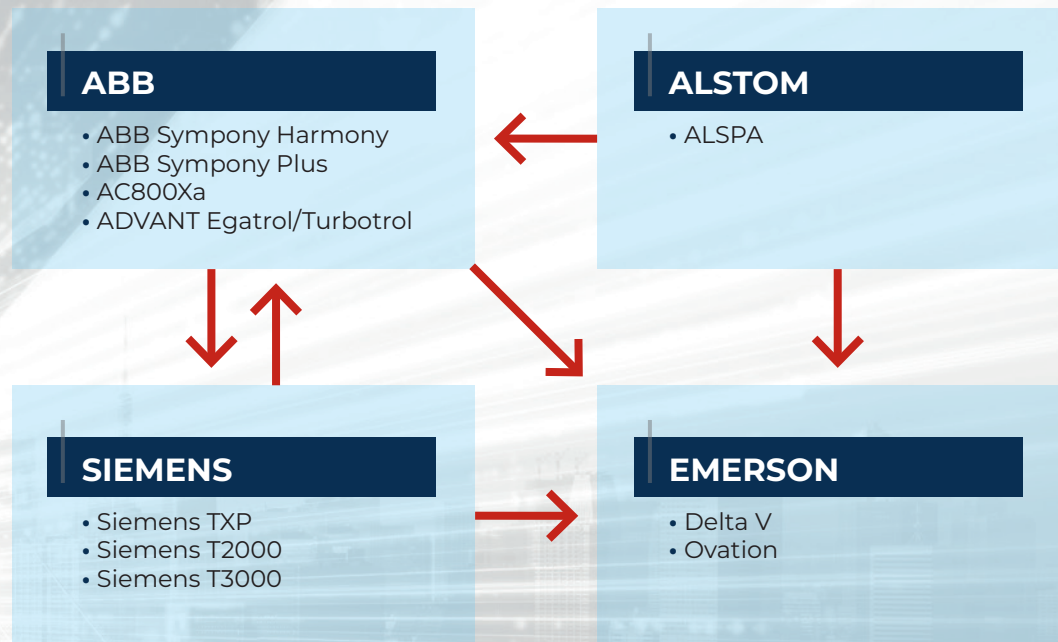
## Technical Advantages

- Improved plant profitability and competitiveness
  - New operating modes
  - New hardware
  - New communication protocols
- Updated Communication Protocol
- Add on new functionalities
  - Significantly reduced overall inventory and individual component costs.
  - Improved equipment system data acquisition, analysis, and storage tools.
  - Improved operational and engineering productivity
- Increase safety with new SIL3 compliant integrated protection system
- Increased reliability and availability due to obsolescence reduction
  - Fast regulation tasks
  - Fast processors' cycle times
  - New I/O's available
  - Reduced processor number & size

## Technical Background

Ansaldo Energia guarantees the global management and engineering development on all control system platforms both on their latest and former generation products.

A migration solution has been developed and validated for each of the managed platforms.





## How We Update Your Control System:

### ***Feasibility study***

↓ A proper analysis of the existing power plant and control system is performed to identify the best tailor-made solution for the Customer.

### ***Engineering***

↓ Hardware and software engineering are performed jointly with the control system producer. The new software is functionally tested in our laboratories and valve test facilities, coupling it to gas turbine emulators and real-time simulators.

### ***On-site activities***

↓ System installation and site commissioning will also be part of the AEN scope of supply:

- Erection
- Loop check
- Cold commissioning
- On load test



### ***A Turnkey project***

Ansaldo Energia handles any project on a turnkey basis, from the initial analysis to acceptance testing.

As a single point of contact, Ansaldo Energia relieves the Client in managing and coordinating several suppliers.







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