

Automatic Control



TIIAME



- **Automation or automatic control**, is the use of various control systems for operating equipment such as machinery, processes in factories, boilers and heat treating ovens, switching on telephone networks, steering and stabilization of ships, aircraft and other applications and vehicles with minimal or reduced human intervention. Some processes have been completely automated.

What is automation



- Automatic -
the technique, method, or system of operating or controlling a process
by highly automatic means, as by electronic devices, reducing human intervention to a minimum.



Automation

Home Automation

Industrial Automation

Microprocessors
Microcontrollers
ASIC

PLC
PAC
HMI
SCADA
VFD



Industrial Automation

Factory Automation

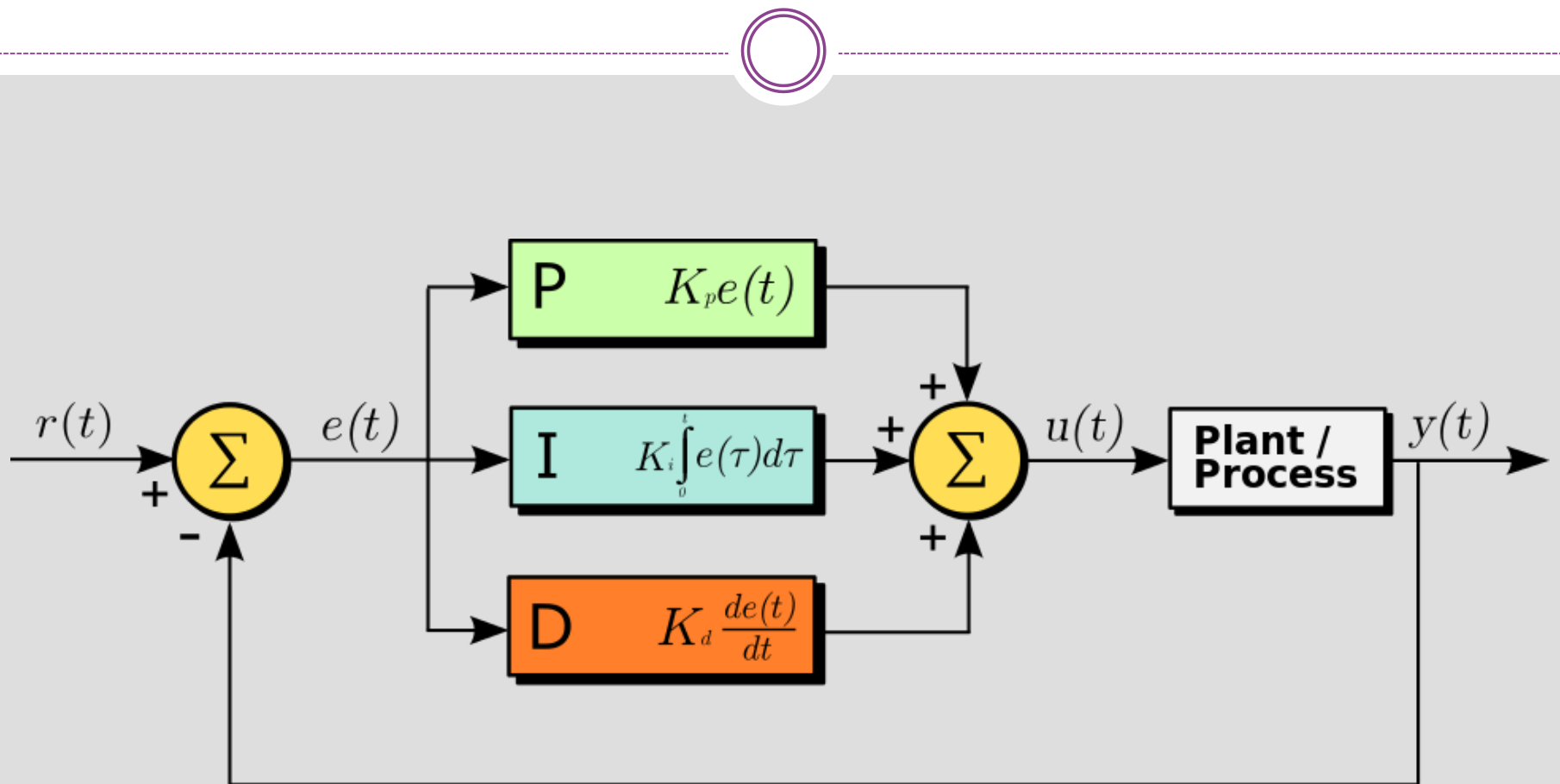
Process Automation

Automotive Industry
Machine Automation

Chemical Industries
Oil & Gas Industries

In Industrial Automation PLC, PAC, SCADA, HMI & VFD
Plays a Key Role

Feedback mechanism



Automation Advantages



- Reduction in production time – having a machine that is automated definitely speeds up the production time since no thinking is needed by the machine, there is better repeatability, and less human error.
- Increase in accuracy and repeatability – when an automated machine is programmed to perform a task over and over again, the accuracy and repeatability compared to an employee is far greater.
- Less human error – no one is perfect, and we are all prone to making mistakes. Which is why a machine that performs repeated tasks is less likely to make mistakes than an employee.
- Less employee costs – by adding automated machines to an operation, means less employees are needed to get the job done. It also indicates less safety issues, which leads to financial savings. With having less employees, there are numerous costs that are diminished or reduced such as payroll, benefits, sick days, etcetera.
- Increased safety – having automated machines means having less employees who perform tasks that can be dangerous and prone to injury, which can make the work environment safer.
- Higher volume production – investing in automated equipment creates a valuable resource for large production volumes, which in turn, will increase profitability.

Automation Disadvantages



- Less versatility – by having a machine that can perform a certain task limits to the flexibility and variety of tasks that an employee could do.
- More pollution – different types of machines operate using motor which may require gases or chemicals in order to operate. This can cause an increase in pollution in the workplace.
- Large initial investment – automated machines can be one of the most costly operating costs for a company. With automated machines running anywhere between thousands and millions of dollars depending on the type and degree of automation.
- Increase in unemployment – by increasing the amount of automation, there are less employees required causing high unemployment rates.
- Unpredictable costs – there can be several unpredictable costs that may exceed the actual cost saved by the automation itself. Some of these costs could include research and development costs of automating a process, preventative maintenance costs, and the cost of training employees to operate automated machines.

