

# ITS PLC PROFESSIONAL EDITION



## LET'S PLAY AUTOMATION.

Turn your PC into the ultimate training platform for PLC programming and automation technologies.



## READY TO USE. FULLY INTERACTIVE. HIGHLY MOTIVATING.

Program your PLC and control five virtual systems that emulate common industrial plants. Experience a realistic simulation with real-time 3D graphics, physics and dynamic sound.



## LOW COST. SPACE SAVING. MAINTENANCE FREE.

Improve your programming skills without risks of injury to staff or damage to equipments.



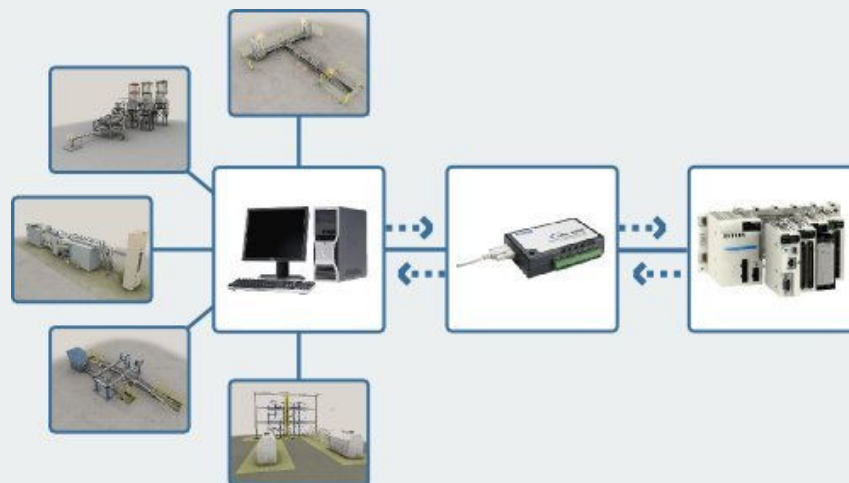
## ITS PLC PROFESSIONAL EDITION

ITS PLC Professional Edition (Interactive Training System for PLC) is a software designed for PLC training and education. It offers five virtual systems that emulate common industrial plants with real-time realistic 3D graphics, sound and total interactivity. Some of the many advantages of ITS PLC PE is that it's a low cost, space saving and maintenance free solution that does not present any risk of injury to staff or damage to equipments.

### How Does It Work

The goal is to make five virtual plants work correctly by using an external (and real) controller. The programming is focused on typical industrial applications of programmable logic controllers (PLC): sorting, batching, palletizing, pick and place and automated storage and retrieval systems. The idea is to let students see a PLC in its typical industrial environment and fully understand and program common control tasks. This is impossible to get if a PLC is simply wired to a few lamps and switches as commonly found in school labs due to cost, space and safety constraints.

Each system is a complete emulation of an industrial system including virtual sensors and actuators. The sensors and actuators data is exchanged between the PLC and the virtual system by a data acquisition board (DAQ) with 32 I/O isolated channels and USB interface.



**Figure 1.** Data flow between ITS PLC PE and a real PLC.

## Systems Available

ITS PLC Professional Edition offers five systems which are organized according to their expected difficulty level: Sorting, Batching, Palletizer, Pick & Place and Automatic Warehouse. Figure 2 shows a view of each.

The goal of the Sorting System is to transport cases from an entry bay to two exit elevators while sorting them by height. The Batching emulates a paint mixing process in order to get a desired color. The Palletizer System challenges the user to group and palletize cases up to three layers. The goal of the Pick & Place is to place parts inside boxes using a three axes incremental manipulator. In the Automatic Warehouse the objective is to transport, store and retrieve boxes from a rack.

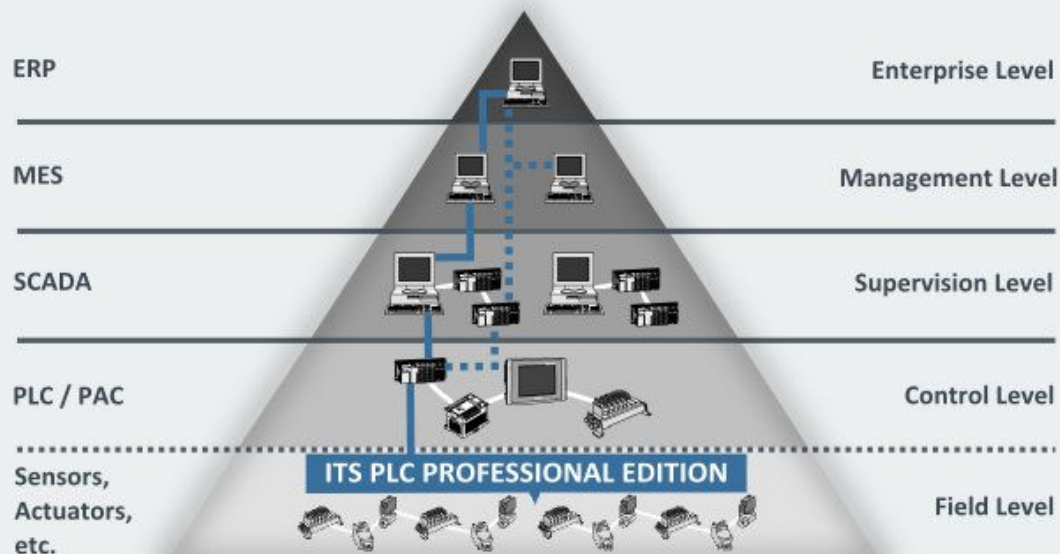


**Figure 2.** Systems available.

## Applications

ITS PLC Professional Edition is now being used worldwide, mostly in schools and universities. Yet, a surprising number of industrial enterprises is adopting the product for internal training.

Also, ITS PLC PE is proving to be a valuable training platform on a big variety of automation technologies. Using the PLC as an RTU (Remote Terminal Unit) ITS PLC PE is currently being used in applications such as training of HMI devices (Human Machine Interface), SCADA (Supervisory Control and Data Acquisition), MES (Manufacturing Executing Systems) and ERP systems (Enterprise Resource Planning).



**Figure 3.** ITS PLC Professional Edition and automation technologies.

Some researchers are finding other interesting usages of ITS PLC PE; for instance, its application in supervisory and fault tolerant control. These are important research areas that benefit a lot from the low cost and risk-free usage of virtual systems.

## The Product Includes

ITS PLC Professional Edition is an out-of-the box solution. The package includes:

- Software CD
- Advantech USB-4750 DAQ board
- USB cable
- USB license key



## PLC Compatibility

ITS PLC PE works with all the major PLC brands: Allen-Bradley, Festo, Hitachi, Mitsubishi, Moeller, Omron, Schneider, Siemens, Unitronics and many others.

## Product Presentation

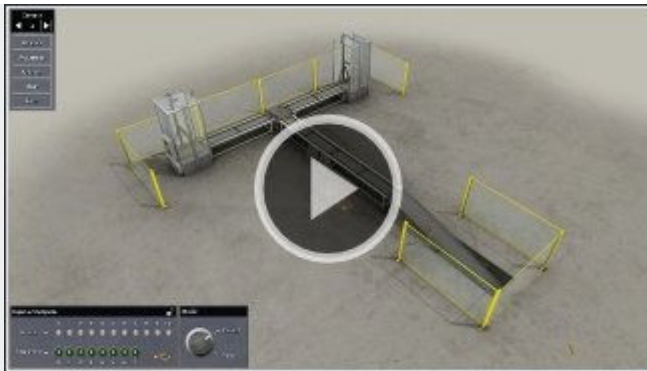
Demonstration video of ITS PLC Professional Edition. If this is your first contact with ITS PLC PE we recommend that you start by watching this video.



## Real-time Footage of the Sorting System Controlled by a PLC

**Objective:** Transport cases from the feeder to the elevators, sorting them by height.

- The feeder randomly supplies boxes of two different heights
- The sorting is done with a turntable
- Automatic elevators



## Real-time Footage of the Batching System Controlled by a PLC

**Objective:** Mix three primary colors (red, green and blue) to obtain a desired ink color.

- Metering tanks with three levels
- It takes five seconds to properly blend



## Real-time Footage of the Palletizer System Controlled by a PLC

**Objective:** Palletize cases in several layers.

- The pallet elevator stacks a maximum of three layers
- Up to two cases per layer



## Real-time Footage of the Pick & Place System Controlled by a PLC

**Objective:** Place parts inside boxes, using a three axis manipulator.

- Three different types of parts, identified by a camera
- Boxes with nine compartments
- Manipulator with incremental operation



## Real-time Footage of the Warehouse System Controlled by a PLC

**Objective:** Transport, store and retrieve boxes from the rack.

- Fifty cell rack
- Transelevator positioning defined by the first six output bits
- Automatic entry and exit transporter



## Realistic 3D Real-time Simulation

ITS PLC Professional Edition is a simulation software package that uses the latest computing technologies from the videogame industry, which include realistic real-time 3D graphics, physics and dynamic 3D sound.

### *Real-time 3D Graphics*



Convincing 3D models based on common industrial equipments.

### *Dynamic 3D Sound*



Experience a complete sensation of realism with dynamic 3D sound.

### *Real-time Physics*



Realistic physical behaviors such as gravity, friction and collisions.

### *Highly Interactive*



Total interactivity with the environment. On-the-fly reaction to any disturbance.

## Fast Learning Curve for Immediate Use

ITS PLC Professional Edition is simple to use and requires minimum user training.

### *Friendly User Interface*



Clean and simple user interface.

### *Complete User Guide*



User guide with illustrations, schematics and useful tips.

### *Predefined Cameras*



Quickly shift through cameras and focus upon the main areas of interest.

### *Failures Simulation*



Easily inject failures in sensors and actuators with just one click.

## High Flexibility and Portability

Quickly set up your PLC training without constraints.

### *Flexible*



Works with PLC from any manufacturer.

### *USB Interface*



DAQ board with USB interface. Plug your USB license key and you are ready to go.

### *USB License Key*



### *Portable*



Set up your training kit where you need it most.  
Works on desktop PC, laptops and netbooks.