# "Even an end user can do it"

**Plantwatch software has a dual personality. It is often employed for cell or line control but is capable of complete traceability applications. Regardless of how it is applied Plantwatch's most important feature is its un believably simple configuration. No integrator required. Training is one day and most systems have been installed in less than one week.**

**Latest customer :**

We are currently using the Plant Watch product from HTE. Our deployment takes data from over twenty scanners, processes the data with a rules based engine and then writes the information to a SQL database that supports key business processes. Plant Watch provided an activity dashboard to assess system and scanner activity. We have found the HTE team to provide excellent technical support, and solid product training. We found the price point and richness of the tool to exceed our requirements.

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Process Development and C I Manager

## A basic implementation provides the following

Connection to any plant floor device with bi directional communication.
Drop down logic to apply actions to apply to the received communication (event based).
Error proofing based on logic results. Mathematical functions
Output to any plant floor device including I/O to control these devices. PLC, conveyors, cameras, stack lights, lasers,  ect.
Communication to higher level computer systems including databases. Database browser. Included is a highly optimized configured SQL database with documented schema.
User created graphic screens to provide operator input and display of process with animations.
File manager to manipulate strings, create directories, delete, rename.
Remote exe's can be embedded into Plantwatch
Multi dimensional array variables

**Basic level example applications**

Read product barcode to determine part type, adjust 4-20 milli amp signal based on the part type and number of parts.

Control replenishment system by monitoring 25 bar code readers that deplete parts as scanned. PWatch reorders to higher level MES as level alarms are reached.

Read bar code containing process data on part, based on where that part is installed create a file containing process data, location, and date time and put into newly created sub directory.

Scan bar code on tote and then trigger vision system to acquire image of tote contents. Save the image file using the decode string from bar code to name the file so lookup of tote contents can be done by entering the bar code data. Remote access to the local Plantwatch system.

Perform cell control of laser marker, mark quality vision system and motion based inspection station to perform error proofing. Controls laser, I/O, rotating motion, RF id system, safety curtains, annunciating lights and performs operator interface

Date lot OCV error proofing. Controls singulation conveyor with reject chute after camera verifies quality of ink jet date lot code on drug ampoules.

**Advanced level application**.  Contains everything in above example but adds traceability functions.
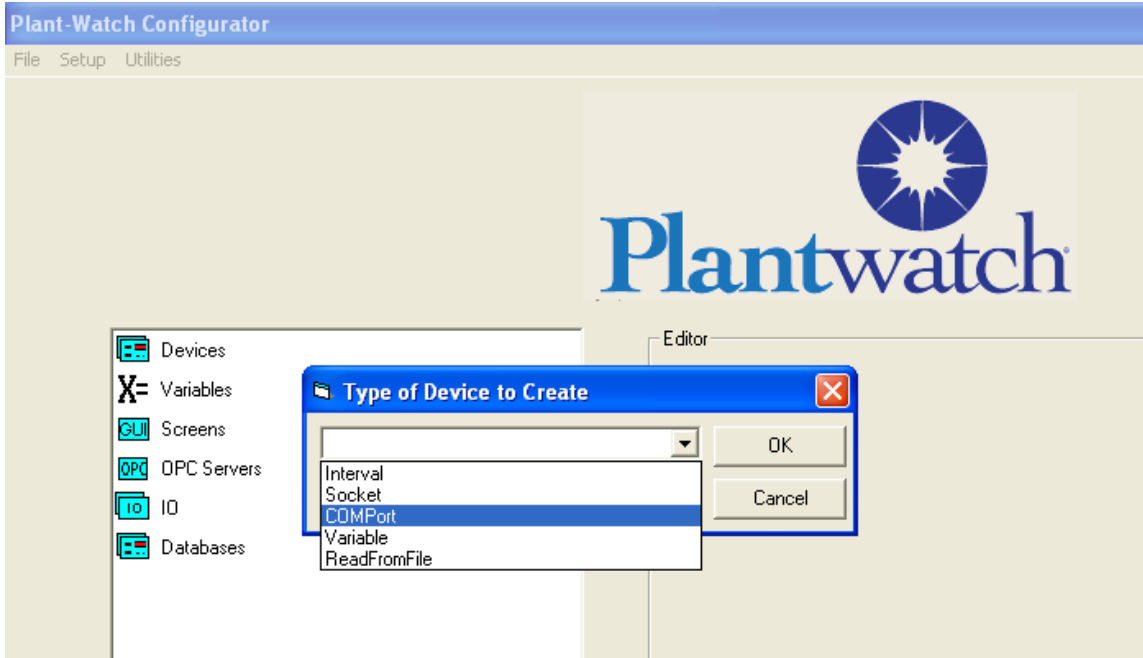
       Traceability functions are pre configured and selected as product routing is built

       Birth, consume, unconsume, Partxfer.  **\*See logic charts**

       Any process / test data is attached to sub component and evaluated by logic against set points.
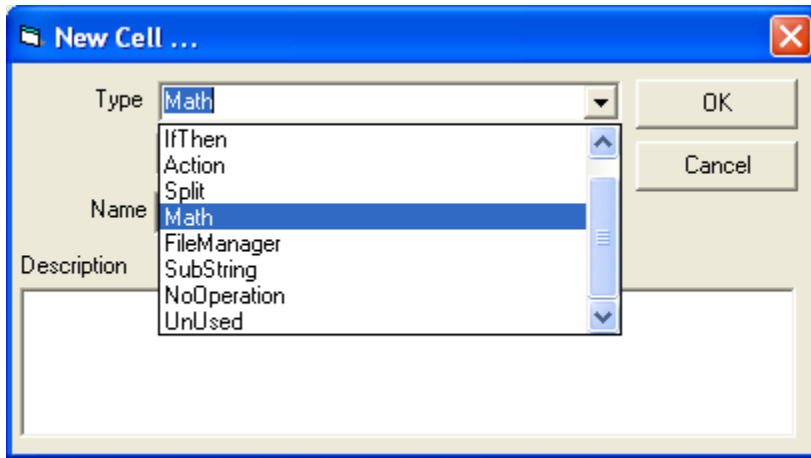
       Forward and reverse genealogy reports

       Serialized and batch
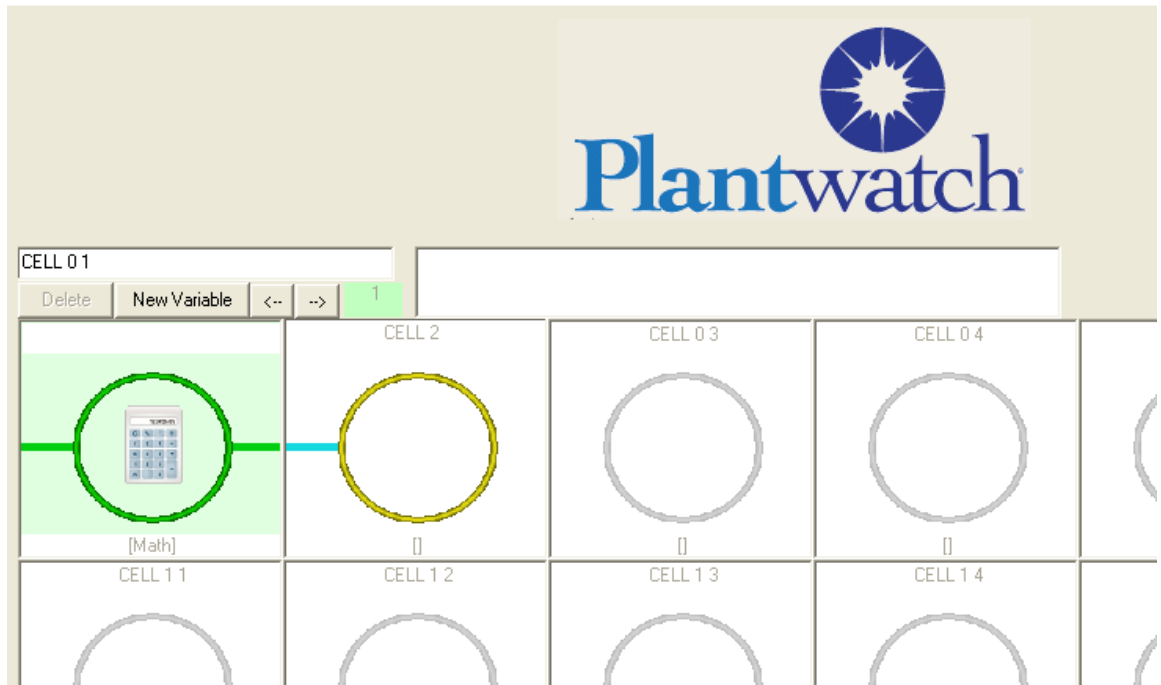
# Example of the configuration environment

## Setting up a serial communication

**Setting up a math logic chart**
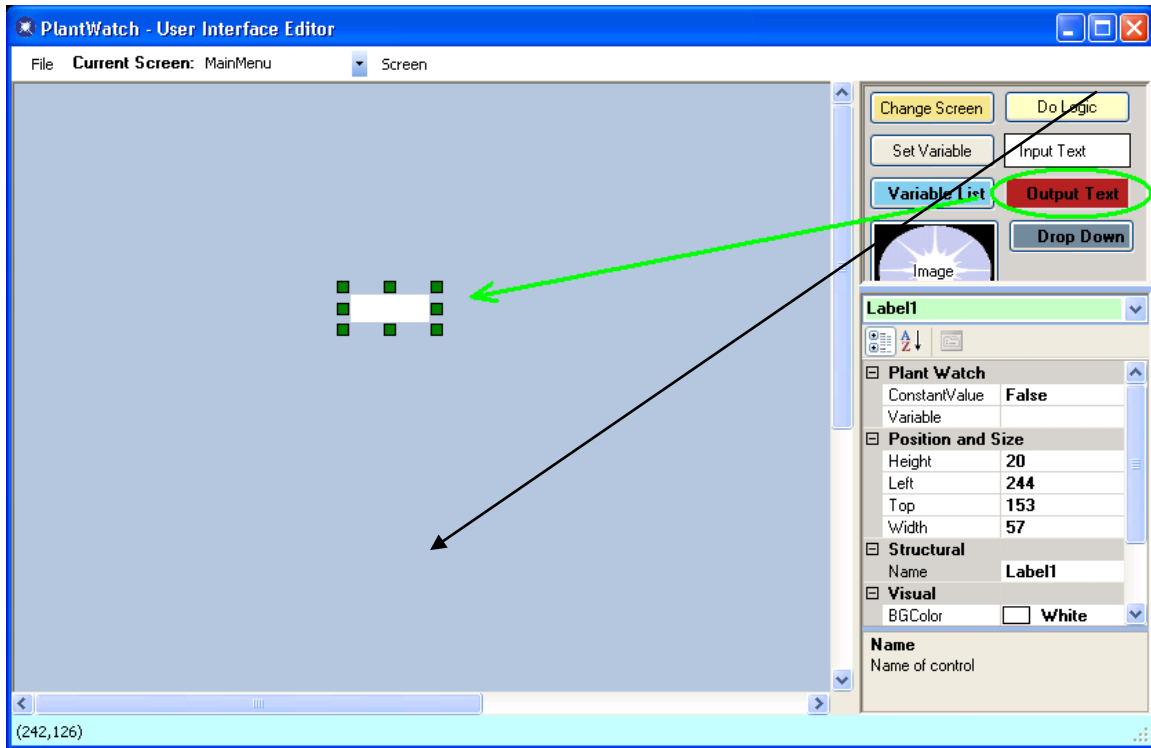


**Logic flows from left to right**
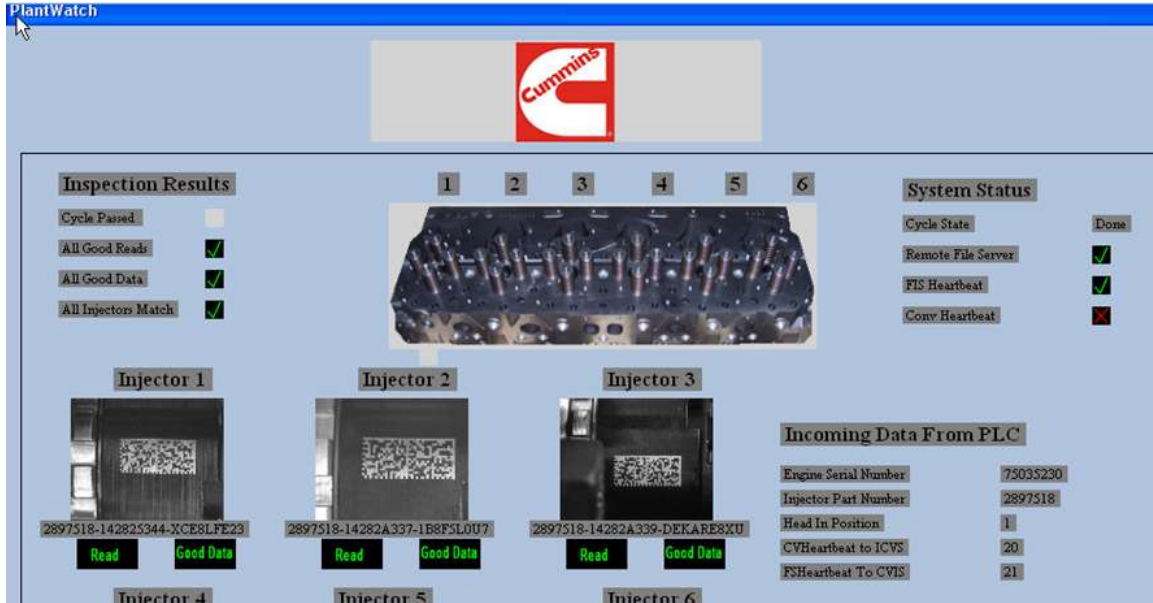
**Logic Chart Cell Types**
Overview
- If – Determines if the logic cells following will be executed
- If Then – Determines if the logic defined within the If Then cell is to be executed
- Action – causes one of several different functions to occur such as writing to a text file, sending a string out of a RS232 port or capturing a piece of data about a part being produced.
  - Sub action Birth - Tracks the creation of a new part within the production system
  - Sub action ConsumeMaterial - Tracks what materials have been consumed by parts in production
  - Sub action UnconsumeMaterial - Returns what materials have been removed from parts
  - Sub action CollectDataPoint - Associates a value to one of the parts within the production system
  - Sub action PartXfer – Tracks the location of work in process
  - Sub action WriteToDevice - Writes a value to the datasouce used as a device
  - Sub action WriteToIO - Writes to a output point on the rack of IO
  - Sub action WriteToOPC - Writes to a OPC data item
  - Sub action WriteToFile - Writes a value to a text file
  - Sub action ReadFromFile - Reads a value from a text file
  - Sub action TriggerExe – Causes a executable file to be started

- Split – Creates a branch in the flow of logic by enabling the cells below the *Split*
- Math – Takes several values from constants, devices or variables, performs a mathematical operation on them and then places the results into a Variable that can be used elsewhere.
- File Manager – Allows interaction with the file system to copy, rename delete files.
- Database Browser – allows bi directional communication with a SQL database
- Substring – extracts a part of a string out of a *Device* or *Variable*

# Graphic screen editor

**Input text, output text, animated buttons, selection boxes,**

**Example of a completed user screen using last generation graphics editor.**



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## Hardware

PlantWatch's input output system; Turck BL67 is made up of *Racks* which have *Slots* that can be populated with a variety of different *Cards,* digital or analog. The system supports multiple networks and a wide variety of I/O signals in a rugged housing.