Software Process Management Systems
Increase Visibility & Control of Your Process

Overview

Yield Engineering Systems (YES) offers multiple software data collection options to increase visibility and control of your process. Trending, analysis and reporting options are available in four basic configurations that can be customized to accommodate unique requirements.

YES process management systems are designed to make detailed data collection easy. Real-time monitoring allows you to quickly react to process upsets, while access to historical data gives you the ability to study and improve your process strategy. Once a process management system is started, data storage is automatic; no operator action is required. Simply point and click to retrieve data and generate reports.

Benefits:
- Quick response to process upsets
- Access to historical data to study and improve process strategy
- Detailed reporting for government compliance regulations
- Easy profile creation
- Improved efficiency

Option 1: Standard Local Data Collection

The standard option is suited for local data collection and analysis and operates on a Microsoft® Windows platform. Collection software communicates with a Control Technologies Corp.® (CTC) tool controller via a Wonderware® DDE (dynamic data exchange) driver, and data is retrieved with Incuity™ Classic client tools using a single seat license.

The server must be installed near the tool; distance is limited to approximately 30.5m (100ft.) by the RS-232 serial communications line. All data capturing must be done on site, at the data collection server.

At selected time intervals, the data collection software samples process data. If the value of any sample variable has changed since the previous sample, the new value is recorded.

Record details include:

- Time and date stamp
- Numerical lot number
- Recipe number
- Chamber pressure
- Process temperature
- Gas flows (if optional mass flow controllers were installed)
- Process gas control valve state
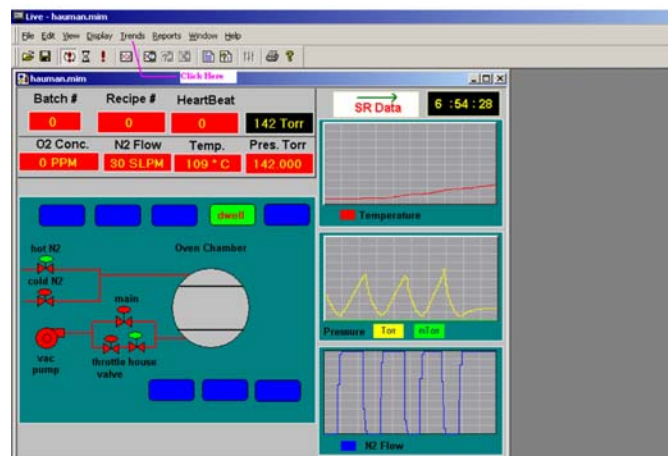- Vacuum flow control valve state

FIG. 1

For data analysis, process data is retrieved by time/date or by lot number. The application displays all system data, system status, valve status, and three real time trends. Process data can be displayed as trend charts (fig. 1) or exported to Excel® for printed reports.

Yield Engineering Systems provides the PC server pre-loaded with software and custom templates so you can immediately begin collecting data and generating reports. Software includes:

- Microsoft® Office
- Microsoft SQL Server™
- Wonderware IndustrialSQL™ Server database manager
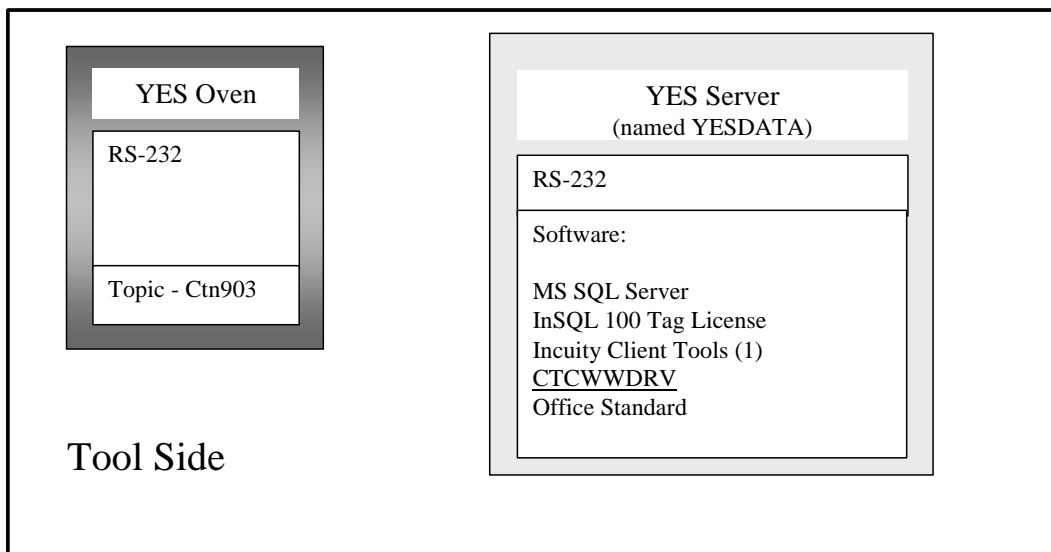- Incuity™ Classic client tools

FIG. 2. Standard Local Collection configuration.

The SQL Server starts as soon as the computer is turned on. The DDE server starts automatically, and InSQL control connects to the SQL server. At this point, the system is collecting your data.

Use Trend to look at data before generating reports to determine whether data looks unusual (fig. 3). If something upset the run, you will quickly catch the problem. Plus, this feature saves time wasted generating and publishing reports that have no anomalies.
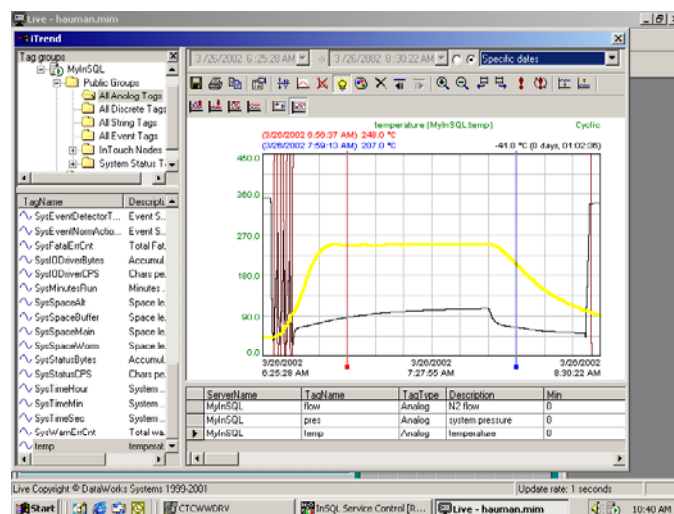

FIG. 3

The standard option includes an additional RS-232 serial communications port added to the tool controller and an additional communications port on the backside of the control console. Also, cabling is provided inside and outside the tool.

Option 2: Network Data Collection
The network option enables data collection over a network, allowing analysis to be done at any workstation connected to the same network as the tool. The option adds an Ethernet 10/100baseT network port to the CTC tool controller in lieu of the RS-232 port used for the standard version. Software is the same as the standard version, but includes multiple seat licenses, allowing network access from several locations. Reporting, trending and analysis capabilities are identical to the standard option.
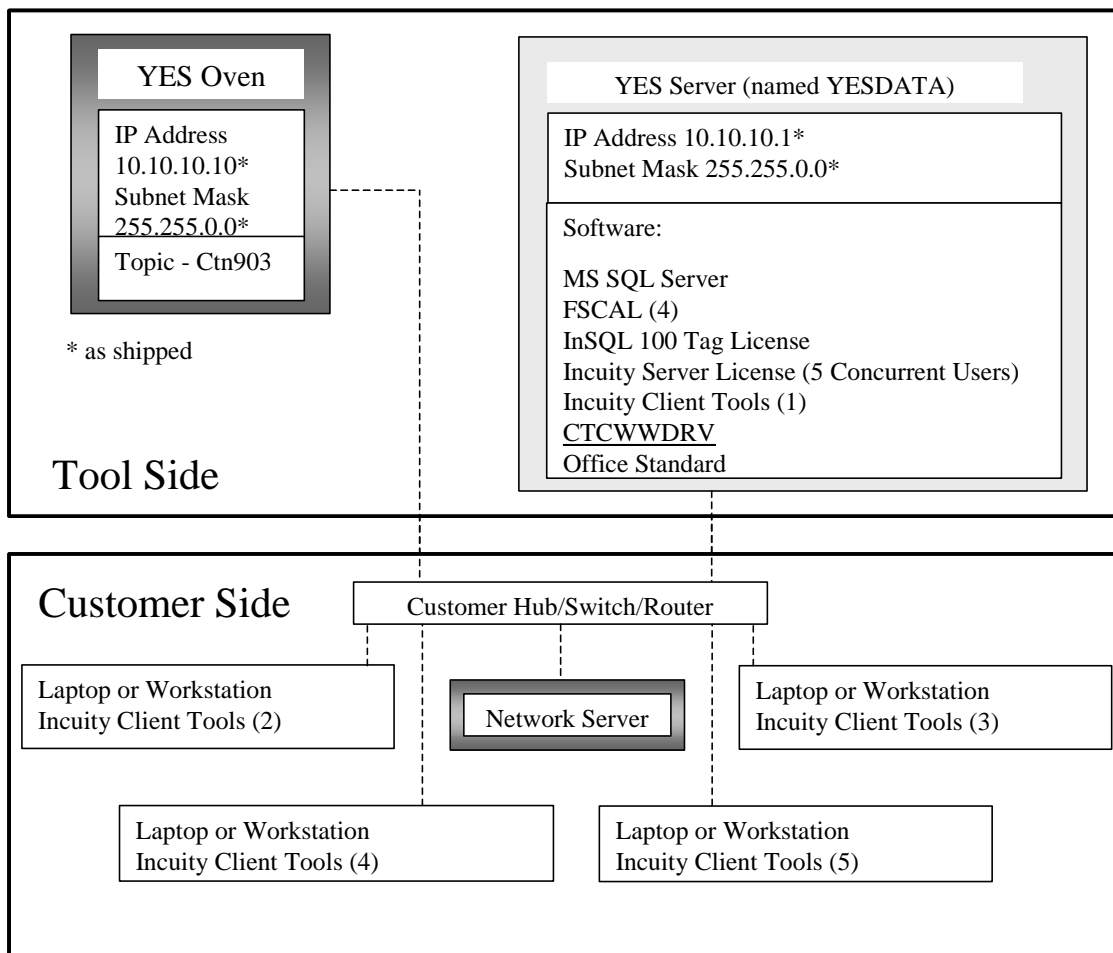

FIG. 4. Network Data Collection configuration.

Option 3: Ethernet Local Data Collection

The Ethernet option enables data retrieval via an Ethernet connection. This data management option increases scalability and simplifies access to process data and analytical applications from outside the fab area in a format that is easy to create, deploy and manage.

Hardware includes local server, flat panel monitor, DDE server, keyboard, mouse and cables. Software includes Windows server, Microsoft Office, Microsoft SQL Server, IndustrialSQL, and a single seat Incuity client tools license for the remote workstation or laptop.
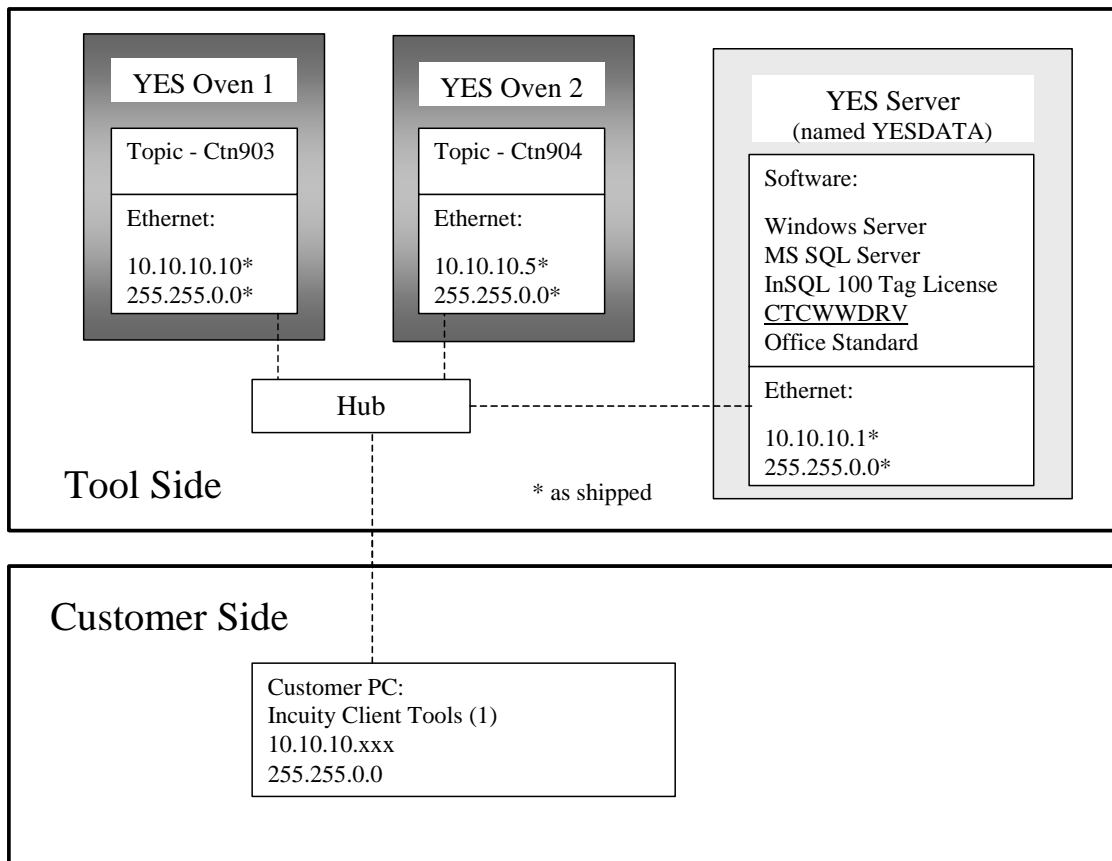

FIG. 5. Ethernet Local Collection configuration.

Option 4: Wonderware Data Collection with Remote Recipe Management

The deluxe version provides data collection, analysis, and temperature profile editing over a network connection. Deluxe data collection option adds the Wonderware InTouch® graphical user interface to the network version software package. This gives the ability to add remote creation, editing, and selection of process temperature profiles to the data analysis and download capabilities over the network connection. Currently, this option is only available for YES-PB Series equipment.
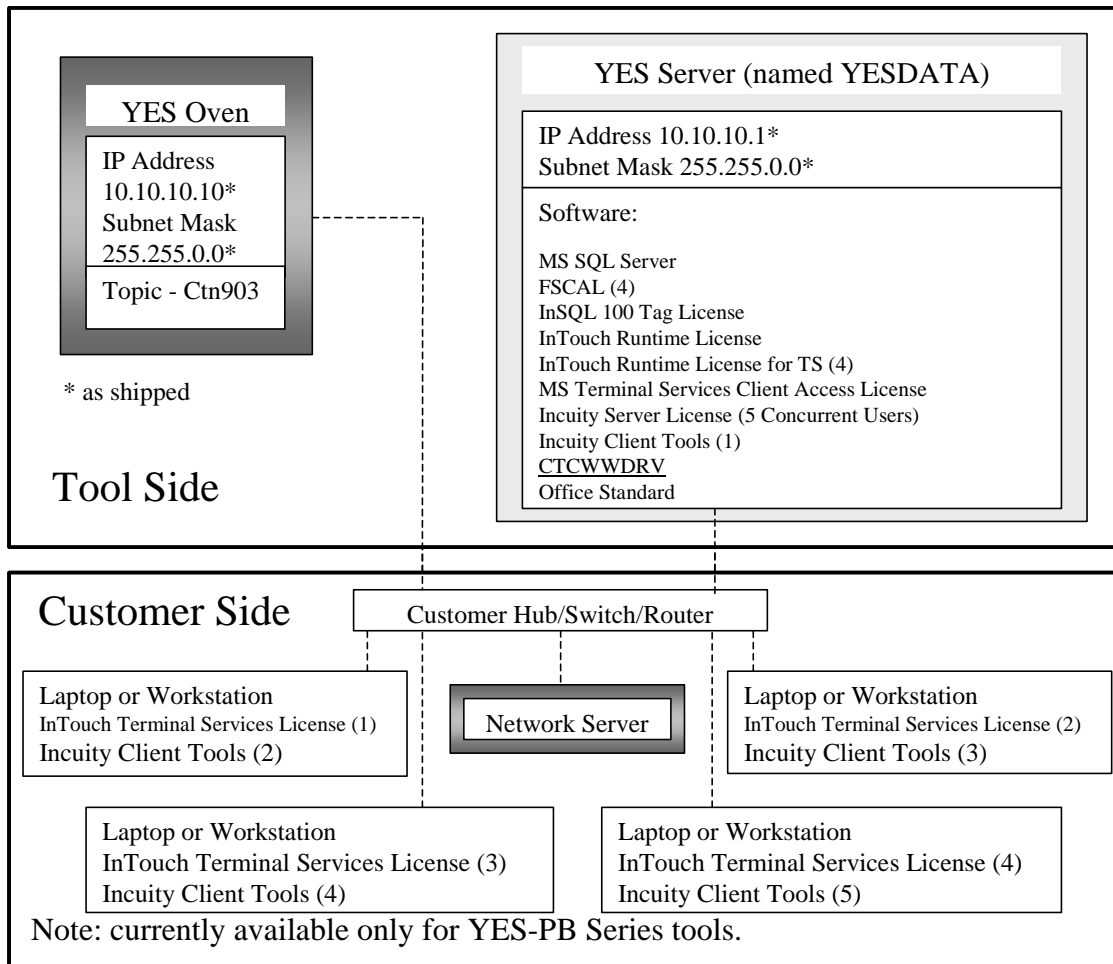
FIG. 6. Deluxe Collection configuration.

Conclusion

Choosing a software option tailored to meet your requirements depends on multiple factors. We can help you find a solution that is the right fit for your process. For over 25 years, Yield Engineering Systems has been designing systems to meet the needs of innovative engineers, lab managers, and fabrication houses. Call +1 925 373 8353 (worldwide) or +1 888 YES 3637 (US toll free), or visit us online at www.yieldengineering.com.