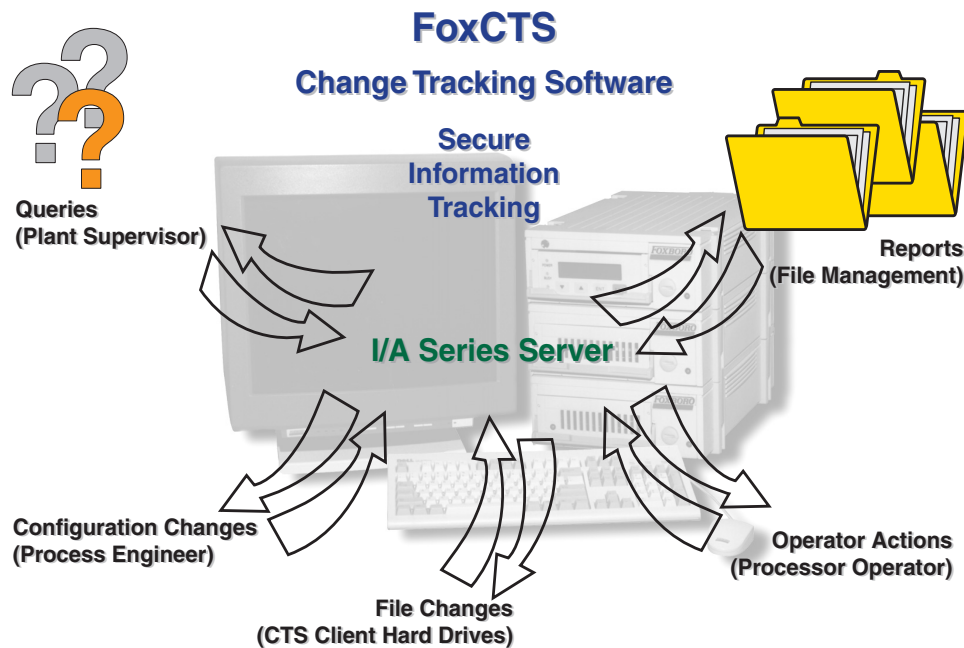


FoxCTS™ – Change Tracking Software



FoxCTS™ (Change Tracking Software) documents modifications on an I/A Series® system. Foxboro® Control Software Systems have limited support.

OVERVIEW

The FoxCTS™ product adds enhanced change tracking, security, configuration, and management functions to 70 Series systems in response of best practices and various regulations.

Features

The FoxCTS features are:

- ▶ Associates the current user to Control Station configuration changes
- ▶ Tracks control configuration modifications
- ▶ Tracks ladder logic and sequence logic changes made to either primary or included files
- ▶ Tracks FOUNDATION™ fieldbus device changes
- ▶ Tracks changes made to ASCII and binary files on FoxCTS Client workstations
- ▶ Tracks the usage of all configuration tools found under the directories d:/usr/fox/sys, d:/usr/fox/soft, and d:/usr/fox/config
- ▶ Includes an application that stores Operator Action Journal (OAJ) information in an AIM*Historian™ database with additional information about the FoxCTS user that made the change.

Regulatory Position

The FoxCTS product is a response to practices required by FDA Regulation 21 CFR Part 11, OSHA 1910, and by other governmental regulations. These regulations require that changes made to a control system be documented and distributed to all affected parties, especially to the process operators and their supervisors, and that access to the system be controlled and monitored.

Though the FoxCTS product provides support for these regulations, it is not sufficient by itself to ensure that any given installation is compliant.

Certification of any given installation as compliant is achieved not only through the application of hardware and software products, like the FoxCTS product, but also through external review, internal procedures, and a variety of other mechanisms.

Security Features

The following are security features that the FoxCTS software provides.

- ▶ FoxCTS user accounts are created by the FoxCTS administrator.
- ▶ Environment access controls are based on FoxCTS user account settings.
- ▶ Workstation access control is based on the FoxCTS user account settings.
- ▶ The FoxCTS administrator can customize security rules and govern FoxCTS user password. (Note: These password rules only apply to I/A Series workstations with a standard I/A Series software installation.)
- ▶ Mandatory login for FoxView™ display access.
- ▶ Includes a User Reconfirmation application that allows an application engineer to easily configure FoxView screen actions to be executed only if the FoxCTS user(s) are confirmed.

Miscellaneous Features

The following are miscellaneous features that the FoxCTS product provides.

- ▶ Supports notification of consecutive failed login attempts.
- ▶ Provides automatic logout from the FoxView displays based on inactivity.
- ▶ FoxCTS domain management through the FoxCTS Configurator.
- ▶ FoxCTS change reporting through the FoxCTS Change Database Server.

DOMAIN CONFIGURATION

A FoxCTS domain is comprised of control processors, workstations, and process areas. Only a FoxCTS database administrator can assign process areas, control stations, workstations, file tracking clients and files to be tracked to the FoxCTS domain database.

The FoxCTS domain is configured using the FoxCTS Configurator, as shown in Figure 1.

Only FoxCTS users with proper database access levels can access the FoxCTS Configurator.

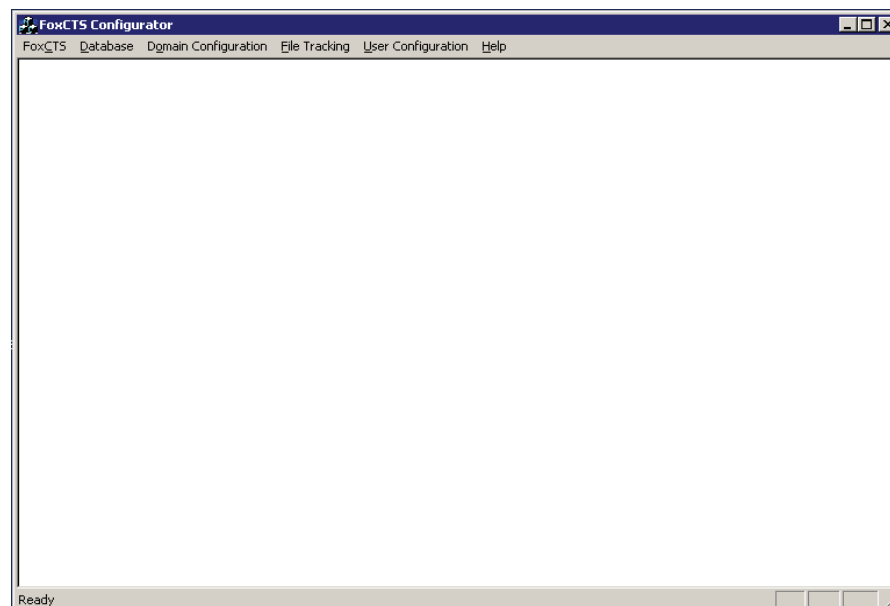


Figure 1. FoxCTS Configurator Main Menu

HUMAN INTERFACE

FoxCTS login begins at the user login box.

For I/A Series workstations with a standard I/A Series software installation, a valid FoxCTS user name and

password must be provided, as shown in Figure 3.

An optional job number or work order number can, also, be provided.

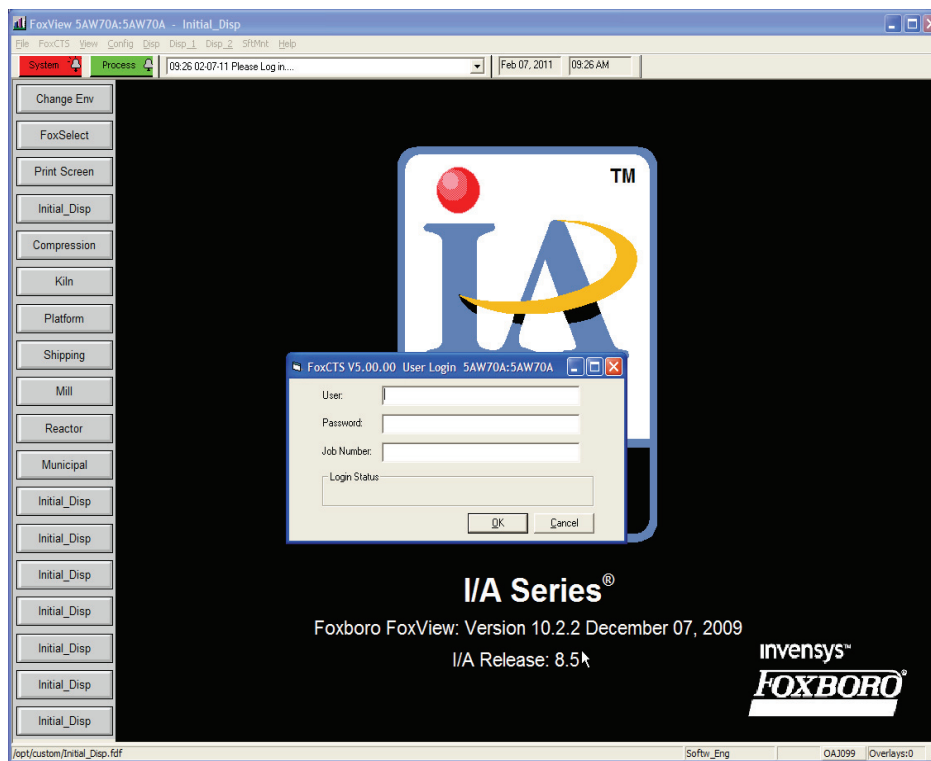


Figure 2. Initial User Login Screen - I/A Series Workstation with Standard I/A Series Software Installation

For I/A Series workstations with a security-enhanced installation of the I/A Series software, the current domain user name is used and an optional job number or work order number can be provided, as shown in Figure 3.

The domain user name must be created in the FoxCTS Domain database before successful login can occur.

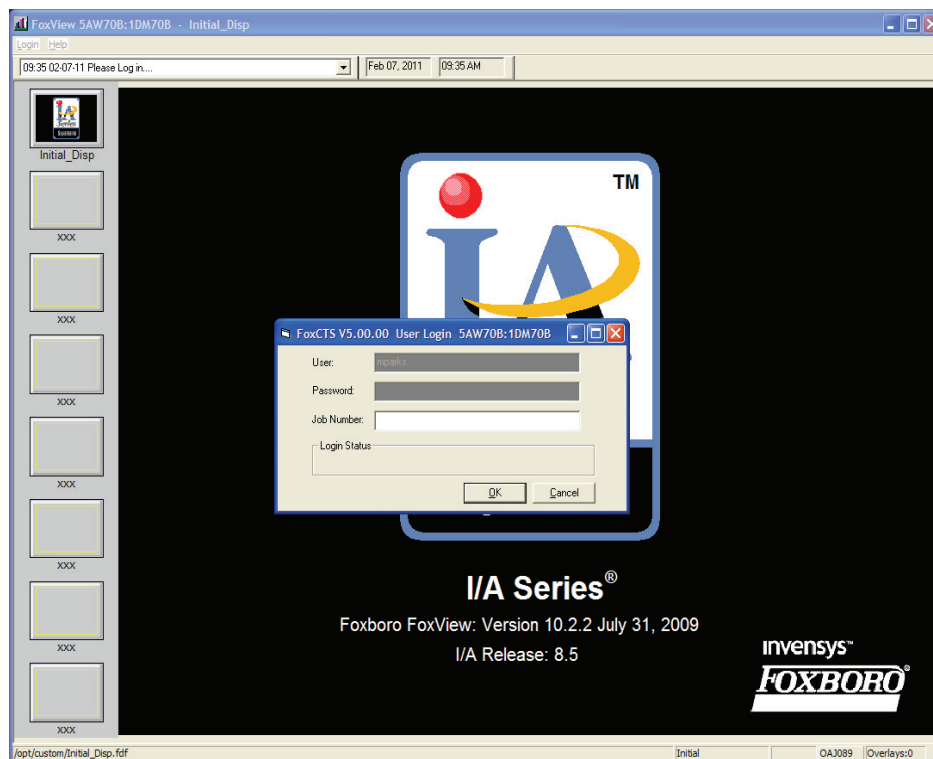


Figure 3. Initial User Login Screen - I/A Series Workstation with Security-Enhanced I/A Series Software Installation

The FoxCTS software limits authorized users access to the I/A Series system and pre-defined environments are used for access protection.

After a successful login, the system environment is changed to the FoxCTS user's default home environment.

- ▶ Users then may change to their configured environments by choosing from a pop-up list. This pop-up list contains environments that have been configured for the current user, as shown in Figure 4.

- ▶ The FoxCTS administrator defines user accounts and environment authorization.
- ▶ Users have the ability to login/logout at will, and to manage their own passwords.

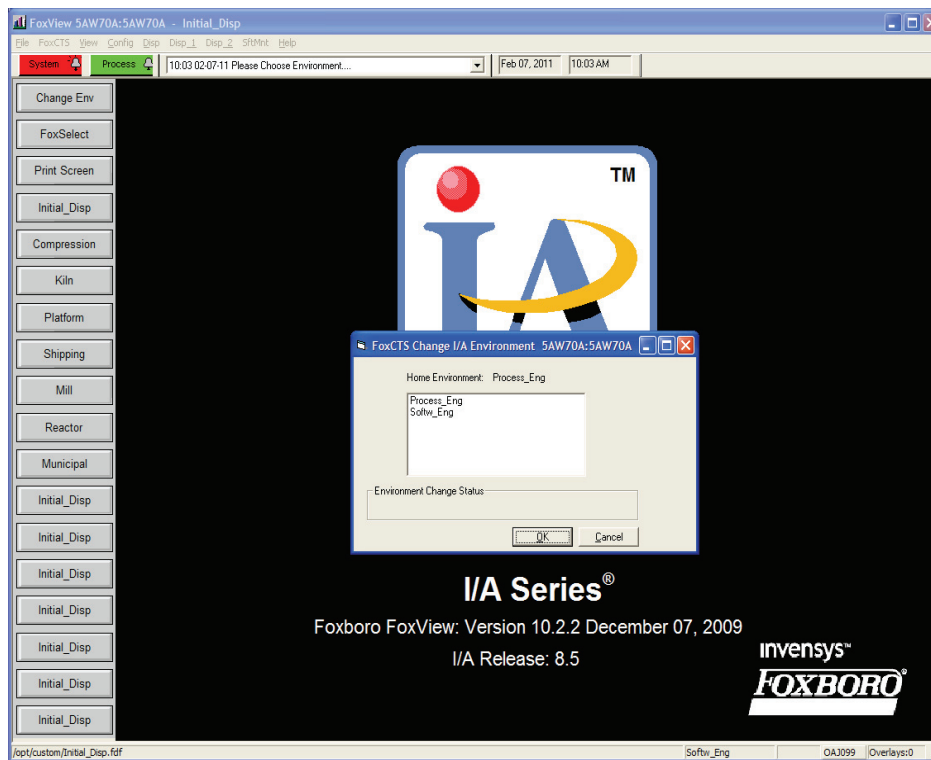


Figure 4. User Change Environment Screen

USER RECONFIRMATION

The FoxCTS User Reconfirmation feature requires either single or double user name/password validation before a specified action can be taken.

For I/A Series workstations with a standard I/A Series software installation, valid FoxCTS user name(s) and password(s) are used.

For I/A Series workstations with a security-enhanced installation of the I/A Series software, the domain user name(s) and passwords are used. (The domain user name must also be created in the FoxCTS domain database.

After the single or double User Reconfirmation occurs, the reconfirmation information is recorded in the AIM*Historian database.

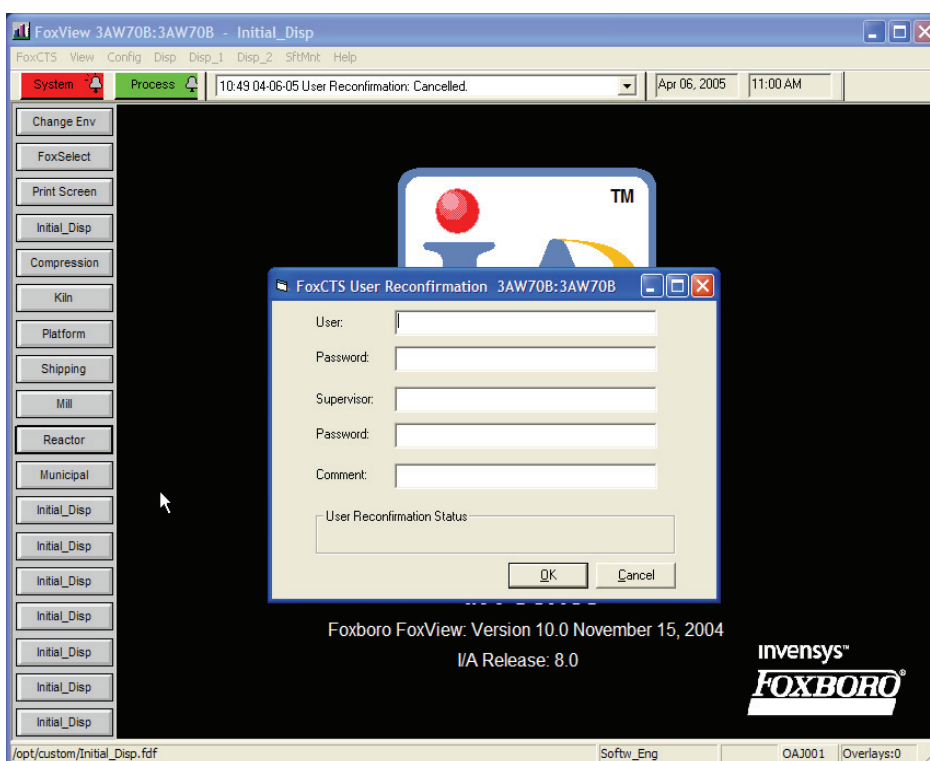
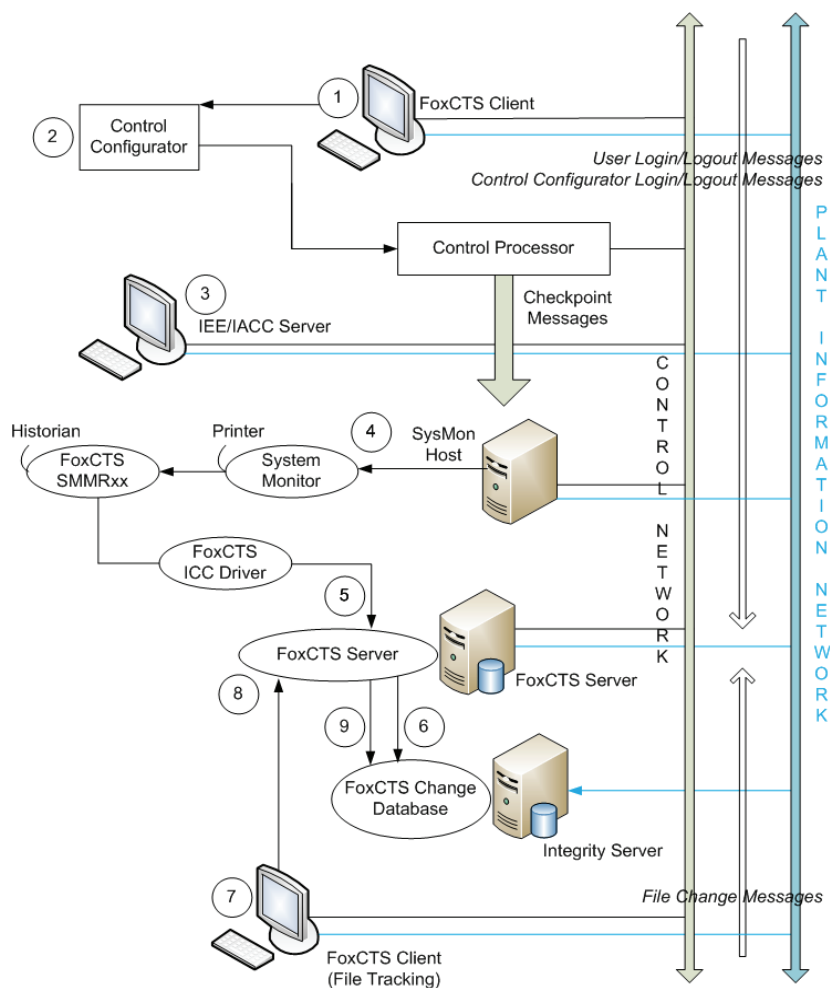


Figure 5. User Reconfirmation Showing Dual Login

STRUCTURE



The FoxCTS product is based on a client/server architecture. The information flow for user login and control configurator activity is as follows:

- 1** The FoxCTS user logs into the FoxView display thereby generating a login message that is recorded by the FoxCTS Server.
- 2** ICC is used to make a change. Starting the ICC generates an ICC login message to the FoxCTS Server. Making changes to the Control Processor alters its memory. Exiting the ICC generates an ICC logout message to the FoxCTS Server and

generates a checkpoint notification to the CP's System Monitor.

- 3** Configuration changes made via either the Foxboro Control Software (FCS) Configuration Tools or IACC Clients are accumulated at their respective server and then transferred to the FoxCTS Server every five minutes.
- 4** The checkpoint message is sent to the FoxCTS SMMR process which sends the message on to the FoxCTS Server and optionally the Historian.

- 5** The FoxCTS Server receives and collects the change information.
- 6** (a) If the FoxCTS Server is acting as the FoxCTS Change Database Server the change information is recorded in the local FoxCTS change database.
(b) In the case of an off-MESH FoxCTS Change Database Server, the FoxCTS Server transfers the collected change information to the FoxCTS Change Database Server for recording in the FoxCTS change database.

The information flow for file tracking is as follows:

- 7** Someone or some program alters a tracked file and the FoxCTS Client workstation notifies the FoxCTS Server of the change.
- 8** The FoxCTS Server receives and collects the file change information.
- 9** (a) If the FoxCTS Server is acting as the FoxCTS Change Database Server the change information is recorded in the local FoxCTS change database.
(b) In the case of an off-MESH FoxCTS Change Database Server, the FoxCTS Server transfers the collected change information to the FoxCTS Change Database Server for recording in the FoxCTS change database.

The FoxCTS Change Database Server uses the PAS® Integrity™ software for reporting and historical data storage.

REPORTS

The FoxCTS Change Database Server, uses the PAS Integrity software, to easily retrieve FoxCTS change records for display.

The FoxCTS Change Database Server stores all historical information in its database. Users can view historical information by object type: activities, compounds, blocks, users or files. Additionally, the user may view history by date range, and by modification type. Query filtering, column sorting, and query display customization are also available.

REQUIREMENTS

The FoxCTS product is comprised of six modules, with each module having a different set of system requirements. A workstation can be installed with any or all of the modules.

The FoxCTS product has limited support for Foxboro Control Software. That is, the FoxCTS modules can record changes made to control stations managed by the Foxboro Control Software Configuration Tool but the Foxboro Control Software InTouch Application is not supported.

Supported I/A Series Software Versions

FoxCTS version 5.00.00 currently supports the following I/A Series software versions:

- ▶ v8.1.1 - v8.4.x - Standard.
- ▶ v8.5 Standard.
- ▶ v8.5 Security Enhanced with default domain group policies.
- ▶ v8.6 Standard.
- ▶ v8.6 Security Enhanced with default domain group policies.

Note - When using I/A Series Security Enhanced versions please be aware that changing the Invensys provided default domain group policies or improperly using McAfee® ePolicy Orchestrator firewall can adversely affect the proper operation of FoxCTS. Modifying Active Directory Group Policies is considered an advanced action and should only be undertaken by qualified personnel.

FoxCTS Server Module

- ▶ AW70 Series workstations
- ▶ At least 100 MBs of space in the D: drive
- ▶ 256 MB RAM
- ▶ A CD-ROM used for installation
- ▶ Connected to the plant information network.
(Only required if the FoxCTS Change Database Server is an off-MESH PC.)

FoxCTS OAJ Host Module

- ▶ AW70 Series workstations
- ▶ AIM*Historian Version 3.3 or later installed and configured on the machine where the FoxCTS OAJ Host Module is to be installed
- ▶ 1 MB of space in the D: drive
- ▶ 128 MB RAM.

FoxCTS Client Module

- ▶ AW70 Series workstations
- ▶ FoxAPI software installed and configured
- ▶ If OAJ enhanced messages is to be installed, AIM*Historian Version 3.3 or later must be installed and configured somewhere on the system
- ▶ 10 MB of space in the D: drive
- ▶ 128 MB RAM.

FoxCTS SysMon Module

- ▶ AW70 Series workstations
- ▶ 1 MB of space in the D: drive
- ▶ 128 MB RAM.

FoxCTS ICC Driver Module

- ▶ AW70 Series workstations
- ▶ System Monitor running
- ▶ 2 MBs of space in the D: drive
- ▶ 128 MB RAM.

FoxCTS Change Database Server Module

If the FoxCTS Change Database Server will be an off-MESH PC, the following requirements must be met.

- ▶ PC connected to the plant information network.
- ▶ Static IP Address assignment for communications from the FoxCTS Server workstation.
- ▶ Meets the software requirements for the PAS Integrity software.
 - *Processor:* 2 dual-core, 32-bit compatible processor(s) at 2.4 GHz or higher
 - *RAM:* 2GB, 800MHz RAM
 - *Hard Disk:* 10,000 RPM SCI or better hard drive. Hyper-threading must be turned off. Disk compression must be turned off.
 - *Software:* Microsoft® Windows® 7, Windows XP or Windows Server® 2003 Operating System Microsoft .NET Framework.

ORDERING INFORMATION

The FoxCTS product is sold based on the number of control stations (CS). A control station is any I/A Series system that runs I/A Series control blocks. Such stations include but are not limited to CP10/30/40/60/270 or later processors, DI/5/30, ABGW, ABI, ABS, MDGW, MDI, FDGs, DI, and Micro-IA. A complete list can be found in the */etc/cplns* file on any I/A Series workstation.

Bulk purchases for entire plant sites are available for larger installations or custom configurations. Contact your Invensys® account representative for details.

All FoxCTS part numbers listed below include a copy of the Integrity™ software and required license. Installation services is not included.

Expected delivery time is four to six weeks.

- ▶ Q0303BM - FoxCTS for Windows, Cfg. 1: 1-3 CSs
- ▶ Q0303BN - FoxCTS for Windows, Cfg. 2: 4-8 CSs
- ▶ Q0303BP - FoxCTS for Windows, Cfg. 3: 9-15 CSs
- ▶ Q0303BQ - FoxCTS for Windows, Cfg. 4: 16-25 CSs
- ▶ Q0303BR - Upgrade FoxCTS for Windows, Cfg. 1: 1-3 CSs
- ▶ Q0303BS- Upgrade FoxCTS for Windows, Cfg. 2: 4-8 CSs
- ▶ Q0303BT - Upgrade FoxCTS for Windows, Cfg. 3: 9-15 CSs
- ▶ Q0303BU - Upgrade FoxCTS for Windows, Cfg. 4: 16-25 CSs

COMPLIANCE

The Invensys® company is committed to having a combination of services, policies, procedures and automated tools to facilitate compliance. Contact your account representative for more information on services provided by Invensys to assist you in meeting these regulations.

Please visit the following Invensys websites for more information on achieving compliance:

Pharmaceutical Industry: <http://www.invensys.com>

Validation: <http://www.vti-canada.com>

