"Controlling
Your World..."

Supervisory Systems
FAST/TOOLS™

vigilantplant.®
The clear path to operational excellence

YOKOGAWA ♦

FAST/TOOLS™
Supervisory Systems

FAST/TOOLS is a powerful, state-of-the-art, flexible, distributed operations information and supervisory control system. It is a leading package utilizing the latest best in class IT technology for these applications and is available on a wide range of industry-standard computer systems.

SEE CLEARLY

Powerful, state-of-the-art software...
... FAST/TOOLS is a flexible, distributed, operations information and supervisory control system, designed to evolve with your needs.

KNOW IN ADVANCE

Leading package...
...The System has been developed over three decades, using our expertise in Supervisory Control And Data Acquisition (SCADA) to respond to customer demands.

ACT WITH AGILITY

Success in critical applications...
... FAST/TOOLS offers stability, a proven track-record, guaranteed 'best-of-class' availability, data integrity, high levels of performance and on-line configuration capabilities.

Introduction

Many global industrial companies and utilities rely on Yokogawa's SCADA System FAST/TOOLS. The system is used to manage production processes while guarding availability and efficiency in a way that maximizes return on investment and minimizes cost of ownership.

FAST/TOOLS success, in many of these critical applications, is based on its highly reliable open architecture design, support of quadruple redundancy and its on-line configuration possibilities. These properties contribute to high efficiency and high quality production processes.

FAST/TOOLS has been developed with a number of key issues in mind, one of which is the provision of a system that can start small and which can easily grow with short and long term application needs. This guarantees your investment against premature obsolescence. Furthermore as a hardware and operating system independent supplier Yokogawa is committed to the support of standard operating systems, standard network protocols, standard user interfaces and standard software development tools.

FAST/TOOLS provide solutions for a wide range of control and supervisory applications where, for example one or more of the following requirements apply:
- *Multiple Process Site environments*
- *Integration of third party systems*
- *Wide Area (Media independent) communication*
- *Robustness for intermitted communication*
- *Security against unauthorized access*
- *Disaster recovery and high availability architecture*
- *Alarm & Event management, Trending & Reporting*

These characteristics are often seen in for instance:
- *Oil & Gas production and transport, infrastructure, utilities and energy management*
- *Critical manufacturing applications*

It also allows the flexibility of combining different types of systems to provide hybrid solutions, both on new and existing sites (green and brown field development).

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The clear path to operational excellence

Today's FAST/TOOLS package embodies three decades of development work, combining SCADA and industry expertise in response to customer demand.
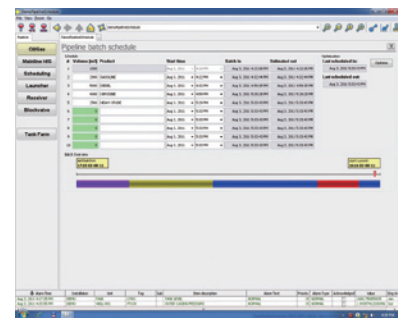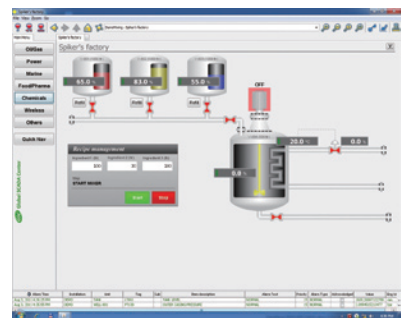
Productive Environment

Web based Human Machine Interface (HMI) for optimal Cost of Ownership

FAST/TOOLS HMI is fully Web based. This allows your operators to easily and intuitively navigate through the process mimics like a browser. The HMI is designed for Web deployment and delivers the benefits of incorporating the latest web technology.

Main benefits are:
- Minimum specification of "Commercial Of The Shelf" hardware
- Centralized administration of software installation and management
- Load sharing through remotely deployed displays and distributed client/server architecture

The FAST/TOOLS HMI editor allows process mimics to be built up with dynamic layers and visibility groups that can be independently made visible and/or transparent in the web-based operator environment. As a result, multi-level process supervision and KPI monitoring can be carried out in one view.

Productivity is maximized through object oriented graphics with rich animation capabilities without the need to update symbols separately. A single change in a parent symbol will update all child symbols system wide.
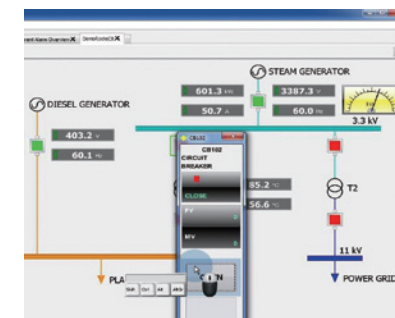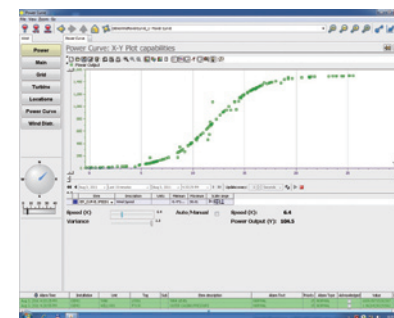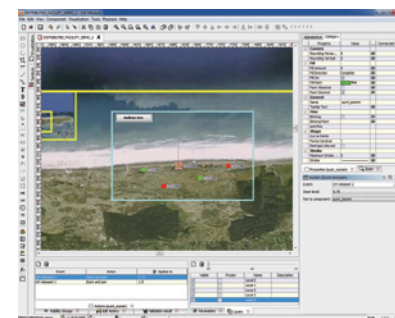
Main Benefits are:
- **Direct animation on drawing elements and shapes which can be activated and changed in their properties**
- **Shapes and symbols can be intuitively manipulated in virtually any way. Examples of this are sheering, rejoining, add/subtract and reforming**
- **Engineering sheets (toolbox, properties, actions, parameters, etc.) can be sized and organised as appropriate and comfortable to the engineer**
- **All dynamic and static information of all display objects are represented and traced in a structured and easy to navigate tree outline.**

Efficient Engineering & Operations protecting your application investment

The FAST/TOOLS engineering module provides access to the systems full intuitive configuration environment. This multi user environment allows building of applications fast and from virtually any location in a way that a project team can work without geographical limitations.

Furthermore the system has been designed as such, that investment made in applications can be preserved when upgrading to new operating system platforms or versions. In practise this means that the software is fully platform independent with Web based clients that can be quick and easy redeployed. This will in many cases significantly reduce the overall cost of ownership and positively contribute to minimize any effect on the controlled plant and processes.

But also making the system more effective by leveraging the capability to see what operators really watch on the job by making use of the systems user centric recording and playback functions. This provides 'real-life' insights that can be used as information for system optimization and to better instruct and prepare operators on their tasks.

FAST/TOOLS application database is scalable to unlimited I/O with a minimal impact on overall system performance. Full supports of on-line editing (adding/removing) of graphics, item (tag-) definitions, reports and I/O drivers guarantees maximum availability. Futhermore the system supports automatic data-archiving of historical data on all common used media and data clean-up technologies to ensure quick recovery and maximize performance.

Plant equipment can be organized in FAST/TOOLS as objects with defined properties and characteristics. The defined objects can be easily propagated to the entire wide area plant by assigning unique tag number to each object, a control symbol is made once and used as many times through-out the system as required.

Flexible Architecture
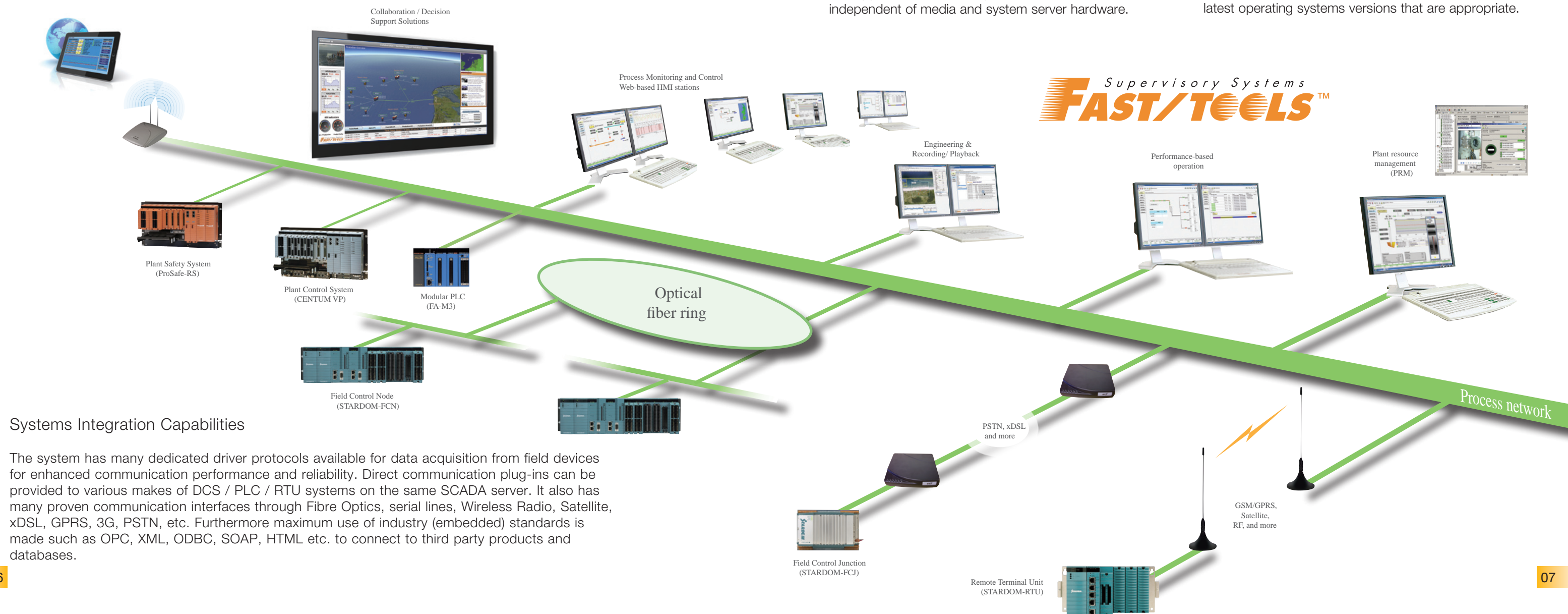
Open & Scalable Architecture

FAST/TOOLS is based on an open event driven system architecture with web services technology and SOA (Services Oriented Architecture) principles. This allows for true scalability and high performance accommodated through a flexible client/server architecture and modular software approach that can be easily extended when your application needs expand.

Availability & Reliability

Where system availability is a prime issue FAST/TOOLS can be configured to run in a redundant and disaster recovery configuration (dual, triple as well as quadruple). Full support of communication and application redundancy is available which is independent of media and system server hardware.

Operating System Independency

FAST/TOOLS is a platform independent SCADA system which is supported on Windows, Unix and Linux based operating systems. Many operating systems have been utilized over the years, with many systems still running on other platforms. Ongoing attention is given to new latest operating systems versions that are appropriate.

Collaboration / Decision
Support Solutions

Process Monitoring and Control
Web-based HMI stations

Supervisory Systems
FAST/TOOLS™

Engineering &
Recording/ Playback

Performance-based
operation

Plant resource
management
(PRM)

Plant Safety System
(ProSafe-RS)

Plant Control System
(CENTUM VP)

Modular PLC
(FA-M3)

Optical
fiber ring

Field Control Node
(STARDOM-FCN)

PSTN, xDSL
and more

Process network

GSM/GPRS,
Satellite,
RF, and more

Systems Integration Capabilities

The system has many dedicated driver protocols available for data acquisition from field devices for enhanced communication performance and reliability. Direct communication plug-ins can be provided to various makes of DCS / PLC / RTU systems on the same SCADA server. It also has many proven communication interfaces through Fibre Optics, serial lines, Wireless Radio, Satellite, xDSL, GPRS, 3G, PSTN, etc. Furthermore maximum use of industry (embedded) standards is made such as OPC, XML, ODBC, SOAP, HTML etc. to connect to third party products and databases.

Field Control Junction
(STARDOM-FCJ)

Remote Terminal Unit
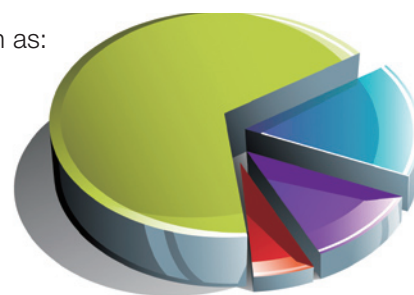(STARDOM-RTU)

Comprehensive Functions

Alarm & Event Management preventing costly downtime

FAST/TOOLS offers a state-of-the-art alarming and alarm management environment with extensive sorting & filter options (Outlook style) based on priority, time, tag, etc. and adjustable acknowledging/reset options such as rerouting of alarms, delaying, repeating and more. Alarms and events can be viewed and managed from operator workstations as well as today's smart phones, PDA's and tablet devices.

Effective Alarm Systems for complex process installations can only be achieved when it allows enough flexibility to suit these particular applications within acceptable ergonomic standards as defined under EEMUA 191 directives.
The system offers a rich number of features to optimize your alarm system accordingly, such as:
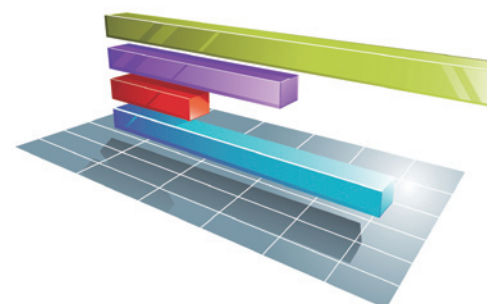
- Alarm acknowledgement (manual/automatic and acknowledge sequences)
- Alarm Filtering (priority based, time based, alarm status, etc.)
- Suppression, delaying and repeating of alarms
- Re-routing of alarms based on time or changed priority
- Trending data statistics (min, max and average)
- Multi tone audible alarms
- Alarm views to smart phone and tablet devices
- Alarm collection groups with first up and first out capabilities
- Notification of alarms through E-mail and SMS services
- Export of alarm views and database in CSV and/or XML format
- Jump from alarm to related process equipment/unit mimic
- Link Alarm and Trend window time lines

Trending in 'real-time' providing Meaningful information for online optimization

The FAST/TOOLS trend module provides outstanding trend visualization capabilities for all real-time and historical process information. The user interface of the trend module allows assigning new trend pens, toggle between two and three dimensional views, x-y scaling, etc. just in a couple of seconds from an open trend window. Many powerful features can be enjoyed such as:

- Real-time and Historical Trends
- Time based and X-Y plots
- Time offset on individual trend pens
- Trending data statistics (min, max and average)
- Trend data health status indication
- Revering of time and value axis
- 2D & 3D Trend Rendering
- Full zoom capabilities and animation
- Power full sliders for various axis like value and time
- Free to define legend (location, description & transparency)
- Automatic selection of history groups
- Link Trend and Alarm window time lines
- Complete flexibility of window decoration and layout
- Export trend data in CSV format for easy import into office applications
- In addition a rich set of tuning parameters...

Reporting on Production Efficiency and Management

The report function in FAST/TOOLS is a very powerful one which provides a broad scope of statistical functions to allow data to be translated into meaningful information.

Reports can be created based on standard available templates or fully customized. The reports can be generated as HTML for easy representation and sharing with standard browsers. FAST/TOOLS reports can be either manually generated or automatically based on event like; scheduled on time base, process value change or alarm limit thresholds.

Recording and Playback Capabilities

FAST/TOOLS can also record the complete operations as well as engineering enviroment and capturing and storing all actions taken by the user at the same time. These user-centric recordings can be used for off-line analysis to:
- Share the recordings with maintenance departments to easier provide detailed and more accurate information to improve problem solving
- Use the recordings to better train and prepare operators for their tasks which can reduce downtime caused by human error

Secure Access to Applications

Intranet / Internet Deployment

FAST/TOOLS has a truly Web-based user interface environment for operators as well as for engineers. This allows rapid deployment of applications and process information to the users that can be easily maintained on a central server. This so called "zero deployment" means that client applications can be run from any web-browser and the users always get the most recent version of an application. There is no need to manage licenses and software installations on the client side and no application files need to be copied over and no communication configurations need to be setup. Benefits include:

• Information can be accessed anywhere an Internet connection is available.
• The information is 'real-time' (no waiting time for critical information).
• The information is more secure than it would be stored locally on the client device.
• Upgrades containing new functions and enhancements are automatically deployed
• There is no need to manually install software or license keys on the client device.

Moving from the intranet to internet environment for remote access to your production facilities demand for a robust risk evaluation and effective counter measures. FAST/TOOLS Web-based technology has been designed to easily adapt to the lastest IT security techniques to stay contineously current.

Security while Utilizing today's Best in Class Technology

Supporting organizations security policies, FAST/TOOLS and its applications are hardened to support protection against failures and help preventing unauthorized usage and access.

In addition to the standard operating system login account policies and/or hardware security solutions such as ID cards and biometric solutions such as Iris scan or fingerprints FAST/TOOLS has its own security mechanisms which are leveraged by standard and proven security techniques as administered by IT departments and compliant to ISA-99 such as:

• Network Centric Computing
• VPN Tunneling Token & Username/Password (level 2 security)
• Built-in endpoint scans and policy controls take into account each user's role, device characteristics and network conditions to determine which applications and data they are authorized to access.

Basically all the privileges for a specific type of user are specified in user profiles which are defined as the runtime, development and engineering security.

Business Systems Integration

FAST/TOOLS easily integrates with your existing business applications that support ISA-95 open standard through Yokogawa's business integration and plant information management solutions. These solutions have been certified by SAP for interfacing production management information using SAP NetWeaver. ISA-95 is an open standards based interface incorporating the B2MML XML schema that Yokogawa was instrumental in developing.

Global Service & Support

Yokogawa offers a complete set of professional services that can be tailored to specific needs. Our highly praised consultants provide services that offer a quick, cost-effective way to ensure success in developing and implementing FAST/TOOLS systems. Yokogawa has many years of experience assisting users from the process control industries, as well as in many other application areas. In addition, Yokogawa invests in the continuous education of our professional service staff.

Remote Assistance by Specialists

By making use of the recording and playback capability process specialists can support from any location by issue a recording to instruct for instance a local operator which actions need to be taken to optimize and secure performance under all conditions.

SEE
CLEARLY

KNOW
IN ADVANCE

ACT
WITH AGILITY

"Automation Solutions that get the most out of your production assets while protecting your application investment lifecycle"

vigilantplant.®
The clear path to operational excellence

SEE
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WITH AGILITY

VigilantPlant is Yokogawa's automation concept for safe, reliable, and profitable plant operations. VigilantPlant aims to enable an ongoing state of Operational Excellence where plant personnel are watchful and attentive, well-informed, and ready to take actions that optimize plant and business performance.

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