MULTIPLE CONTROLLERS

Modular Integration allows free 'mix and match' selection of Sequence control, Loop Control and Computer control modules in a single rack optimizing the controller for each application. One line of equipment provides for simple construction of everything from a small ladder or loop application to a fully integrated factory management or process DCS.

SEQUENCE CONTROL [MODEL2000/3000 (TRADITIONAL PLC)]

High-Speed Processing: Exceptional scanning rates at just 40 nano seconds per contact achieved by a dedicated IEC61131-3 sequence microprocessor. Supports ladder diagrams, integer and floating-point functions.

LOOP CONTROL [MODEL 1000/2000/3000 (TRADITIONAL DCS)]

Hyper PID Control: Provides hyper PID control developed by pursuing the essentials of PID control algorithm with double-cross limit combustion control and separate feed – forward/feedback control very effective for controlling plant disturbance problems.

COMPUTER CONTROL [MODEL 2000/3000]

Runs on main base sharing common memory data with other control modules via the station bus. Accesses the I/O module directly, making micro control applications possible.

ENGINEERING TOOLS

PROGRAMMING LANGUAGE

Engineering tools uses the IEC61131-3 worldwide standard for sequence control and loop control modules, covering ladder diagram, function block diagram and sequential function chart programming. Multiple programming languages provide the flexiblity required for efficient coding of all projects.

GRAPHICAL LANGUAGE

Ladder diagrams, function block diagrams, and sequential function charts can be written and monitored in a single program enabling the use of the best language for each portion in one worksheet.

GLOBAL VARIABLES

Integrated controllers can be programmed with symbolic addresses only, thus allowing to program hardware configuration or logical addresses. Both global and local variables are fully supported with three hierarchical layers of global variables: controllerglobals, stationglobals, and LAN globals.

USER-DEFINED FUNCTION BLOCKS

The engineering tool integrates user programs into user-defined function blocks and allows these functions blocks to be used in any part of the programs.
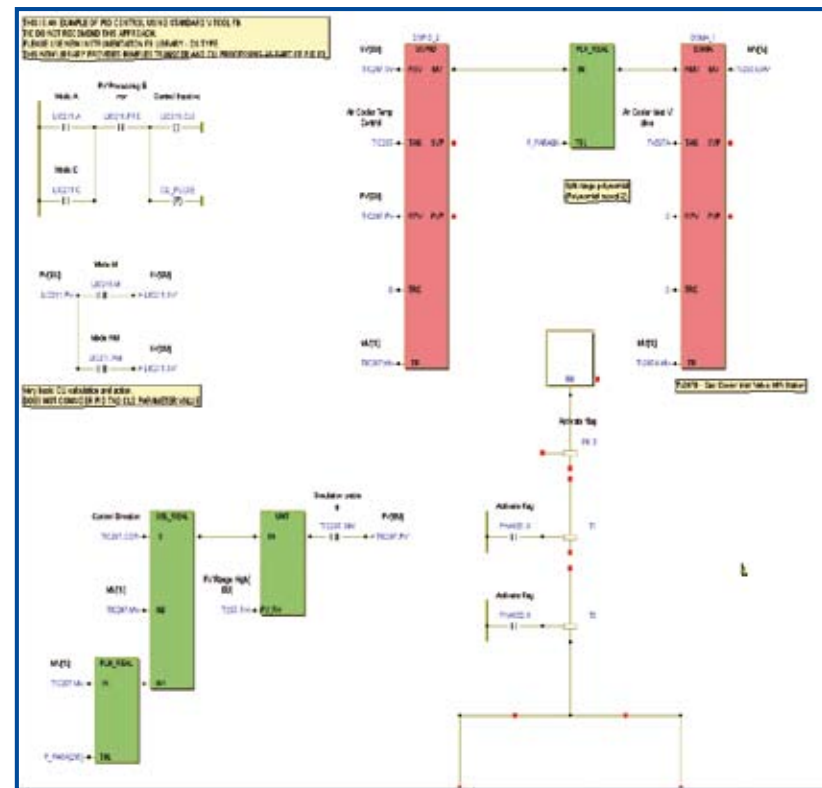
## DUPLEX REDUNDANT SYSTEM CONFIGURATION

Duplex configuration is available on all fundamental parts of the system including I/Os and ensuring system reliability.

NO CONTROL LOSS

When the on-line controller fails, the standby controller takes over the capability to control, providing uninterruped control operation without initialisation or user intervention.

BUMPLESS TRANSITION

The switch over generates no disturbances to the field output signals and the process continues as though nothing happened.

REDUNDANT SYSTEM DIAGRAM
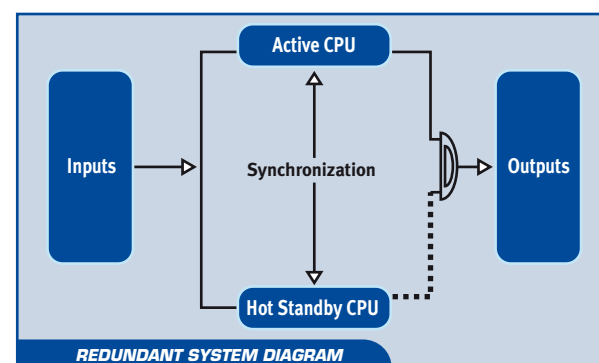
LC500

LC500 controller is a single Loop station consisiting of a control unit, network and process I/O units. The control unit, which has the 6K-step control operation capacity, executes complex PID Control loops, various analogue operations and sequenced control. Additional I/O and Control loops are available by using Toshiba's Process I/O moldules.

MODEL 1000

For small end DCS applications, Model 1000 consists of one L1 CPU and is capable of up to 8 PID loops, This controller is tag based (MCS style) and has 6k steps of capacity. Features include up to 8 loop display units, Ethernet or Tosline S20LP, which operates on the basis of real time scan transmission, RS485 utilising Computerlink Protocol and the ability to cater for up to 16 process I/O modules.

MODEL 2000

For mid sized applications, Model 2000 is a powerful integrated controller. It provides for a maximimum of five control and network modules. Sequence (S2), Loop (L2) and Computer (C2) modules can be freely combined on the main base. The S2 and C2 modules utilise the direct I/O modules while the L2 utilises the process I/O type of module.

MODEL 3000

For large end applications, Model 3000 is Toshiba's flapship. This integrated controller can cater for up to a maximum of 8 control and network modules which can be freely combined on the main base. Like the model 2000, the model 3000's control modules share a common memory, which enables high speed sharing of controller, station and LAN global variables.

TOSHIBA

Toshiba Integrated Control System

A complete control system which integrates Toshiba's expertise in computer and DCS design into a common hardware platform.
A control system to set new milestones in scalable, open process control by incorporating the leading industrial automation and information management software!

Plant2Business
An easy-to-use, plant-wide reporting tool that seamlessly connects data from the control network with the plant management system.

Industrial Information Management
Scalable management information solution which delivers real-time access to plant and business information.

Batch
Highly flexible, scalable batch management solution. Provides exceptional reporting, control and visualization capabilities, which is compliant with international regulations.

TC-Net
High Speed "Scan Transmission" network for P2P or remote I/O application. 10, 20 or 100 Mbps speeds.

V3000 Controller
Provides the functionality, capacity and performance for large high speed applications.

V2000 Controller
Mid range controller where functionality, flexibility and performance are required.

Process I/O Bus
Standard redundant serial I/O bus ensures high speed and reliable fault tolerant remote I/O options with enhanced functionality for process-oriented applications.

Direct I/O Bus
High speed bus ensuring a fast response speed between the I/O and processor.

FL Net
International open standard network based on Ethernet. Incorporates a high speed deterministic protocol for remote I/Os and real time applications.
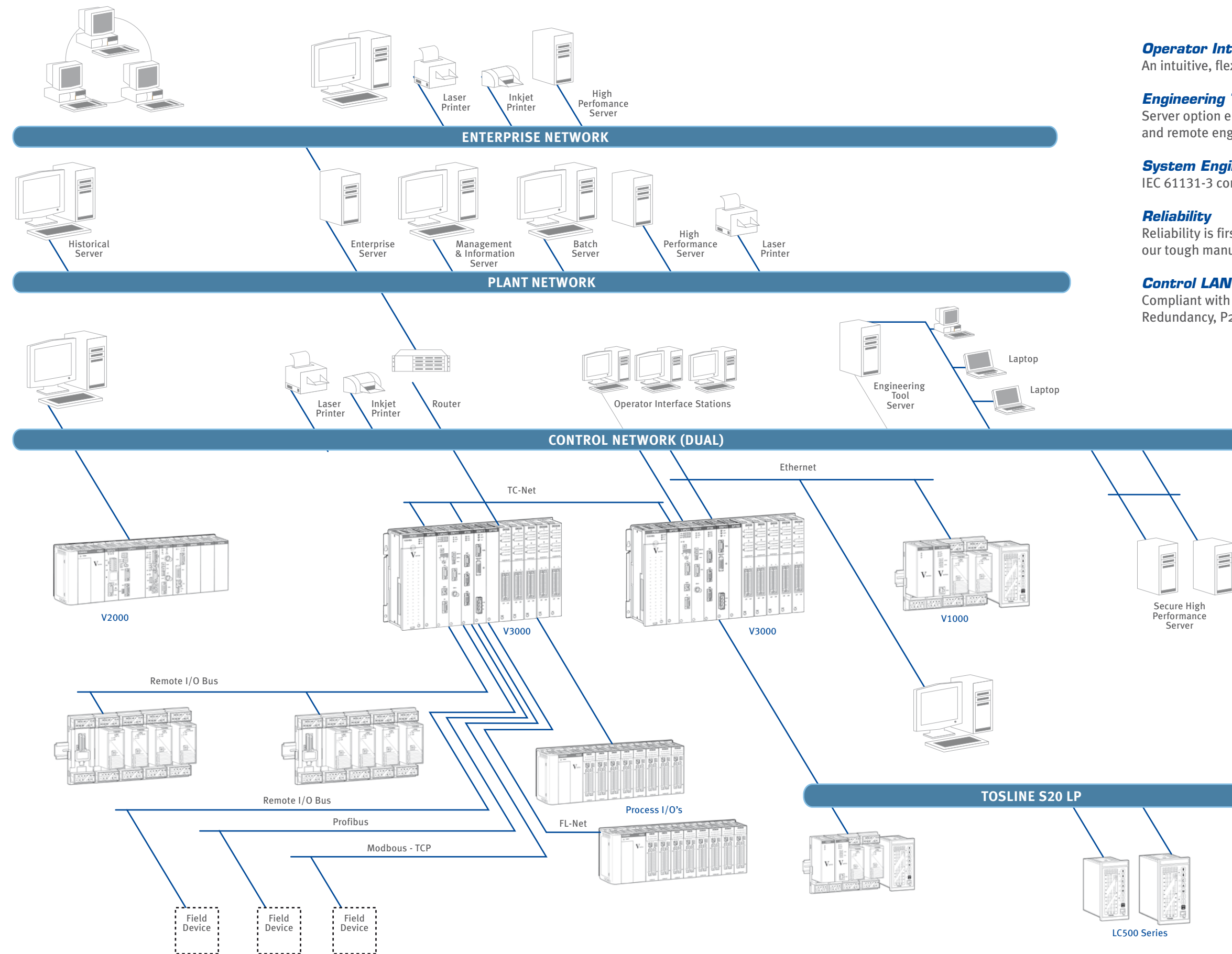
Operator Interface Station
An intuitive, flexible operation interface based on open independent software.

Engineering Tool Server
Server option enables team engineering, with an integrated database and remote engineering options.

System Engineering Tool (V Tool)
IEC 61131-3 compliant configuration/programming software.

Reliability
Reliability is first designed into the products and then maintained through our tough manufacturing and testing standards.

Control LAN
Compliant with the IEEE 802.3 Ethernet standard for maximum flexibility. Redundancy, P2P and multi-port functionality ensure speed and reliability.

V1000 Controller
Small, flexible, non-redundant tag based controller with common engineering and functionality.

Redundant Server
Scalable technology allows the systems architecture to grow as requirement/capacity increases. Reliable, redundant and open servers provide maximum flexibility.

TOSLINE - S20
A high speed processor-to-processor or processor-to-drive control LAN incorporating both - message transmission and scan transmission of data.

LC500 Series Controller
Panel mounted controller with integrated display. Eight (8) control loops and 256 I/O capacity.

DeviceNET
An open low-level network that provides connections between simple industrial devices (such as sensors and actuators)

Profibus
International fieldbus standard for factory automation and process automation

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Diagram labels:

Laser Printer · Inkjet Printer · High Perfomance Server

ENTERPRISE NETWORK

Historical Server · Enterprise Server · Management & Information Server · Batch Server · High Performance Server · Laser Printer

PLANT NETWORK

Laptop · Laptop · Laser Printer · Inkjet Printer · Router · Operator Interface Stations · Engineering Tool Server

CONTROL NETWORK (DUAL)

Ethernet · TC-Net

V2000 · V3000 · V3000 · V1000 · Secure High Performance Server

Remote I/O Bus · Remote I/O Bus · Profibus · Modbous - TCP · FL-Net · Process I/O's · TOSLINE S20 LP

Field Device · Field Device · Field Device · LC500 Series

TOSHIBA