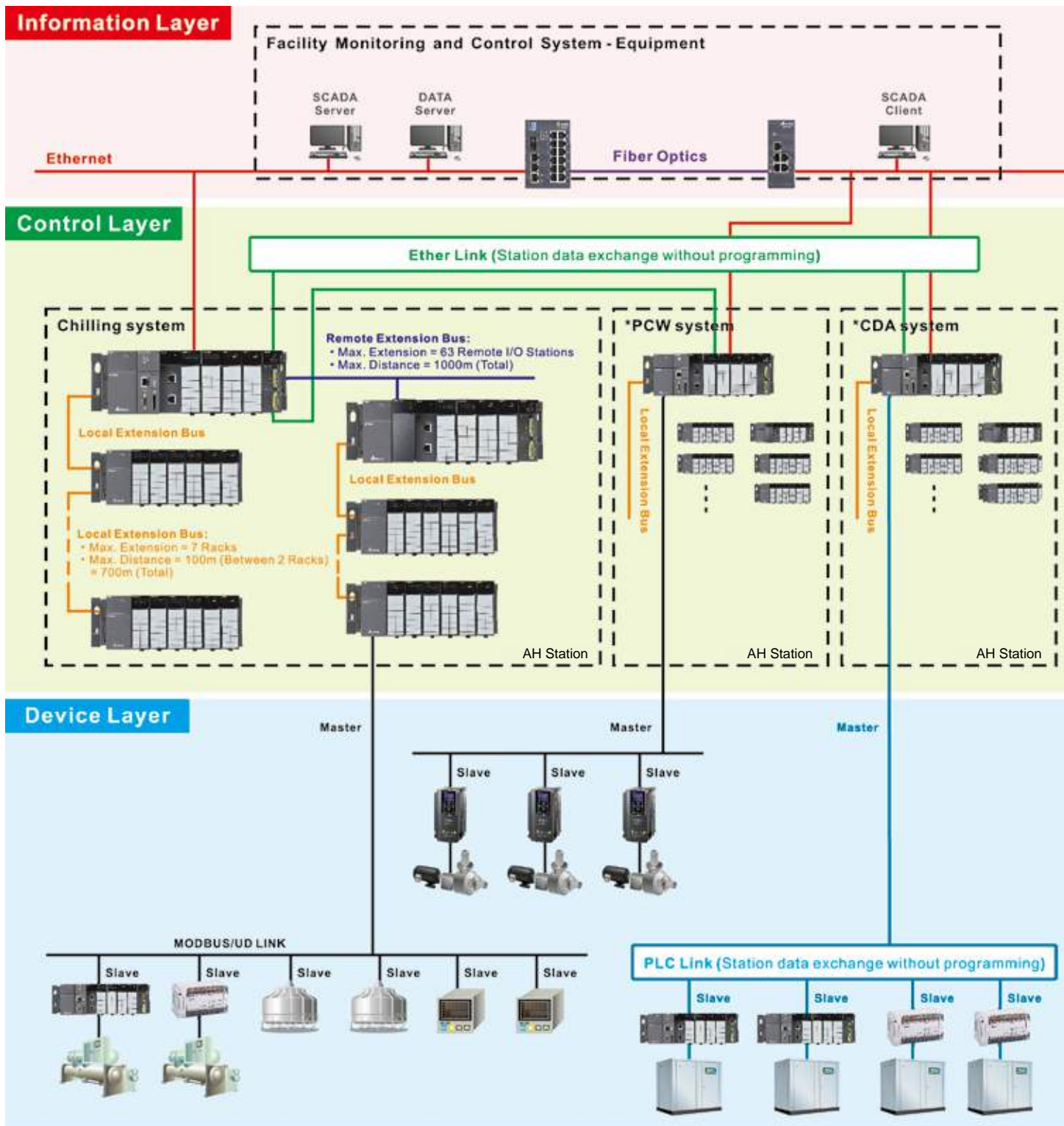# AH System Structure –
Facility Monitoring and Control System

The system configuration of the AH is well demonstrated by the Facility Monitoring and Control System (FMCS).
The AH in the control layer connects multiple facility systems and product processing systems and performs data exchange without programming through Delta's convenient PLC Link and Ether Link. PLC Link can be applied for data exchange between masters and slaves, and Ether Link can be applied for data exchange between AH master stations. The smart communication feature can save you time spent in programming.

Information Layer

Facility Monitoring and Control System - Equipment

SCADA Server

DATA Server

SCADA Client

Ethernet

Fiber Optics

Control Layer

Ether Link (Station data exchange without programming)

Chilling system

Remote Extension Bus:
- Max. Extension = 63 Remote I/O Stations
- Max. Distance = 1000m (Total)

*PCW system

*CDA system

Local Extension Bus

Local Extension Bus

Local Extension Bus

Local Extension Bus:
- Max. Extension = 7 Racks
- Max. Distance = 100m (Between 2 Racks) = 700m (Total)

AH Station

AH Station

AH Station

Device Layer

Master

Master

Master

Slave

Slave

Slave

MODBUS/UD LINK

Slave   Slave   Slave   Slave   Slave   Slave

PLC Link (Station data exchange without programming)

Slave   Slave   Slave   Slave

* 【Note】 PCW system: Process Cooling Water System ; CDA system: Clean Dry Air System

In addition to AH PLCs, Delta's industrial automation solution includes human machine interfaces (HMI),
DVS series industrial Ethernet switches, DVP series PLCs, AC motor drives, AC servo drives and temperature controllers.
You can find the best solution for your industry from our product lines across the device layer, control layer and information layer.
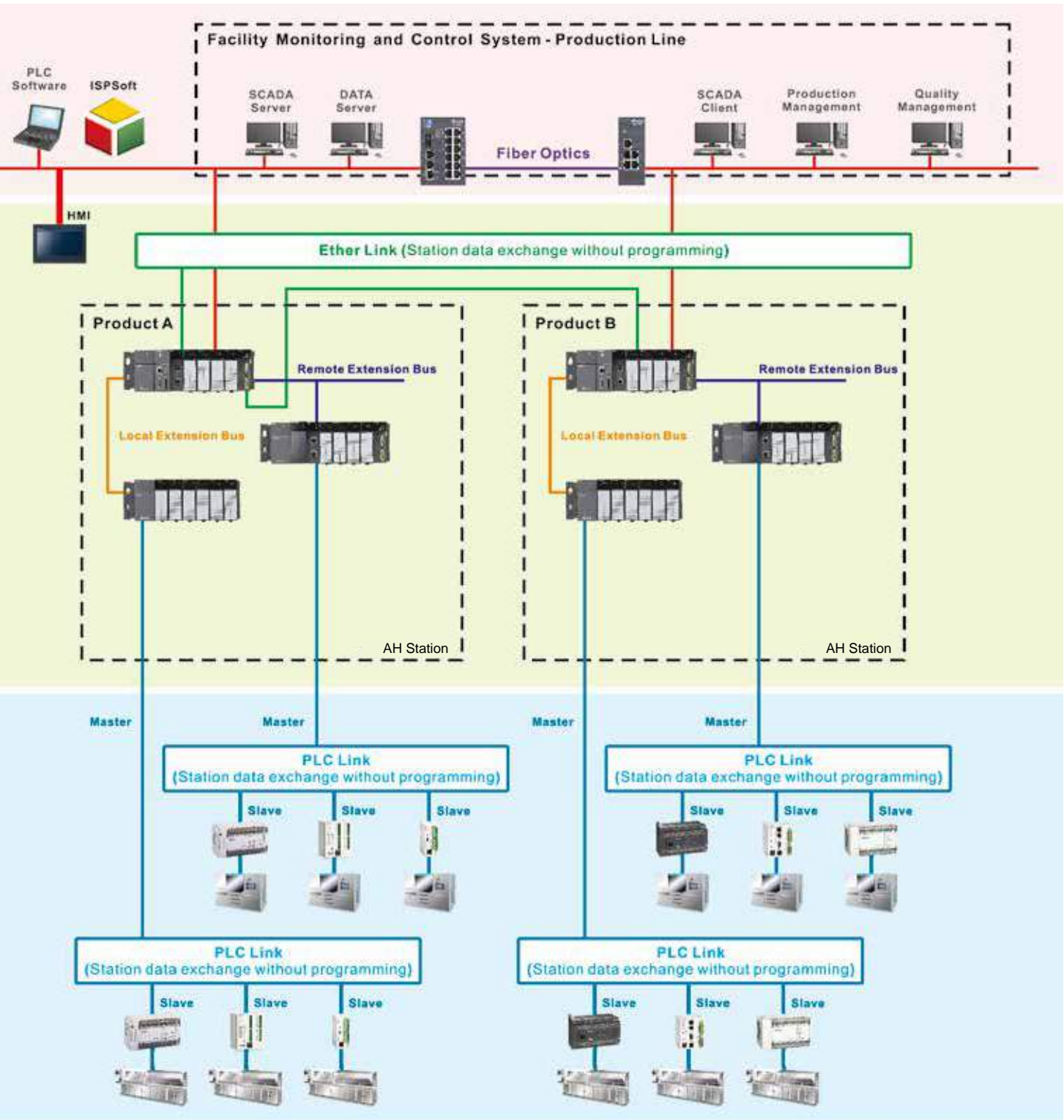
ISPSoft V3.0
# Highly Accessible Programming Software

Fully Integrated Interface

Advanced Programming Interface + Visualized Hardware Configuration + Simplified Network Configuration + Data Tracer & Logger + Motion programming

Communication Management

Simplified Network Configuration

Advanced Programming Interface

Visualized Hardware Configuration
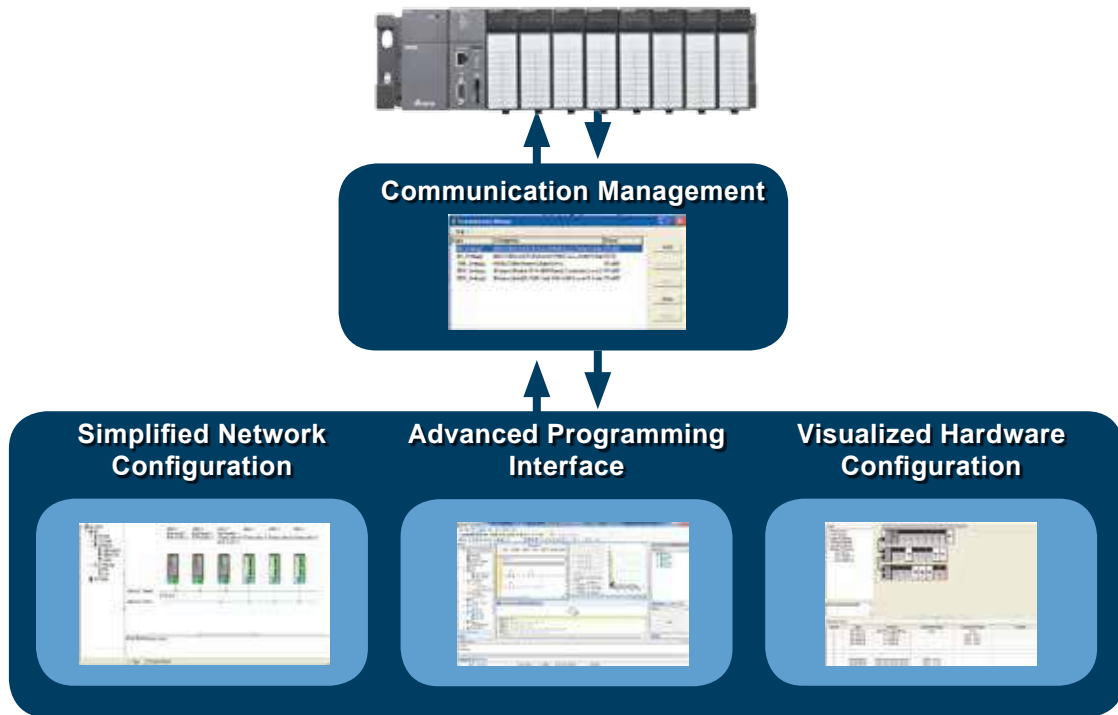
Advanced Programming Interface

Project Management Window

- **New Functions:** Network configuration, hardware configuration and PLC card.

- Supports 5 programming languages (LD / FBD / SFC / IL / ST)

- **Function Blocks:** Symbols can be introduced in call-by-value or call-by-reference types. Function blocks can be called in function block for up to 32 levels.

- **Monitor Table:** It can be stored and managed separately. Multiple monitor tables can be stored in a single project.

- **User Library:** Users can design frequently used instructions for specific applications in different industries.

- **Task:** Supports cyclic, I/O interrupt, timer interrupt, external interrupt, and more. Software will provide usable tasks for different CPUs.

Toolbar

Programming Area
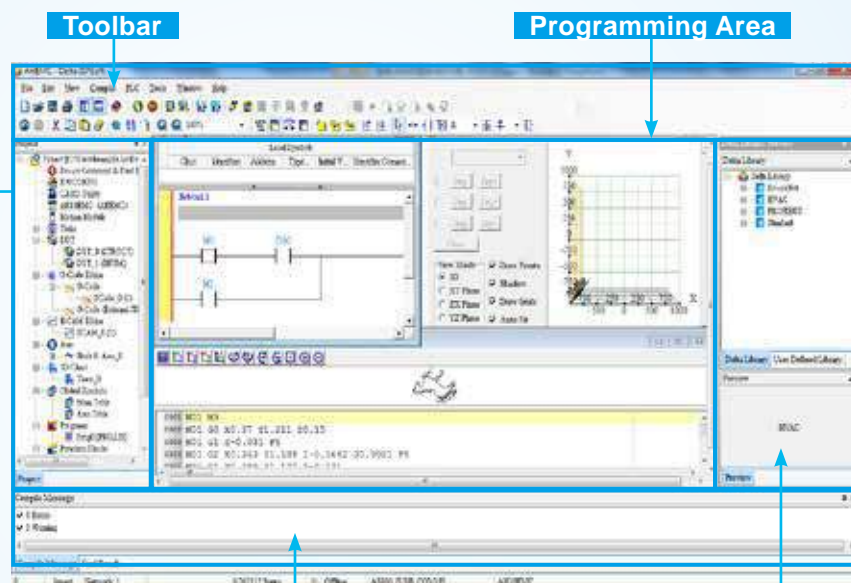
Message Window

Library Management

Visualized Hardware Configuration

Module Selection

Module Description

Toolbar
- System hardware configuration can be monitored in On-Line mode
- Hardware configuration can be displayed by Scan function

Hardware Configuration Area
- Operations of Cut / Copy / Paste / Delete are available for modules and racks
- Parameters of each module can be directly configured

Rack Information
- I/O device range can be specified by the user

Simplified Network Configuration

192.168.1.11
Station 11

192.168.1.12
Station 12

192.168.1.13
Station 13

FMCS

Ethernet

RS-485

Station 21   Station 22   Station 23

Network Device Selection

Ether Link

PLC Link

Toolbar

Network Configuration Area
- Master device settings
- Ether Link editing function
- PLC Link editing function

Network Information

14

Data Tracer & Logger

Data Tracer

Provides high speed data log ability and the interval could be 1 CPU scan. Users can easily analyze the program logic with this function.

Data Logger

Provides big data log ability and adjustable intervals. Users can log critical system data and then analyze the system operation status.

Tool Bar

Axis y: Value

Axis x: Samples No.

Trend Chart Area

Configuration Area
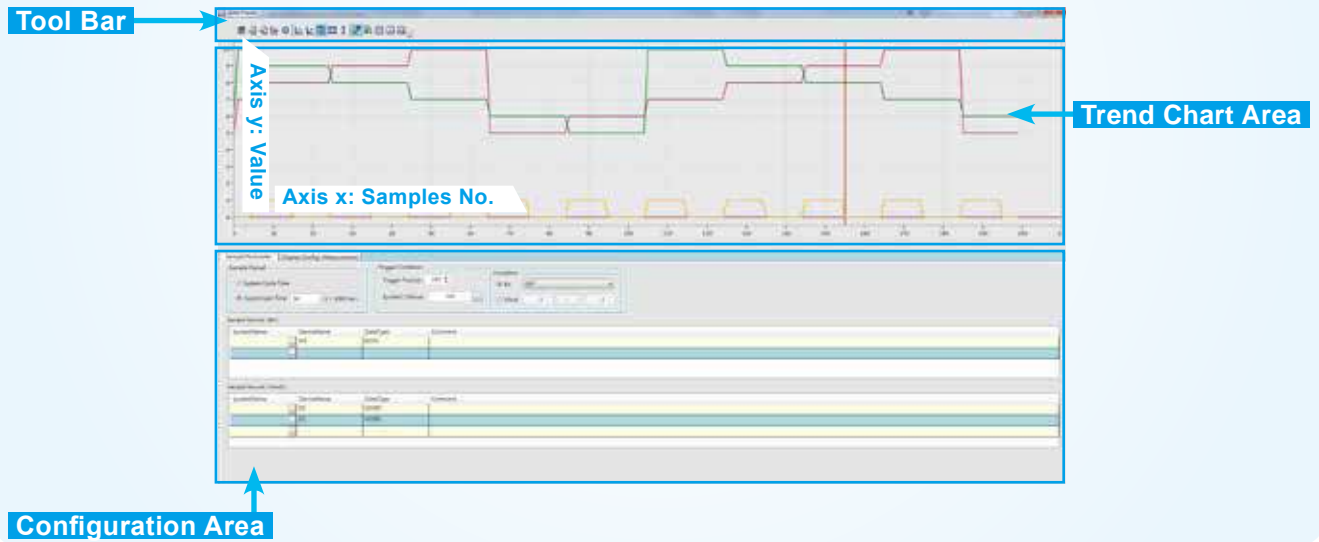
Integrated Motion Programming

ISPSoft V3 integrates the logic and motion program editors into one software

G-code Simulation

E-CAM Edit

Axis Property

PMSoft V2.0

This programming software is for G-code editing, motion trajectory simulation, positioning route instruction and electronic cam establishment.

Variable Declaration

Separate from the program.
The corresponding physical I/O point of the variable is defined only after the program is compiled. Users do not need to modify the program.

Function Block

A complicated project can be divided into many function blocks. A function block can be used repeatedly. The import/export function makes the programming more convenient.
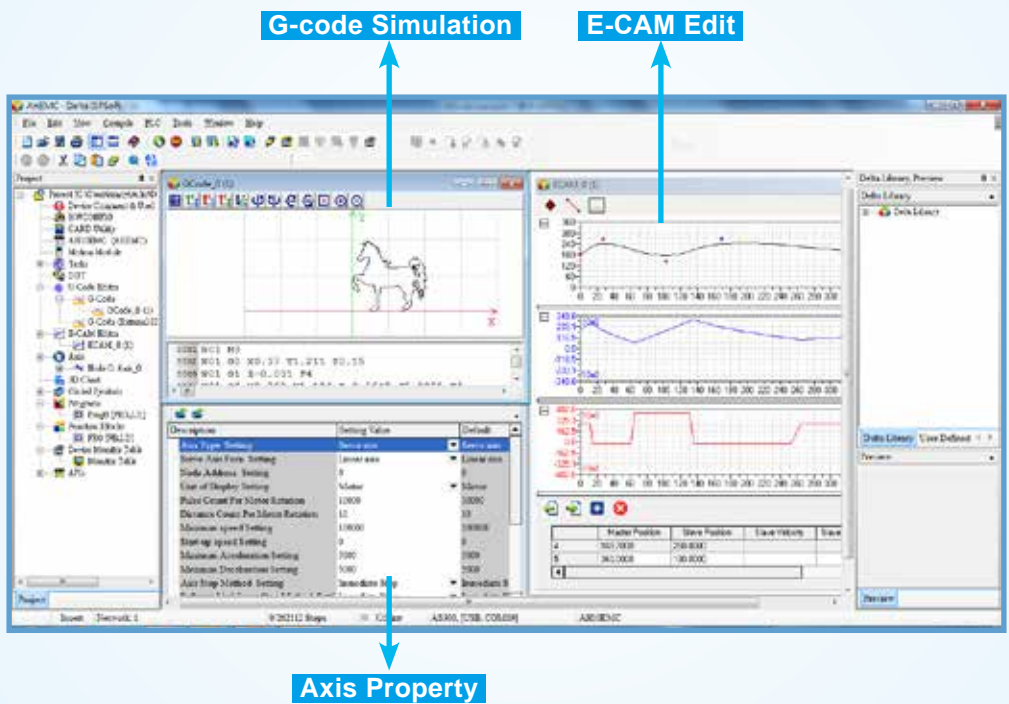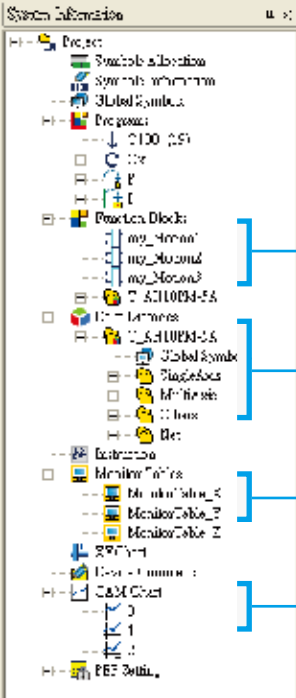
Function Block for Motion Control

Provides function block features specifically for motion control, making programming more convenient

Convenient Monitor Table Management

Users can save and manage monitor tables independently according to their needs.

Electronic Cam

Electronic cam editing
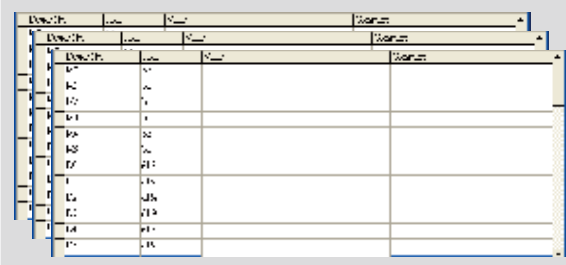
CFC Editor
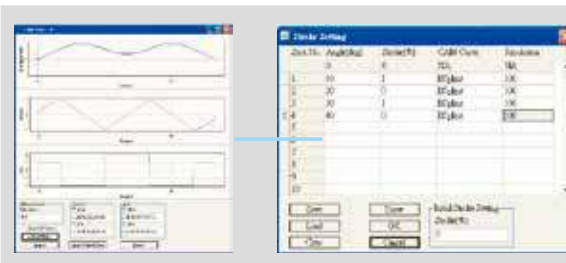
Supports CFC programming language

SCMSoft V1.0 Communication Editing Software

Provides SCM module with automatic data exchange setup function

Project Management Interface
- Supports user defined protocol (UD Link)
- Supports MODBUS protocol
- Supports data monitoring for communication ports
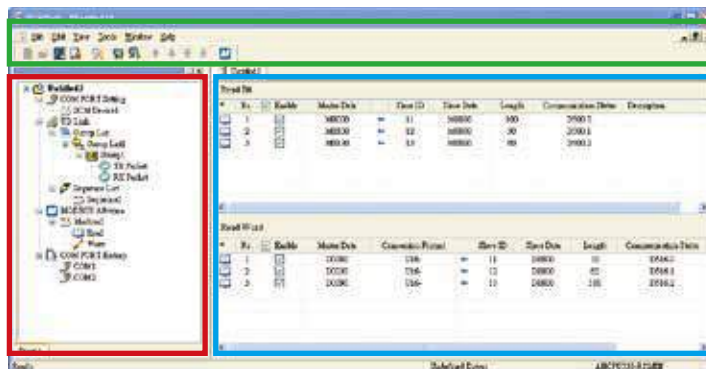
Toolbar
- Upload / Download setup files
- Supports wizards

Editing Area
- Data exchange setup
- Status display

Specification Tree

EN

RS232 (Excludes 560) — RS232 — RS422 — RS485 → COM1 / Ethernet → **Feature**

Model
- 500: IO-768/FB-128, P-32K/D-16K, No Extension Rack
- 510: IO-1280/FB-256, P-64K/D-32K, 1 Extension Rack
- 511: IO-1280/FB-1024, P-96K/D-48K, 1 Extension Rack
- 520: IO-2304/FB-512, P-128K/D-64K, 3 Extension Racks
- 521: IO-2304/FB-2048, P-192K/D-96K, 3 Extension Racks
- 530: IO-4352/FB-1024, P-256K/D-64K, 7 Extension Racks
- 531: IO-4352/FB-4096, P-384K/D-128K, 7 Extension Racks
- 560 (New): IO-4352/FB-4096, P-1M/D-256K, 7 Extension Racks, Supports redundancy

Trans. — COM / USB / Ethernet

SD — Backup/Restore / Error log/Recipt

RS2

Feature — COM1 → RS232 / RS422 / RS485, COM2

Model
- 500: IO-768/FB-128, P-32K/D-16K, No Extension Rack
- 510: IO-1280/FB-256, P-64K/D-32K, 1 Extension Rack
- 511: IO-1280/FB-1024, P-96K/D-48K, 1 Extension Rack
- 520: IO-2304/FB-512, P-128K/D-64K, 3 Extension Racks
- 530: IO-4352/FB-1024, P-256K/D-64K, 7 Extension Racks

Trans. — COM / USB

SD — Backup/Restore / Error log/Recipt

CPU Selection Table

| Item	Specifications	Check	AH500-RS2	AH510-RS2	AH520-RS2	AH530-RS2	AH500-EN	AH510-EN	AH520-EN	AH530-EN	AH511-RS2	AH511-EN	AH521-EN	AH531-EN	AH560-EN2 (New)
Local I/O points	< 768	☐	●				●								
	< 1280	☐		●				●			●	●			
	< 2304	☐			●				●				●		
	< 4352	☐				●				●				●	●
Program capacity	< 32 k steps	☐	●				●								
	< 64 k steps	☐		●				●							
	< 96 k steps	☐									●	●			
	< 128 k steps	☐			●				●						
	< 192 k steps	☐											●		
	< 256 k steps	☐				●				●					
	< 384 k steps	☐												●	
	< 1M steps	☐													●
Expansion capacity	None	☐	●				●								
	< 1 expansion rack	☐		●				●			●	●			
	< 3 expansion racks	☐			●				●				●		
	< 7 expansion racks	☐				●				●				●	●
Built-in communication	1 COM port	☐					●	●	●	●		●	●	●	●
	2 COM ports	☐	●	●	●	●					●				
	Ethernet	☐					●	●	●	●		●	●	●	●
	Mini-USB	☐	●	●	●	●	●	●	●	●	●	●	●	●	●
Protocol supported	MODBUS	☐	●	●	●	●	●	●	●	●	●	●	●	●	●
	MODBUS TCP	☐					●	●	●	●		●	●	●	●
	EtherNet/IP	☐											●	●	●
SD card	V 1.0	☐	●	●	●	●	●	●	●	●					
	V 2.0 (SDHC)	☐									●	●	●	●	●
Redundancy	CPU	☐													●