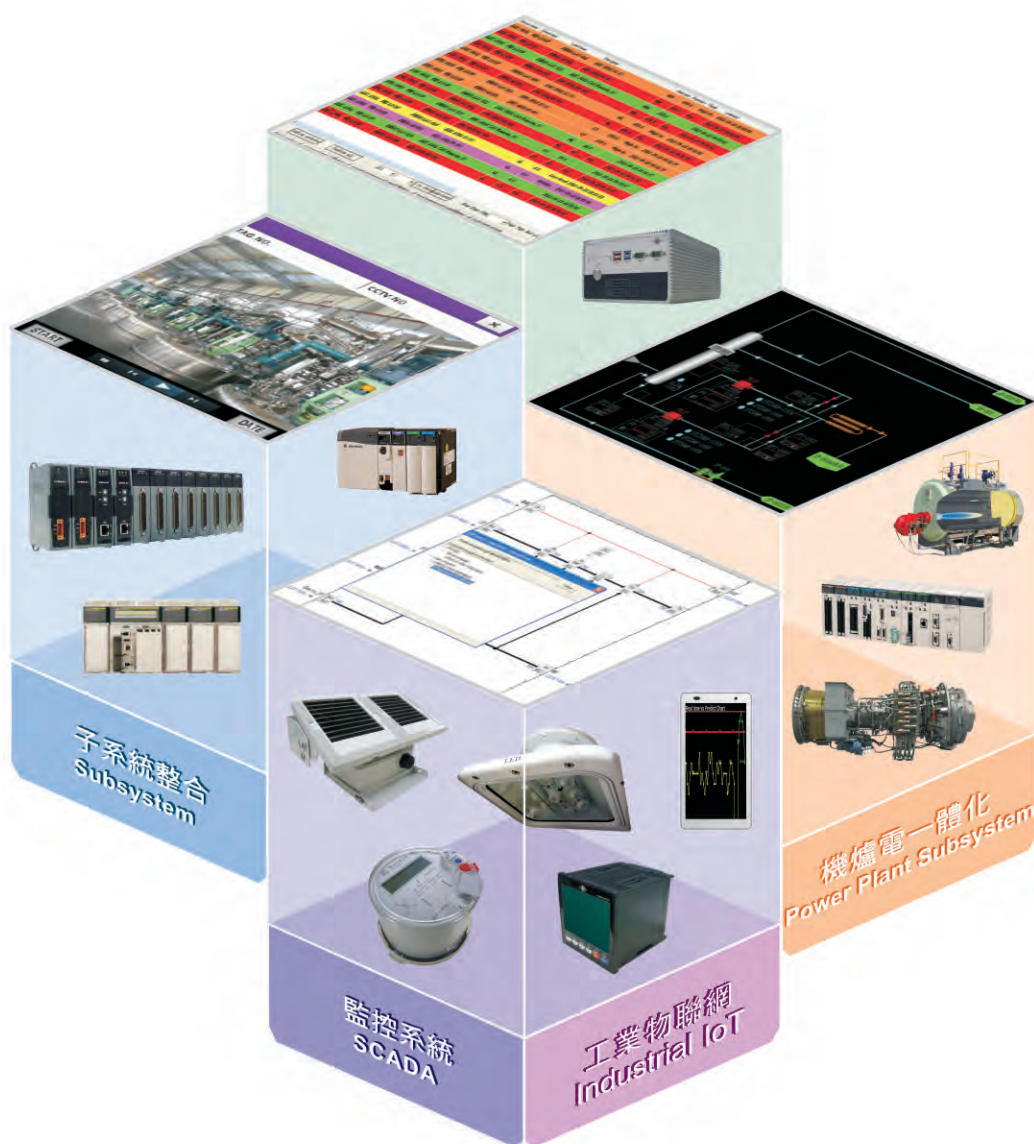




廣域智慧控制系統 Wide Area Intelligent Control System

FORMOSA-FX



台灣塑膠工業股份有限公司
FORMOSA PLASTICS CORPORATION

電子專案組
ELECTRONICS GROUP

控制系統架構圖

Control System Configuration

Flexible

跨平台、跨控制器的廣域控制系統，一體化設計與操作介面整合DCS、PLC、SCADA、IED、AMI、CCTV、LED工業照明及智慧系統等。

Wide area control system crossovers platform and controller with unified engineering and human interface to integrate DCS, PLC, SCADA, IED, AMI, CCTV, LED industrial lighting and intelligent system etc.

Freedom

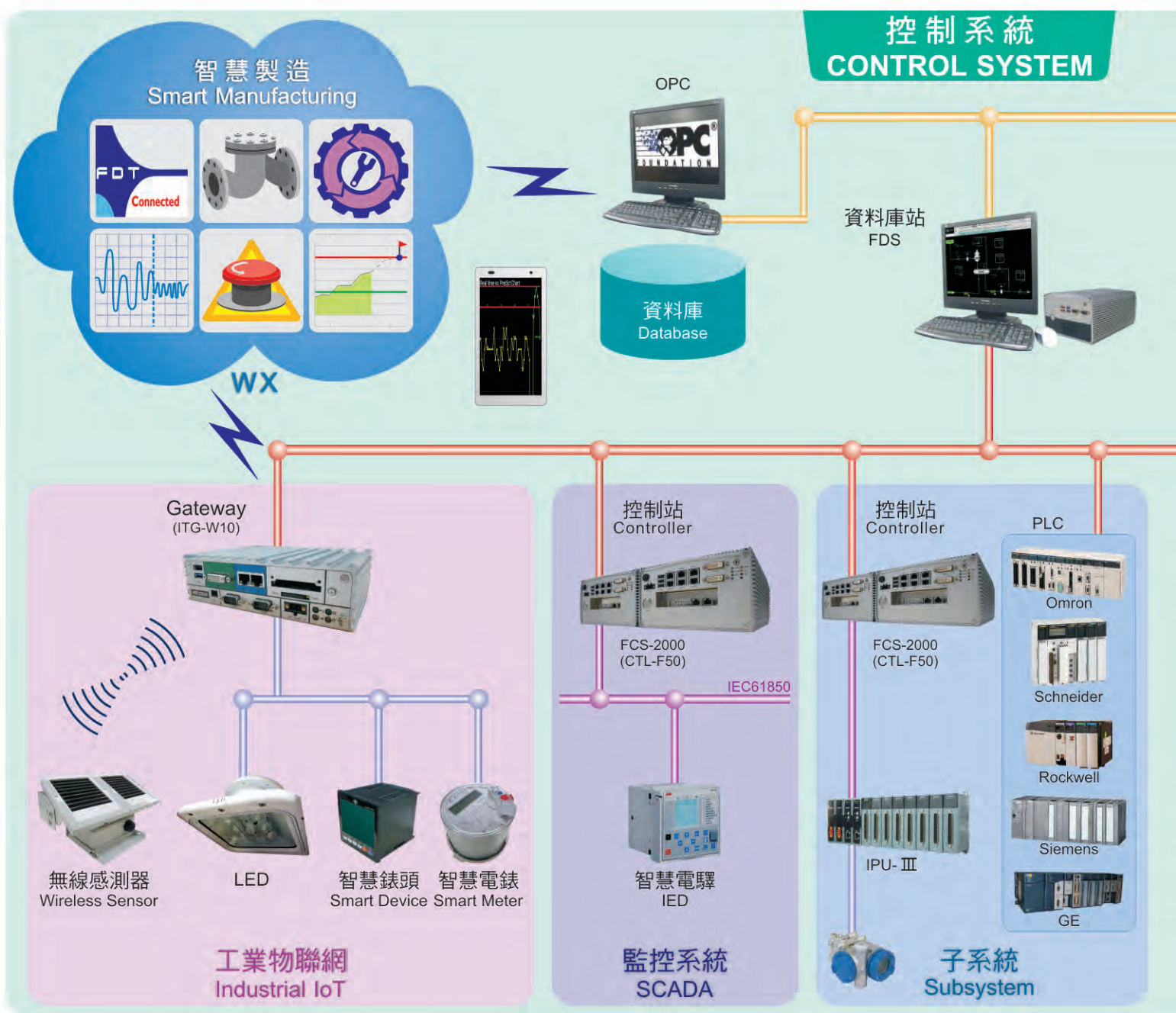
製程控制與子系統無縫整合，電廠實現機電爐一體化，減少備品。

Seamless integrating process control and subsystem (e.g. boiler, turbine, generator and auxiliary) for power plant to reduce spare parts.

Friendly

智慧型導航、強制操作、警報管理之人機介面。

Intelligent MMI with navigation, force on/off and alarm management.



FCS: FORMOSA Control Station
 FOS: FX Operator Station
 FDS: FX Database Station
 FES: FX Engineering Station
 GCS: Generic Communication Station
 OPC: OLE for Process Control
 EAM: Enterprise Asset Management
 APC: Advanced Process Control

PAM: Plant Asset Management
 TMR: Triple Module Redundancy
 EWS: Engineering Workstation

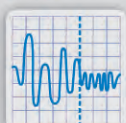
AMI: Advanced Metering Infrastructure
 IED: Intelligent Electronic Device
 IMC: Inter-Module Connector

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節能 Energy Saving



儀錶管理
Plant
Asset
Management



製程最佳化
Advanced
Process
Control

環保 Eco-friendly



管線洩漏偵測
Pipeline
Leakage
Detection



設備安全
Safety

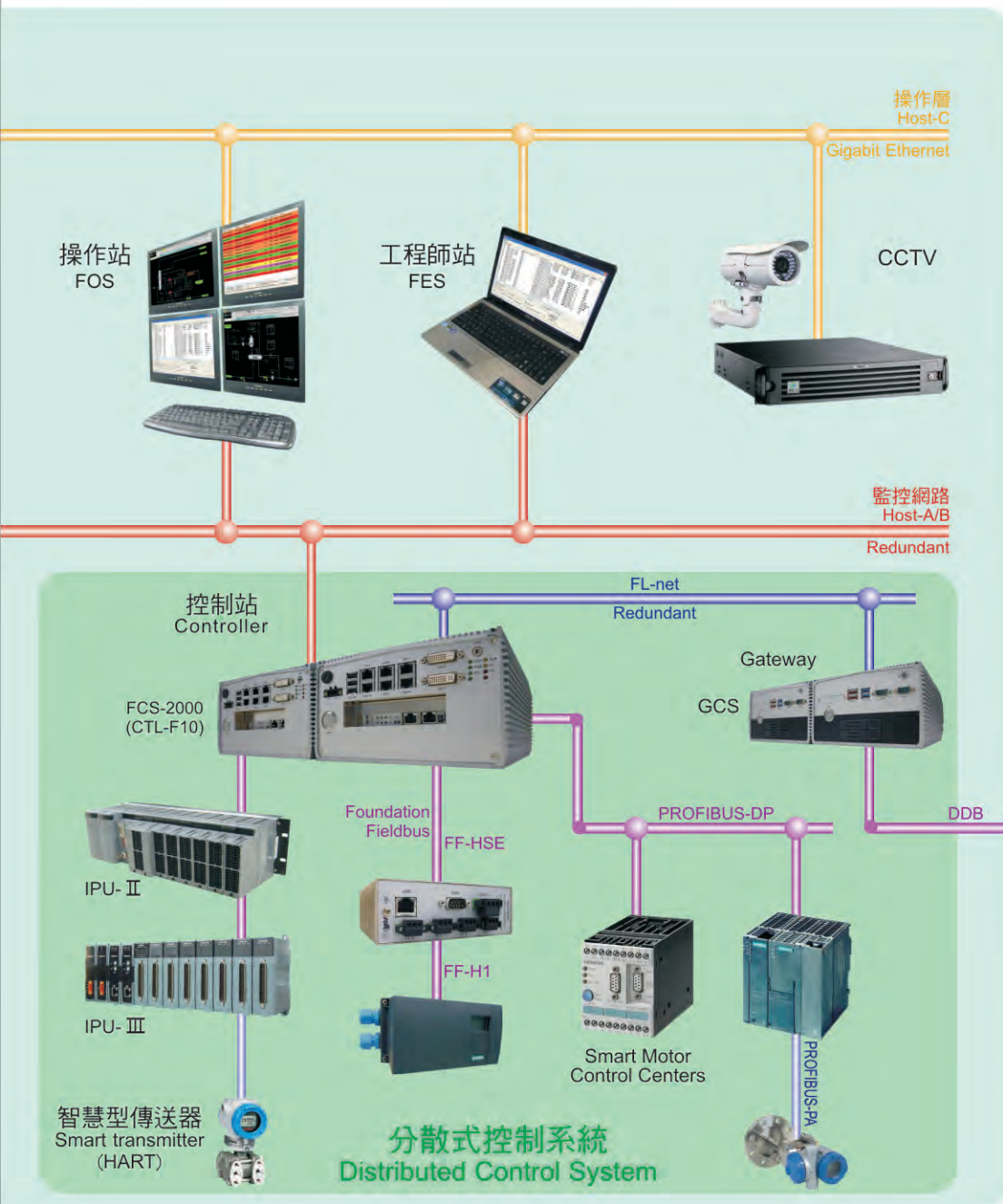
設備可靠 Equipment Reliability



老化監視
Breakdown
Prediction



故障抑止
Failure
Prevention



安全系統 SAFETY SYSTEM

操作與工程師站
EWS



C-Link
Redundant

安全控制站
Safety Controller
SCS-2000



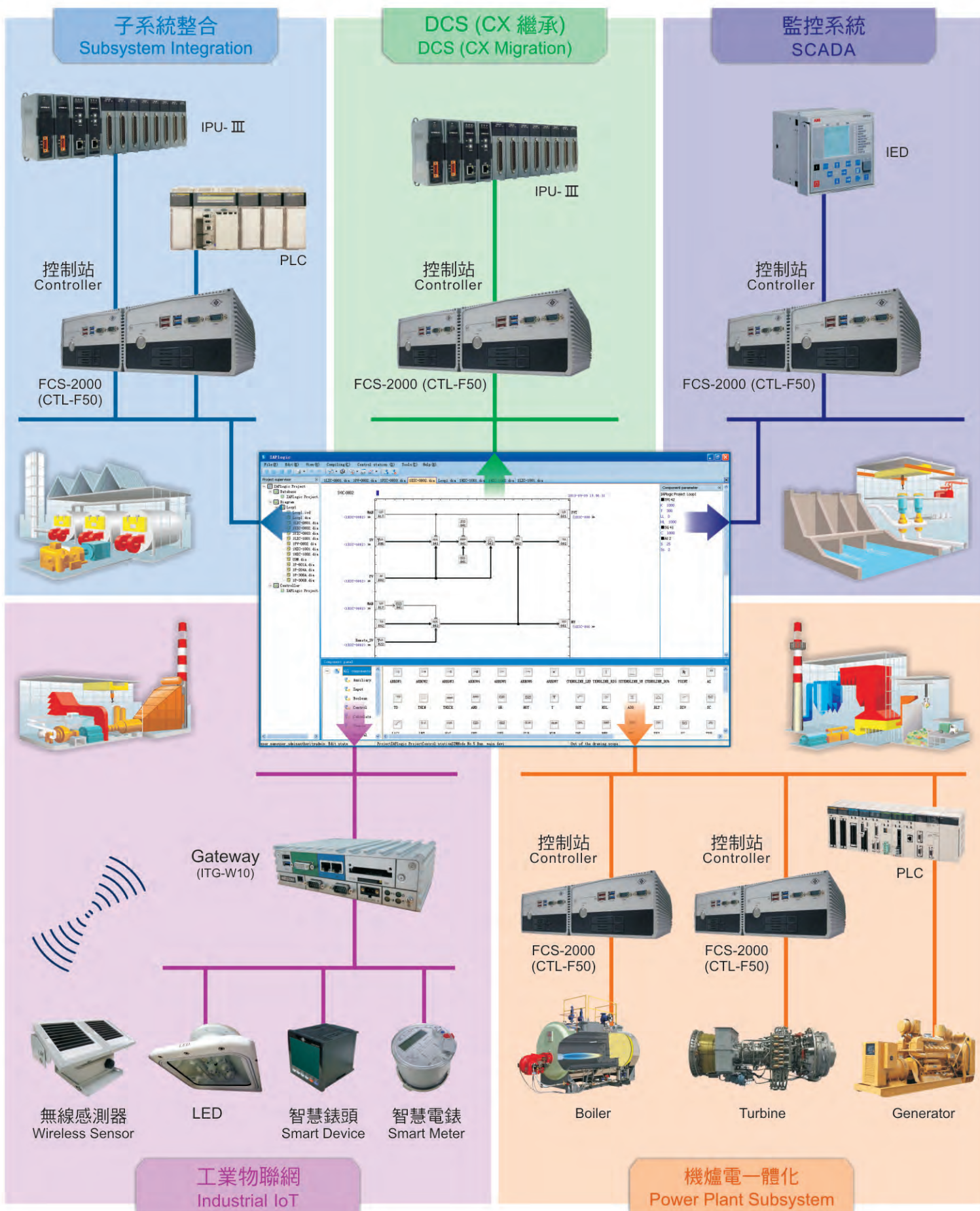
三重化 TMR



安全儀錶
Safety Device

跨平台、跨控制器 Crossover Platform and Controller

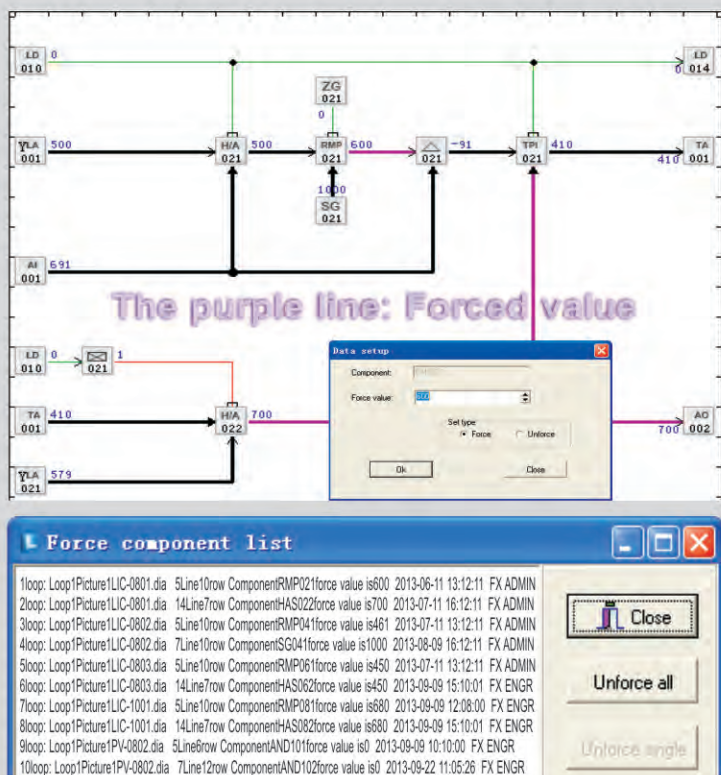
採用IEC61131，一體化控制語言，首次實現控制邏輯的跨平臺應用，可跨不同DCS/PLC品牌運行
Integrated control language of IEC61131 crossovers platform and controller of different DCS/PLC manufacturer



智慧型操作 Intelligent Operation

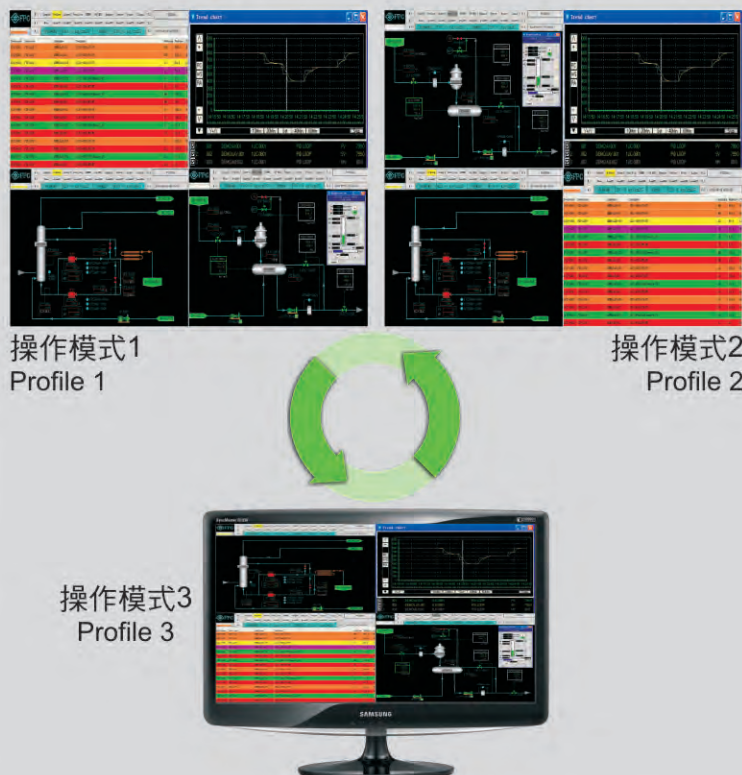
邏輯強制操作 Force on/off

可強制 AI 與 DI 操作
AI or DI can be forced on/off



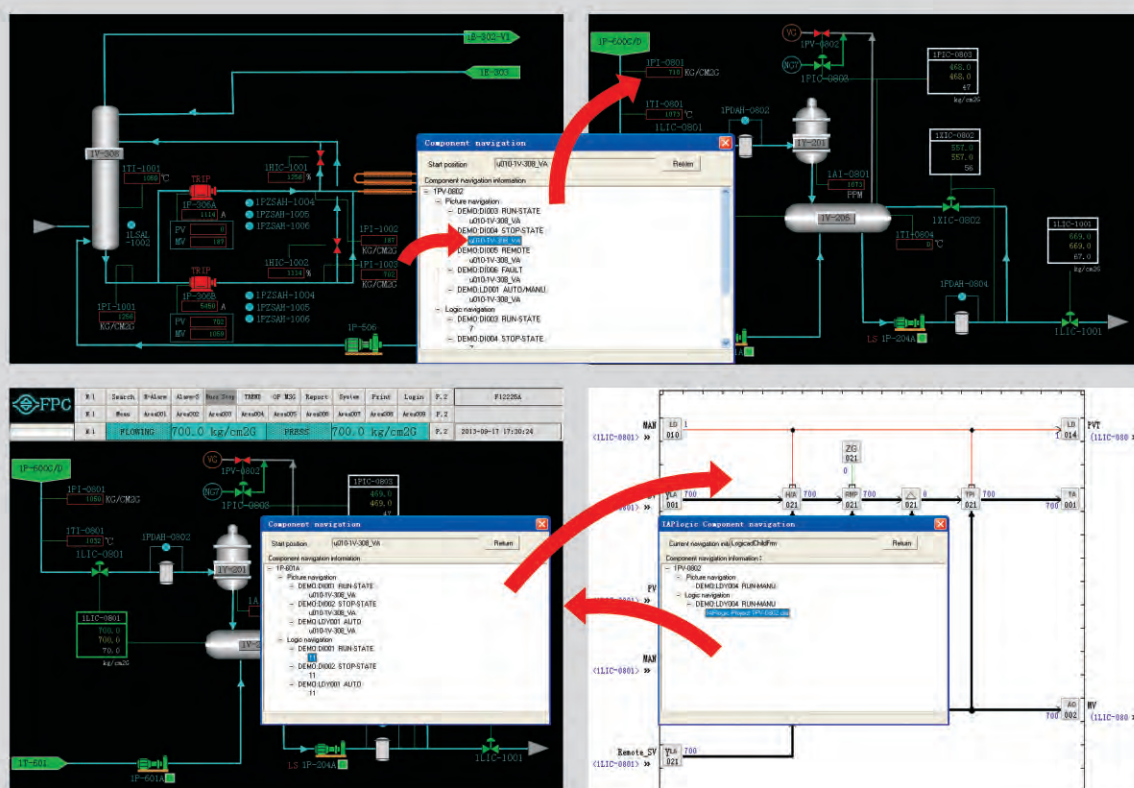
智慧操作記憶 Operation by profile

操作者可儲存個別或多螢幕畫面為設定檔，並快速回復調用
Operator can save single or multi screens as profile and restore quickly.



導航 Navigation

智慧型人機畫面與控制邏輯雙向導航
Intelligent navigation between graphic and logic diagram



快速導航
Quick navigation

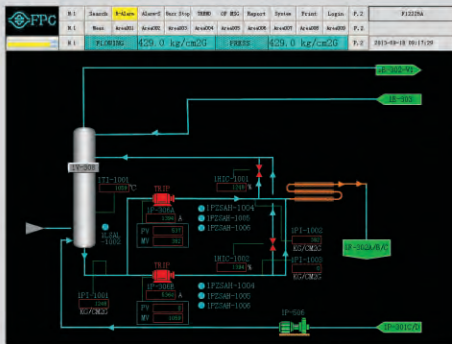
快速定位
Quick positioning

方便確認
Convenient check

有效檢索
Efficient retrieval

智慧安全節能 Intelligent energy saving

經由製程圖及CCTV畫面，透過UPS電源管理，可遠端遙控工廠現場照明狀態(開/關)，達到節能效果
Manage lighting remotely via UPS power, intelligent CCTV and process diagram to save energy



製程圖操作 Process Diagram



CCTV



電源管理
Power Management

鋰電池
UPS
Lithium
Battery

現場照明控制
Lighting Management

Lighting Management



事件驅動式CCTV與報警管理 Intelligent event-driven CCTV and alarm management

當警報發生時，手動或自動連結該設備相關畫面(警報、製程圖、CCTV、趨勢圖)

If alarm occurs, automatically or manually show device related operation screens (alarm, process diagram, CCTV and trend)

Alarm name	Device name	Label name	Description	Alarm type	Deal time	Pr
IPSC-0801	PID LOOP	DEMOLAY011	IPSC-0801(PV)SV	HI	885.0	H
IPSC-0802	PID LOOP	DEMOLAY012	IPSC-0802(PV)SV	HI	885.0	H
ELSC-1001	PID LOOP	DEMOLAY016	ELSC-1001(PV)SV	LO	64.0	L
ELSC-1002	PID LOOP	DEMOLAY016	ELSC-1002(PV)SV	LO	64.0	L
ELSC-1003	PID LOOP	DEMOLAY016	ELSC-1003(PV)SV	LO	64.0	L
ELSC-1004	PID LOOP	DEMOLAY016	ELSC-1004(PV)SV	LO	64.0	L
ELSC-1005	PID LOOP	DEMOLAY016	ELSC-1005(PV)SV	LO	64.0	L
ELSC-1006	PID LOOP	DEMOLAY016	ELSC-1006(PV)SV	LO	64.0	L
ELSC-1007	PID LOOP	DEMOLAY016	ELSC-1007(PV)SV	LO	64.0	L
ELSC-1008	PID LOOP	DEMOLAY016	ELSC-1008(PV)SV	LO	64.0	L
ELSC-1009	PID LOOP	DEMOLAY016	ELSC-1009(PV)SV	LO	64.0	L
ELSC-1010	PID LOOP	DEMOLAY016	ELSC-1010(PV)SV	LO	64.0	L
ELSC-1011	PID LOOP	DEMOLAY016	ELSC-1011(PV)SV	LO	64.0	L
ELSC-1012	PID LOOP	DEMOLAY016	ELSC-1012(PV)SV	LO	64.0	L
ELSC-1013	PID LOOP	DEMOLAY016	ELSC-1013(PV)SV	LO	64.0	L
ELSC-1014	PID LOOP	DEMOLAY016	ELSC-1014(PV)SV	LO	64.0	L
ELSC-1015	PID LOOP	DEMOLAY016	ELSC-1015(PV)SV	LO	64.0	L
ELSC-1016	PID LOOP	DEMOLAY016	ELSC-1016(PV)SV	LO	64.0	L
ELSC-1017	PID LOOP	DEMOLAY016	ELSC-1017(PV)SV	LO	64.0	L
ELSC-1018	PID LOOP	DEMOLAY016	ELSC-1018(PV)SV	LO	64.0	L
ELSC-1019	PID LOOP	DEMOLAY016	ELSC-1019(PV)SV	LO	64.0	L
ELSC-1020	PID LOOP	DEMOLAY016	ELSC-1020(PV)SV	LO	64.0	L

Linkage picture
Linkage navigation
property
Linkage operator
Linkage CCTV

The interface displays a complex process diagram with various tanks, pipes, and control valves. A trend chart is visible on the right side, showing data over time. A list of alarms is shown at the bottom, including details like alarm name, device name, label name, description, alarm type, and deal time.

相容既有機種 Migration

相容既有之控制語言、降低系統轉換之工程費用
Control language is compatible. Reduce the engineering cost of system migration

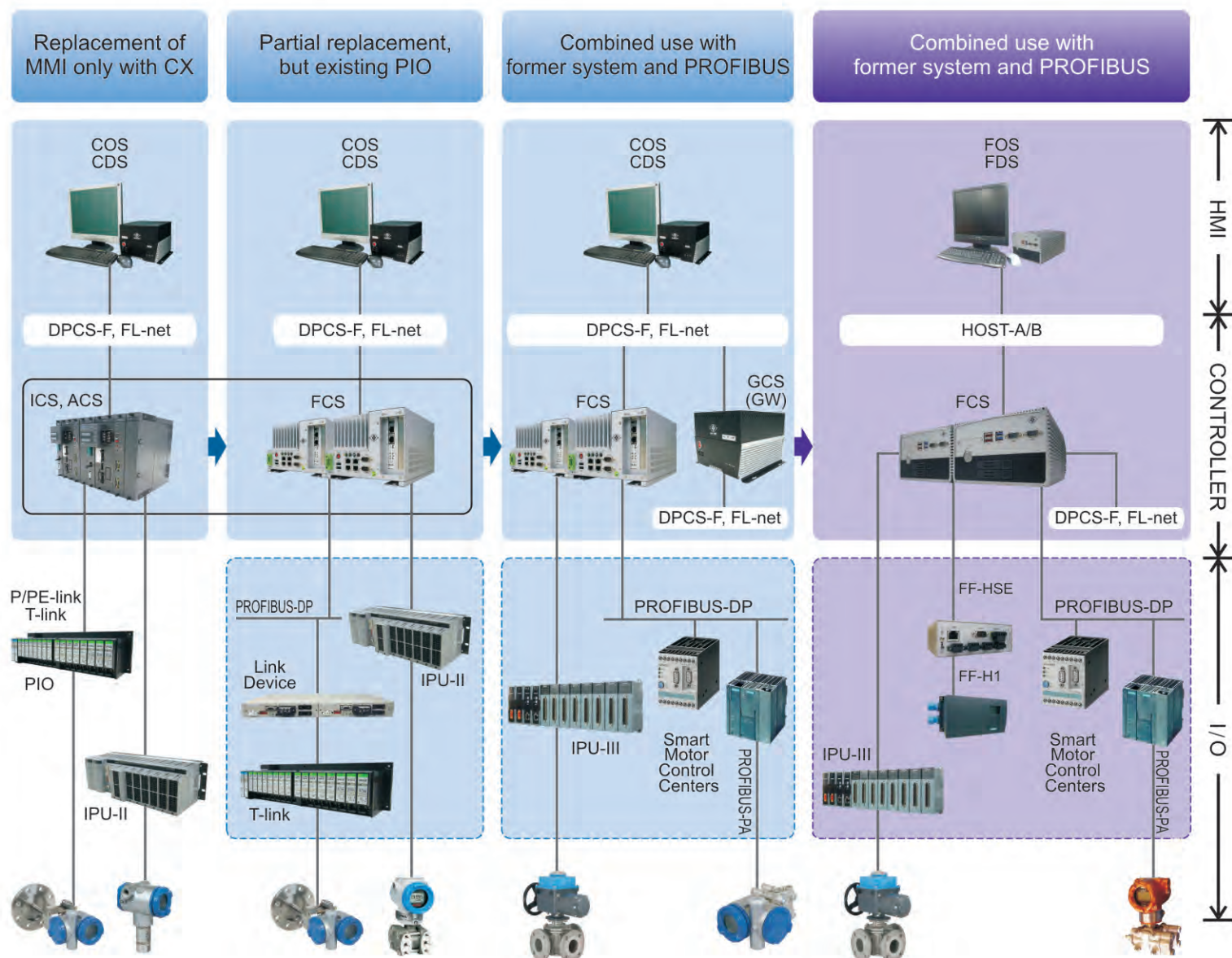
Years	1985	1990	1995	2000	2005	2010	2013
Generation	3rd		4th	5th		6th	7th
Series name	MICREX-PIII		MICREX-IX	MICREX-AX		FORMOSA-CX	FORMOSA-FX

既設MICREX-AX / FORMOSA-CX系統可以分二階段進行更換至FORMOSA-FX。

Two phases to migrate from the MICREX-AX / FORMOSA CX system

(1) 更換人機或控制器：在不換I / O與控制邏輯情形下，更換人機與控制器以解決AX/CX備品取得之問題。
HMI and Controller : Inherit original I/O, control logic, migrate the HMI stations and controller to alleviate obsolescence issues.

(2) 更換I / O：FX控制器可支援IPU-II/III、PROFIBUS現場總線。
I/O: Combine legacy I/O with the next generation IPU-II/III and the fieldbus such as PROFIBUS.





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