ICP DAS DCS I/O Solution

iDCS-8000

Outline

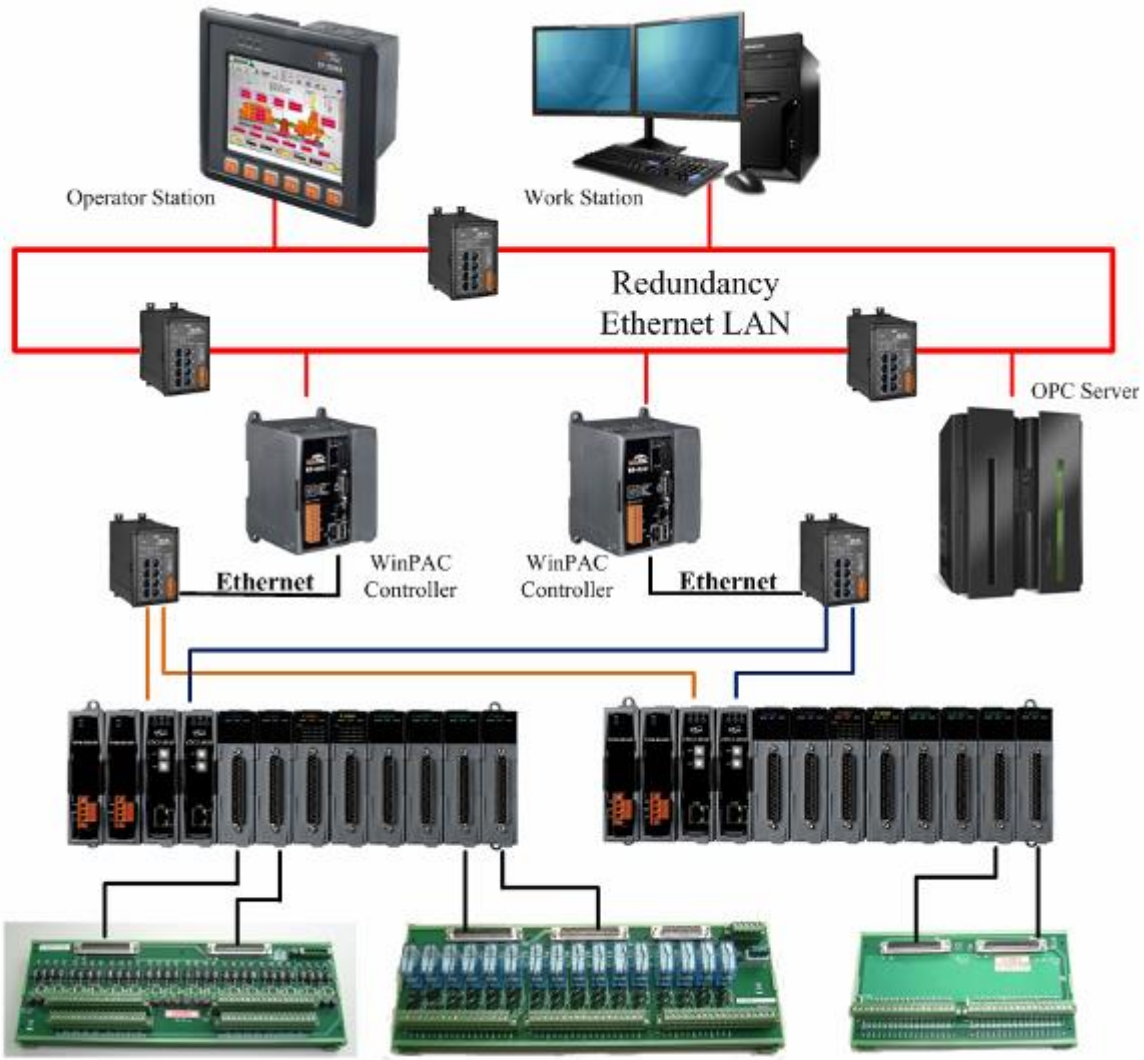
- Distributed Redundant System
- ICP DAS DCS Solution
- iDCS-8000 Introduction
- iDCS-8000 Application Structure
- The Plan of DCS Product

Distributed Redundant System (1/3)

Communication Redundancy

Controller Redundancy

iDCS-8830 Remote Redundancy I/O System



Distributed Redundant System (2/3)

- Widely applied in petrochemical industry
- Integrated many technique in computing, communication, control, monitor, etc.
- Reducing the risk of automation and improving equipment reliability
- Various signal, Digital, Analog, HART, Pulse, Temperature, etc., in fields
- Fast switching time of redundant
- Fast I/O data updating
- Self-Diagnostic
- Suitable for Harsh Environments

Distributed Redundant System (3/3)

ICP DAS DCS Solution (1/2)

- **Host Software :**

  Smart / EZ Data Logger, eLogger / InduSoft, NAPOPC Server …

- **DCS Controller :**

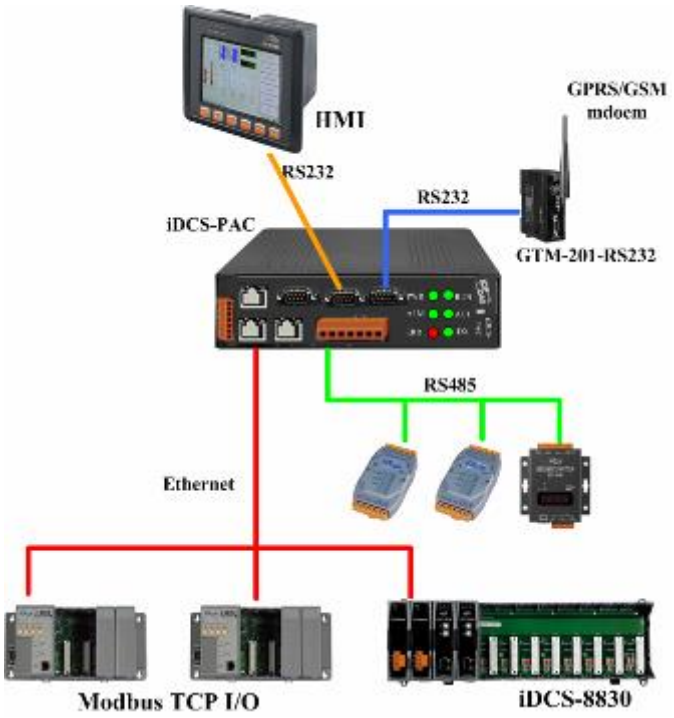
  WinPAC / ViewPAC / XPAC / LinPAC / iDCS-PAC / iPAC …

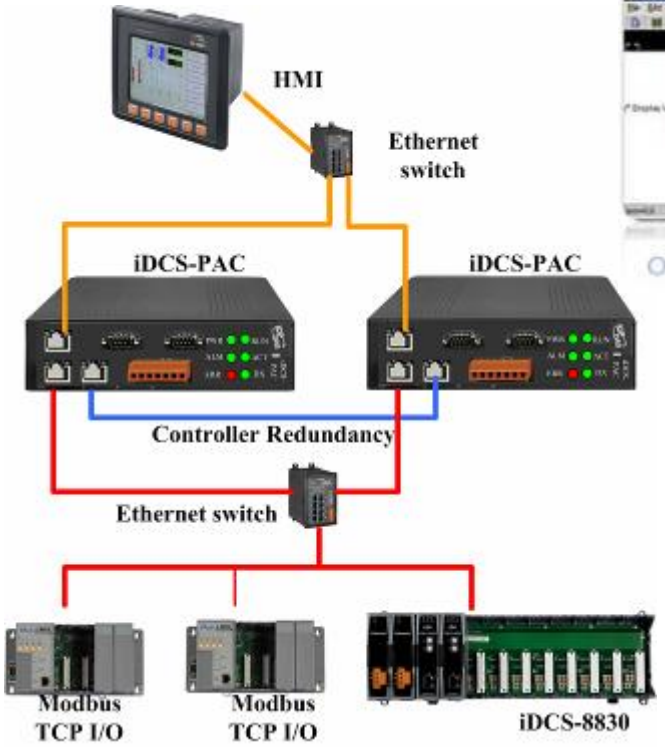
- **I/O Module :**

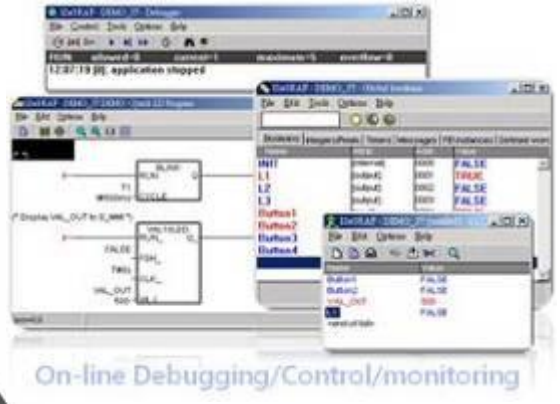
  I-7K / I-8K / I-87K / ET-7K / USB-87K / PROFI-8K / CAN-2K / iDCS-8000 …

ICP DAS DCS Solution (2/2)

- Single / Redundant controller
- Development Tools – SoftPLC, C language, etc.



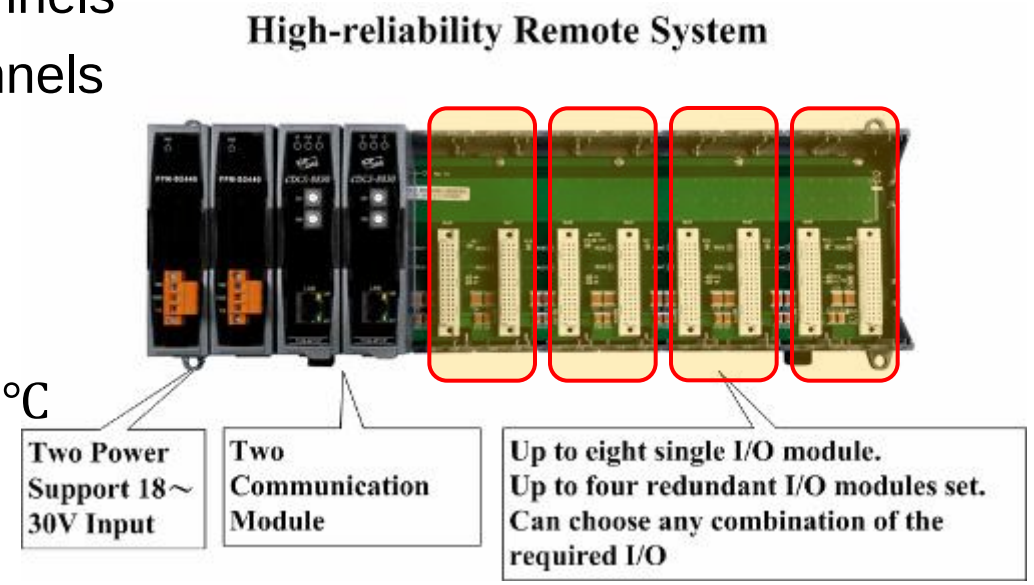




- Windows CE
- MiniOS 7 (DOS)
- Embedded Linux
- Android 、BSD etc..

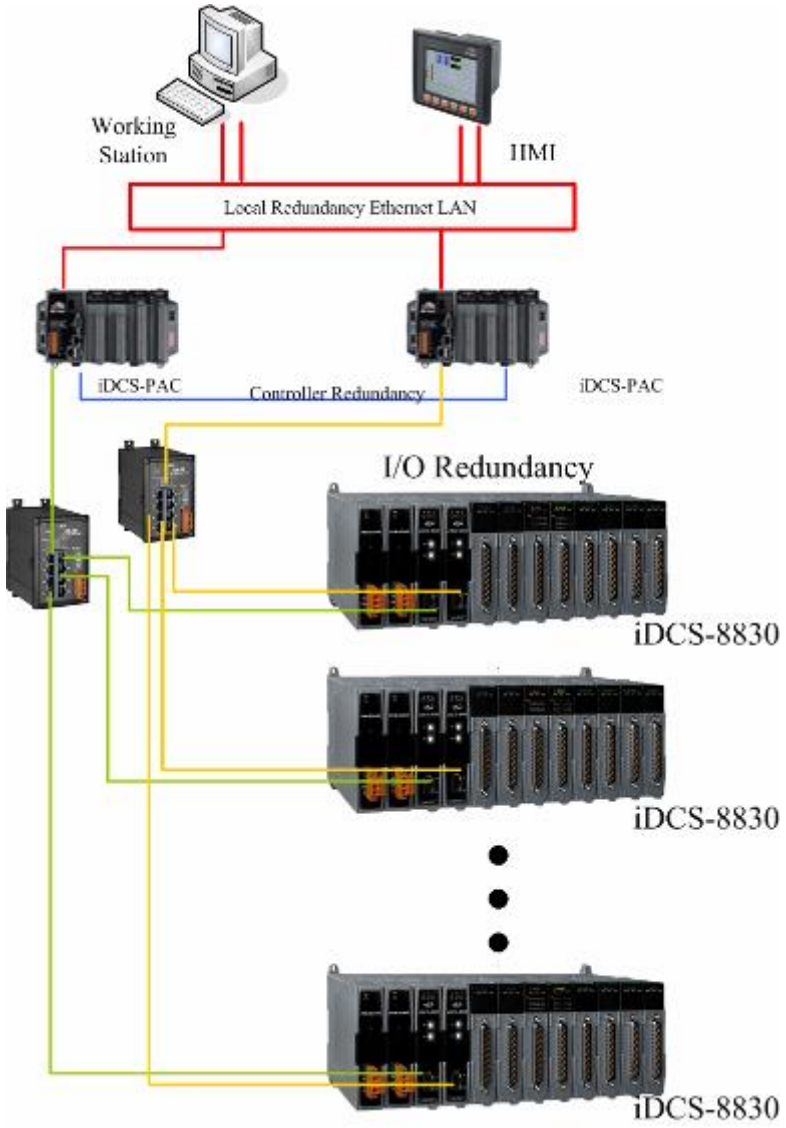
iDCS-8000 Introduction

- Remote I/O Redundant System
- Support Modbus TCP protocol
- Equip Redundant Power Modules
- Equip Redundant Communication Modules
- Equip 8 I/O module slots
  - Max. 256 Digital I/O Channels
  - Max. 64 Analog Output Channels
  - Max. 128 Analog Input Channels
  - Max. 64 Pulse I/O Channels
- Four sets of I/O Redundant
- Hardware Features :
  - Operating Temp. : -25 ~ +75 ℃
  - ESD : 8KV
  - G3 Standard (ISA S71.04)



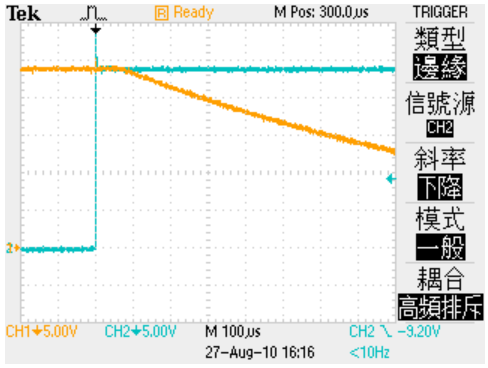
iDCS-8000 Feature (System)

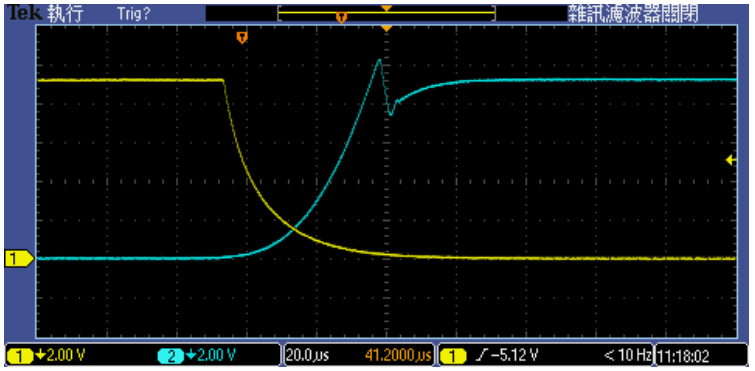
- An Ethernet Remote I/O Unit
- Two redundant power and communication modules to ensure system reliability
- I/O modules update data actively to communication modules to reduce process time
  - ✓ 256 DI – 3ms
  - ✓ 128 AI – 20ms
  - ✓ 64 PI – 10ms



iDCS-8000 Feature (I/O)

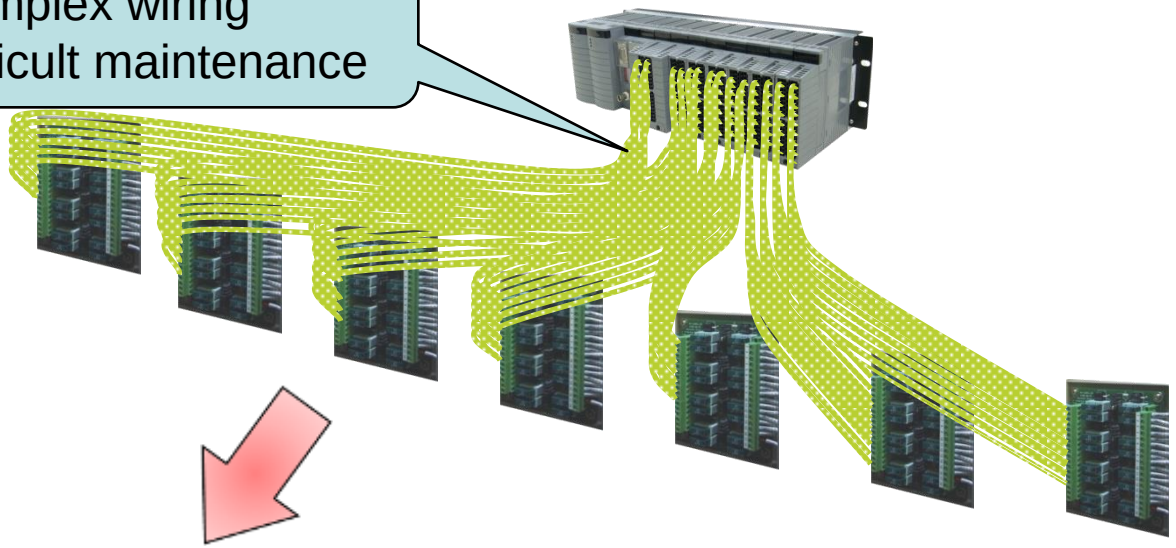
- **Tiny redundant switching time**
  - DO module < 50us
  - AO module < 1ms
  - PI module－Maximum error less than 1 pulse under 10KHz
- **High Accuracy**
  - Maximum error less than +/- 0.05% FSR for analog I/O modules
- **Self-Diagnostic**
  - Termination board break up detection
  - I/O wire broken
  - …

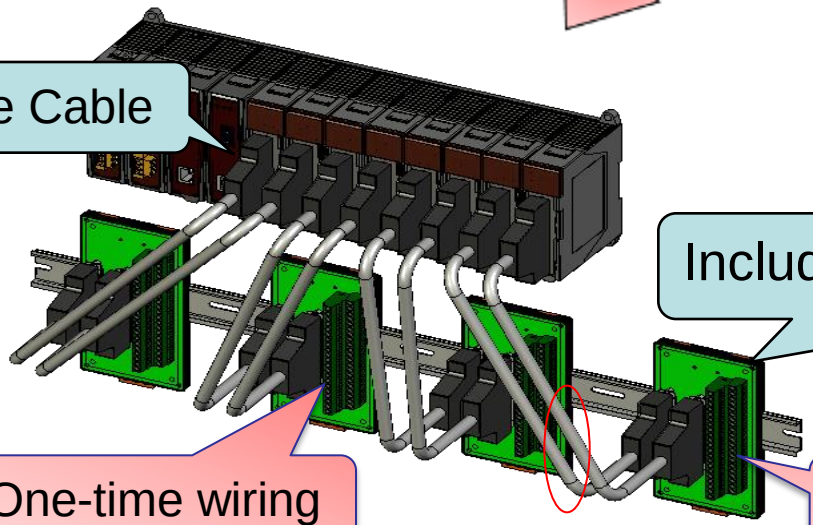




iDCS-8000 Feature (Termination)

1. Complex wiring
2. Difficult maintenance





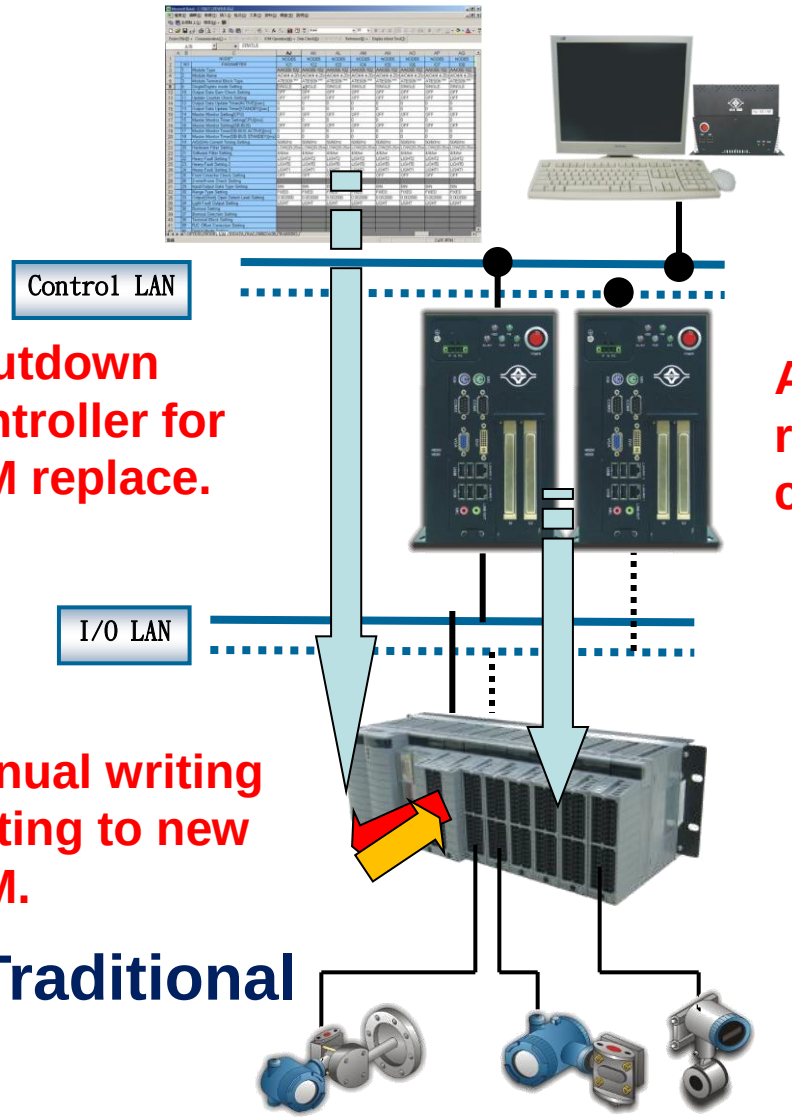
Exclusive Cable

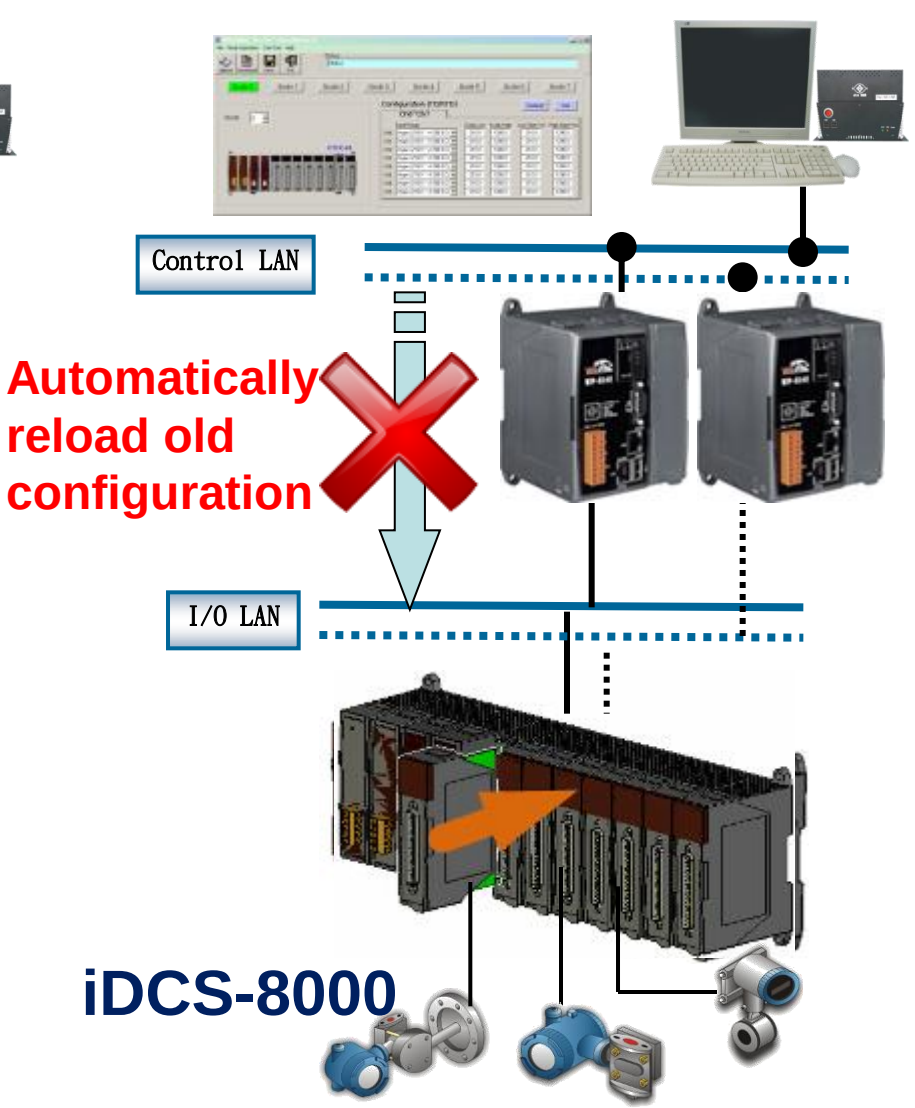
Including EMS protection circuit

One-time wiring

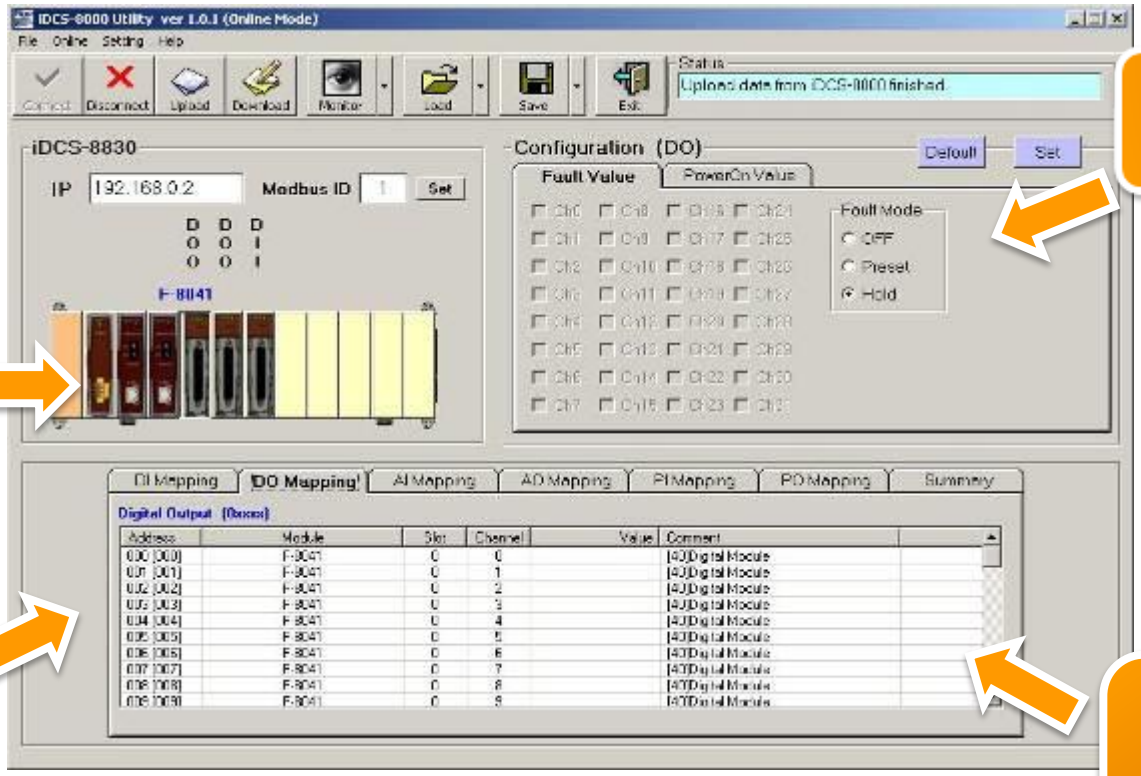
Easy maintenance

iDCS-8000 Feature (Hot Swap)





iDCS-8000 Feature (Utility)



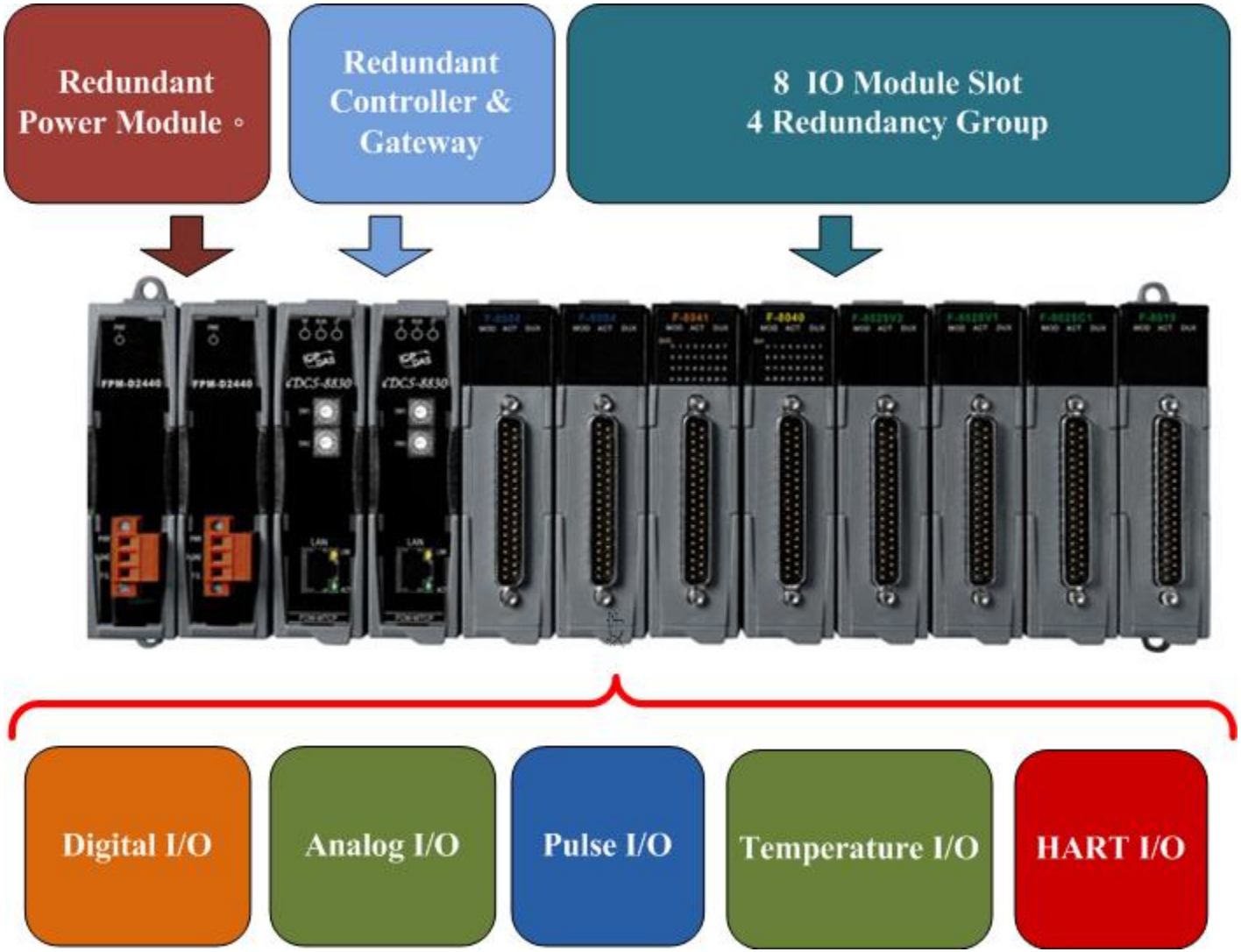
Configuration

Module Status

I/O List

I/O Channel Overview

iDCS-8000 I/O Modules

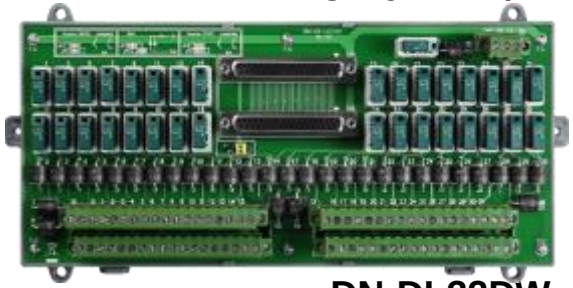


iDCS-8000 I/O Module List

Type		Model	Channel	Features
Digital	DI	F-8040	32	32 channel digital input, 5~30V, sink/source
	DO	F-8041	32	32 channel digital output, sink
Analog	AII	F-8017C1	8	4~20mA Input
		F-8017C2	16	4~20mA Input
	RTD	F-8015	8	Pt100, Pt1000, Jpt100
	TC & AIV	F-8019	8	J, K, T, E, R, S, N, B, C, mV, V
	AOI/V	F-8028CV	8	Current, Voltage Analog Output
	HART AI	F-8017CH	8	4~20mA Current Input with HART
	HART AO	F-8028CH	8	4~20mA Current Output with HART
Pulse	PI	F-8084	8	Frequency, Counter. Over-current protection
And the termination boards				

Digital Module

DN-DO-16-DR-A/B



DN-DI-32DW

DN-DIO-M

[I/O Feature]

1. Single / Redundant
2. 32 I/O Channel LED

[Termination Board]

1. Removable Relay(6A,250VAC)
2. Supports Dry / Wet contact
3. Removable fuse
4. EMS protection
5. I/O Channel LED Indicator

Analog Module

[I/O Feature]

1. Single / Redundant
2. High accuracy
3. HART

[Termination Board]

1. Cost Effective
2. EMS protection
3. Provide Isolated Passive Loop Power

DN-AIO-M

DN-AIH-08

Temperature & Pulse Module

DN-RTD-M

DN-TC-M

DN-PI-M

[I/O Feature]

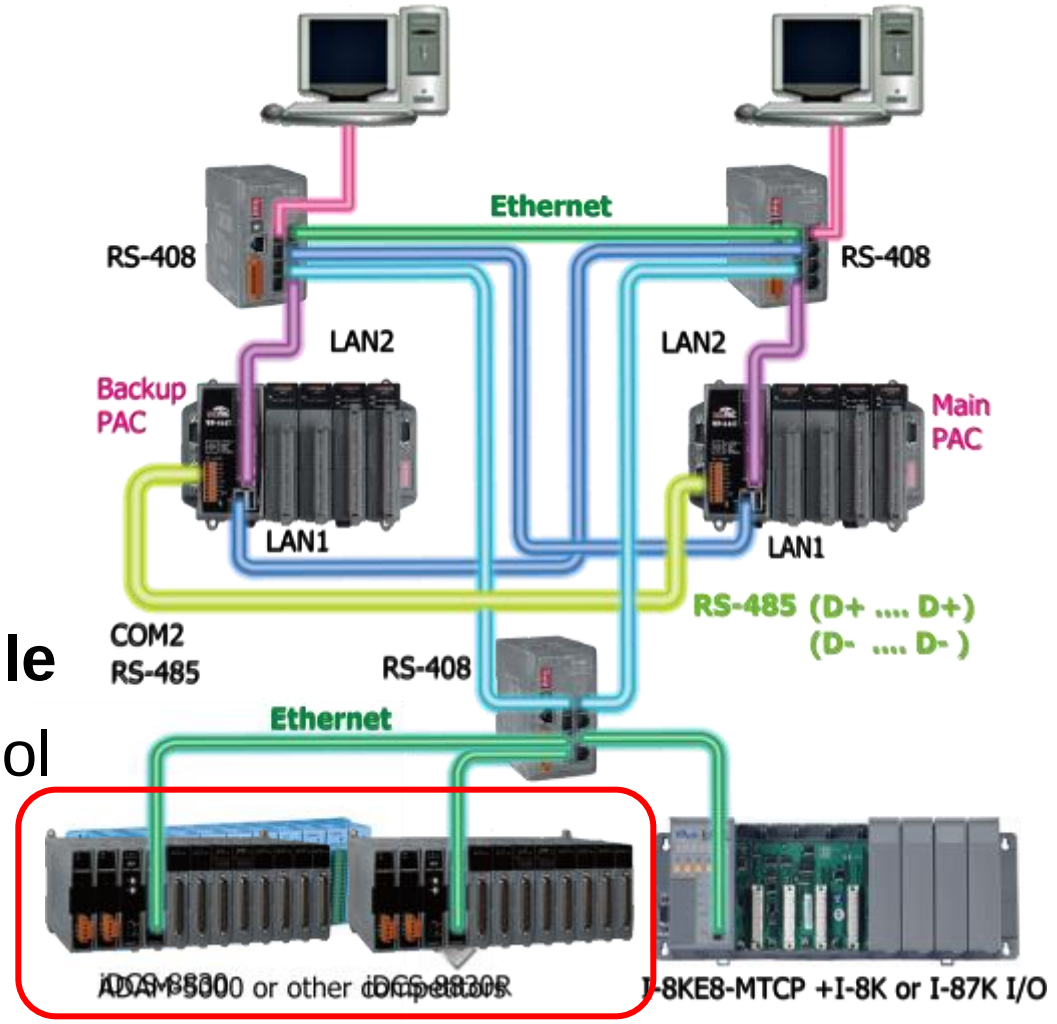
1. Single / Redundant
2. 3-wire RTD
3. Support TC, mV and V
4. Pulse redundant switching error less than 1 pulse

[Daughter Board]

1. CJC compensation
2. EMS protection

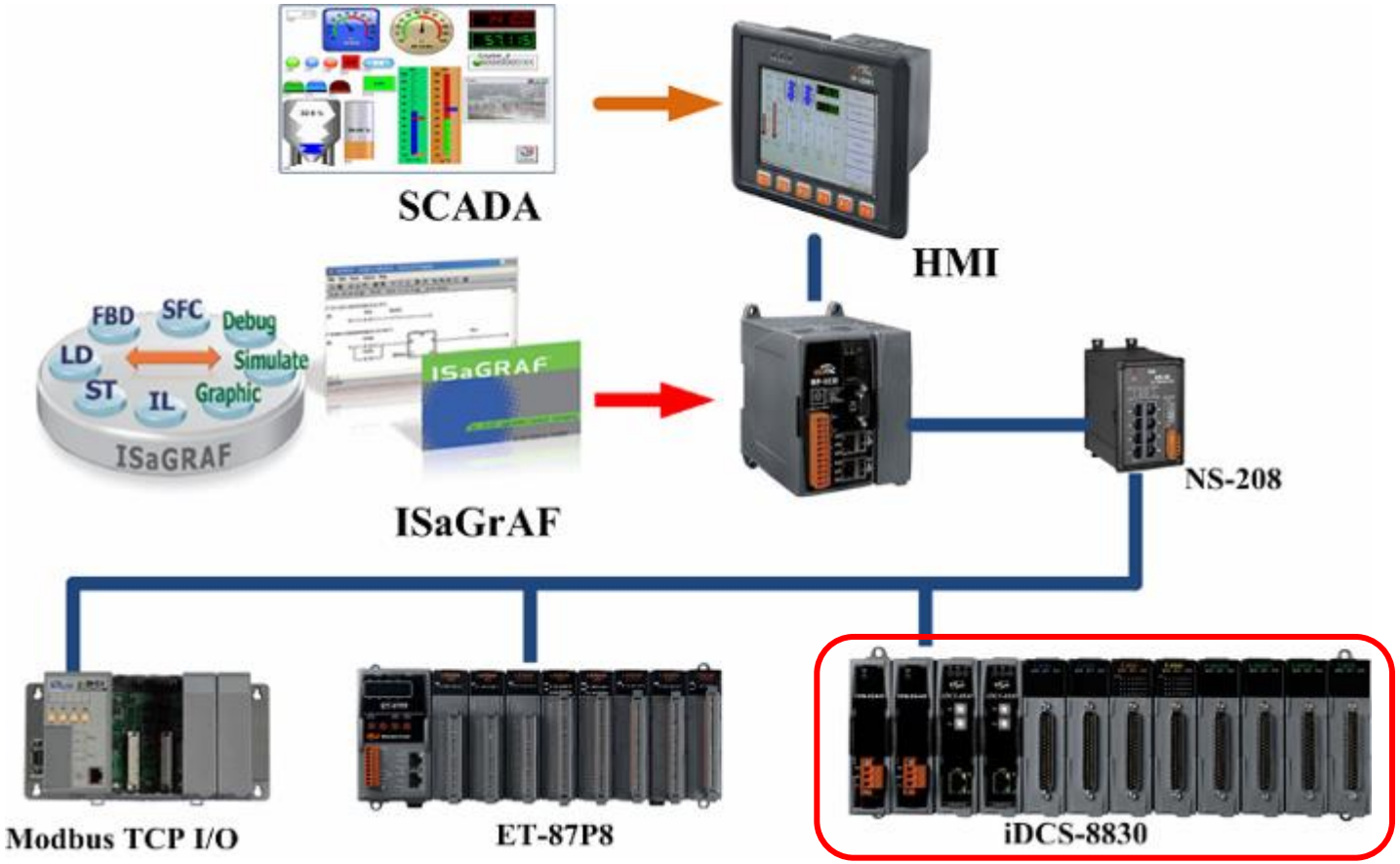
Advantage of iDCS-8000

- **Hardware**
  - ✓ Better EMS
  - ✓ High accuracy
- **I/O module**
  - ✓ Redundancy
  - ✓ Self-Diagnostic
- **Communication Module**
  - ✓ Modbus TCP Protocol



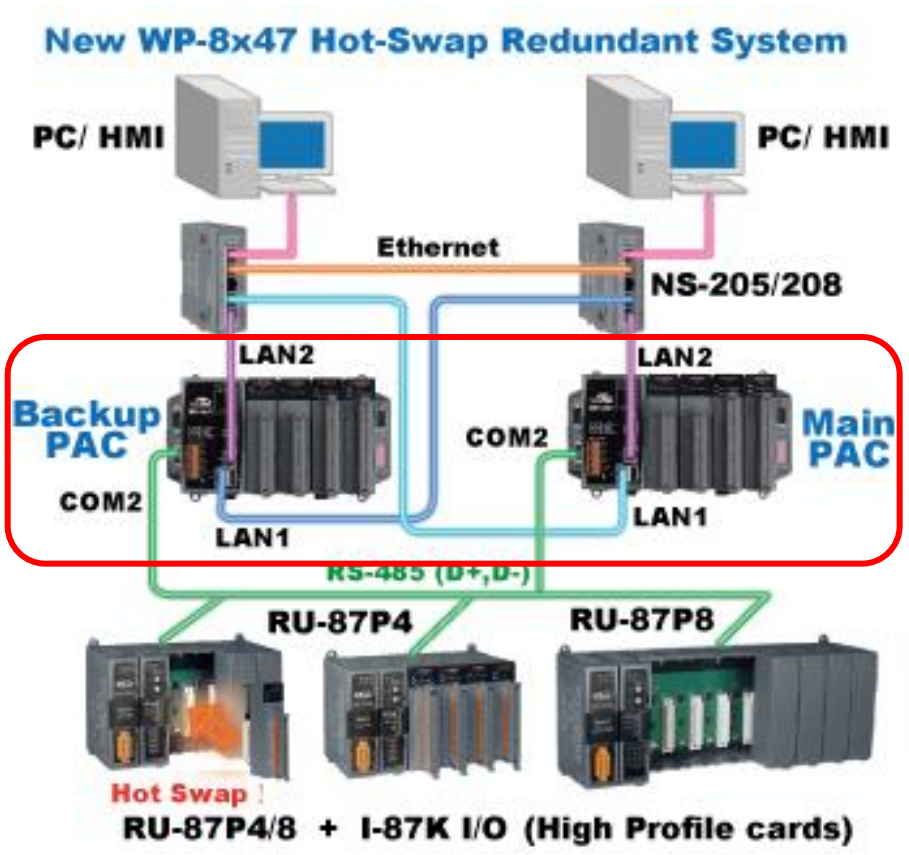
Application Structure (1/3)

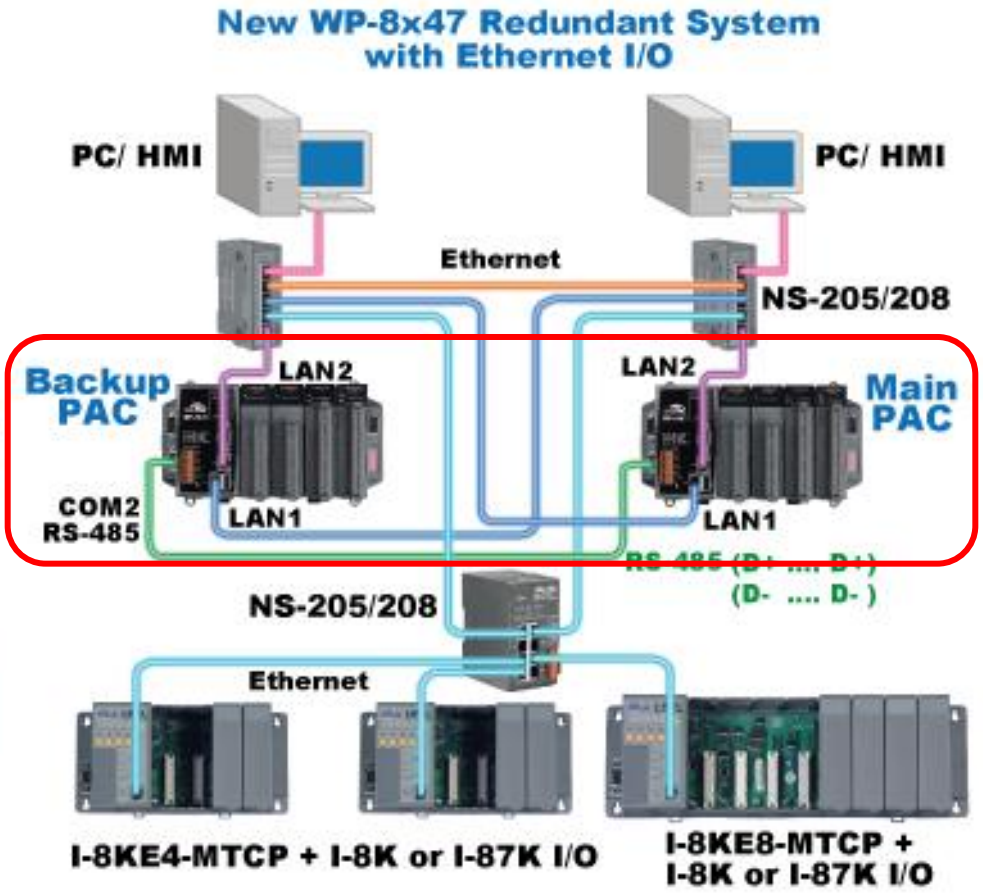
I/O Redundancy



Application Structure (2/3)

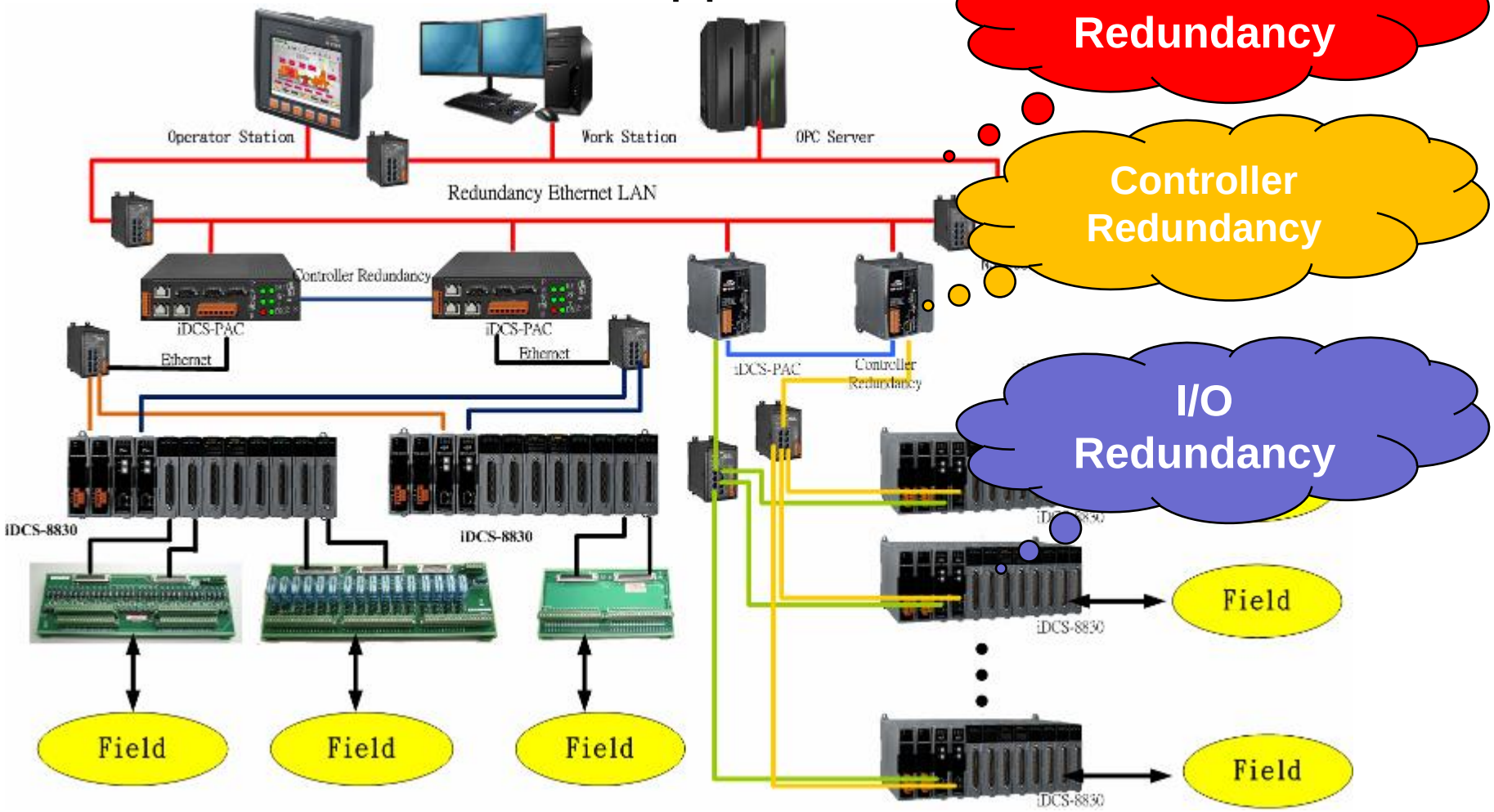
Controller Redundancy





Application Structure (3/3)

Distributed Redundant Application



Installation of iDCS-8000

Q & A

Thanks

For more information please visit

http://www.icpdas-usa.com/