

I&C Profile of ICCC

Capabilities, Facilities & Indigenous Developments

MAHMOOD SHAH

Director (I&C Systems)

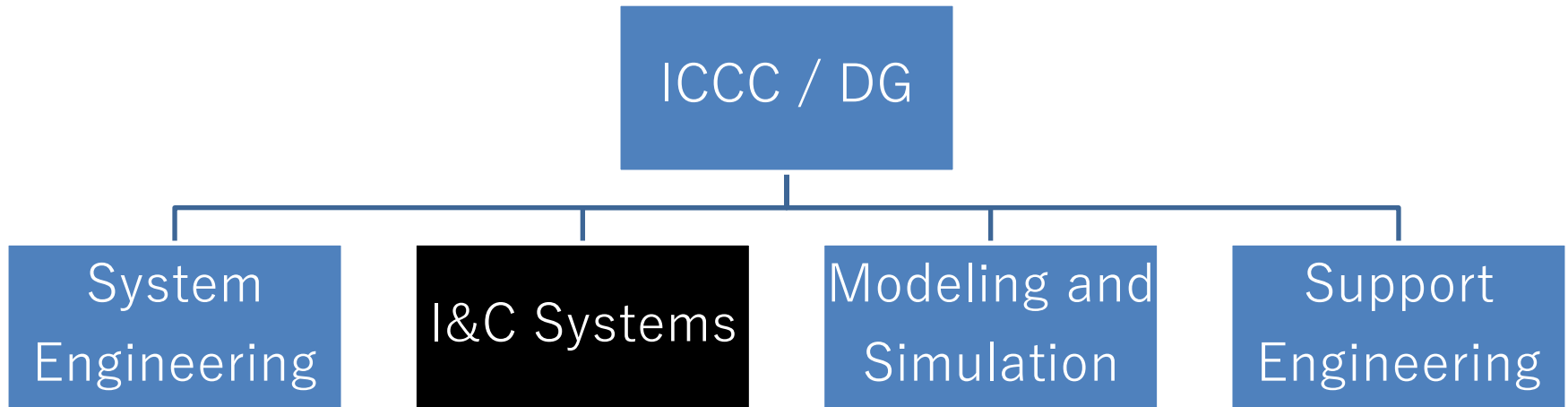
Instrumentation, Control and Computer Complex (ICCC)

PAEC, Pakistan

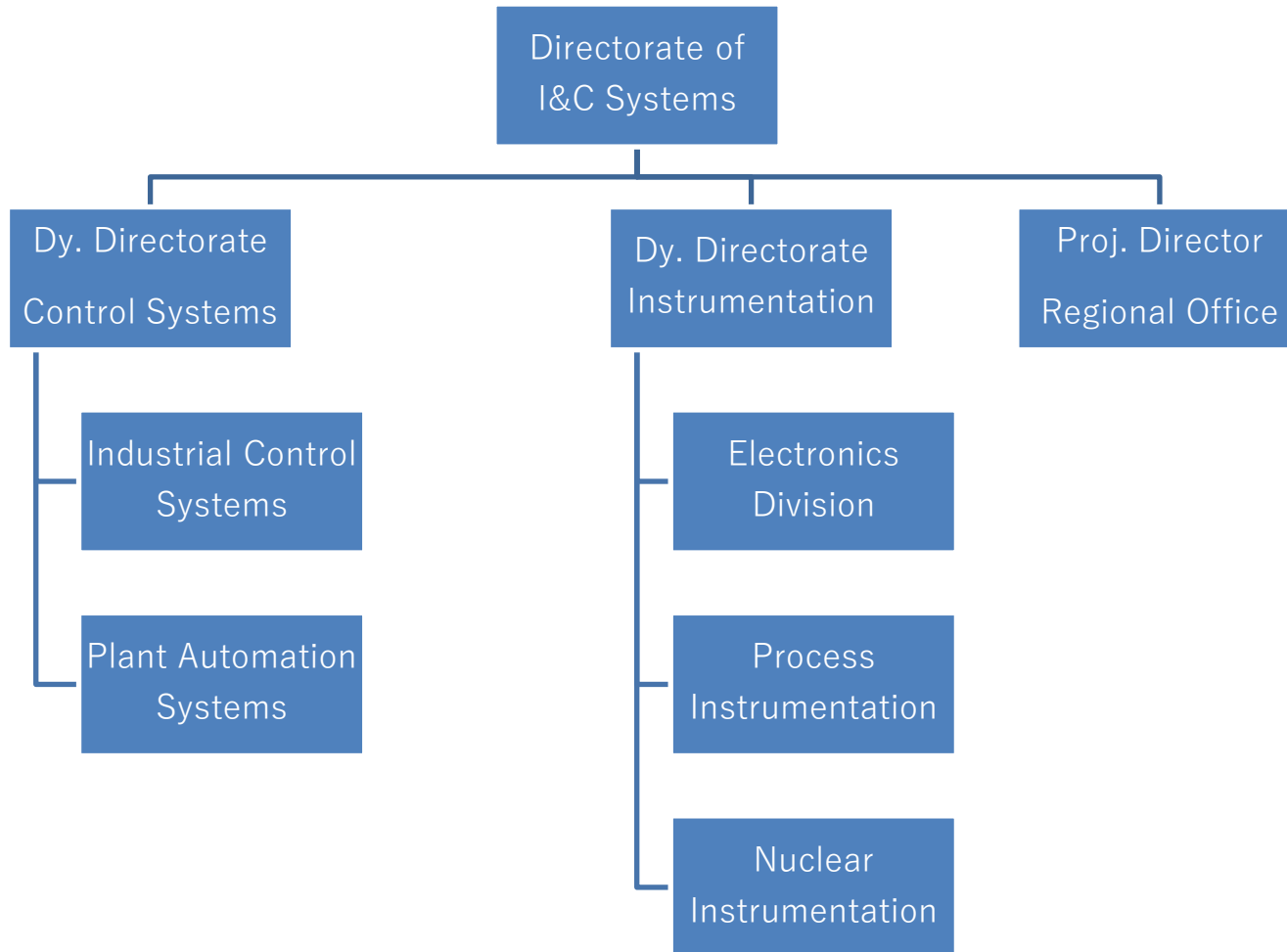
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Organogram



Directorate of I&C Systems



Design and Development I&C Systems

for:

- Nuclear Power Plants
- Research Reactors
- Industrial Plants
- Chemical Plants
- Special Facilities

CNPGS | KNPGS

Scope: Systems and Services

Licenses

1. Design License:

Analogue Safety Instrumentation and Control Systems of Research Reactors

2. Manufacturing License:

Analog Safety I&C Equipment for Research Reactors

3. Manufacturing License:

Safety Class 1-E Equipment for NPP

Certifications

1. ISO 9001: 2015

Quality Management Systems - Requirements

2. ISO 19443: 2018

Quality management systems

Specific requirements for the application of ISO 9001:2015 by organizations in the supply chain of the nuclear energy sector supplying products and services important to nuclear safety (ITNS)

Overall Experience

Instrumentation & Control Systems : 150+ Systems

Min I/O: 150

Max I/O: 12000

I/O: Inputs / Outputs

Kinds of I&C Systems

DCS-Based Control Systems : 20+

PLC-Based Control Systems : 30+

AC/DC Motor Drives Automation : 10+

NexSys DCS : 10+

Indigenous Hardware: FPGA/Microcontroller

DCS Platforms

Honeywell



CENTUM R3

CENTUM VP

SUPCON



PLC Platforms

SIEMENS



Allen-Bradley

OMRON®

ABB

ADVANTECH

Development Facilities

- ◆ Plant Automation Systems - DCS/PLC NPPs
- ◆ Industrial Control Systems
- ◆ Nuclear Instrumentation
- ◆ Electronic Systems / FPGA-Based Devices
- ◆ Drives Automation

Testing Facilities

- ◆ Verification & Validation
- ◆ Cyber Security

QUALIFICATION FACILITIES

Functional and Performance Testing

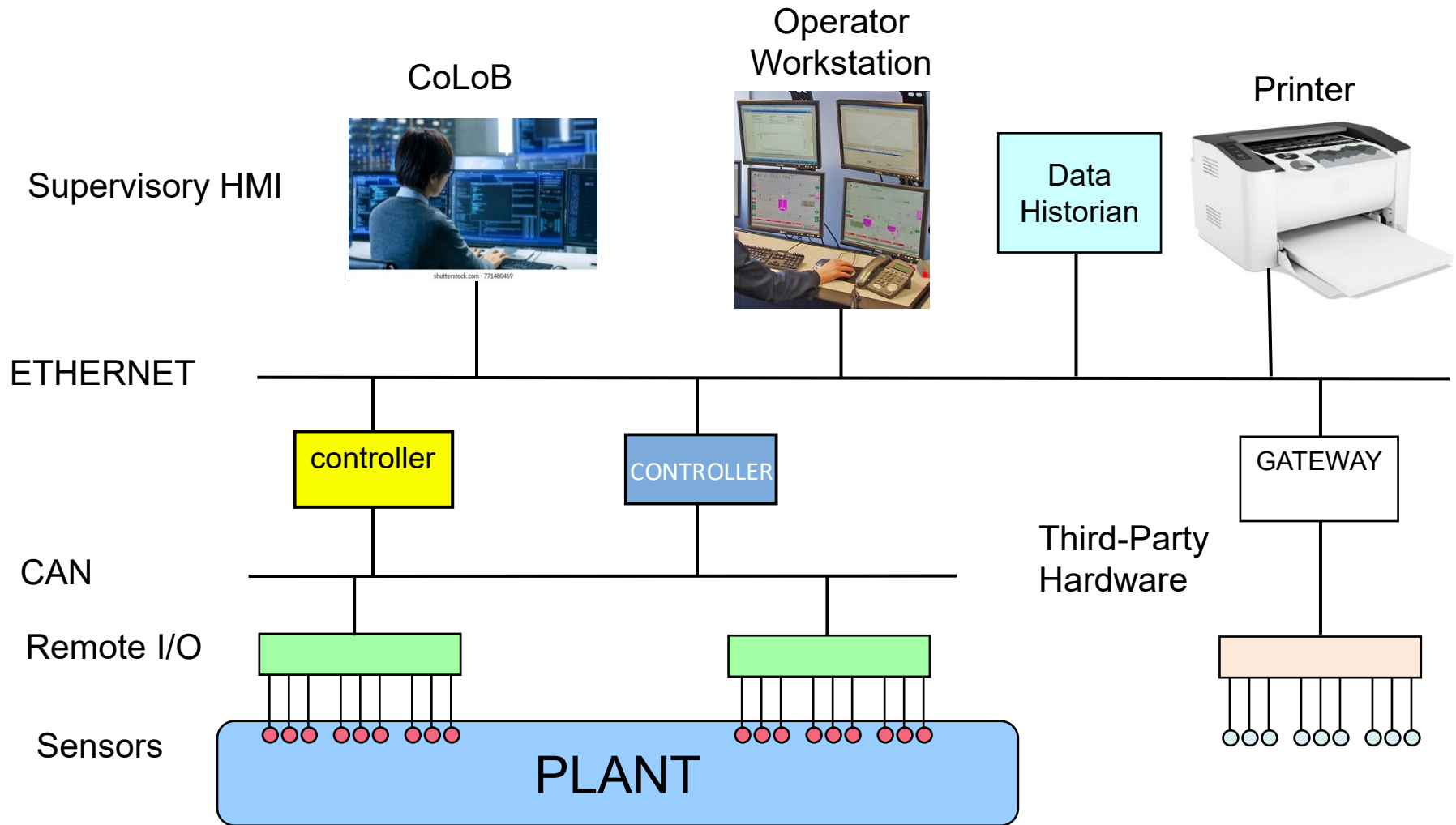
Analog Devices	1	Environmental Qualification	Digital Systems
	2	EMC Qualification	
	3	Seismic Qualification	
	4	Verification & Validation	
	5	Network & Computer Security	

DEDICATION PROCESS

FIICS - Facility for Indigenous Instrumentation & Control Systems

- ◆ Customized Automation Solution
- ◆ Process Instruments
- ◆ Soft PLC
- ◆ FPGA – Based Devices
- ◆ Smart Switchgears
- ◆ FDAS

NexSys DCS

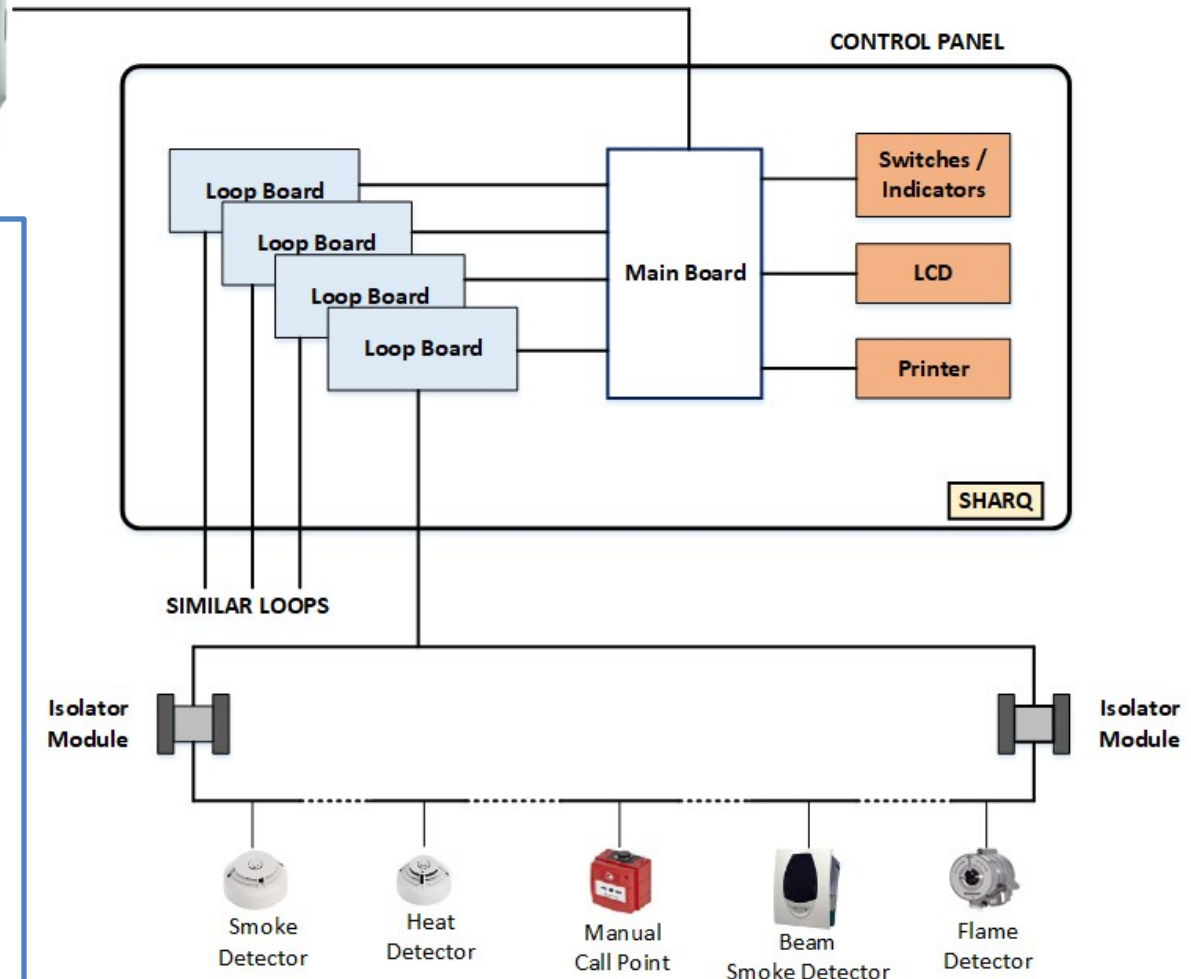


Fire Detection and Alarm System - FDAS



HMI

- HMI Software – SINOS
- Control Panel - SHARQ
- Totally indigenous
- Modular architecture
- Scalable
- Fully addressable solution
- Customizable loop configurations
- Hardware Diagnostics
- Security
- Third-party integration



THANK YOU