

Bridges and Gaps in Wearable Applications for Chemical Manufacturing

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Nalco Champion



Nalco Champion – Who We Are

NALCO Champion

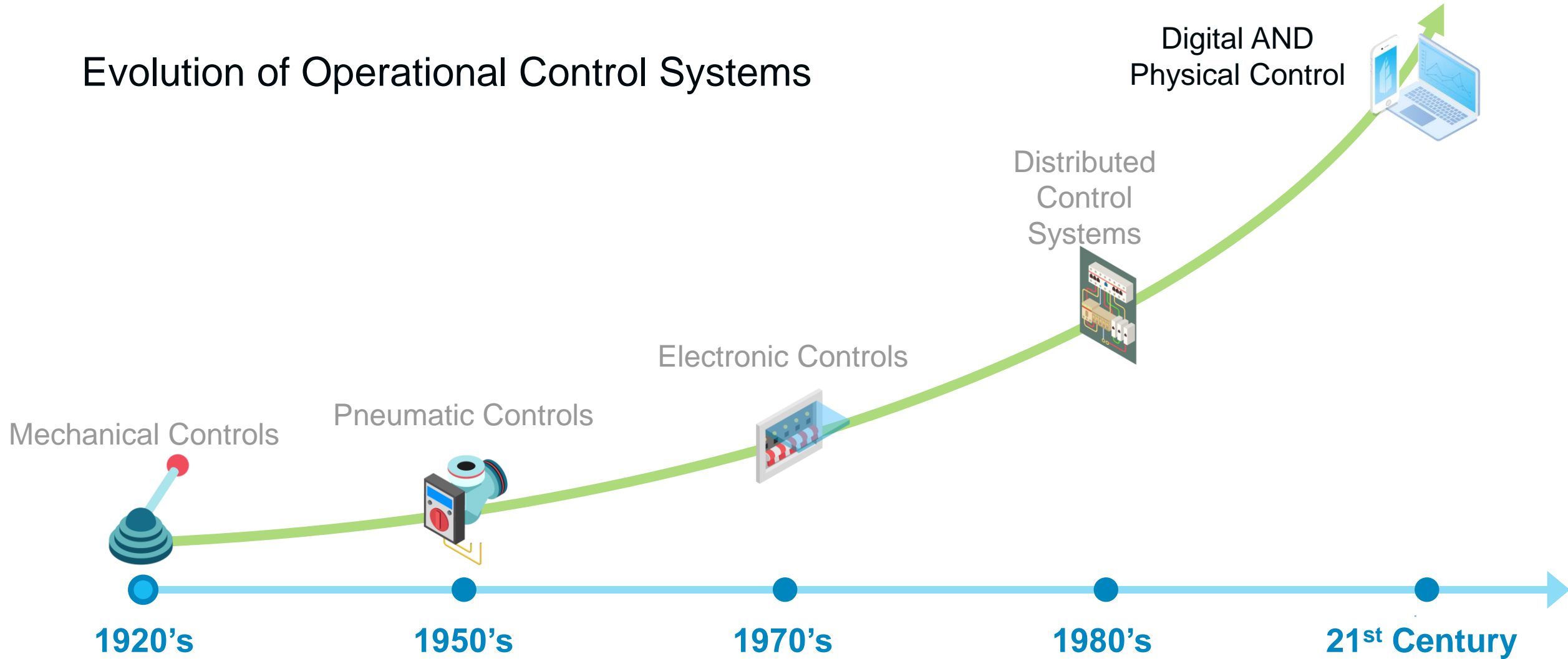
An Ecolab Company

- ▲ The division of Ecolab, the largest oil and gas field chemical and service company in the world
- ▲ A critical producer of specialty chemicals for Oil exploration and production
- ▲ Products do everything from easing flow in pipelines to cleaning & preservation
- ▲ Produce both intermediate products and finished products for direct purchase & use
- ▲ Total production exceeds 1.25 million metric tons
- ▲ Operate 34 plants in 10 countries

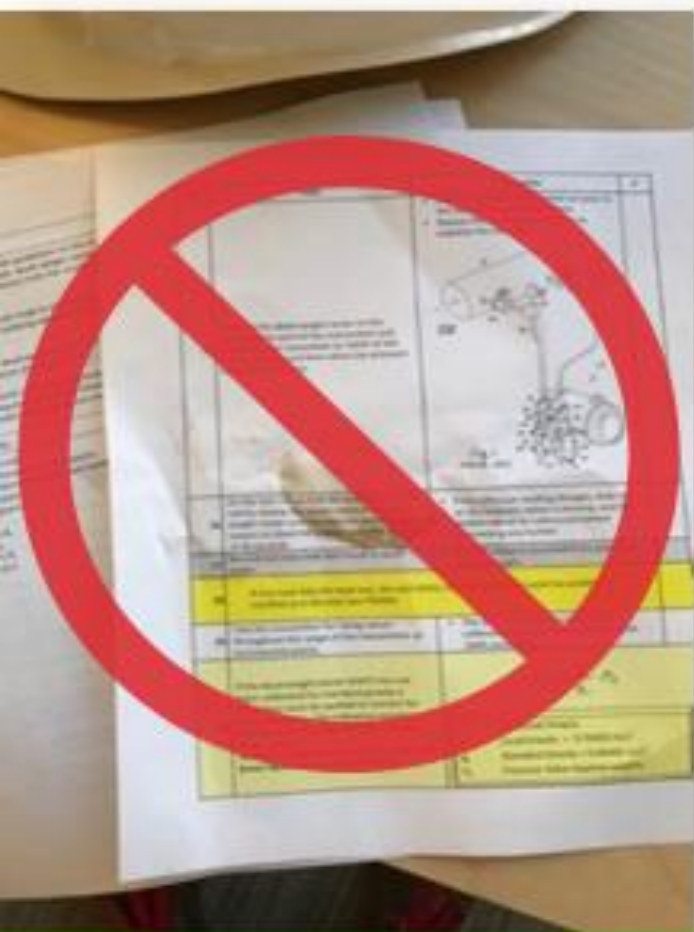


In our View, Wearable is a Game-Changer in Operational Control

Evolution of Operational Control Systems





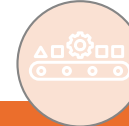



Execute & Measure Processes Digitally



The precision of IoT for humans in a single platform to do it all...simply.

FUNCTIONAL LIBRARIES

 Safety	 Training & Operations	 Quality	 Maintenance	 Supply Chain	 Continuous Improvement
Lock Out Tag Out	Procedural Adherence	Product Release	Remote Expert Collaboration	Goods Receipt	Best Practice Identification
Safety Rounds	Line Change Overs	Visual Inspection	Standard Procedures	Material Inspection	Bottleneck Improvements
Job Safety Analysis	Shift Handoff	Remote Inspection	Troubleshoot and Repair	Supplier Collaboration	Root Cause Analysis
LAPs	Truck Roll	Audit \ Traceability	Issue Collaboration	Certificate of Destruction	Corrective & Preventive Actions

Bridges

- ▲ New Multi Media Software Platforms
- ▲ Event sync with time based activity
- ▲ Integration with ERP and DCS
- ▲ Wearable devices for hazardous environment
- ▲ Wi-Fi and Cell communications to the back office system
- ▲ Meta data management systems, megabyte to terabyte

Gaps

- ▲ Personnel Readiness
- ▲ Resources for digitization
- ▲ Conversion from paper to digital
- ▲ Economical devices for Hazardous environment
- ▲ Security control for integrating systems with DCS