

Production Supporting Systems in Factories

ระบบสนับสนุนการผลิตในโรงงานอุตสาหกรรม

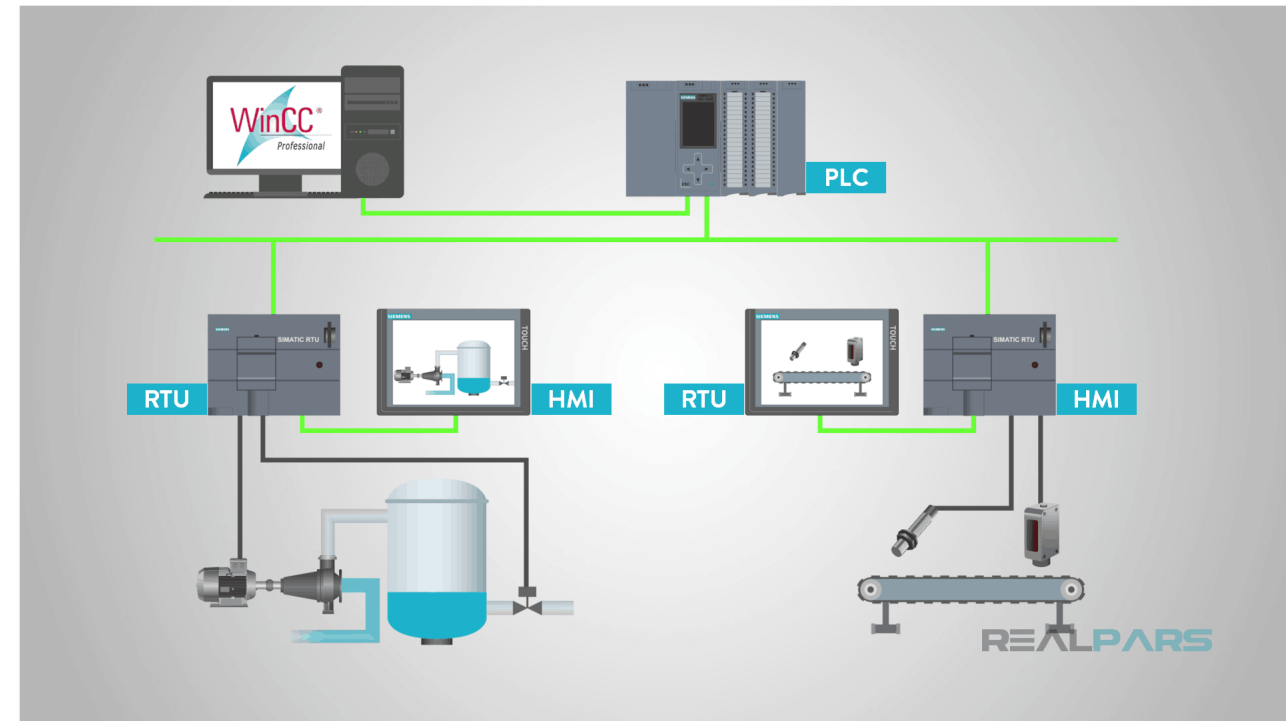
Summary

SCADA

- A system of software and hardware elements that allows industrial organizations to:
 - **Control** industrial processes locally or at remote locations
 - Directly **interact** with devices such as sensors, valves, pumps, motors, and more through human-machine interface (HMI) software
 - **Monitor**, gather, and process real-time data
 - **Record** events into a permanent storage.

Architecture

- **PLC** (Programmable Logic Controller) and/or **RTU** (Remote Terminal Units)
- **HMI** (Human Machine Interface)
- **Field devices** - sensors and actuators
- **SCADA computer**



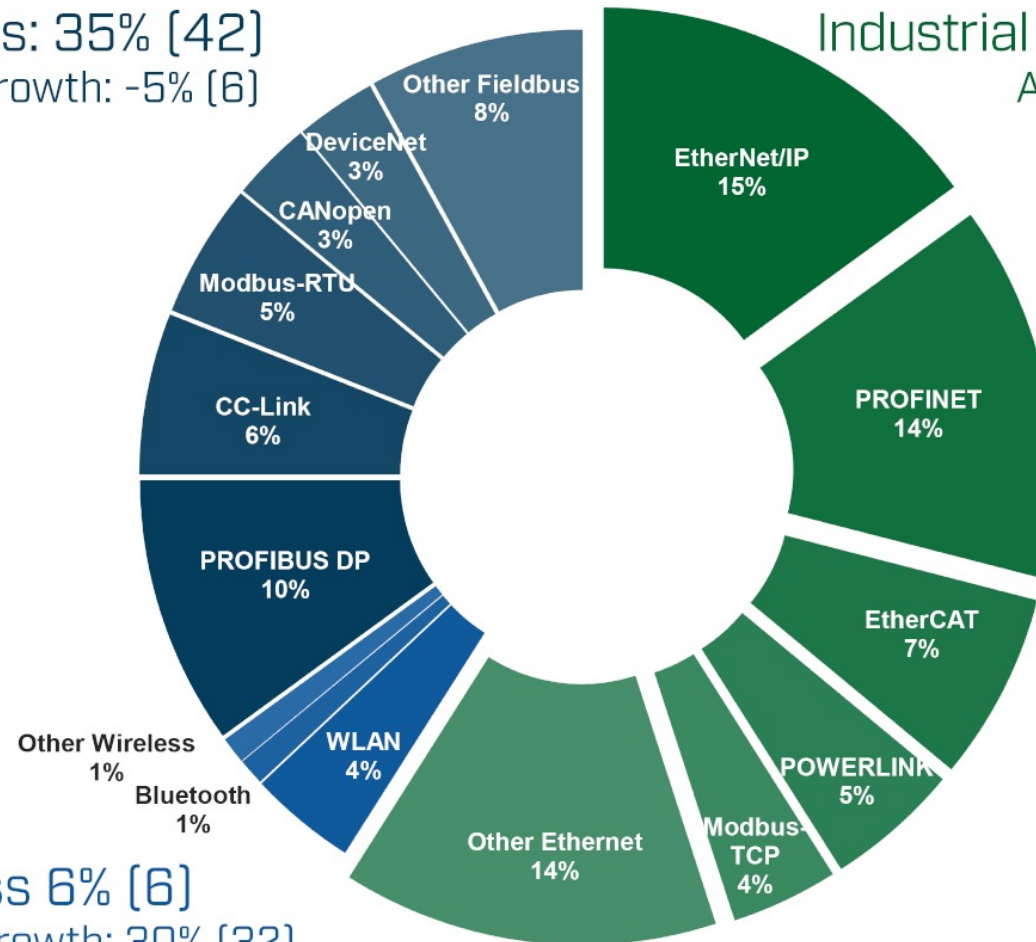
Protocol

Source

Fieldbus: 35% [42]
Annual growth: -5% [6]

Industrial Ethernet: 59% [52]
Annual growth: 20% [22]

Wireless 6% [6]
Annual growth: 30% [32]



Comparison to SCADA components

Component	Function	SCADA Equiv.
Node-Red	Collect data	PLC / RTU
	Display data	SCADA computer
	Notify to Line	SCADA computer
	Write to Database	SCADA computer

Comparison to SCADA components

Component	Function	SCADA Equiv.
Mobile phone	Output Sensor	Field devices
	Touch screen	HMI

Protocol used in the project

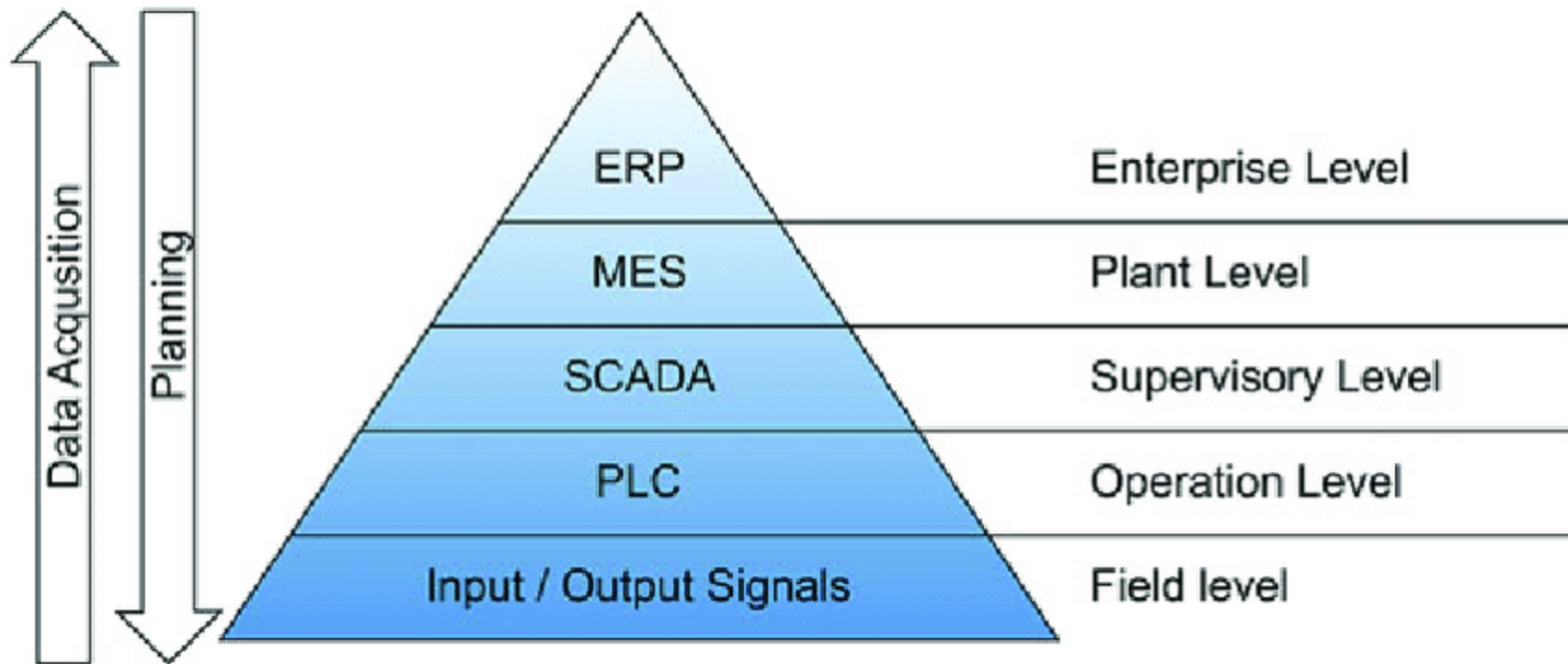
- HTTP
- MQTT

Ilot

- The Industrial Internet of Things (IIoT)
- Internet of Things (IoT) in industrial environments.
 - It includes the collection of data from smart connected equipment, sensors, actuators, and systems.

Why

Hierarchical model of an industrial automation

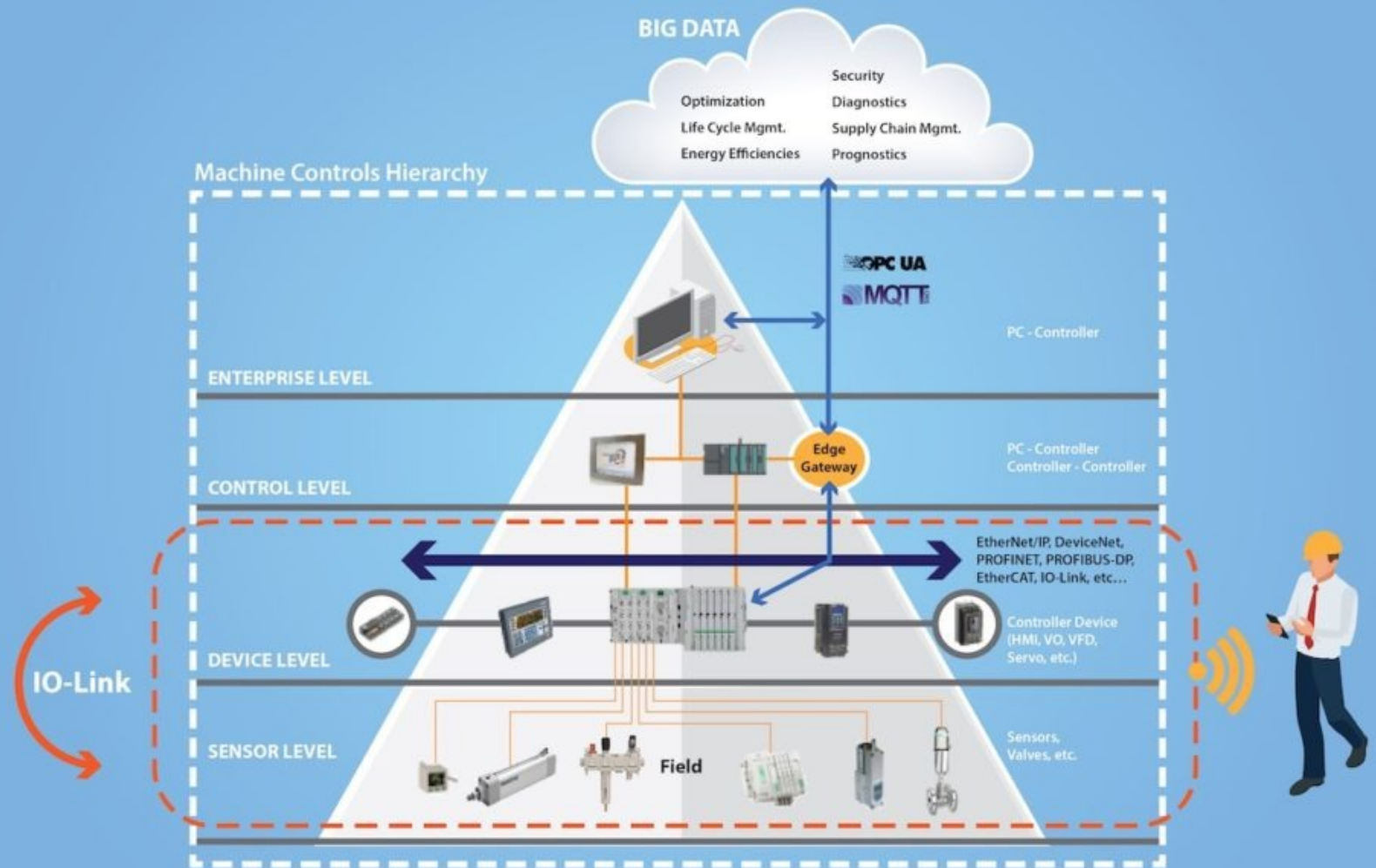


Source

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Source

IIoT Architecture



Industry 4.0/IIoT- Emerson Devices connected via G3 Electronics Platform and IO-Link at the Device and Field Level.

Benefits

- เพิ่มประสิทธิภาพการสื่อสารการวางแผนการทำงานในโรงงานอุตสาหกรรม
 - ยืดหยุ่น
 - ประหยัดเวลา
- หลีกเลี่ยงการ Downtime
 - การบำรุงรักษาที่คาดการณ์ล่วงหน้า (Predictive maintenance)
 - การตรวจสอบสถานะของเครื่องจักร (Monitor)