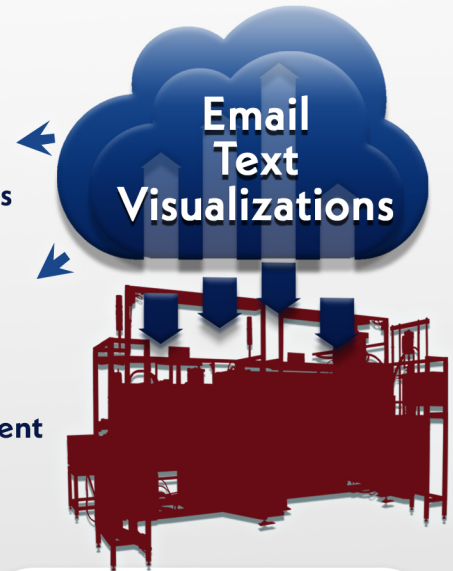


Industry 4.0 Technologies

- IIoT
- Simulation
- Big Data Analytics
- Augmented Reality
- Advanced Robotics
- Additive Prototype Mfg

Eagle
- Service
- Spare Parts

Customer
- Managers
- Line Leaders
- Maintenance
- Quality Department



Assets



Industrial Equipment



Advanced Testers



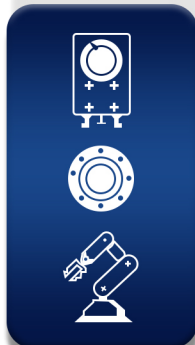
Operational Devices

Industrial Equipment:
Automated machinery, conveyor systems, lean cells.

Advanced Testers:
End of the line test equipment and process.

Operational Devices:
· Facility blower units
· Water controls
· Environmental units

Operational Technology (OT)



Sensors and Actuators



Edge Nodes

Sensors and Actuators:
Various sensor and actuator technologies that integrate into a industrial machine that can be monitored and treated as operational data. Such as robots and variable devices.

Edge Nodes:
Small computers.
Localized on-board processors.
Programmable logic controllers.

Information Technology (IT)



On-Premises IT



Cloud IT

On-Site IT:
These are servers or master computers that are located at the end-user's facility. Information is sent from the Edge devices to a central destination.

Cloud IT:
End users cloud based servers.

Production Metrics

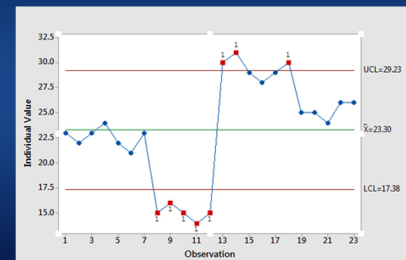
- Machine Monitoring
- Overall Equipment Effectiveness
- Part Quality Analysis/Part Traceability
- Life Cycles of Perishable Tooling
- Life Cycles of Devices
- SPC (Statistical Process Control)

Example Station: Press Rivet Into Pump Housing

Downtime	Last 7 Days	
	Occurrences	Time Lost
Rivet Stuck in Feeder	23	2m 24sec
Hydraulic Unit Over Press	32	9m 56sec
Operator Stoppage	28	7m 23sec

System OEE 91%
Station Availability 95%

SPC Data



Part Quality

Rivet height is trending high +1.3%

ⓘ Service notice sent to quality department

Rivet Press Signature Analysis

Perishable Tooling

Rivet press tool 22% life remaining
Rivet gripper 84% life remaining
Feeder escapement tool 92% life remaining

Devices

Conveyor motor 80% life cycle
Hydraulic Unit Filter at 5% Usable Life
ⓘ Service Notice sent to Eagle
Rivet press valve 96% life cycle

Part Traceability

- Pump Serial #A32134
- Housing Lot #C2345
- Housing Height 1.2m
- Piston S/A SN#A123
- Piston 1 Lot#A124
- Piston 1 1.3 DiA
- Rivet Lot #A123
- Rivet Height