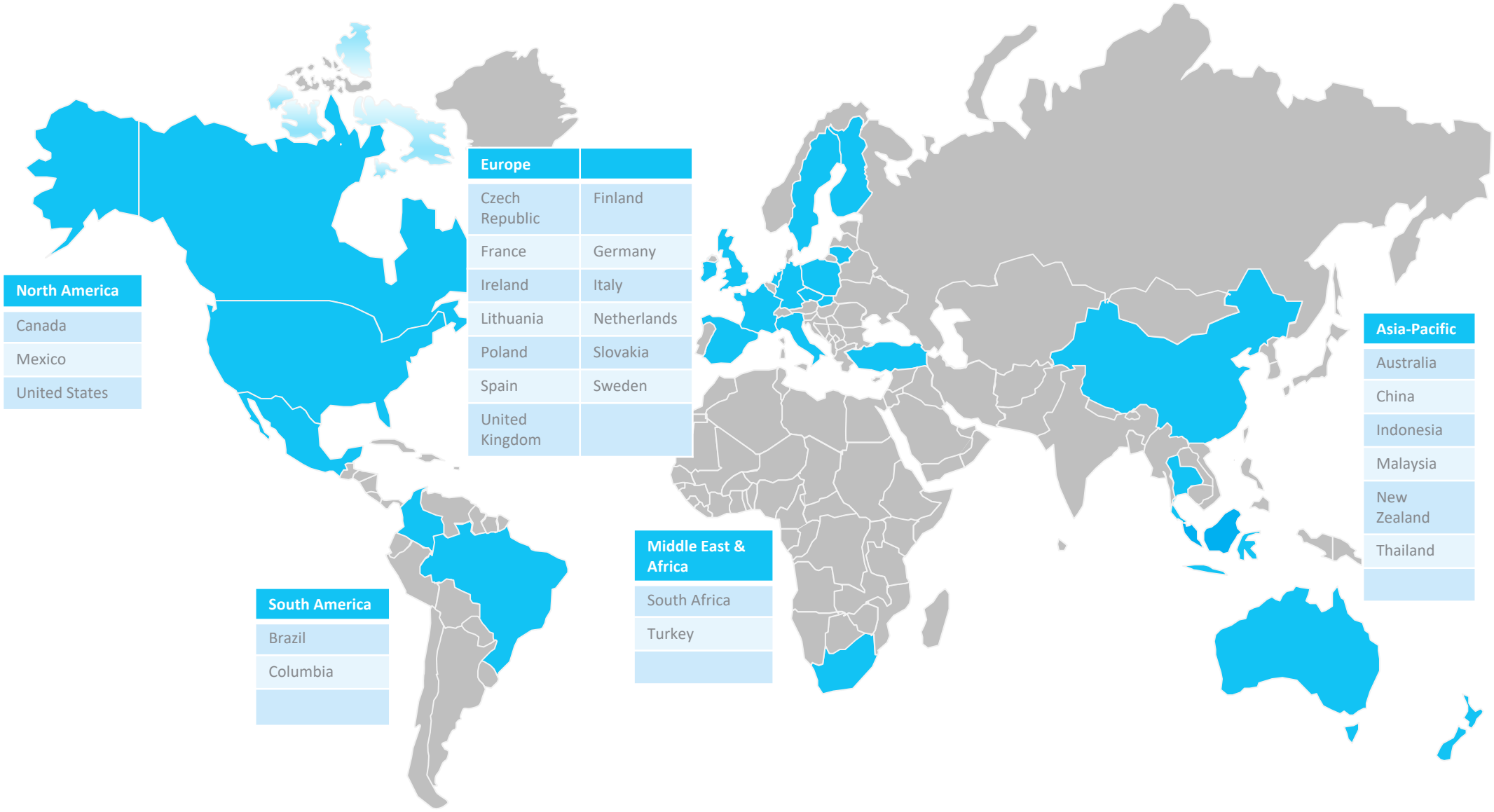
Industry 4.0

Epicor Advanced MES

SageClarity
Insight in Manufacturing

EPICOR MES AROUND THE WORLD



North America
Canada
Mexico
United States

Europe	
Czech Republic	Finland
France	Germany
Ireland	Italy
Lithuania	Netherlands
Poland	Slovakia
Spain	Sweden
United Kingdom	

South America
Brazil
Columbia

Middle East & Africa
South Africa
Turkey

Asia-Pacific
Australia
China
Indonesia
Malaysia
New Zealand
Thailand

Epicor Advanced MES Overview

Customers	500+	Countries	24+
Languages	21	Connected Machines	> 15,000

Epicor MES Primary Markets

Markets

Market Segment

- Subsidiaries & Divisions of Global Enterprises
- Regional Enterprises
- Local Mid-market Companies

- Plastics & Rubber
- Fabricated Metals
- Automotive
- Fasteners, Valves, Springs
- Consumer Goods
- Packaged Goods
- Food and Beverage






Epicor MES Primary Processes

Market Segment

Processes

- Subsidiaries & Divisions of Global Enterprises
- Regional Enterprises
- Local Mid-market Companies

Plastics Injection | Blow Molding | Extrusion | Metal Stamping | Die Casting | CNC | Assembly





Problems We Help Customer's Solve

- More **capacity** without more assets
  - Find and reduce down time
  - Use that capacity to make more parts or cut costs
- Improve quality/**reduce scrap**
  - Highlight where your quality losses are occurring
- Improve product **throughput**
  - Highlight sources of your speed losses and cycle time
- Improve real-time **scheduling**
- **Consistent** measurement of metrics like OEE for all equipment
- See it all in **real-time** to allow immediate action and empower employees to make better decisions

Epicor MES Drives Continuous Improvement at Johnson Controls

"We used to run 3-4% scrap. Last month we were down to 1.37%. You can't get much better than that; that's world-class and is largely attributable to Epicor MES. It's the tool that gives us the numbers we need to make good decisions."

Dave Rose
Quality Engineer

Company Facts

- Location: Florence, Kentucky
- Industry: Manufacturer of plastic battery cases for automotive OEMs and aftermarket
- Website: www.johnsoncontrols.com

Business Benefits

- Decreased scrap to 1.37% (reduced start-up scrap by 23% and running scrap by 27% in last 7 years)
- Decreased machine downtime by 3.1%
- 13% improvement in conversion cost (cost to make each unit)
- 8% increase in overall productivity
- 50% reduction in changeover time
- Annual cost of quality reduced by $600,000

Epicor MES Deployment

EDA

LAN or WAN

Data Analytics (EDA / Power BI etc.)
Multi-Site View

EPICOR MES SERVER
Microsoft Windows Server
Microsoft SQL Server

QC | MOULDING DEPT | PLANT MANAGER | PRODUCTION CONTROL

Web HMI

DT Code Entry

Scrap Code / QTY Entry

CF-MIU (IoT Device)

Single or Dual Machine MIU
1:1, 2:1 Process Monitoring

Multi-Machine MIU
16:1, 8:1 Production Monitoring

OPC or MT CONNECT

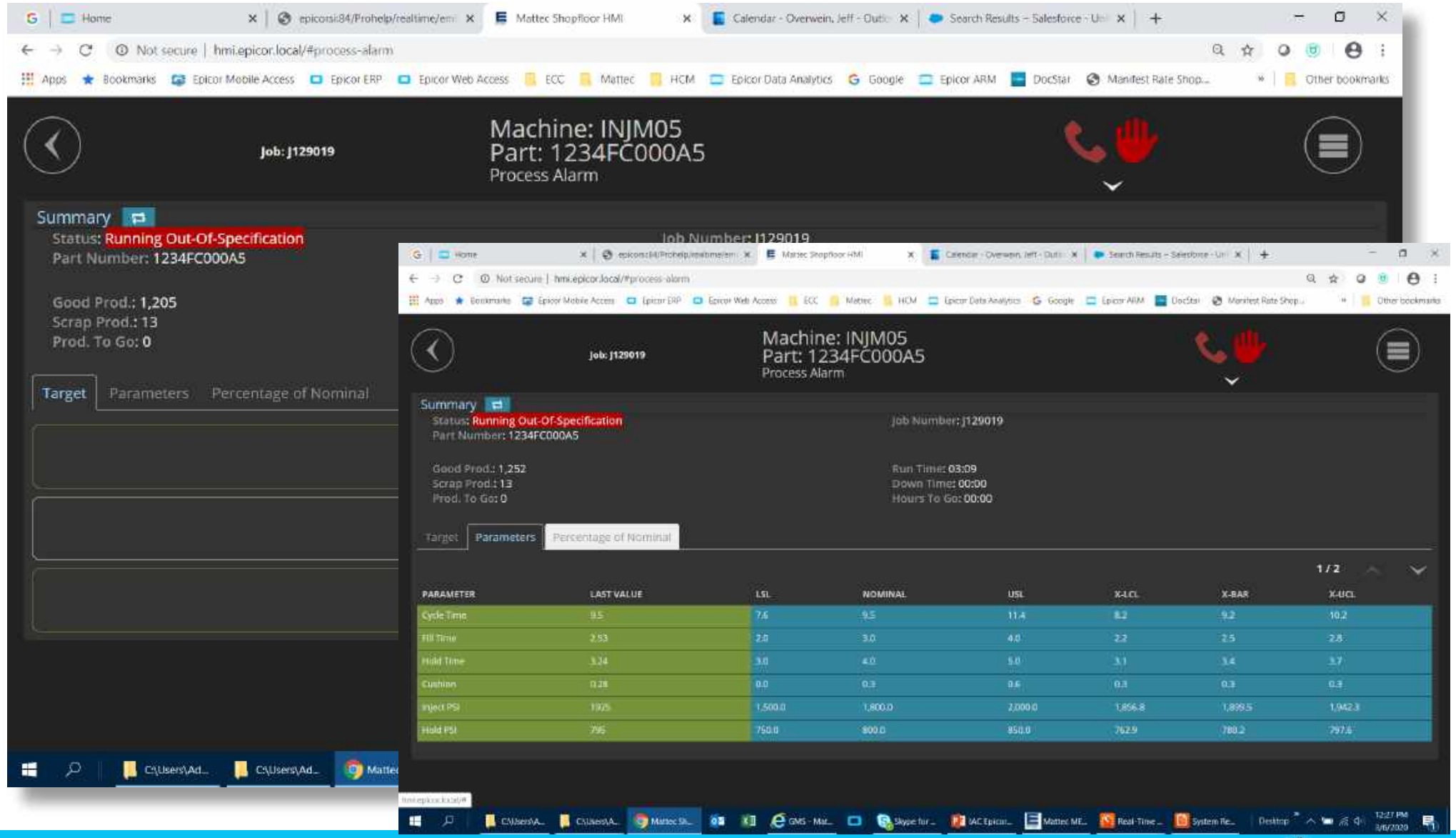
“It’s not about data…its about information”

Global Access to Information with a contemporary MES platform

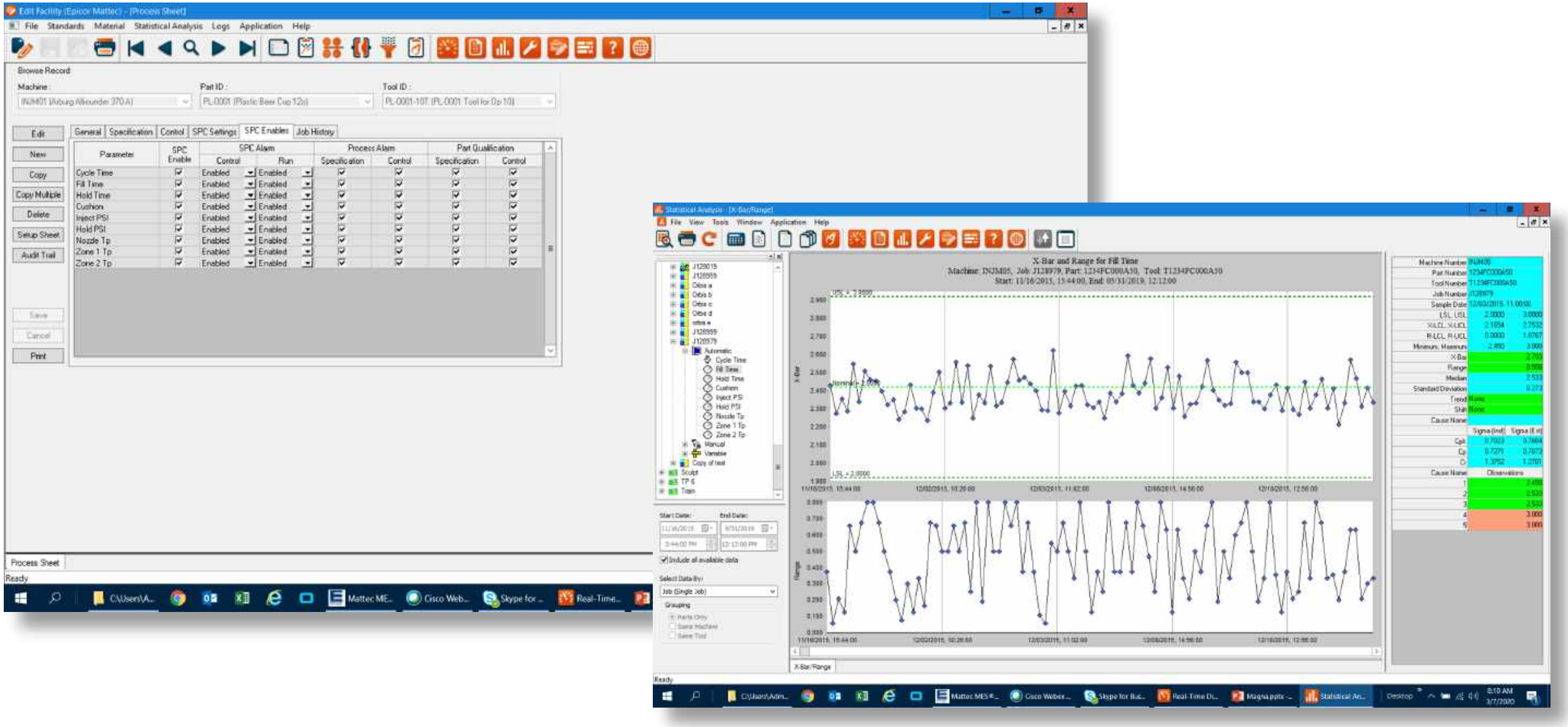
Real-time Production status

Machine Number	Machine Description	S H	Part Number	Help Call	Good	Scrap	Scrap Parts	To Go	Hours To Go	Std CycleTm	Actual Speed	Cycle Per Hour	Cycle Eff	Yield Eff	OEE	STD CAV	ACT CAV	Down Description
AINJ03	DMG MORI NT 10	1	CNC-0002		11016	0 %	0	-12526	0:00	1.00	1.0	3600.0	03.4 %	102 %	100.0 %	1	1	
Die Casting - Department																		
01	Techmire 46 NTX [	1	MXL FB4552		2034	0 %	2	-27	0:00	25.00	0.9	4000.0	00.6 %	236 %	81.1 %	2	2	
02	Yomato Die Castin	1	1234FC000A50		290	0 %	0	22232	73:21	9.50	30.0	120.0	31.9 %	28 %	23.2 %	1	1	
03	Idra 1600 Ton Hor	1	1234FC000A50		197	0 %	0	7018	23:09	9.50	45.0	80.0	21.3 %	19 %	16.1 %	1	1	
Extrusion - Department																		
EXT01	TSSK Parallel Twin	1	JO-1234		113	69 %	253	-9083	0:00	15.00	5.0	720.0	93.4 %	16 %	0.7 %	1	1	Machine Setup (2:
EXT02	Cincinnati Milacro	1	1234FC000A12		187	68 %	403	145469	891:21	15.00	15.0	240.0	62.6 %	29 %	6.1 %	1	1	
EXT03	Cincinnati Milacro	1	1234FC000A13		5944	7 %	473	1226595	232:13	0.50	0.5	7200.0	69.7 %	31 %	15.4 %	1	1	
EXT04	Cincinnati Milacro	1	1234FC000A14		2	99 %	370	149910	1484:08	30.00	30.0	120.0	03.0 %	1 %	0.0 %	1	1	
EXT05	Cincinnati Milacro	1	1234FC000A25		435	27 %	157	108084	320:58	9.50	9.5	378.9	00.7 %	43 %	14.9 %	1	1	
Injection Mold - Department																		
INJM01	Arburg Allrounder	1	PL-0001		4474	0 %	0	3409	4:16	12.00	5.0	720.0	51.9 %	249 %	100.0 %	2	2	
INJM02	Arburg HM50	1	PL-0001		632	0 %	0	8484	16:09	12.00	15.0	240.0	87.8 %	35 %	29.3 %	2	2	
INJM03	Cincinnati Milacro																	None (2053:48)
INJM04	Arburg KS170	1	SBA3-01-SBB		1488	0 %	0	16252	32:21	25.00	30.0	120.0	87.3 %	86 %	86.5 %	4	4	
INJM05	Cincinnati Milacro	1	1234FC000A5	Relief O	1183	1 %	13	-1818	0:00	9.50	9.5	378.9	06.6 %	116 %	98.9 %	1	1	

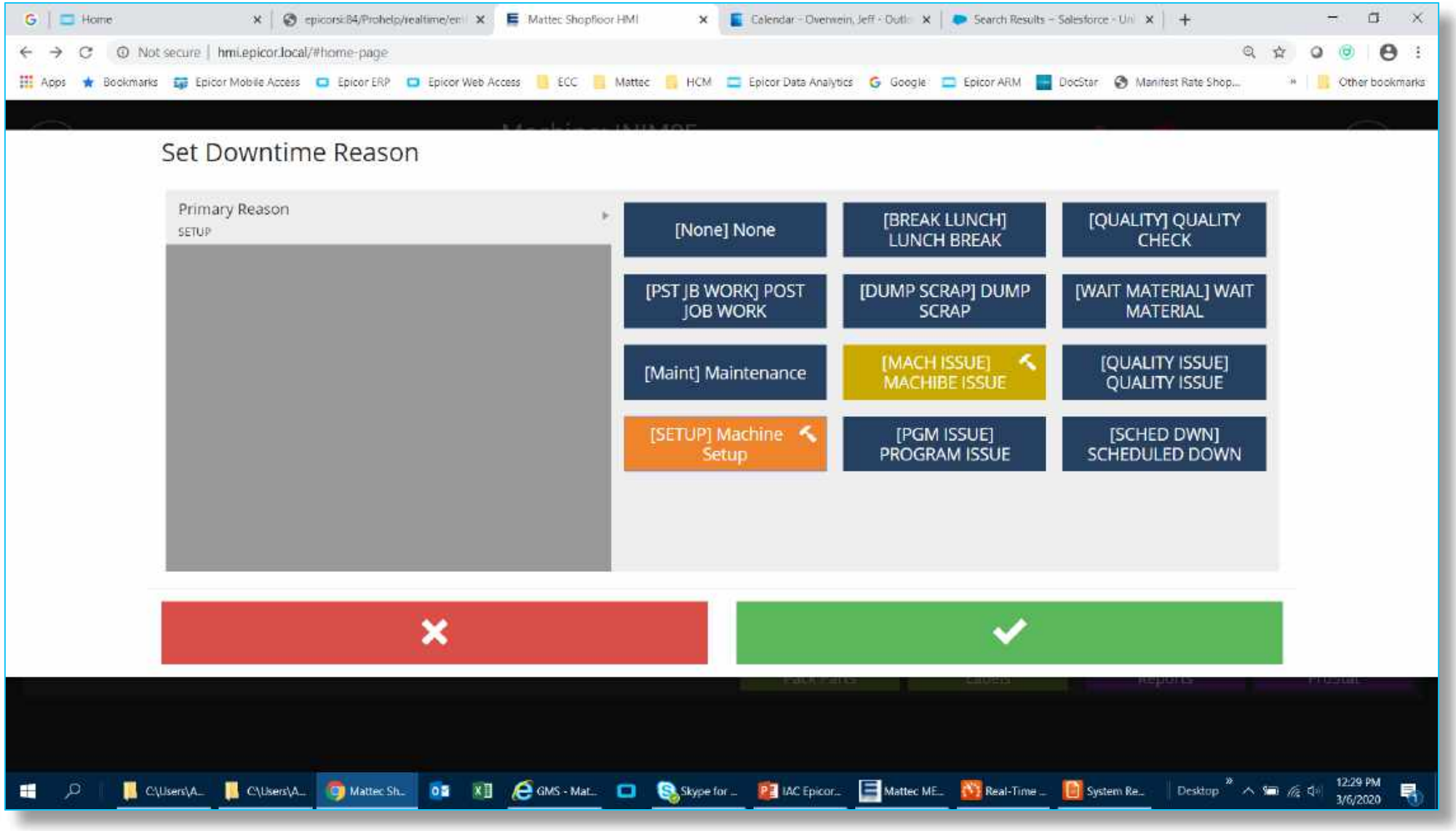
Process Alerts



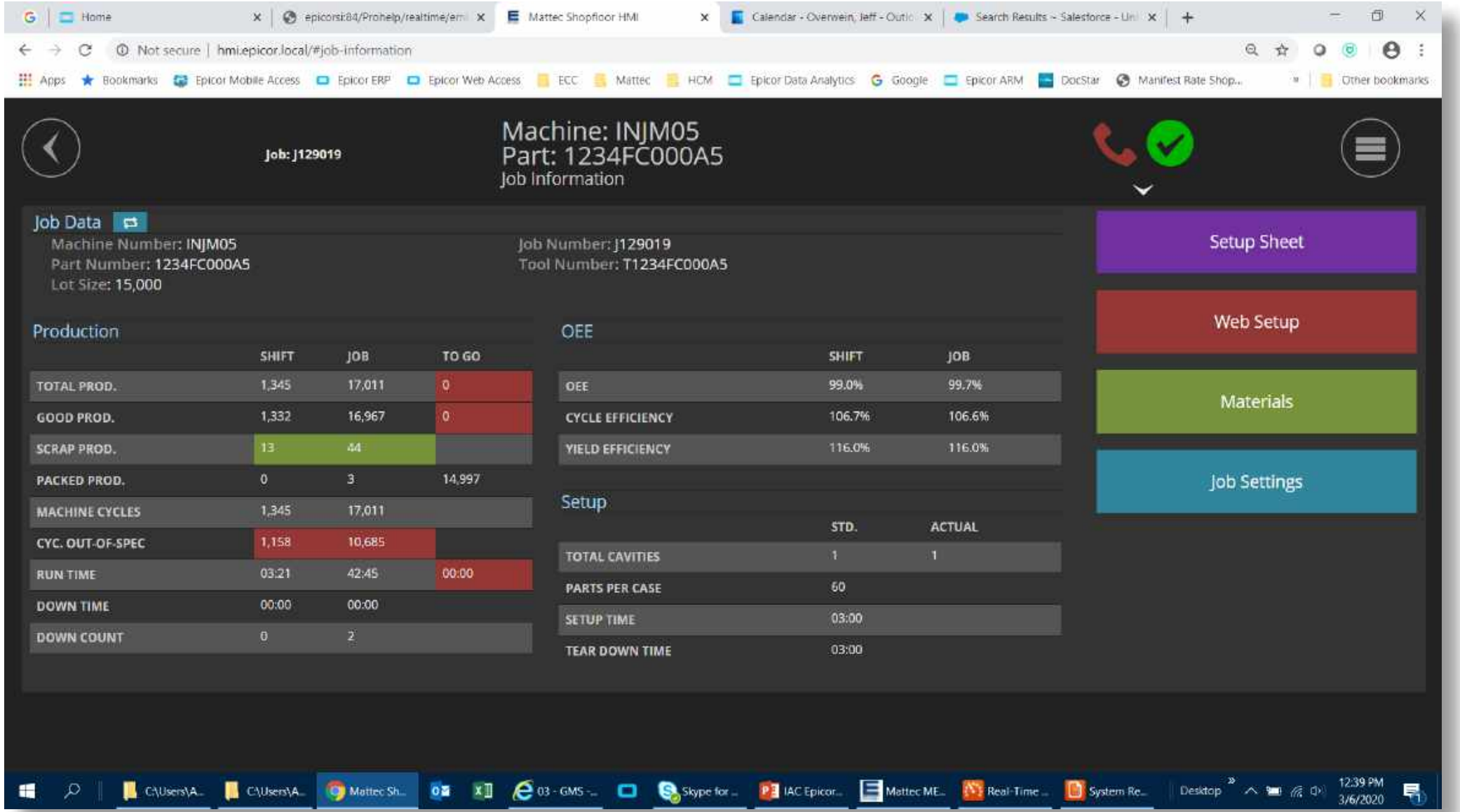
Parameter Data



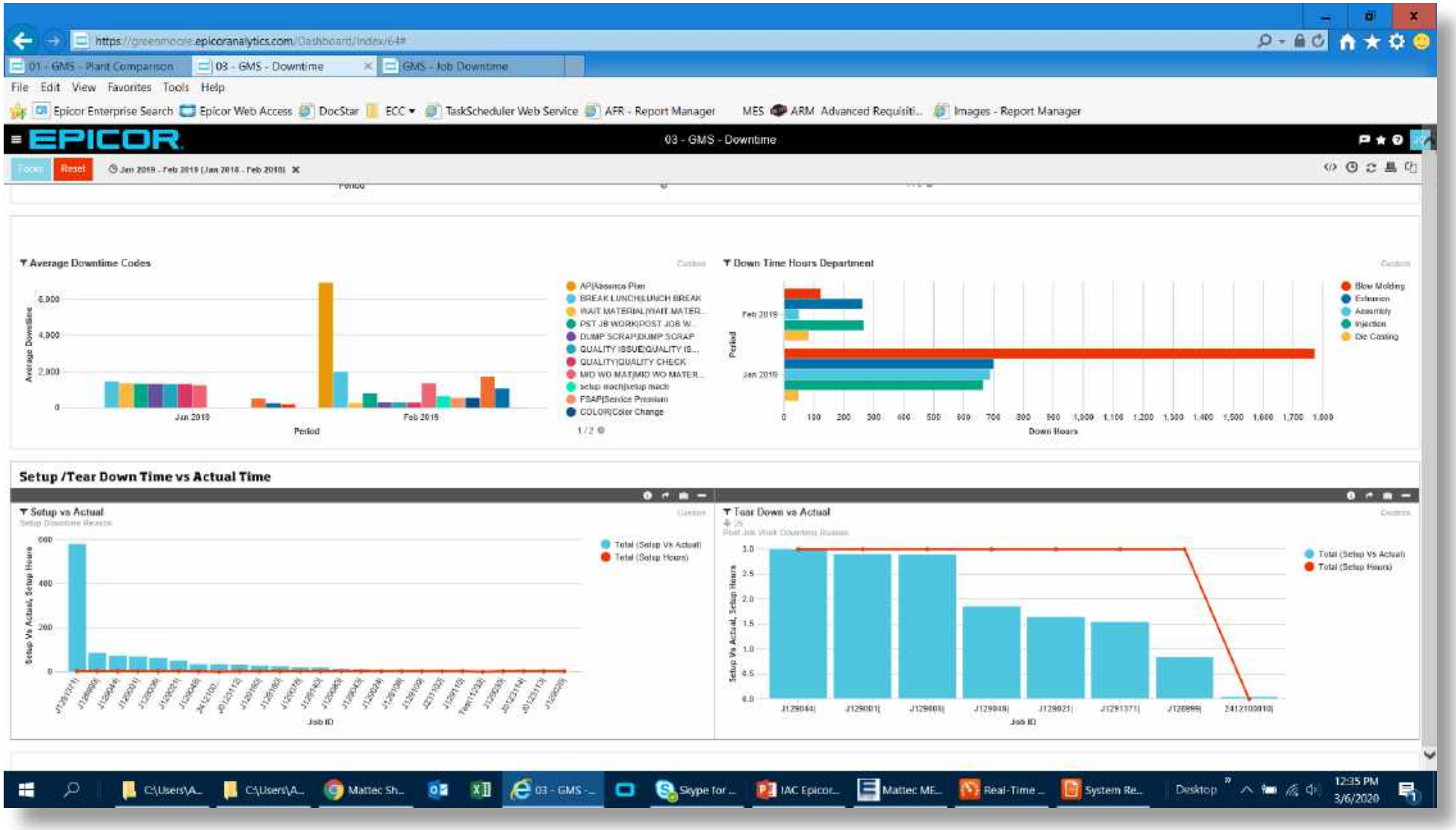
Multi level downtime reason capture



Job Data

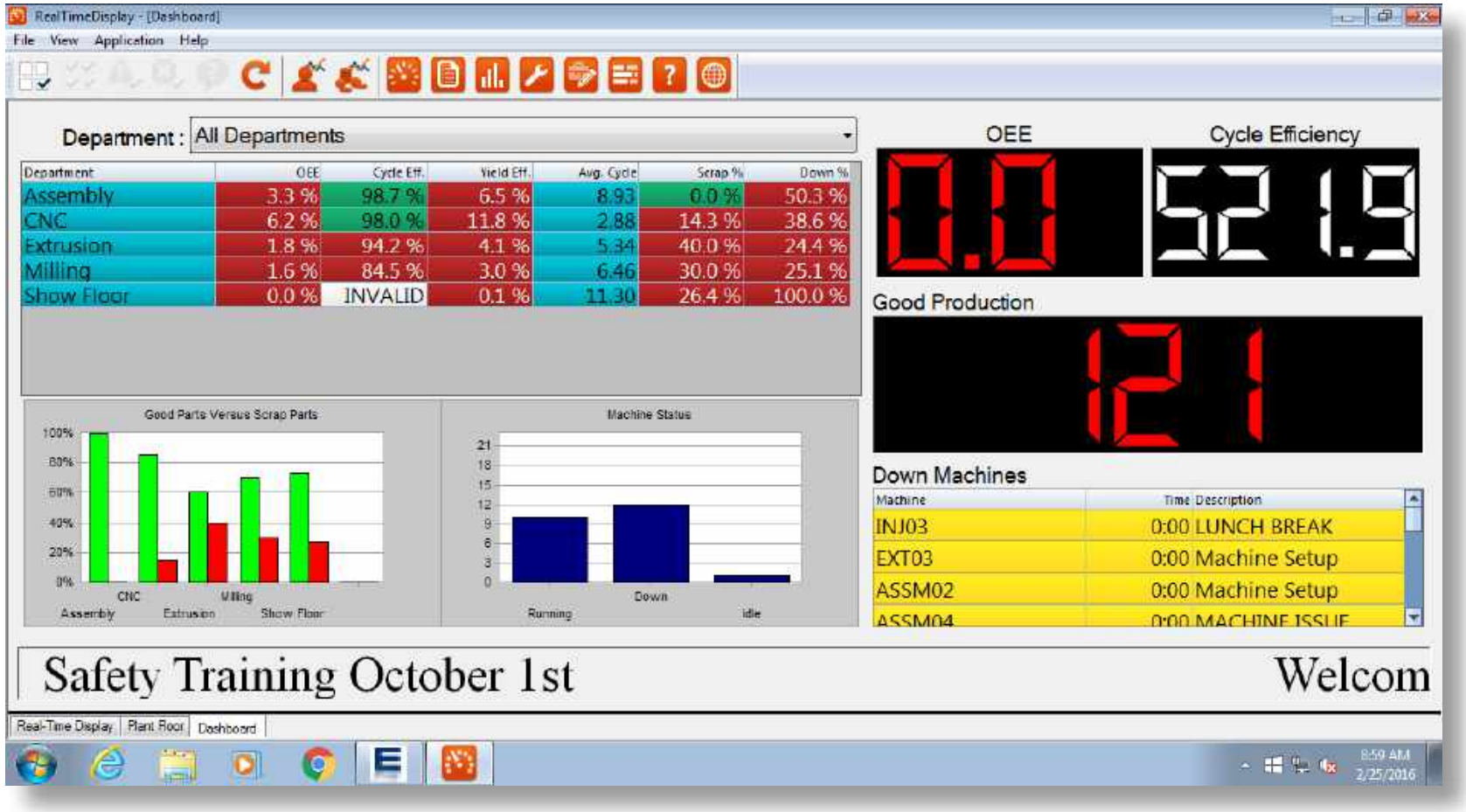


Custom Dashboards with Epicor Data Analytics

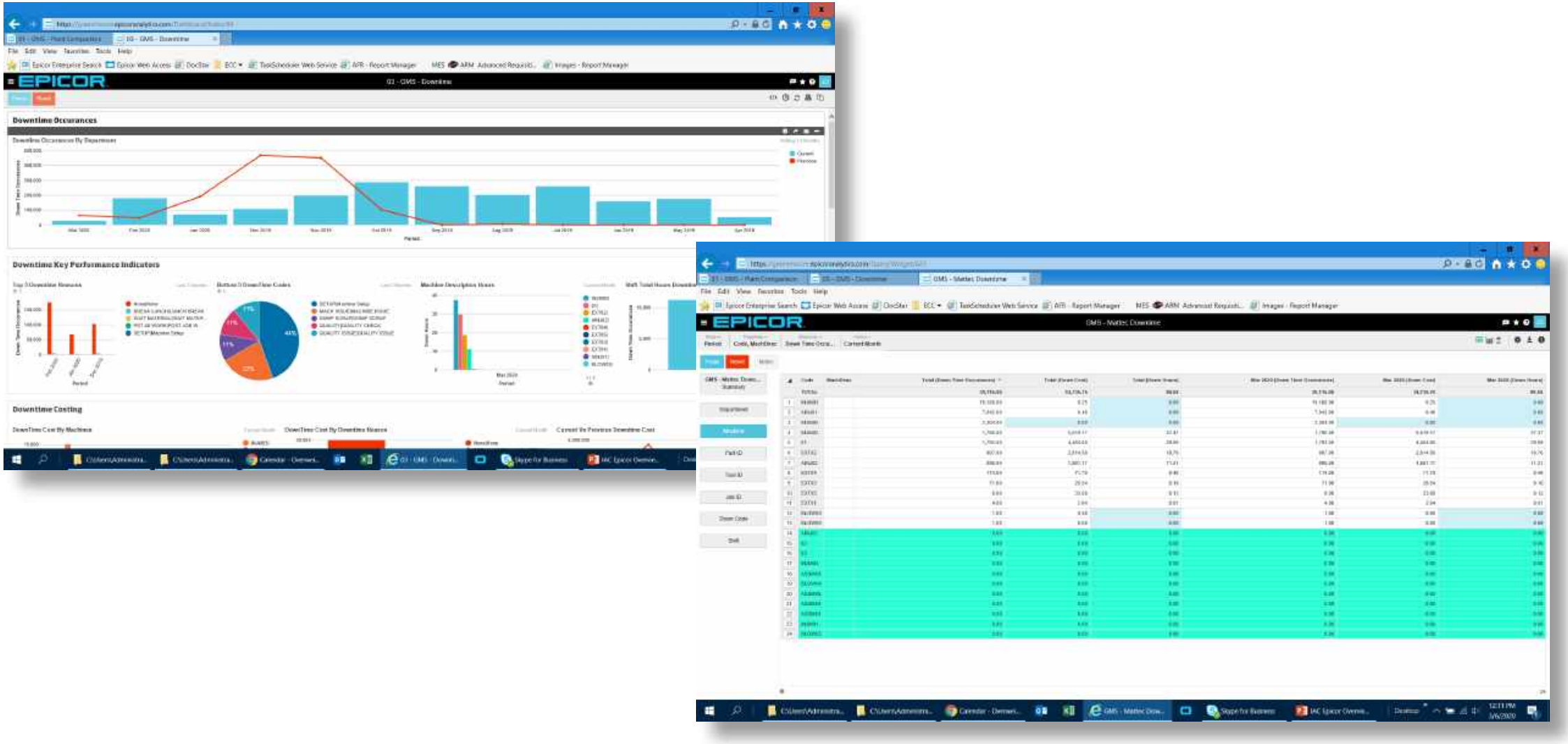


Real-time dashboards designed for Overhead displays

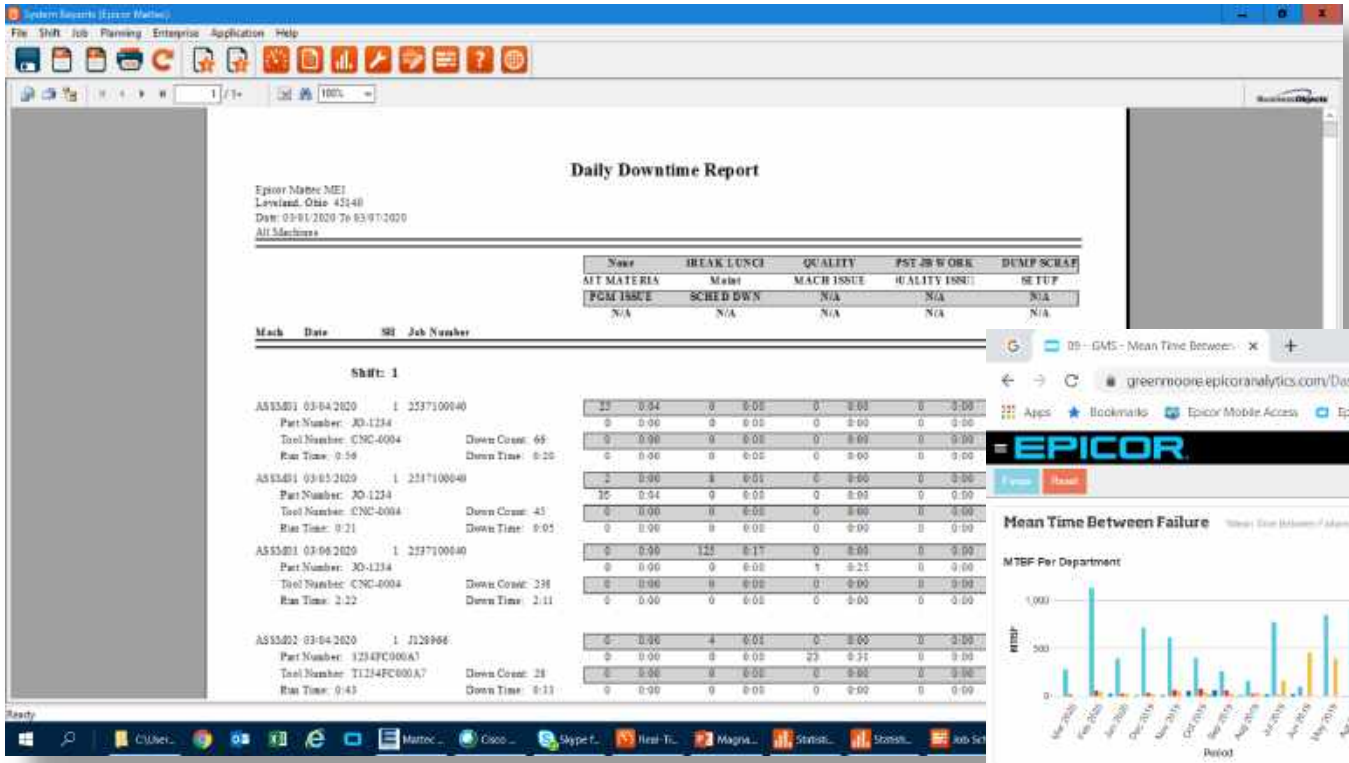
Operator focused dashboards

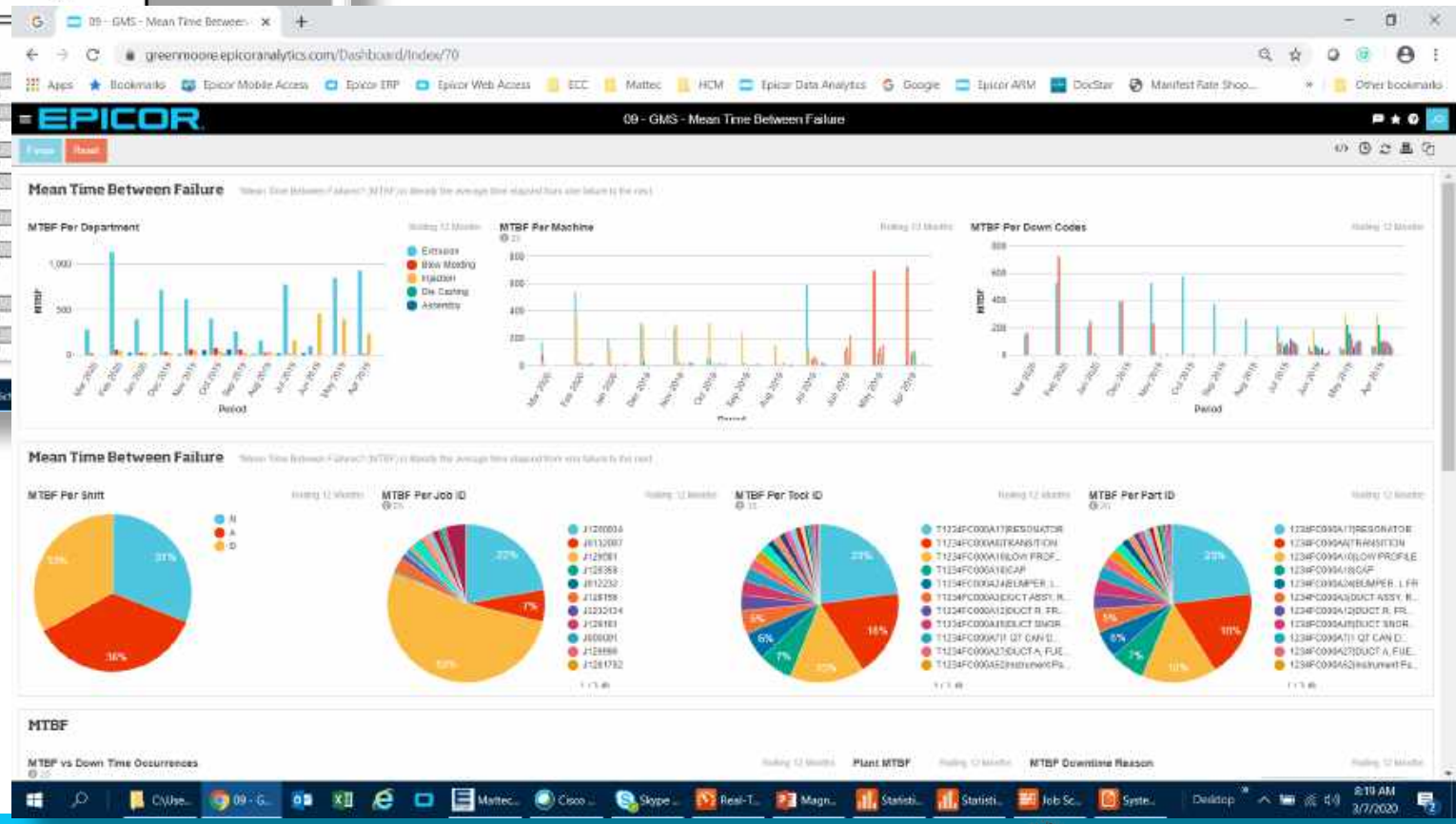


Downtime Tracking



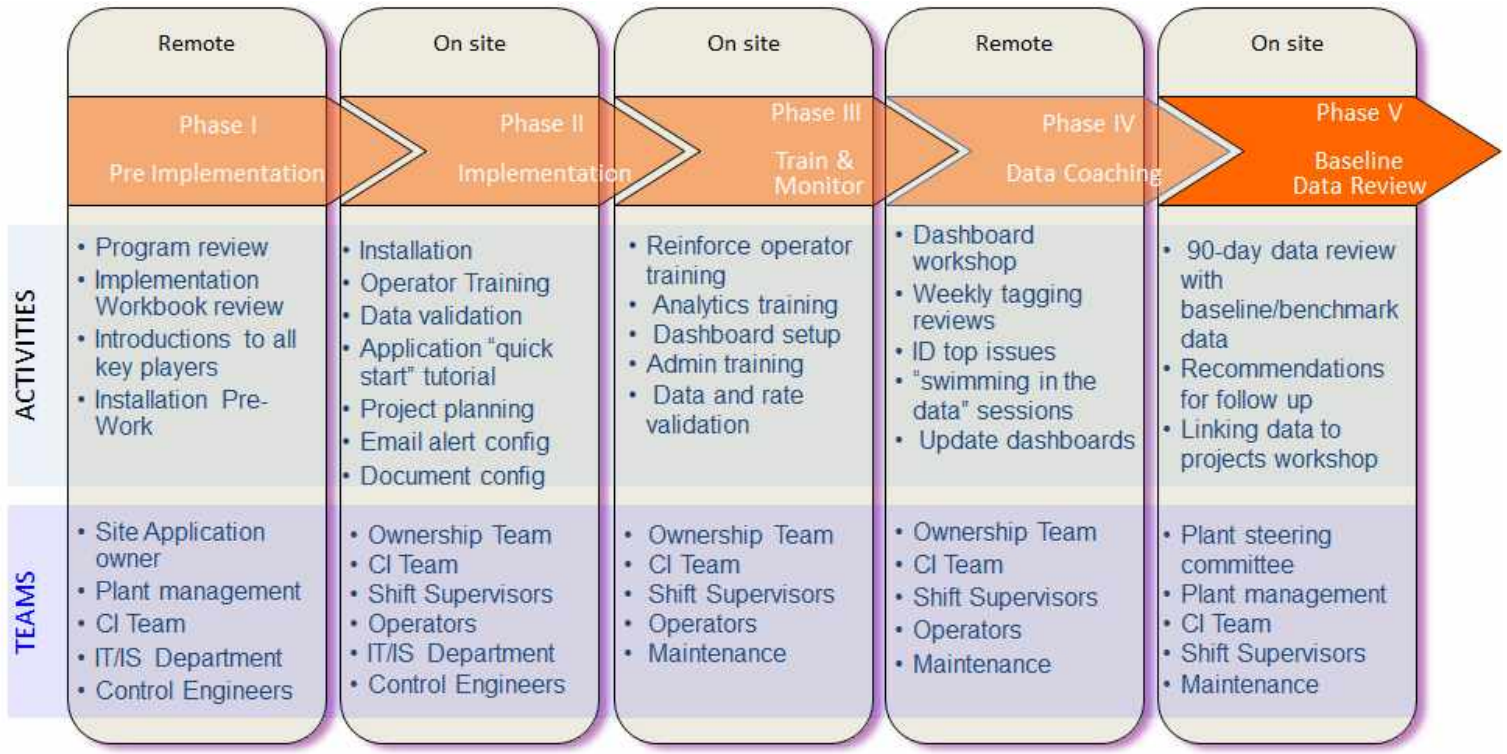
Daily/ Weekly Reports





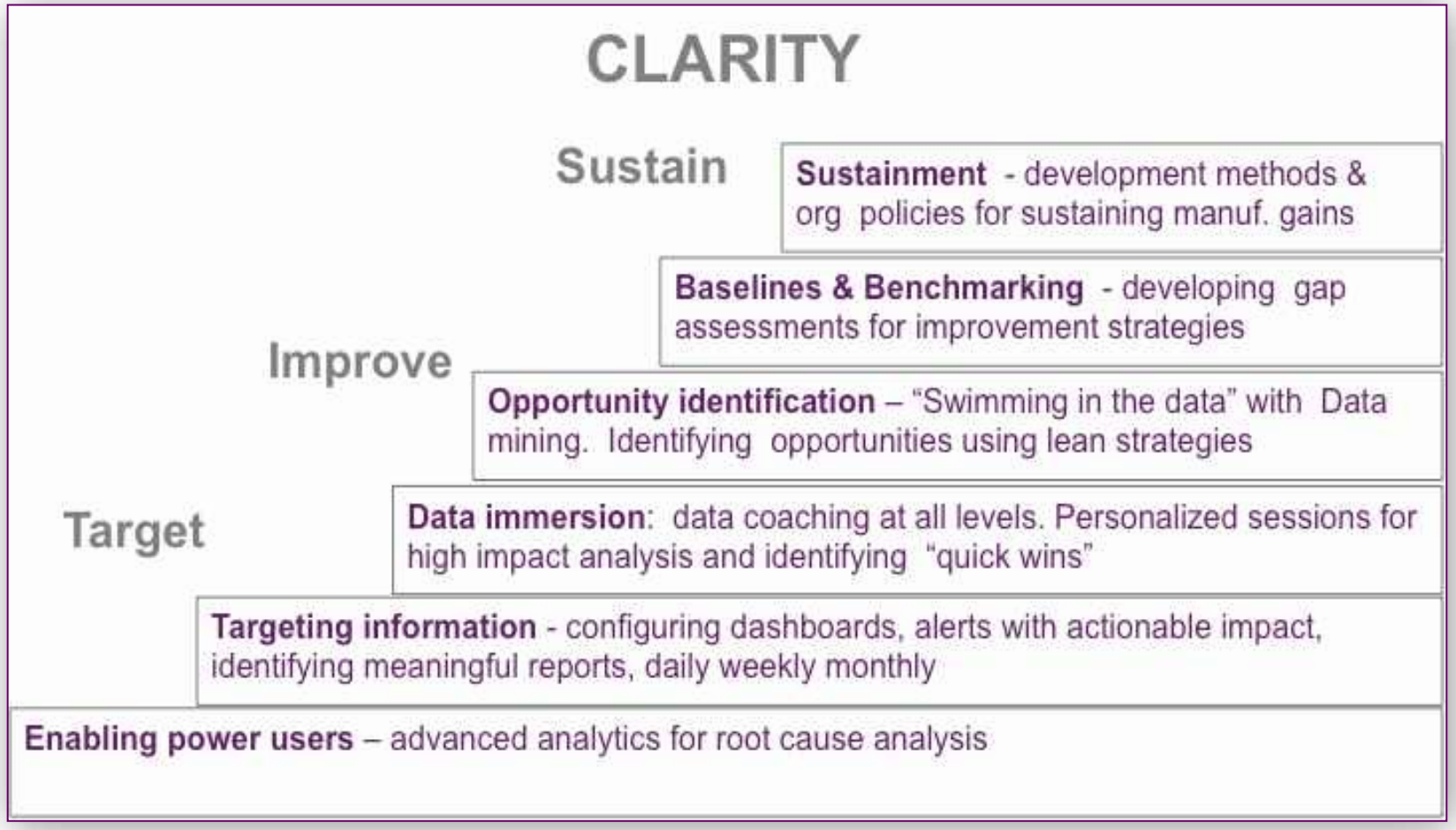
Sage Clarity – Your Advanced MES Partner

CLARITY: More than just technology…
A unique deployment methodology to drive fast results

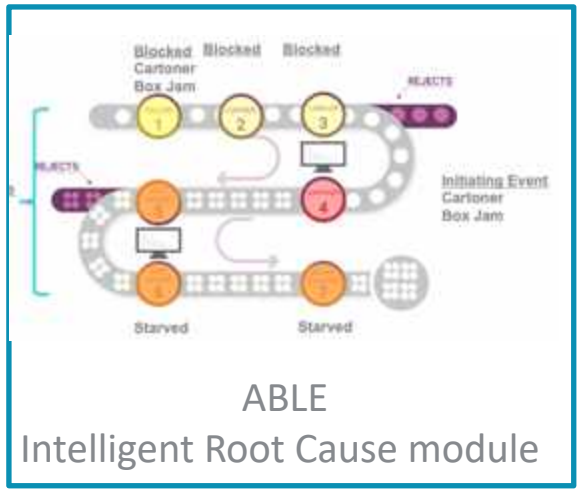


CLARITY Advisory Services

CLARITY Drives OEE Improvement



Industry 4.0 MES Eco system products for Advanced MES:



ABLE
Intelligent Root Cause module

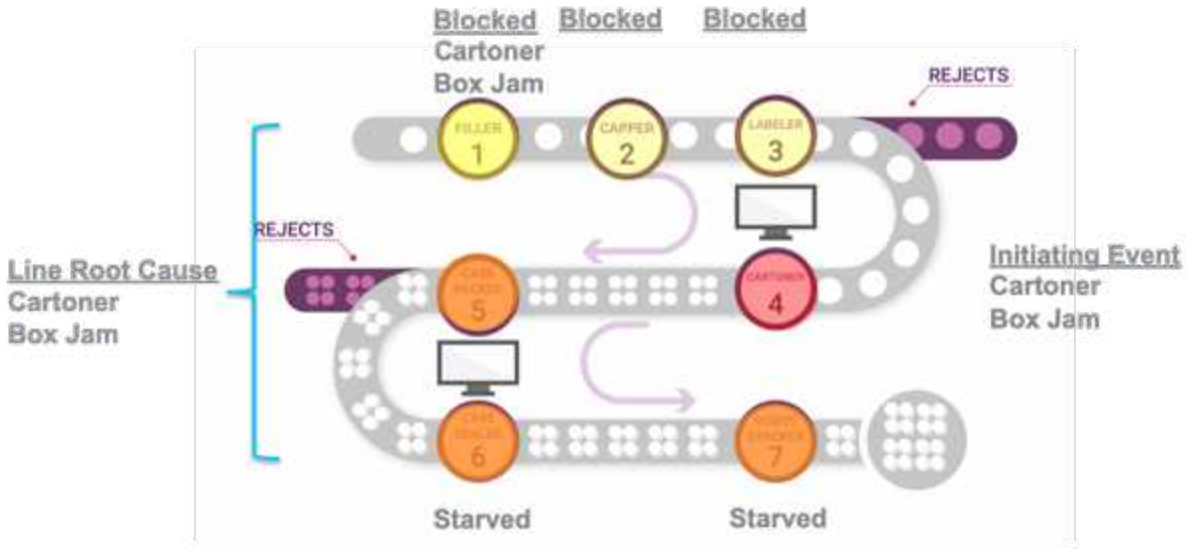
Factory View
Live Plant Visualization

Digital Twin software
Factory DNA for Industry 4.0

Andon as a Platform
Plug in App for MES

Mobile OEE

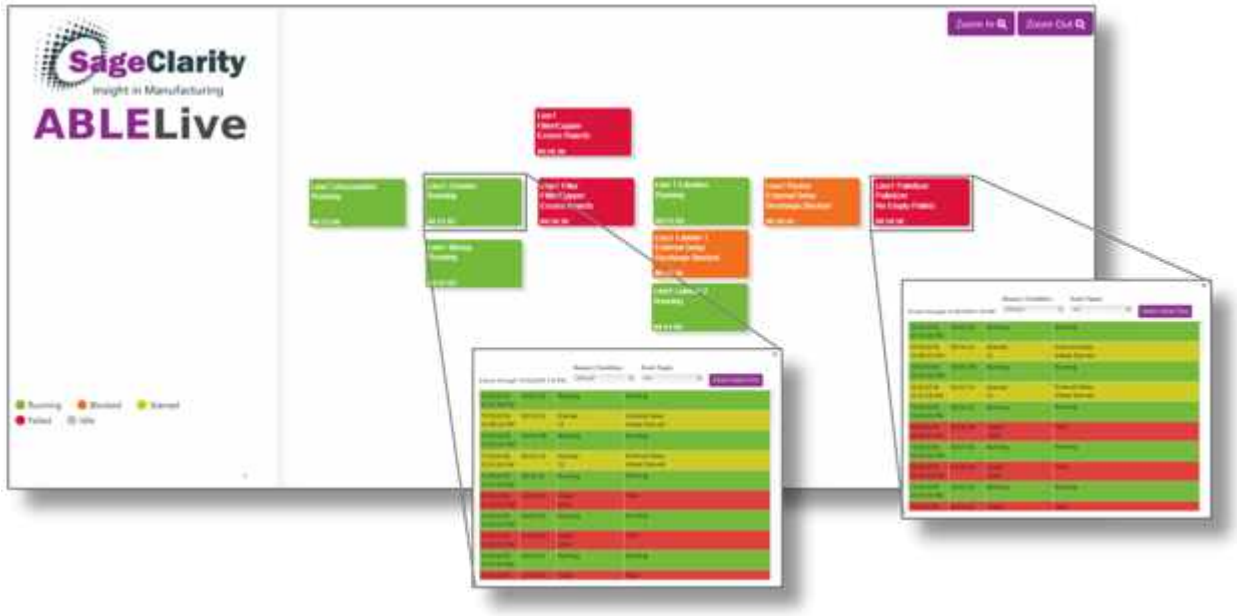
ABLE – IOT
Intelligent Root Cause Analysis



Key Features/Benefits

- Modular modeling of machine centers, each with simple logic engine to determine state
- Models line flow to determine root cause
- Supports a corporate PLC standardization strategy
- Simplifies data acquisition & control architectures
- Enterprise configurations that can be copied from line to line and plant to plant.
- **Improves Fidelity of data by 20%**
- **Reduces integration costs up to 50%**

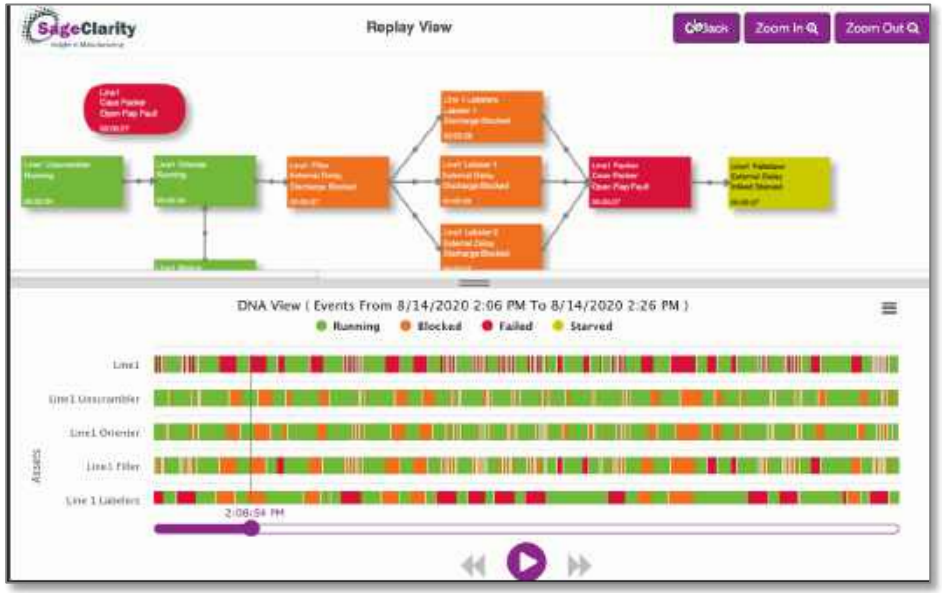
Factory View



Key Features/Benefits

- Live Plant Views
- Message Broker technology
- Data Logging capability for validation
- Great visualization for ANY manufacturing plant
- Can be integrated into plant floor HMIs

Digital Twin
Digital Replay



Key Features

- ✓ Ability to create Digital Twins from real-time Manufacturing data
- ✓ Fast forward / rewind / pause through production sequences
- ✓ Multiple data streams replayed in sync
- ✓ Use for production line modeling with more accurate representations of performance
- ✓ Diagnose problems. “The press crashed last night…we lost a drive belt”. What led to the crash?

Next Gen Andon

Key Features/Benefits

Features

- ✓ Track issues related to Safety, Quality, Maintenance, engineering, etc.
- ✓ Smart Alerting technology
- ✓ Work flow to drive follow up
- ✓ Integrate machine related and non machine related issues

Typical uses

- ✓ NCR (Non comformance) Reporting
- ✓ Safety Incident reporting
- ✓ Downtime Andon alerts and follow up
- ✓ Quality issue follow up
- ✓ Warehouse escalations

Mobile OEE

Key Features/Benefits

Features

- ✓ Enterprise Roll up across sites
- ✓ Drill down by plant / line
- ✓ YTD, MTD, WTD reporting
- ✓ “Mobile First” design
- ✓ Metric apps for OEE, OTIF, Quality, etc.

Key Points

- ✓ Fills the mobile strategy for manufacturing companies
- ✓ Can be configured as a Single app or as multiple apps
- ✓ Can be used to bring real-time visibility to key manufacturing metrics

Industry 4.0 meets Advanced MES with Sage Clarity

- ✓Thought leadership and domain expertise in the world of MES
- ✓A deep feature rich set of modules integrations and plug-in applications to expand the MES footprint
- ✓Capabilities to help drive:
  - ✓IIOT data collection strategies
  - ✓Meaningful User Interfaces
  - ✓Purpose Built applications
- ✓A global partner to help accelerate & deliver a visionary EPCIOR MES roadmap.

For additional information

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