

PRODUCTION LINE MONITORING

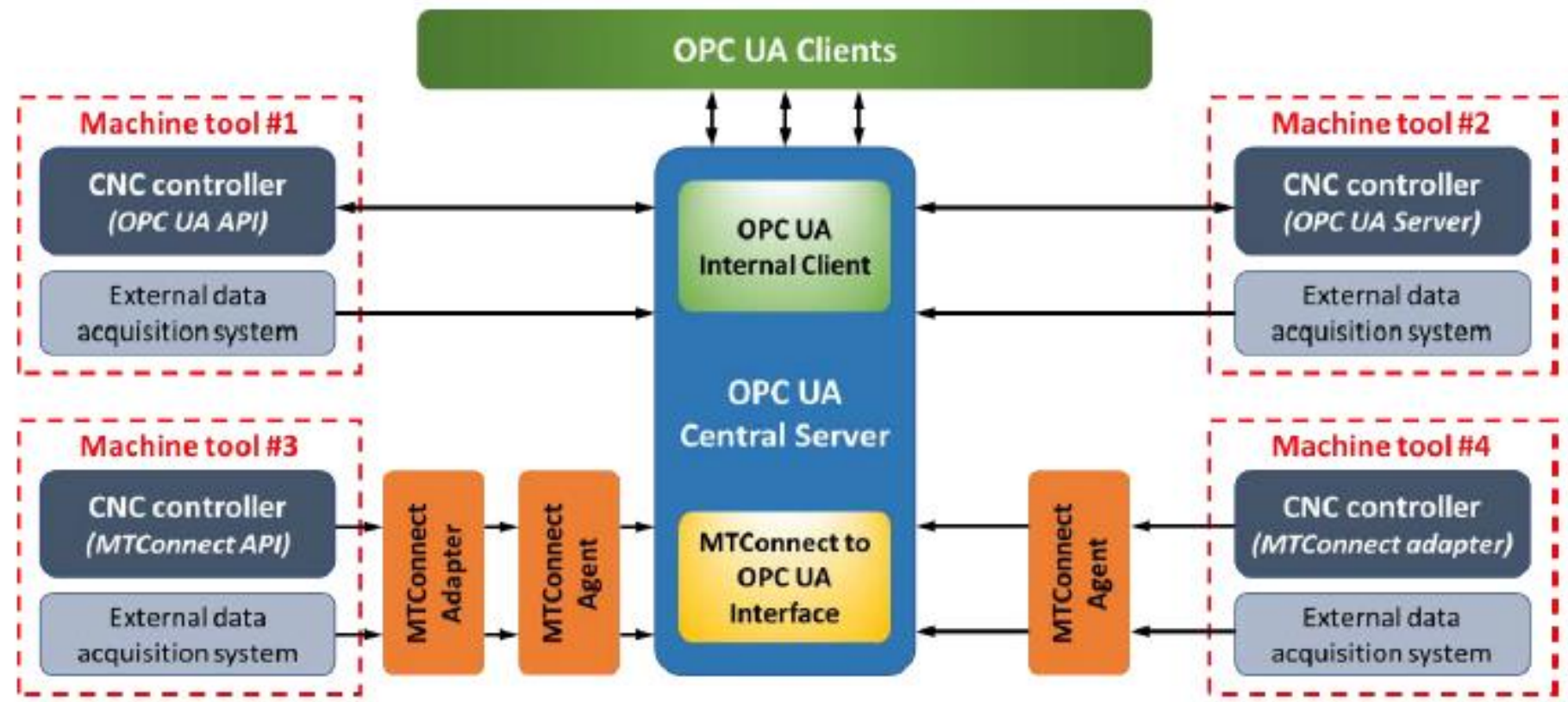


Factories of the Future

Sustainable Business | Connected Operations | Industry 4.0+ Technology

MTCONNECT OR OPC UA*

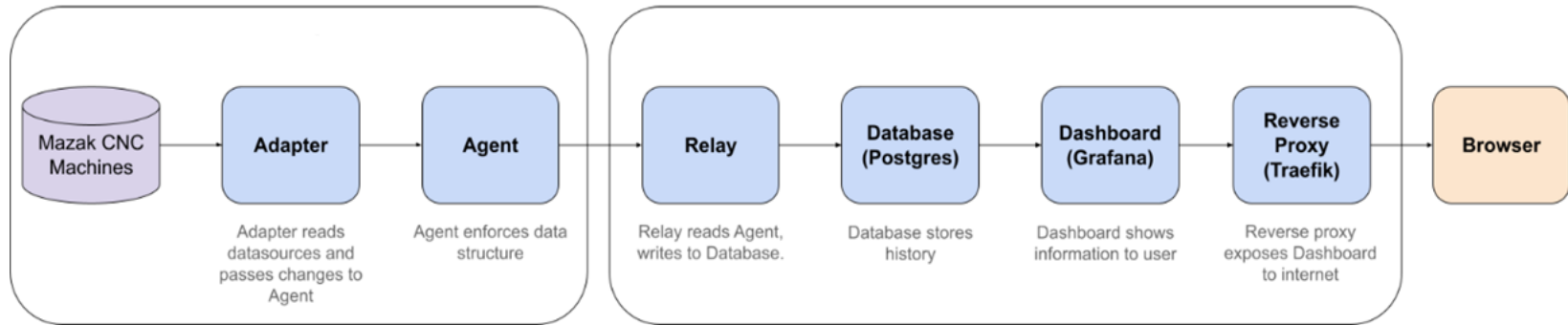
The 4 variations in which machine tools available in any manufacturing setup across the globe



Reference – “Cyber-Physical Machine Tools (CPMT) Platform” using OPC UA and MTConnect, Cardiff University

Open Platform Communications Unified Architecture (OPC UA)

REAL-TIME MONITORING ON JOB & MACHINE PERFORMANCE



```

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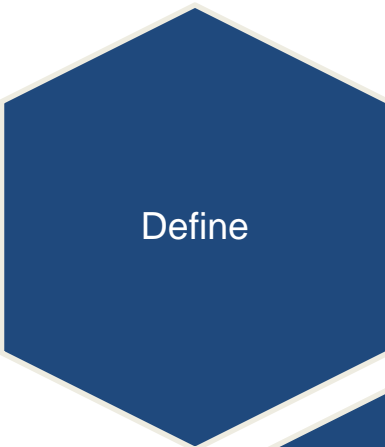
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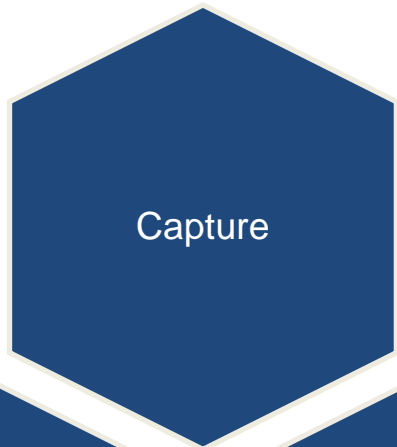
LINE PERFORMANCE MONITORING



Manufacturing master data including enterprise model, downtime reasons, products, ingredients and product steps

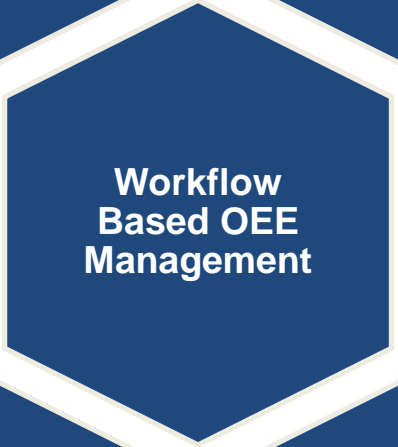


Define

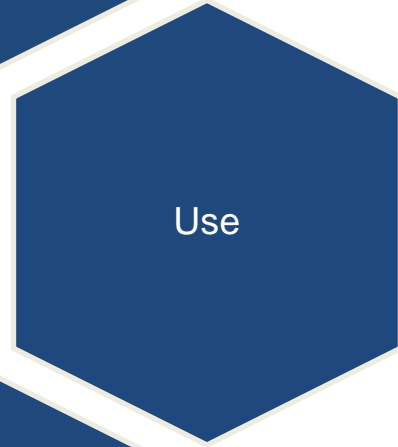


Capture

Connect machines using a variety of methods into key buckets with an InfluxDB Historian



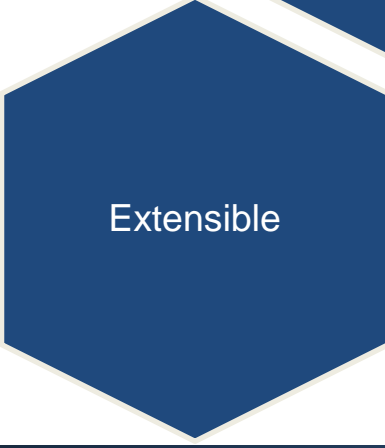
Workflow Based OEE Management



Use

Schedulers create and schedule orders, operators execute orders & capture downtime reasons

Built on Grafana, Influx and postgres to push key process parameters to view alongside production dashboards

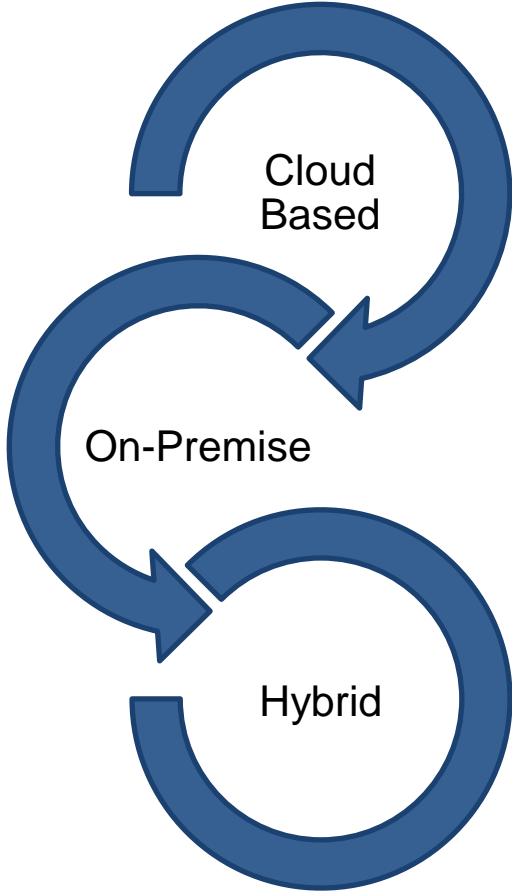


Extensible

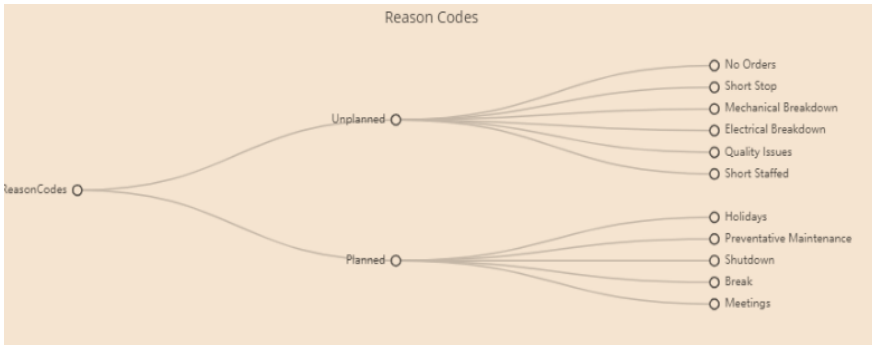
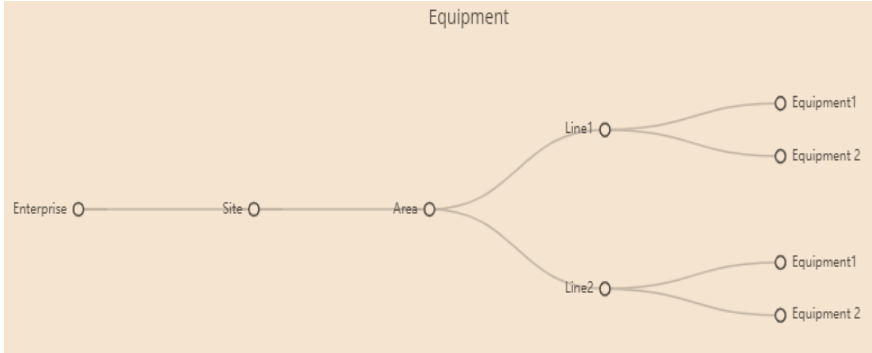


Improve

Get key insights into your manufacturing, understand your biggest losses, visualize OEE



LINE PERFORMANCE MONITORING



SmartFactory > Line Performance

Site: Site Area: Area Line: Line1 Annotations & Alerts:

Current Running Order

Time	Production Line	Order ID	Product ID	Product Description	Order State	Scheduled Start Time	Actual Start Time	Setpoint Rate	Order Qty	Issued Qty	Remaining Qty	Remaining Time
1969-12-31 19:00:00	Site Area Line1	100033	1	Chicken Pizza	running	2020-08-20 10:22:07.007	2020-08-20 10:00:01	100.00	100000	-	-	-
1969-12-31 19:00:00	Site Area Line1	100034	1	Chicken Pizza	next	2020-08-21 03:02:57.007	-	0	10000	-	-	-

Planned Production: 16787 Actual Production: 3530 Held Time: 1.83 day Running Time: 2.61 day Availability: 58.79% Performance: 34.97%

Current Rate: 65

Line Performance

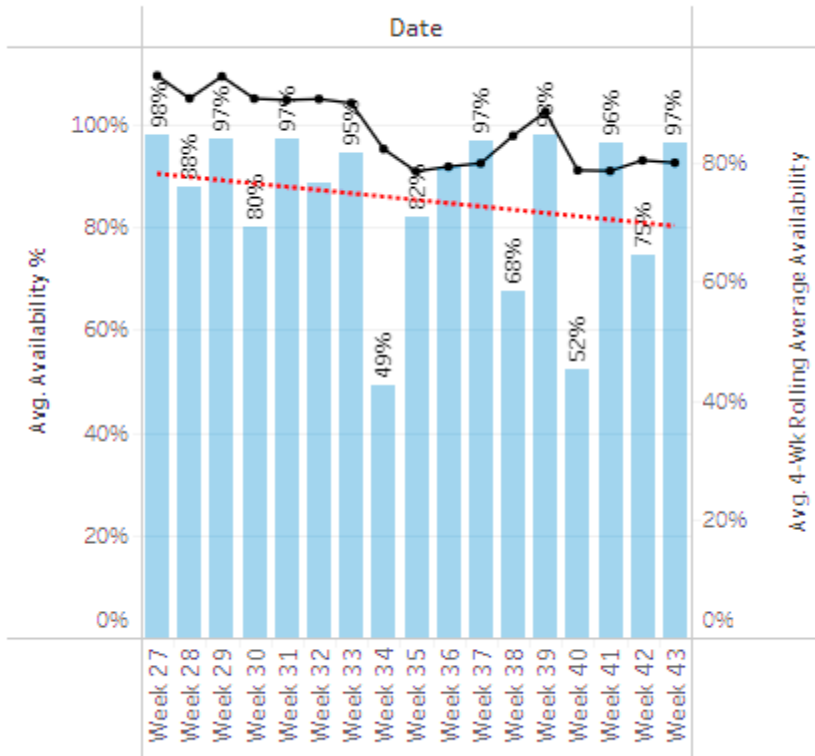
DownTime Editor Table

Time	duration	status	category	reason	equipment
2020-08-19 19:04:07.402	16:48:29.500	held	Unplanned	Electrical Breakdown	
2020-08-19 11:24:34.801	07:39:32.601	held	Unplanned	No Orders	
2020-08-19 03:11:29.653	08:13:05.148	held	Unplanned	Short Staffed	
2020-08-19 00:08:28.179	03:03:01.474	held	Planned	Holidays	
2020-08-18 13:00:32.920	11:07:55.259	held	Unplanned	Short Staffed	
2020-08-17 01:32:15.575	35:28:17.345	held	Planned	Holidays	

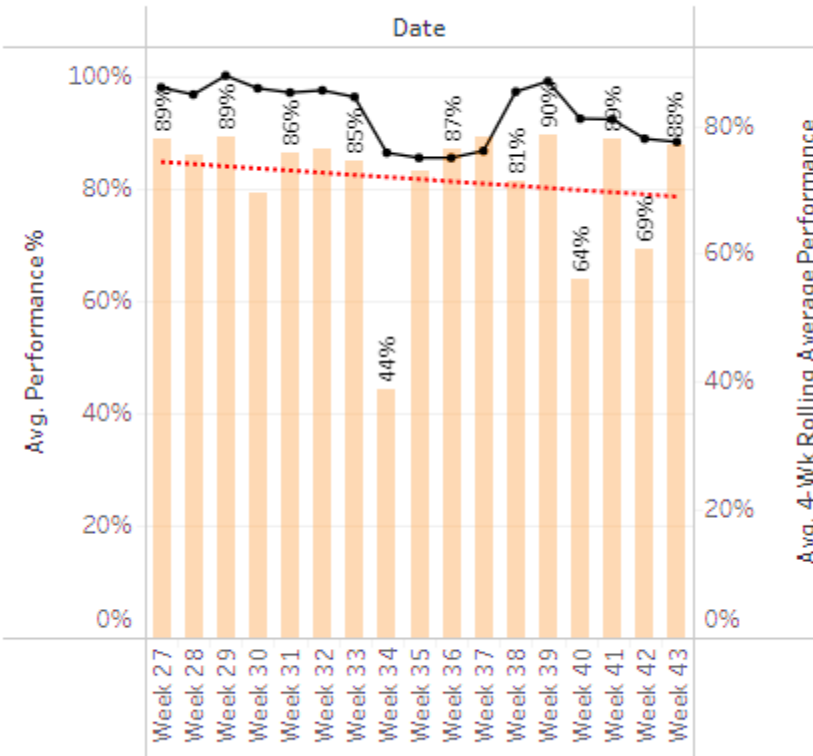
LINE PERFORMANCE MONITORING

- OEE BY PLANT/MACHINE

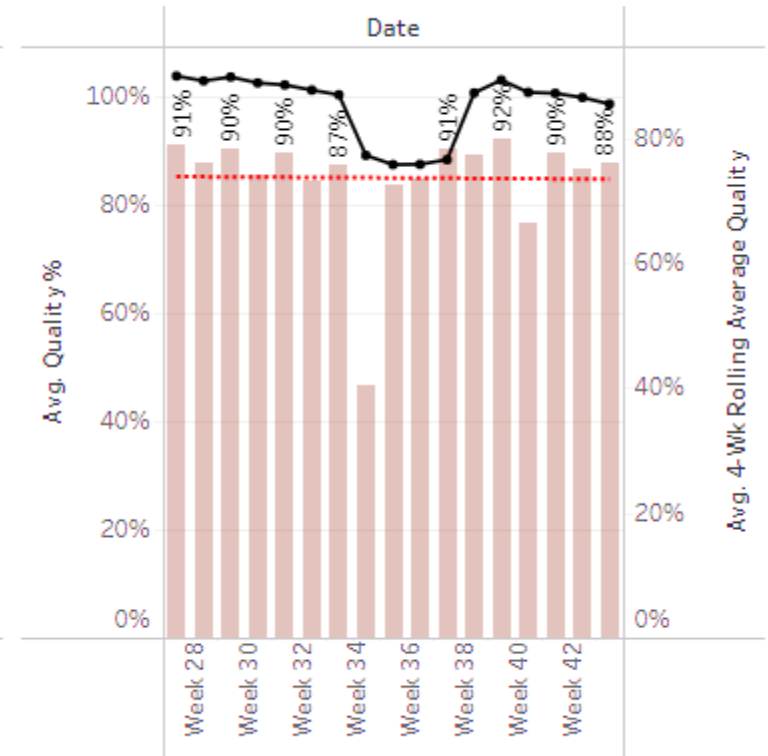
Availability %



Performance %



Quality %



Date



THANK YOU