

Cantier[®]

MAKING FACTORIES SMARTER



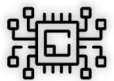
Execution • IIoT • Intelligence

Execution • IIoT • Intelligence



Provider of Next Generation Manufacturing Execution System, Cantier® MES 4.0 unifies Execution, IIoT & Intelligence capabilities like Manufacturing Intelligence, AR, VR, MES Edge, Edge Analytics in a single highly configurable and scalable suite.

FOCUS INDUSTRIES



Semiconductor
& Electronics



Automotive



Aerospace



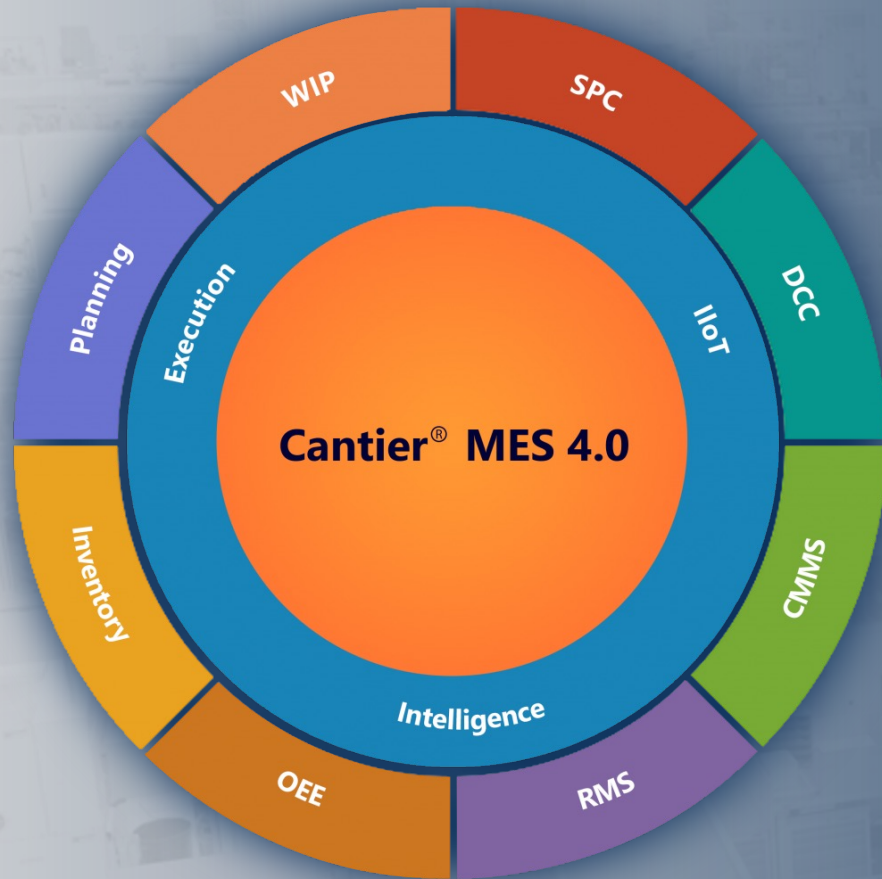
Metal Precision
& Engineering



Food & Beverages



Sugar & Ethanol



SMART Factory Solution

We offer a refreshing new take on an integrated, modular, flexible, convergent & scalable NextGen MES 4.0 Solution.

Our world-leading federated platform helps to gain full benefits of Industrial Automation, IIOT Edge Analytics, MES, AR/VR, Digital Twin and Manufacturing Intelligence.

You can collaborate in an orchestrated and intelligent way across Production Planning, WIP Traceability, Quality and Maintenance for setting up the foundation for a world-class Smart Factory with optimum TCO.



Modular industry specific functions



Fast and flexible implementation



Advanced future ready features



Cost-effective & easy-to-use

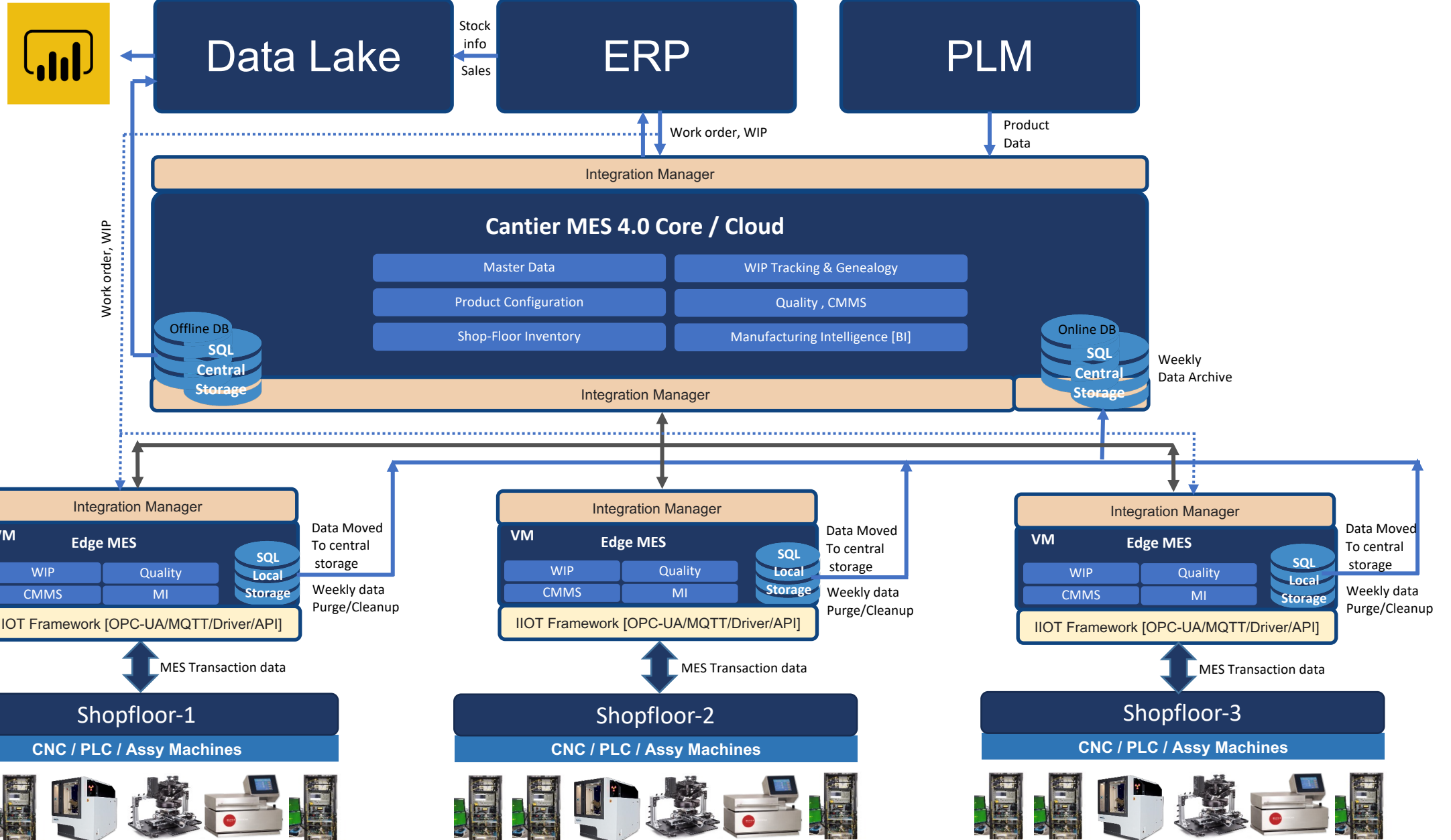
Cantier® MES X.0 Solution

MES Foundation	Transactional Platform with Task Flow & Micro Services	Master Data Management	Product Configuration	Edge Deployment Management	
WIP & Shop Floor Control	Production Execution, Track and Trace & Genealogy	Operator Certification & Skill Set Mapping	Instruction & Recipe Management	Production twin with Co-pilot	
Inventory	Inventory Management & Optimization	Location Tracking & Analytics	In-factory dispatching		
Quality	Incoming/Outgoing Quality Control	Statistical Process Control (SPC)	Non-Conformance Management (NCM)	Product Quality Management (PQM) – CAPA, RCA)	Yield Management with Root Cause Finding
Maintenance	Equipment Maintenance Management (CMMS)	Corrective Maintenance with worker guidance	Fault Detection with equipment SPC	Predictive & Prescriptive Maintenance	Equipment Maintenance twin with Co-pilot
KPI Monitoring	Production & Performance Monitoring with OEE	Resource effectiveness monitoring	Sustainable Index tracking and publishing	Virtual Factory twin with Co-pilot	
Integration	Enterprise Integration Manager (SAP/Cloud)	3 rd party API packaging for transactional integration	Hypergraph for enterprise knowledge integration		
IIOT	IIOT Connectivity Controller	OPC UA, SECS/GEM Compliant	Metadata Catalog	Secured Private Edge	
Reports	Manufacturing Intelligence	Trigger/time based agents	Blockchain-protected Traceability Publishing		

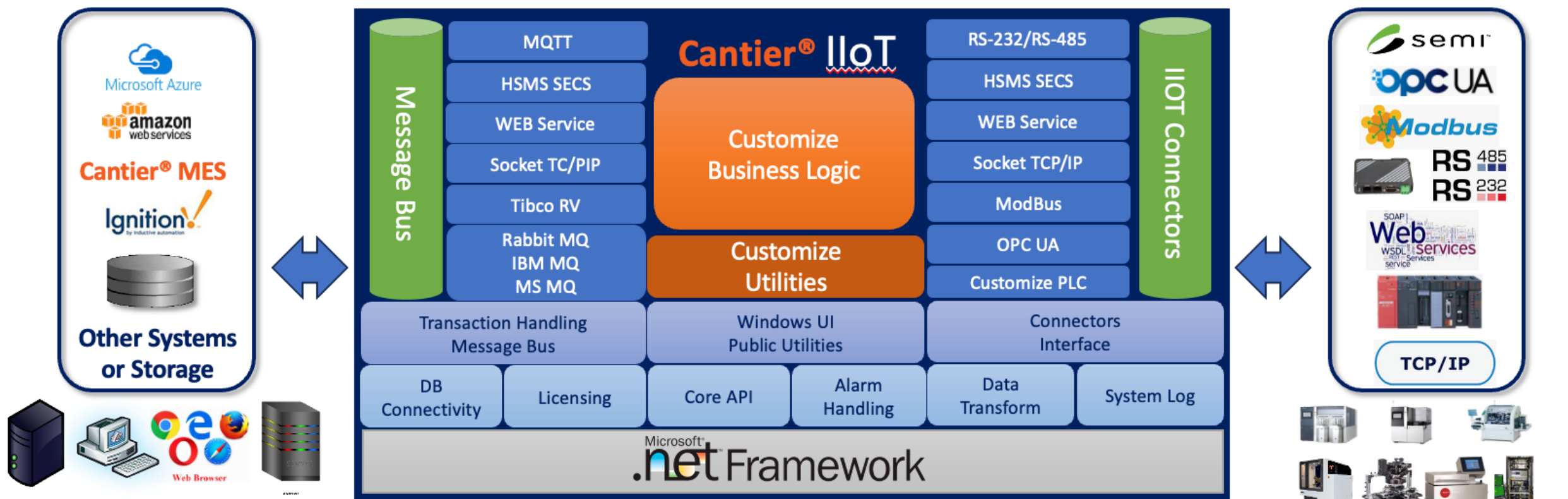
- Digital Enablement
- Digital Thread
- Digital Twin

Cloud/Edge Architecture

Manufacturing Intelligence



Cantier® IIoT Architecture



Host

- Multi-Message Bus Support!
- Multi-Server Connective.
- Client UI for Local Control
- Browser UI for Remote Monitoring.

Cantier® IIoT

- Message Decoding & Encoding!
- Message Bus Drivers can Plug-In.

- Support .NET Framework, Spring.net and Nlog development framework.
- Use XML Config for I/O Tags, IP Address, SVID, CEID etc, no code.
- IIoT development focusing on business logic changes.

- Connector I/O Decoding & Encoding!
- Connector I/O Drivers can Plug-In.

Equipment

- Multi-IOT Protocols Support!
- Support SEMI SECS GEM Standard.
- Support TCP/IP and Serial Port

INDUSTRY RECOGNITION & CLIENTS

With proven efficacy and scalability, we service prominent global manufacturers across critical industries



Systems Integration



Technology Partners





CASE STUDIES

CASE STUDY

Electronics Industry



Business Case and Challenges

- To support their Industry 4.0 Transformation Journey without scraping old machines, not major replacement capex investments, and solution needs established across their Factories.
- Most of these machines are PLC based such as Allen Bradley, GE Fanuc, etc., and Industrial PCs some of them as 45+ old machines to connect and collect data in the shop-floor process flow
- More than a week to come-up with the Root Cause Analysis (RCA) Report,, as a results lesser OEE, MTBF, MTBA and MTTR which hits bottom line in company

Solution Approach

- Cantier MES 4.0 connects 450 machines through IIoT Gateway to establish real-time communications.
- Cantier Intelligence solution provides accurate OEE Dashboards with drill down capabilities.
- Maintenance KPIs – MTTR, MTBF, MTBA to minimize downtime
- Machine Learning on Predictive Maintenance and Quality

Benefits

- **MTTR improvement 17%**
- **MTBF improvement 15%**
- **OEE improvement 7%**
- **Overall Productivity Improvement 10%**
- Successfully connected 45+ years machines to provide the live data feed to MES 4.0
- All of this achieved within 3 months
- ROI achieved in shorter period and solved the problem with negligible cost

Breakthrough KPI Improvements



Area	KPI	2019 (pre-MES)	2020	2021	Q1 2022	2022 YE Proj	% Improvement from 2019
Assembly	OEE	59%	64%	79%	78%	80%	36%
	UPDT <small>(ave hours per day)</small>	5.6	4.5	3.0	3.1	3.0	39%
	MTTR <small>(Minutes)</small>	69	51	35	35	35**	49%
	FOY <small>(KUS)</small>	32%	37%	66%	66%	68%	112%
	OUTPUT <small>(Millions)</small>	472 <small>(54 machines)</small>	415 <small>(54 machines)</small>	633 <small>(54 machines)</small>	170 <small>(56 machines)</small>	750 <small>(59 machines)</small>	45%
Test	OEE	80%	81%	85%	85.2%	85.2%	6%
	UPDT <small>(ave hours per day)</small>	3.4	1.6	1.0	0.9	0.9	74%
	MTTR <small>(Minutes)</small>	16	16	14	13.7	13	19%
	Output <small>(Millions)</small>	433 <small>(65 machines)</small>	378 <small>(64 machines)</small>	576 <small>(70 machines)</small>	157 <small>(71 machines)</small>	650 <small>(74 machines)</small>	32%

CASE STUDY – Establishing World Class Smart Mega Factory

High Tech
Precision Machining

Greenfield Mega plant



Business Case and Challenges

- Implement Enterprise MES as the foundation for Smart Manufacturing across design/production/tool room/quality facilities with low latency & secured connectivity towards WIP Traceability, OEE, Preventive Process & Product quality & Asset maintenance
- Shop Floor IIOT & Intelligence
- Agile implementation with scalability,
- Ability to handle proprietary interfaces & protocols

Solution Approach

- Cantier MES 4.0 is being implemented by connecting and collecting data from 3500 machines through IIoT Edge Computing Systems to establish real-time communications for phase 1 This will be extended in Phase 2 for another 5500 machines
- WIP module with full Track and Trace with Error proofing with accurate Dashboards and drill down capabilities being implemented
- Maintenance KPIs – MTTR, MTBF, MTBA to minimize downtime will made available by implementation CMMS module
- SPC module for monitoring and closed loop control of selected in-process quality parameters
- Machine Learning to be implemented on Predictive Maintenance and Quality

Benefits

- **Core-Edge Architecture for high performance & scalability**
- **Machine Connectivity using FOCAS Gateway- Proven Scalable & Cost-Effective Solution for CNC machines**
- **Agility to deal with unique requirements**
- **Readiness to interface with proprietary protocols for critical machine communication**

CASE STUDY – Connecting Multiple Machines for OEE, CMMS and Traceability



Business Case and Challenges

- Manual data collection across multiple machines for OEE computation which is laborious and inefficient
- Need to create a central corporate data and visualizing capability for managing and monitoring the performances of plant

Solution Approach

- Cantier MES 4.0 is being implemented by connecting and collecting data from multiple machines to establish real-time communications
- WIP module with full Track and Trace with Error proofing with accurate Dashboards and drill down capabilities being implemented
- Maintenance KPIs – MTTR, MTBF, MTBA to minimize downtime will be made available by implementation CMMS module
- SPC module for monitoring and closed loop control of selected in-process quality parameters
- Machine Learning to be implemented on Predictive Maintenance and Quality

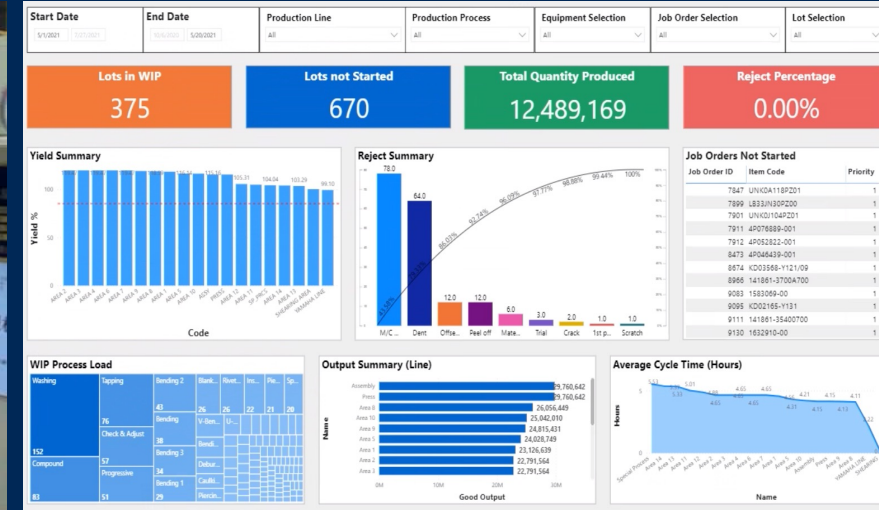
Benefits

- **Rapid configuration capability of the Cantier 4.0 solution has enabled the Requirement Mapping to simple and cost-effective**
- **Seamless integration of factory device data with Cantier MES 4.0 modules**

CASE STUDY

Automotive (INDIA)

Leading Tier 1 Manufacturer of Tyres



Business Case and Challenges

- Comply with immediate end customer needs for Product Traceability and Genealogy
- Accelerate Industry 4.0 Transformation Journey leveraging old machines with desperate control systems and solution needs across multiple factories through minimal capex investments,
- Create a central corporate data lake and visualizing capability for managing and monitoring the performances of multiple plants

Solution Approach

- Cantier MES 4.0 is being implemented by connecting and collecting data from 250 machines through IIoT Edge Computing Systems to establish real-time communications for the phase 1 for one of the plants for the Tyre Building to Dispatch process. This will be extended in Phase 2 for Raw Material to Tyre Building stage.
- WIP module with full Track and Trace with Error proofing with accurate Dashboards and drill down capabilities being implemented
- Maintenance KPIs – MTTR, MTBF, MTBA to minimize downtime will made available by implementation CMMS module
- SPC module for monitoring and closed loop control of selected in-process quality parameters
- Machine Learning to be implemented on Predictive Maintenance and Quality

Benefits

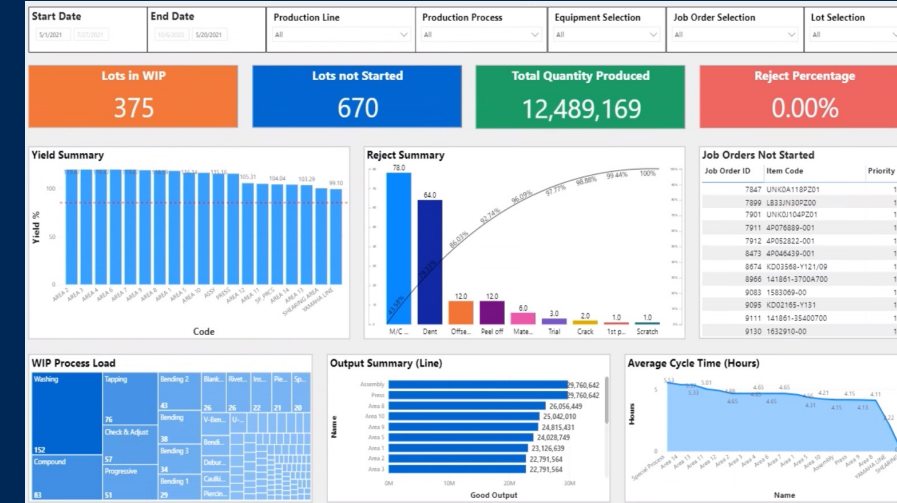
- Robust configuration capability of the Cantier 4.0 solution has enabled the Requirement Mapping simple and cost effective**
- Seamless integration of factory device data with Cantier MES 4.0 modules tested with leading IIOT Edge Computing solution provider**
- Project on schedule and within budget through well established Agile Application Management processes**

CASE STUDY

Metal Precision



Sohbi Kohgei



Business Case and Challenges

- Convert the Paper Based Manual System to a Digital Manufacturing of steel form / assembled parts, semi-finished assemblies for electronic machinery, Office Automation and other precision equipment
- Centralize Supply Chain Management across manufacturing units & Automate Shop-floor Planning, WIP Traceability, Quality & Maintenance

Solution Approach

- Connecting Equipment for automated data collection
- Implementation of Supply Chain Management with focus on Sales, Purchasing & Warehouse operations
- Implementation of Shop Floor management with focus on Inventory, Planning, Production, Quality and Maintenance

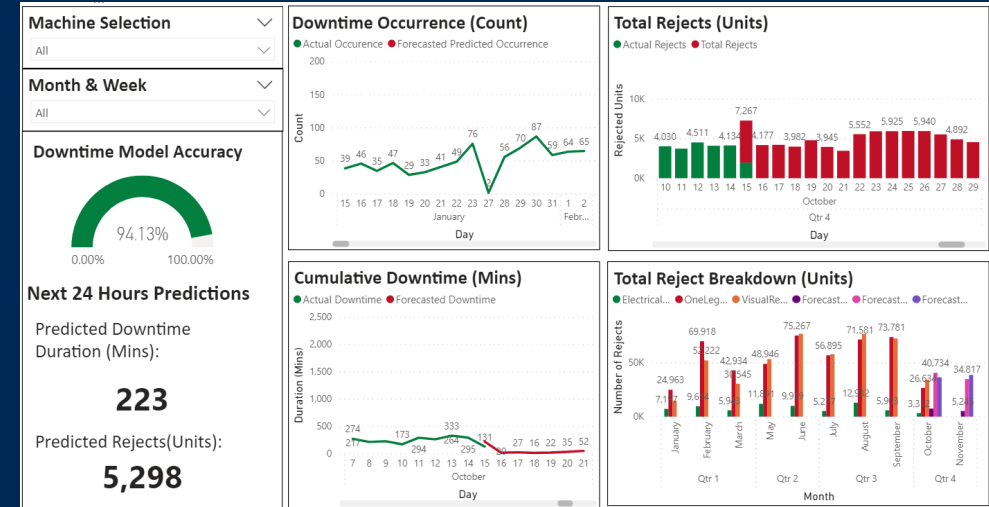
Benefits

- Cost reduction, Better equipment utilization, Better process control, Improved Shop Floor Inventory & Operations visibility and Reduced Scrap & Waste

Process	Improvement
SO	75%
PR/PO	70%
MRP/MPS	90%
JO / Travel Lot Card	70%
Material Issuance	60%
DR/SI	60%
RR / RTS	70%

CASE STUDY

Metal Precision & Assembly



Business Case

- Convert the Paper Based Manual System to a Digital Manufacturing Setup.
- To Centralize Supply Chain across their Factories
- To Automate their Shop-floor Planning, WIP Traceability, Quality & Maintenance.

Project Scope

- Supply Chain Implementation: Sales, Purchasing & Warehouse Management
- Plant Floor management: Shop floor Inventory, Planning, Production, Quality and Maintenance
- Equipment Connectivity

Solution Approach

- Implemented Cantier MES core functions for Shop floor Inventory, Production, Quality, and Maintenance.
- Implemented Cantier ERP for their Financial & Supply Chain to replace their paper-based setup
- Interfacing with their Equipment for Data Collection.

Benefits

- Real-Time Daily Production Dashboards
- Productivity Increase due to decision making based on real-time information
- Improved Visibility of the Shop Floor Inventory & Operations
- Reduction of Scrap & Waste
- Reduced Down-time

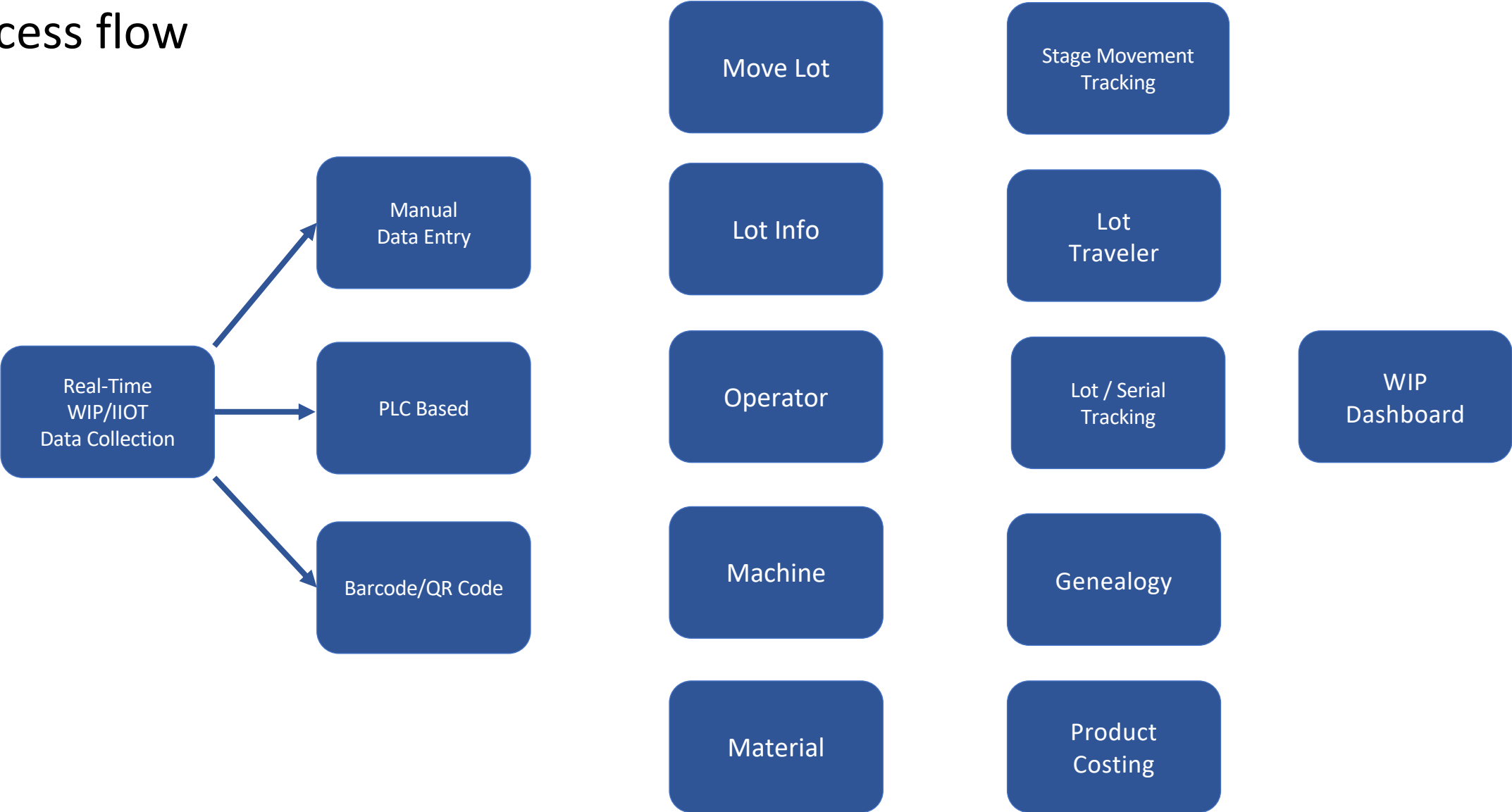


Cantier[®] MES 4.0

WIP Tracking & Shop Floor Control

WIP- Management

Process flow





Your License has expired

Shop Floor > Work-In-Progress > WIP Transactions > Move Lot

In Queue

10 Items

In Process

15 Items

Completed

09 Items

On Hold

03 Items

Search

SCAN

Lots List

MOVE IN

TRACK IN

GROUP

UNGROUP

TRACK OUT

MOVE OUT

<input type="checkbox"/>	JO No	Bin	Lot No	Item	Sequence	Process	Status	Planned Completion
<input type="checkbox"/>	35	●	60005240	136504750 215/7SR15LT XA1 TT	30	PGT Painted Green Tyre	WIP	13 - 12 - 2021
<input type="checkbox"/>	35	●	60005240	136504750 215/7SR15LT XA1 TT	30	PGT Painted Green Tyre	WIP	13 - 12 - 2021
<input type="checkbox"/>	35	●	60005240	136504750 215/7SR15LT XA1 TT	30	PGT Painted Green Tyre	In-Queue	13 - 12 - 2021
<input type="checkbox"/>	35	●	60005240	136504750 215/7SR15LT XA1 TT	30	PGT Painted Green Tyre	In-Queue	13 - 12 - 2021
<input type="checkbox"/>	35	●	60005240	136504750 215/7SR15LT XA1 TT	30	PGT Painted Green Tyre	On-Hold	13 - 12 - 2021
<input type="checkbox"/>	35	●	60005240	136504750 215/7SR15LT XA1 TT	30	PT Painted Tyre	WIP	13 - 12 - 2021
<input type="checkbox"/>	35	●	60005240	136504750 215/7SR15LT XA1 TT	30	PT Painted Tyre	WIP	13 - 12 - 2021
<input type="checkbox"/>	35	●	60005240	136504750 215/7SR15LT XA1 TT	30	PGT Painted Green Tyre	Completed	13 - 12 - 2021
<input type="checkbox"/>	35	●	60005240	136504750 215/7SR15LT XA1 TT	30	PT Painted Tyre	WIP	13 - 12 - 2021

- 📍 **Work-In-Progress**
 - WIP Setup
 - WIP Transactions
 - Job Orders
 - Job Orders Upload
 - Lot List
 - **Move Lot**
 - Shop Floor Console
 - Throughput Monitor
 - Advance Change Notice
 - Change Order
 - WIP Packing
 - WIP Reports
- 🛡️ **Quality Management**
- ✂️ **CMMS**



Work-In-Progress

- WIP Setup
- WIP Transactions
 - Job Orders
 - Job Orders Upload
 - Lot List
 - Move Lot**
 - Shop Floor Console
 - Throughput Monitor
 - Advance Change Notice
 - Change Order
 - WIP Packing
- WIP Reports

Quality Management
CMMS

Shop Floor > Work-In-Progress > WIP Transactions > Move Lot


 INFO


 MACHINES


 MATERIALS


 RECEIPE

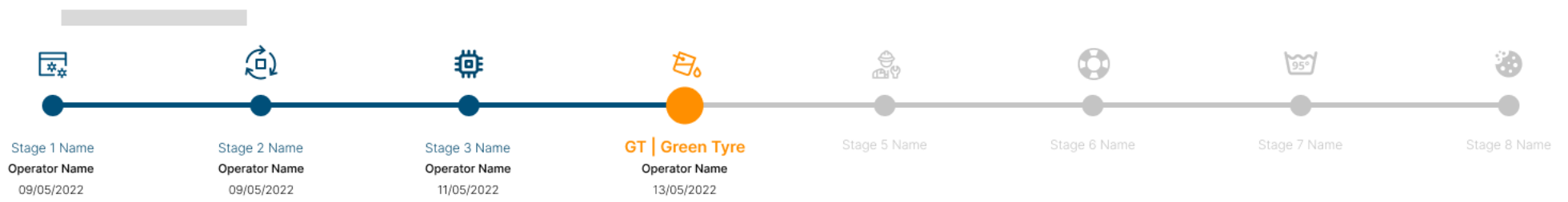

 DATA


 FILES


 INSTRUCTIONS


 BACK

Lot No	JO No 74	Current	In Process	Process	Cycle Time 207
60005240 ▾	Item 16382140 265/38	Quantity 30	Planned on 13-05-2022	GT Green Tyre	Group Code G209 -JB 007 -20211
	Seq 20			<div style="background-color: #00a0e3; width: 100%; height: 10px; border-radius: 5px; display: flex; justify-content: center; align-items: center;"> 4 of 8 </div>	Status WIP - Inprocess





Work-In-Progress

- WIP Setup
- WIP Transactions
 - Job Orders
 - Job Orders Upload
 - Lot List
 - **Move Lot**
 - Shop Floor Console
 - Throughput Monitor
 - Advance Change Notice
 - Change Order
 - WIP Packing
- WIP Reports

Quality Management

CMMS

Shop Floor > Work-In-Progress > WIP Transactions > Move Lot


INFO


MACHINES


MATERIALS


RECEIPE


DATA


FILES


INSTRUCTIONS



BACK

Machine ID

Location

+ ADD

Machine Name

🗑 CLEAR

S.No	Machine ID	Machine Name	Location	Actions
1	MC187	Machine Drilling 187	Plot12, Unit7...	Edit Delete
2	MC188	Machine Painting 188	Plot12, Unit7...	Edit Delete

WIP Traceability & Genealogy



Cantier® MES 4.0



ABC Manufacturing Inc.



ABC Manufacturing, Inc.

LOT TRAVEL CARD

JO-HV 7620 95 kV BIL.6.1

MONTH OF: August

DATE: 8/19/2020

PRODUCT INFORMATION

CUSTOMER		LOT NUMBER JO-HV 7620 95 kV BIL.6.1	SIGNATORIES
PART NUMBER	HV 7620 95 kV BIL	CUSTOMER J.O. NUMBER JO-HV 7620 95 kV	
PART NAME	HV 7620 95 kV BIL		

MATERIAL INFORMATION

MATERIAL	CHECKED BY (WAREHOUSE STAFF)	RECEIVED BY (OPERATOR)	VERIFIED BY (P. QUALITY)	MATERIAL LOT NUMBER	
SiFe Silicon Steel (SiFe) (25 KG)				DP-0025	PPC/WAREHOUSE
Cu-Al Copper-Aluminum (Cu-Al) (10 KG)				DP-0026	PRODUCTION SUPERVISOR
					LEADMAN IN CHARGE

PROCESS INFORMATION

No.	Process	Machine	QUANTITY				DATE	SHIFT	OPERATOR	QC	REMARKS
			IN	OUT	Reject	Time in/ Time Out					
1	CORE CUTTING	CUT-MAC-001	1	1	0	9:46:33 AM 9:50:32 AM	08/19/20 08/19/20		Carol		
2	CORE STACKING	STACK-MAC-001	1	1	0	9:50:32 AM 9:51:09 AM	08/19/20 08/19/20		Carol		
3	COIL WINDING	WIND-MAC-001	1	1	0	9:51:09 AM 9:51:37 AM	08/19/20 08/19/20		Carol		
4	ASSEMBLY		1	1	0	9:51:37 AM 9:51:58 AM	08/19/20 08/19/20		Carol		
5	TEST		1	1	0	9:51:58 AM 9:52:20 AM	08/19/20 08/19/20			Carol	

Product Costing



Product Costing

FG Product Code	Operation / Process	Standard Cost				Standard	Units Produced		Actual Cost				Actual	Variance
		Material Cost	Process Cost	Labor Cost	Total Cost	Cost / Unit	Qty	UOM	Material Cost	Process Cost	Labor Cost	Total Cost	Cost / Unit	
77100-OK530		0	2,180.74	433.07	2,613.81	87.13	30	PCS	0	3,582.04	960.72	4,542.76	151.43	(1,928.95)
	HOTWASH	0	271.2	39.37	310.57				0	173.7	25.21	198.90		
	SPOT/TACK WELDING	0	33.9	39.37	73.27				0	172.8	200.62	373.37		
	SEAM WELDING	0	308.1	39.37	347.47				0	210.9	26.94	237.74		
	LEAK TESTING 1	0	135.6	39.37	174.97				0	176.7	51.31	228.02		
	DRY OFF OVEN	0	135.6	39.37	174.97				0	182.7	53.06	235.83		
	MASKING	0	67.8	39.37	107.17				0	491.7	285.59	777.40		
	PAINTING	0	237.3	39.37	276.67				0	626.1	103.85	729.83		
	BAKING / UNLOADING	0	135.6	39.37	174.97				0	144.3	41.94	186.39		
	ASSEMBLY	0	482.7	39.37	522.11				0	825	67.28	892.25		
	LEAK TEST 2	0	135.6	39.37	174.97				0	72.3	20.99	93.30		
	FINAL INSPECTION	0	237.3	39.37	276.67				0	505.8	83.92	589.73		
77100-OK530-L		0	101.70	39.37	141.07	4.70	30	PCS	0	104.30	40.38	144.68	4.82	(3.61)
	SPOT WELD NO.2	0	101.7	39.37	141.07				0	104.4	40.38	144.68		
77100-OK530-U		0	661.65	196.85	858.50	28.62	30	PCS	0	780.05	235.87	1,015.91	33.86	(157.41)
	PROJECTION WELD NO.1	0	101.7	39.37	141.07				0	105.3	40.73	145.93		
	PROJECTION WELD NO.2	0	101.7	39.37	141.07				0	102.6	39.68	142.17		
	PROJECTION WELD NO.3	0	203.4	39.37	242.77				0	204.3	39.54	243.85		
	SPOT WELD NO.1	0	135	39.37	174.37				0	135.3	39.43	174.63		
	PIPE SCREWING	0	120	39.37	159.22				0	232.8	76.49	309.34		

AR Feature – Digital Work Instruction



Work-In-Progress Dashboard

Start Date 01/10/2020 - 31/03/2021	End Date 05/10/2020 - 31/01/2021	Production Line All	Production Process All	Equipment Selection All	Lot Selection All
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Lots in WIP

38

Lots not Started

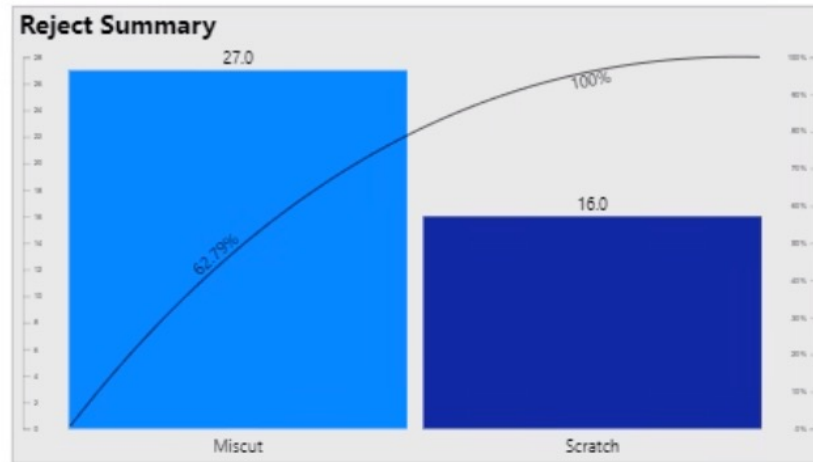
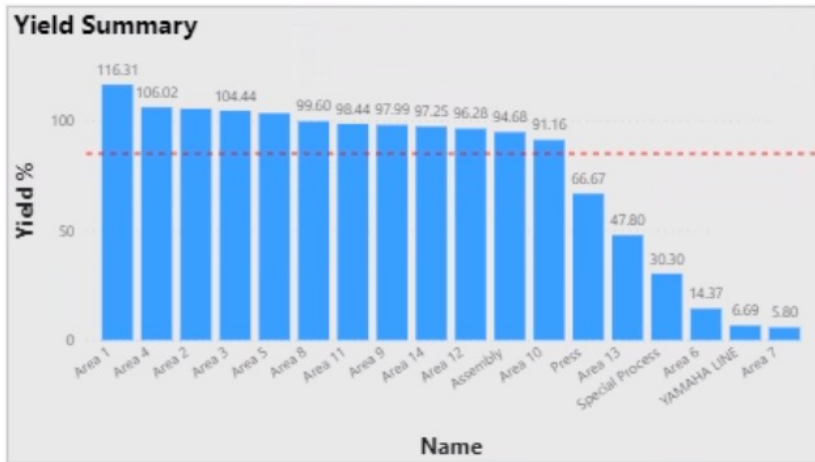
76

Total Quantity Produced

47,334,775

Reject Percentage

0%

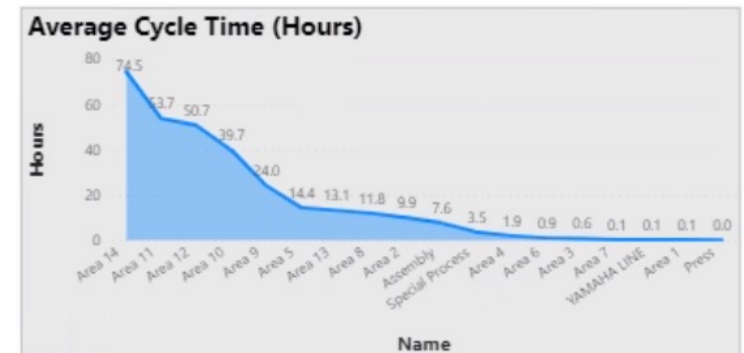
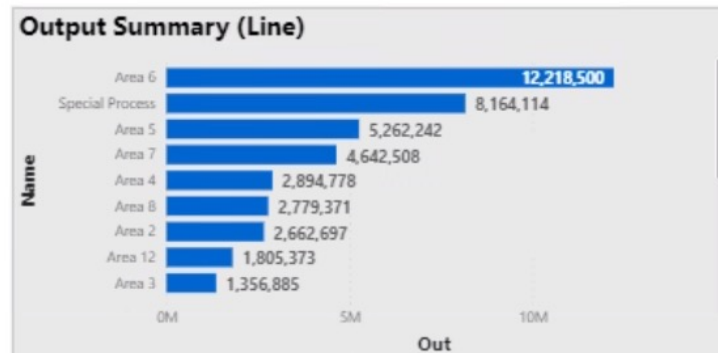


Product Output Summary

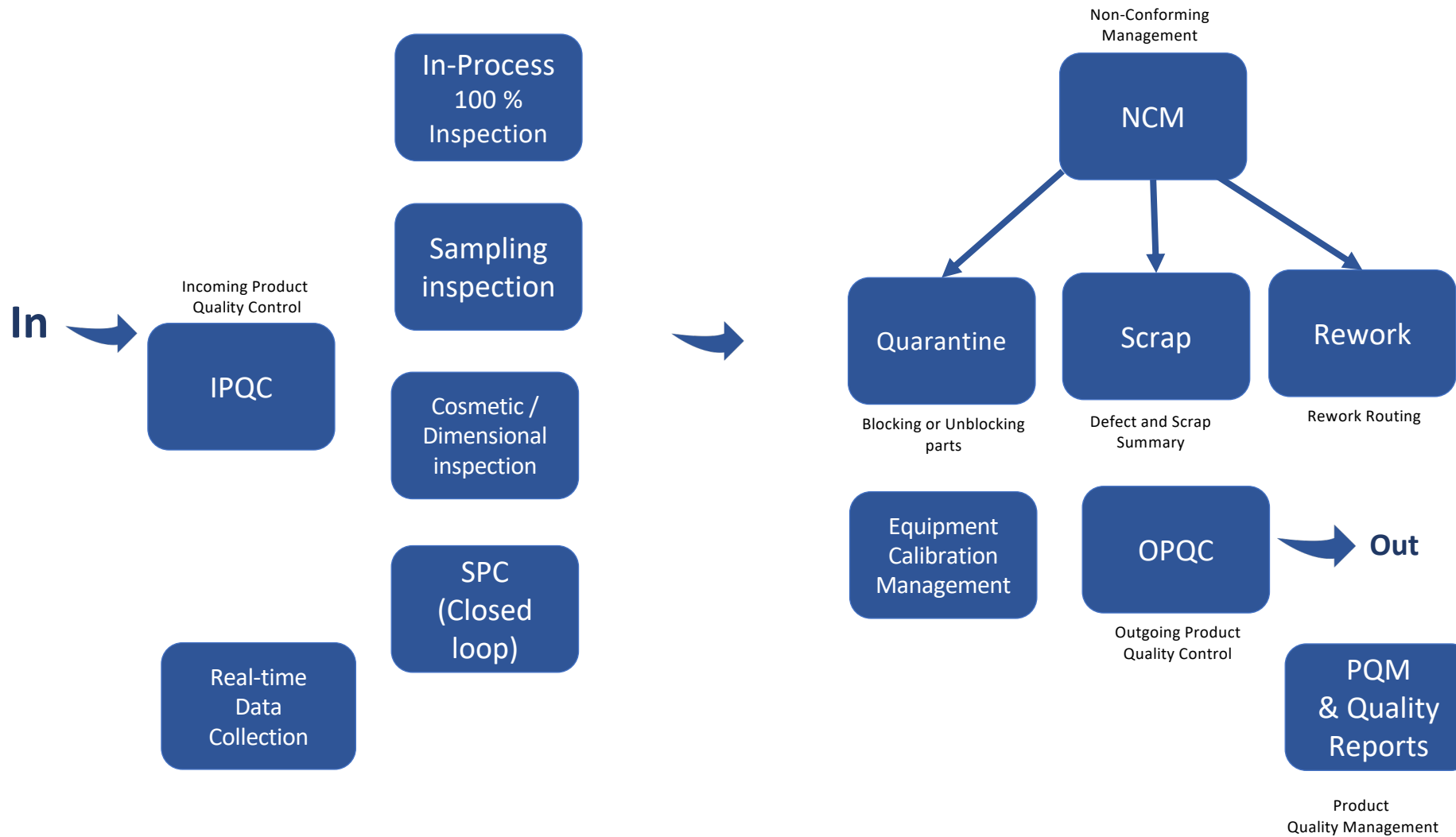
Description	Out	Reject Count
PLATE CAC DRIVE	1,100	
ASE_CONT_UPPER Progressive	49,252	
ASSY PLATE RIGHT	700,102	27
ASSY RDOOR STOPPER PLATE	4,284	
ASSY_CST_TRAY_PLATE_CENTE	2,040	
R		
ASSY-CASE-CONTROLLER	102,519	
ATTACHMENT UNIT;LCU;PH;2	3,906	
BALANCE,WEIGHT;C;PH	118,250	
BASE	0	
BASE ASSY	527	
BOT BAS ASSY	215	
BOTTOM PLATE L	3,456	

WIP Process Load

19818	16561	16383	18848	21128	21432	21487	21550
		1	1				
		2	16653	19309	1	1	1
	19086	1	1	21562	21705	23039	
		1	16668	19674	1	1	
		2	1	1	21640	1	1
	24428	1	16681	20504	1	23188	24...
8		1	1	1	1	23717	
16441		1	16927	20505	21691	23717	
2	2	1	1	1	1	1	1



Quality Management



QMS

IPQC : Inspection

Quality Management > Quality Control > 100% Inspection

IPQC

Serial Number Scan



Serial Number

Batch

Job Order

Serial Number

Batch

Job Order

Item

Line

Machine No.

Item

Line

Machine No.

Previous Route

Next Route

Group Code & Quantity

Previous Route

Next Route

Group Code & Quantity

Stage	Stage
Date	Date
Shift	Shift
Total Inspection	0
WIP	0
OK Quantity	0 0%
NOT OK Quantity	0 0%
Rework	0 0%

DEFECT

DATA COLLECTION

Show All Defects

Defect

Grade

Location

CLEAR

Line

Remarks

ADD DEFECT

PASSED

NC Number

NC Number

Re-Inspection

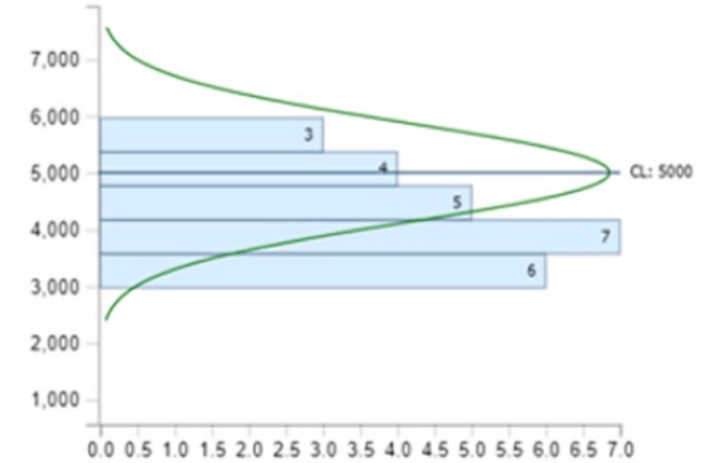
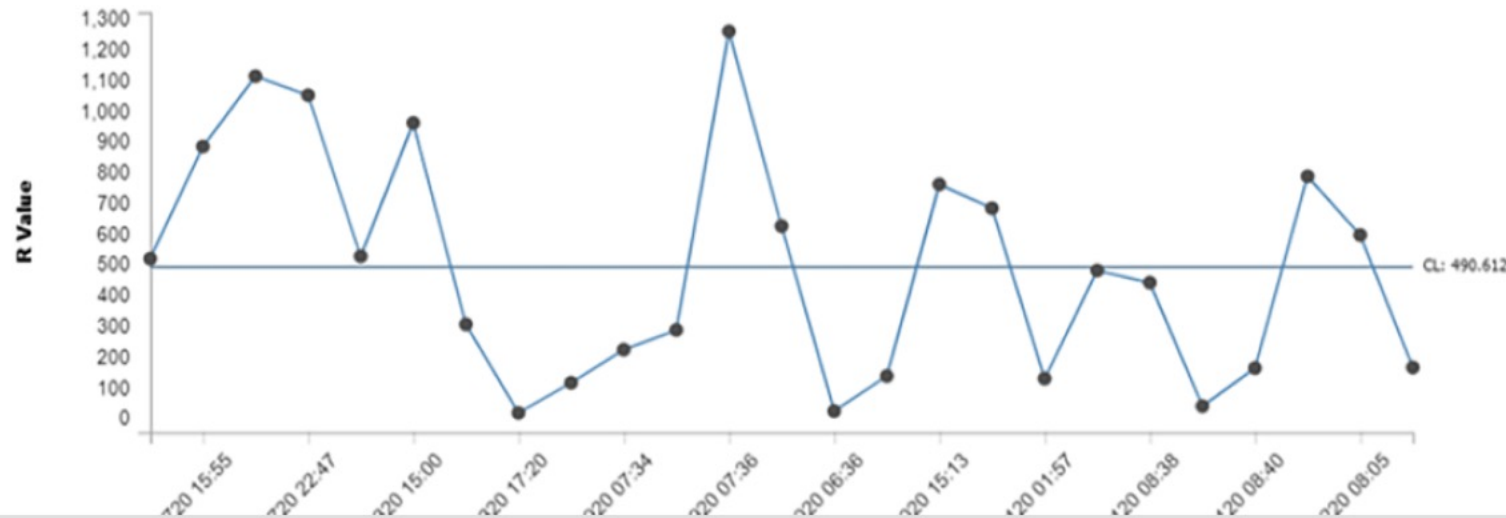
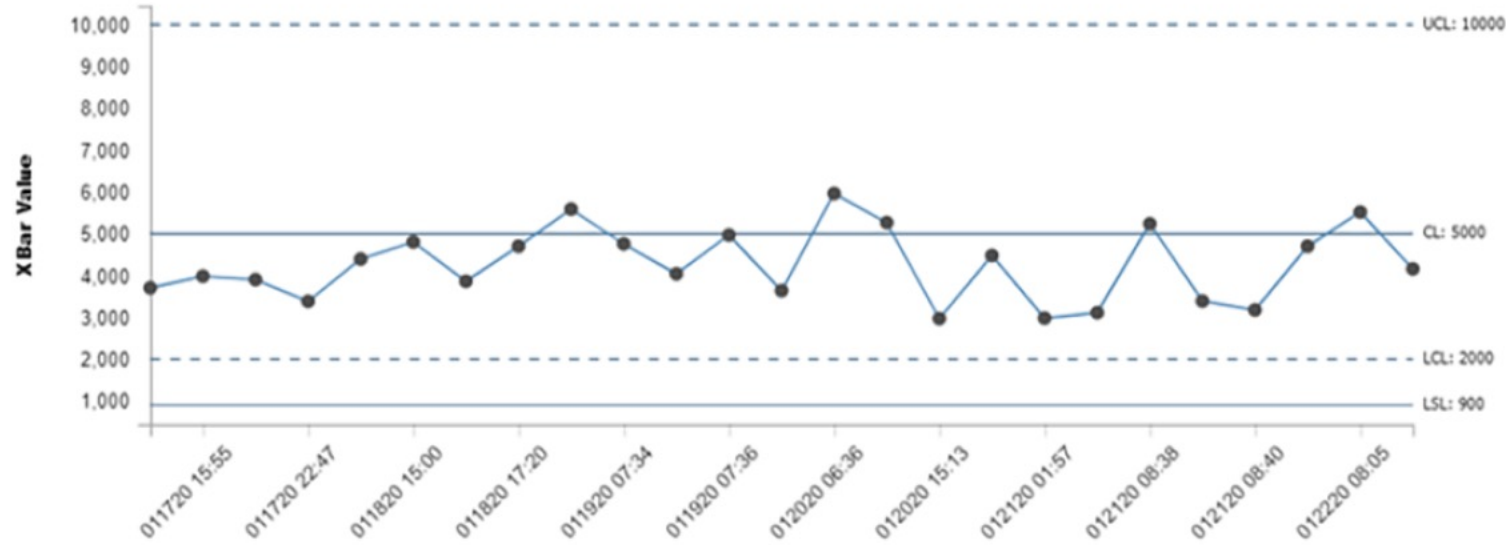
Re-Inspection

Remarks



Statistical Process Control (SPC)

XBar-R for Tensile Strength



Attributes ▼

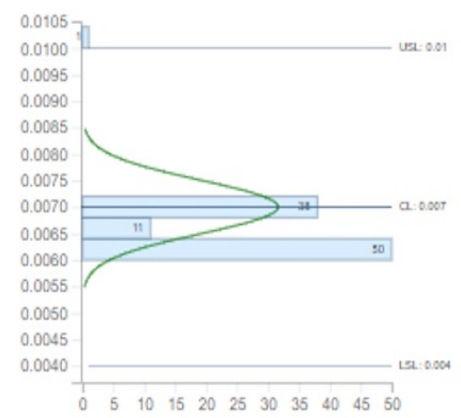
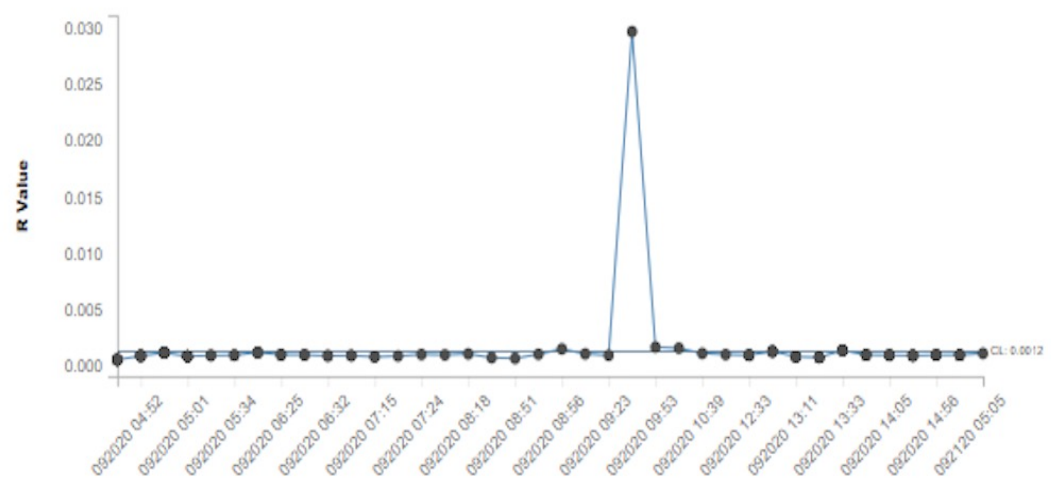
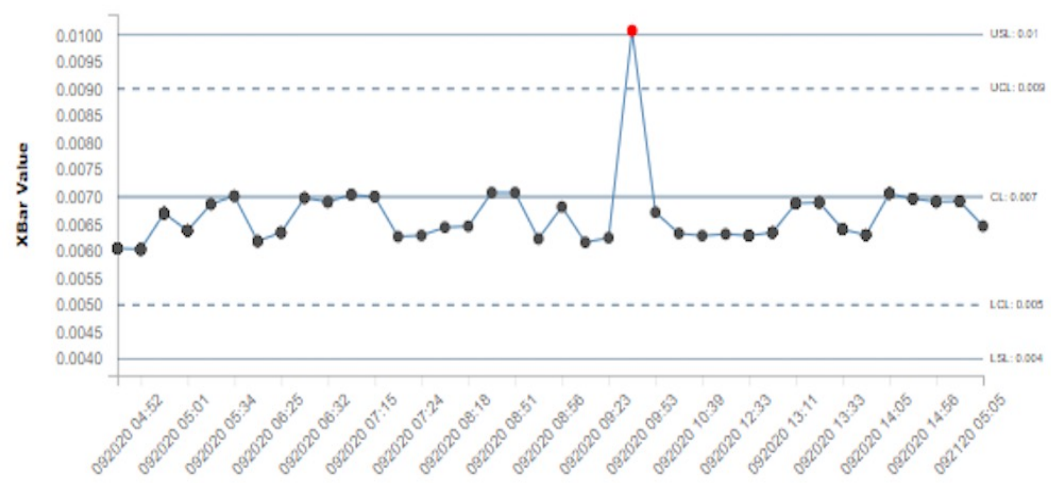
Descriptive Statistics ▲

Data Points: 25	Min: 2971
Max: 5960	Mean: 4267.414
Median: 4159	Modes: 4159, 5517.5, 4702, 4397, 5236, 4758, 3638, 5589, 4701, 3863, 4803, 4968, 4040, 3383, 3903, 3984.5, 3706, 3111.9, 2982.45, 3178, 3389, 4480, 2971, 5265, 5960

Out of Spec Limit - A single point falls beyond the spec limit. Create OCAP

- Search
- Add Chart
- OCAP
- Data
- Charts
- PASTE HEIGHT
- Auto-refresh Off
- Save Chart

XBar-R for PASTE HEIGHT



Attributes

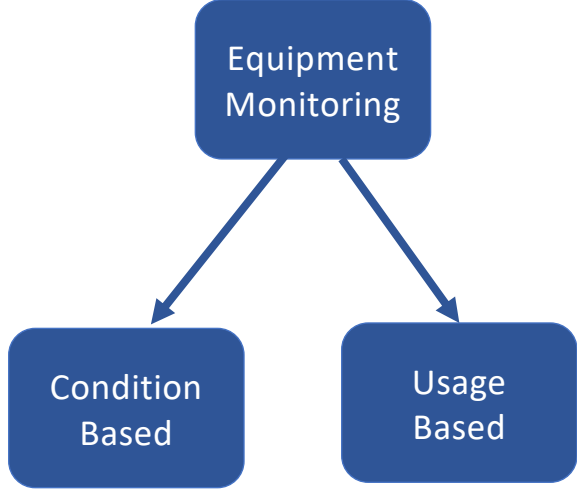
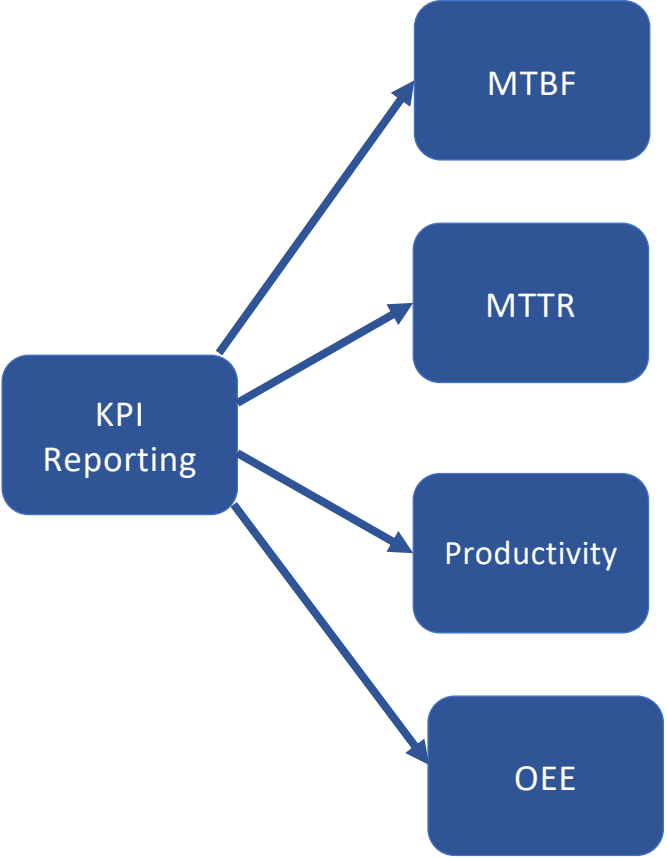
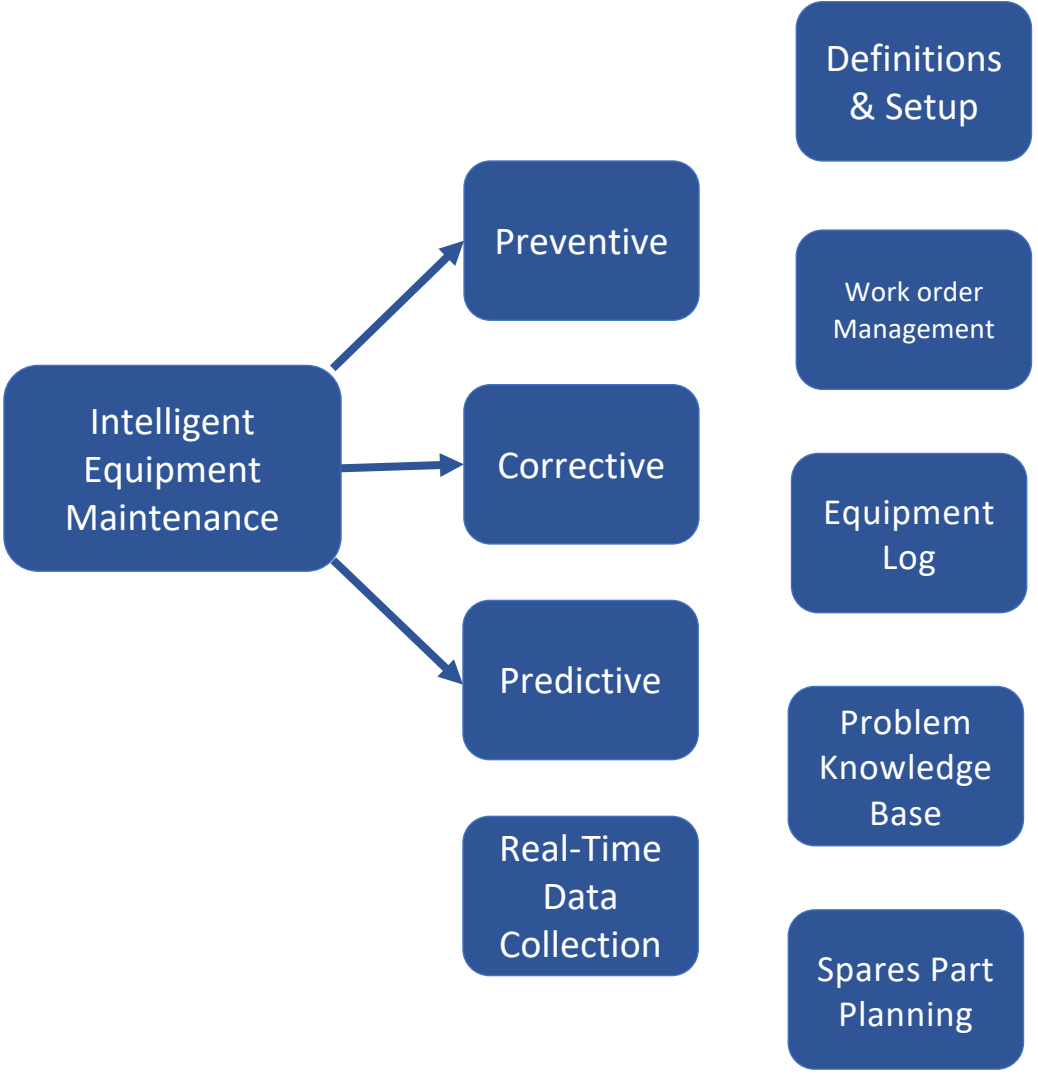
Descriptive Statistics

Data Points: 100	Min: 0.006
Max: 0.0101	Mean: 0.0066
Median: 0.0064	Modes: 0.0064, 0.0067
Range: 0.0041	Standard Deviation: 0.0005
Cpk: 2.2706	

CMMS & OEE

CMMS

Process flow

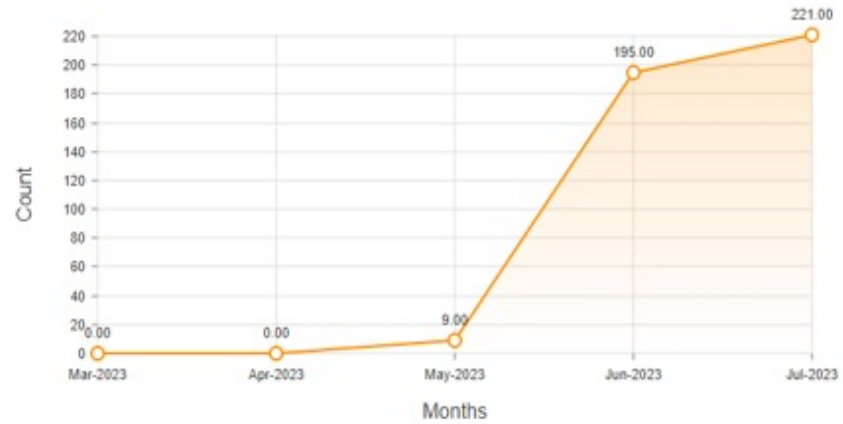




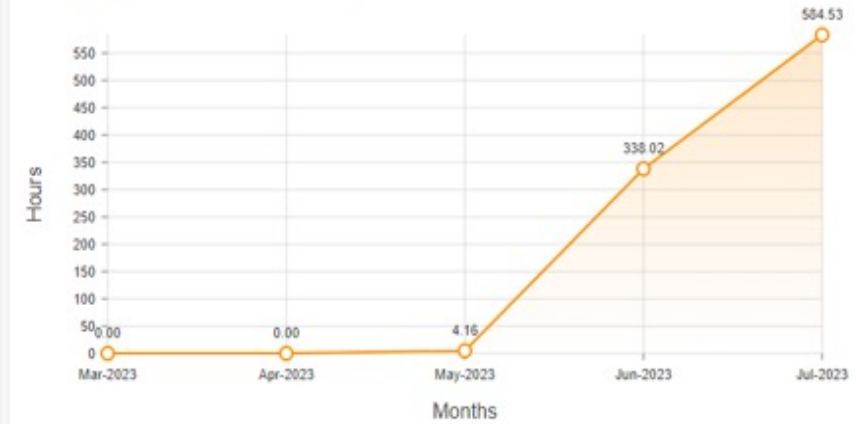
CMMS

Dashboard - KPI

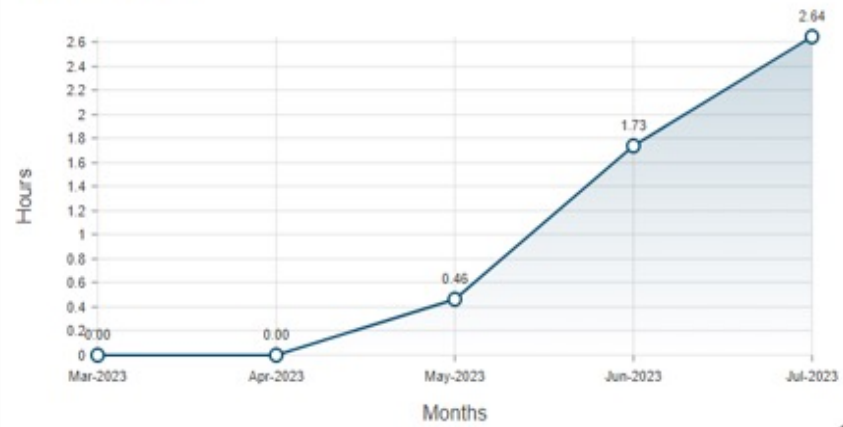
Equipment Failure Occurrence



Equipment Failure Delay Hrs



MTTR Hours



MTBF Hours



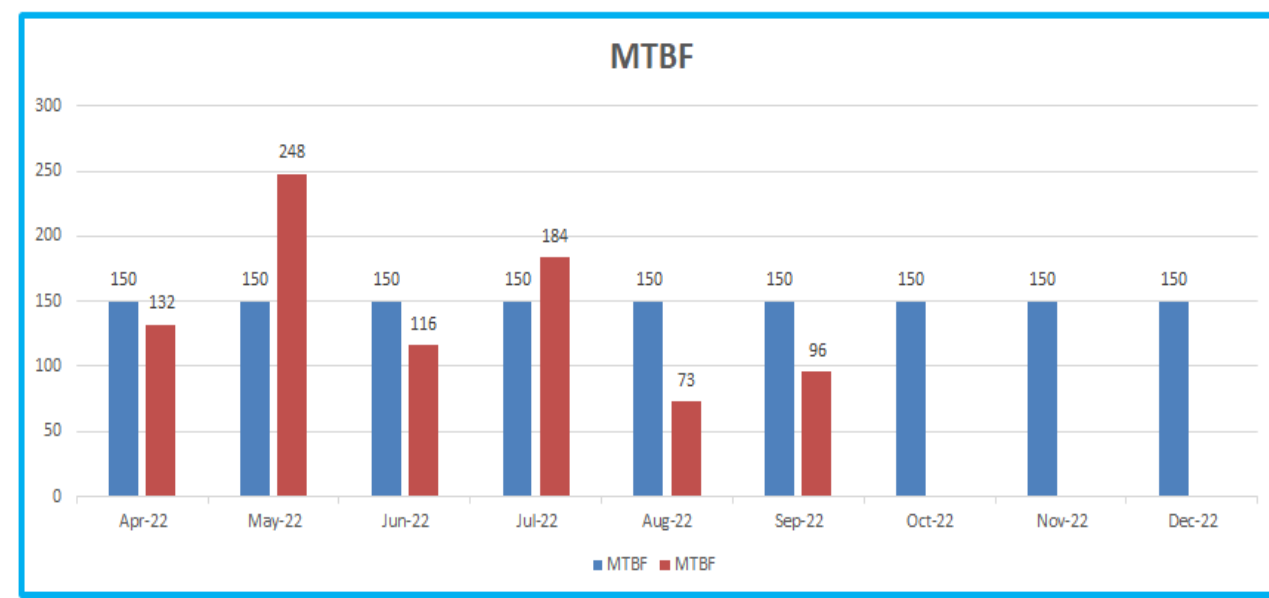


CMMS

MTBF

Mean Time Between Failure(MTBF)

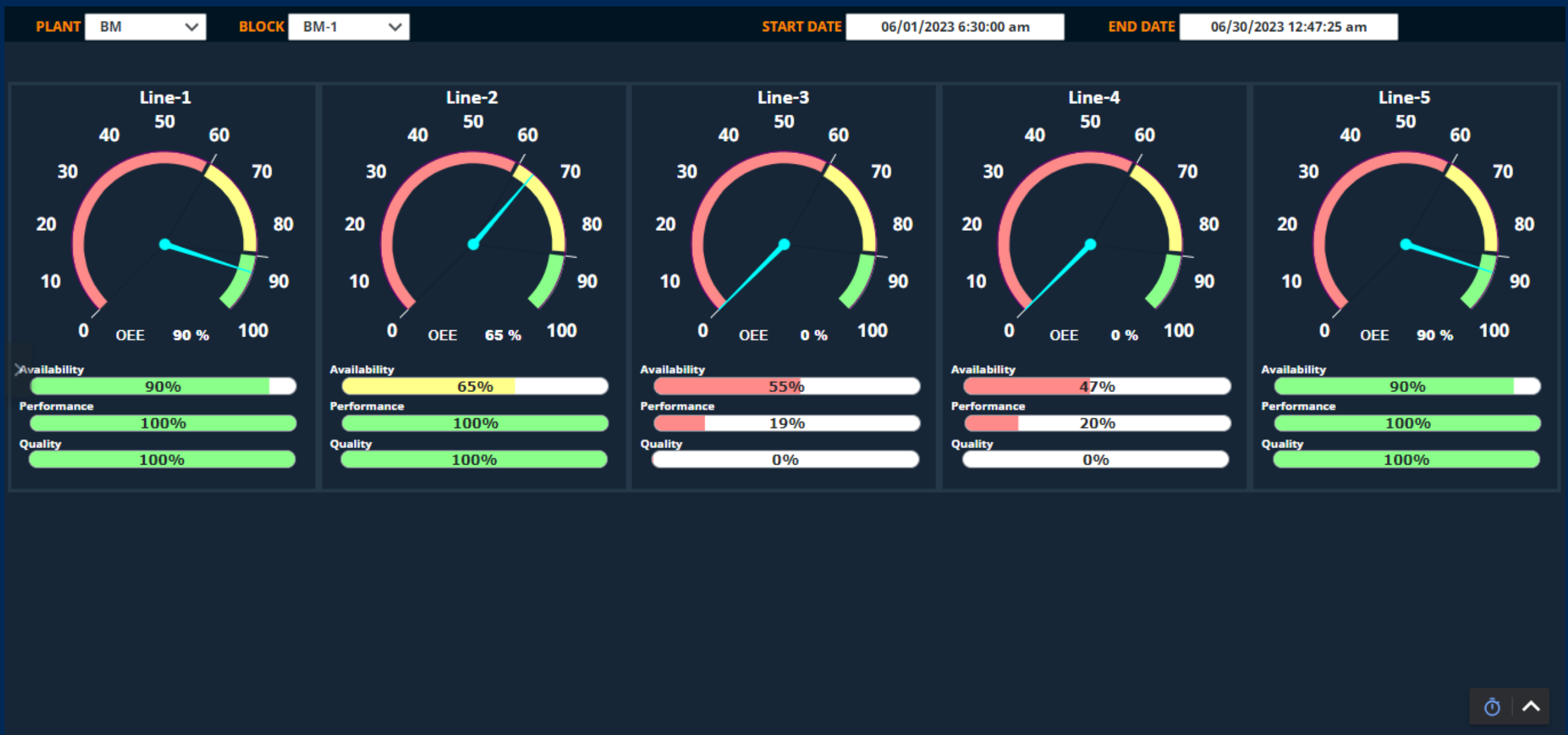
GOOD



	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
TARGET	150	150	150	150	150	150	150	150	150
ACTUAL	132	248	116	184	73	96			

CMMS & OEE

OEE – Group Level



CMMS & OEE

OEE – Plant Level

PLANT	BM	BLOCK	BM-1	LINE	Line-2	STAGE	CNC-1-1	START DATE	06/01/2023 6:30:00 am	END DATE	07/03/2023 12:47:54 am								
	BM1L2C1F01	BM1L2C1F02	BM1L2C1F03	BM1L2C1F04	BM1L2C1F05	BM1L2C1F06	BM1L2C1F07	BM1L2C1F08	BM1L2C1F09	BM1L2C1F10	BM1L2C1F11	BM1L2C1F12	BM1L2C1F13	BM1L2C1F14	BM1L2C1F15	BM1L2C1F16	BM1L2C1F17	BM1L2C1F18	BM1L2C1F19
OEE%	70	71	70	69	69	69	69	69	60	67	68	69	67	68	67	68	68	69	68
PER%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
AVL%	70	71	70	69	69	69	69	69	60	67	68	69	67	68	67	68	68	69	68
QUA%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
UPH	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
FPY%	61	59	59	60	58	56	53	52	54	55	55	56	57	56	57	57	56	56	55
TC	3306	3166	3093	3098	3199	2856	3087	2928	3049	2884	3122	3141	3104	2903	3020	3093	3040	3018	2876
	BM1L2C1F20	BM1L2C1F21	BM1L2C1F22	BM1L2C1F23	BM1L2C1F24	BM1L2C1F25	BM1L2C1F26	BM1L2C1F27	BM1L2C1F28	BM1L2C1F29	BM1L2C1F30	BM1L2C1F31	BM1L2C1F32	BM1L2C1F33	BM1L2C1F34	BM1L2C1F35	BM1L2C1F36	BM1L2C1F37	BM1L2C1F38
OEE%	68	67	67	66	67	68	65	65	68	68	68	68	68	67	66	66	66	67	66
PER%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
AVL%	68	67	67	66	67	68	65	65	68	68	68	68	68	67	66	66	66	67	66
QUA%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
UPH	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
FPY%	52	52	53	51	54	52	54	54	56	56	57	55	55	53	53	52	53	47	42
TC	2646	2939	2975	2886	2908	2777	3058	2746	3082	3058	3099	2921	2987	2784	2718	2678	2761	2722	2879
	BM1L2C1F39	BM1L2C1F40	BM1L2C1F41	BM1L2C1F42	BM1L2C1F43	BM1L2C1F44	BM1L2C1F45	BM1L2C1F46	BM1L2C1F47	BM1L2C1F48	BM1L2C1F49	BM1L2C1F50	BM1L2C1F51	BM1L2C1F52	BM1L2C1F53	BM1L2C1F54	BM1L2C1F55	BM1L2C1F56	
OEE%	66	66	67	67	0	67	66	65	65	45	47	45	46	44	0	0	0	0	
PER%	100	100	100	100	0	100	100	100	100	100	100	100	100	100	0	0	0	0	
AVL%	66	66	67	67	68	67	66	65	65	45	47	45	46	44	0	0	0	0	
QUA%	100	100	100	100	0	100	100	100	100	100	100	100	100	100	0	0	0	0	
UPH	4	4	4	3	0	4	3	4	4	31	34	40	34	34	0	0	0	0	
FPY%	43	43	54	52	0	49	49	48	51	30	33	39	34	33	0	0	0	0	
TC	3003	2687	2932	2651	0	2676	2632	2762	2832	23468	25984	30763	26070	25745	0	0	0	0	

Predictive Maintenance Dashboard

Start Date 02/04/2021 - 31/12/2022	End Date 01/01/2020 - 25/04/2021	Production Line All	Production Process All	Equipment Group Selection All	Equipment Selection All
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Downtime Occurrence

714

Alarms

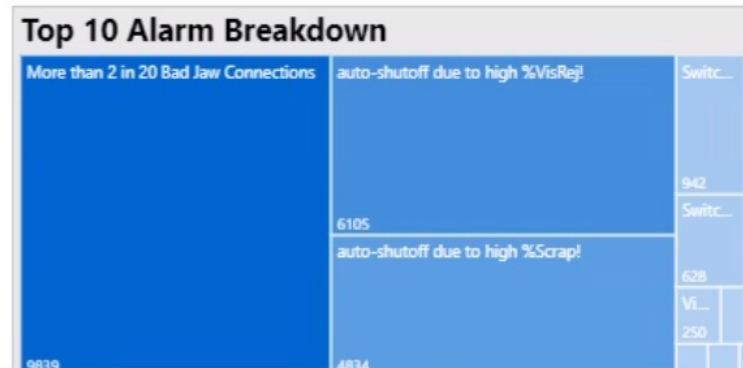
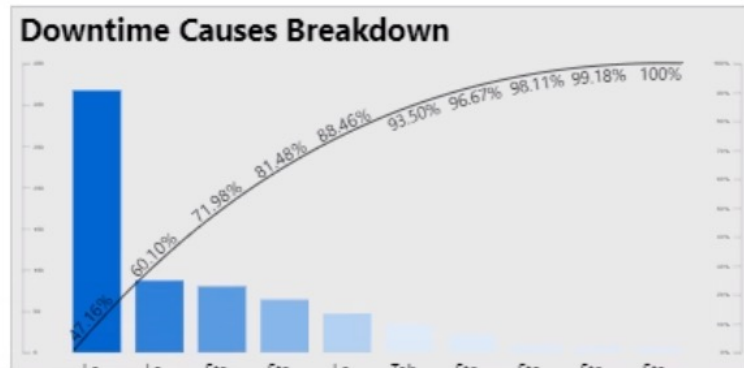
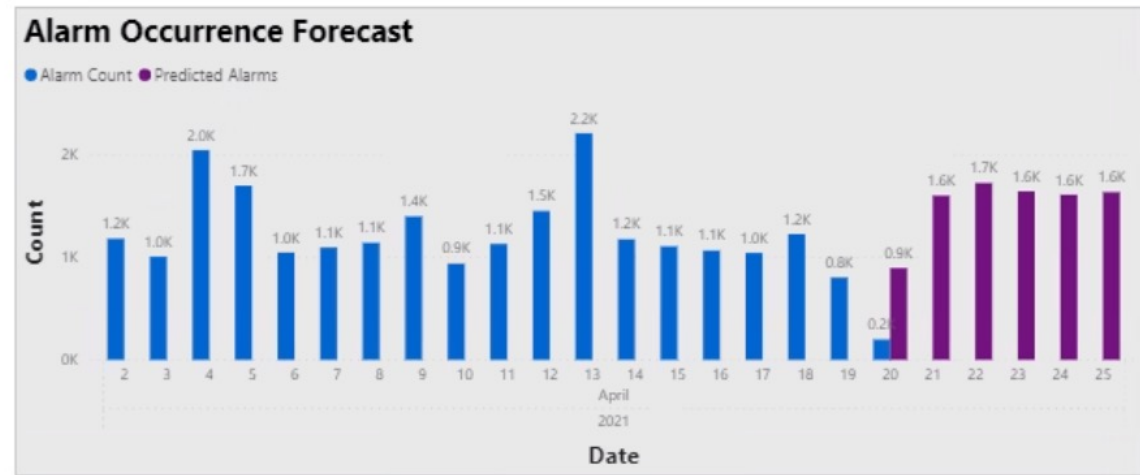
9,147

Downtime Duration

1,408

Model Accuracy

0.00 **64.62** 100.00



Downtime Breakdown

Name	Predicted Downtime	Predicted Alarms	Predicted Downtime Duration
Assembly	76.36	758	329.41
Area 2	25.43	1851	329.29
Area 1	249.30	2295	265.76
Press	323.44	1226	250.69
Area 8	36.63	2985	232.79
Total	711.16	9115	1,407.93

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