



# Utilice la información de su compañía para mejorar la productividad y eficiencia de los procesos

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LEONARDO FORERO • LCS MES BUSINESS DEVELOPMENT MANAGER

expanding **human possibility**®



A Rockwell Automation Event



# Agenda

1

¿Cuál era el reto?

2

¿Qué esperaban los diferentes involucrados?

3

¿Cuál es el cambio?

4

Por dónde empezar...

5

¿Cuáles son las herramientas más apropiadas?

6

Resultados



# ¿Qué está sucediendo?



**Rockwell  
Automation**



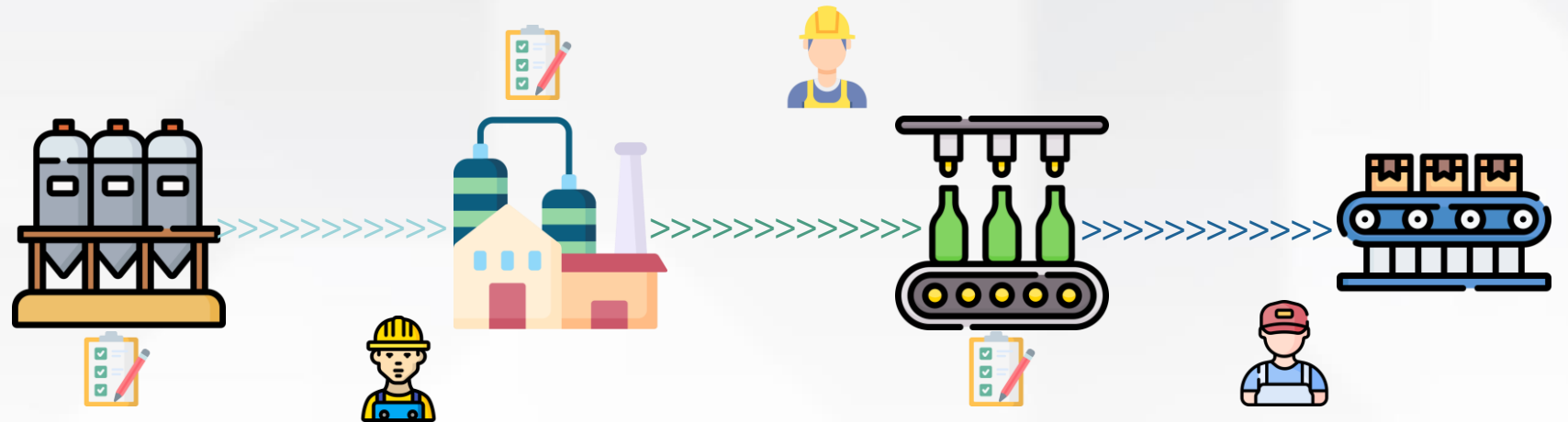




# ¿Qué está sucediendo?

Motivaciones para considerar soluciones de información

Calidad  
Trazabilidad  
Flexibilidad  
Estandarización  
Productividad  
Integración  
Error





# ¿Qué actividades necesita mejorar?

Funcionalidades esperadas del sistema



Supervisión en tiempo real



Manejo de órdenes de producción



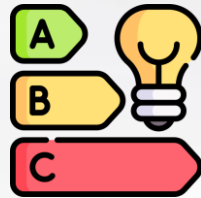
Manejo de materiales



Gestión de lotes de producción



Gestión del Rendimiento



Gestión de la Eficiencia Energética



Gestión de Activos



Integración de sistemas ERP/LIMS/BMS/DCS...

*¿Cuáles son las necesidades más importantes?*

*¿De qué forma se favorecerán los objetivos de la organización?*



¿Qué esperan los diferentes involucrados?



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Automation**



# Salvando las distancias

Creando consensos entre los diferentes interesados



Mejora continua



Rendimiento predecible



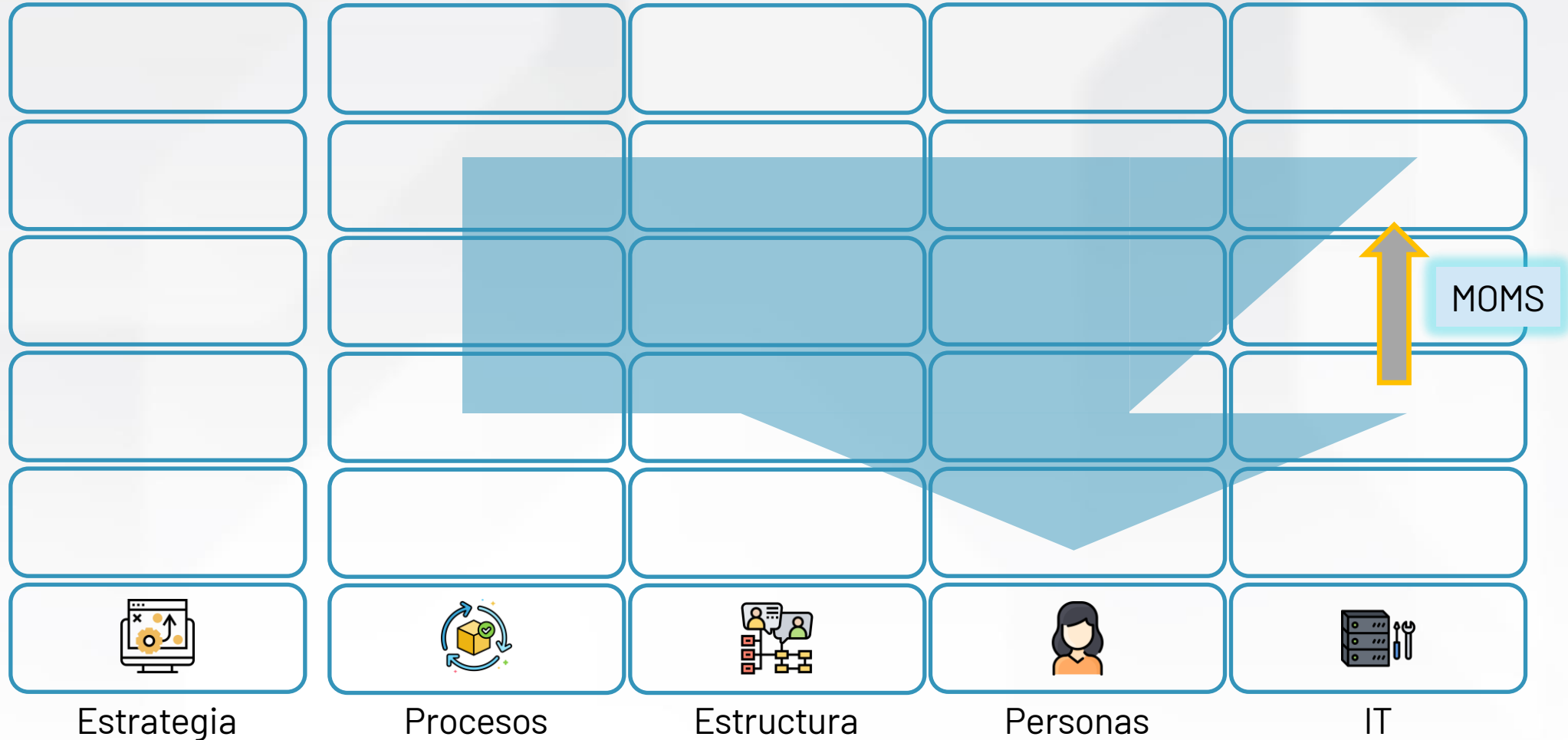
Estandarización de procesos



Planeación y control



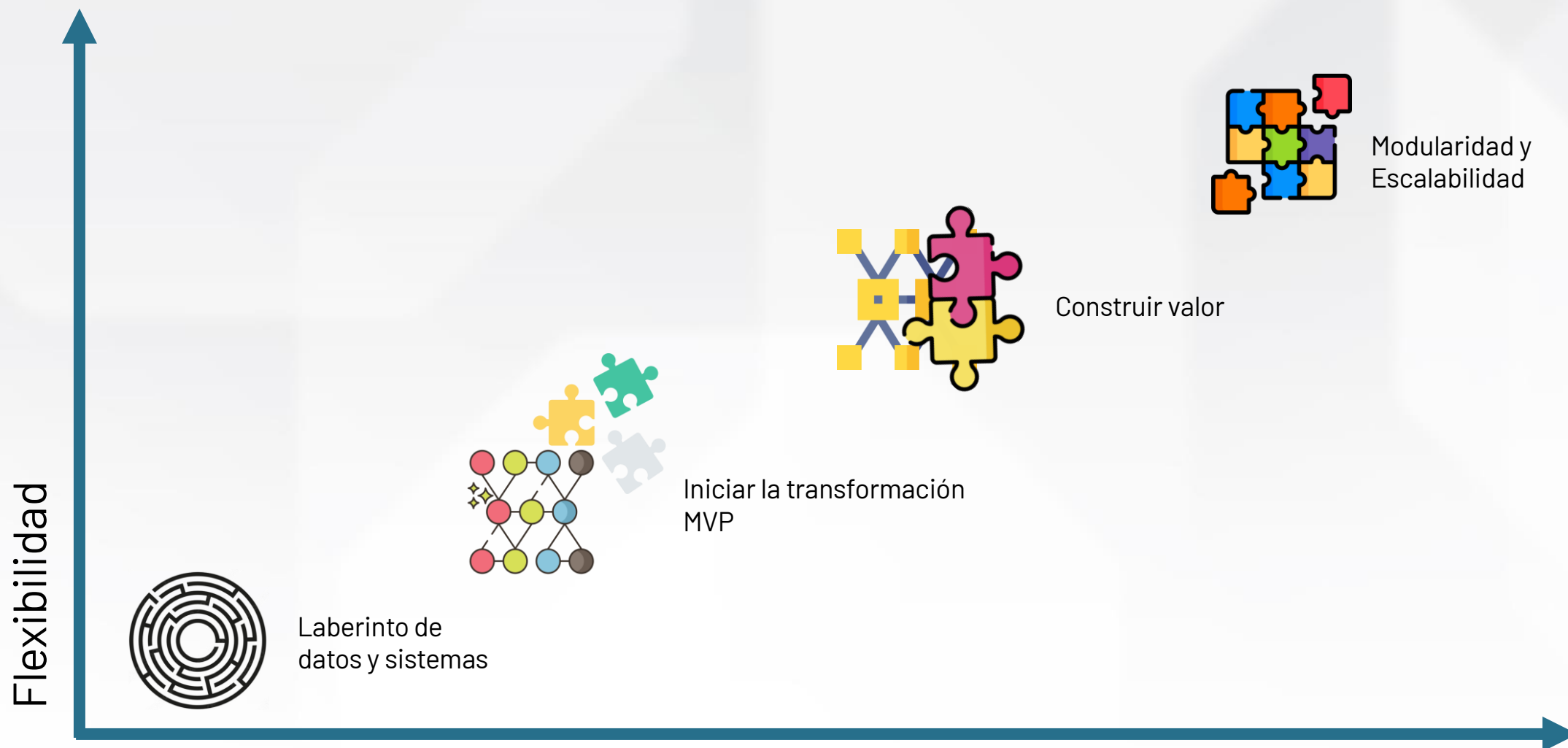
Ad-hoc





# Madurez de la organización

Aprovechando las ventajas de la organización a través de la tecnología





# Salvando las distancias

Consenso entre los interesados



Mejora continua



Rendimiento predecible



Estandarización de procesos



Planeación y control



Ad-hoc

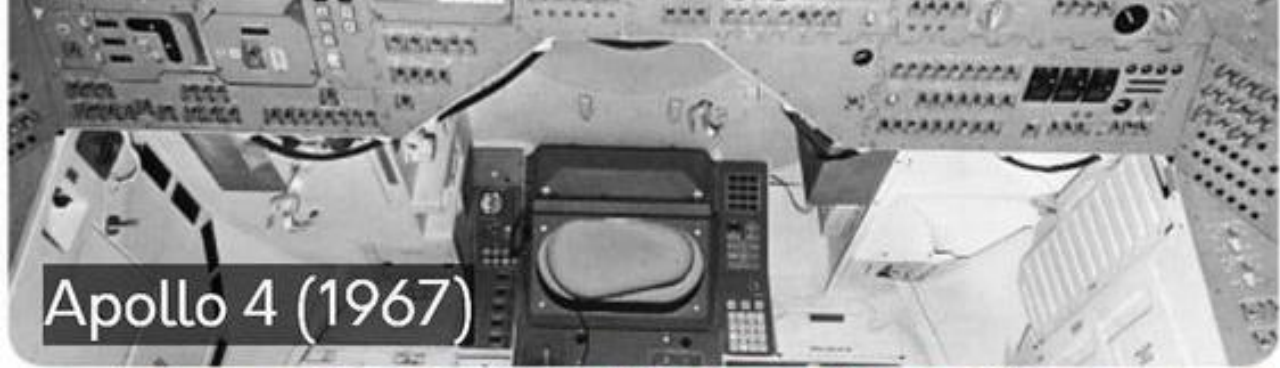
✓	✓	✓	✓	✓
✓	✓	✓	✓	✓
✓	✓	✓	✓	✓
Estrategia	Procesos	Estructura	Personas	IT



# ¿Por qué cambiar?







Apollo 4 (1967)



Space Shuttle (2002)



Crew Dragon (2020)

## Manufactura Actualizada

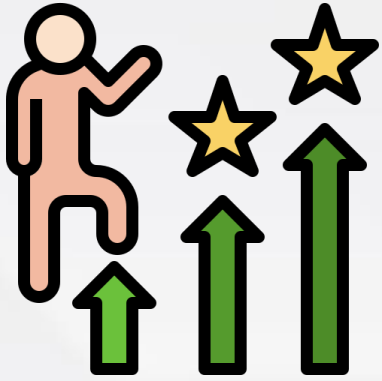
Aprovechando las ventajas de la tecnología

- Una fuente de verdad
- Eficiencia en la toma de decisiones
- Calidad en la información y en los resultados
- Simplicidad en la operación
- Capacidad de tomar decisiones informadas
- Seguimiento y Trazabilidad



# Objetivos del cambio

Funcionalidades esperadas del sistema



Operación Confiable



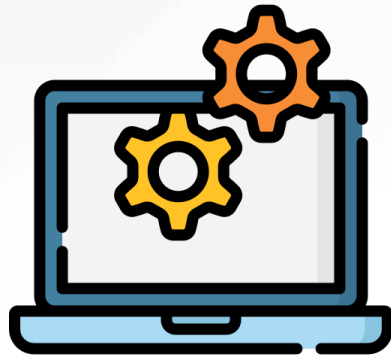
Operación Segura



Operación Ágil



Cumplir requerimientos  
para exportar



Ultima tecnología para  
operaciones



Innovación y mejora  
continua



¿Por donde empezar?





# Mapa de Transformación Digital



Eficiencia Operativa



Eficiencia de Costos



Innovación



Calidad

## Soluciones de Impacto

Producción sin papel  
(MES)



Analítica de Datos



Trazabilidad y Genealogía  
(MES)



Gestión Digital de la Calidad  
(SPC & MES)



Gestión Digital del Rendimiento  
(MES)



Gestión del proceso de Producción  
(MES)



## Soluciones Habilitadoras

Monitoreo de Proceso



Gestión de Lotes de Producción



Gestión Energética



## Soluciones Fundamentales

Automatización de procesos



Redes de Comunicaciones



Seguridad de la información



Seguridad operacional





# Tecnologías para materializar esta solución



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# Tecnologías Existentes

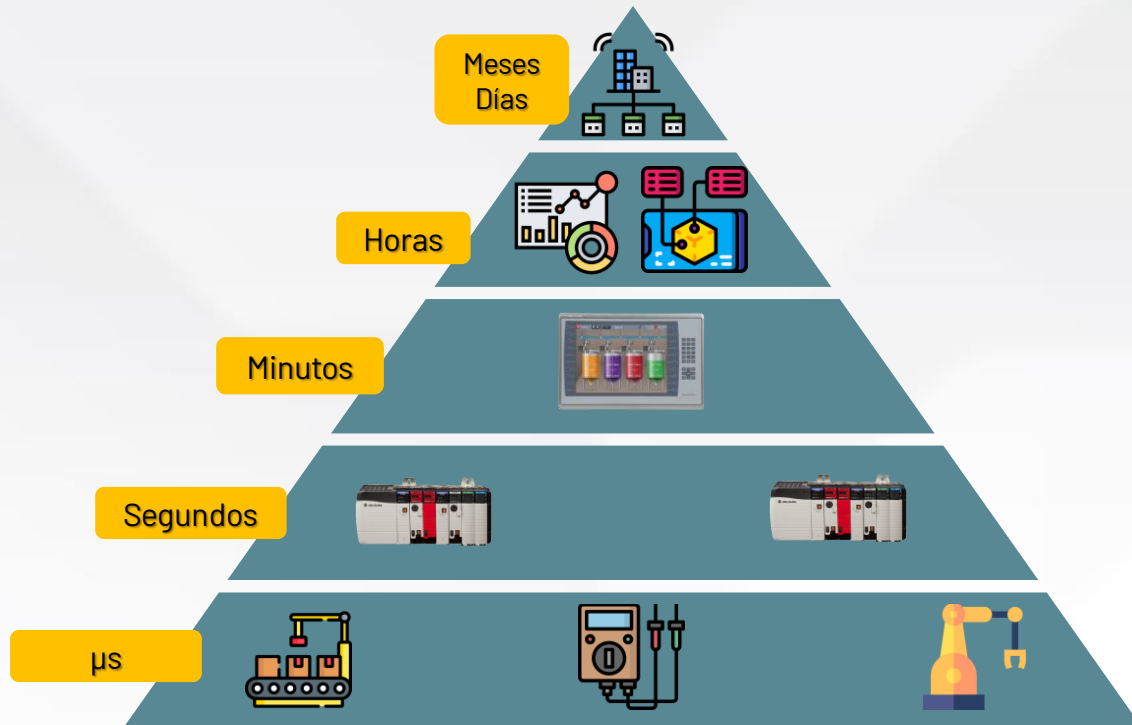
Dónde y por qué usarlas



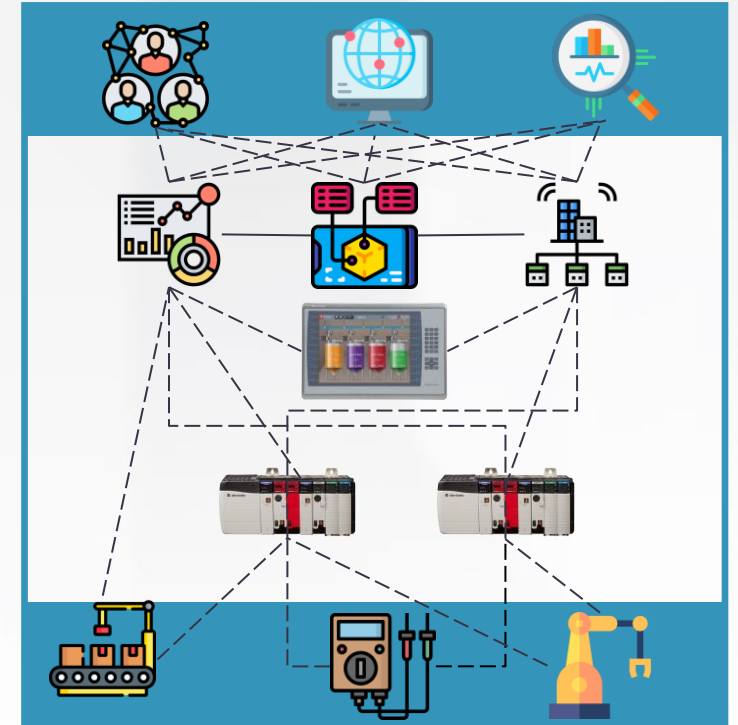


# Tecnologías Existentes

Donde y porque usarlas



**Industria 3.0**



**Industria 4.0**

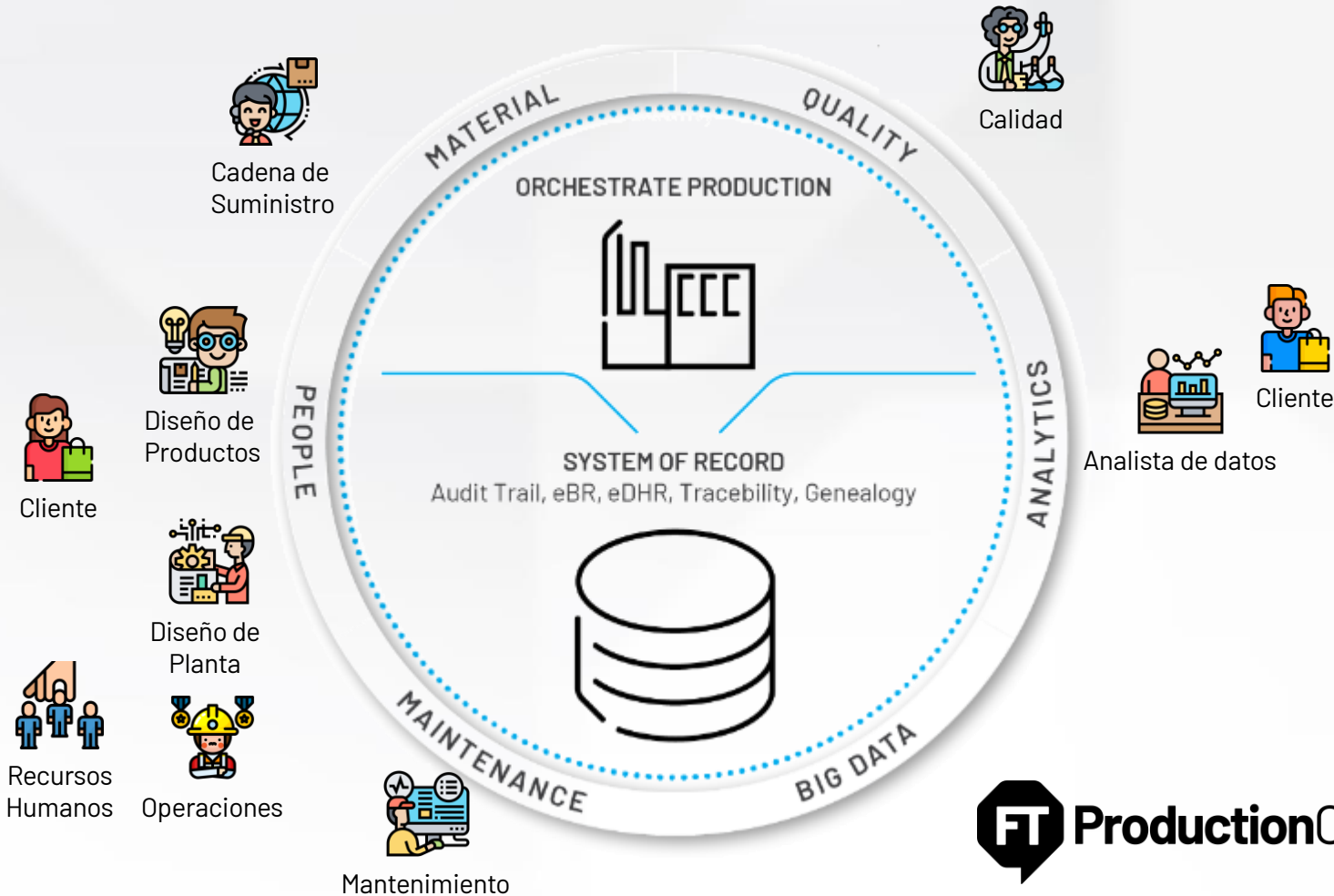






# GESTION DE OPERACIONES DE MANUFACTURA – MOM/MES

La realización de valor es una oportunidad multidimensional de múltiples partes interesadas



## MES TIENDE UN PUENTE ENTRE EL MUNDO EMPRESARIAL Y EL DE LA FABRICACIÓN

- Rastrear y documentar la transformación de materias primas en productos acabados.
- Gestiona las definiciones de productos, BOM, recetas, puntos de ajuste en proceso.
- Gestiona los recursos: disponibilidad de equipos, estados, operarios.
- Trazabilidad y Genealogía.
- Libros de registro.
- Gestión de materiales.
- Calidad en proceso / SPC.
- Rendimiento de las máquinas.









# TRANSFORMACIÓN DIGITAL – IIoT y Analítica

Maximizando el uso de los datos en beneficio de la organización





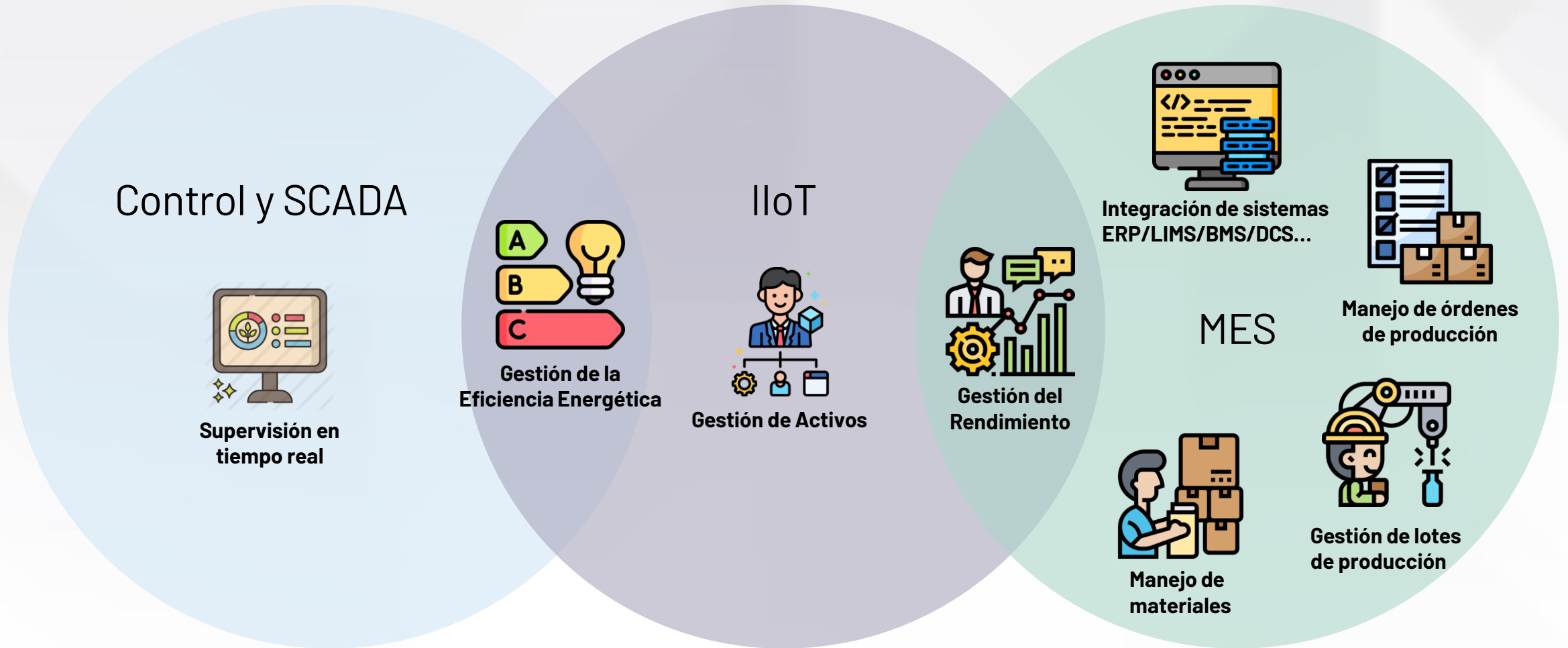
Iot platform is NOT a Manufacturing Execution System  
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# ¿Qué se implementó?

Construyendo una solución a la medida de las necesidades y aprovechando la tecnología



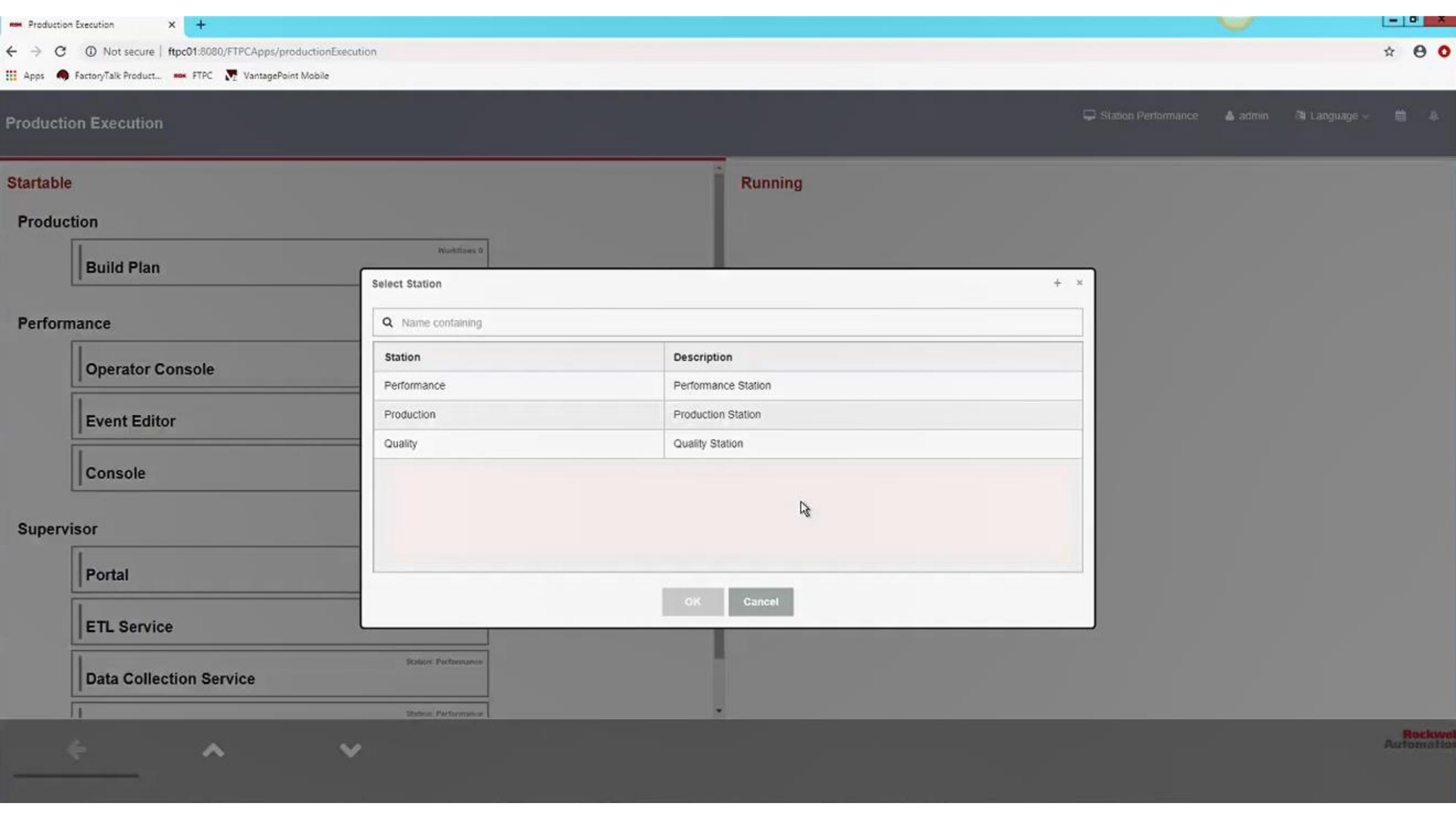


# Resultados



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Automation**





Production Execution

ftpc01:8080/FTPCApps/productionExecution

AppsFactoryTalk Product...FTPCVantagePoint Mobile

Station PerformanceadminLanguage

Startable

Running

Production

Build Plan

Performance

Operator Console

Event Editor

Console

Supervisor

Portal

ETL Service

Data Collection Service

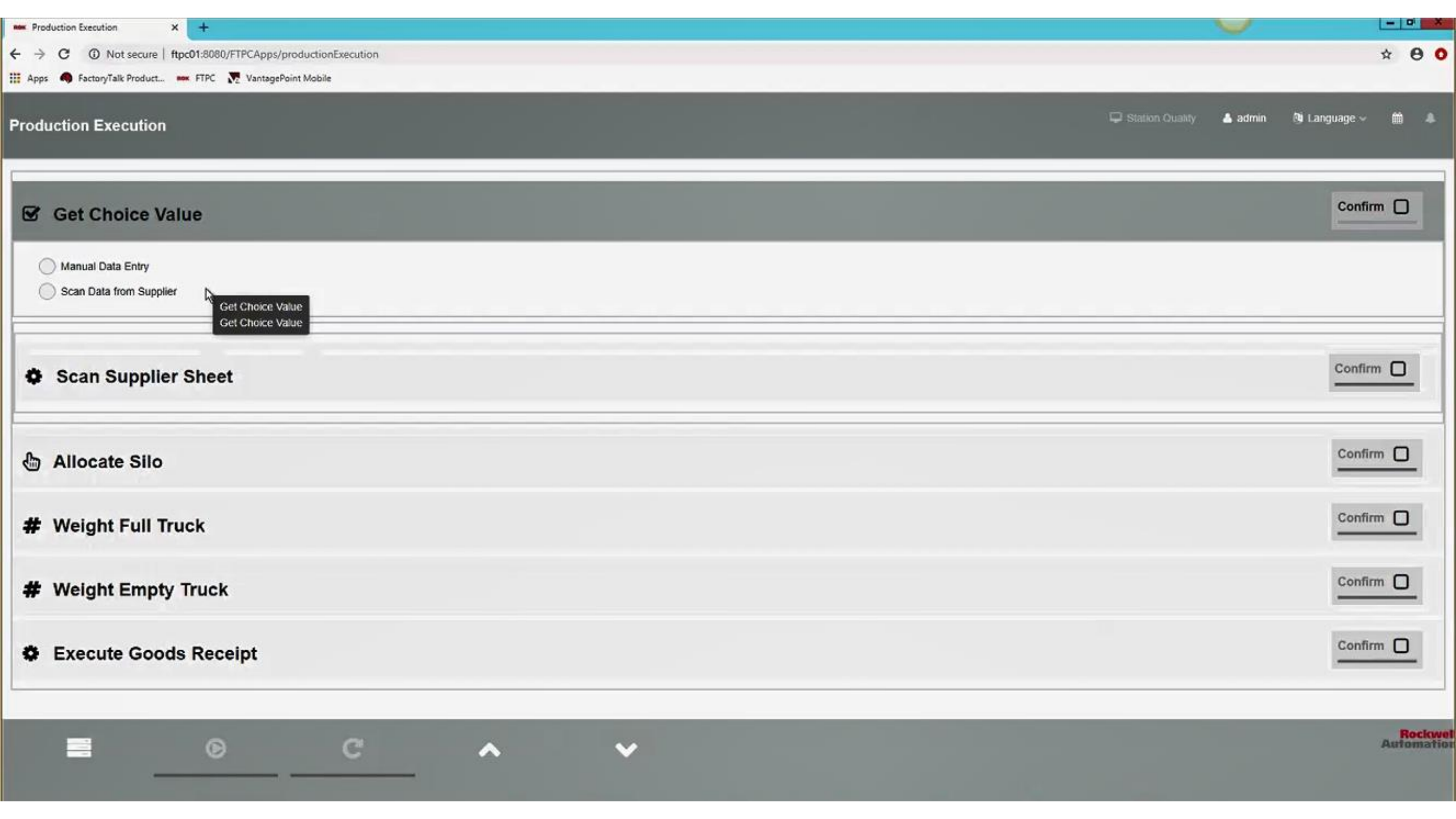
Select Station

Q Name containing

Station	Description
Performance	Performance Station
Production	Production Station
Quality	Quality Station

OKCancel





☒ **Get Choice Value**

Confirm ☐

- ☐ Manual Data Entry
- ☐ Scan Data from Supplier

Get Choice Value  
Get Choice Value

**Scan Supplier Sheet**

Confirm ☐

**Allocate Silo**

Confirm ☐

**Weight Full Truck**

Confirm ☐

**Weight Empty Truck**

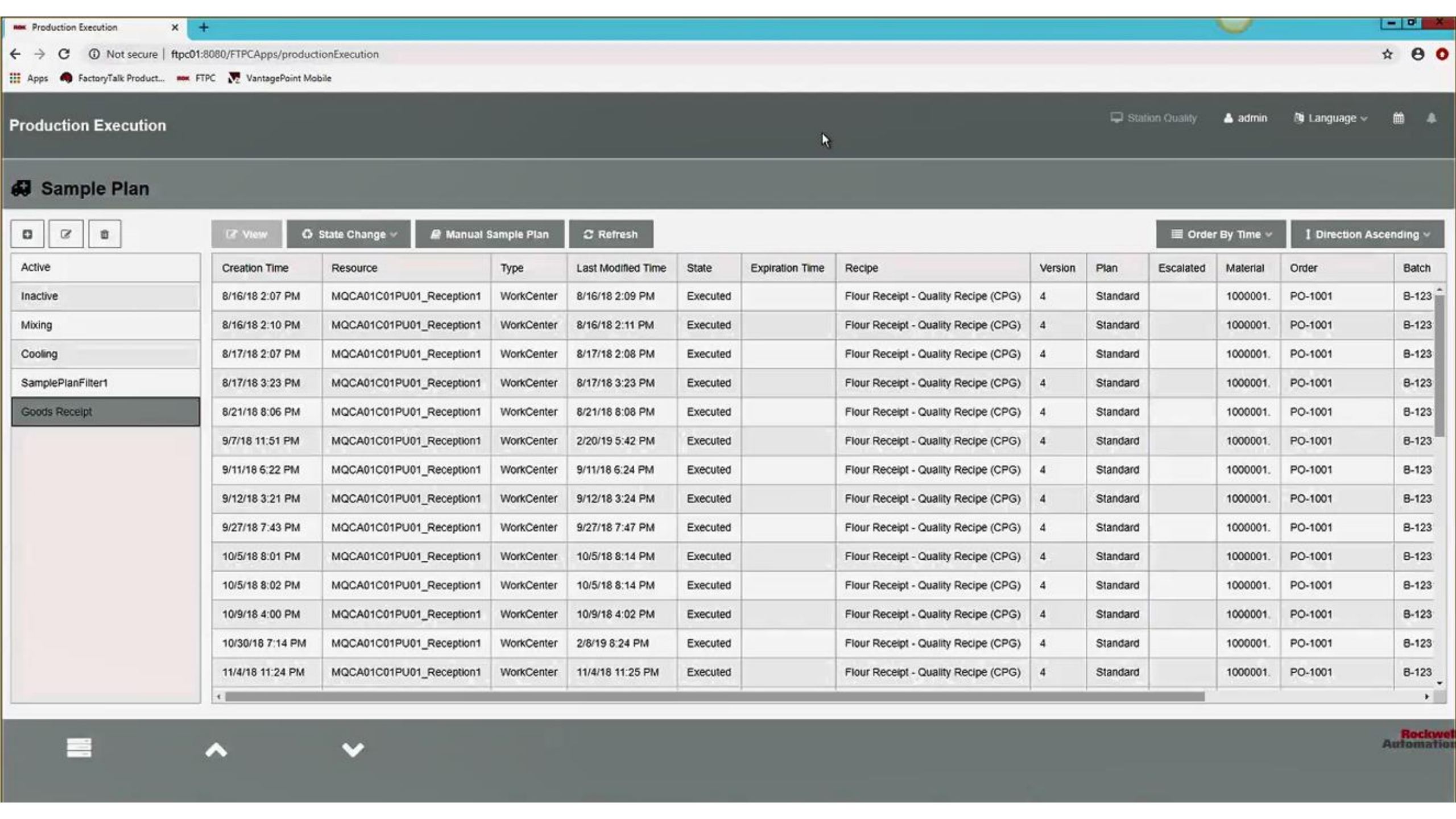
Confirm ☐

**Execute Goods Receipt**

Confirm ☐







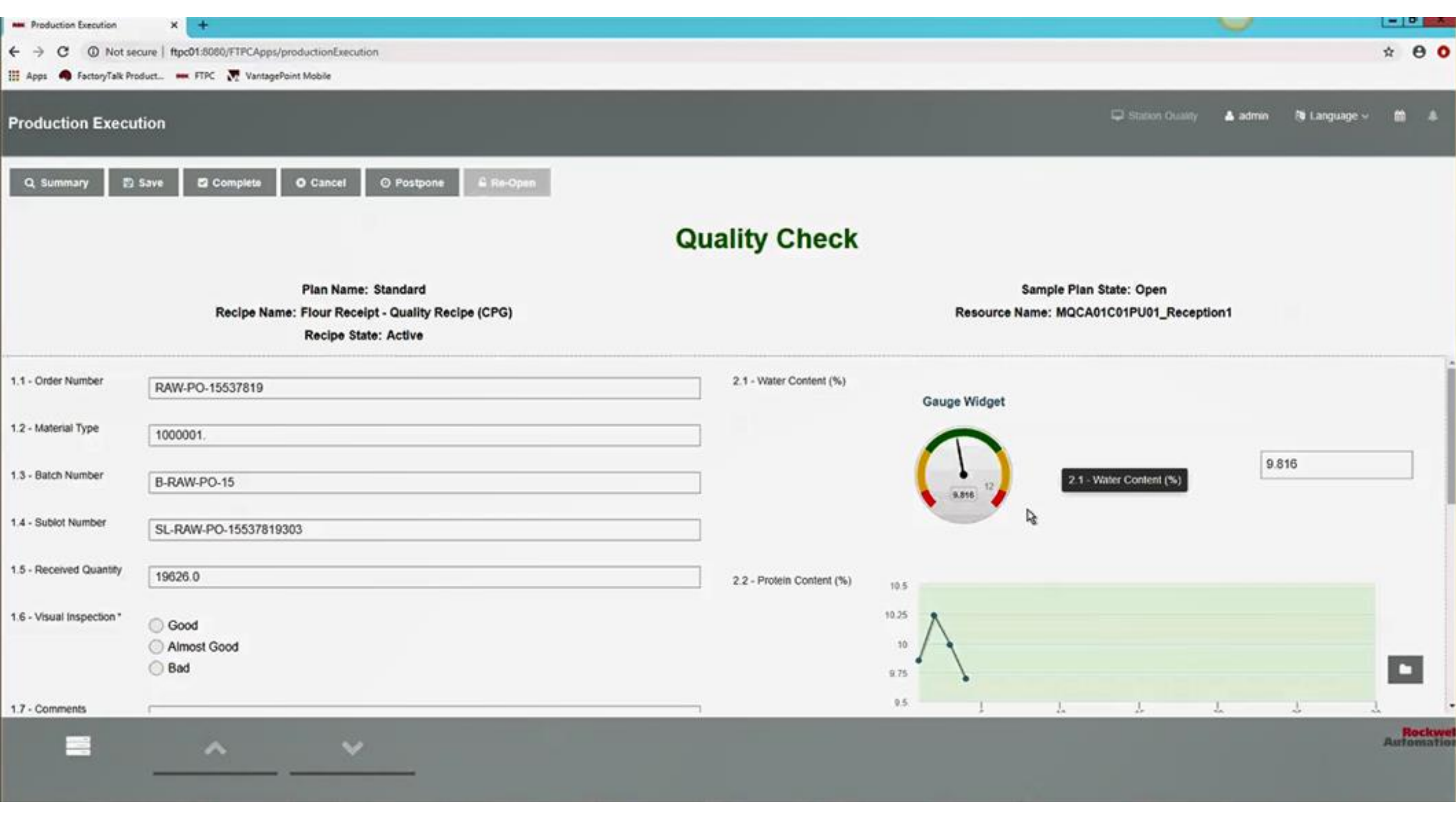
Sample Plan

ViewState ChangeManual Sample PlanRefresh

Order By TimeDirection Ascending

Active	Creation Time	Resource	Type	Last Modified Time	State	Expiration Time	Recipe	Version	Plan	Escalated	Material	Order	Batch
Inactive	8/16/18 2:07 PM	MQCA01C01PU01_Reception1	WorkCenter	8/16/18 2:09 PM	Executed		Flour Receipt - Quality Recipe (CPG)	4	Standard		1000001.	PO-1001	B-123
Mixing	8/16/18 2:10 PM	MQCA01C01PU01_Reception1	WorkCenter	8/16/18 2:11 PM	Executed		Flour Receipt - Quality Recipe (CPG)	4	Standard		1000001.	PO-1001	B-123
Cooling	8/17/18 2:07 PM	MQCA01C01PU01_Reception1	WorkCenter	8/17/18 2:08 PM	Executed		Flour Receipt - Quality Recipe (CPG)	4	Standard		1000001.	PO-1001	B-123
SamplePlanFilter1	8/17/18 3:23 PM	MQCA01C01PU01_Reception1	WorkCenter	8/17/18 3:23 PM	Executed		Flour Receipt - Quality Recipe (CPG)	4	Standard		1000001.	PO-1001	B-123
Goods Receipt	8/21/18 8:06 PM	MQCA01C01PU01_Reception1	WorkCenter	8/21/18 8:08 PM	Executed		Flour Receipt - Quality Recipe (CPG)	4	Standard		1000001.	PO-1001	B-123
	9/7/18 11:51 PM	MQCA01C01PU01_Reception1	WorkCenter	2/20/19 5:42 PM	Executed		Flour Receipt - Quality Recipe (CPG)	4	Standard		1000001.	PO-1001	B-123
	9/11/18 6:22 PM	MQCA01C01PU01_Reception1	WorkCenter	9/11/18 6:24 PM	Executed		Flour Receipt - Quality Recipe (CPG)	4	Standard		1000001.	PO-1001	B-123
	9/12/18 3:21 PM	MQCA01C01PU01_Reception1	WorkCenter	9/12/18 3:24 PM	Executed		Flour Receipt - Quality Recipe (CPG)	4	Standard		1000001.	PO-1001	B-123
	9/27/18 7:43 PM	MQCA01C01PU01_Reception1	WorkCenter	9/27/18 7:47 PM	Executed		Flour Receipt - Quality Recipe (CPG)	4	Standard		1000001.	PO-1001	B-123
	10/5/18 8:01 PM	MQCA01C01PU01_Reception1	WorkCenter	10/5/18 8:14 PM	Executed		Flour Receipt - Quality Recipe (CPG)	4	Standard		1000001.	PO-1001	B-123
	10/5/18 8:02 PM	MQCA01C01PU01_Reception1	WorkCenter	10/5/18 8:14 PM	Executed		Flour Receipt - Quality Recipe (CPG)	4	Standard		1000001.	PO-1001	B-123
	10/9/18 4:00 PM	MQCA01C01PU01_Reception1	WorkCenter	10/9/18 4:02 PM	Executed		Flour Receipt - Quality Recipe (CPG)	4	Standard		1000001.	PO-1001	B-123
	10/30/18 7:14 PM	MQCA01C01PU01_Reception1	WorkCenter	2/8/19 8:24 PM	Executed		Flour Receipt - Quality Recipe (CPG)	4	Standard		1000001.	PO-1001	B-123
	11/4/18 11:24 PM	MQCA01C01PU01_Reception1	WorkCenter	11/4/18 11:25 PM	Executed		Flour Receipt - Quality Recipe (CPG)	4	Standard		1000001.	PO-1001	B-123





## Production Execution

Station Quality

admin

Language ▾



Summary

Save

Complete

Cancel

Postpone

Re-Open

## Quality Check

Plan Name: Standard

Recipe Name: Flour Receipt - Quality Recipe (CPG)

Recipe State: Active

Sample Plan State: Open

Resource Name: MQCA01C01PU01\_Reception1

1.1 - Order Number

RAW-PO-15537819

1.2 - Material Type

1000001

1.3 - Batch Number

B-RAW-PO-15

1.4 - Sublot Number

SL-RAW-PO-15537819303

1.5 - Received Quantity

19626.0

1.6 - Visual Inspection \*



Good



Almost Good



Bad

1.7 - Comments

2.1 - Water Content (%)

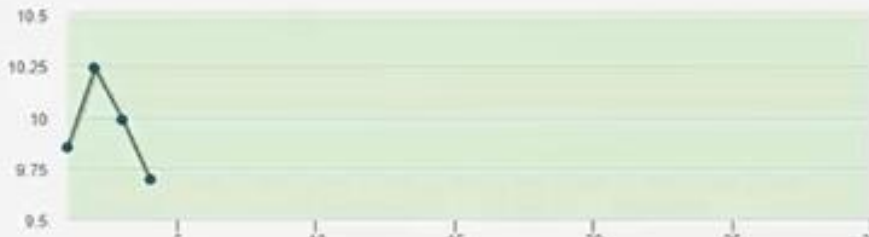
Gauge Widget



2.1 - Water Content (%)

9.816

2.2 - Protein Content (%)





Production Execution

ftpc01:8080/FTPApps/productionExecution

AppsFactoryTalk Product...FTPCVantagePoint Mobile

Production Execution

Station ProductionadminLanguage

Order Execution

Step 1 - Select Process Order Item

Name	State	Part Number	Part Description	Quantity	Actual Quantity	Start Date	End Date
G-Cookie-1001-001	Completing	0	Ginger Case	32.00 ea	31.000000000 ea	7/25/18 1:09 PM	7/25/18 1:41 PM
G-Cookie-1016-001	Completing	0	Ginger Case	32.00 ea	23.000000000 ea	11/15/18 7:19 PM	11/15/18 7:51 PM
O-Cookie-1005-001	Completing	1	Oat Meal Case	32.00 ea	31.000000000 ea	10/4/18 10:44 PM	10/4/18 11:16 PM
C-Cookie-1008-001	Completing	2	Chocolate Case	32.00 ea	25.000000000 ea	11/15/18 6:58 PM	11/15/18 7:30 PM
C-Cookie-1010-001	Completing	2	Chocolate Case	32.00 ea	20.000000000 ea	11/15/18 9:19 PM	11/15/18 9:51 PM
C-Cookie-1011-001	Completing	2	Chocolate Case	32.00 ea	31.000000000 ea	12/4/18 5:10 PM	12/4/18 5:42 PM
C-Cookie-1012-001	Completing	2	Chocolate Case	32.00 ea	31.000000000 ea	12/10/18 3:52 PM	12/10/18 4:24 PM
C-Cookie-1017-001	Sequences_Created	2	Chocolate Case	32.00 ea	0.00 ea	5/10/19 8:43 PM	5/10/19 9:15 PM
Pack-1002-001	Sequences_Created	3000101	Cookie Pallet	1.00 ea	0.00 ea	7/19/18 4:25 PM	7/19/18 4:57 PM
CIP-1001-001	Completing	4	CIP	10.00 kg	10.000000000 kg	7/19/18 4:24 PM	7/19/18 4:25 PM

Step 2 - Select Recipe Sequence

Create Sequence

Material Allocation

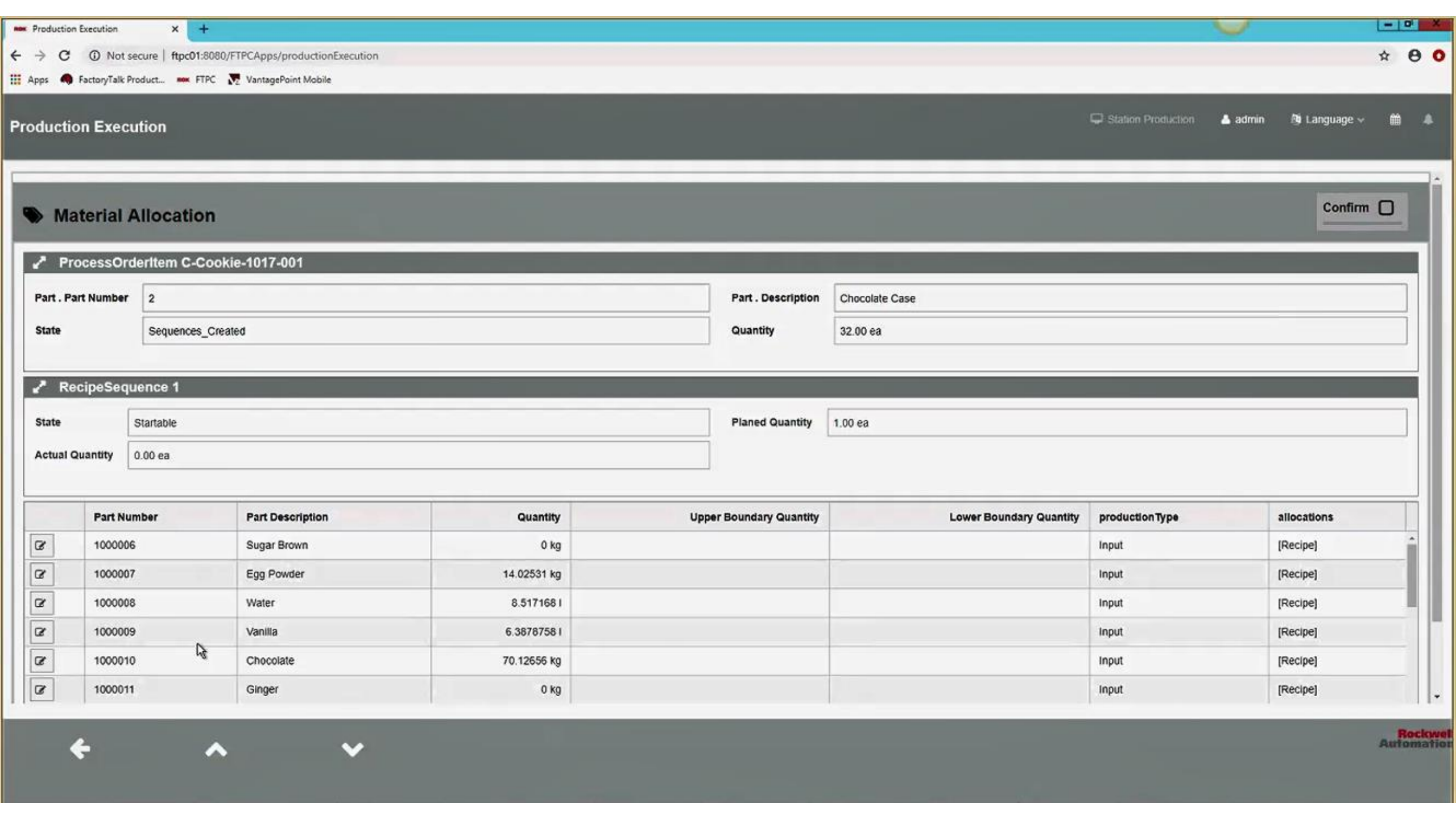
Parameter Allocation

Resource Allocation

Sequence Details

Rockwell Automation





Material Allocation

Confirm

ProcessOrderItem C-Cookie-1017-001

Part . Part Number

2

Part . Description

Chocolate Case

State

Sequences\_Created

Quantity

32.00 ea

RecipeSequence 1

State

Startable

Planned Quantity

1.00 ea

Actual Quantity

0.00 ea

	Part Number	Part Description	Quantity	Upper Boundary Quantity	Lower Boundary Quantity	productionType	allocations
	1000006	Sugar Brown	0 kg			Input	[Recipe]
	1000007	Egg Powder	14.02531 kg			Input	[Recipe]
	1000008	Water	8.517168 l			Input	[Recipe]
	1000009	Vanilla	6.3878758 l			Input	[Recipe]
	1000010	Chocolate	70.12656 kg			Input	[Recipe]
	1000011	Ginger	0 kg			Input	[Recipe]



Production Execution

ftpc01:8080/FTPCApps/productionExecution

Station ProductionadminLanguage

Parameter Allocation

Confirm

ProcessOrderItem C-Cookie-1017-001

Part . Part Number

2

Part . Description

Chocolate Case

State

Sequences\_Created

Quantity

32.00 ea

RecipeSequence 1

State

Startable

Planned Quantity

1.00 ea

Actual Quantity

0.00 ea

	Step	Name	Source	Data Type	Value	High High	High	Low	Low Low
<div></div>	010 - Mixing	Recipe_Number	Recipe	Long	3				

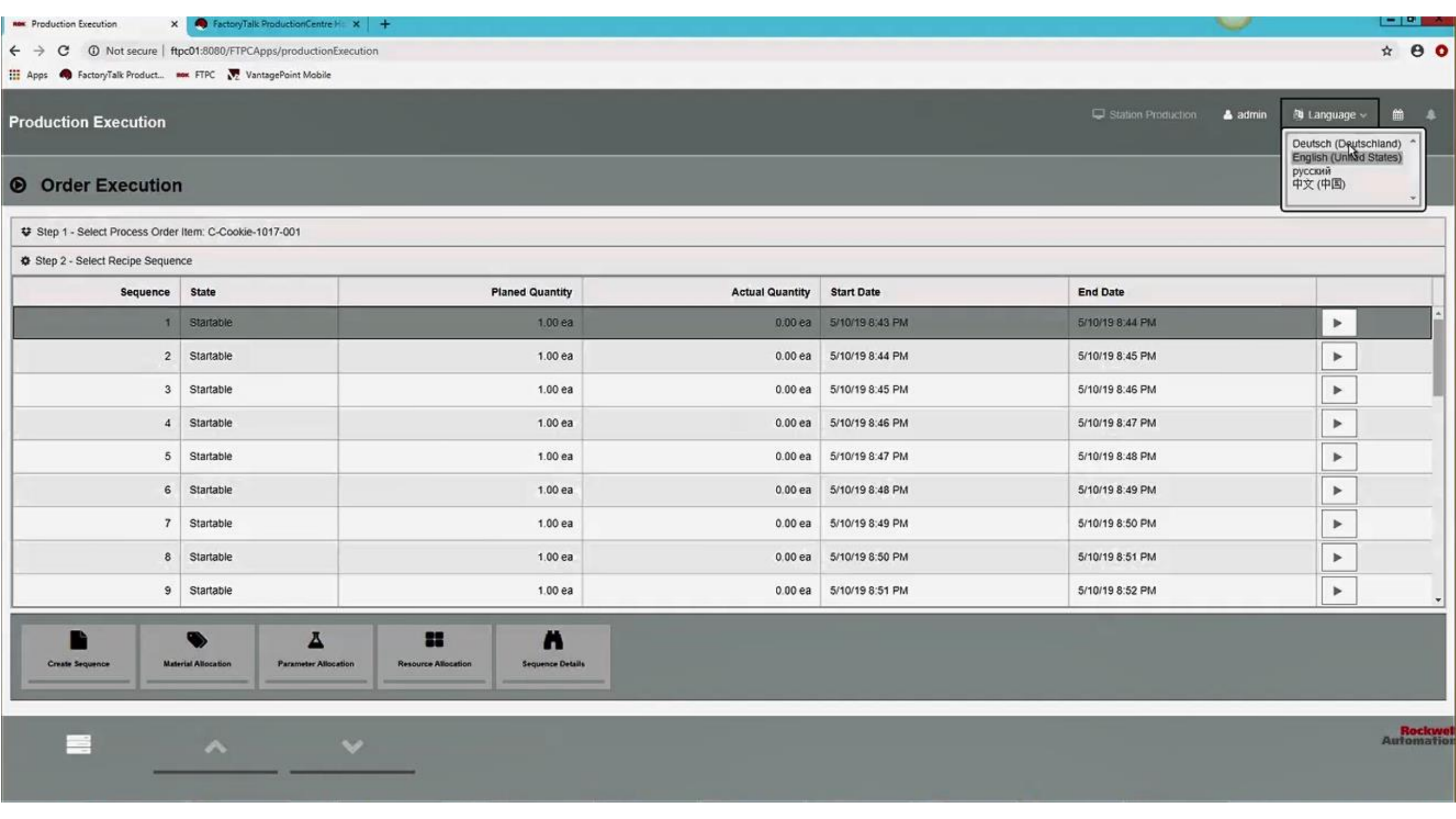
←

^

↓

Rockwell Automation





## Production Execution

Station Production

admin

Language

Deutsch (Deutschland)  
English (United States)  
русский  
中文 (中国)

## Order Execution

Step 1 - Select Process Order Item: C-Cookie-1017-001

Step 2 - Select Recipe Sequence

Sequence	State	Planed Quantity	Actual Quantity	Start Date	End Date	
1	Startable	1.00 ea	0.00 ea	5/10/19 8:43 PM	5/10/19 8:44 PM	▶
2	Startable	1.00 ea	0.00 ea	5/10/19 8:44 PM	5/10/19 8:45 PM	▶
3	Startable	1.00 ea	0.00 ea	5/10/19 8:45 PM	5/10/19 8:46 PM	▶
4	Startable	1.00 ea	0.00 ea	5/10/19 8:46 PM	5/10/19 8:47 PM	▶
5	Startable	1.00 ea	0.00 ea	5/10/19 8:47 PM	5/10/19 8:48 PM	▶
6	Startable	1.00 ea	0.00 ea	5/10/19 8:48 PM	5/10/19 8:49 PM	▶
7	Startable	1.00 ea	0.00 ea	5/10/19 8:49 PM	5/10/19 8:50 PM	▶
8	Startable	1.00 ea	0.00 ea	5/10/19 8:50 PM	5/10/19 8:51 PM	▶
9	Startable	1.00 ea	0.00 ea	5/10/19 8:51 PM	5/10/19 8:52 PM	▶

Create Sequence

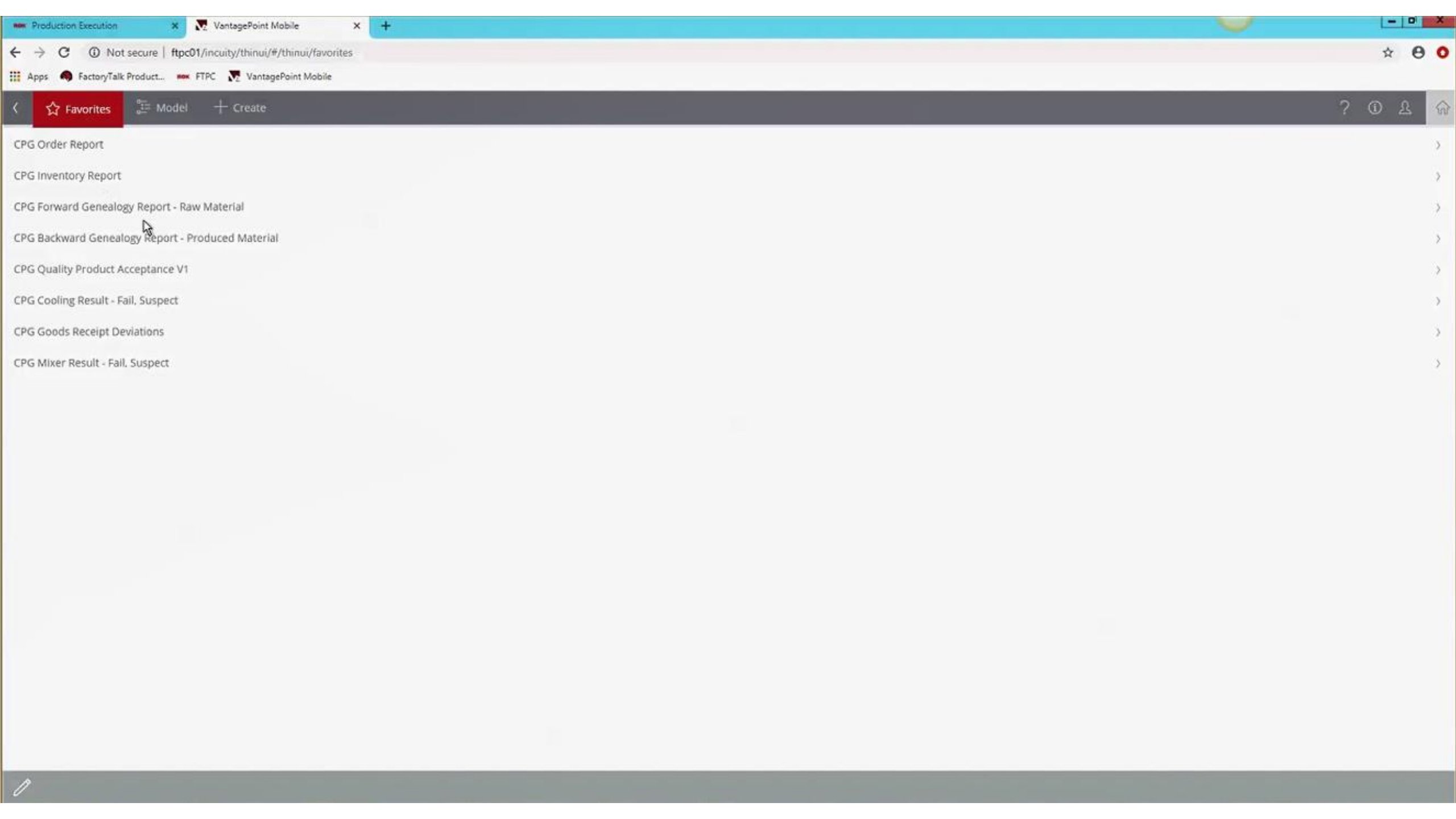
Material Allocation

Parameter Allocation

Resource Allocation

Sequence Details





- CPG Order Report >
- CPG Inventory Report >
- CPG Forward Genealogy Report - Raw Material >
- CPG Backward Genealogy Report - Produced Material >
- CPG Quality Product Acceptance V1 >
- CPG Cooling Result - Fail, Suspect >
- CPG Goods Receipt Deviations >
- CPG Mixer Result - Fail, Suspect >



☆ Favorites

Model

+

Create

?

ⓘ

👤

🏠

MyEnterprise > CPG > Reports

Reports Order Report

Start Time: 2/1/2019 4:54:25 PM

End Time: 5/16/2019 5:54:25 PM

View Report

1 of 2

Find | Next

CPGSuite

Rockwell Software

Process Orders

Order	Creation Time	State	Last Activity
☐ CIP-1070	04.02.2019 19:06:30	Running	04.02.2019 19:26:11
☐ B-Cookie-1016	04.02.2019 19:26:00	Completed	05.02.2019 16:09:44
☐ CIP-1071	05.02.2019 16:07:00	Running	05.02.2019 16:26:43
☐ O-Cookie-1023	05.02.2019 16:26:30	Completed	06.02.2019 15:28:31
☐ CIP-1072	06.02.2019 15:24:30	Running	06.02.2019 15:44:31
☐ B-Cookie-1017	06.02.2019 15:44:00	Completed	06.02.2019 15:48:41
☐ CIP-1073	06.02.2019 15:45:00	Running	06.02.2019 16:04:39
☐ C-Cookie-1015	06.02.2019 16:04:30	Completed	08.02.2019 20:37:12
☐ CIP-1074	08.02.2019 20:33:30	Running	08.02.2019 20:53:03
☐ B-Cookie-1018	08.02.2019 20:53:00	Completed	15.03.2019 18:15:28
☐ CIP-1075	15.03.2019 18:11:50	Running	15.03.2019 18:31:23
☐ O-Cookie-1024	15.03.2019 18:31:19	Completed	26.03.2019 21:38:22

Order Report

Inventory Report

Forward Genealogy Report - Raw Material

Backward Genealogy Report - Produced Mat...



MyEnterprise

CPG

Reports

Reports Forward Genealogy Report - Raw Material

Material Number1000001, 1000012, 1000003, 100View Report

1 of 1Find | Next

CPGSuite

Forward Genealogy - Raw Material

Raw Material Batch	Raw Material Sublot	Raw Material Reception Time	Raw Material	Raw Material Description	
MQCA02Z01SU12_Oat Flour	S-1000011	02.04.2019 16:28:06	1000012	Oat Flour	➡
MQCA02Z01SU06_Sugar Brown	S-1000005	10.04.2019 17:46:59	1000006	Sugar Brown	➡
MQCA02Z01SU11_Ginger	S-1000010	10.04.2019 17:47:08	1000011	Ginger	➡
MQCA02Z01SU13_Chemicals	S-1000012	10.05.2019 20:42:40	1000013	Chemical A	➡
MQCA02Z01SU14_Sanitizer	S-1000013	10.05.2019 20:42:44	1000014	Sanitizer A	➡
MQCA02Z01SU05_Sugar	S-1000004	16.05.2019 17:59:35	1000005	Sugar	➡
MQCA02Z01SU07_Egg Powder	S-1000006	16.05.2019 17:59:38	1000007	Egg Powder	➡
MQCA02Z01SU08_Water	S-1000007	16.05.2019 17:59:42	1000008	Water	➡
MQCA02Z01SU09_Vanilla	S-1000008	16.05.2019 17:59:46	1000009	Vanilla	➡
MQCA02Z01SU10_Chocolate	S-1000009	16.05.2019 17:59:49	1000010	Chocolate	➡
MQCA02Z01SU01_Flour	S-1000000	16.05.2019 18:00:02	1000001	Flour	➡

Order Report

Inventory Report

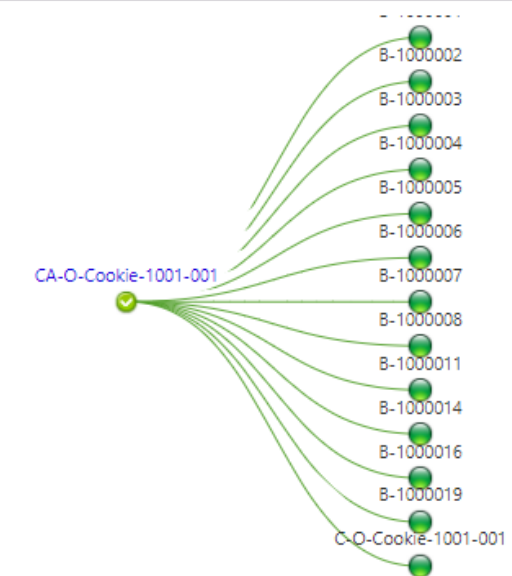
Forward Genealogy Report - Raw Material

Backward Genealogy Report - Produced Mat...



Material	1.1 - Oat Meal Case	▼
Batch	CA-O-Cookie-1001-001	▼

How Made					Where Used				
Source Batch	Material	Material Description	Consumption Step	Consumption Quantity	Target Batch	Material	Material Description	Produced Step	Produced Quantity
CA-O-Cookie-1001-001					CA-O-Cookie-1001-001				
-1000001	1000002	Butter	010 - Mixing	62.1544 kg					
-1000002	1000003	Salt	010 - Mixing	1.5064 kg					
-1000003	1000004	Baking Soda	010 - Mixing	3.2142 kg					
-1000004	1000005	Sugar	010 - Mixing	21.695 kg					
-1000005	1000006	Sugar Brown	010 - Mixing	37.2807 kg					
-1000006	1000007	Egg Powder	010 - Mixing	6.2395 kg					
-1000007	1000008	Water	010 - Mixing	3.7763 l					



CA-O-Cookie-1001-001

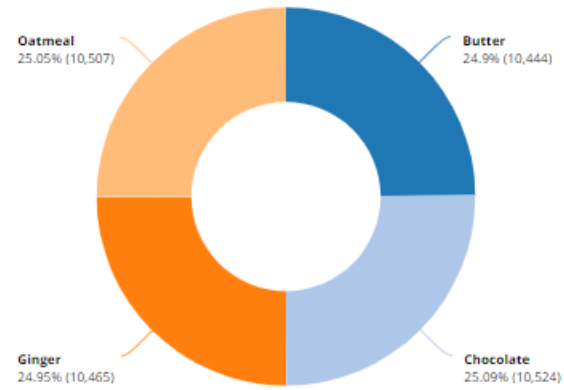


Batch History Dataset Count: 353136 LastdataSync: 2021-08-20 12:30:00.000

Batches

41,082

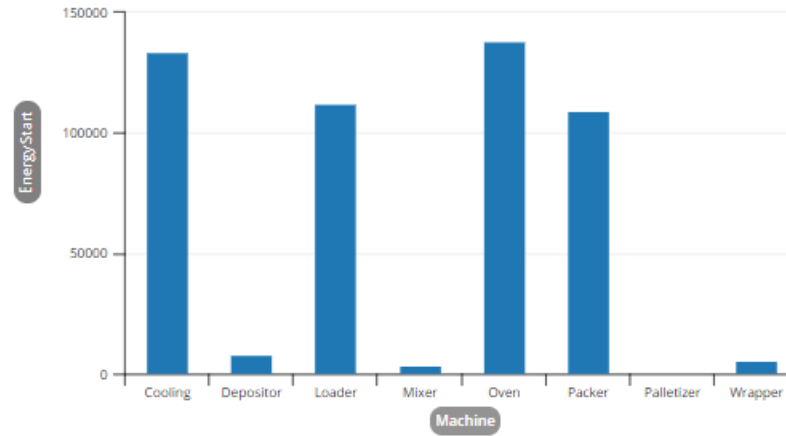
Batch Count by Product



Energy Usage (Total)

510,360.69

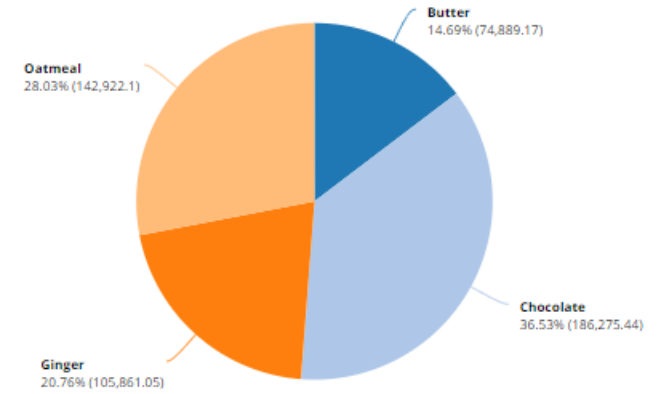
Energy Usage by Machine



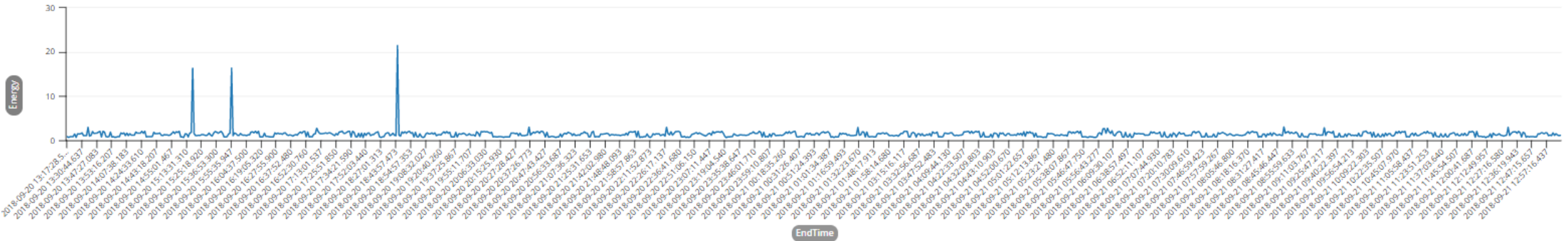
Energy Usage (Today)

0

Energy Usage by Product



Energy Usage





CONTAINER INFORMATION

Container	Class	Description
MQCA02Z01SU01_Flour	StorageUnit	MQCA02Z01SU01_Flour
MQCA02Z01SU02_Butter	StorageUnit	MQCA02Z01SU02_Butter
MQCA02Z01SU04_Baking Soda	StorageUnit	MQCA02Z01SU04_Baking Soda
MQCA02Z01SU06_Sugar Brown	StorageUnit	MQCA02Z01SU06_Sugar Brown
MQCA02Z01SU08_Water	StorageUnit	MQCA02Z01SU08_Water
MQCA02Z01SU10_Chocolate	StorageUnit	MQCA02Z01SU10_Chocolate
MQCA02Z01SU12_Oat Flour	StorageUnit	MQCA02Z01SU12_Oat Flour
MQCA02Z01SU14_Sanitizer	StorageUnit	MQCA02Z01SU14_Sanitizer
MQCA02Z02SU02_Wrap Storage	StorageUnit	MQCA02Z02SU02_Wrap Storage
MQCA02Z02SU16_Oat Meal Cookie Storage	StorageUnit	MQCA02Z02SU16_Oat Meal Cookie Storage
MQCA02Z02SU18_Butter Cookie Storage	StorageUnit	MQCA02Z02SU18_Butter Cookie Storage
MQCA02Z02SU31_Oat Meal Case Storage	StorageUnit	MQCA02Z02SU31_Oat Meal Case Storage
MQCA02Z02SU33_Butter Case Storage	StorageUnit	MQCA02Z02SU33_Butter Case Storage

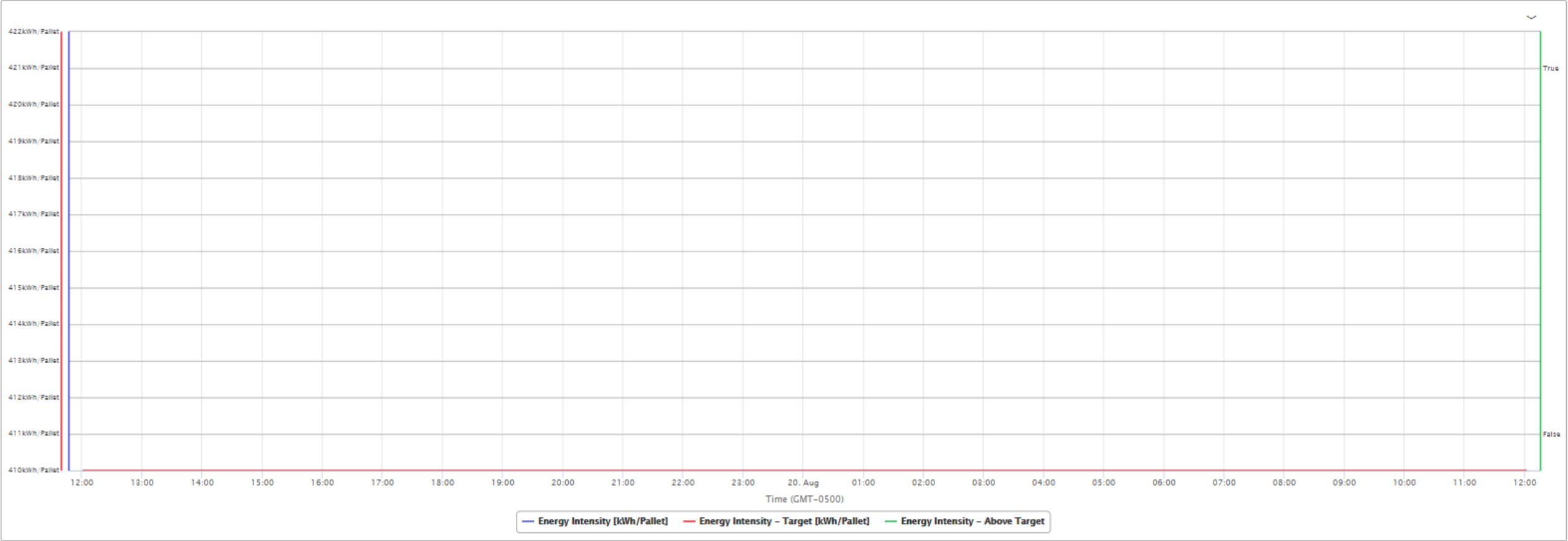
Percentage Full

99.996%

Batch	Sublot	Quantity	Part	PartDescription	State
MQCA02Z01SU01_Flour_{AC54E0CD-14F6-547E-2AFD-CD87E6072BAE}	S-1000000	1999924.926815600 kg	1000001.1	Flour	Released



4 - Energy Concerns Line 1 - Energy Intensity to Target (24hr)



Line 1 - Energy Intensity to Target (24hr)

Energy Intensity Slicer

Analyze Energy and Energy Intensity by Form...

Energy Consumed Current Shift

Consumption with drill down

kWh DB

Energy across batches with drill through

☆



Duration Liq Manufacturing

Total Orders

21,935

Total Duration

562,079 min

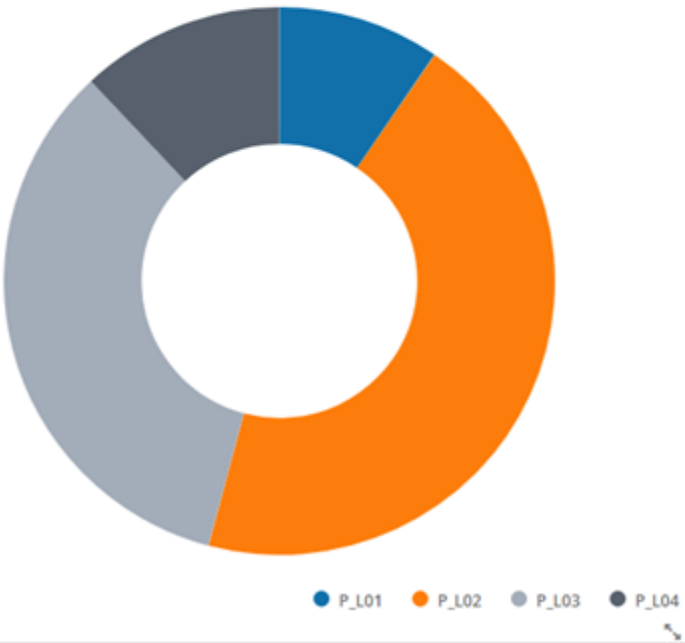
Average of Duration

25.7 min

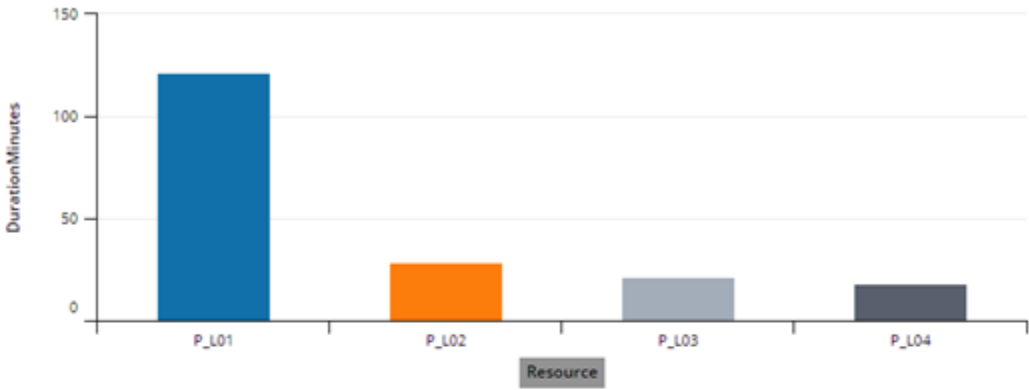
STD of Duration

148.68 min

Distribution of Time



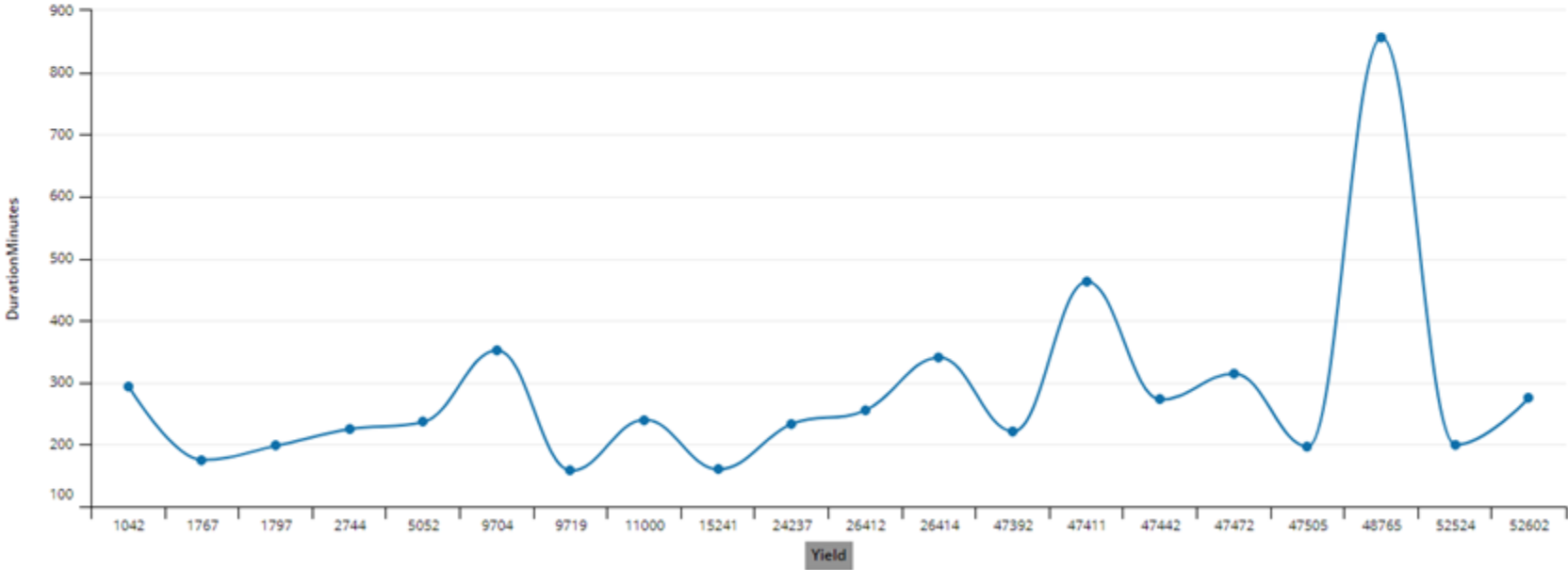
Resource by DurationMinutes



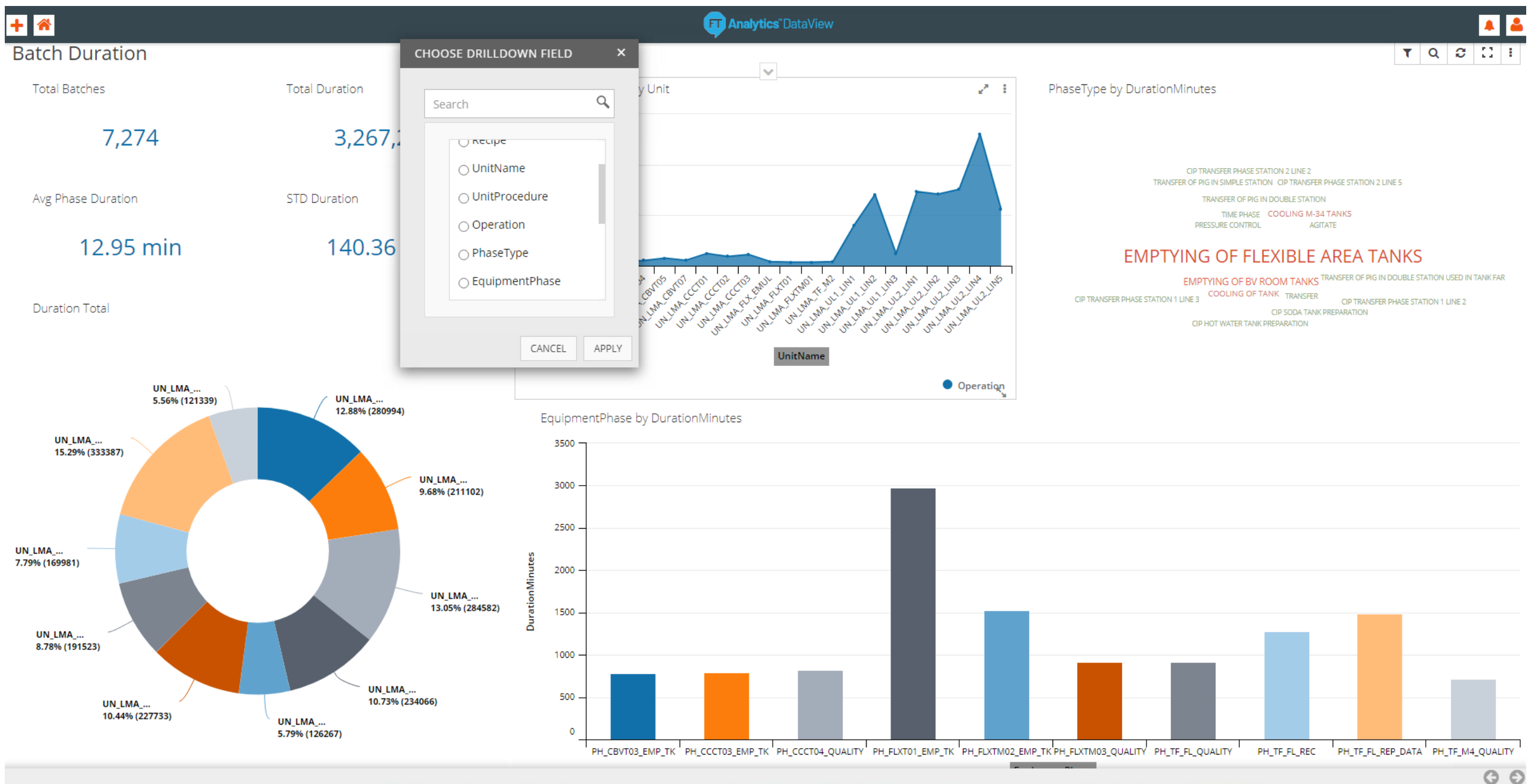
Material Duration



Duration vs Volume









# OEE Dashboard

Fri Aug 20 2021 11:18 AM  
Administrator

## Site Model

- Customer
  - Plant
    - Area
      - F\_D01\_Line
        - F\_D01
      - F\_D02\_Line
        - F\_D02
      - F\_D03\_Line
        - F\_D03
      - F\_D04\_Line
        - F\_D04
      - F\_D06\_Line
        - F\_D06
      - F\_P01\_Line
        - F\_P01
      - F\_P02\_Line
        - F\_P02
      - F\_P03\_Line
        - F\_P03
  - Customer
    - Plant
      - Area
        - F\_L02\_Line
          - F\_L02
        - F\_L03\_Line
          - F\_L03
        - F\_L04\_Line
          - F\_L04
        - F\_L06\_Line
          - F\_L06

WorkCell Overview	WorkCell Details	Current Shift Overview
<div><div>49</div><div>F_D01</div><div>1.000000</div></div>	<div><div>50</div><div>F_D02</div><div>2.000000</div></div>	<div><div>33</div><div>F_D03</div><div>2.000000</div></div>
<div><div>2</div><div>F_D04</div><div>3.000000</div></div>	<div><div>0</div><div>F_D06</div><div></div></div>	<div><div>34</div><div>F_P01</div><div>2.000000</div></div>
<div><div>0</div><div>F_P02</div><div>1.000000</div></div>	<div><div>48</div><div>F_P03</div><div>1.000000</div></div>	<div><div>0</div><div>F_L01</div><div>1.000000</div></div>
<div><div>37</div><div>F_L02</div><div>1.000000</div></div>	<div><div>0</div><div>F_L03</div><div>0.000000</div></div>	<div><div>16</div><div>F_L04</div><div>8.000000</div></div>
<div><div>0</div><div>F_L06</div><div>0.000000</div></div>		



OEE Dashboard

Site Model

- Customer
  - Plant
    - Area
      - F\_D01\_Line
        - F\_D01
      - F\_D02\_Line
        - F\_D02
      - F\_D03\_Line
        - F\_D03
      - F\_D04\_Line
        - F\_D04
      - F\_D06\_Line
        - F\_D06
      - F\_P01\_Line
        - F\_P01
      - F\_P02\_Line
        - F\_P02
      - F\_P03\_Line
        - F\_P03
  - Customer
    - Plant
      - Area
        - F\_L02\_Line
          - F\_L02
        - F\_L03\_Line
          - F\_L03
        - F\_L04\_Line
          - F\_L04
        - F\_L06\_Line
          - F\_L06

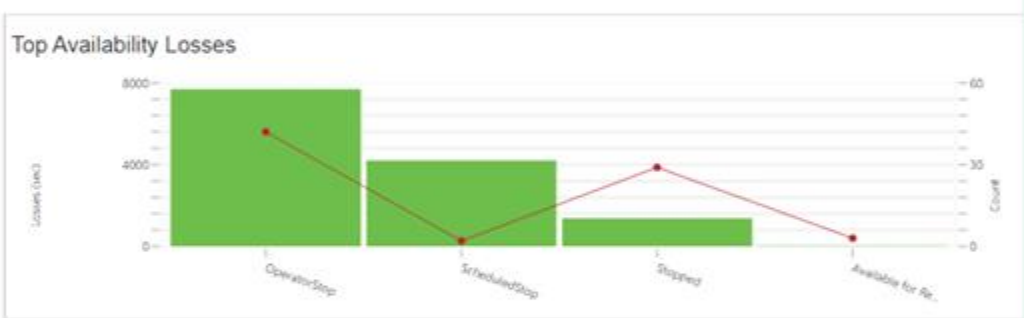
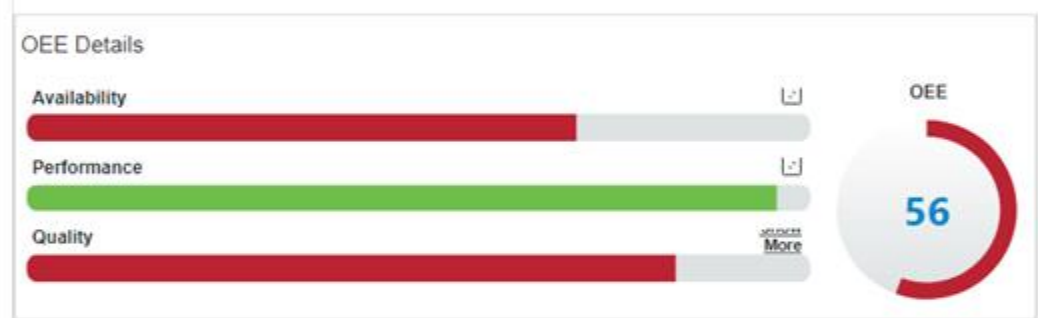
Overview by time    Current Shift Overview

Start Time:  

August 20, 2021 1:00 AM

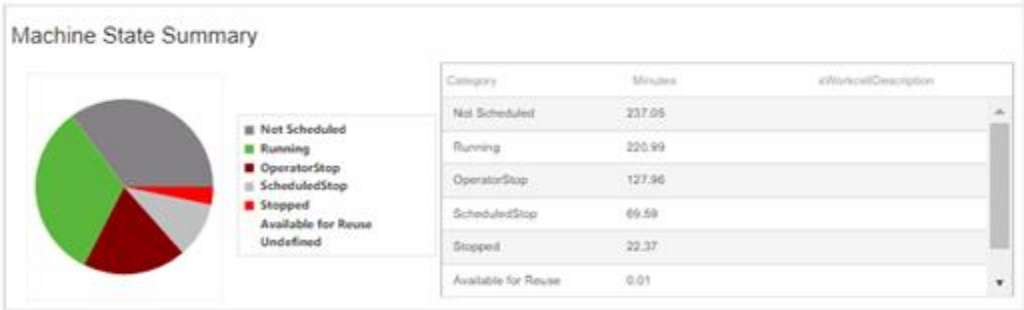
End Time:  

August 21, 2021 1:00 AM



Context Information

Lin...	PO	Co...	Part	Shift	Good	Scrap	Total	Tot...	Av...	Ru...	Do...	KPIs
F_D01	00010738	600.0000	3024393	Shift 1	437.00	92.00	529.00	317	315.04	190.33	124.71	MTBF
												MTTR





# Encontrando el valor en las soluciones

Mejoras que han sido documentadas por los adoptadores tempranos de la digitalización



## CAPEX:

30% en evasión de capital



## Inventario:

120 días a 82 días



## Entrega a tiempo:

82% a 96%



## Plazos de entrega:

Reducción del 50%



## Calidad:

40% mejora en RTYL

15% Inventario

7.8% Capacidad de respuesta

8.6% Financieros

17% Eficiencia

13.7% Calidad



# ¡Su opinión es muy importante para nosotros!

Lo invitamos a escanear el código QR desde su celular



¡Muchas gracias!



A Rockwell Automation Event



# ¡GRACIAS!



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