

NOVEMBER 2022

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# Deploying an Asset Utilization & Efficiency Solution with AVEVA™ Insight OEE

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# AVEVA Insight OEE Deployment



## Challenge

- How to monitor equipment performance and improve asset utilization
- What tools are available to view this data for equipment operators
- What tools are available for analyzing and evaluating my data



## Solution

- AVEVA Insight with its asset performance capabilities to report on overall equipment efficiency
- Publish equipment utilization state data and production counts to AVEVA Insight



## Benefits

- Simple configuration of equipment performance monitoring
- Standardization of OEE reporting across multiple assets within one or multiple sites
- Dashboards to drive improvements



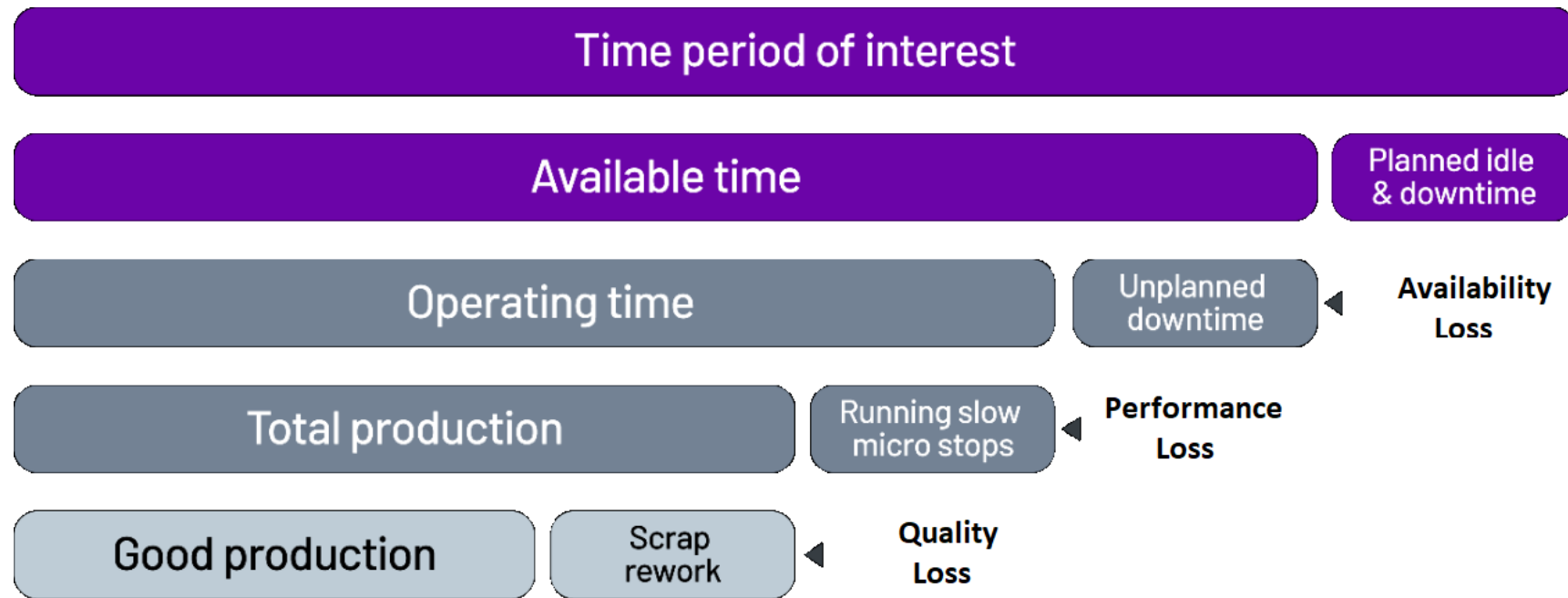
# AVEVA Insight

## Product Information: [AVEVA Insight](#)

- Cloud-based solution that provides information in the right context to enable anyone to easily manage your operations and assets from anywhere, at anytime
- Publish data from 30+ AVEVA products
- REST API for data access and integration
- Prebuilt asset monitoring for time series charting and OEE analysis
- Customizable dashboards and process graphics
- Integrated add-ons for predictive analytics, guided analytics, asset performance, and more

# AVEVA Insight OEE

Overall Equipment Efficiency Component Breakdown –  $OEE \% = Availability * Performance * Quality$





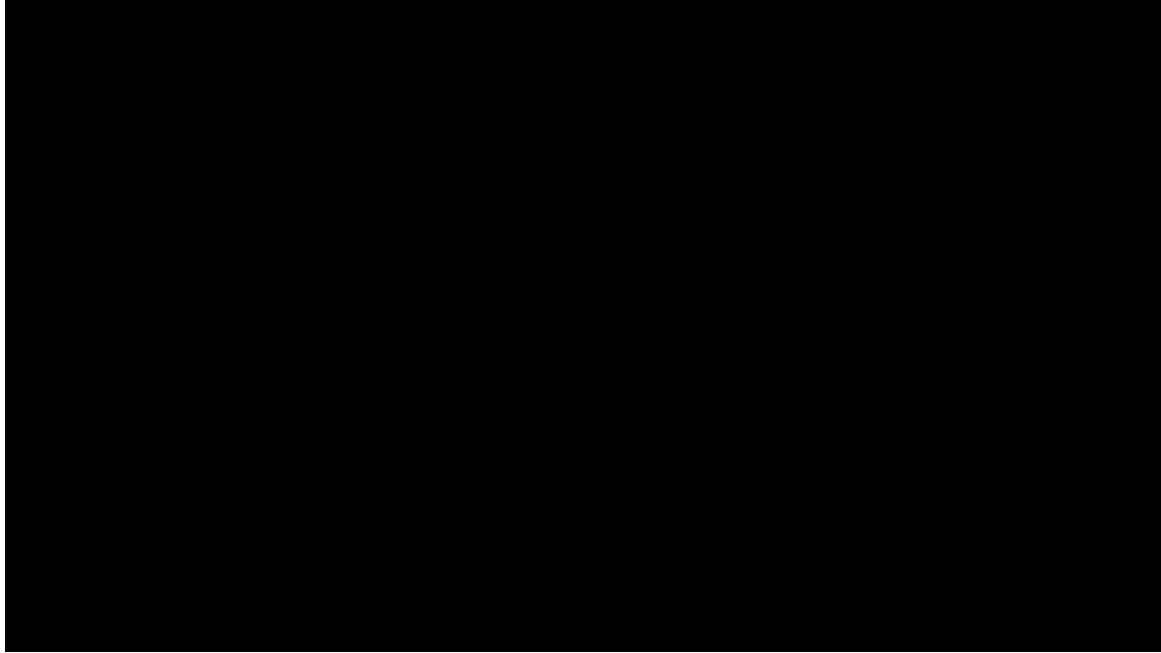
# AVEVA Insight

## Insight Performance Configuration

- Administrators Configure
  - Equipment Model (Hierarchical Asset model and optional production line model)
  - Equipment Utilization States (Idle, Runtime, and Downtime state types)
  - Utilization Reason Groups and Utilization Reasons – generic as well as equipment specific reasons
  - Overall Equipment Effectiveness (OEE) Calculation Definitions (default production rates, unit of measure, and KPI targets)
  - Production Disposition Reasons for good and waste production
  - Optional Context Properties
  - Automated data collection (link Historian tags to utilization reasons, production counters, and context properties)
  - Optional Shift and Shift pattern configuration
- Prior AVEVA World Conference covered the detailed configuration steps of Insight Performance
  - Contact the presenter for additional slides



# AVEVA Insight OEE Configuration Demo





# AVEVA Insight

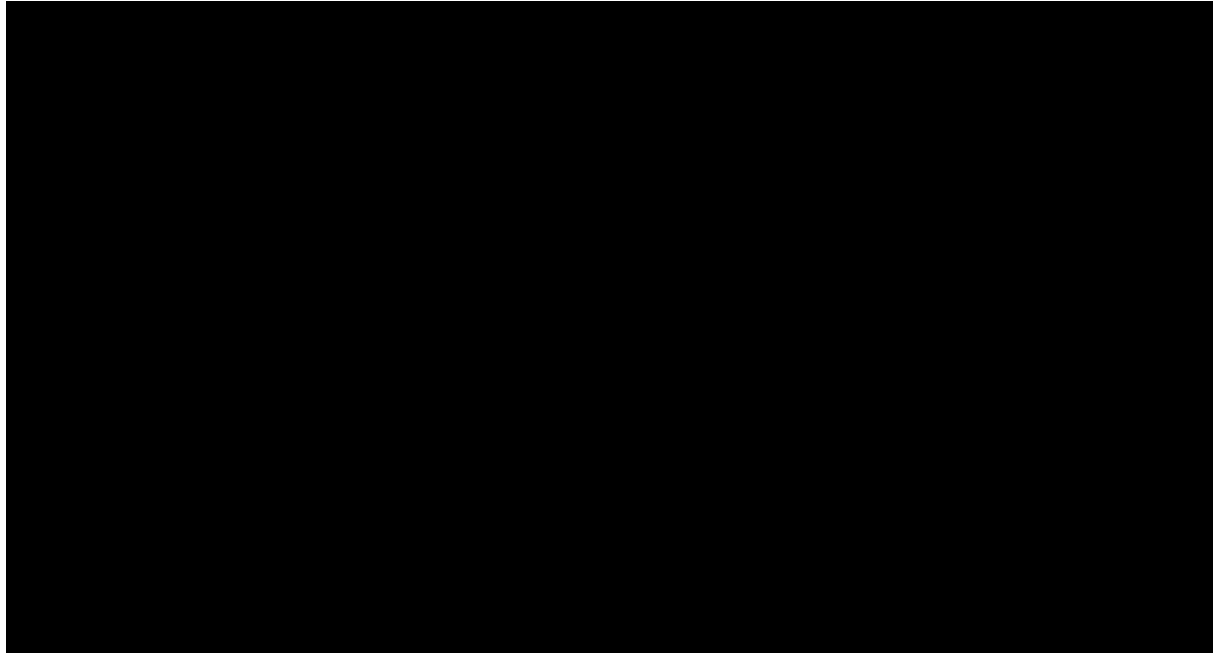
## Insight OEE Prebuilt Content

- Equipment Efficiency Page
  - Top of all Pages – OEE KPIs, current state, and option to start / stop production run
  - Utilization Events – Summary data, utilization timeline, and options to add, edit, split, merge utilization events
  - Production Events – Summary data of the current production run and options to add, edit, reclassify good/waste production
  - OEE Data Properties – Additional context properties
  - Line Overview – Visual view of production line and current status of equipment
- Asset Page Efficiency Tab
  - Summary view of area or individual asset
- OEE Analysis Page
  - Bar graphs of utilization analysis and OEE KPI analysis
  - Drill down options to data grid of event data



# AVEVA Insight OEE Prebuilt Content Demo

## Equipment Efficiency Page

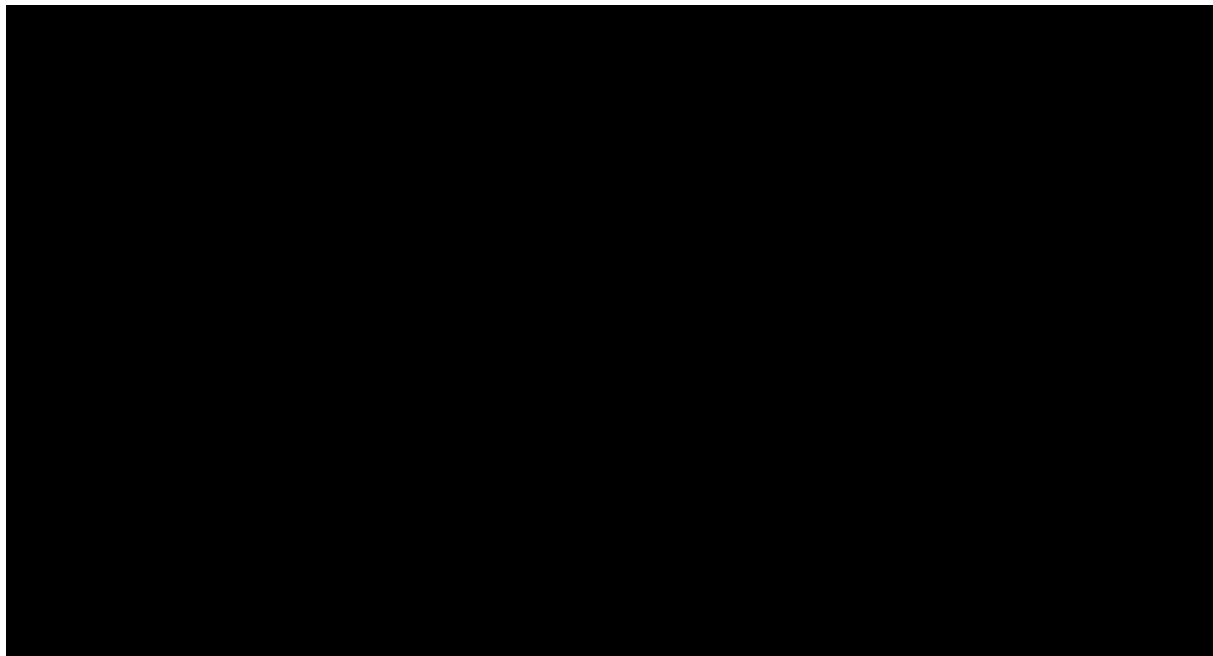






# AVEVA Insight OEE Prebuilt Content Demo

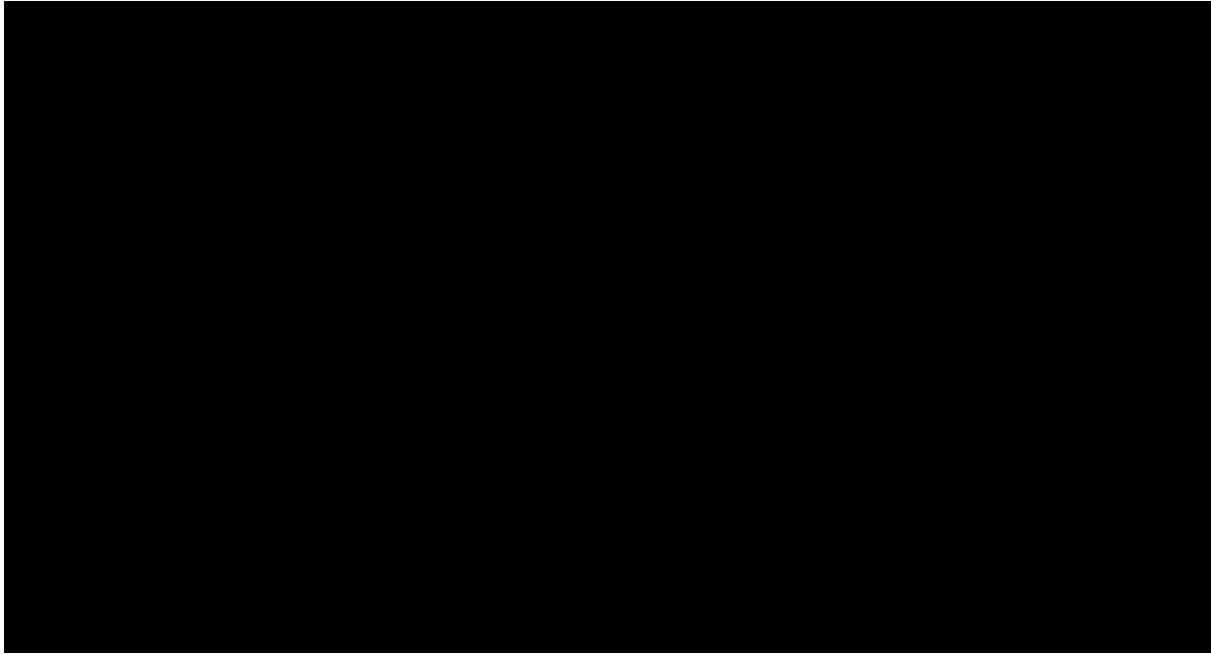
Asset Page





# AVEVA Insight OEE Prebuilt Content Demo

## OEE Analysis Page





# AVEVA Insight Dashboards

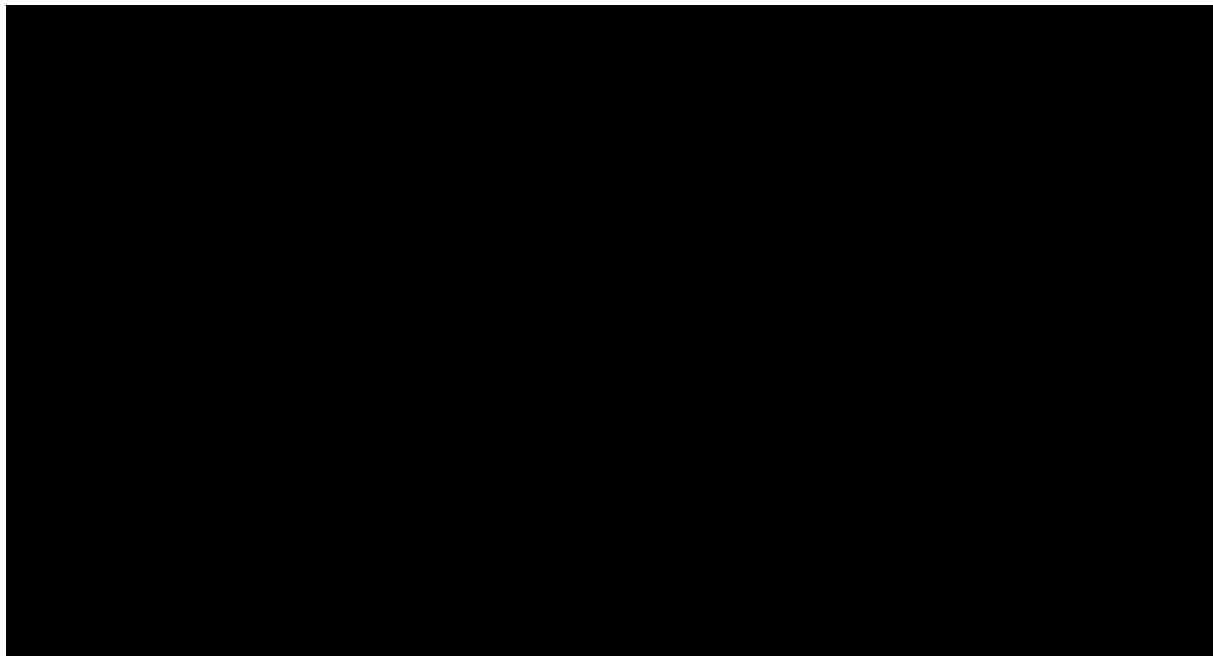
## Insight OEE Custom Content

- Widgets for building custom dashboards
  - Utilization Timeline (Gantt) widget
  - OEE Gauge (KPI dial) widget
  - Utilization Summary Chart (Pareto) widget
  - Production Summary Chart (Pareto) widget



# AVEVA Insight Dashboards Demo

Building Custom Content with Insight Performance Widgets





# Insight Equipment Efficiency REST API

## All the Content Shown uses APIs for Data Retrieval

- First, generate an API key and then can call into the API
- OEE Buckets – Equipment Summary
  - **Resource Path:** /odata/OEEBuckets/mes.EquipmentSummary()/
- OEE Buckets – Location Summary
  - **Resource Path:** /odata/OEEBuckets/mes.LocationSummary()/
- OEE Buckets – Production Line Summary
  - **Resource Path:** /odata/OEEBuckets/mes.ProductionLineSummary()/
- Utilization Events – Equipment Summary
  - **Resource Path:** /odata/UtilizationEvents/mes.EquipmentSummary()/
- [Welcome to the Insight Equipment Efficiency REST API](#)



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## Related Sessions

- AVEVA Learning Lab – AVEVA Insight Introduction (Monday 1:00–4:00 & Tuesday 2:00–5:00)
- Optimize Asset Utilization & Efficiency with AVEVA Insight OEE and Guided Analytics (Tuesday 2:40–3:10)

# Questions?

Please wait for the microphone.  
State your name and company.



# Please remember to...

Navigate to this session in the mobile  
app to complete the survey.





# Thank you!

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#### ABOUT AVEVA

AVEVA is a global leader in industrial software, sparking ingenuity to drive responsible use of the world's resources. The company's secure industrial cloud platform and applications enable businesses to harness the power of their information and improve collaboration with customers, suppliers and partners.

Over 20,000 enterprises in over 100 countries rely on AVEVA to help them deliver life's essentials: safe and reliable energy, food, medicines, infrastructure and more. By connecting people with trusted information and AI-enriched insights, AVEVA enables teams to engineer efficiently and optimize operations, driving growth and sustainability.

Named as one of the world's most innovative companies, AVEVA supports customers with open solutions and the expertise of more than 6,400 employees, 5,000 partners and 5,700 certified developers. With operations around the globe, we are headquartered in Cambridge, UK and listed on the London Stock Exchange's FTSE 100.

Learn more at [www.aveva.com](https://www.aveva.com)

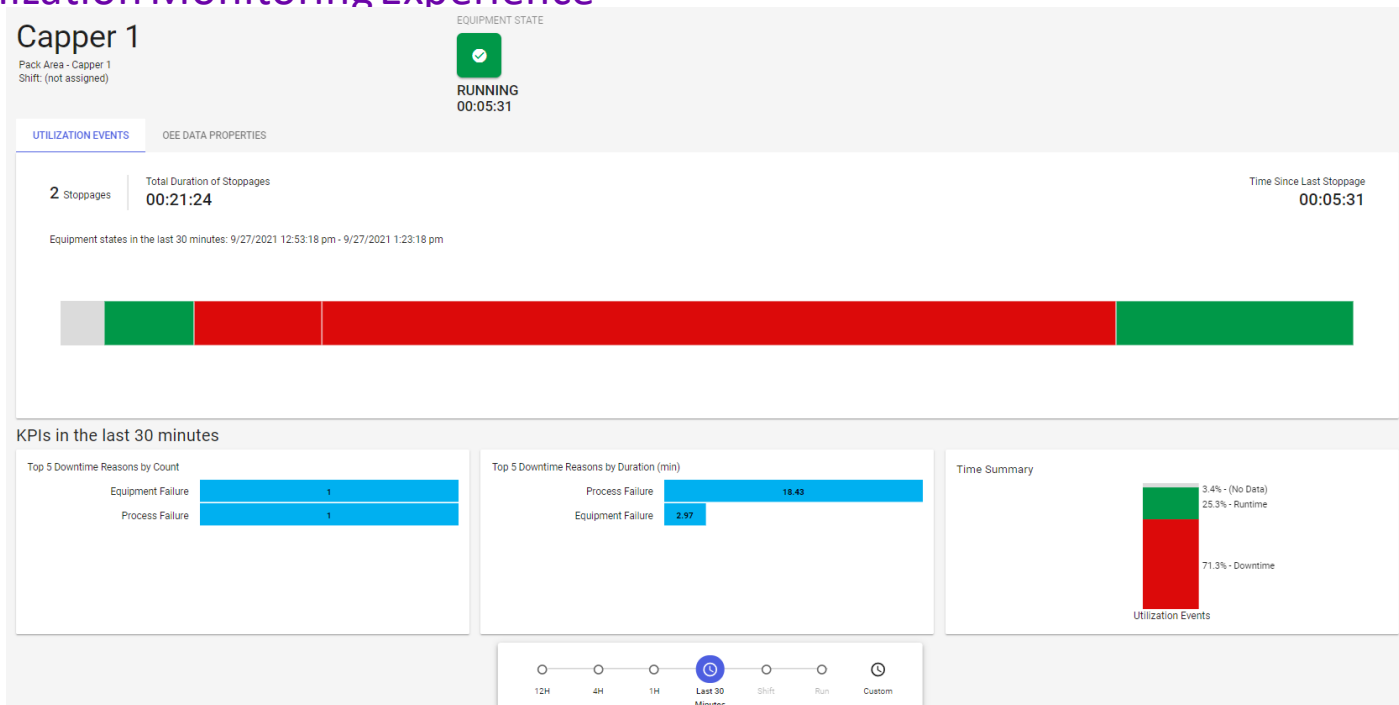


# Reference Slides

# Monitor Equipment Utilization

## Introduction to Utilization Monitoring Experience

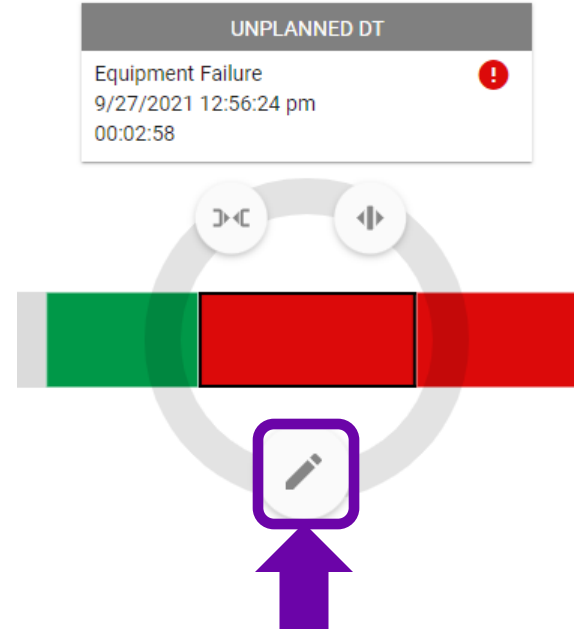
### Utilization Monitoring Experience



# Monitor Equipment Utilization

## Edit Utilization Event

- Click on an event and the Edit / Split / Merge actions are displayed
- Click on the Edit action button and change the reason for the event
- Alternative, use the merge (top left) or split (top right) action buttons



# Monitor Equipment Utilization

## Interacting with the Efficiency Page (cont.)

- Along the bottom of the page are KPI statistics for the selected time period
- Pareto of downtime reasons by count
- Pareto of downtime reasons by duration
- Time Summary – percent of time in equipment state type (Runtime, Downtime, Idle)

### KPIs in the last 30 minutes

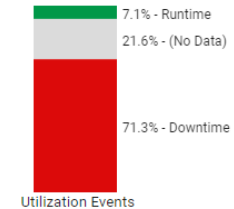
#### Top 5 Downtime Reasons by Count

Equipment Failure	1
Process Failure	1

#### Top 5 Downtime Reasons by Duration (min)

Process Failure	18.43
Equipment Failure	2.97

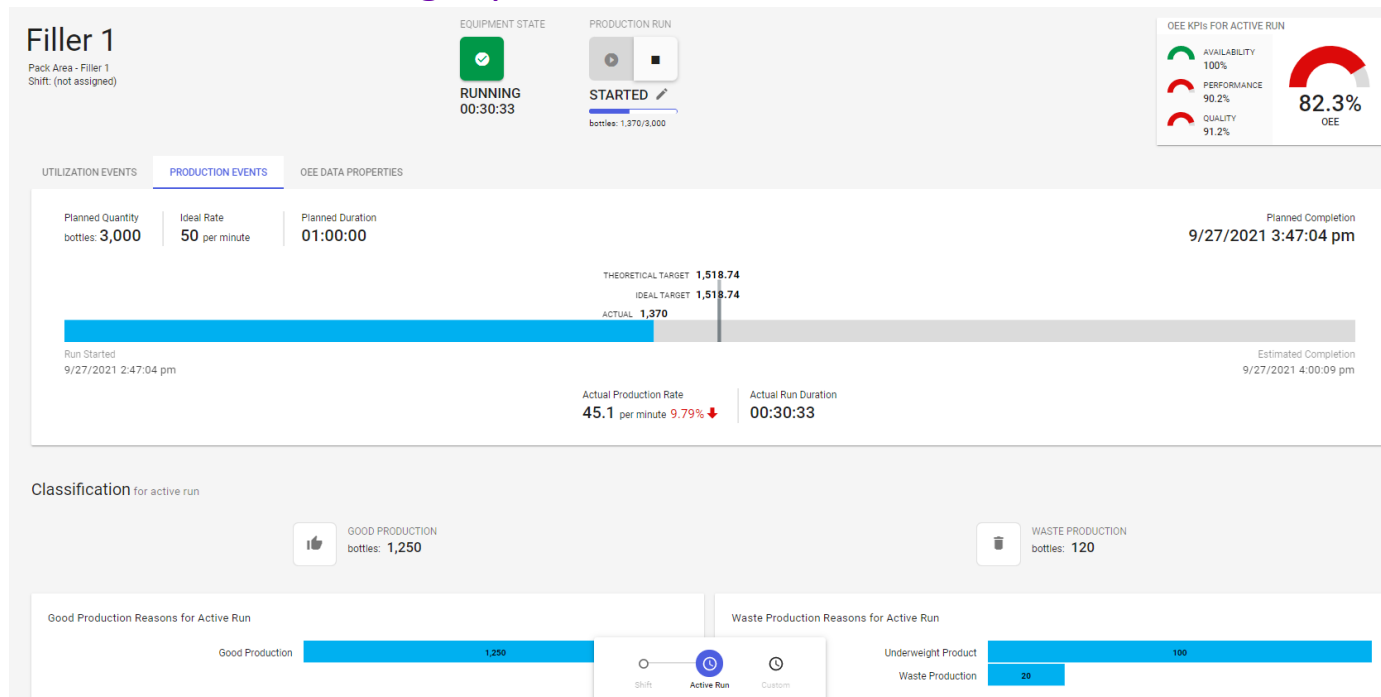
#### Time Summary



# Monitor Equipment OEE and Production

## Introduction to OEE/Production Monitoring Experience

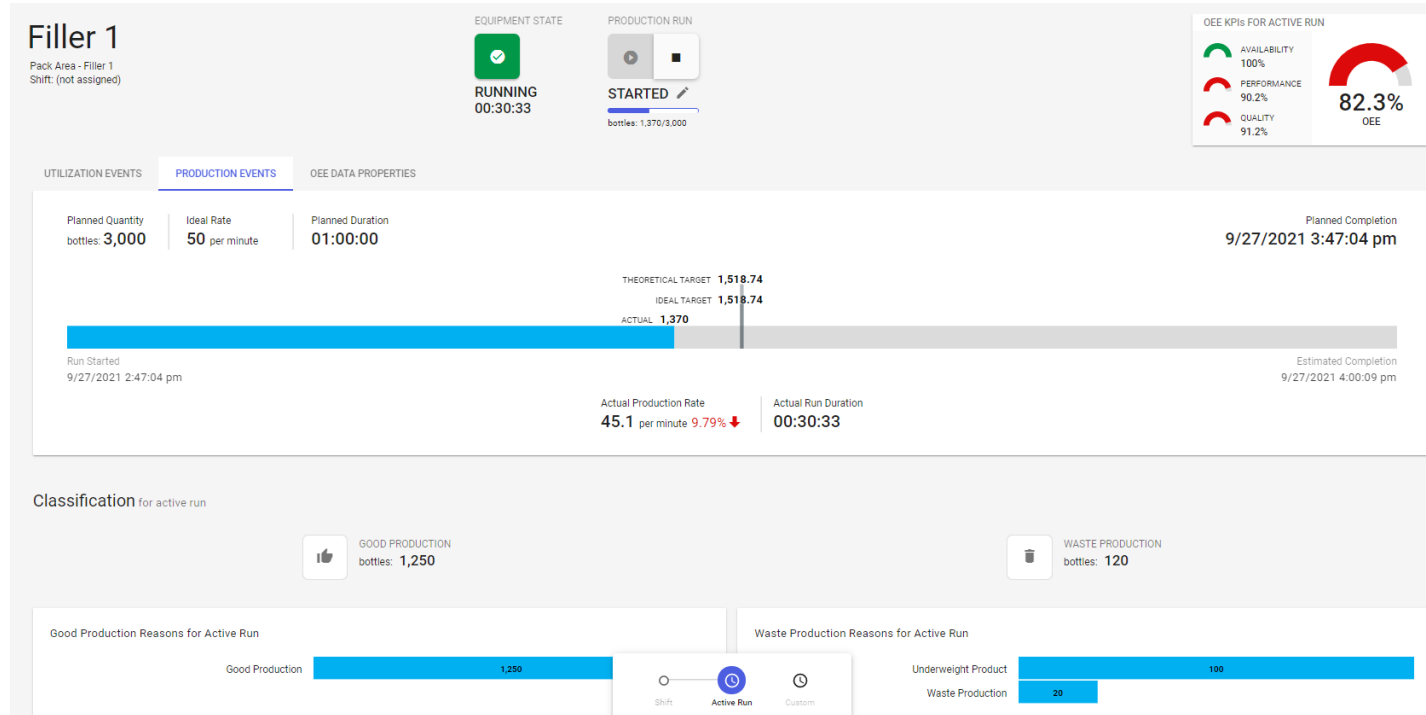
### OEE/Production Monitoring Experience



# Monitor Equipment OEE

## View Details of Production Run

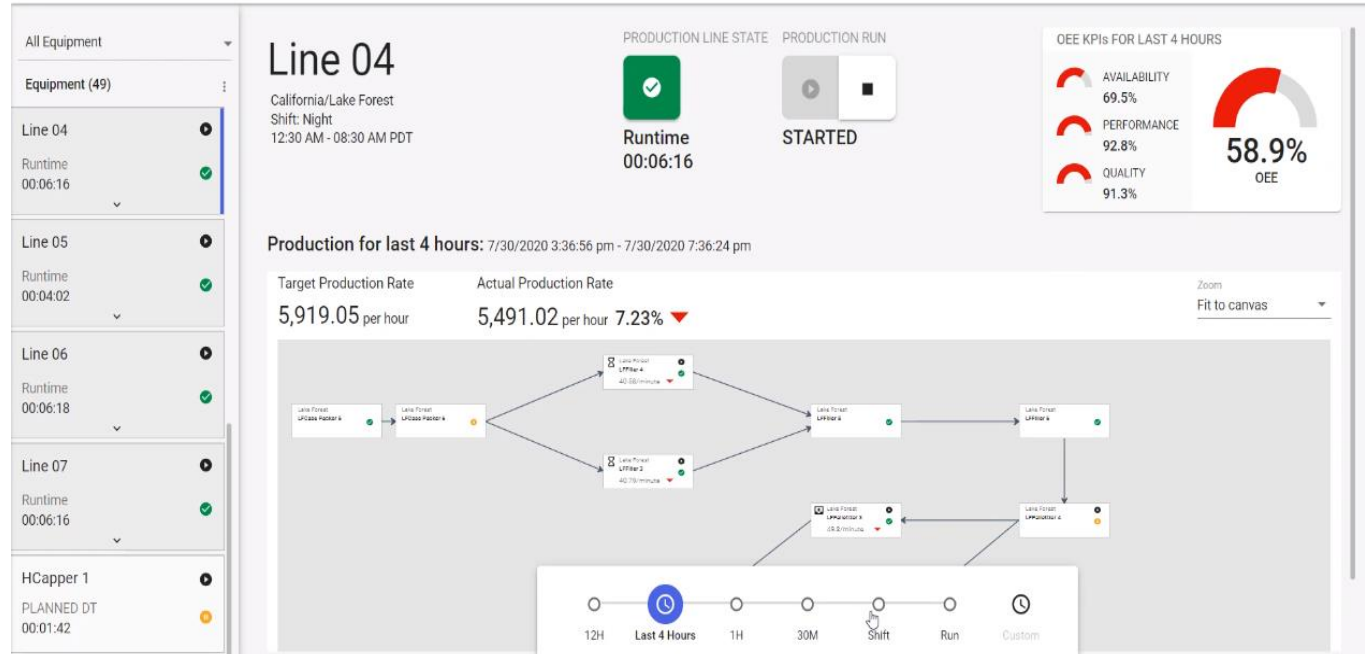
- OEE KPIs
- Production Progress
- Pareto of production reasons by quantity



# Monitor Production Line OEE and Production

## Introduction to Production Line Experience

### OEE/Production Monitoring Experience

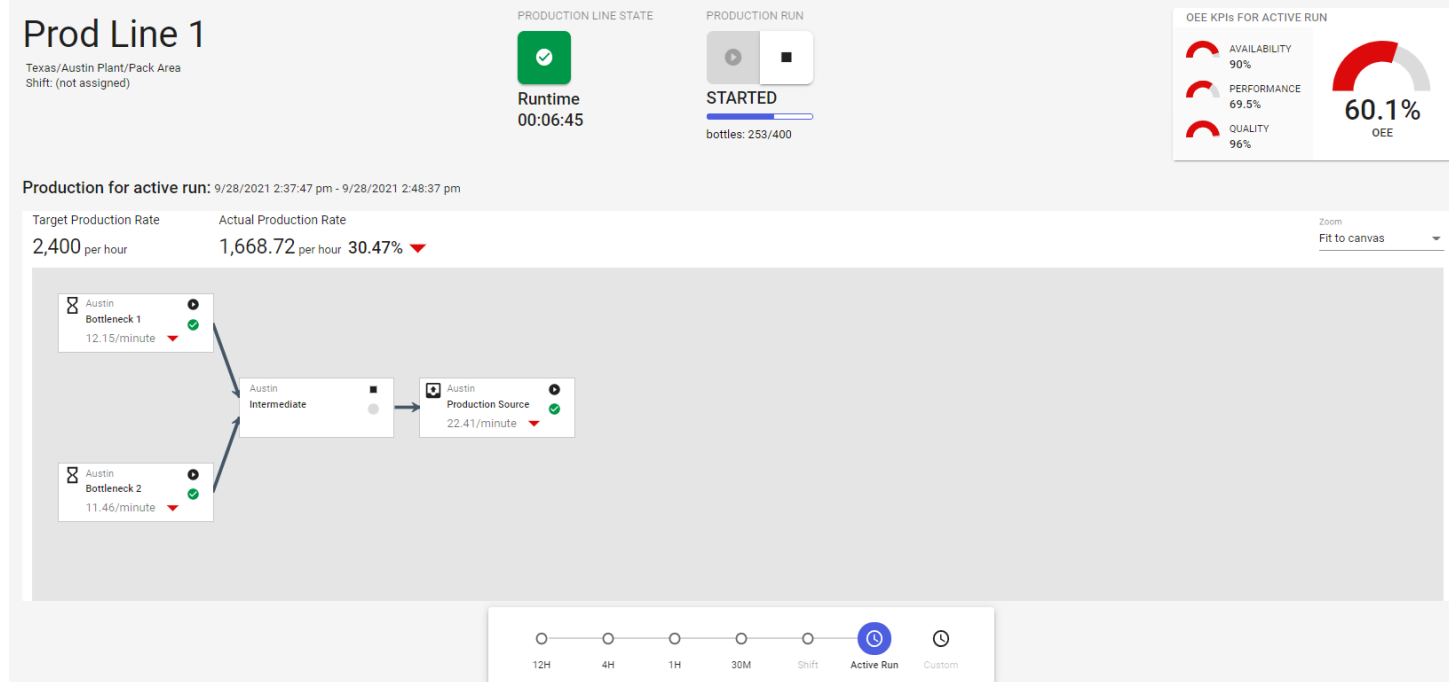




# Interact with Production Lines

## View Details of Production Line

- Line OEE KPIs
- Production Rate
- Current states of line equipment



## Single Asset View



# Asset Page Equipment Efficiency Tab

## Hierarchy View

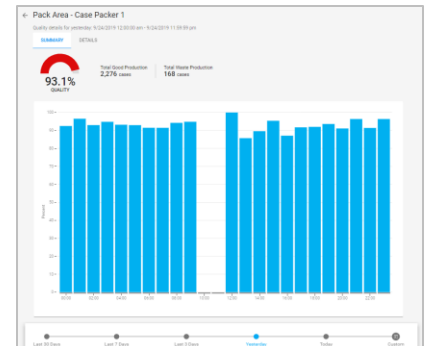
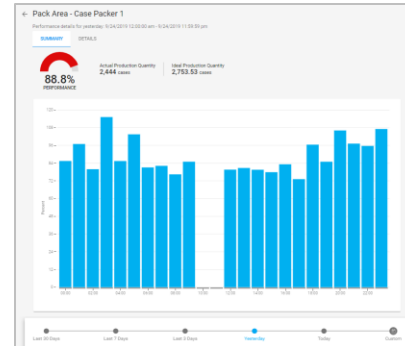
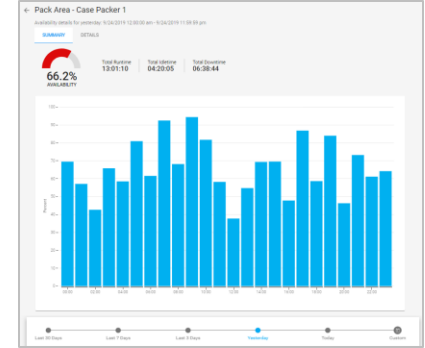
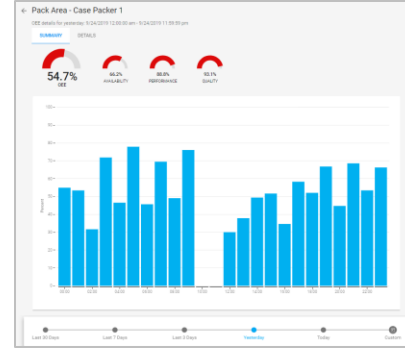
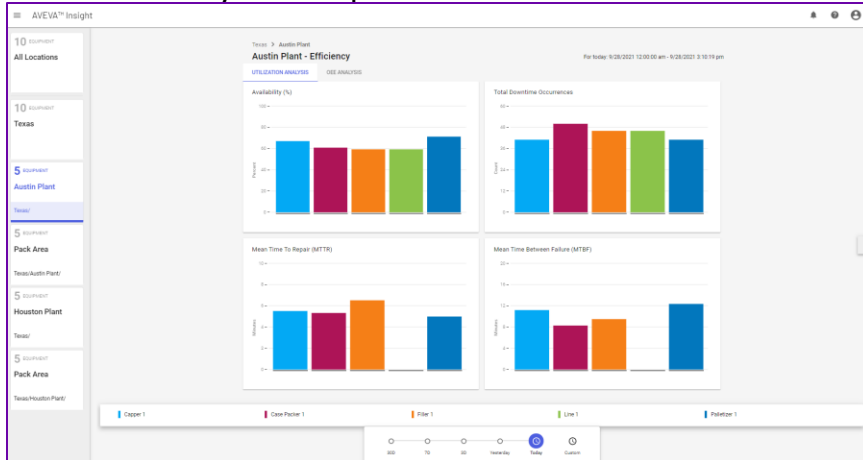
AVEVA<sup>®</sup> Insight



# Analyze Equipment Utilization and OEE Data

## Introduction: Overall Equipment Efficiency Analysis with Insight

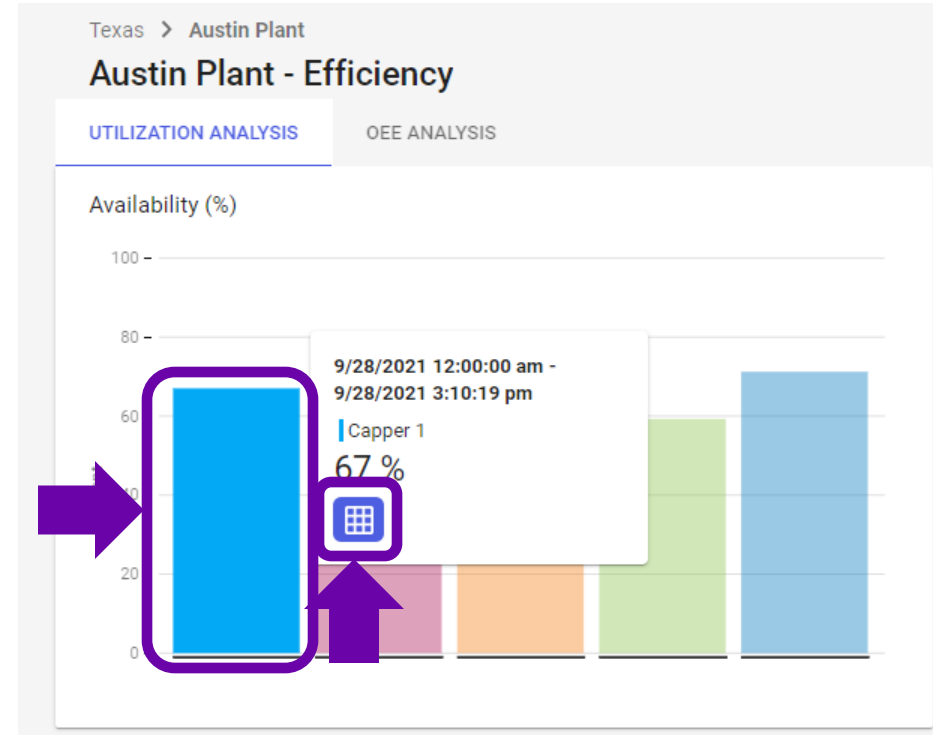
- Out-of-the-Box Reporting & Analysis
- KPI Comparison Across Equipment
- Detailed Root Cause Analysis on OEE, Availability, Performance & Quality KPIs
- All Efficiency Data Exposed via REST APIs



# Analyze Equipment Utilization and OEE Data (cont.)

## Access Equipment Utilization Data

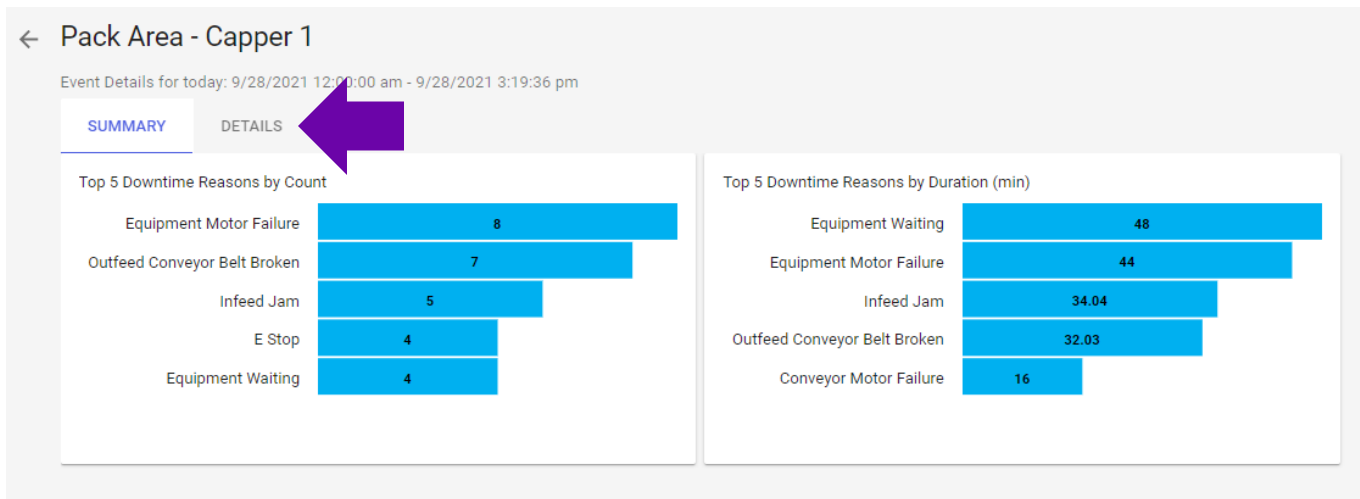
- From “UTILIZATION ANALYSIS” tab, click on the first bar of the “Availability” chart
- Click on “Details” icon to access detailed utilization data for the selected equipment



# Analyze Equipment Utilization and OEE Data (cont.)

## Access Equipment Utilization Data (cont.)

- The Utilization Details Page will be displayed. The SUMMARY tab provides some information around Top 5 Downtime Reasons by Count & Duration for the selected time period. Click on the DETAILS tab to access more detailed utilization data/events.



# Analyze Equipment Utilization and OEE Data (cont.)

## Access Equipment Utilization Data (cont.)

1. Expand the grid
  2. Drag columns to group by columns
  3. Export data to csv
- Click on column name to order by the column
  - Click on column filter to apply a filter on a column

← Pack Area - Capper 1

Event Details for today: 9/28/2021 12:00:00 am - 9/28/2021 3:19:36 pm

SUMMARY DETAILS

Drag a column header and drop it here to group by that column

Start Time	Duration	Utilization Reason	Utilization State	Utilization State Type	Crew Name
9/28/2021 3:17:37 pm	00:01:59	Infeed Conveyor Belt Broken	UNPLANNED DT	Downtime	Blue Crew
9/28/2021 3:15:37 pm	00:02:00	Running	RUNNING	Runtime	Blue Crew
9/28/2021 3:09:37 pm	00:06:00	Speed Loss	RUNNING	Runtime	Blue Crew
9/28/2021 2:57:37 pm	00:12:00	Running	RUNNING	Runtime	Blue Crew
9/28/2021 2:49:37 pm	00:08:00	Planned Meeting/Break	PLANNED DT	Idle	Blue Crew
9/28/2021 2:41:37 pm	00:08:00	Planned Cleaning	PLANNED DT	Idle	Blue Crew
9/28/2021 2:35:37 pm	00:06:00	Running	RUNNING	Runtime	Blue Crew
9/28/2021 2:33:37 pm	00:02:00	Speed Loss	RUNNING	Runtime	Blue Crew
9/28/2021 2:31:37 pm	00:02:00	Running	RUNNING	Runtime	Blue Crew

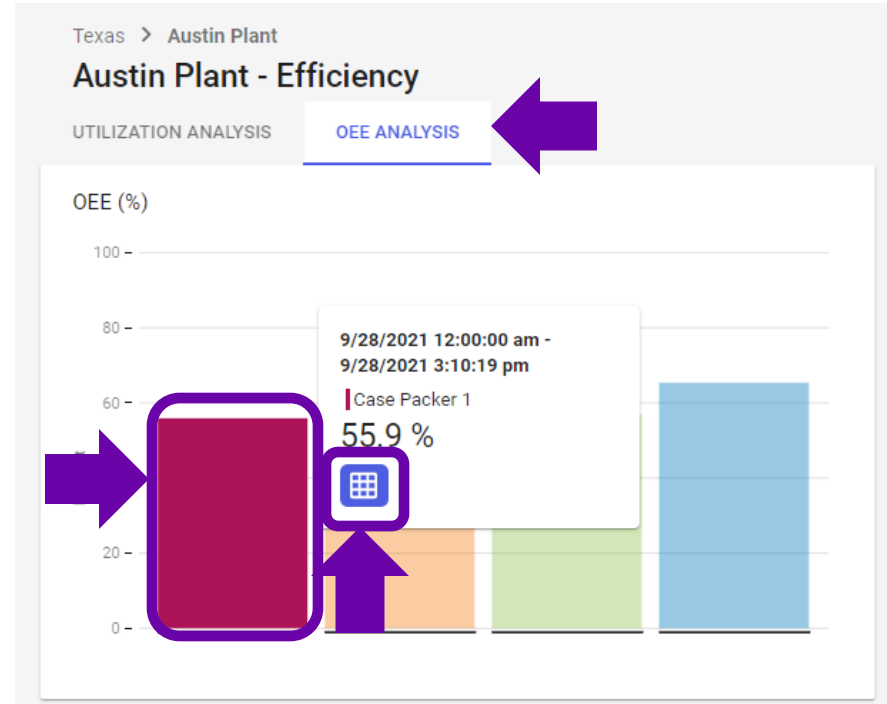
Page: 1 Rows per page: 100 1 - 100 of 197

30D 7D 3D Yesterday Today Custom

# Analyze Equipment Utilization and OEE Data (cont.)

## Access Equipment OEE Data

- Click on “Back Arrow” to return to OEE Analysis – Summary Page from Utilization Details Page
- Switch to OEE ANALYSIS tab
- From OEE ANALYSIS tab, click on the first bar of the “OEE (%)” chart
- Click on “Details” icon to access detailed OEE data for the selected equipment

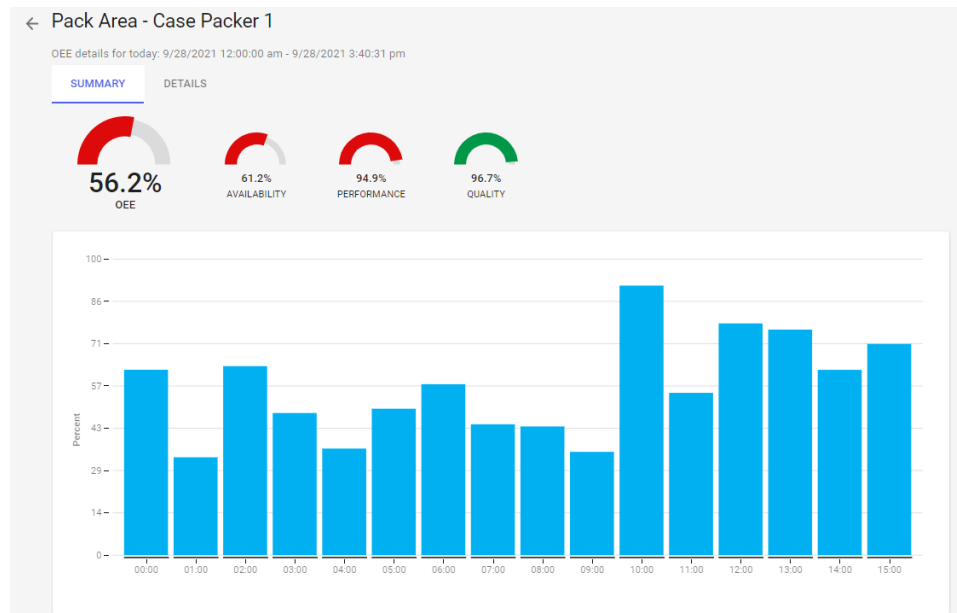




# Analyze Equipment Utilization and OEE Data (cont.)

## Access Equipment OEE Data (cont.)

- The OEE Details Page will be displayed. The SUMMARY tab provides some OEE trend information for the selected time period. Click on the DETAILS tab to access more detailed OEE data.



# Analyze Equipment Utilization and OEE Data (cont.)

## Access Equipment OEE Data (cont.)

- Records in this view show summarized OEE bucket data

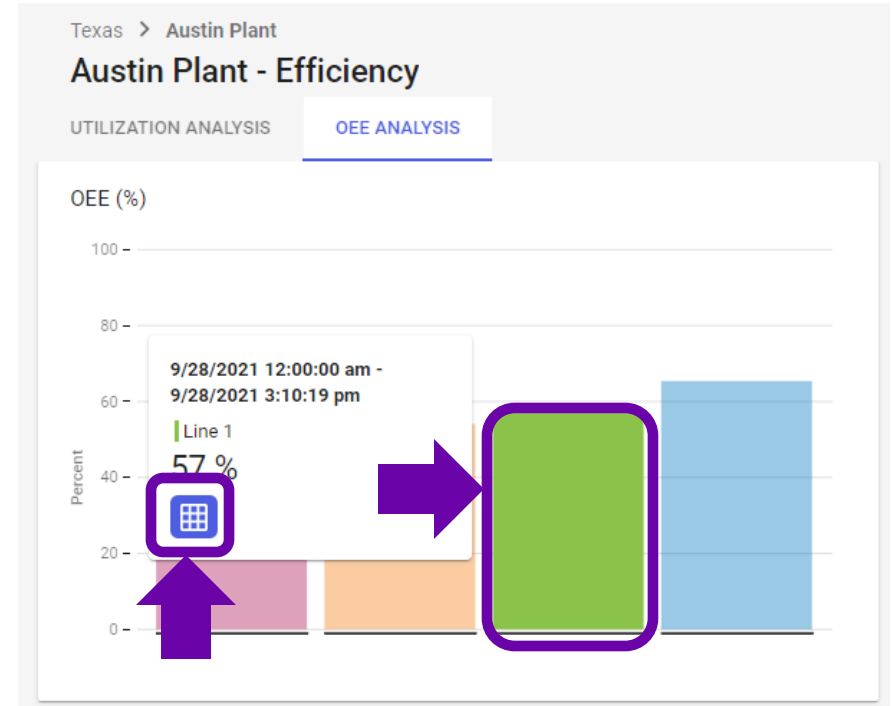
Pack Area - Case Packer 1 OEE details for today: 9/28/2021 12:00:00 am - 9/28/2021 3:40:31 pm										
Drag a column header and drop it here to group by that column										
Start Time	End Time	Runtime Duration	Downtime Duration	Idle Duration	Runtime Count	Downtime Count	Idle Count	Good Count	Waste Count	
9/28/2021 3:00:00 pm	9/28/2021 3:40:31 pm	00:25:47	00:06:00	00:08:45	5	2	4	1,134	31	£
9/28/2021 2:00:00 pm	9/28/2021 3:00:00 pm	00:25:57	00:12:00	00:22:03	8	3	5	1,188	26	£
9/28/2021 1:03:52 pm	9/28/2021 2:00:00 pm	00:34:23	00:06:00	00:15:44	5	3	3	1,508	93	£
9/28/2021 1:00:00 pm	9/28/2021 1:03:52 pm	00:01:37	00:00:00	00:02:16	1	0	2	92	0	£
9/28/2021 12:48:53 pm	9/28/2021 1:00:00 pm	00:08:23	00:00:00	00:02:44	1	0	1	437	18	£
9/28/2021 12:18:52 pm	9/28/2021 12:48:53 pm	00:20:44	00:06:00	00:03:16	5	1	1	950	62	£
9/28/2021 12:00:00 pm	9/28/2021 12:18:52 pm	00:07:16	00:00:00	00:11:37	1	0	2	272	13	£
9/28/2021 11:03:56 am	9/28/2021 12:00:00 pm	00:23:56	00:22:00	00:10:07	6	5	5	1,151	49	£
9/28/2021 11:00:00 am	9/28/2021 11:03:56 am	00:03:36	00:00:00	00:00:20	1	0	1	207	0	£
9/28/2021 10:48:50 am	9/28/2021 11:00:00 am	00:04:15	00:02:00	00:04:55	2	1	2	223	0	£
9/28/2021 10:27:36 am	9/28/2021 10:48:50 am	00:18:00	00:02:00	00:01:14	1	1	1	966	18	£
9/28/2021 10:27:35 am	9/28/2021 10:27:36 am	00:00:00	00:00:00	00:00:00	0	0	1	0	0	£
9/28/2021 10:18:50 am	9/28/2021 10:27:35 am	00:08:45	00:00:00	00:00:00	1	0	0	483	0	£
9/28/2021 10:00:00 am	9/28/2021 10:18:50 am	00:09:14	00:03:36	00:06:00	2	1	2	506	18	£
9/28/2021 9:03:50 am	9/28/2021 10:00:00 am	00:16:01	00:30:09	00:10:00	4	5	2	736	13	£

Page: 1 Rows per page: 100 1 - 34 of 34

# Analyze Line Utilization and OEE Data

## Access Line OEE Data

- Click on “Back Arrow” to return to OEE Analysis – Summary Page
- Find the bar for Line 1
- Navigate to the details page



# Analyze Equipment Utilization and OEE Data (cont.)

## Access Line OEE Data (cont.)

- Records for Line OEE data include all bottleneck and production source equipment on the line


← Pack Area - Line 1

OEE details for today: 9/28/2021 12:00:00 am - 9/28/2021 4:12:45 pm

SUMMARY DETAILS

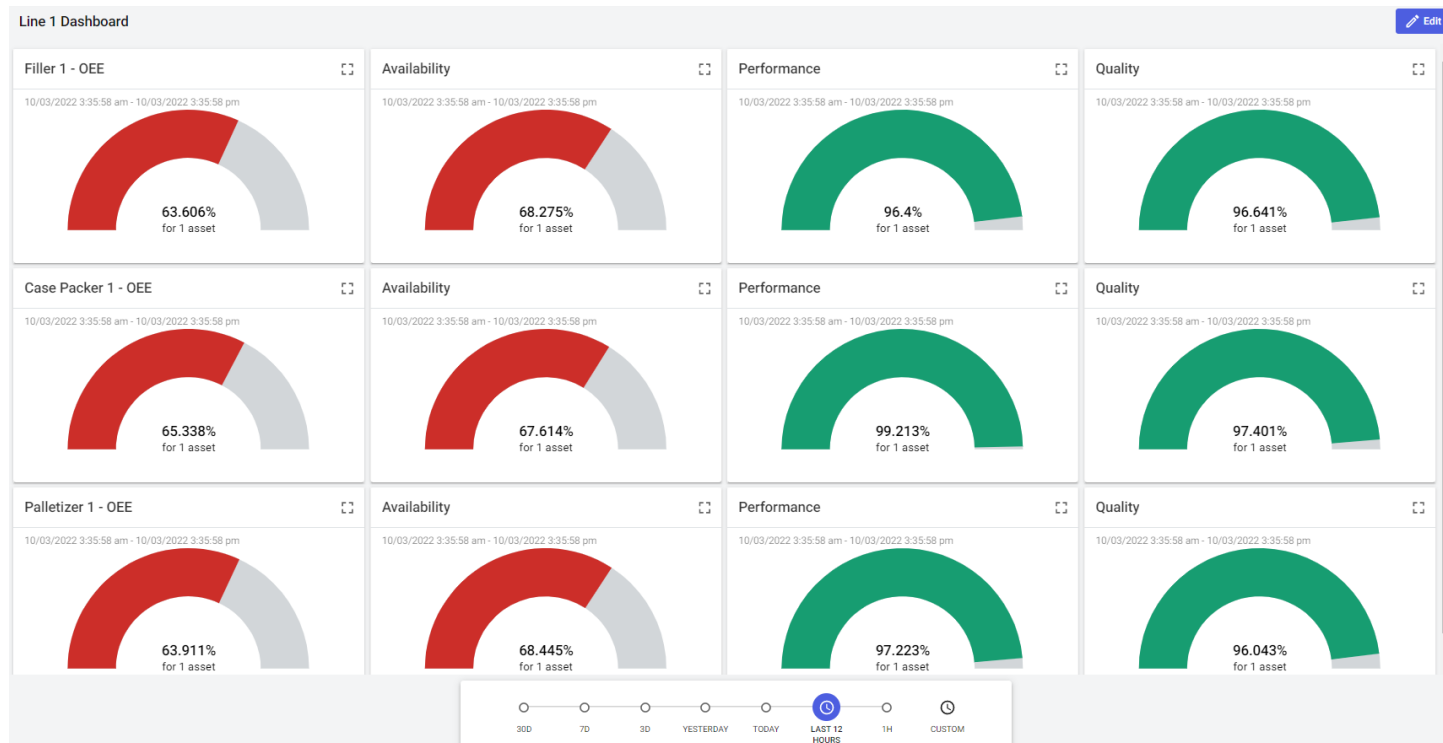
Drag a column header and drop it here to group by that column

Start Time	End Time	Namespace		Name		Type		Runtime Duration
9/28/2021 4:00:00 pm	9/28/2021 4:12:45 pm	Austin		Filler 1		Bottleneck		00:12:46
9/28/2021 4:00:00 pm	9/28/2021 4:12:45 pm	Austin		Palletizer 1		Production Source		00:07:08
9/28/2021 3:00:00 pm	9/28/2021 4:00:00 pm	Austin		Filler 1		Bottleneck		00:25:50
9/28/2021 3:00:00 pm	9/28/2021 4:00:00 pm	Austin		Palletizer 1		Production Source		00:22:08



# Custom Dashboards

## Multiple KPI Gauges in custom layout



# Custom Dashboards

## Summary Dashboard single Asset

