Mar 2024

WATS Server 2024.1 Release Note

Major Feature Areas

Test step analysis

Feature preview

This release is a preview version of the new Test step analysis module. It is set to replace the old Test step yield & analysis module in an upcoming release. The module if not yet feature complete. Notable missing features from the old report is chart analysis data and advanced measurement options.

Test step analysis

A modernized version of the Test step yield & analysis is now available. The module is renamed to Test step analysis, hereby called TSA, and while the usage will feel familiar to users with experience in Test step yield & analysis, several new features have been added:

- **Improved grid features:** filtering, grouping and the ability to choose which columns to view has been added.

- **More data:** With the ability to choose which columns to view, we have now added many new columns, especially for the step grid, enabling the users to view the data they deem important. Several of these columns pertain to Cp/Cpk and will in a later release also replace the Process capability analysis report.
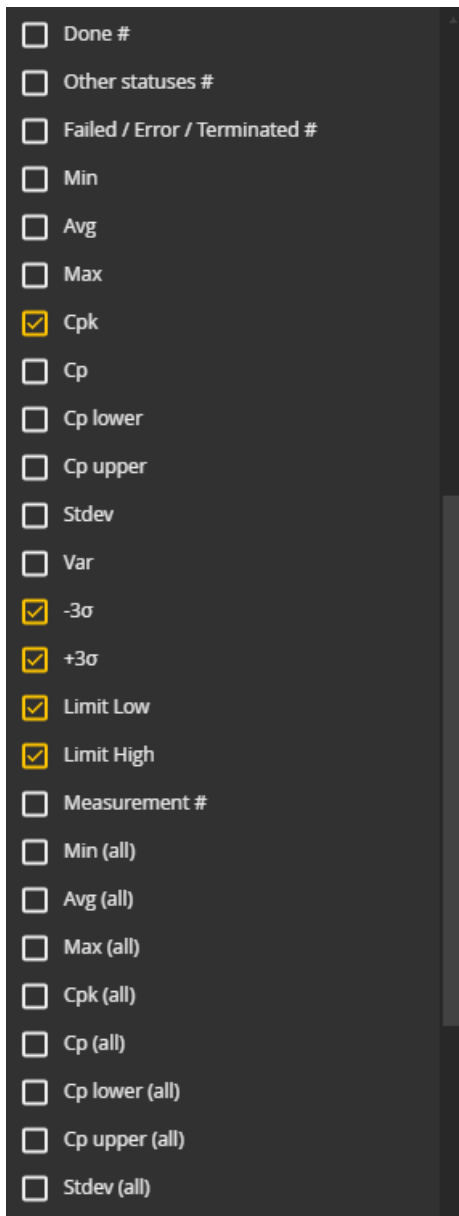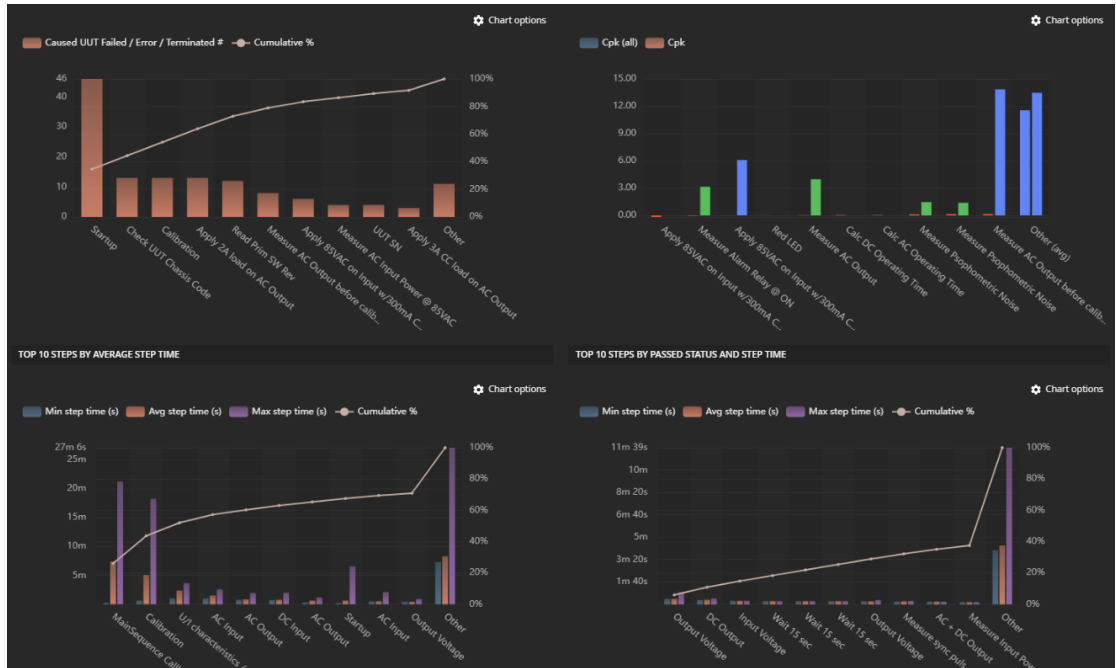
- **Suggestions:** TSA now includes AI driven suggestions powered by WATS Alvea, as we move further into development of this module, more features will be added.
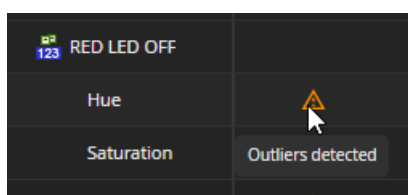
- **New data visualization:** We have added new charts in addition to those present in the old version of the report, including a chart focusing on Cpk-values.

Step details

A host of new features is planned for the new version of Step details, several which have already been implemented in the preview version. The goal of this rework is to add more functionality, while still cleaning up the user interface, as well as improving the performance of the report for larger datasets.

The following describes notable improvements and additions compared to the old Step details:

Aggregated overview: By default, Step details will now load an aggregated overview of the data, while only loading the last 1000 datapoints for this data. This ensures that the report is a lot faster to load, especially for larger datasets. Further selection of details to load can then be performed in the aggregated overview. The following image displayed the aggregated chart, and the details loaded in the second chart, as indicated by the green selection. The selection can subsequently be resized and/or moved to analyze the details of a different slice of the data:
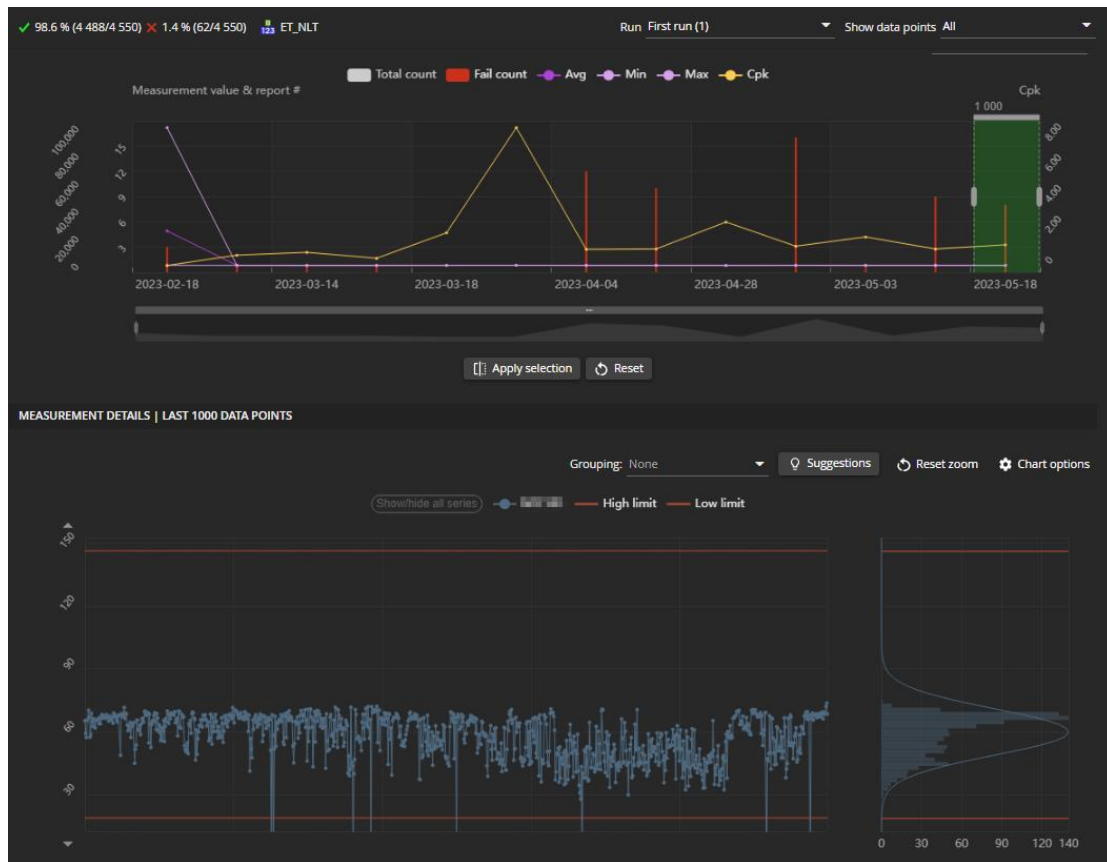
- **Improved grouping:** While the old Test step & analysis can group data, this functionality has been improved in the new version. WATS Aleva will now assist the user by optionally providing suggestions for which groups to choose. Also, groupings which would result in only a single group are now greyed out.

- **Views:** To facilitate the requirement of adding a lot of new functionality to Step details, it is now split into multiple views. The different views can be accessed from the menu bar on the left-hand side of the screen. The following gives an overview of each of the currently available views:

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    - **Default view:** The default view of the report is designed to resemble the old Step details, even though it contains several new features, like moving range, cusum and x-bar charts.

    - **Measurement details view:** Currently not much more than a larger version of the details chart found in the Default view, this view will be expanded with more functionality at a later release.

    - **Measurement comparison view:** Compare two steps, adding one step to each axis of the chart to see correlation between the two.
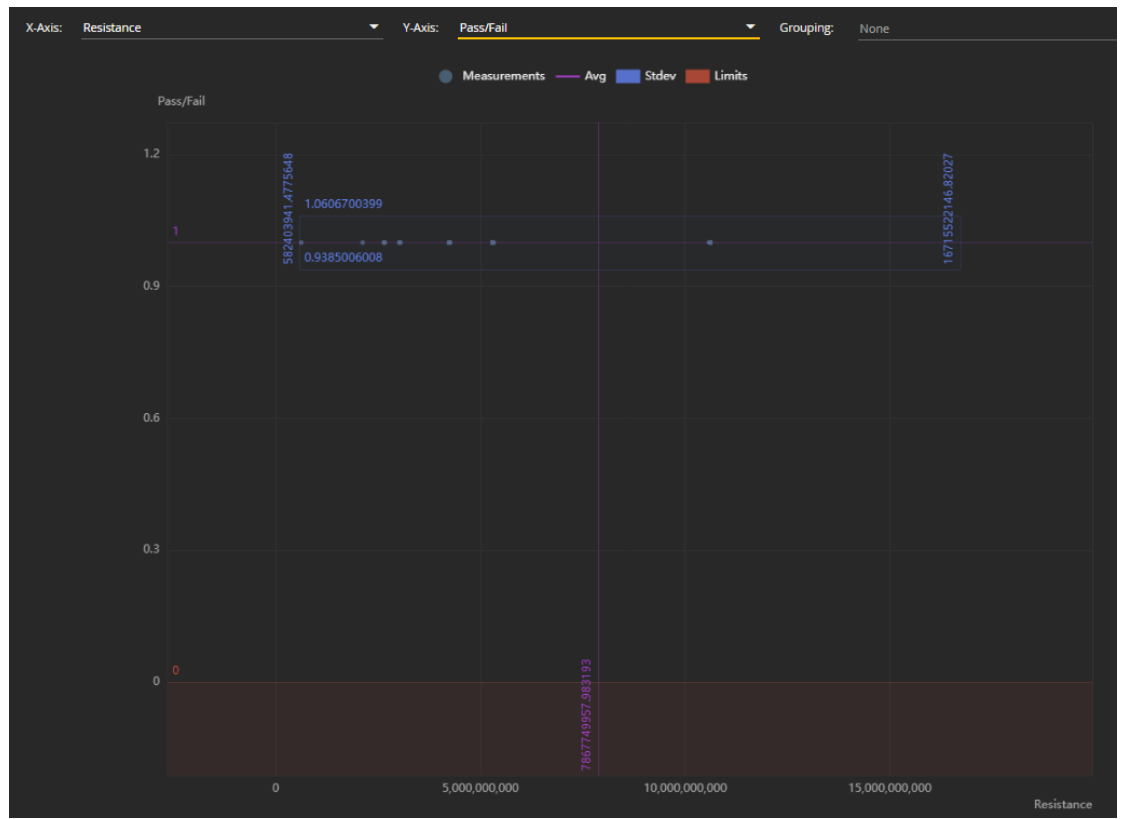
- ○ **Data view:** The data view allows the user to inspect and export the underlying data of the data points currently analyzed.

- **Uniform handling of numeric and non-numeric steps:** In the previous version of Step details, numeric steps were always shown in a chart, while non-numeric steps were always shown as a table. In the new version both types of steps can be viewed either as a chart or as a table. For the data points of any step, head to the Data view. Likewise, analyzing a non-numeric step will include it in the chart in the Default

view:

- **Improved analysis on multiple steps:** In the previous version of Step details, analyzing multiple steps at the same time came with a few limitations. Series for limits, standard deviation and average were not available. Neither was the frequency chart. This has been rectified in the new version.

- **Other details chart improvements:** Several other improvements have been made to the details chart. Both total execution time and step time have been added as series. The user now also has more control over how the data is split on the axis. Data can either be split into grouping, measurements, or none of the above:
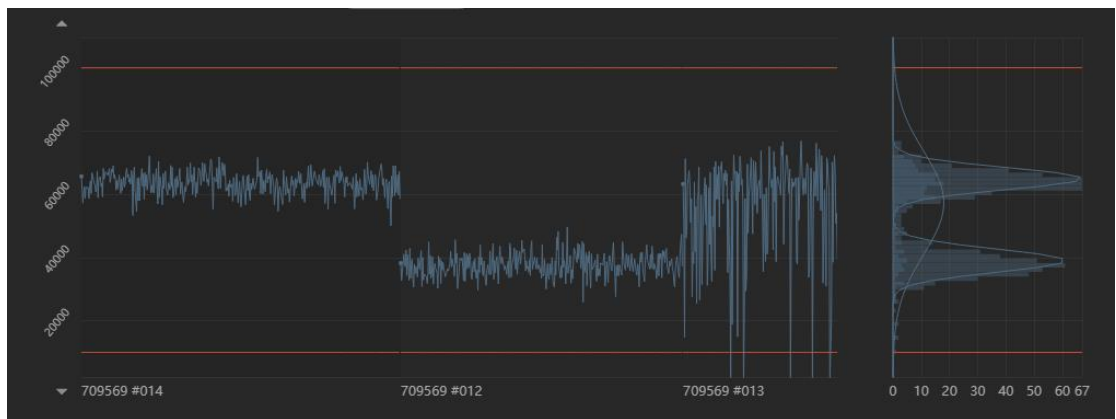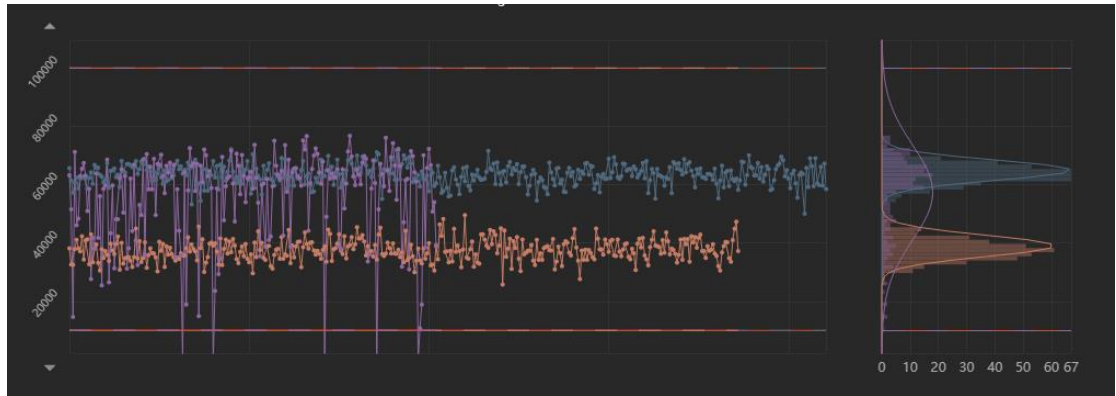
- **Improved quick selection:** While the previous Step details allowed the user to quickly select the top 10 failing steps, an improved quick selection has now been implemented, allowing to choose measurements based on status, step type and Cpk.

- **Theme support:** While the previous Step details was only really optimized for light theme, the new report brings TSA in line with the rest of WATS visually.

Process heatmap

General

The heatmaps offer an overview of manufacturing processes associated with a chosen category (e.g., Part number), with each row representing a distinct production line.

Presented in a cross-table format, each cell offers insights through various drilldown options and a details view. Wats Alvea has been integrated to identify and reveal possible enhancements in first pass yield, providing guidance to users on specific areas to examine for production improvements.
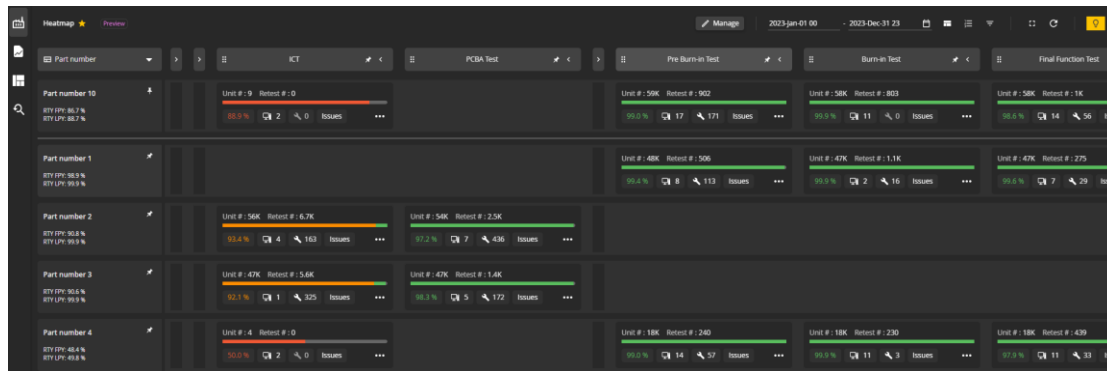
Views

View can be customized in several ways.

From the side menu, views can be added, edited, cloned, and deleted (Figure 1).
They can be cloned or deleted from the manage dropdown in the toolbar (Figure 12).
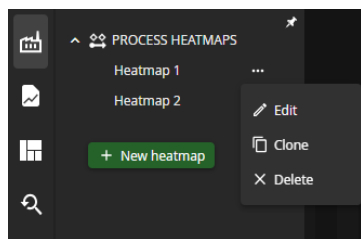

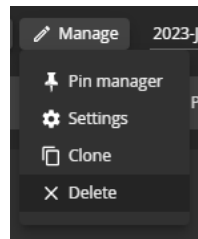
Figure 1 Views, side menu

Figure 2 Views, toolbar

The dropdown menu in the upper left corner cell, gives the option to view processes against; Part numbers, product groups, level, or batch numbers(Figure 3).
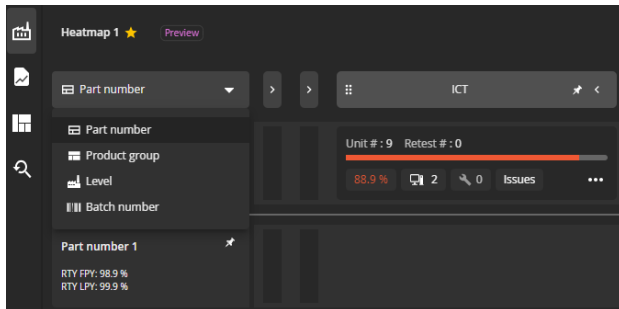
Figure 3 Manage views, category dropdown

Columns (Processes)

Each process can be pinned, collapsed, and moved to desired position by drag and drop
(Figure 4 Processes).
This gives the user the option to customize each view by preference.
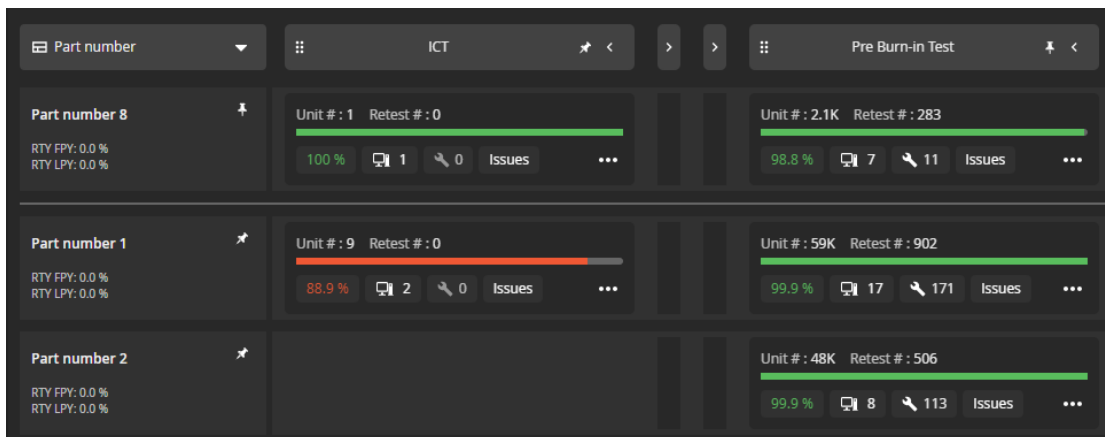
Figure 4 Processes

Rows (e.g. Part Numbers)

By default, the rows will sort itself by unit count in descending order. As with the columns,
each row can be pinned. When pinning a row, it will place itself on top and be separated
from the unpinned by a line (Figure 4).
Pinning and unpinning will break the sorting. If preferred, the pinned and the unpinned rows
can be sorted within its respective category (pinned and unpinned) by unit count. To do this,
refresh the page by clicking the refresh button located in the toolbar.

Cells

Each cell holds crucial information along with multiple options for in-depth analysis.

Drilldown.

The drilldowns can be accessed through dropdown menus triggered by various buttons (Figure 5).

Note: Clicking on a column in the Station Overview chart will initiate the drilldown.

Figure 5 Cells, drilldown menus

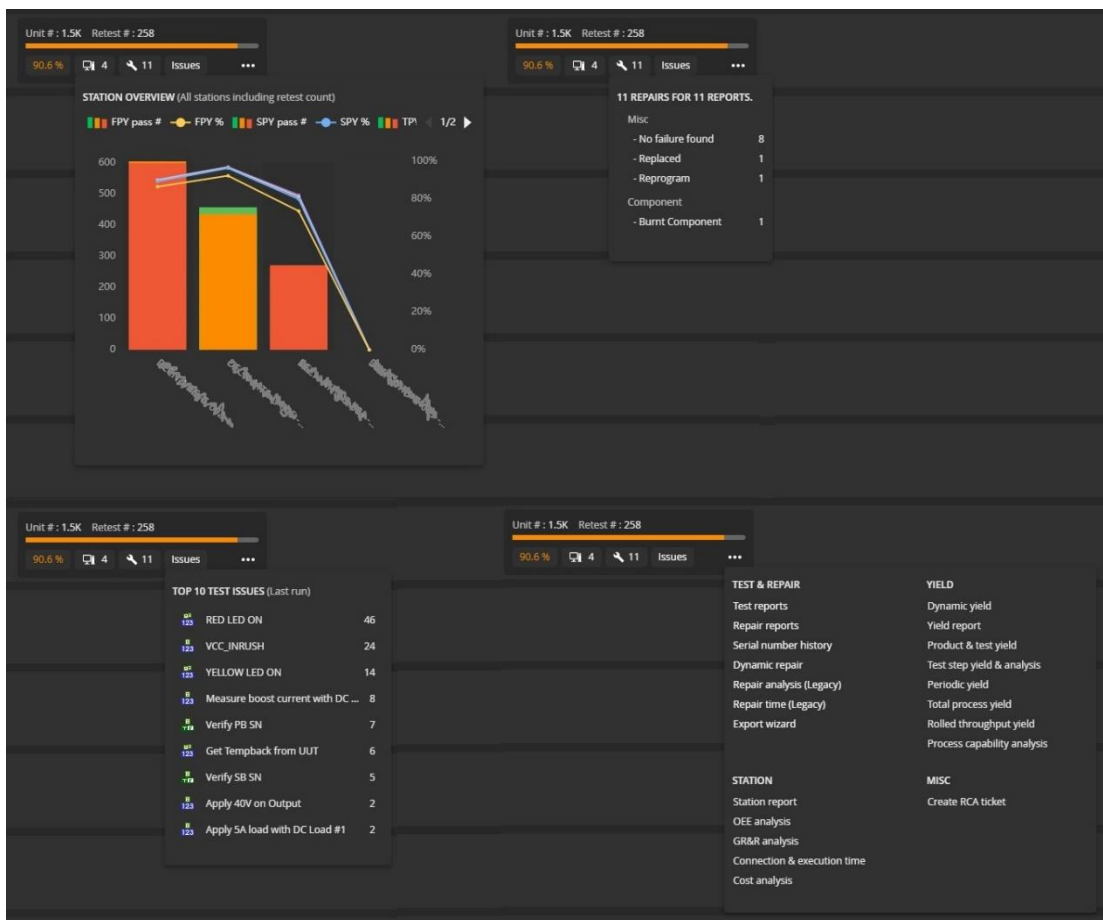Furthermore, a suggestions icon is available (if WATS Alvea is activated and has a suggestion for the specific cell). Clicking on the icon opens a dropdown menu with the option to drill down on each suggestion (row). See Figure 6.

Note: To activate WATS Alvea, press the suggestions button in the toolbar.
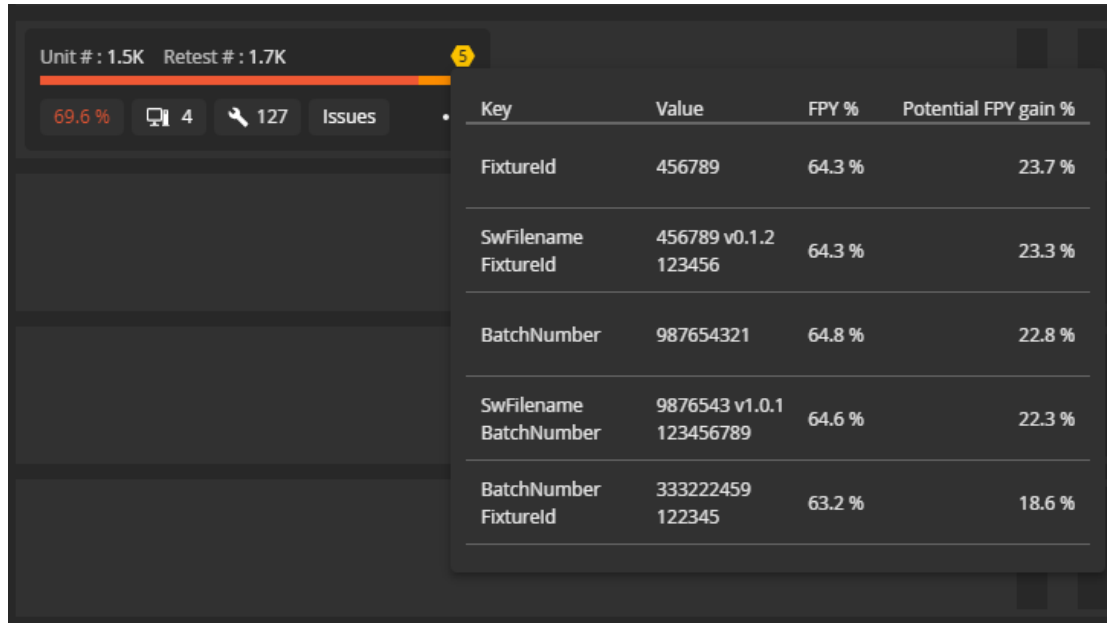
Figure 6 Cells, suggestions drilldown

Yield

The colored percentage value in each cell represents the first past yield. This can be changed to display the last past yield by changing the visible yield type to Last pass yield in the heatmap settings.

The yield status bare in each cell will display either first, last or all yield according to selected visible yield type.

Pressing the yield percentage will show a cross table for all yields which includes fail count. Hovering the yield status bar will display selected visible yield type (Figure 7).
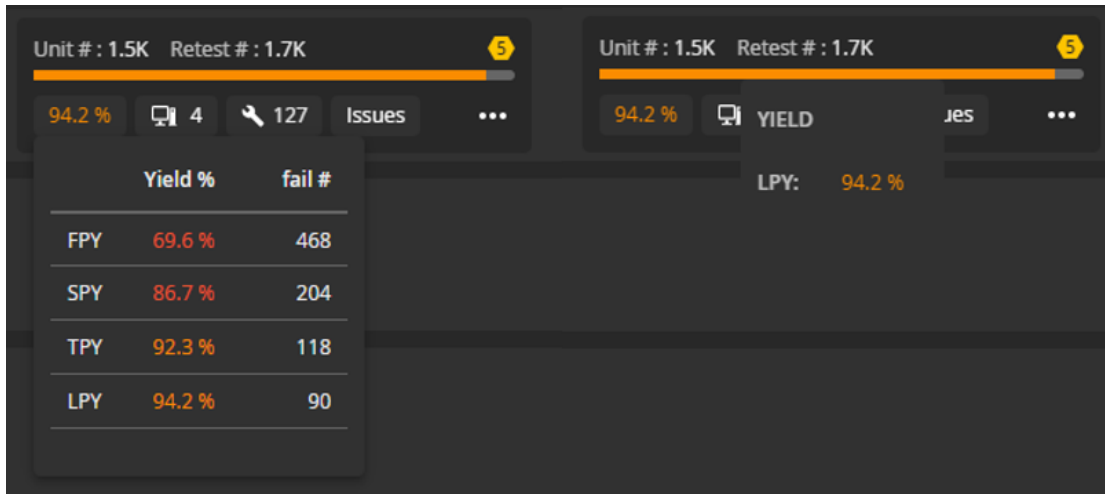
Figure 7 Cells, displaying yields

Suggestions

Wats Alvea is activated when pressing the suggestions button. This will load suggestions based on all expanded columns in the current view. Hovering a suggestion will open a nested menu where each row can be pressed for drilling down to dynamic yield (this menu is the same as the one opened when pressing the suggestions icon for the cell in question).

If there is need for a collapsed column to be part of Alvea's calculations, the column can be expanded and the refresh button in the suggestions dropdown clicked.

In addition to the suggestions from Alvea the dropdown will display cells with 0% first pass yield.

If a dropdown item(cell) is clicked. The cell will be scrolled into view.
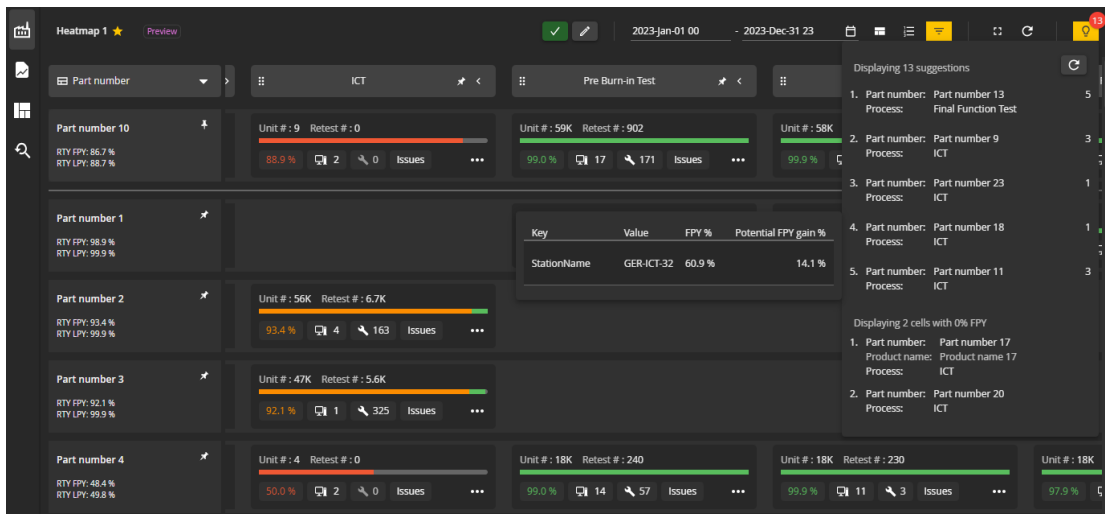
Enterprise Connection

The Enterprise Connection Module represents a recent addition to the WATS control panel, seamlessly integrated into the existing infrastructure. It is used to forward reports to another WATS account, like from a subcontractor's WATS to yours, and provides monitoring capabilities of the process.

The connection is configured as a job on the subcontractor's WATS that continuously uploads incoming reports to the destination WATS, as if the reports are being submitted directly to the destination.

Filter

The filter allows users to refine their search criteria to select only the desired reports. Like filters found in reporting modules it offers options such as selecting levels, part numbers, processes, date from, and report types (UUT or UUR), except part numbers does not support wild card.

A user can verify that the filter matches the desired reports by using the "Open UUT reports" or "Open UUR reports" buttons, redirecting them to a list of reports with the chosen filter applied. This ensures a comprehensive overview of the reports to be uploaded, for you to confirm the intended reports.

Once all required fields are filled, users can proceed by clicking "Confirm," prompting a confirmation message. Users have the flexibility to edit the filter at any time. However, upon modification, users must confirm the filter again to proceed with the process mapping.

Connection details

In the connection details section, users are prompted to provide a URL and a security token for the other WATS. Upon successful connection, users gain access to the mapping grid, facilitating the process mapping. Connection details can be updated and reconnected at any time. However, users should exercise caution during reconnection, as modified process mapping data may be lost if it no longer aligns with the other WATS's data.

Process mapping

Report processes must be mapped to a corresponding process on the other WATS. Cooperate with someone from the other WATS account to create or match up processes correctly.

The mapping grid will display the processes selected in the filter for mapping purposes. Users map their selected processes to those on the other WATS by selecting the process target from the cell dropdown, which lists all active processes from the other WATS.

The mapping grid will automatically map your processes to the processes from the other WATS if they have the same name.

Users can modify the process mapping at any time. In the event of issues later, such as errors or inactive processes, the status will be reflected in the job list overview or detailed statistics. Furthermore, the process mapping will display a warning icon if the process is no longer active or if error is detected.

Managing permissions and Connectivity

Permissions for the Enterprise Connection module, including the ability to create and delete jobs, can be assigned through control Panel under Roles and permissions. By giving the access to just the Enterprise Connection module, you give the accessibility to read only. To create or edit a job, you need to have access to Edit job. To delete a job, you need access to Delete job.

To connect to the other WATS, you need to fill out the connection details. Read more about creating and updating job in the article "Enterprise Connection – Best practice."

Custom Single Sign On Configuration

With this release, WATS will now support adding a custom configuration from your own Identity Provider to provide Single Sign On capabilities with this Identity Provider.

Under Security Settings in Account Settings, you can now find a new button under Authentication which allows you to start the configuration of Single Sign On.
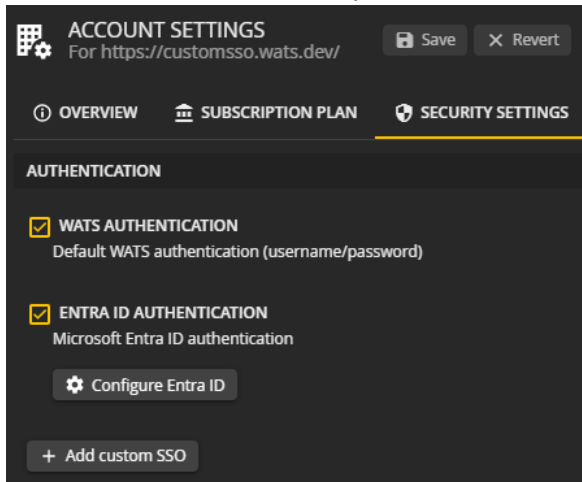
Clicking this button will open a popup where you can fill out details from an application in your Identity Provider Tenant or Organization.
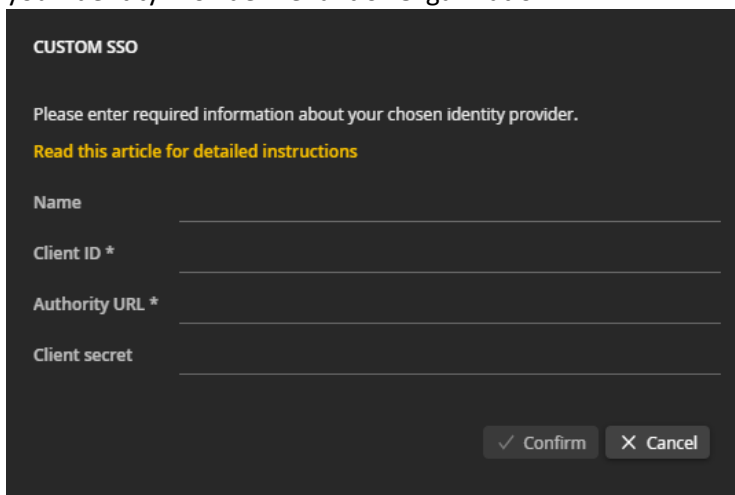
Steps on how to set up an application for select Identity providers, and for more information about requirements for proprietary or private Identity Providers, can be found by clicking this link, which includes step-by-step guides on how to create applications in Auth0, Entra ID, Google and Okta tenants.

Root Cause Analysis

The Root Cause Analysis (RCA) module seamlessly integrates with the WATS Reporting tool. It serves as a versatile tool following the D8 RCA setup and is applicable to various cases, extending beyond WATS-specific scenarios.

Ticket List view

Gain comprehensive overview of all tickets through organized ticket list views, including categories such as Assigned to me, Following, and My solved. Additional views are accessible to users with specific permissions, such as Unassigned, Unsolved, and Solved. Users can effortlessly navigate between different views and create new tickets directly from the RCA main menu. Total ticket counts for each view are conveniently displayed, providing a quick overview of the ticket distribution.
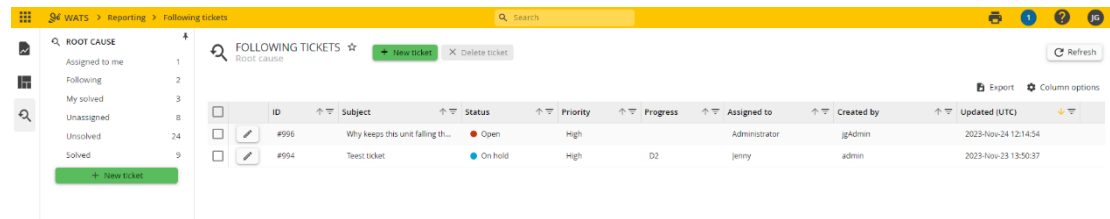

Ticket Management

Choose from multiple methods to create and update tickets, ensuring flexibility and efficiency in workflow management. Easily delete individual or multiple tickets from the ticket-list view, with a smooth and secure deletion process.

Enhance your understanding of the root cause through comprehensive ticket properties, including subject, assignee, status, team, progress, priority, reference, attachments, progress tracking, and tags. Utilized advanced text editor features for effective communication within tickets, such as formatting options, image handling capabilities.
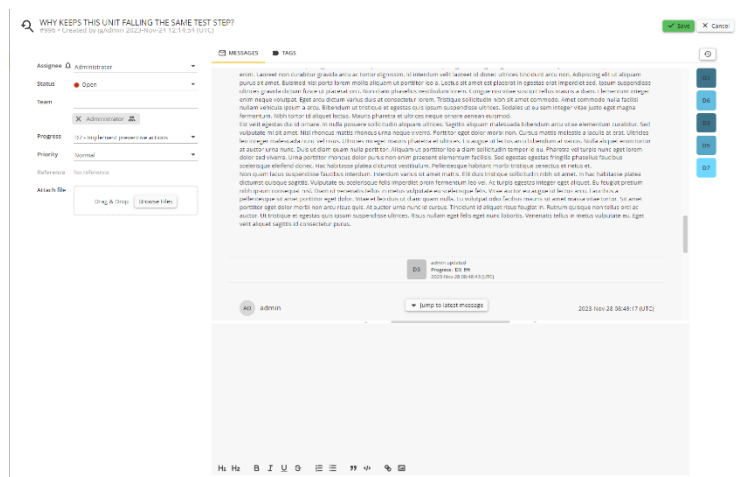
Permission

Configure permissions for the Root Cause Analysis module seamlessly through the Control Panel within Roles and permissions settings. Choose from two primary access levels: Root

Cause Module and Manage All Tickets. The hierarchical arrangement ensures users possess the requisite permissions to effectively execute their tasks within Root Cause Analysis Module.

Control ability to edit shared dashboards

When sharing dashboard with other users or roles, an option can now be set to determine if the dashboard is editable or in view only mode. The latter option enables users to share a dashboard without running the risk of other users editing it.

In the dialog for setting up sharing, a new input lets the user choose between Can edit or Can view only on a per user/role basis:
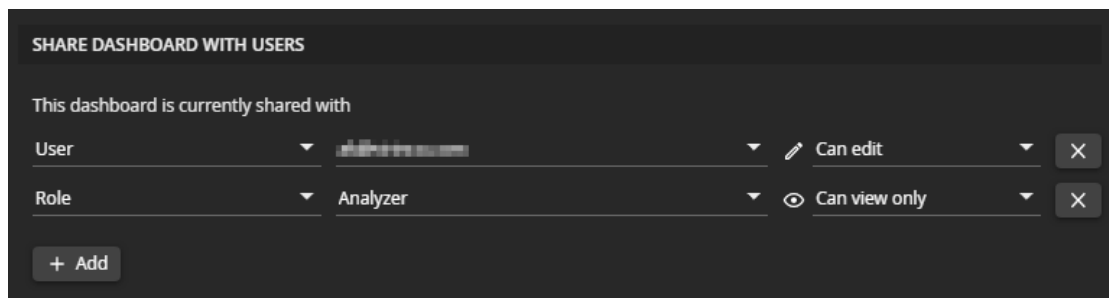
When set to Can edit, the sharing works as it did before. This is also the default any existing shared dashboards.

When set to Can view only, the user or role will not be able to save any changes to the dashboard. The only options available when the dashboard is set to Can view only are setting the dashboard as your default dashboard, unshare yourself from the dashboard and cloning the dashboard, creating your own copy of it, which will then be editable. The dashboard filter can be edited while in Can view only mode, but it can't be saved, so it will not affect any other users and will not persist when the dashboard is reloaded.
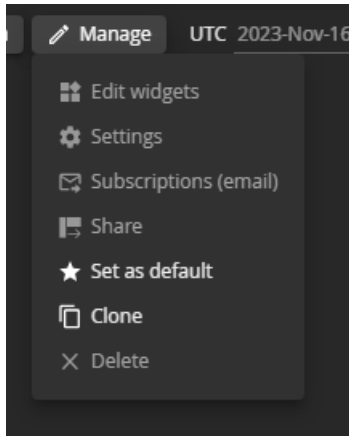
Miscellaneous features

- New WATS Client version: 6.1.106
- Add Unique Unit Index to uut.header / watsdw.productProcess
- Add sub serial number, sub part number and sub revision to Serial number history grid
- Tokens: add no data template for grid
- Filtering on non-existing process codes returns all processes
- Improve OData query documentation
- SQL Raw storage cleanup
- Alarms & notifications - suggest WATS user emails
- Oee details period grid. Change period sorting direction and fix weeks sorting
- Backend - Add Caching to EmailSettings
- Grid edit mode position off on tab change
- Support enter to confirm password change in users
- Multi select auto-complete: only deselect when clicking checkbox
- Provide information messages on delete
- General - Update translations

Bug fixes

Bug fixes in this list is a summary of items since the last Server release. Most items have already been deployed to cloud accounts through periodic maintenance.

- Component repair - expanding rows does not show all valid data
- Unable to filter for null in QueryHeader rest API
- Export Wizard - Cannot turn off signature in Certificate export
- Operator Interface - Related repair history doesn't return any data
- Station map: changed tile provider and improved stability
- Enhance display of Description field in Manual inspection
- System manager - Missing row drag ghost in list view grid
- Onprem storage - sometimes fails with transaction failure
- Product repair - Repair type chart does not show valid data
- System Manager - drag & drop is not working correctly
- Manual Inspection - * is not supported in MI relations
- Operator Interface - Fix issue with station name lookup when machine is in domain
- Report processing can fail when submitting reports out of order
- Report processing can technically skip updating yield
- Production Manager - GetProductNames is slow
- Reporting - Range search (@) doesn't work
- Operator Interface - Submitting MI hangs and returns 500
- OI - Serial number history is failing
- Reporting - Fix issue with null values in either miscDesc or miscValue filter
- Replace sub unit popup does not submit after scan
- Dashboard - Issues with selecting repair operations
- Reporting - Filter behaves strange when using the range character
- System manager - Export button missing in default view
- Alarms and Notifications - Unable to save a rule if filter value is 0
- Reporting - Semicolon appended to last element in misc value filter when selected from dropdown menu
- Root Cause - Unable to download attachments
- PRP file editor fails to save when a field is empty
- Control Panel - Legacy Root Cause permission still visible in user interface
- Export wizard - Certificates supports charts with descending values
- Operator Interface - MI putSequence requested multiple times and may cause quarantined report
- Production Manager - Pluss sign is removed from package filename
- Dashboard - Data not showing in passed in run chart
- POST Wrml store unexpected error

- Serial number history - Product name is missing from sub units.
- Alarms and notifications - Unable to add measurement paths longer than 100 characters.
- General - New users are missing dynamic yield views
- Chart overlay - Exporting chart data to Excel may duplicate the data
- Edit Repair process - Removing and re-adding the same repair code causes issues
- Root Cause - Unnecessary requests to count tickets
- Reporting - Unable to filter on serial numbers in the dynamic repair (preview)
- Dynamic Repair - Drilldown to Matrix view doesn't filter data for selected row
- POST Wrml store unexpected error
- UUT report - Unable to load table view if comparison operator is null
- Operator Interface - Component references lost during submit
- Alarms and notification - Conditions – Can't select part number
- Dashboard - Wrong quick date & date grouping on default dashboards
- Yield report - Yield overview pie chart does not include max report filter result in mismatch in data
- Rest API - Missing documentation on Report/Query/Header endpoint
- Station map - filter fields not supported by the widget is present in widget filter
- Dynamic yield - navigating from an to dynamic yield report causes error
- Rolled throughput yield - Matrix view doesn't load data when part number is encoded
- Export Wizard - Certificate export of report with empty chart fails
- Dashboard - Measurement widget doesn't apply run filter
- Dashboard - Shared dashboards are not displayed in the menu
- UUT - Unable to drill into step details from looped measurements
- On-prem database connection string must have TrustServerCertificate=True
- ReportCenter - StepIndex is incremented in looped steps in wsxf/wsjf converter
- Production Manager - It is possible to edit released Manual Inspection sequences
- Process heatmap - New heatmaps are missing datetime filters
- Process heatmap - Step grouping not set to default values
- Typo in Top 10 steps by failed / error / terminated chart
- Production Manager - Grid formatting issue (date format)
- Operator Interface - Unit consists of is inconsistent when the same part is used in multiple sub units

- Step details - Icons missing in step list on light theme
- Step details - Measurement counts missing in header in light theme
- System Manager - Cannot delete web client if internal admin account has it as it's web client

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