

PSImetals Release 5.26



SUPPORTING YOUR
DECARBONIZATION JOURNEY



Dear Customer,

There have been several trends in the metals industry, but none has had as much at stake as green steel production and digitalization. This is because the goal to produce green steel and reduce CO2 emission from our atmosphere does not only impact our businesses but also our environment. Digitalization is also an enabler of decarbonization. When there is so much at stake, you never stop asking how you can improve.

Following intensive phases of testing and delivery preparations, we are delighted to announce the availability of our Release 5.26!

PSImetals Release 5.26 offers new features for ongoing decarbonization and energy management. It supports the management of hybrid steel plant during the transition from blast furnaces to direct reduced iron-based routes. It enhances precise prediction of energy and raw material demand across all time horizons. In addition, there is an interface of Qualicision Smart Day Trader which allows you to buy and sell energy in the intra-day market at best prices.

Our new release is termed “Supporting Your Decarbonization Journey”.



SUPPORTING YOUR
DECARBONIZATION JOURNEY

This Release signals an important milestone in our migration to the Service Platform (SP), a technology that supports efficient metals production. The Release includes the SP-based support for the Demand & Sales Planning process while providing improved forecast scenario management, workflow modelling by PSIBpm, data analytics based on our Embedded Business Intelligence framework and full support of all common database products, including MS SQL-Server and PostgreSQL.

With PSImetals 5.26, you not only have strong capability to meet the challenges of today, you also become well prepared for a more sustainable and prosperous tomorrow

In PSImetals Quality, we accomplished a significant step by implementing our Quality Decision Process fully on the Service Platform. Just like all new SP-based feature nowadays, all related functions are fully web-based.

Key milestone achieved and no more Oracle dependencies.

We further replaced all Oracle dependencies, just as we did with the Demand and Sales Planning modules. As promised, the new SP features are running smoothly and integrated with the remaining Oracle-based components, allowing smooth migration during maintenance.

As we look towards the future, the significance of adopting innovative solutions cannot be overstated. With PSImetals 5.26, you not only have a strong capability to meet the challenges of today, you also become well prepared for a more sustainable and prosperous tomorrow.

**Best regards,
Jörg Hackmann
Managing Director PSI Metals**





- Production Order Monitor (OD)
- Permissions for Derivation Tables (OD)
- Chart Enhancements
- Migration to Service Platform: Process Quality Decision
- Pre-Certification of Test Results



Order Dressing - Production Order Monitor

The Business Intelligence application embedded in PSImetals is being used in order to monitor the results of the Technical Elaboration (TE) of Production Orders (PO) in PSImetals Order Dressing.

In the new dashboard Production Order Monitor, visually rich charts are created to show available measures aggregated by selectable dimensions, with specific KPIs calculated.

The dashboard aims at increasing transparency of the business process of Order Dressing, by aggregating and filtering Production Order data, as well as the calculation of KPIs. PSImetals offers a selection of predefined charts and KPIs, but the expert user, with granted corresponding permissions, can customize the dashboard.

The following measures are evaluated:

- PO (as count or mass in tons)
- NEW: Technical Elaboration time

In more detail, the Production Orders are aggregated in terms of PO count or sum of their mass in tons and displayed in absolute values or percentages. Newly available with the current release are the measures of the PO's technical elaborations preparation and processing times in seconds.

The corresponding KPIs can be calculated for different dimensions: not only PO attribute like Product, Grade or Customer, but also Order Dressing specific data like TE status and TE duration bucket. Heat map charts are enabled to combine more than one dimension to a matrix.

The EBI dashboard not only provides a clear overview of the Order Dressing's performance, but additionally enables, with its native BI functions, to drill down the data to specific aspects of interest.

Filters applied in the EBI dashboard are automatically replicated in the PSImetals classical list view of Production Orders for seamless, more detailed insights.

The main benefit of Production Order Monitor is the possibility of discovering, in a few clicks, systematic issues of the Technical Elaboration based on metrics (and not "feelings"). This is a first step of the continual improvement process or root cause analysis, thereby, shifting from a repeated punctual correction mode to a thorough solution.

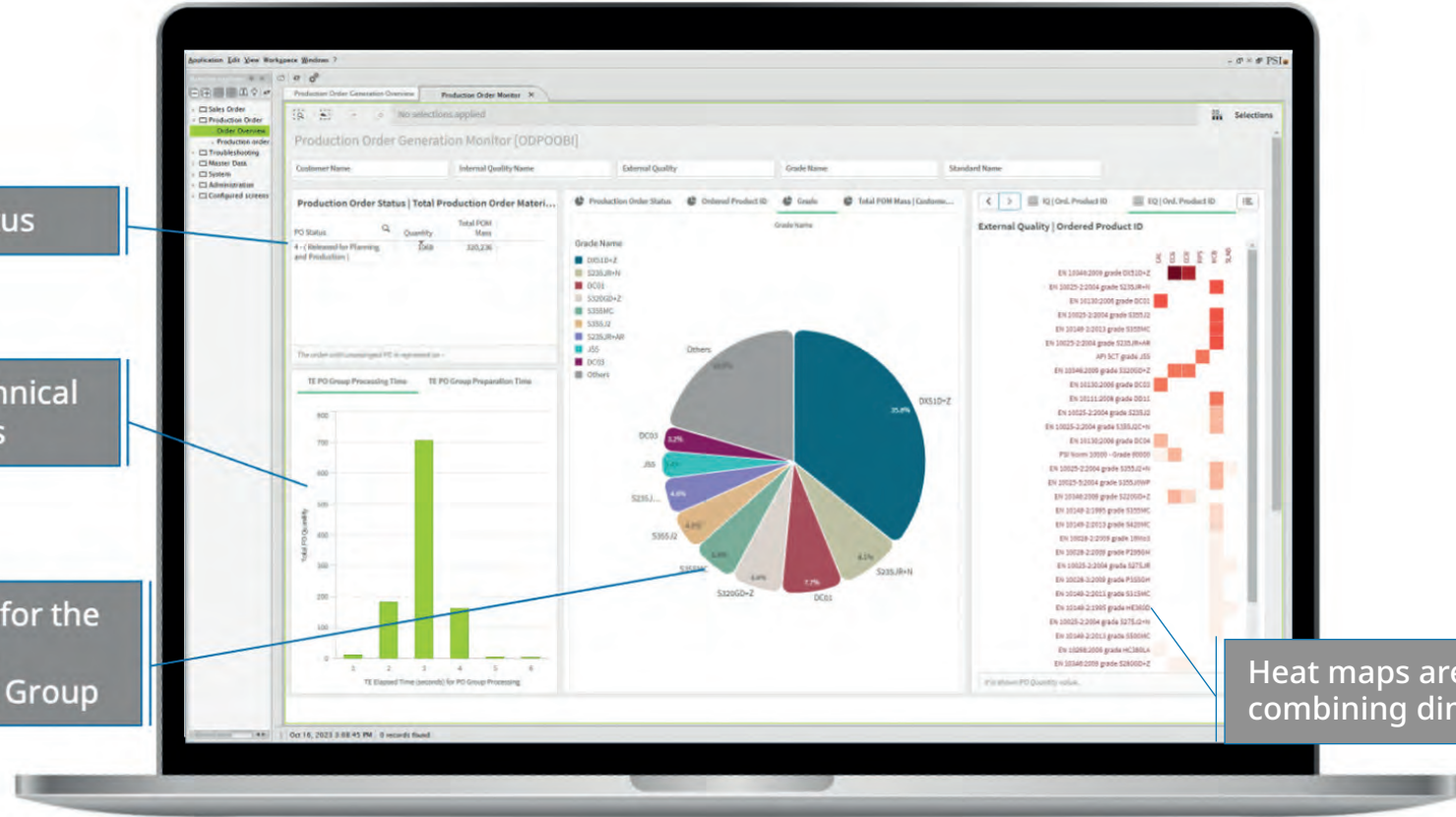


KPI about PO Status

Bar Chart for Technical Elaboration Times

Pie Chart available for the dimensions Grade, Customer, Product Group

Heat maps are used in combining dimensions



Order Dressing - Permissions for Derivation Tables

Reading and editing Derivation Tables can now be individually restricted by permissions

In order to control the possibility of editing Derivation Tables (DerTab) in Order Dressing, a new system of permissions for DerTab has been implemented.

The permissions are based on roles, which are assigned to named user in PSiAuth, in order to grant them reading or editing permission.

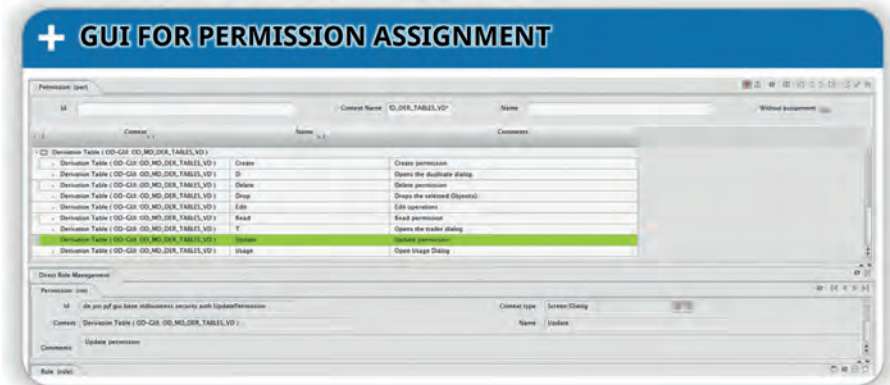
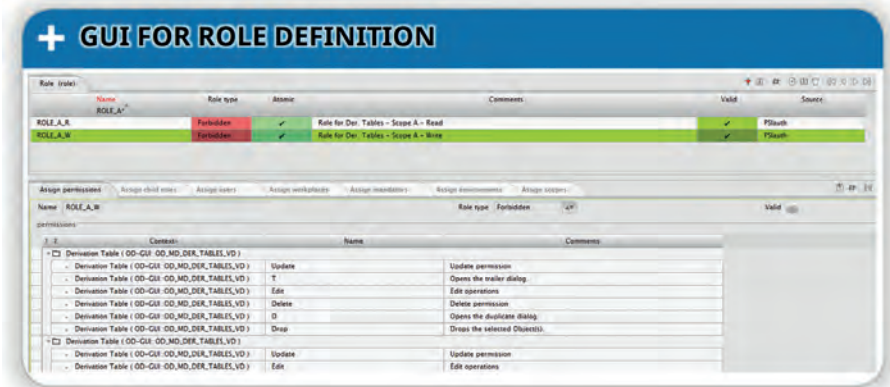
To define permissions for different roles, a combination of the below is used:

- PSiAuth scopes assigned to roles;
- Order Dressing's scope categories assigned to each Derivation Table.

After named user logs in, PSiAuth checks their role and grants appropriate permission for each Derivation Table:

- Read (e.g. loading and display of data in the detail window)
- Edit (e.g. activation of the corresponding GUI buttons)

The assignment of a user to multiple roles and the accumulation of corresponding permissions are supported.



Reading and editing Derivation Tables can Now be individually restricted by permissions



Quality Data Management - Chart Enhancements

Continuous improvement of the graphic charts for visualization of process data is the result of our customers' feedback

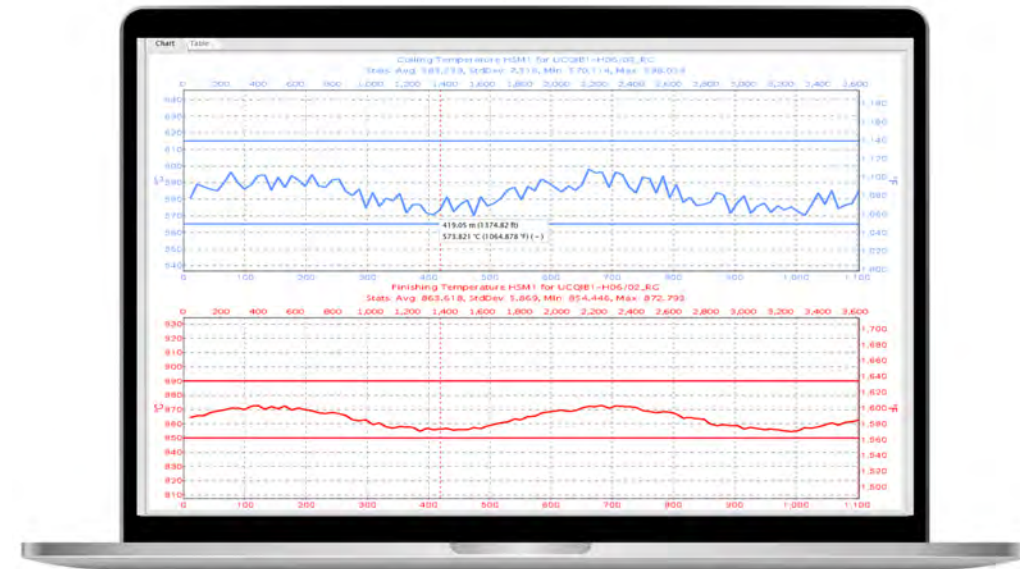
With 5.26, the requirement of displaying multiple convertible measurement units on curve charts including the coil coordinate system was in focus.

Now it is possible to scale axes according to two different measurement units, for example, length, width and temperatures in both the metric and the US customary system. Additionally, for the curve chart, it is now possible to select which curve has to be shown in a separate chart and which in a multiple-curve chart.

The curve charts are enriched with a configurable title which can contain free editable text but also content depending on the material for which the chart is plotted.

- For instance, Material ID but also statistics of the depicted curve, like min, max, and average value, standard deviation, and number of measurements.
- Additional attributes can be defined in PAM and added to the list available for title composition.

The autoscale function for the y-axis has been introduced. Autoscale takes into account the curve values. In the case of available curve limits, the activation of a dedicated setting guarantees that autoscale takes them into account to make them always visible.



Display of different curves in separate charts

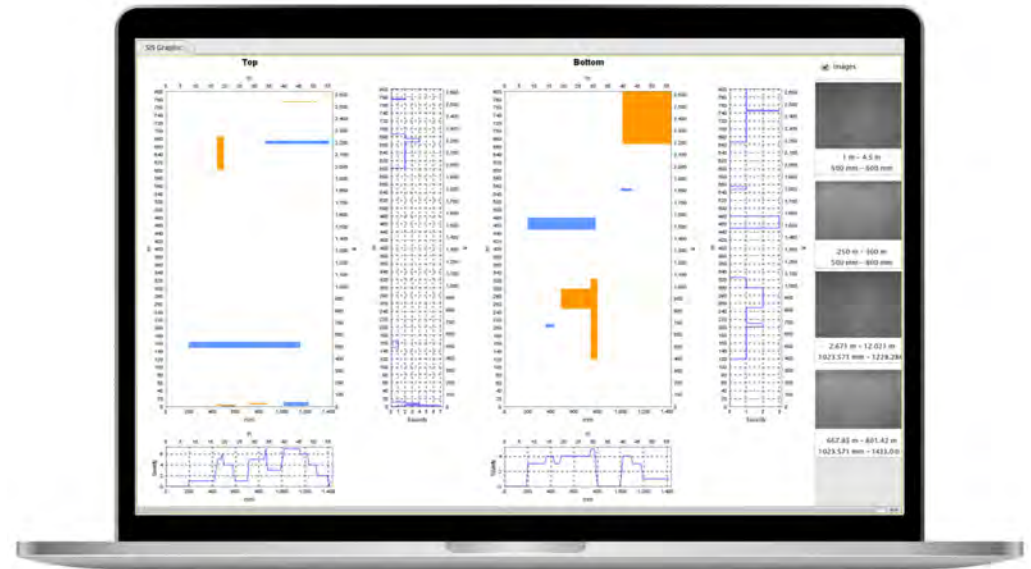


New chart for Surface Inspection System (SIS) data now available within the standard Chart Configuration with dedicated settings

The graphic showing the collected results from the Surface Inspection System (SIS) has been reworked. It is now a standard graphic available in the standard charts configuration menu with dedicated settings:

- Selection of data source;
- Chart assignment to Production Step;
- Configurable colorization;
- Display of defect images (where available);
- Display of two convertible measurement units (e.g. metric / US customary) for both width and length.

Additionally, new statistics regarding surface defects are provided. Configurable attributes (like severity or counts) can be aggregated along the width or the length of the materials unit. This way, areas extraordinarily affected by defects can be identified. Defect pictures, fetched from the SIS, can be also displayed.



New chart for Surface Inspection System (SIS)



Migration to Service Platform: Process Quality Decision

Execution of Process Quality Decision is now also available within the Service Platform framework

PSImetals Quality is progressively migrating from PL/SQL to PSI's own Service Platform framework. As an additional step of the migration, with Release 5.26 the execution of the Process Quality Decision (PQD) with Quality Indicators can be performed in the new framework.

SP-based PQD is seamlessly integrated and synchronized via PSibus with non-SP-based PSImetals Production & Quality.

This is also reflected in the User Interface (UI): the PSIweb UI that comes with the Service Platform is embedded in the "classical" PSIGUI so that the user still works with One GUI despite the fact that some Quality services run in the PL/SQL framework and some in the new Service Platform.

A new screen "PQD Browser" has been released. It follows a master-detail approach:

- In the first tab, an Embedded Business Intelligence dashboard "PQD Monitor" aggregates all results of executed Process Quality Decisions, enabling monitoring them also with the support of KPIs. It also enables a drill down analysis by application of dedicated filters.

- In the second tab, the PSIweb List View "PQD Overview" reports each single PQD with an evaluation of tests and characteristics; filters applied in the "PQD Monitor" are carried over to this list view.
- In a third tab "PQD Detail", details of the Quality Process Snapshot related to each PQD are shown, including QI values, process data charts, and Material Genealogy.



Process Quality Decisions (PQD) are now available in SP



Pre-Certification of Test Results

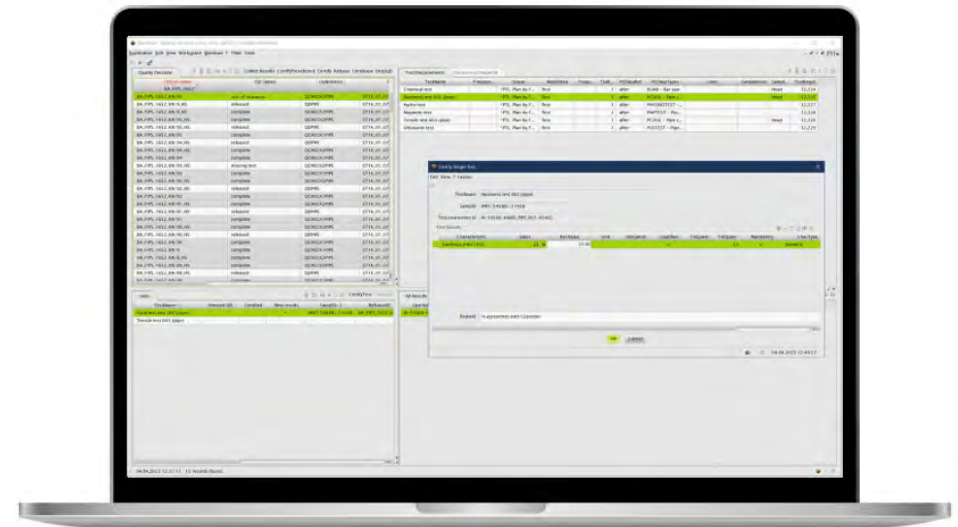
Deviating test results can be certified or corrected at Process Quality Decision (PQD) level and automatically inherited for Final Quality Decision (FQD), increasing the efficiency of the material release workflow.

So far, in PSImetals Quality, the decision of which test results are used for certification (and therefore handed over to ERP in an unequivocal way) happens at a later stage corresponding with the operation called Final Quality Decision.

However, it is not unusual that some of these results are already available at an earlier stage. To check them, an previously available Process Quality Decision can be configured to also include these tests (additionally to FQD).

The current extension of PQD enables Quality Operators to manage test results that already miss the target at the PQD level, e.g. making decisions of which values will enter the certification before FQD.

FQD will then inherit these decisions and hand over the corresponding values to ERP for certification without asking for any additional intervention at the FQD level.



- “Certify” button works also for PQD
- Dedicated “Certify Test” button
- Remarks in “Certify Single Test” dialog



More in detail, the following actions are possible at the PQD level:

- If more than one test has been executed but only one result set is requested for certification, the Operator can select which test result is handed over to the Final Quality Decision.
- In case a test result misses the target, the value can be declared suitable for certification of the entire Quality Decision lot (and therefore neither PQD nor the PQD and FQD at a later stage will withhold the materials due to these violations). For this purpose, a dedicated “Certify” button is available in the GUI. An explanatory comment can be entered to justify this decision and will be made available to the ERP for certification.
- Alternatively, in case a test result misses the target, a value can be entered manually (“release value”) and set as suitable for certification of the entire Quality Decision lot, even if it may not meet the target. For this purpose, a dedicated “CertifyTest” button is available in the GUI at the test level (i.e. first select the test, then press button).

As a consequence, both PQD and later PQD/FQD will not withhold the materials due to this characteristic. The manually entered value is separately saved in the database. An explanatory comment can be entered to justify this procedure and will be made available to the ERP for certification.

The described PQD actions can be performed again (e.g. to change the “release values”), as long as the Final Quality Decision is not released for certification, e.g. FQD has not happened yet (materials have not reached that point yet) or FQD has been manually unreleased (function already available for FQD).

Benefits

- Experts of specific production steps can immediately solve “release issues” at the intermediate production step level;
- No need to repeat decisions/operations performed at the PQD level when the material reaches FQD;
- Increased efficiency in release operation, saving time and communication efforts.



Suddenly everything's that simple.



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