

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”.



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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.

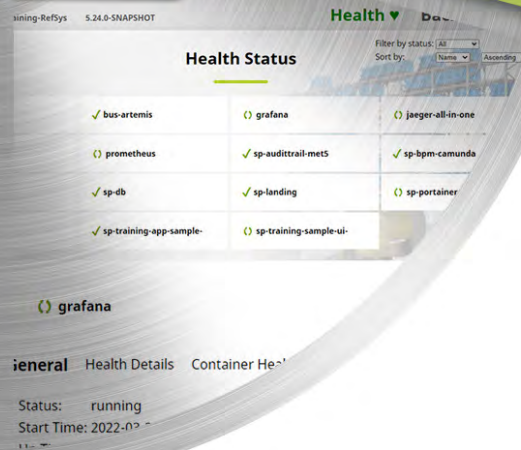
As we look towards the future, the significance of adopting innovative solutions cannot be overstated. With PSImetals 5.26, you not only have a strong capability to meet the challenges of today, you also become well prepared for a more sustainable and prosperous tomorrow.

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





- Metadata and dynamic access
- Generic Actions
- Data Synchronization
- PSibpm Framework Introduced



Metadata and dynamic access

Rule Engine can access metadata in order to Provide auto completion capabilities to the user during Rule Definition.

Metadata describes the model of an application, and we need it for generic UI. For example: display data in screens. We also need Metadata to create “mapping rules” to map incoming/outgoing telegrams into/from entities, and retrieving/setting data of entities in a generic way (also referred as “dynamic access”).

- generic UI to e.g. display data in screens
- creation of “mapping rules” to map incoming/outgoing telegrams into/from entities
- retrieving/setting data of entities via a generic way (also referred as “dynamic access”)

Since Release 5.25, Rule Engine can access metadata in order to :

- Provide auto completion capabilities to the user during Rule Definition. The user will be able to see a list of possible attributes (standard & project specific) when entering an entity.
- The user will also be able to access the relevant data for an object via dot notation during Rule Execution. E.g. `getAttributeValue("Mat.Weight")` should return the value which is stored in the corresponding database field.



Generic Actions with SP

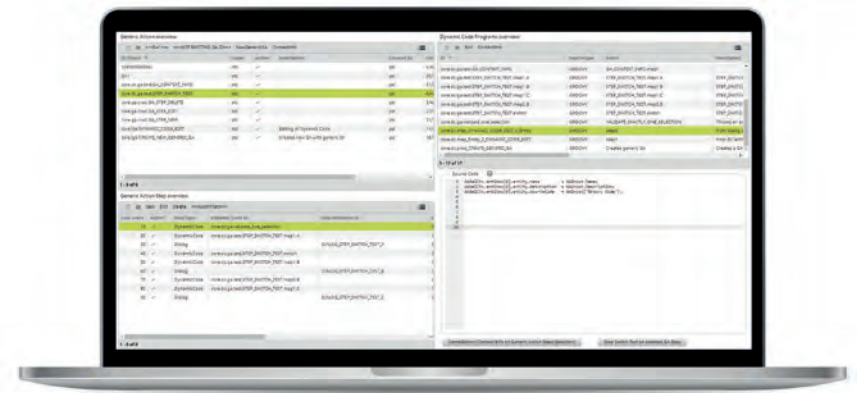
Since Release 5.25, the user can configure (add, remove, or change parameters) actions for the existing Views or Lists without changing underlying code

Since Release 5.25, Generic actions were made available in SP. Generic Action means the possibility to configure (add, remove, or change parameters of) actions for a view/list without having to change the underlying source code.

A Generic Action consists of a variable list of steps, each either is a step performed on the backend 'Dynamic Code' or on the front end 'Dialog'.

Now end customers (projects) with knowledge of Service Platform and the internal competence centers can attach actions to Generic Actions on the fly and don't need to re-compile or restart the application.

Users are now able to introduce new parameters in a standard screen and push data changes to the database via dialogue boxes. They can also configure "Generic Actions" provided they have the know-how of working with Service Platform.



The Generic Action configuration and test Screen



Data Synchronization

To ensure consistency in a distributed environment, the data between applications has to be consistent and this can be achieved using the Data Synchronization mechanism available with since Release 5.25.

PSImetals 5 (base4ora and SP) is designed as a distributed system, whereby each application has its data storage (usually a dedicated DB schema). Despite the fact that the data storage is separated for each application, the different models of the application have a large portion of elements in common due to the shared model definition on various levels of business contexts. E.g., nearly all applications will have the sp-met-global business context; all planning applications will have met-pla-core in common, etc.

To ensure consistency in a distributed environment, the data between applications has to be consistent. In a distributed system like SP, data synchronization is needed frequently between the applications.. If application "A" changes data for an object, which is also known in other applications, a data synchronization has to be triggered.

Data sync is a generic implementation to support those use cases. It uses the standard PSImetals SP API to ensure data consistency between SP applications. In the case that multiple applications have to agree on a change this agreement has to be done before the data synchronization message is triggered.



Two applications in a SP environment will trigger Data synchronization mechanism when needed



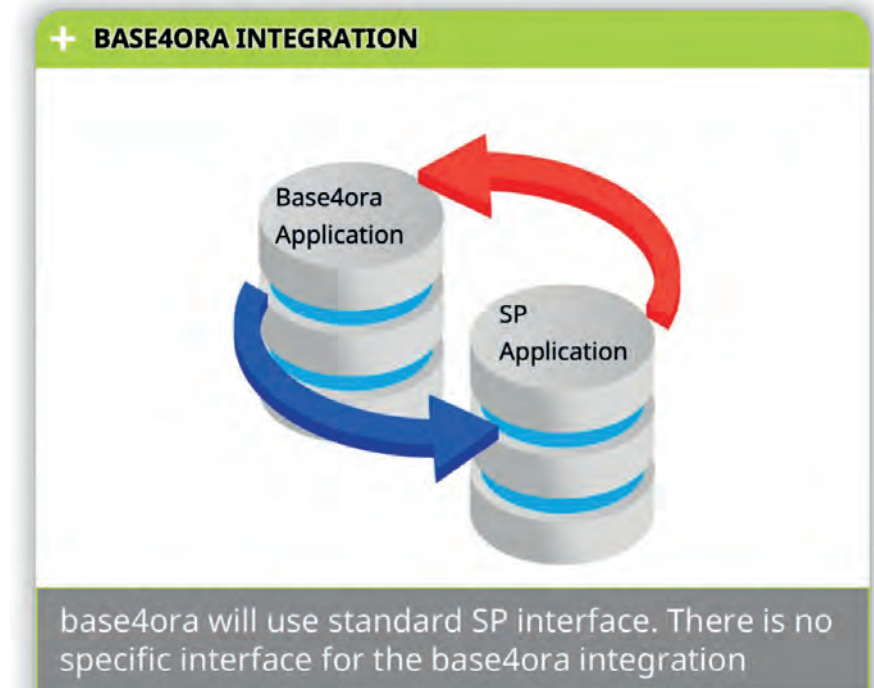
Based on data synchronization functionality released with 5.26, a toolset has been developed to allow easy data synchronization between the base4ora stack and SP:

This toolset includes:

- A mechanism to generate PSIintegration message descriptions out of SP standard interfaces (DTOs)
- A pattern for PSIintegration adapters for both directions
- Oracle processes to receive/send corresponding messages for standard entities
- Audit trail configuration to trigger data synchronization from base4ora to SP for standard entities

The following should be achieved by the data synchronization design:

- Have a common, pre-defined way for data synchronization;
- Data synchronization should be applicable regardless of the source/target application, so the same concept should be applied for;
 - Base4ora to SP application;
 - SP application to base4ora;
 - SP application to SP application;
 - Synchronization with 3rd party systems following. datasync protocol



PSI bpm Framework Introduced

Now with PSImetals 5.26, PJF introduced a standard integration with Camunda. We have migrated our BPM solution towards the PJF standard way.

Camunda is a powerful open-source workflow automation and business process management (BPM) platform designed to streamline and optimize complex business processes. It provides a comprehensive suite of tools and capabilities to help organizations model, automate, monitor, and improve their workflows efficiently.

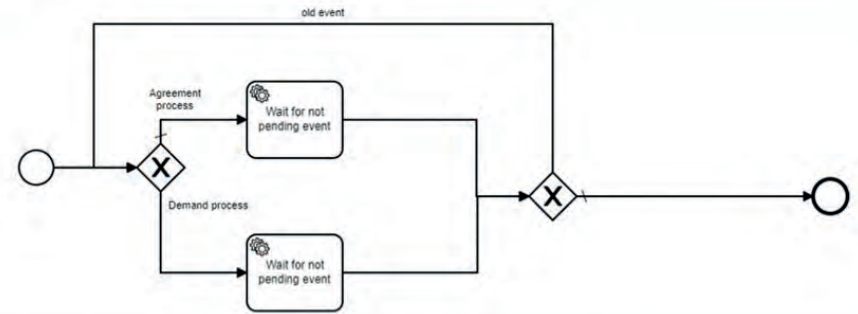
Now with release 5.26 PJF introduced a standard integration with Camunda. We have migrated our BPM solution towards the PJF standard way. PSI bpm is a PSI software component that integrates workflow management into PJF environment.

This release offers a new level of configuration for projects. PSI business workflows are now adapted to PSI bpm and well integrated with Camunda. All this made it even easier to create user tasks because hardcoded workflows and knowledge of programming knowledge are no more a bottleneck

A few out-of-the-box benefits are:

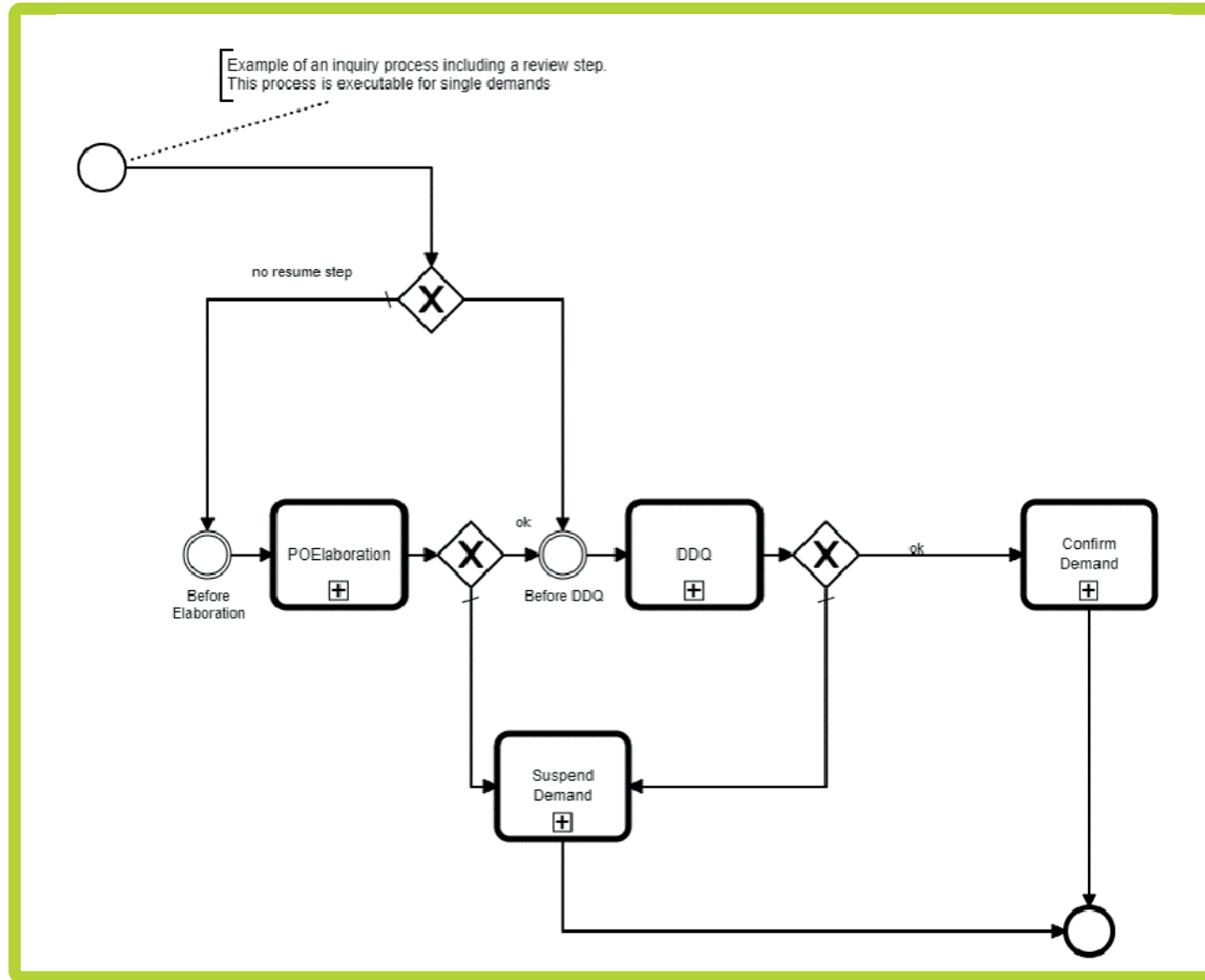
- Support of user tasks and user dashboard
- Projects can achieve configurable business processes

+ MONITOR DEMAND WORKFLOW



The circles mark the start and end of the workflow, the rhombus indicates the decision step and the rectangle indicates the regular task for the process





Inquiry Workflow for incoming demand



Suddenly everything's that simple.



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