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Qualicision technology in the ERP context

Sequencing in JIS processes

For an automotive supplier, Just-in-Sequence (JIS) used to mean above all serving OEM targets. This often meant that the supplier's own economic goals suffered. With PSI_{jis}, this no longer has to be the case. Thanks to Qualicision-based sequencing, production sequences are created that are also optimised for the supplier.

The automotive industry is one of the most demanding industries and important growth drivers in Europe. Through the individualisation of customer requests and therefore the growing influence of end customers, the complexity of the added-value chain in the automotive industry has increased sharply. High innovation and cost pressure with a simultaneous increase in complexity through market-driven model and variant diversity pose great challenges for the industry.

PSI_{jis} is designed specifically for these conditions and supports highly automated, sequence-optimised and sequence-synchronous production and delivery from supplier to car manufacturer. In other words, different variants of the same part or pre-configured module are delivered to the car manufacturer's assembly line at the right time in the correct sequence and position. Qualicision technology simultaneously creates optimum sequences, in other words production or

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News ticker

+++ PSIPENTA presents best-practice solution at the IT&Business 2011 – Microsoft's Windows Azure becomes platform for SaaS bids +++ PSI receives new orders from the Vallourec Group – PSImetals for the Youngstown finishing mill and the new forge at Changzhou +++ PSI to deliver new network control system for the city of Muscat – Muscat Electricity Distribution Company, SAOC, decides in favour of PSIcontrol +++ PSI awarded additional traction power contract from the Netherlands – New, central PSIcontrol control system replaces four existing control stations +++ PSI wins follow-up order from Müller-Technik – PSI material flow controller for logistics centre of plastic injection-moulded components expert +++ PSIPENTA manages maintenance processes for Airbus 340 at SR Technics – MRO service provider goes online with Planning, Execution and Control (PEC) +++ PSI receives order from 50Hertz Transmission – Grid calculations for the operation of the 380/220 kilovolt transmission network +++ PSI wins logistics order from Würth Elektronik eiSos – Warehouse Management System PSIwms optimises current warehouse processes +++ PSI supplies new energy trading system for N-ERGIE – standardisation of processes for all relevant goods such as electricity and gas +++

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Editorial



Dear readers,

Qualicision® technology enables the implementation of software systems for intelligent decision-making support and process optimisation across industry sectors, and for more efficient handling of production processes and any other business processes. Numerous business and industrial applications prove this. In this edition, you will learn more about a new application – the integration of Qualicision in PSIjis. The new system, developed jointly by PSIPENTA, F/L/S Fuzzy Logik Systeme GmbH and PSI Poland, optimises the calculation and management of production sequences for automotive suppliers so that delivery is

just-in-sequence in accordance with OEM targets whilst the individual suppliers' production sequences still optimise their own economic goals.

A further application is related to portfolio planning and the optimisation of planning-related real time responses to changes to financial and economic market conditions as they occur.

Although both applications are fairly distinct, they are both supported by the same Qualicision core in the optimisation process. This is because the Qualicision design is universal. Whether sequencing, portfolio planning, fashion label logistics, bus depots or maintenance of infrastructure networks – as reported in previous issues – Qualicision is a useful tool across industry sectors.

Therefore, several Qualicision solutions have already been integrated into the range of solutions offered by PSI in production, energy and infrastructure management. PSIjis is a new and important element on this road; because this joint product development pools PSI expertise for our customers.

Yours faithfully,
Dr. Rudolf Felix

Managing Director
F/L/S Fuzzy Logik Systeme GmbH

► Continued from page 1

assembly sequences, both from the supplier perspective, that of the external service provider, and at the OEM.

Just-in-sequence delivers the required parts to the conveyor belt not only at the right time on the basis of a pull principle, but also in the right order for the cars. To achieve this, the software generates production or delivery orders for exactly ONE specific part at a specific time. The part is also allocated a unique Vehicle Identification Number (VIN) and sequence number. As a rule, three calls, known as JIS CALLS, are generated by the OEM for the supplier n days, n hours and n minutes before the start of assembly in order to react to configurations by the customer at short notice. The lead time offset varies according to the distance between the supplier and end customer or production and assembly.

Sequences improve efficiency

Among automotive suppliers, there is increasing recognition of the importance of suitable sequencing to improve production process efficiency. This is because just-in-sequence delivery should be completed right to the OEM in accordance with their specifications. However, if resequencing takes place before delivery in accordance with internal supplier criteria, as the PSJis module itself allows, increased efficiency or cost saving is achievable according to individual interests. Although the supplier performs sequencing in accordance with their own criteria, the OEM receives its desired sequence through JIS and the final resequencing.

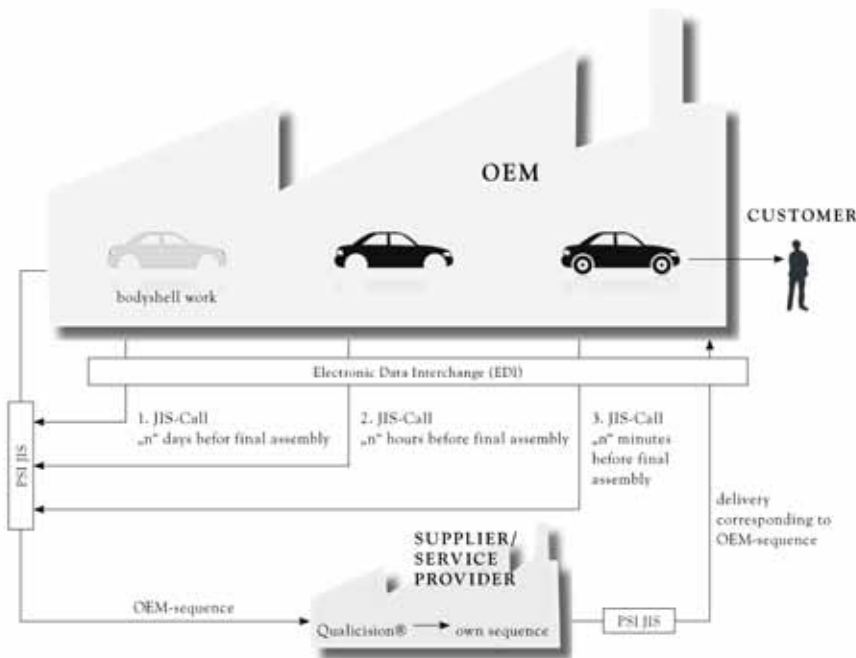
In this way, both partners' seemingly contradictory economic goals can be achieved. The economy of the se-

quencing is not restricted only to the immediate optimisation of production-related technical efficiency and costs. Indirect effects of optimised sequencing can also be important. If, for example, sequencing efficiency increases, one possible result is energy savings and the prevention of peak demand in various respects. If appropriate key performance indicators and the associated data are available, the sequences can be optimised flexibly in line with those KPIs by means of their relative importance – meaning that KPI improvement is verifiable.

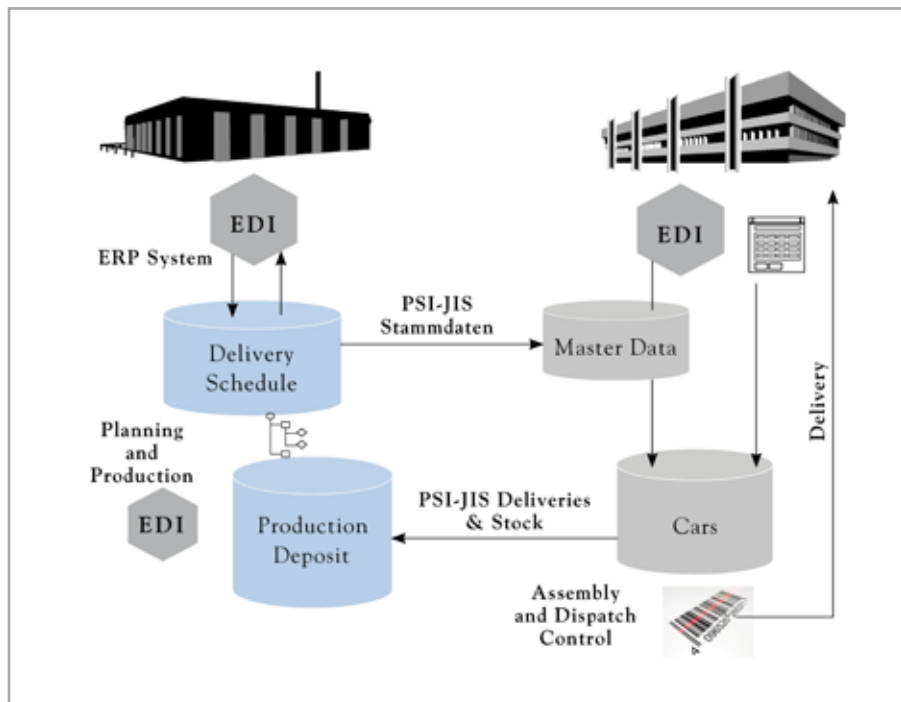
Qualicision-based sequencing has already proven itself efficient in numerous OEM factories. Therefore the JIS module is the logical continuation of this procedure transferred to the customer-supplier principle between the OEMs and their suppliers, and is now also available as active sequencing control for the supplier.

Integrated sequence planning with EDI

The JIS module is a stand-alone module that can be integrated into an existing software infrastructure at any time. The system's processes are self-contained and are equipped with interfaces to ERP systems. This therefore guarantees that the value flow and core processes chain within the ERP system is uninterrupted. Call integration and sequence planning take place automatically via the EDI interface and its own associated JIS database. The core of the JIS database is the information system that provides information regarding vehicles that are in production or pre-production as well as vehicles already produced. This data basis is used to manage all JIS module processes by means of their status information in the sense of a workflow. The open architecture means that customer-specific adjustments to the workflow are



PSJis not only enables delivery right up to the OEM with optimised sequencing, but also guarantees optimised production sequences for all parties involved on the basis of the Qualicision technology.



The self-contained PSI-JIS module, with an interface to the ERP system, can be integrated into an existing software infrastructure at any time. Source: PSIPENTA

Advantages

- Individual, production-synchronous sequencing and assembly control with Qualicision®
- Production-synchronous delivery and sequencing in transport containers with scan checks including label management
- Application of mobile solutions
- Configurable process monitoring and passing on of alarms by means of the system, SMS and e-mail in real time
- Open interfaces to ERP and test systems
- Documentation and traceability for batch and serial numbers
- Local processing with high-level availability including own master data
- Standard EDI processing
- Multi-level emergency concept
- Business control through integration of credit advices and repeat orders

possible at any time. The architecture of the JIS module is designed for 365/7 operation.

Optimising sequences

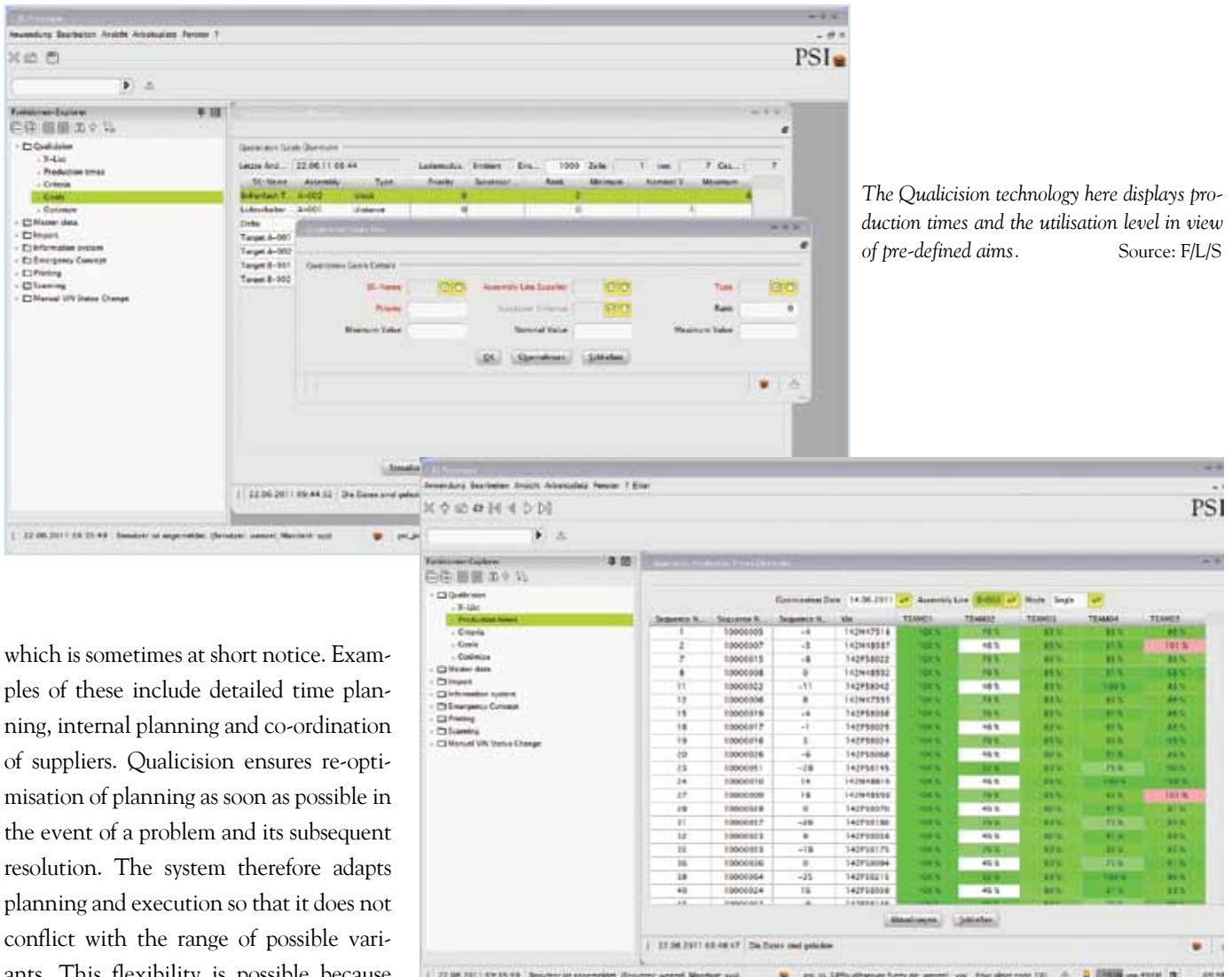
Beyond standard JIS functionalities, Qualicision technology supports sequencing optimisation in production or assembly for the OEM and/or supplier in order to achieve a balanced production flow with regard to human and machine resources. One possible situation might be related to preventing employees from being overloaded in their work, for example. If an assembly worker deals with three or four fully configured vehicles in succession, a high degree of concentration is required, which is accompanied by fatigue. Logically, this presents an increased risk of error that can be reduced with a more balanced sequence, i.e. fewer stress peaks and a more even, continuous workload. Expressed verbally, one specification to the software could read: When a fully configured car is assembled, the system should

optimise the workload so that if possible, a car with a simple configuration follows. This requirement for optimal sequences in assembly partially contradicts the requirements of sequences in the paint shop. This section would like to group cars by colour and prefers colours to go from light to dark. This is because fully configured cars, which lead to high workloads in assembly, are mainly dark. The complexity in sequencing that arises for the OEM with regard to the number of possible combinations is more than the human mind can imagine, even with extensive professional knowledge. In addition to assembly and the paint shop, this also affects preliminary building works. This section also has its own optimisation goals regarding order sequences, which are defined from the perspective of the resources found there, such as welding robots or feed cartridges, etc.

Harmonising contradictions

From the point of view of suppliers who have to operate the complex sequences

that arise in the JIS environment, their own production sequences are also subject to requirements. These in turn must comply with the technical and economic requirements of a supplier. With Qualicision, these sequences can be calculated in a similar way. However, because of the diversity in production processes, these do not generally conform to the sequencing requirements of the recipient OEMs. As both sequencing types are calculated by the same software, the supplier can harmonise the contradiction between its own production sequencing requirements and those of the OEM. To create such optimised sequences, in the sequencing, Qualicision must include all measures affected by changes after the options freeze,



The Qualicision technology here displays production times and the utilisation level in view of pre-defined aims. Source: F/L/S


which is sometimes at short notice. Examples of these include detailed time planning, internal planning and co-ordination of suppliers. Qualicision ensures re-optimisation of planning as soon as possible in the event of a problem and its subsequent resolution. The system therefore adapts planning and execution so that it does not conflict with the range of possible variants. This flexibility is possible because the approach to human thinking and action has been adapted in Qualicision and transferred to IT. In a situation, decisions on sequences are made rapidly using clear parameters and heuristics.

KPIs are used as control parameters and, in contrast with the retrospective view that is common at present, perform an active controlling function. The approach to control here is entirely comparable with the procedure in the OEMs themselves. They also sometimes perform sequencing internally within the factory by applying the customer-supplier principle between individual production areas. For example, preliminary building works is the supplier for the customer "paint shop", and the paint shop in turn is the supplier for the customer "assembly".

Customer groups and target markets

The JIS module is aligned with automotive industry suppliers that deliver their components just-in-sequence. Some examples of these components are: wiring harnesses, seating systems, cockpits, engines, gears, tank containers, mirrors and interior parts including roof lining and locking systems. External service providers such as forwarding agents can use the JIS module as system suppliers to harmonise process steps.

Due to the PSI group's international structure and experience, projects are offered and supported worldwide. The PSI Poland business unit based in Poznań is

specifically responsible for implementation of and support for projects in eastern European countries. 

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Case study: PSImetals at ThyssenKrupp Electrical Steel

ThyssenKrupp Electrical Steel forges ahead with integrated PSI, IBM and SAP solution



ThyssenKrupp Electrical Steel (TKES) aimed to create a homogeneous set of global business processes and reporting standards. The ultimate goals were to optimize business and manufacturing operations using a standardized approach at all locations. This would require powerful, highly integrated ERP and shop-floor solutions running on a reliable, high-performance platform.

Working with PSI, IBM and SAP, TKES extended its existing SAP and PSImetals landscape to four additional locations. Business processes were extensively re-engineered to enable greater harmonization of operational activities across the company. Combined IBM, SAP and PSI solution delivers cost savings of 25 to 30 percent over comparable solutions.

Standardization for efficiency

The TKES business has five manufacturing locations: at its German headquarters in Gelsenkirchen and in nearby Bochum, in India, in Italy, and in France. To ensure efficient production and effective coordination of its global activities, the company wanted to standardize operations and reporting across these different locations. Without a consistent, corporate-wide standard, the company recognized that it could not achieve its full profit potential.

The first step was to carry out a business-process re-engineering project with the existing SAP application landscape at headquarters – which included the upgrade of various legacy components and platforms to the latest standards.



Annealing furnace at ThyssenKrupp Electrical Steel: The new material for electric motors gain their special properties. Source: ThyssenKrupp

The company also developed a uniform interface to its manufacturing locations, ensuring that everything was in place for a rollout of SAP Advance Planning and Optimization across its Grain Oriented Electrical Steel business.

The Gelsenkirchen and Bochum locations were using PSImetals for manufacturing operations, automation and control, and physical process management, including the information exchange with the business applications. For example, on the shop floor PSImetals controls materials tracking, process control, measurements capturing, quality management and reporting. The PSImetals solution had gradually been extended, and implemented in four manufacturing locations.

PSImetals' standard functionality covers 70 percent of requirements, with about 20 percent of TKES-specific and about 10 percent location-specific customizations. Each manufacturing plant uses a

separate database to manage production orders and amounts, time schedules, quantities, quality, measures and weights of intermediate and finished products. Data exchange from the shop floor systems to core SAP software is managed by SAP NetWeaver Process Integration.

Key Solution Components

Applications

PSImetals Production & Quality, SAP® Business Suite applications, SAP NetWeaver®, SAP Supply Chain Management and SAP Advanced Planning and Optimization

Hardware

IBM® Power® 770, IBM Power 570, IBM BladeCenter® H, IBM System Storage® DS5300, IBM System Storage TS3310 Tape Library

During production, PSIMetals collects, monitors and analyses materials data, and enables complete tracking of finished goods back to the raw materials used for hot rolled coil. PSIMetals traces materials and product movements throughout the whole plant, and optimizes production processes to minimize wastage (known as 'clippings') and defects.

The integration between SAP and PSIMetals is very tight, each software solution excels in its role. The difference is between the time horizons and level of granularity, and the solution can truly be considered as a joint setup, and not the one or the other.

Michael Brüne, Head of Information Technology at TKES, comments: "In

SAP for cross-enterprise business processes, PSI for functional coverage on the shopfloor, and IBM as our comprehensive infrastructure supplier."

Fully virtualized landscape

The new centralized SAP APO landscape runs in the main TKES data center, located in Gelsenkirchen, Germany. The IBM infrastructure is split across three separate buildings for added protection against disaster, with fiber-optic connections providing the required high-speed mirroring of data.

In the first building, the multiple SAP central instances and database servers for PSIMetals run on an IBM Power

high availability of the IBM infrastructure allows the company to have just one planned maintenance window each year of just two hours.

Scaling up to global challenges

"In parallel with the standardization of our business processes, we have achieved a standardization of the components of the IT infrastructure," explains Carsten Kübler, who has overall responsibility for the IT infrastructure at TKES.

"The IBM technologies effectively give us a private cloud: a set of standard components that we can orchestrate to achieve whatever goals we have. Both

Michael Brüne

Head of Information Technology, ThyssenKrupp Electrical Steel

"Our investment in a flexible solution from PSI, IBM, and SAP will continue to deliver benefits into the future, driving greater efficiency and speed in our manufacturing processes while continuing to push down costs in IT operations."

our view, the main function of information technology is to support the central business processes in an optimized way. We have extremely demanding requirements regarding product quality and delivery times, and given the global nature of our business, this makes us absolutely reliant on the smooth operation of our information technology landscape."

"We want to preserve a relatively small technical team, to keep operational costs low, and so our requirement from the outset was for technology that would enable self-healing, fully autonomic operation as far as possible. With this in mind, we selected three key strategic partners:

770 server with IBM POWER7 processors and an IBM Power 570 with IBM POWER6 processors, while the PSIMetals application server instances run on IBM BladeCenter HS22 blades. Two IBM System Storage DS5300 arrays provide high-speed disk storage, fully virtualized for greater flexibility using IBM System Storage SAN Volume Controller. This entire system landscape is duplicated in the second building. The third building provides data backup and archive services.

In steel manufacture, production stoppages are costly, so TKES tries to keep its plants running around the clock. The

ThyssenKrupp Electrical Steel

ThyssenKrupp Electrical Steel (TKES) is part of the Materials division of the major industrial firm ThyssenKrupp AG, which generated sales of 42.6 billion in the 2009/2010 fiscal year, and which has approximately 177,000 employees in more than 80 countries.

TKES is a leading global manufacturer of grain-oriented and non-oriented high-tech electrical steel. This core material is used throughout the entire value chain of the electrical energy components industry, from power generation, transmission and distribution to electric motors and appliances.

With its innovative, highquality products, TKES also plays a valuable role in meeting the increasing environmental requirements governing the use of steel in the manufacture of electrical components.

the IBM hardware and the SAP software ensure that we never come up against any barriers when designing and executing our business processes.”

Highly integrated solution

Competition is fierce, so TKES needs to minimize operational losses and costs by achieving extremely high efficiency throughout the supply chain.

By standardizing its business processes on SAP Business Suite applications, and tightly integrating them with the production processes managed using PSImetals, TKES has enabled fast and efficient production from order entry to delivery.

Moreover, the use of common business definitions and data standards enables accurate reporting in real time, allowing business managers to see and understand the status of manufacturing across all plants.

Tight integration of the central SAP system with the PSImetals instance in each manufacturing location enables all inventory data to be accessed at any time. During the production process, PSImetals collects, monitors and continuously analyzes all material data, enabling sophisticated tracking. For example, TKES can completely track each end-product back to the hot rolled coil from which it was made, ensuring complete traceability and supporting the highest quality standards in manufacture.

TKES customer orders define the specific type of steel needed. Starting with the hot-rolled coils, processes known as rolling, annealing, coating, side trimming, repairing and slitting provide the vari-

Robert Gieselmann

Manager PSI Shopfloor solutions, ThyssenKrupp Electrical Steel

“The open architecture and the modularity of PSImetals make customer-specific customizations per location possible with special plug-ins using the same technology.”

ations required by the customer. A key challenge is to maximize the material yield from each coil with minimum waste, and to optimize the manufacturing operations for each coil.

Robert Gieselmann, responsible for PSI shopfloor solutions at TKES, comments: “The open architecture and the modularity of PSImetals make customer-specific customizations per location possible with special plug-ins using the same technology. That offers additional flexibility when business processes change.

PSImetals integrates extremely well with SAP applications; in fact, the solution is certified as ‘Powered by SAP NetWeaver’. The practical outcome is smooth exchange of data between our SAP system and the manufacturing plants.”

Proven cost savings

The early decision to establish a consistent and standardized system and application architecture throughout TKES is now paying significant dividends. Michael Brüne comments: “Standardization took time and effort, but it has already more than repaid our investment.

Today, TKES can operate efficiently with a small set of highly flexible and scalable resources. Our recent experience has proven that we can integrate entire new production locations into the common landscape quickly and without any productivity losses.”

Michael Brüne says, “Having participated in multiple benchmarks during the last years, we see a clear economic advantage. We estimate that our IBM, SAP and PSI landscape offers IT cost savings of 25 to 30 percent against comparable solutions. And the high degree of abstraction and virtualization in the solution means that we can easily benefit from ongoing technology refreshes to improve the performance of our systems, without requiring any changes to the logical architecture.”

He concludes, “Our investment in a flexible solution from IBM, SAP and PSI will continue to deliver benefits into the future, driving greater efficiency and speed in our manufacturing processes while continuing to push down costs in IT operations.”

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This report is an extract with focus on the PSI part of the solution.

Complete article: <http://bit.ly/p5acmS>



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PSI 

Products & solutions: PSItms as a management information system

More than just logistics software

The PSItms transportation management system offers order management, planning, controlling and monitoring across regions and locations. With the provision of actual data on transport and resource planning as well as functions for comprehensive performance and quality analyses, the software system, with its modular design, also works effortlessly as a management information system.

What do users of transportation management systems (TMS) expect? Counter-question: Which users are we talking about? The service provider that wants to optimise its vehicle fleet routes? The medium-sized transportation company that would like to react convincingly to attractive tenders? The shipper that wants to reduce their transport costs? If it is a case of preserving an accepted approach, not much is necessary, and at best just some logistics software. However, if the user is thinking of future and growth,

adaptable and sustainable solutions are necessary; because transportation management systems such as PSItms from PSI Logistics offer more:

- Investment security and integration compatibility
- Modules and functions
- Efficiency and economy
- Planning security
- Upgradability and flexibility

PSItms is designed for order management, planning, controlling and monitoring across regions and locations and supports the planning and control of operative processes and resources – with substantial advantages for the user.

In the first instance, the service-oriented Java Architecture (SOJA) developed by PSI Logistics represents the basis for this. Its design means that it can be very successfully integrated into heterogeneous IT infrastructures. As well as this, PSItms is release-compatible and therefore always remains up-to-date with regard to technology and functionality.

Customised solution

With a TMS too users need an IT-System that is customised to their individual requirement and, due to its flexibility, offers potential for further expansion. As a modern IT system with the character of an individual system, PSItms is therefore structured into a total of ten base modules for the control and planning levels. These are composed as required and can then be expanded to an optimised customer system in the customising process. The spectrum of functions ranges from order and resource management to transport scheduling, planning and execution to freight management and the automated determination of key performance indicators.

Optimisation of process times and costs

One of the main characteristics of PSItms is the rolling planning of trans-



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PSI 



Route planning and freight cost management can be automated with PSItms. This means a double-digit percentage decrease in planning expenditure and transport costs.

port tasks with the approach of combining several logistical nodes for the purpose of optimisation, and taking all parties involved in the process into account. In addition to operative issues and transparent planning, control and consistent monitoring of (multi-modal) transports – including services such as storage and packaging – this comprises in particular the integration of upstream and downstream supplier, partner and customer processes. This type of targeted initiative for resource utilisation as well as optimisation of process times and costs opens up substantial potential for savings.

This means that route planning and freight cost management can be automated with PSItms. Corresponding functions make it possible, for example, to define regulations and configurable processes for multi-level planning, multi-

channels and supply chains, for distances and travel times for different transport means, or to define tariffs and conditions. This relieves persons responsible, planners and the accounting and controlling processes. Integrated simulation models also enable the use of comprehensive scoring applications, such as bid comparisons or tender evaluations with the integration of diesel prices and toll costs, amended service provider assignments or new location structures. Last but not least, PSItms offers a sound basis for strategic decisions with its diverse analysis tools and key performance indicators.

One advantage for the user is that by automating planning and control of inbound and outbound processes, shippers decrease their planning costs by up to 80 percent, while planning efficiency increases by 30 to 50 percent. Up to ten percent is saved on transport costs.

The processing times decrease by up to 95 percent – with an error rate of almost zero.

The benefits for logistics service providers include automation functions for the generation of transport orders, partial and full truck loads, as well as multi-level planning of routes and freight capacity utilisation. Result: organisational expenditure reduced by up to 75 percent through automation and real time planning as well as an improvement in resource utilisation of between 10 and 50 percent.

PSItms as a management information system

PSItms is characterised by high levels of expandability and flexibility. As a form of adaptable solution, other modules and functions can be easily integrated as necessary. Parallel to this, functional modules of PSItms can be systematically connected with other PSI Logistics products for in-house logistics, production control and warehouse management for integrated solutions and a homogeneous IT infrastructure.

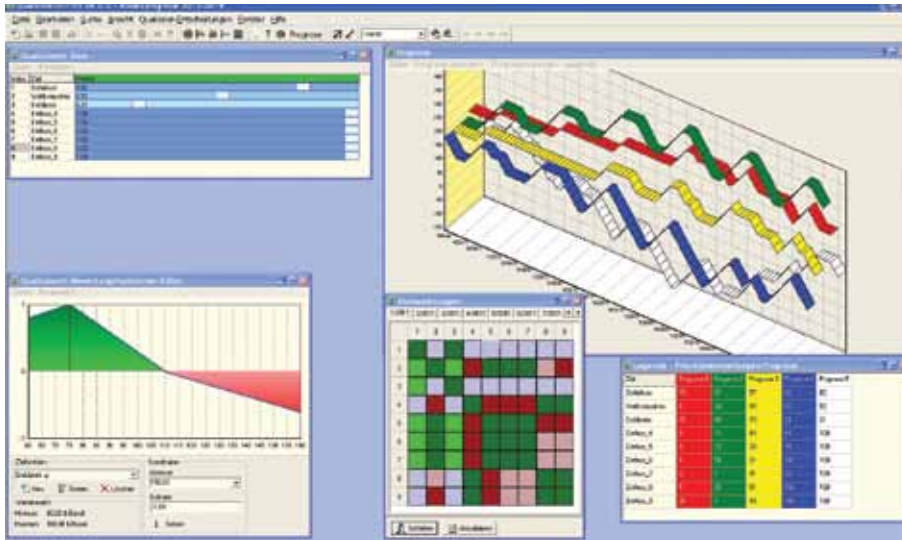
The examples show that efficient transportation management is far more than logistics software for fleet management and transport planning. Modules, functionalities and tools make PSItms a management information system as well, and open up a variety of procedural and economic advantages for users. ☉

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Products & Solutions: Qualicision-based forecasting tool for long-term production planning in PSIPec

Adjusting to changing framework conditions ahead of time



The tool can be used to incorporate various forecast scenarios into the planning. Source: F/L/S

Global market conditions have an increasing influence on a company's mid-term and long-term sales expectations. However, projected sales expectations are of great importance for a business to be able to strategically adapt to changed market conditions as early as possible. Long-term sales forecasts cannot yet be supported by concrete customer queries. The forecasts result much more from an evaluation of various market and sales indicators.

Another possible aspect is the determination of optimised product portfolios for a period under review (e.g. a fiscal year). In this analysis, as a rule, many additional criteria are included that go beyond traditional production planning parameters, such as production capacity or delivery deadlines. In both situations described above, the difficulty lies in making the best possible decisions on the basis of many arbitrary – possibly also competing – criteria (multi-criteria decision-making).

Within the PSIPec approach (planning, execution and control) from PSIPENTA, the Qualicision® forecast, based on Fuzzy technologies, from F/L/S Fuzzy Logik Systeme, has been incorporated in the planning processes. With this aid, in the cases mentioned above, forecast

scenarios can be determined and their results can be compared with one another. As an example, the production capacities are defined dependent on a sales forecast. The dollar rate can, for example, be just one of many sales indicators that flow into Qualicision calculations and therefore into a forecast scenario. Various sales scenarios can be deduced for each dollar rate development forecast. These can then be used to derive utilisation scenarios in respect of the production capacities. At the same time, other arbitrary indicators such as oil prices, economic or operational indicators or consumer indexes can also be added.

Just like determining an optimised product portfolio, supporting a sales forecast is a matter of deriving scenarios on the

basis of multi-criteria decision-making as well as scenario evaluation.

The fundamental benefit of the integration of Qualicision into the PSIPec solution from PSIPENTA can be summarised as follows:

- Seamless transition from long-term strategic planning to short-term and medium-term operative planning whilst using existing data from other modules.
- The effects of changed influencing factors on strategic and operative planning are immediately recognisable.
- The application is industry-independent: influencing factors from other modules can be used or recorded individually by means of the user interface.
- Company-specific skills can be represented: the user defines how individual influencing factors are to affect the result. ☺



Perfectly adjusting to changing conditions with PSIPec.

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Products & Solutions: New technology model for PSIAirport/BRS

More security and reliability in the airport environment

For consistent monitoring of baggage loading in air traffic, PSI has designed the baggage reconciliation system PSIAirport/BRS in a new technology approach for baggage handling in the airport environment. The change in technology reduces infrastructure costs and enables a new business model.

With an innovative technology model for consistent logging and monitoring of the loading processes for items of luggage in the airport, PSI is expanding its spectrum of airport solutions. The new development within the baggage reconciliation system PSIAirport/BRS targets the loading and unloading processes in the airport environment, directly next to the planes. Up until now, recording and real time documentation here has been almost impossible: solution models based on wireless LAN are greatly restricted by the many aircraft and vehicle movements in the aircraft surroundings. The PSI approach now integrates mobile communications into the handling process.

Proven technology

Background: in accordance with the applicable safety regulations, no aircraft is allowed to take off if there is an item of baggage on board without an associated passenger. In the world of IT, the baggage reconciliation system PSIAirport/BRS already ensures transparent processing and optimum integration of x-ray check results, as well as supporting the alignment of baggage and passenger data with airlines at four of the ten largest commercial airports in Germany.

As an operative example, the baggage items are detected with a mobile hand-



The baggage reconciliation system PSIAirport/BRS is already in use in four of the ten largest German commercial airports.

Source: Michael Penner

held unit when being taken out of the automated hall area and assigned to the transport container by scanning the bar code on the transport container. This also takes place at hand-over in the aircraft cargo space. Here, mobile hand-held units are used to control the loading of all relevant objects and to document these in detail without slowing down time-critical work processes. PSIAirport/BRS therefore prevents incorrect loading. At the same time, the data is encrypted and communicated to the airline in real time. The airlines are therefore equipped with a consistent report regarding the number, weight and location of the items of baggage. With this data, a passenger/baggage

item comparison can be performed, for example, and – where irregularities occur – the baggage item can be accessed directly. With the change in technology that has taken place, PSI has now changed these processes over to the third generation (3G) UMTS mobile communication standard. Outcome: The replacement of WLAN applications offers not only higher and more cost-effective transmission speeds of up to 14.4 MBit/s, but also significantly faster data processing alongside greater reliability. The change in the transmission technology affords all parties involved – from the airport operator to the airlines and the handling agents right up to the solution providers – nu-

merous new business models and forward-looking applications. These range from cooperation models and cost sharing for the hardware to cost-effective rental and "flat rate" models. For the future, in addition to the further expansion of the baggage reconciliation system PSIairport/BRS, there is also the option of extensive networking not only of airport systems at one location but also between airports. This means that in future, airlines could promptly advise the destination airport of the actual data collected at the departure airport, for example, in order to better coordinate reloading and to tighten up the departure window.

This future has already begun

The new Berlin Brandenburg Willy Brandt Airport (BER), which is to open in the middle of next year, is planning to use this new technology. In future, 27 million passengers will be processed in the Berlin central airport per year – an average of 6500 people per hour. With the new technology model within the baggage reconciliation system PSIairport/BRS, PSI is preparing itself to contribute to smooth baggage processing in BER. Two more of the ten large international commercial airports in Germany have already indicated interest in the solution. ☺

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Events: PSI Logistics cooperates with schools in Hamburg

Concrete promotion of young talents

The subject of the skilled worker shortage is on everyone's lips. PSI Logistics is therefore dedicating itself to young people in good time and is bringing them closer to the logistics industry.

At the Hamburg PSI Logistics headquarters, at the end of June senior students at the Hamburg-Rahlstedt Gymnasium (GyRa) presented their solutions for package optimisation. In technically convincing presentations, five groups introduced short, executable IT programmes that they had developed themselves for this topic. The two most striking solutions were rewarded with a voucher for EUR 300 by a panel of judges headed by PSI Logistics managing director Wolfgang Albrecht.

The results of a semester of information technology and mathematics was part of the "Naturwissenschaft und Technik" (NaT) ("Science and Design") initiative. With this initiative, PSI Logistics is already in its second year of supporting the schools as a cooperating partner,

not only in non-material ways but also personally, financially and professionally. The aim of the initiative is to get up-and-coming scientists and engineers in Hamburg's senior profile classes interested in the subjects of chemistry, information technology, mathematics and physics – as well as in a subsequent course in engineering. Albrecht's view on the PSI Logistics' exceptional commitment is that: "Given the increasing shortage of skilled workers, we need to better integrate the economy and schools with one another to allow students to become interested in logistics in general and in particular the IT aspect of this business segment". ☺

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The successful completion of the first piece of project work by the senior profile class of the Rahlstedt Gymnasium was celebrated with the presentation of an award. Source: PSI Logistics

Group news: PSI on the move to the energy change

Sales in Production Management increase


PSI Group increased its EBIT by 4 % to 3.8 million Euros in the first six months of 2011. The EBT increased compared to the same period for the previous year by 5 % to 3.0 million Euros, at 1.9 million Euros the group net earnings after interest and taxes were, as a result of deferred taxes, below the value for the previous year. Group sales were about constant at 76.2 million Euros. The volume of new orders increased over the same period for the previous year by 4 % to 97 million Euros.

Sales in Production Management (raw materials, industry, logistics) were, at 35.8 million Euros, 9 % above the value for the previous year. The EBIT increased to 1.7 million Euros. PSI expects further increases in sales and profitability in this segment as a result of follow-up contracts for the raw materials extraction control system.

Energy Management (electricity, gas, oil, heat, water) achieved 4 % higher sales of 31.7 million Euros. The EBIT decreased as a result of high project costs and investments in systems for electrical distribution grids in Germany and particularly in exports to 2.6 million Euros. PSI is preparing itself for the expected greater demand in Germany resulting from the change its energy policy. The gas and oil business and the business with systems for rail electricity and electrical transmission networks continue to develop very well.

In Infrastructure Management (transportation and security) sales decreased by 37 % to 8.7 million Euros as a result of the sale of the telecommunications business at the end of the year and a new procurement behaviour in Europe resulting from new prerequisites for subsidies. As in the previous year the segment had an EBIT of 0.5 million Euros. In this segment PSI was awarded major contracts in South-east Asia in the first six months of this year, which will lead to increases in sales and EBIT in the second half of the year. The number of employees in the Group increased as of 30 June 2011 to 1,441, the order book volume in the Group increased significantly compared to the previous year to 125 million Euros. The cash flow from operating activities also improved significantly to 1.8 million Euros, so that the liquid funds rose to 26.1 million Euros (30 June 2010: 13.5 million Euros).

In the first six months, PSI continued to invest in products for the upcoming technical revolution in the medium and low-voltage grids of distribution grid operators. It is expected that customers will be making significant increases in investments in smart grid control in the coming years. PSI is working on continued improvements of quarterly results through better management of the corresponding pre-development and marketing costs.

As a consequence of the high volume of new orders in the fourth quarter of 2010 and the first quarter of 2011, PSI expects to have a strong second six months in 2011. On the basis of higher license earnings and an expansion of business in Eastern Europe, the management expects to achieve the year's goal of an EBIT of 13 million Euros. 

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EVENTS

19/10-21/10	28. International Supply Chain Conference	Berlin/Germany	www.bvl.de/Veranstaltungen	Havana Lounge/Room Tiergarten 1
20/10-21/10	MRO IT 2011	Chicago/USA	www.aviationweek.com/mroit	PSIPENTA, booth 410
10/11	STAHL 2011; CSD Süd	Düsseldorf/Germany	www.stahl-online.de	PSI Metals
10/11-12/11	25th User Group Meeting	Zürich/Switzerland	www.psipenta.de/ipa-tagung2011/	PSIPENTA
15/11	IT for Metals	Moscow/Russia	www.metalinfo.ru	PSI Metals
22/11-23/11	European Alu Congress 2011	Düsseldorf/Germany	www.aluminium-congress.de	PSI Metals

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