PROCE55 Quality

Overview

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PROCE55 Quality Introduction

PROCE55 Quality manages quality control processes in the areas of logistics, production, and maintenance. It extends other PROCE55-based solutions and other enterprise applications by integrated quality functionality.

PROCE55 Quality enables backward and forward traceability at all production phases – final products, production lots, semi-products, and material batches. Based on the traceability data, documents such as product quality certificates and product attestation certificates can be generated, especially to be submitted to regulation institutions, certification institutes, and customers.

PROCE55 Quality enables to systematically solve cases of deviations and occurrence of non-conforming products. It ensures that deviations are kept within the defined range. When a recorded value exceeds the parameter limits, action is taken to ensure that the quality of final product is not affected.

The common problem of quality control workers is ex post solving of quality issues (documentation and evaluation take place only after the occurrence of a problem, based on which new methods or control mechanisms are proposed).

PROCE55 Quality enables a significant qualitative change – error prevention. Standard ERP systems (e.g. SAP) enable to record a product status (e.g. conforming, non-conforming). PROCE55 Quality extends the quality control by functionalities which enable to avoid errors. These are mainly:

- » SPC, Statistical Process Control – continuous tracking of parameter values, evaluation of trends
- » EWS, Early Warning System – automated warning system for the cases of non-conforming products

Implemented solution is individually customized, due to specific customer needs in quality control.

PROCE55 Quality Use

Production

In production processes, defined technological parameters need to be adhered to. Deviations of measured values are permitted only within a specified range. PROCE55 Quality enables continuous control of measured values in technological processes and in product characteristics.

» **Statistical Process Control (SPC)**

SPC is a method of quality control based on statistical methods. It monitors and controls production processes so that they operate at their full potential. Output of production processes should be as much conforming product as possible with a minimum (or elimination) of waste. SPC can be applied to any process where the output can be measured.

SPC records and controls the values and their deviations in all production phases. PROCE55 uses gauges, sensors, or manual data entry to collect real-time data on production processes. Next, the data are evaluated, statistical calculations are performed, and the results are visualized for managerial needs. The goal of SPC is continuous process optimization that leads to improved product quality.

When certain limits for measured values or trends are reached or exceeded, appropriate workflows can be launched, including PROCE55 Early Warning System.

» **Deviation Management**

Every deviation from defined value (e.g. median value) or from range of tolerance can launch a process that systematically solves such issues. The record of deviation includes detailed information.

Processes launched by the control mechanism lead to the correction of deviation and return of production into a defined state. Non-conforming products can be reworked and fixed, or they can be removed from the production process and reused in other processes. Non-conforming semi-products or their parts can be used in other products, where tolerances permit the existing deviation.

Entire process of deviation processing is recorded. Based on this information, regular reports for managers are generated, either in the form of tables or graphs. This information is also used for prophylactic purposes. Similar situations should be avoided in future with the support of a quality knowledge database.

The recorded data are stored for a defined time period in PROCE55 Quality database and are used in further analyses and reports.

» **Early Warning System (EWS)**

When threshold values for monitored process parameters are reached, EWS launches appropriate workflow to solve the deviation or event. An occurrence of deviation can lead to immediate warning of workers, other workflows and notifications.

Warning of workers on the shop floor can have a form of sound or visual signal (e.g. light signals – lighthouse; use of green, yellow and red light – similar to traffic lights). Managers can be notified by e-mails or SMS messages.

» **Reporting**

PROCE55 Quality can generate reports for external institutions (e.g. food industry), customers (e.g. tender condition), internal controlling (e.g. quality management), and other parties.

Logistics and Warehouses

Quality management is fully integrated with related logistics processes. Processes like material receipt, receipt from production, and shipping can be conditional on a conforming result of quality control. Of particular importance is quality control of received materials, which is critical to the entire production process.

Quality control at any point of logistics processes is performed against inspection points, attributes and properties (which can be displayed on a mobile terminal). Physical control can be performed by inspection or measurements, automatically or manually. Quality control can be integrated already in the production process, or can take place in a laboratory.

All recorded and pre-defined values are stored in a database and are used for further analyses. These data can additionally control transactions in other systems (ERP – e.g. SAP – confirmation of production lots, complex structures, complex points, attributes, etc.).

PROCE55 Quality enables to block a handling unit or a batch in the phase of quality control and in cases of excessive deviations. When the quality problem is solved, the handling units are unblocked or they are taken out of the production process.

Maintenance

Wear and setting of production equipment and tools directly influence the production process quality. In certain industries, integration of quality management system and maintenance system is recommended. Correlation of quality aspects and maintenance work can lead to more effective schedule of preventive maintenance and thus improved production quality.

Case: Quality Control of Received Materials with Mobile Terminals
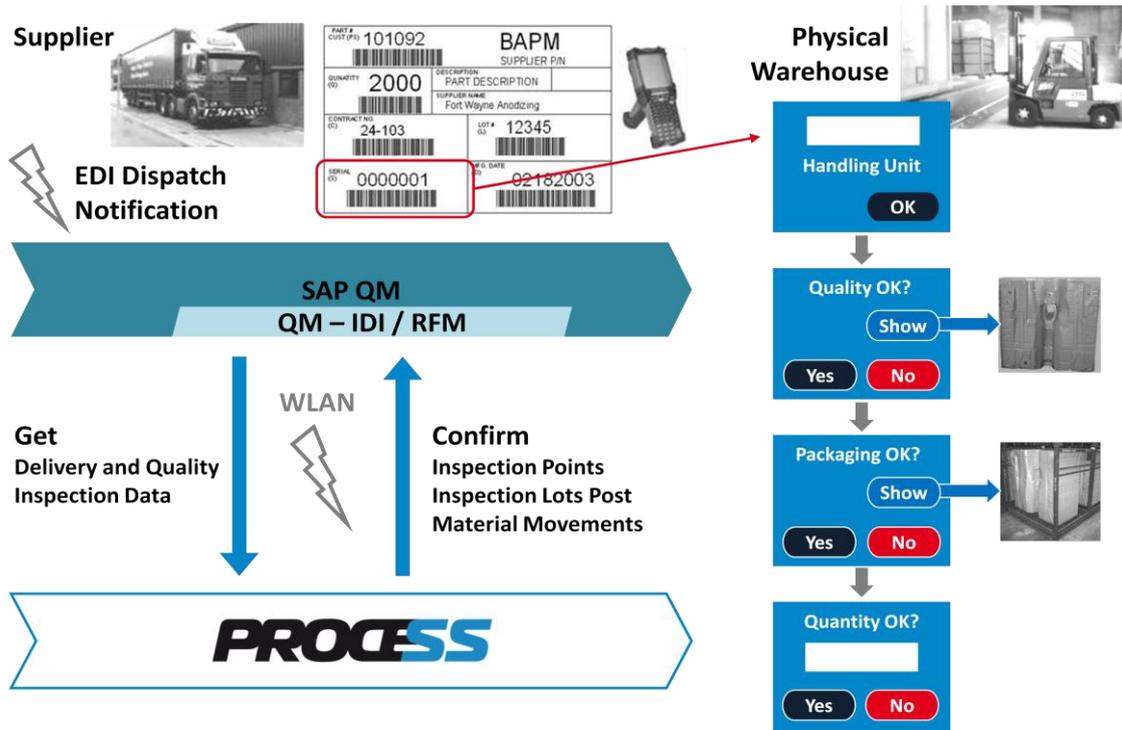
Typical case of PROCE55 Quality implementation is quality control of received materials. Control of received materials and semi-products is of significant importance, because they have critical impact on the quality of entire production process. Materials entering production processes must conform to all quality requirements, if the final products need to meet certain quality. Detection of material quality deviation already at the point of receipt is less costly when compared to deviation detection at further production phases.

Quality control of received materials can be connected with the existing supply chain system, and make use of existing EDI connection or other means of data exchange. With EDI, information about delivered materials is sent in advance. Based on the information, delivery notice is automatically created, as well as appropriate structures in QM module.

After the physical delivery of materials, quality control is performed between the phases of materials receipt and their issue to production. Quality control can be connected with a test schedule in SAP QM or other system. Based on the result of quality control, material is either moved to the zone of issue to production, moved to blocked inventory, or returned to the supplier.

Efficient physical quality control processes are characterized by the use of mobile terminals and PROCE55 Quality mobile application. The terminals load data on-line from SAP QM (or other system) and help the workers to inspect the items. The application can display additional data and pictures, which leads to improved quality inspection processes.

Easy access to quality-related supporting information directly on mobile terminals has extremely decreased the process costs, or even enabled to perform the quality control of received materials. Paper-based quality control would not be possible in the given extent.

Additionally, the solution is fully integrated with ERP system SAP (can be integrated also with other systems). All the data needed for quality control are loaded on-line in real-time from SAP. Confirmation of production lots, inspection points, and attributes takes place in real-time.

Errors are eliminated by the use of barcodes. Barcodes are automatically generated by the supplier, and all received materials are labeled with a barcode. Identical codes are also stored in SAP system.

PROCE55 Technology

PROCE55 Quality is a set of pre-configured components developed by East-Gate on the BPM platform PROCE55. These components are individually customized with every implementation. Users are not distracted by unnecessary functionalities. New functionalities and processes can be easily added with new components.

Flexibility

PROCE55 solution delivers applications with functions customized to each company. Development of PROCE55-based applications and their changes are extremely fast. Solution flexibility is significantly higher in comparison with standard ERP systems. Changes can be implemented in response to quick and unexpected changes in the processes. Even if the company changes its processes as often as every month, PROCE55 solution can adequately respond to such frequent changes.

Rapid Implementation

Implementation process is also characterized by high solution flexibility. Implementation can already begin with the first concept, without a precise specification. Next, optimal solution is iteratively developed based on the real customer need. PROCE55 implementation is not based on lengthy specifications. On the other hand, time is spent on continuous development of functions, together with the customer.

Simple Use

User interface is customized to processes and workers. It simplifies work with applications and process control. User training is fast because the screens are easy-to-understand and can be used intuitively. Friendly user interface leads to minimum user errors. The human-machine interface is a significant advantage compared to standard ERP systems, whose complex screens require highly qualified and trained staff.

Favorable License Conditions

East-Gate's license and pricing policy is favorable when compared with other solutions. PROCE55 is provided under a server license. Number of end users is not restricted.

PROCE55 Solution Repository

Solution repository is a set of configurable solutions, which are used for accelerated development of specific solutions.

PROCE55 Solution Repository includes:

- » PROCE55 Manufacturing
  Manufacturing system (MES)

- » PROCE55 Scheduling
  Operations scheduling

- » PROCE55 Quality
  Quality management

- » PROCE55 Labs
  Laboratory system (LIMS)

- » PROCE55 Warehouse
  Logistics and warehouse system (WMS)

- » PROCE55 Maintenance
  Maintenance system (CMMS)

- » PROCE55 Mobile
  Field operations management

- » DigiSWord
  Document digitization

- » PROCE55 AIM
  Asset & inventory management

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