TAKEOVER OF CHANGES AND EVALUATION REPORTS FROM PRODUCTION SITES

Smart Solution for **SAP**

Staff in manufacturing departments often note important changes directly on the drawing. But how can this hand-written information on production documents and evaluation reports automatically be transferred into the SAP system? SEAL Systems has the right solution for this.

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During the production and assembly process, beside the usual SAP production order, often technical drawings are needed. The ideal case would be that these drawings contain all information, which is needed at the production site. But in practice it happens that some parts cannot be produced as it was originally designed by the constructor, or that the drawing contains errors. In many cases the required changes are noticed by the staff members directly on the drawing by handwritten annotations. A similar situation can happen if external evaluators write down their notifications on the checked drawings. After the assembly of the equipment or the evaluation is finished, usually the changed drawings have to circulate as papers to several departments in order to enter the changes into the SAP system. In this process, some errors can happen, for example, the accidental assignment of changed drawings to the wrong material or equipment. The manual, paper-based return flow process causes also time

delays. In the worst case, the same faulty technical papers are used during the next parts production cycle.

Enterprises can completely avoid all these disadvantages by adding some smart extensions to the SAP system. The automatic process starts with the distribution or output of the documents and ends with the scanning and storage and further processing. This method avoids not only errors, but reduces the cycle time of the whole production process chain.

Document Output with Barcodes

With an extension all production relevant drawings and the required meta data, like status, document key or production order number, can be retrieved besides the SAP production papers. This also enables the quick and efficient creation and distribution of document lists, for example, to an auditor. A special server starts the preparations of the

output job, for example:

- Printout of SAP forms
- Output of attached drawings
- Stamping of barcodes and other distribution information

The software stamped barcode contains all information for later further on processing, like document key, production order number or status. According to the industrial branch and application scenario, the barcode should still be readable also, in case of pollution, which could happen in production environments. In practice 2D barcodes are the best choice compared with 1D barcodes, because information is redundantly coded.

In addition, further information can be stamped as clear text for document control, for example, production order number, Technical Place, print data etc.

According to the requirements, the output is done on an Office printer or a large format plotter directly in the production site, in the assembly preparation or with email and web portal. With large production lines documents can also be separately output and sorted at each work place.

After the documents have passed the process and changes were made in the single drawings, the returned documents are collected at a central place and separated in two piles:

- Paper without changes (without hand-written additions)
- Revision necessary (there were hand-written notes for changes on the drawing)

"Polluted" drawing with stamped 2D barcode

Papers without Changes

According to the business process the unchanged documents are not required anymore or are used for further processing. For additional works the documents are scanned. The workflow for this extracts meta data from the barcode. With this data the document can be stored in the SAP system and can be connected to the production order. Now the user can see at any time which documents were used for a special assembly module or a series of products.

Revision necessary

The changed documents are also scanned. Afterwards the process workflow starts, which extracts the meta data from the barcode. With the barcode data the following process steps can be evaluated and automatically performed:

- Creation of a new document version in the SAP system (the previous document version is set to the status "invalid" or "newer version available")
- Check-in of the handwritten changed document
- Link of the document information set to the production order for production series tracking
- Check the existence of new production ordersthat may contain old faulty data. If there are some, a message is sent to the assembly preparation and/or to the production site.
- For evaluation scenarios: Check-in of proofed/signed document

including status change in the DMS.

Intelligent Process for various Application Fields

The method, described here, provides a significant faster feedback from the assembly line to the construction department for paper-based production companies through a small change in the production workflow. Handwritten changes on drawings and documents are input in an efficient way to the central data management and are available then for all processes. This pragmatic approach avoids errors, saves time, enhances productivity and results in reduction of production costs.

Further Fields of Application

The method of integration of relevant information with software barcodes into automatic processes is not limited to production orders. In the process industry, for example, guidelines are sent to an auditor, who signs them and sends these documents back again. Through the automatic method, signed papers are stored in the SAP system at the correct place and further process steps can be started. Evaluation reports, in which measurement data and results are entered, can be scanned directly after the check and returned to the SAP system. Respective workflows can then be automatically started, for example, for initiating further release processes. This enables a gapless and traceable quality management also in sensitive production fields.

request
return
check log
service message
performance record
invoice
delivery
order
clearance certificate
cancellation
customer assignment
process
supplier query
contract

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