ECM & BPM at Neways Electronics Riesa

- Production supported by workflows
- Electronic production records
- Integrated solution comprised of Doxis4 and change management tool

BEST PRACTICE Neways Electronics Riesa GmbH & Co. KG

Management summary

The EMS (electronic manufacturing services) firm Neways Electronics Riesa produces according to its customers' orders, which includes accommodating possible changes. These changes have to be integrated into the production records as quickly as possible and made available to the employees in production.

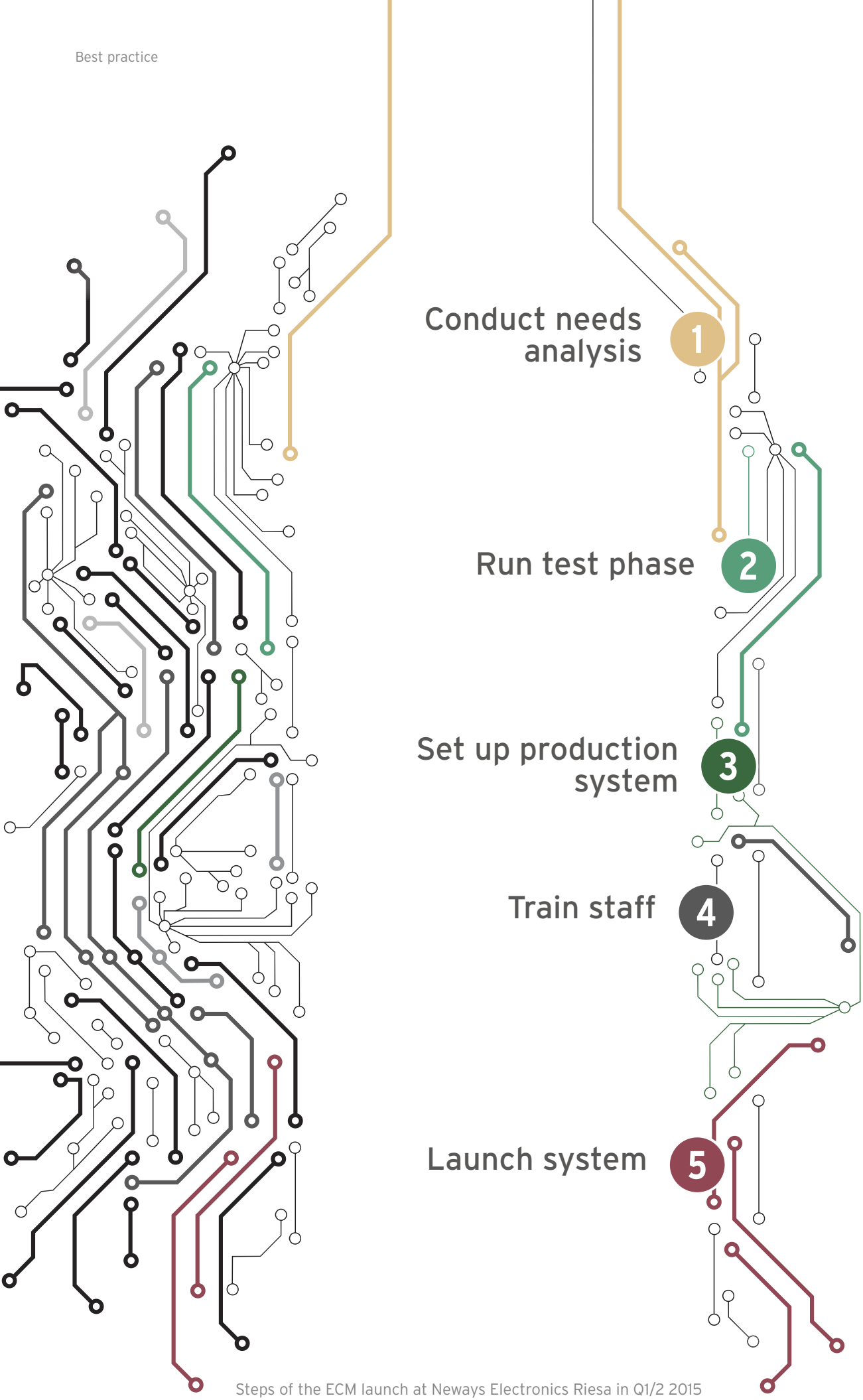
In the past, the modified documents had to be hand sorted into the corresponding paper-based production record and placed in the filing cabinets of the production areas – a laborious process. By copying the documents, the quality diminished, thus making it harder for employees in production to understand them. They had to ask the work planning department for assistance.

Doxis4 creates an electronic production record according to the workflow with all documents relevant to production, which is then released for the production process. Technical changes to products can be integrated immediately into the documentation and taken into account during production. Neways Electronics Riesa now has a modern enterprise content management system (ECM) that effectively supports its work preparation, quality assurance and production departments.

The company

Since 1991, the EMS provider Neways Electronics Riesa GmbH & Co. KG has been de- veloping and producing circuit boards, electronic assemblies, and systems for customers. The company is located in Riesa, Germany, which is on the Elbe river not far from Dresden. Today, about 750 employees work at this location for more than 100 customers from various industries. Approxi- mately50percentoftherevenue(2015:127meuros)stemsfromcus- tomers in the automotive industry. The rest comes from industry, rail and med- ical sectors. Its core competency lies in electronics production. The ser- vice scope covers everything from development to box building. In its own plants, Neways produces individual products, entire assortments and complete assemblies, including spare parts production. Neways delivers custom-made products, not ready-made ones.

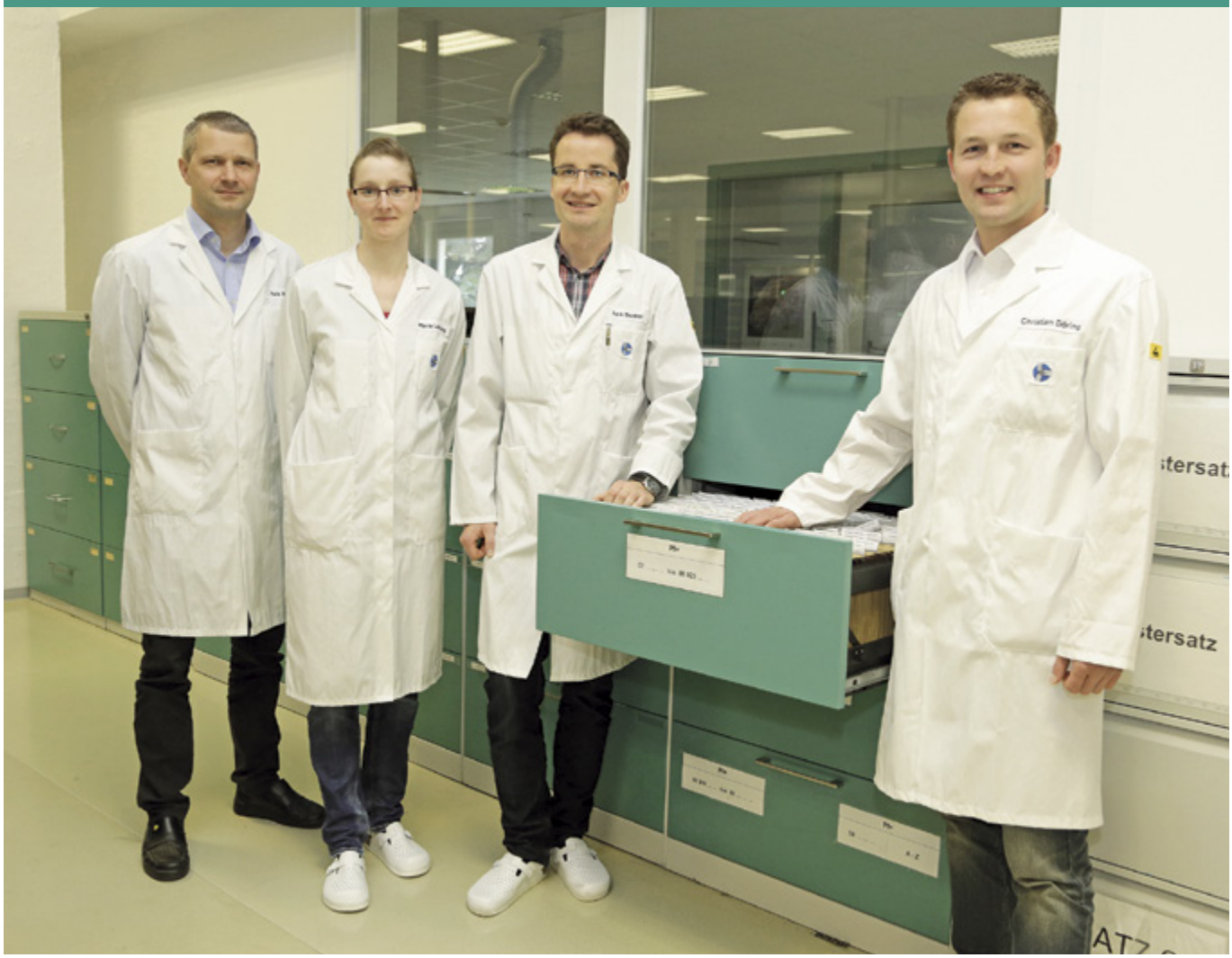
Since mid-2014, Neways Electronics Riesa – formerly known as BuS Elek- tronik – is a subsidiary of Neways Electronics International N.V. Based out of Son, The Netherlands, Neways is one of the top five EMS providers in Europe.



Steps of the ECM launch at Neways Electronics Riesa in Q1/2 2015

Project facts and figures

TOPIC:	Workflow-based management of production documents with eRecords
CUSTOMER:	Neways Electronics Riesa GmbH & Co. KG, member of the Neways Electronics
INDUSTRY:	Electronic manufacturing services (EMS)
EMPLOYEES:	Approximately 750
SER CUSTOMER SINCE:	2015
SER SOLUTIONS:	Doxis4, archive, DMS, BPM, eRecords
INTEGRATION:	Change management tool (MS, SQL database, in-house development)
USERS:	Approximately 100
DOCUMENT VOLUME:	Database since launch in late 2015: ca. 5 GB distributed across ca. 3,500 files in ca. 320 eRecords. Growth of about 800 records per year (archive: 3,000 paper records; still to be digitized)
HIGHLIGHTS:	Electronic production records immediately available in production, technical changes quickly published



The project team (left to right): Falk Müller, Process Engineering Manager; Maria Leinung, Data Processing employee; Falk Decker, Data Processing Manager; Christian Döring, Process Engineering employee

From small-lot production to mass production

Electronic manufacturing service is the core business of the eastern German electronic service provider Neways Electronics Riesa, which belongs to the Dutch group Neways. The mid-sized business assembles circuit boards according to its customers' speci- fications. Neways offers a range of products and services, including material procure- ment, assembly, soldering, programming, module inspection, and box building. It produces lot quantities of one to six million; the main lot size at Neways in medium-lot production can be 100, 1,000 or 2,000. Neways produces large assembly lots primarily for the automotive sector – ranging from 100,000 to several million. In small and medium-lot production, a high percentage of work in production and in quality assurance is traditionally manual. At each station of the production process, employees need access to the production documents.

"It was our goal from the beginning to launch an ECM solution that not only fulfills the requirements of the production record, but also can be expanded to other corporate areas and document and record types."

Falk Decker, Data Processing Manager,
Neways Electronics Riesa

In the past, the schedules, assembly instructions, circuit diagrams, etc. were given to the employees exclusively on paper in physical records. Using paper created several disadvantages: The production records required a lot of storage space in record cabinets. The fact that documents were still manually sorted and distributed to production revealed another improvement area. Generally speaking, when customers request changes to their circuit boards, they must be immediately passed on to production so that they can be incorporated. With paper-based documents, however, this wasn't always possible without delays.

Procedures in the Process Engineering department

The technical work planning (TAV) department at Neways Electronics Riesa creates the production records. To evaluate customer in- quiries, the TAV team receives parts lists, assembly diagrams, circuit plans, various inspection requirements and other product-specific data from the potential customer. Based on this, they calculate the production costs for the requested quantities. Material is calculated at the same time.

Once the order is placed, the parts list is filed in the ERP system (called FOSS) so that the material can be procured. After that, product-specific equipment is ordered for production. Once all of the paperwork is available, the documents for manufacturing a product are compiled in a production record.

"All documents relevant to production are compiled in one record where the user can search through them. This makes work so much easier."

Christian Döring, Process Engineering employee,
Neways Electronics Riesa

eRecords for flexible production management

The management team at Neways Electronics Riesa gave the impetus to switch to electronic records and workflow-based processes in the work planning department. The TAV team had re- ported that documents did not always come in top quality; some paper copies were illegible. Furthermore, intricate assembly plans, detailing the positioning of assem- bly parts on the circuit board, were printed on large paper sheets. Due to the faint lines, the component references and polarities were hard to decipher. "We would divide up intricate drawings into sections to take a closer look at the details. At a certain point, though, it's just not possible to do this anymore on paper," explains Falk Müller, Head of the Work Planning (TAV) department. For this reason, the TAV department pushed for an electronic solution that did not require paper.

The targets

- Create more transparency through system-guided document management and control
- Make it easier to search for documents
- Set up authorization management
- Manage production and customer documents
- Conduct version management
- Integrate change management

Neways' search for the right ECM system led it to Doxis4 by SER. It decided to go with SER for several reasons, among them for its international positioning as a leading ECM expert, its customer-oriented service and quality, and the flexibility of Doxis4. Most of all though, Neways Electronics Riesa was impressed with the multilingual capability of Doxis4, its modern interface, the user-friendliness, and the comprehen- sive parameter options for defining authorizations, workflows, etc.

Advantage: Combination of ECM and BPM

Early 2015, the ECM project kicked off with an extensive needs analysis. The test phase began in the spring, which checked handling and processes in the new sys- tem, factoring in previous experience and using software to improve processes. The production system was then set up, the staff was gradually trained, and the soft- ware was installed in the work planning and quality assurance departments. By mid- 2015, the system was able to go live.

Combining ECM and BPM functions in Doxis4 on one technological platform makes it possible for Neways to conduct work planning in which the quality is assured and workflows are managed. What's more, the platform is also able to provide electronic production records that are immediately updated. Doxis4 BPM manages the entire process – from the TAV department creating and modifying documents to the quality assurance (QA) team and the head of TAV verifying and approving of documents, all the way to the documents being published in production.

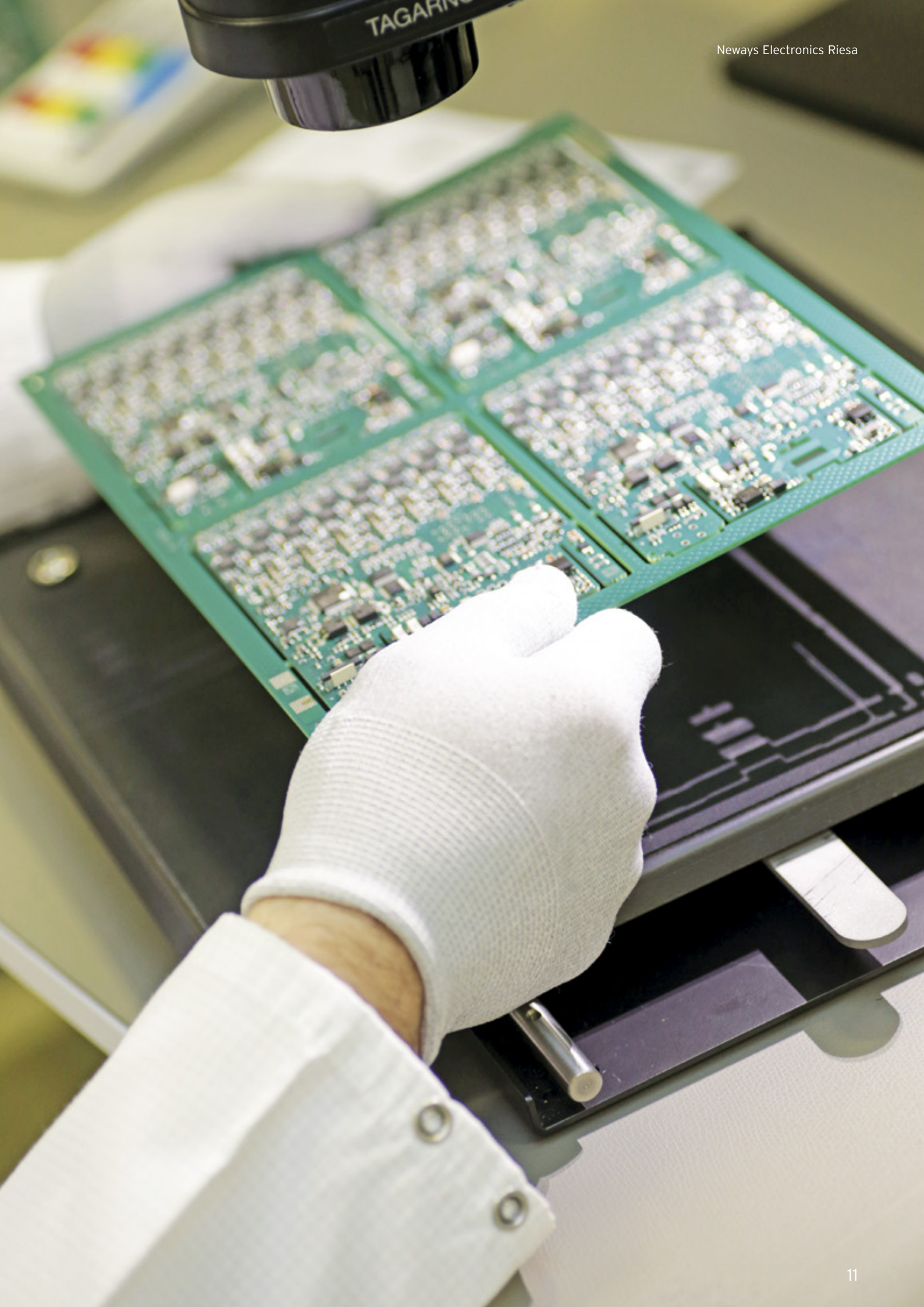
The Process Engineering workflow – modeled with Doxis4 BPM

The process starts in the Process Engineering department. The Process Engineering colleague saves a new eRecord in the system. Individual documents are created using templates, and then they are filed in the eRecord. This triggers the workflow and the eRecord is sent on to the QA department. Quality Assurance checks all of the documents, creates inspection plans, and, if necessary, sends the process instance back to the Process Engineering department via the workflow for corrections.

Once everything has been checked, QA sends the eRecord to the Process Engineering Manager who releases the record in the system, which means that it is immediately available to the production team at the terminals.

Using Doxis4 to create and publish production records streamlines and speeds up the entire document management and distribution process. Instead of printing out the production documents and filing them in record binders, as it was done in the past, Doxis4 saves them in electronic production records. Each workspace in production will be equipped with a computer so that schedules, parts lists, circuit diagrams and the related work instructions are directly available in the electronic production documents for the production team. By the time the switch to Doxis4 is complete, every production record will be digitized.

The transition to this new way of working is seamless at Neways. The production record creation process in the work planning department has already switched to Doxis4. The connection between Doxis4 and production is currently in the implementation phase. "Rolling out the solution in production will take some time, because we have to digitize the production records in addition to setting up the necessary computer equipment," comments Falk Decker, Head of Data Processing at Neways Electronics Riesa. There are currently 2,500 to 3,000 different product types that the production team needs to access. The transferal is under way. Since Doxis4 was launched at the end of 2015, the database has grown to contain around 5 GB of data, distributed across about 3,500 files in approximately 320 eRecords. Circa 800 new eRecords are added each year to the database.


TAGARNO

At the same time, the transferal of legacy records is a good way for employees to learn how to use the new system. They notice how much easier work has become since electronic documents were introduced, especially when changes need to be made in production documents. Today, the Process Engineering team only needs to add the change to the existing plan, then the document is replaced and passed on to production. "Doxis4 truly makes our daily work easier," praises Christian Döring, Process Engineering employee.

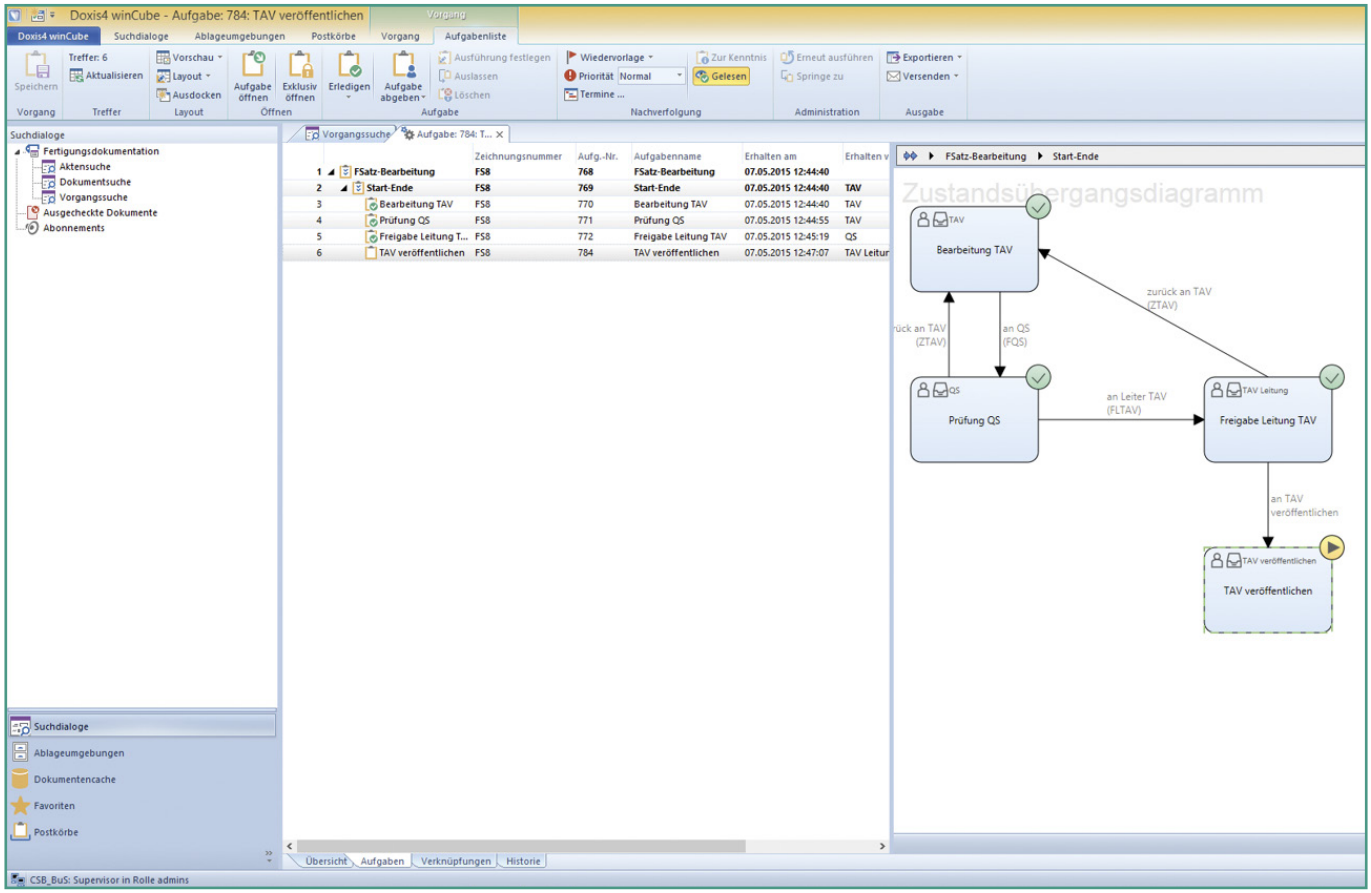
Standardization is not only a goal in work processes, but also in document creation. Doxis4 gives them the option to file various document templates in the system, so that new documents always conform with the design. "We want to provide standardized production documents for production processes, production information for various areas, etc. This ensures that, for instance, the document header is consistent with the component names throughout the documents," says Falk Müller, Process Engineering Manager. "The templates contain everything that belongs to a document type. No detail is left out," he adds. The Process Engineering employees can adjust the template to the specific product. In addition to these standardized documents, customer documents can be added. This means that all documents relevant to production are compiled in one record where the user can search through them. "When you think about the fact that some circuit boards contain several thousands of components, you realize how much easier work is now. Finding a specific component on a paper plan sometimes took pretty long," recalls Process Engineering employee Christian Döring.

"I'm happy that we have a modern ECM system now that supports us so well in process engineering and in production."

Falk Müller, Process Engineering Manager,
Neways Electronics Riesa

Change notifications up-to-date and available in production records

An important system at Neways Electronics Riesa is the change notification database, a tool developed in-house that issues notifications of changes. The notifications are forms with de- tailed key information about the changes. This covers the validity date, the affected assembly group, the scope of the change, the name of the related work order, etc. "When selecting the right document management system, it was very important to us that the change notification tool could be integrated into it," says Maria Leinung, employee in the Data Processing department, responsible for the administration of the Doxis4 system. Both systems have to work together closely; there is no time to lose. The change notifications ideally need to be sent on an hourly basis to the production records, because a customer may make changes to an order already in progress. The requested change then has to be incorporated into the production process as quickly as possible. Doxis4 and the change modification tool work seam- lessly together. The change notifications and additional explanatory documents, all generated by the tool, are filed in the SQL database. Doxis4 then accesses this and integrates the tool documents into the cover sheet of the production record. "You immediately see the notifications when you open the record. In other words, you see all the changes that need to be factored into production," comments Maria Leinung, pleased with the solution.



The creation, verification and release process of production documents is securely managed with Doxis4 BPM.

No more paper piles

Process Engineering Manager Falk Müller, who is also the last release authority for production documents, also profits from the new electronic work system: "Sometimes I would have huge piles of paperwork on my desk – all records that were given to me for release. We will never be able to completely give up on paper, but there is considerably less of it now," he states with satisfaction. One of his tasks is to carefully check the technical specifications one last time. This is much easier now with electronic records than it was with paper – for example, when checking the work schedule saved in the ERP system. With Doxis4, he can copy the type designation from the record and check in the ERP system if the corresponding processes are correctly implemented and if specific attributes can be found. This simplifies the inspection process considerably.

"I'm happy that we have a modern ECM system now that supports us so well in process engineering and in production," sums up Falk Müller.

"It was our goal from the beginning to launch an ECM solution that not only fulfills the requirements of the production record, but also can be expanded to other corporate areas and document and record types," says Falk Decker, Data Processing Manager. "Doxis4 gives us all kinds of opportunities to introduce further eRecords such as contract and customer records. It also gives us options for managing accounting documents such as delivery notes, invoices, etc., even covering ERP integration." In particular, an electronic record for all customer documents, accessible across departments, would streamline the offer creation and order process significantly – a project that is on the top of the wish list at Neways Electronics Riesa.

The benefits

- Up-to-date production documents available at any time
- Immediate updates in production documents if technical changes are made
- Faster set-up times per production order
- Considerably shorter document distribution times
- Better process security
- Easier to manage a digital record than a pile of files
- Further development of documents with electronic version archiving

SERgroup Holding International GmbH | Joseph-Schumpeter-Allee 19 | D-53227 Bonn | +49 228 90896-0 | info@sergroup.com | sergroup.com