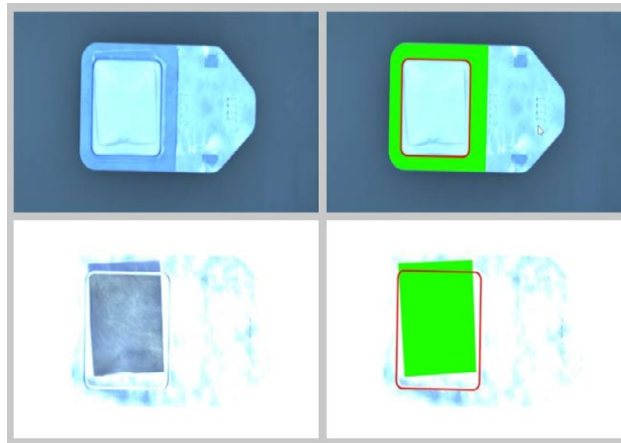
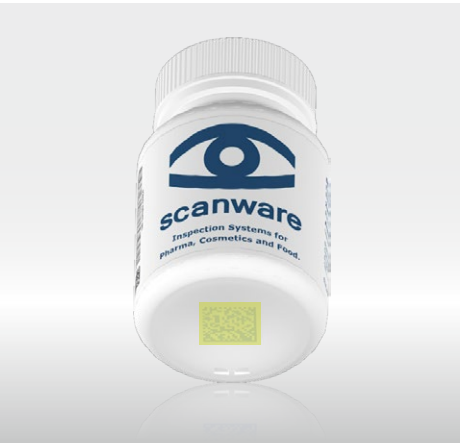




Inspection Systems for Pharma, Cosmetics and Food.



News





Harald Mätzig, Managing Director of scanware electronic GmbH

■ Dear Reader,

2022 for **scanware** was shaped by a return to more normal conditions following COVID-19 and then the war in Ukraine. The energy crisis and surrounding economic conditions have created a focus which more than ever centres on sustainability.

Where hardware is concerned, long-lasting components as well as upgradeability have offered an impressive Return On Investment ever since **scanware** released the first LYNX. The same is true where software is concerned – smart features and statistical tools reduce product waste and save resources (see our “Features you might not know (yet)” article).

Thanks to industry 4.0 solutions, especially within the **new software architecture QI**, a whole flood of new ways to increase sustainability has opened up – running upgrades remotely, troubleshooting and predictive maintenance are all possible now. **scanware** as a driver of innovation is a trailblazer in that regard and we are happy that we can share some of our developments with you below.

Enjoy reading and have a lovely holiday season and a great start into the new year.

Sincerely, Harald Mätzig

A handwritten signature in black ink, appearing to read 'H. Mätzig'.

■ Vintage inspection systems - Quality is visible.

This September, a new class of **scanware** apprentices has started their career. This makes our long-standing colleagues smile – some of our new team members are younger than **scanware** systems in service right now.

LYNX-ULTRA, the colour system on sale between 1993-2005, is still in operation on a few dozen packaging lines. This is possible thanks to our designated repair team who will tack-

le the rare defects with their honed expertise.

Even a few **LYNX-4** and **LYNX-5**, sold until 1995, are still installed on a few packaging lines. This shows that ever since company foundation, durable quality has been a pillar of **scanware** systems.

In combination with the first generation of **LYNX-SPECTRA** systems, more than 100 systems with more than 15 years of operation are on site

with pharmaceutical producers and packagers across the globe. Compared to our newest generation of **QI systems**, these systems are downright vintage. And yet they are testimony to the **scanware** slogan – with 20 years of running time, quality truly is visible.



■ scanware-QI – The software architecture for all future systems

The full range of inspection applications that **scanware** can offer you is enormous. However, these applications are dispersed among the system families. Looking to the future, a new software architecture is the key to enabling maximum flexibility for the unity of inspection functionality, organisational tasks and the user interface.

The **scanware** development has tackled this challenge and created **scanware QI - Quality Intelligence**, the architecture based on artificial intelligence. Its basis is a combination of experience based premises of the **scanware** vision technology and machine learning technologies. The inspection systems retain the produced data and this information is utilised to draw conclusions and a frame of reference for future evaluations. This allows the creation of better evaluation results which do not depend upon manual setting of individual parameter limits and seeing as all modules communicate with each other, these channels can be depicted in a network. **scanware** is embedded in industry 4.0.

Modularity of the QI architecture – Starting point for new developments

The new **software architecture QI** also enables the decentralisation of system tasks into modules. This offers an extraordinary depth of functionality to the customers. The following advantages open up within the **QI software architecture**:

- All inspection systems are based on a shared core, so all features of another system can be made available in any other system.

- The software architecture makes the systems particularly durable as the modular structure allows efficient changes and corrections in single areas of code.
- The structure allows easy extension of the functionality and therefore can easily be tailored to customer requirements. The large degree of flexibility is an asset to all users of the new system generation
- The modularity of the **QI platform** ensures that clarity is retained upon scaling, making it easy to control and maintain.

Interfaces – Your gateway to scanware big data

Aside from the modular structure, the **QI software** offers a tailored solution for possible interfaces. The architecture enables a speedy implementation of Level 3 interfaces as required by the customer's environment. **scanware** already offers the pharmaceutical industry offers a range of protocols, such as OPC UA and VDMA XML_P. Furthermore, by offering the **scanware**-developed protocol, this can be used as a standard for a variety of systems along any packaging line. This simplifies or even enables cooperation in any machine environment (see more on page 10).

Further to that, the **QI architecture** can come into play as a translator between various systems. For example, an external user management can be accessed via LDAP (Lightweight Directory Access Protocol), allowing other, tertiary participants on

the line to align with the customer-specific user management.

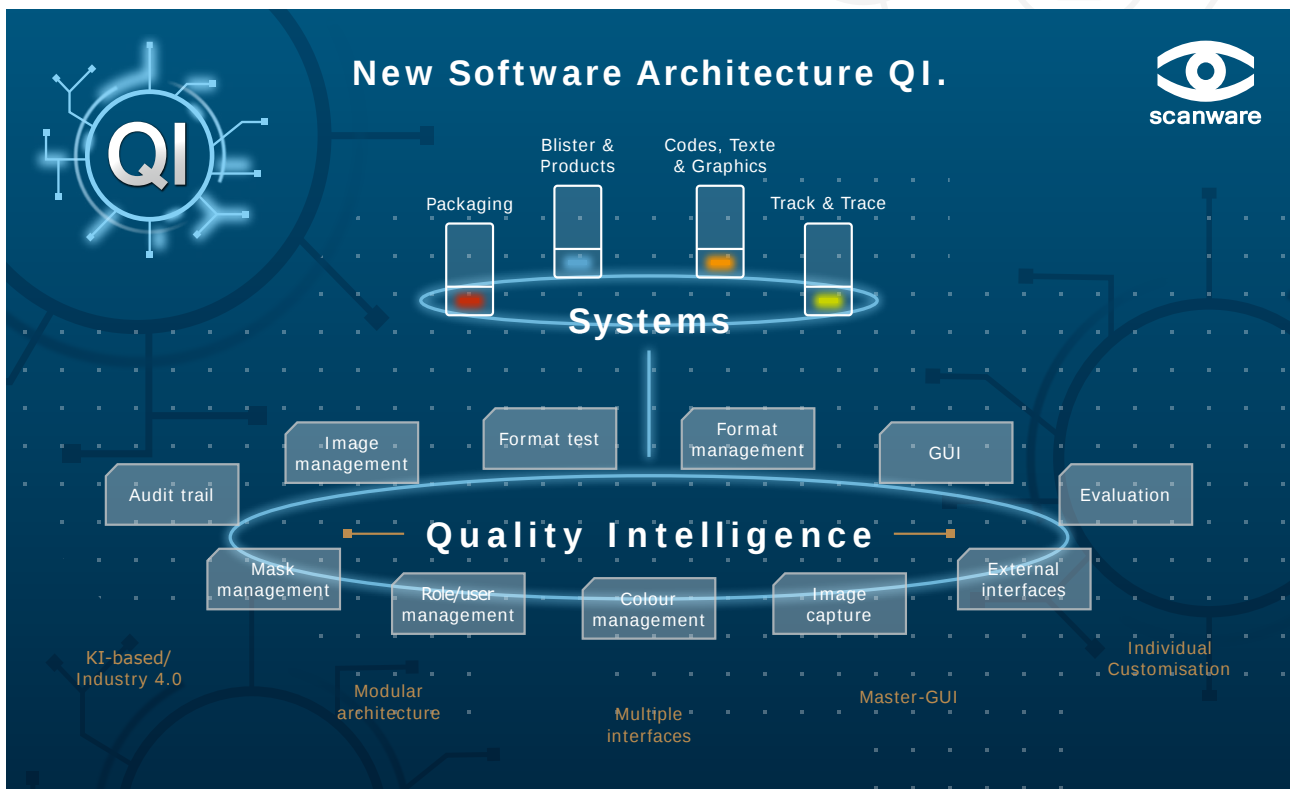
Finally, the architecture facilitates the combined management of multiple lines at a production site. As a consequence, all administrative, supervisory and preparatory tasks can be undertaken at the control console. This can encompass full factory floors or an entire production site.

Management of multiple systems in a Level 2 solution

Thanks to the **QI architecture**, administrative and image processing functionalities are differentiated structurally. This allows users to control, manage and supervise multiple inspection systems in the **scanware** level 2 solution IMPERA. Some examples of the synergies this allows are a centralised audit trail, centralised user and role management, statistics as well as track & trace functionalities such as serialisation and aggregation.

User interface

The **QI software platform** due to the remote access functionality can establish a real-time connection between machine operators and back office or **scanware** service technicians. As a consequence, preparatory steps can be completed in the office without impeding production, such as monitoring the equipment, data administration etc. An office user interface is incorporated into the overall architecture for that very reason. This reduces machine standstill times and optimises productivity.



The realisation of a Master GUI allows the visualisation of multiple systems within a user interface. Furthermore, system functionality can be displayed on multiple screens or user interfaces simultaneously, in real time. As a consequence, a project-specific visualisation can be facilitated and adapted whenever necessary without requiring a software update. So at the packaging line, a single display can be used to operate multiple inspection points, while the back office can prepare the data for the next batch.

The most prominent advantage of the developed QI software architecture is the immense potential for implementing any number of functionalities the future might call for.

The new **software architecture QI** was first created for the **PATERA Parenterals** inspection system (see next page) and is the basis for all **scanware** inspection systems of the new generation. Next, the 2D code inspection system **SIGNUM 2DC** was

carried over onto the new platform, optimising the functionality and offering an encompassing machine operation functionality. At present, the developers are integrating the product and blister inspection systems of the SPECTRA family. Also, the current development trajectory includes the planned incorporation of applications by other companies so these can be used within the **scanware** user interface for a highly homogenous experience.

■ PATERA Parenterals inspection systems for primary packaging

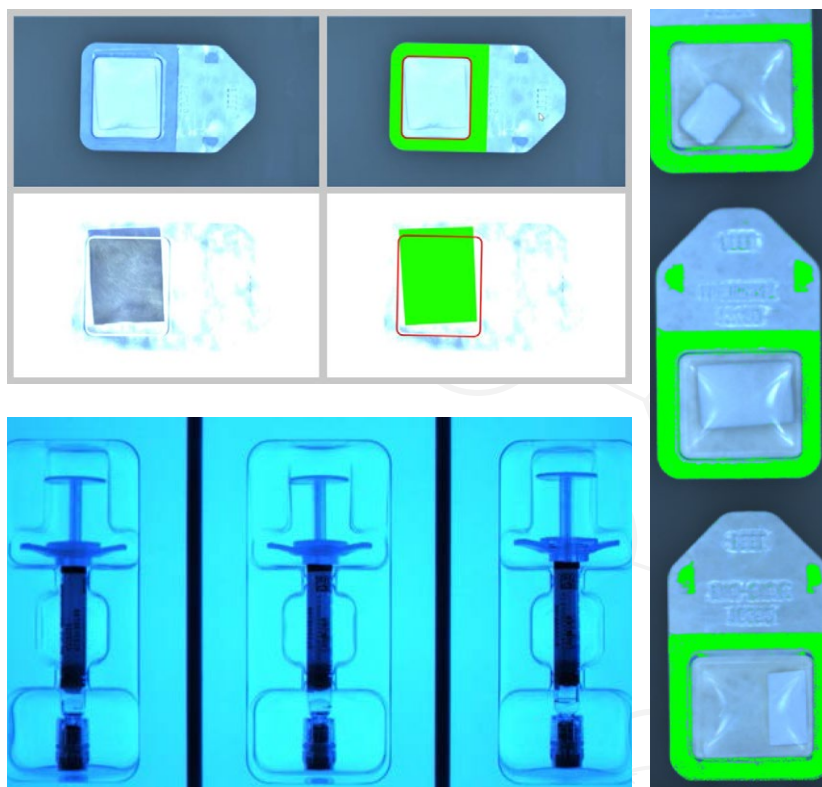
PATERA Parenterals inspects the packaging of pharmaceuticals that are administered intravenously, such as ampoules, vials, syringes and car-pules.

As noted above, it is the first system based on the new **software architecture QI**. The new user interface is modern, easy to use and highly intuitive. Use of a multi-touch screen enables the user to utilise the usual gestures that are now intuitive, offering highest user comfort.

Flexible inspection of mixed blisters

PATERA Parenterals inspects the presence of the medication in its primary packaging to ensure that the blister contains all required parts and is ready for administration once it reaches the patient. For the first time, the teach-in does not require the manual setting of parameter limits – the system generates evaluation criteria based on the acquired product images. This saves time and enables quick product changes on your packaging line.

Inspection of mixed blisters, including verifying that labels and package inserts are present, is no challenge. Of course, the established **scanware** hardware benefits are maintained. The illumination is adjustable and reproducible. The high-end cameras – black & white, colour or high resolution as necessary – offer stellar colour separation results. And the speed is as breath-taking as with the older systems. Thanks to the detailed data, missing items in a blister can be placed to reduce waste.



PATERA Post-Seal

In the second half of 2022, **PATERA Parenterals** was installed on a packaging line for blisters of 50mm depth. The task successfully implemented is that of inspection of filled and sealed blisters that contain a parenteral product.

For this task, the double grab feature was used. Double grab describes taking two images in a row, with a different illumination setting each. The algorithm then uses results from the first image to determine the sealing area within the second image i.e. one picture is taken with illumination perfect for the background, and another perfect for the parenteral product. This allows the combination of advan-

tages of each detection step within a single system, and a subsequently highly varied inspection.

In order to correctly inspect parenterals post-seal, **scanware** developed an algorithm which uses the existing sealing area as an indication for the blister positioning. Using top light illumination, **PATERA Parenterals** first determines the sealing area for each blister and provides this information to the product mask and compares it to the reference image. The boundary of the sealing area is detected and if any product is detected within, the correctness of the seal is in jeopardy, causing ejection.

■ SPECTRA Product and Blister Inspection – Features you might not know (yet)

Even long-time users are sometimes surprised by some of the special features of **SPECTRA**. Once in production, keeping things as they are can become a habit. Thanks to regular visits of **scanware** technicians as part of the **CURA Service and System Check**, knowledge stays fresh and more features to optimise production will be utilised. Below, find some gems that might enrich your site.

Functionality

LDAP

Description

To establish a centralised user and password directory, as per current safety standards, an Active Directory (AD) can be accessed via a Lightweight Directory Access Protocol (LDAP). **scanware** offers this connection and the roles present in the inspection system can be linked to the groups set up in the AD.

Customer advantages

Local user management is not applicable, which saves time and increases user comfort.

Parameter

MaskTracking

Description

Where this optional feature is installed and activated, the format mask is adjusted to the foil position in real-time, counteracting thermal or mechanical stretching of the foil.

Customer advantages

Rather than increasing tolerances to counteract variations in foil position, mask tracking enables the evaluation of the actual pocket. This keeps position data accurate and relevant for optimisation of the production across the entire foil width.

Parameter

ReuseOldTeachInImages

Description

Re-teaching within an existing format is necessary from time to time, for example if the product colour of a new batch has changed slightly or packaging of a new foreign product on the line. This feature enables using existing images for re-teaching.

Customer advantages

The machine does not need to be started again, which saves time and reduces waste due to ejection.

Parameter

PocketStatistics

Description

Pocket-specific data including error types are saved in the statistical data which can then be exported via print or standardised VDMXML_P protocol.

Customer advantages

Precise data for each evaluation per pocket enables the analysis of good products as well as errors for each individual position in a tracking system.

Parameter

Feederstatistic

Description

Different feeding methods can cause different errors. The **scanware** feeder statistic provides data by lane or pocket – ideal for lane filling or pocket tubes.

Customer advantages

Due to the Feeder Statistics, filling stations can be evaluated on lane or pocket level. This enables the user to detect problems with the filling machinery early on. As a result, preventive maintenance and process optimisation can be executed.

■ All-round product inspection for any code placements



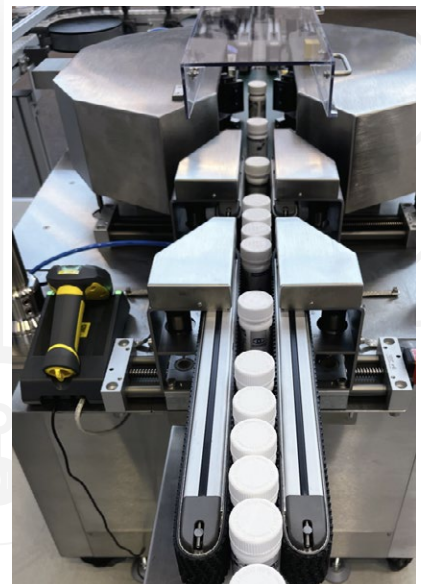
You distribute products packed in plastic bottles and these need to be serialised or aggregated? At ACHEMA, **scanware** presented **CAPA 360° Orbital**, an inspection system developed for precisely this task.

The **track & trace** system inspects of 2D and helper codes on pharmaceutical, lidded plastic bottles prior to the filling station. Thanks to placement of six cameras, a 360° reading area is established, allowing for a quality inspection from all sides. The quality of the print to be inspected is maintained by smooth bottle conveying to avoid contact and scratches. The minimum distance between inspection objects is maintained as well as product congestion at the infeed avoided using sensors.

The print can be applied by integrating any Continuous Ink Jet (CIJ) printer established on the market. So

you can choose the CIJ manufacturer you prefer. Apart from print and print inspection, the system also establishes the presence of the lids and correct position of lid and label. The 360° inspection can process up to 120 objects per minute. Bottles with an error on the print are ejected before filling, so only packaging is binned, not product.

Aside from these optical inspection steps, **scanware** can further accompany the bottles on the journey to shipping, for example aggregating data in the **data management software IMPERA** and inside bundlers and top loaders. For these steps, the stations of the **CAPA** range can be utilised or add-on solutions can be implemented.



■ New and improved pinhole detection PATERA FOCON Foil

Aluminium is a pricey material and again **scanware** is supporting you to protect the environment and lowering costs. Since 2000, **scanware** has provided pore detection units traded as **scanware FOCON**, now part of the PATERA line of primary packaging inspection. After more than 20 years of successful use worldwide, experience and trust in this optoelectronic unit is firmly established.

Time to innovate – a new design as well as a new, modular sensor tech-

nology create a new generation of world class pinhole detection of foil, plane or formed. Furthermore, the likelihood of ambient light entering the evaluation area was further reduced. As a consequence, inspection speeds of up to 2 metres per second are now possible.

While so far it was only possible to use two different detection sizes, meaning another unit is required to inspect other sizes, the new **PATERA FOCON Foil** demands less hardware

investment. Now, 25 to 500 µm can be inspected without having to change any hardware parts, making the necessary changes via the newly integrated touchscreen. Further to that, the touch screen displays operation mode and evaluation results.



■ Interfaces for simple data analysis

In order to access statistics and production data of the camera systems online, **scanware** has continuously implemented a range of interfaces connecting to a number of level 3 system in the last few years. Primarily, **scanware** established the standardised technical communication language VDMAXML_P. Alternatively, the OPC UA interface can be used.

Statistical information that can be accessed online includes fine detail.

While the blister and product inspection systems of the **SPECTRA** family can offer blister and pocket statistics, the code inspection systems of the **SIGNUM** range can provide information per detection area. Both enable precise analysis which can be used for process optimisation. Users can utilise this data for predictive maintenance and to reduce down times. This of course also increases cost effectiveness.



■ Your Tube - Code Inspection of 1D Codes on tubes

For manufacturers filling pastes into tubes, **scanware** is now offering a new solution – the code inspection system **SIGNUM Codes (1DC/2DC)** was optimised for the inspection on tubes and other round objects. Codes such as pharmacode, mini pharmacode and print markers printed on tubes and other round objects are inspected with a code reader. This allows the inspection as an add-on solution within existing packaging lines.

Reading of barcodes is a particularly high-speed evaluation with excellent reaction times. Furthermore, errors are minimised and the system as a consequence is extremely dependable and possible in locations where a full camera inspection will not fit.

By nature, the round shape can cause distortions of the barcode. This is alleviated in the software algorithm to enable correct reading. The rea-

ding of the relevant code is selected in the menu which is particularly user-friendly and part of the new **software architecture QI**. The result is transmitted to the machine in real-time, which also signifies the location of the tube to the machine. Furthermore, the system allows a visualisation of the online statistics and the previous 15 reading results.

The required installation space is minimal, compared to a full camera solution. This allows for great flexibility and enables installation on all types and models of tube fillers. Furthermore, the system can be incorporated into the **scanware line management system IMPERA**.

On site, the tube inspection opens a number of advantages – the quick result of the evaluation result can provide information on tube orientation/position. And seeing as inspection

usually occurs before filling, product wastage can be reduced. Finally, by including this in a full line management solution, optimising how much hardware is used overall, decreasing investment cost.



■ Upcoming Events

04.05. – 10.05.2023	Interpack - Düsseldorf, Germany
26.09. – 28.09.2023	PPMA - Birmingham, Great Britain
11.11. – 13.11.2023	PackExpo - Las Vegas, USA

■ Web

Find out more about our solutions:



Website



Brochures

Quality is visible.



Management



Packaging



**Blister &
Products**



**Codes, Text &
Graphics**



**Track &
Trace**



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