Software solutions for smart packaging lines

Global solutions for the automation of packaging lines and workflow control

AutoCoding® Systems

Let’s get smarter!

AutoCoding Systems offer world-class factory automation solutions centred around the packaging line. By using a modular approach, factories can gradually create smart packaging lines, error-proofing primary, secondary and tertiary packaging in the process. The various modules enable equipment and applications to work together with minimal human intervention, allowing them to communicate, share data and report back on performance and quality.

This combination makes the automation of your packaging lines accessible and affordable, reducing manpower, eliminating date coding and packaging errors and increasing productivity.

Now that’s smart!

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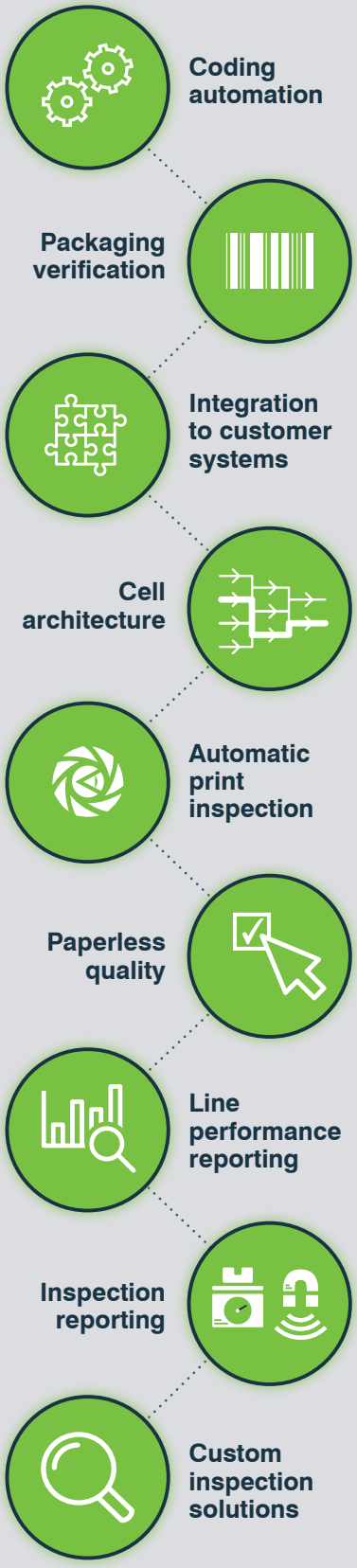
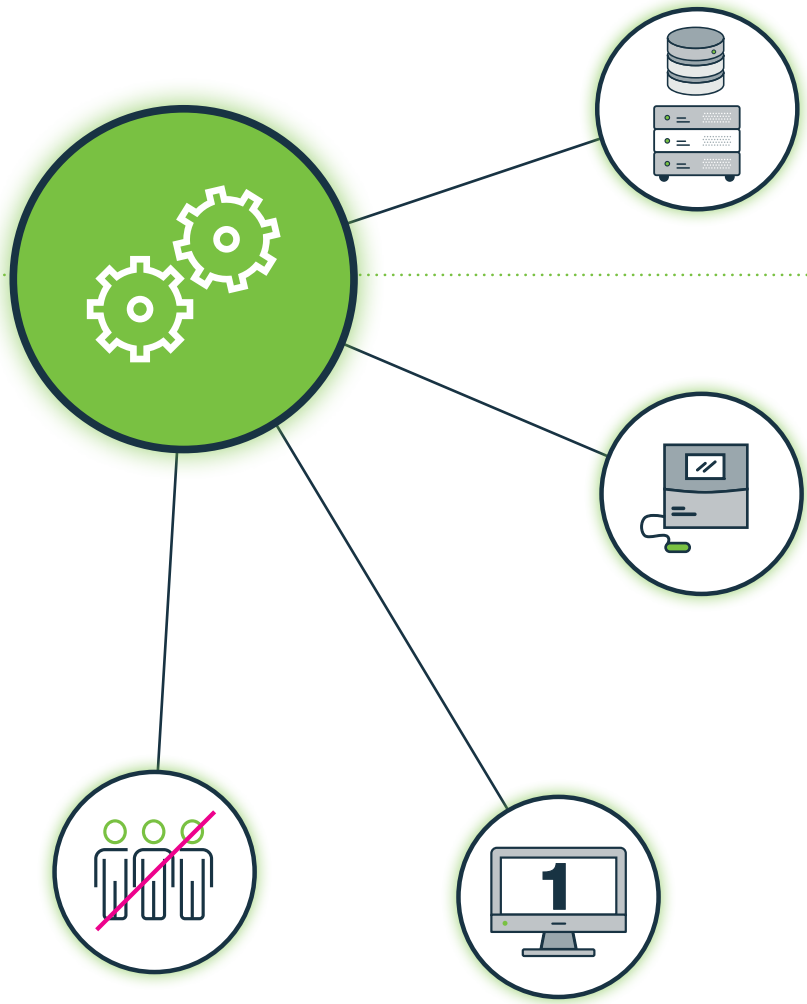


Coding automation

The entry level product, hosted on a central server, is accessible through any desktop PC, tablet or Smartphone on the network. The solution is scalable; automatically setting up printers and labellers on a single line extending to multiple devices on multiple lines, if required.



Automatic set-up of all coders/ labellers with product specific information held on a central database (date codes, batch/lot number etc)

Works with all brands and types of technologies (inkjet, thermal transfer, laser, thermal inkjet etc)

No need for operators to manually set-up printers and labellers, therefore risk of human error eliminated

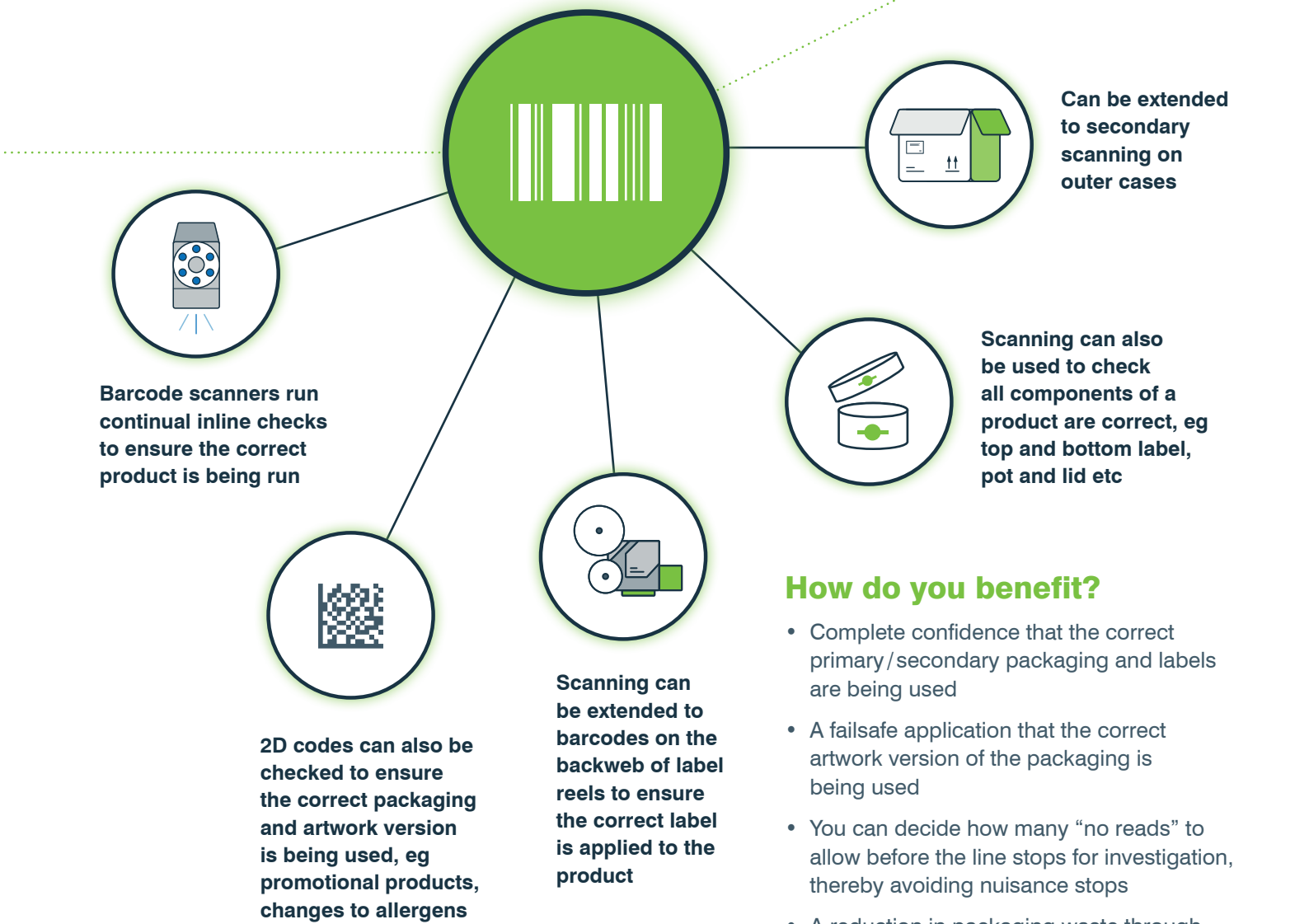
Set-up and control of all equipment from one single point (desktop PC or tablet)

How do you benefit?

- Complete confidence that the coding on your products or labels will be 100% accurate
- No allegiance with a specific printer or labeller manufacturer required – the software works with all brands
- Measurable reduction in set-up and changeover time resulting in less downtime
- Reduction in operators required to run a line; relocate elsewhere in the factory
- Reduction in training required on setting-up a variety of printers and labellers

Packaging verification

The use of incorrect packaging can have serious consequences, particularly when allergens aren't declared. Products may be mislabelled, packed in the wrong packaging or packed in the incorrect packaging for specific countries. With the AutoCoding solution, every piece of packaging can be checked inline as part of the production run.



Can be extended to secondary scanning on outer cases

Barcode scanners run continual inline checks to ensure the correct product is being run

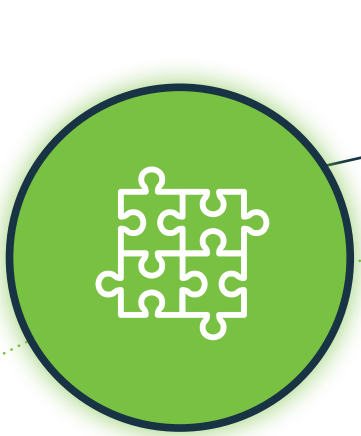
Scanning can also be used to check all components of a product are correct, eg top and bottom label, pot and lid etc

2D codes can also be checked to ensure the correct packaging and artwork version is being used, eg promotional products, changes to allergens

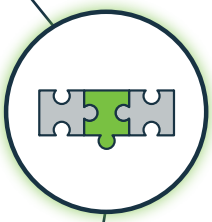
Scanning can be extended to barcodes on the backweb of label reels to ensure the correct label is applied to the product

How do you benefit?

- Complete confidence that the correct primary/secondary packaging and labels are being used
- A failsafe application that the correct artwork version of the packaging is being used
- You can decide how many "no reads" to allow before the line stops for investigation, thereby avoiding nuisance stops
- A reduction in packaging waste through rework saving you time and money



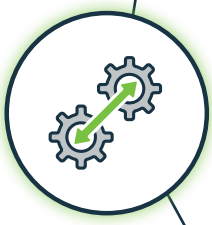
The AutoCoding database is populated with master product and customer information already held in an existing business system



The AutoCoding solution becomes part of the overall factory automation system and not isolated to the packaging line

Integration to customer systems

By combining the coding automation and packaging verification modules and integrating into existing customer systems, the data within each system can be shared and duplication is avoided.



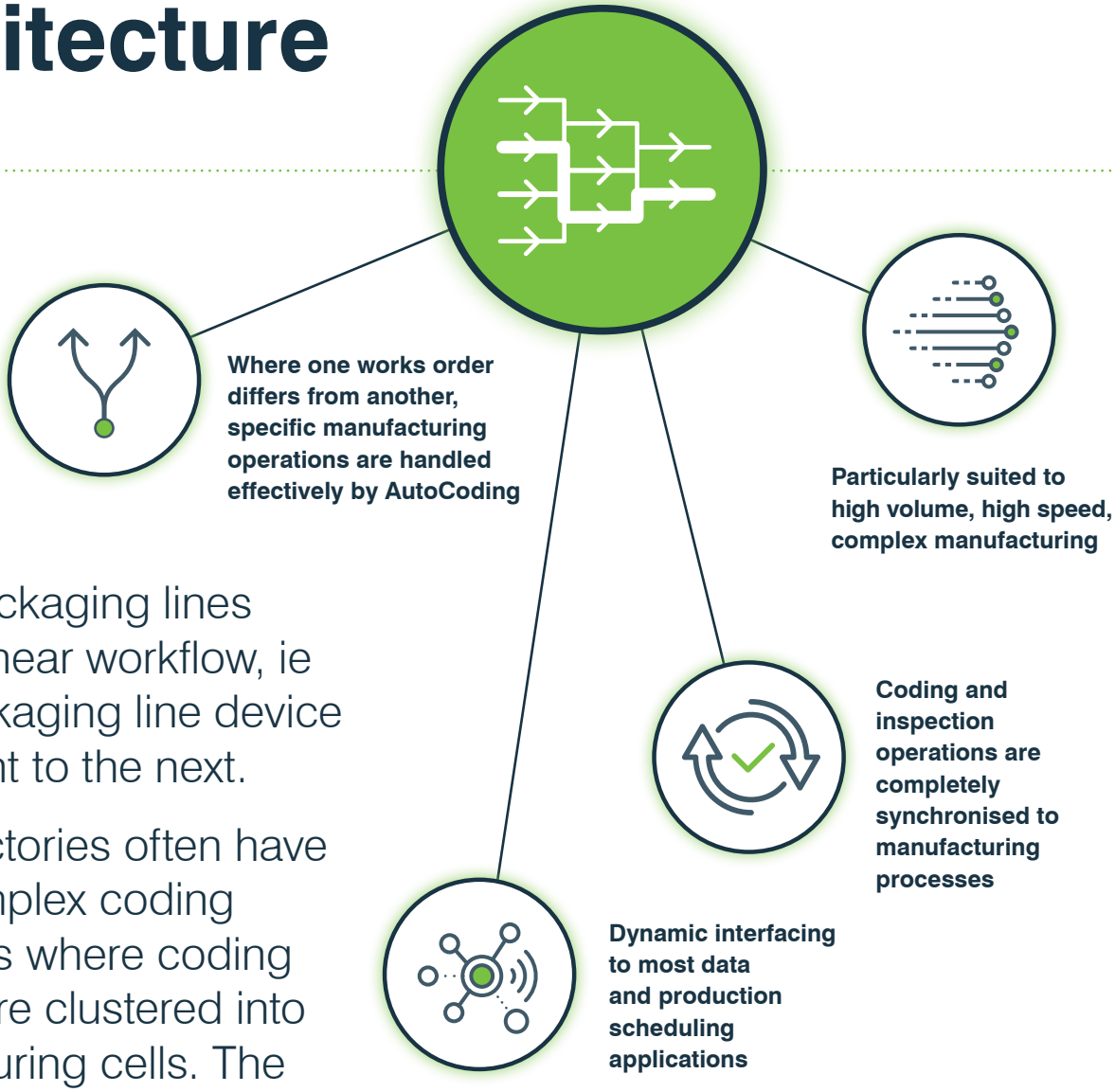
Integration is possible into existing business systems, such as ERP, MES, Planning, WMS etc

The solution can be extended to include automated set-up of checkweighers, metal detectors and X-ray equipment with corresponding data collection and reporting available to export

How do you benefit?

- No requirement to input all product specific and customer information into the AutoCoding database – it's automatically populated
- Peace of mind that the data brought into the AutoCoding database has been validated
- Any new products introduced are automatically added to the AutoCoding database – it's always up-to-date and requires minimum maintenance
- Compliance reports from checkweighers, metal detectors and X-ray equipment can be easily pulled off the AutoCoding system

Cell architecture



Not all packaging lines follow a linear workflow, ie each packaging line device is adjacent to the next.

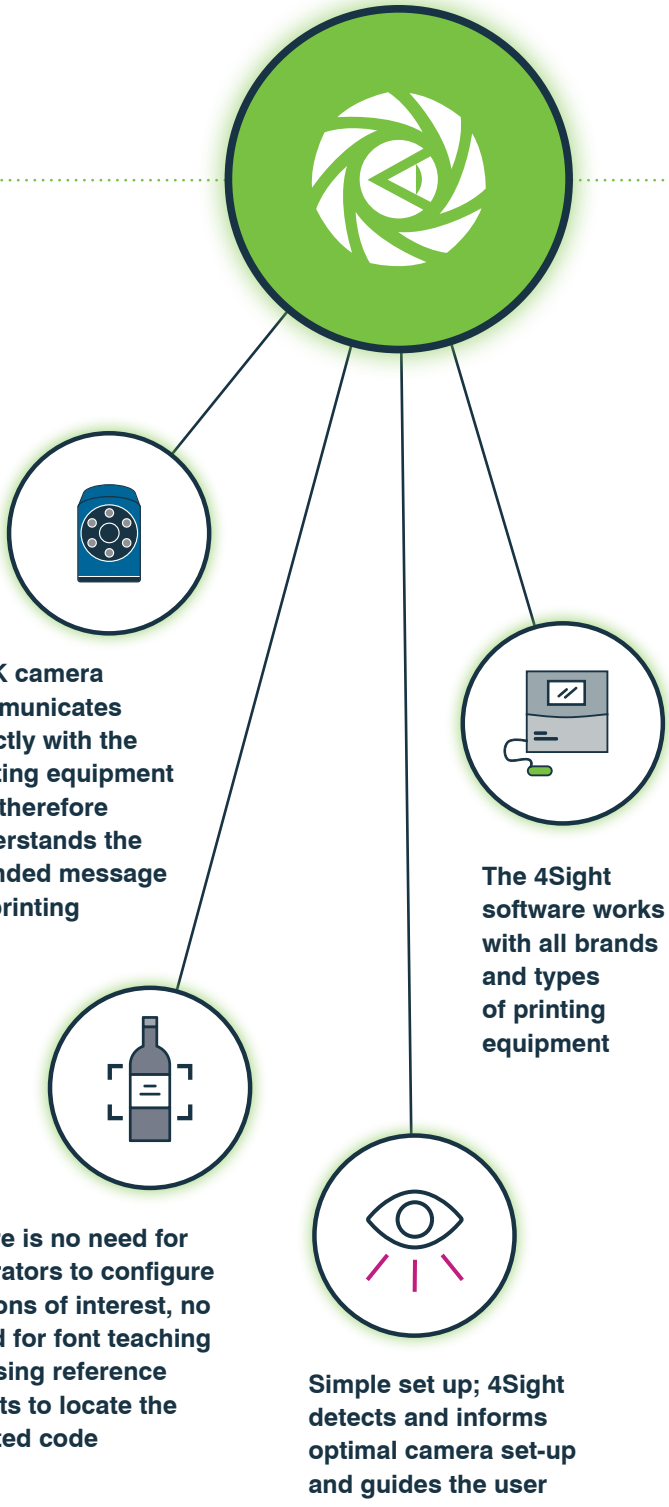
Larger factories often have more complex coding operations where coding devices are clustered into manufacturing cells. The coding/labelling relationships between primary and multiple secondary packaging formats, as well as outer case and pallets are not linear.

How do you benefit?

- Allows flexibility of manufacturing – coding and inspection perfectly match the manufacturing solution
- Different packaging legs can seamlessly manage different works orders using differing coding profiles and equipment
- Complex coding rules are effectively handled and automated within AutoCoding
- Flexible opportunities for operators to preview and edit production jobs

4Sight automatic print inspection

The printing of legible information in the right location on consumer products is often challenging. Common problems range from partially printed codes to poor quality or missing codes and codes printed in the wrong location. Trying to read and inspect printed codes at speed to check presence and legibility brings another set of challenges – until now.



How do you benefit?

- No line-side PC required; the 4Sight software resides on the SICK camera
- "Inspection Depth" allows you to decide what level of inspection you require, from basic code presence through to whole code including the location
- Print quality tolerances can be configured – you decide what is classed as a good read, poor read or bad read, reducing the number of nuisance stops
- Choice of 3 modes of operation; stand-alone, printer-led or integrated to AutoCoding (or other code deployment system)

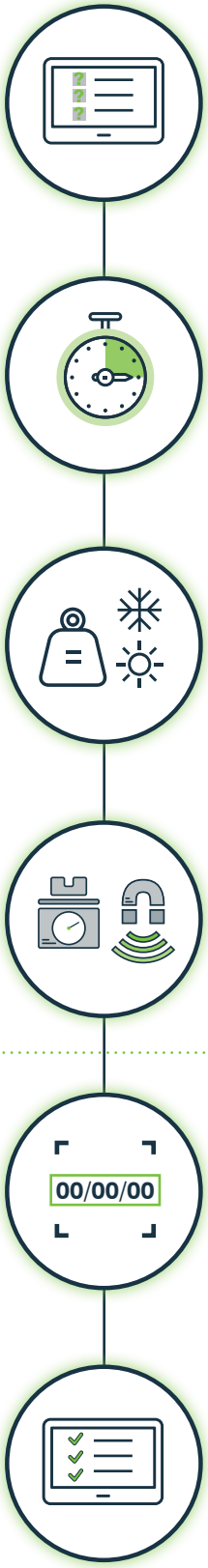
For more detailed information, our 4Sight brochure is online at autocodingsystems.com

Paperless quality

Quality checks are mandatory throughout any production run and the amount of time and effort required to run the manual checks, plus the resulting paperwork can't be underestimated.

How do you benefit?

- Confidence that all QA checks are carried out at the required times throughout the production run
- Flexibility to configure and run QA checks to meet your specific requirements
- Common checks can be extended to include other critical line control functions, such as checking the rejection systems on the metal detectors and checkweighers with challenge test pieces
- Reduction in storage requirements for physical paper records – all checks stored automatically in the audit log



Automate quality checks by incorporating into the line start procedure

Include time prompted checks throughout the job run, as well as at the end of the job

A wide range of data variables can be included such as weight and temperature

Checkweigher and metal QA checks can be included

Digital images can be captured of the products and coded information

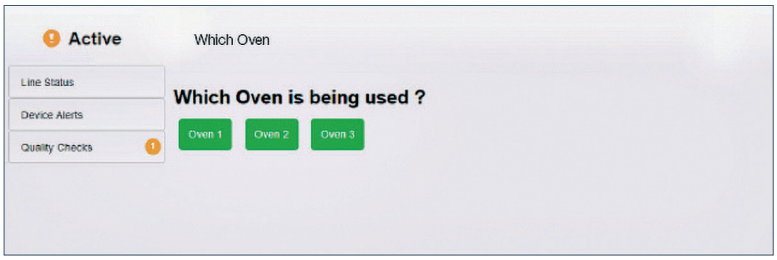
All QA events are stored in the AutoCoding audit log for compliance reporting

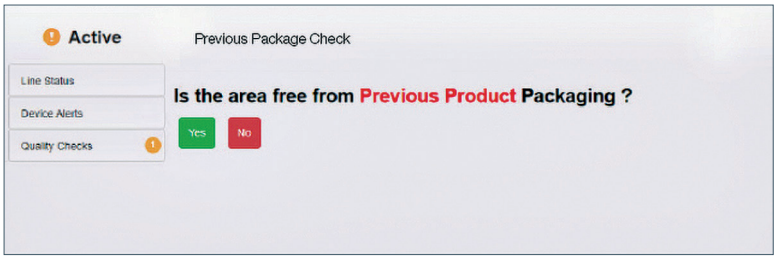
The paperless quality solution is completely configurable to individual factory requirements. Customised line checks can be set-up to enforce best practice at job-start, job-running and job-end.

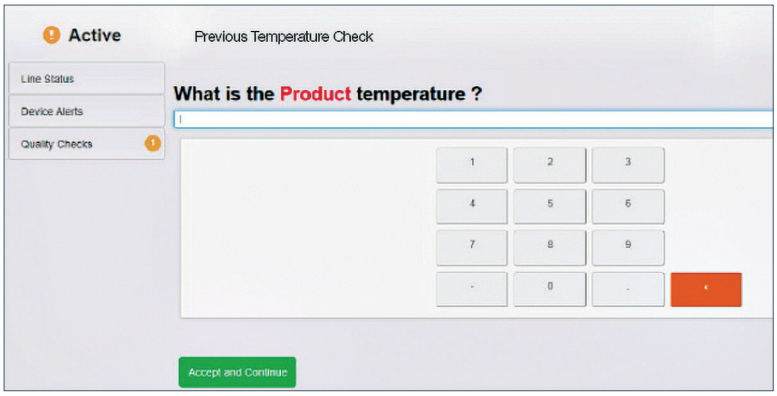
Numerous quality checks take place across many processes along the packaging line and the paperless quality solution can be extended across all these processes.

All responses, images and corrective actions are recorded in the audit log.

When quality tasks are mandated, it is easier to enforce compliance and consistency. The line can be stopped if a check is not performed or as the result of the check dictates.





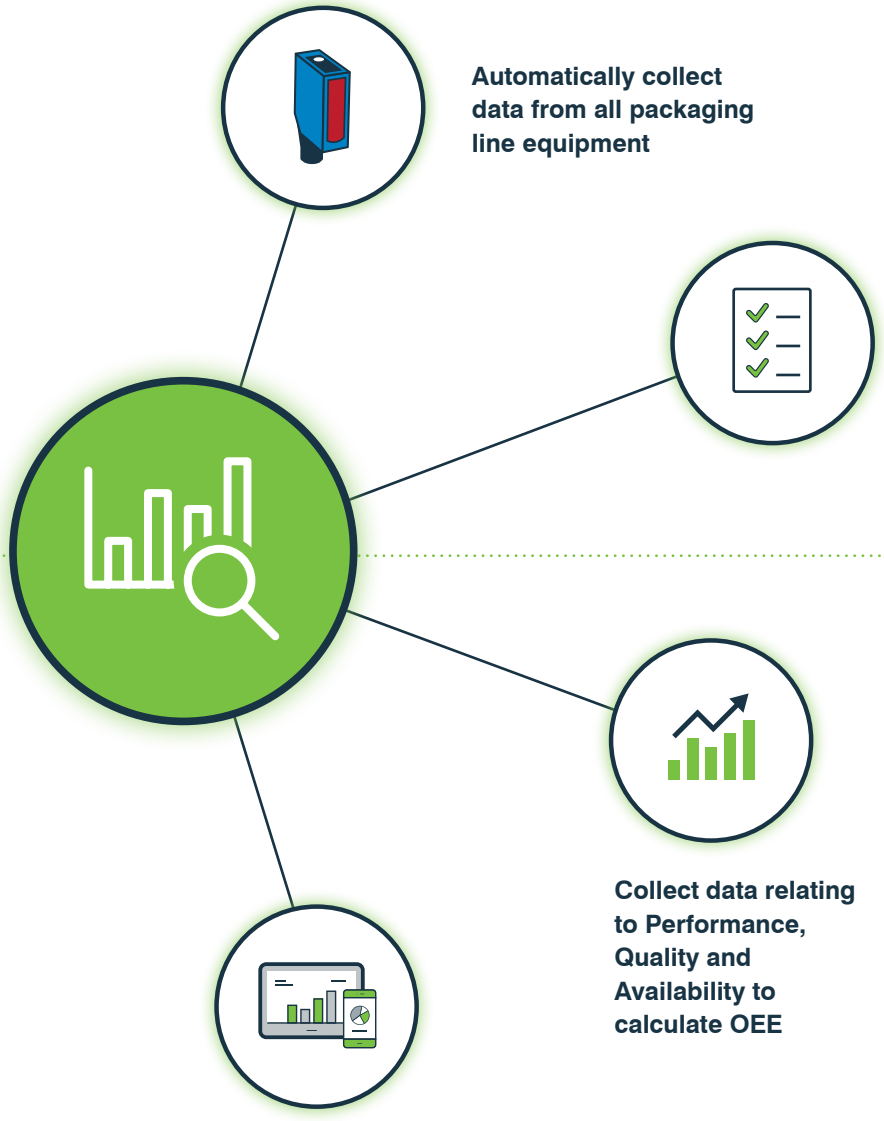


Further examples of customised instructions:

- Are the end seals intact|
- Are the weight buckets working correctly|
- What is the checkweigher average weight|
- Does the product contain the correct number of bars|
- Take a photo of the printed date code on the product|
- What is the pudding height (mm)|
- Is the glue in the unvarnished area|
- What is the glue temperature|
- Which freezer is being used|
- What is the freezer temperature|
- 2.5mm non-ferrous metal check passed|
- Take a photo of the top and bottom label on the product|

Line performance reporting

AutoCoding's primary strength in data capture makes it expertly placed to harvest rich real time data from multiple machines and systems. This information can be optimised to provide tabular production reports and trending performance metrics using charts and dashboards, together with alerts of any threshold breaches.



Automatically collect data from all packaging line equipment

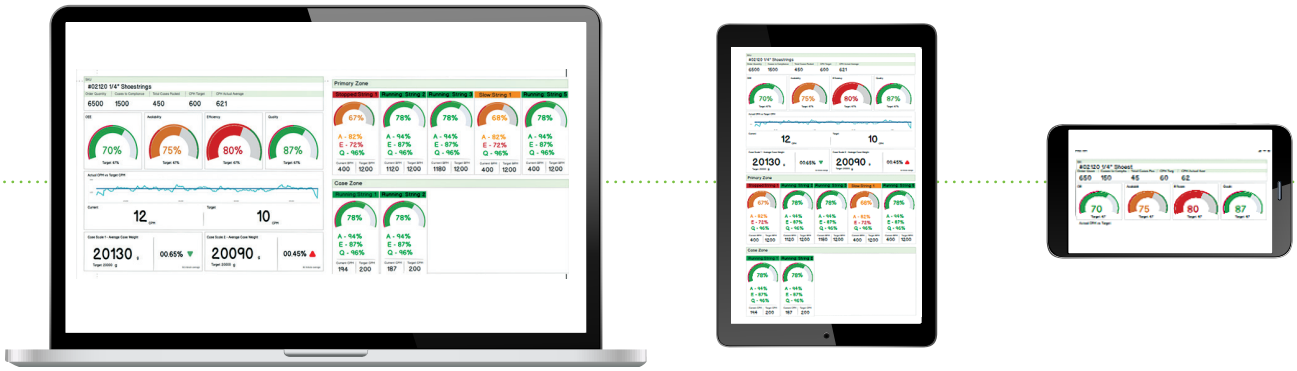
Ability to configure system with specific downtime reasons

Collect data relating to Performance, Quality and Availability to calculate OEE

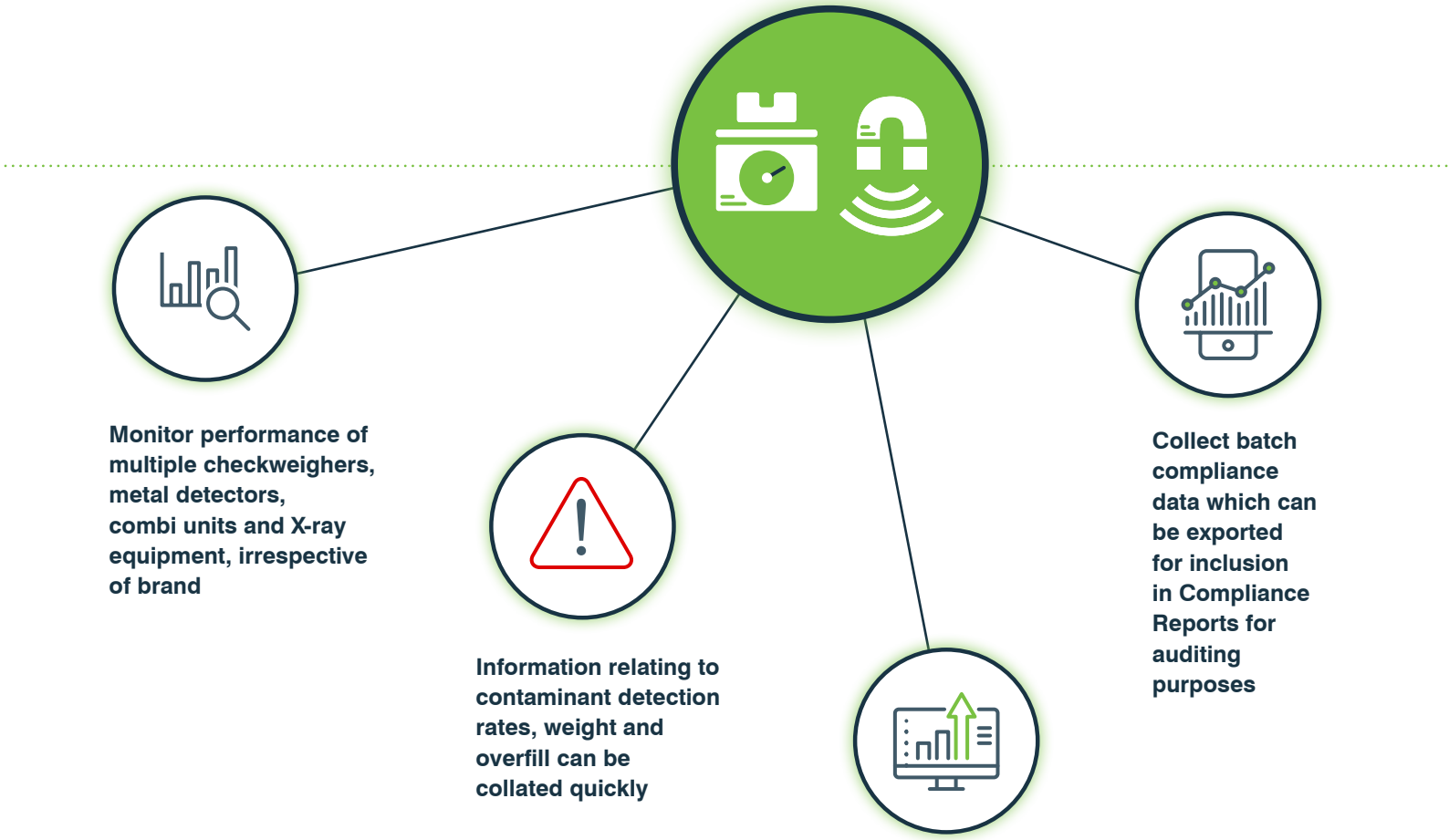
Data can be visualised via a number of easy-to-read reports, accessible to view at any time via PC, tablet or Smartphone

How do you benefit?

- Using real-time data, take proactive measures to improve efficiency of individual devices and the packaging line as a whole to increase productivity
- Proactively manage equipment downtime, identifying recurring breakdown issues and packaging line stoppages due to shift changes and product changeovers
- Access easy to interpret reports which give accurate information of product, device and packaging line performance



Typically, many OEE systems collect equipment data which lacks context. They, therefore, require additional interfaces or data entry to give meaningful feedback. As AutoCoding is running when the line is running, we are continually collecting data and details of events from the packaging line equipment, as well as other systems. Factories require consolidated reports from fewer systems, with meaningful context, effortless traceability and the ability to drill down to obtain the detail they require.



Monitor performance of multiple checkweighers, metal detectors, combi units and X-ray equipment, irrespective of brand

Information relating to contaminant detection rates, weight and overfill can be collated quickly

Access to easy to interpret graphics showing detailed counts, weight analyses, end of batch reports etc

Collect batch compliance data which can be exported for inclusion in Compliance Reports for auditing purposes

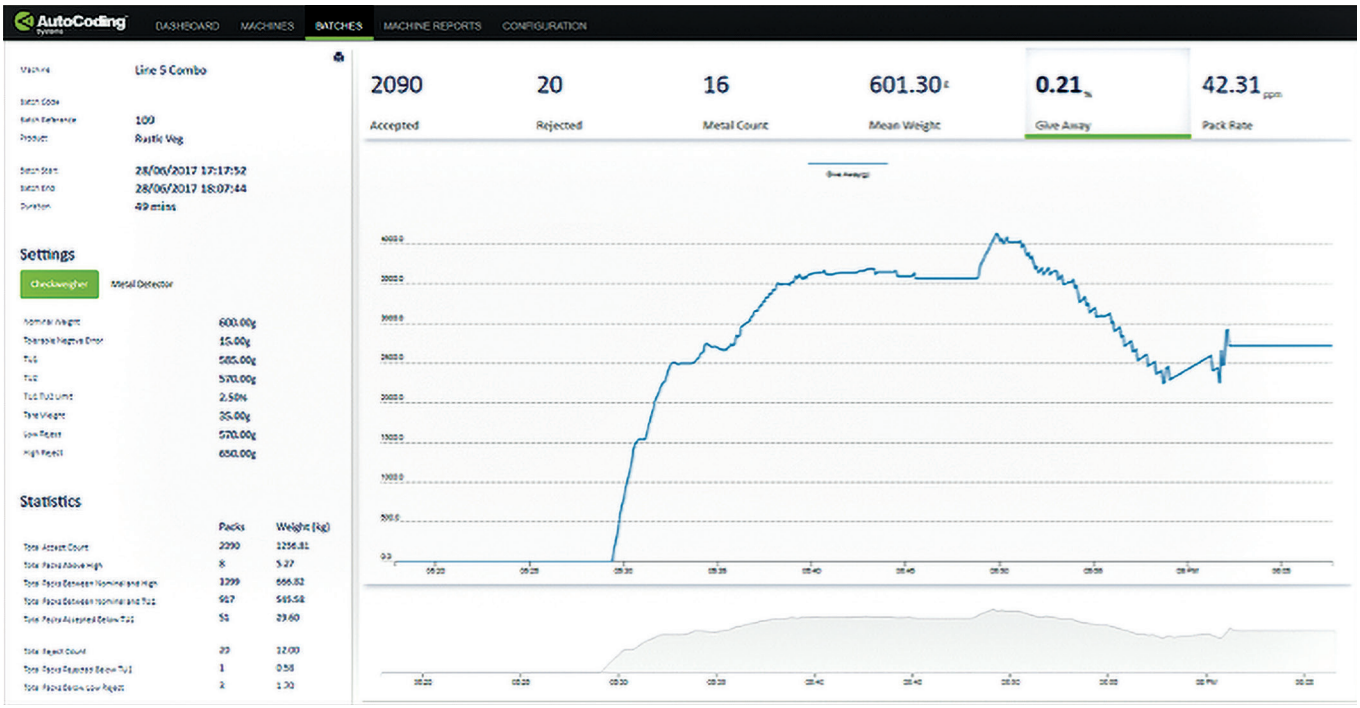
Inspection reporting

Collecting real-time data from inspection devices, such as checkweighers, metal detectors and X-ray equipment enables inefficiencies to be identified quickly and corrective action taken.

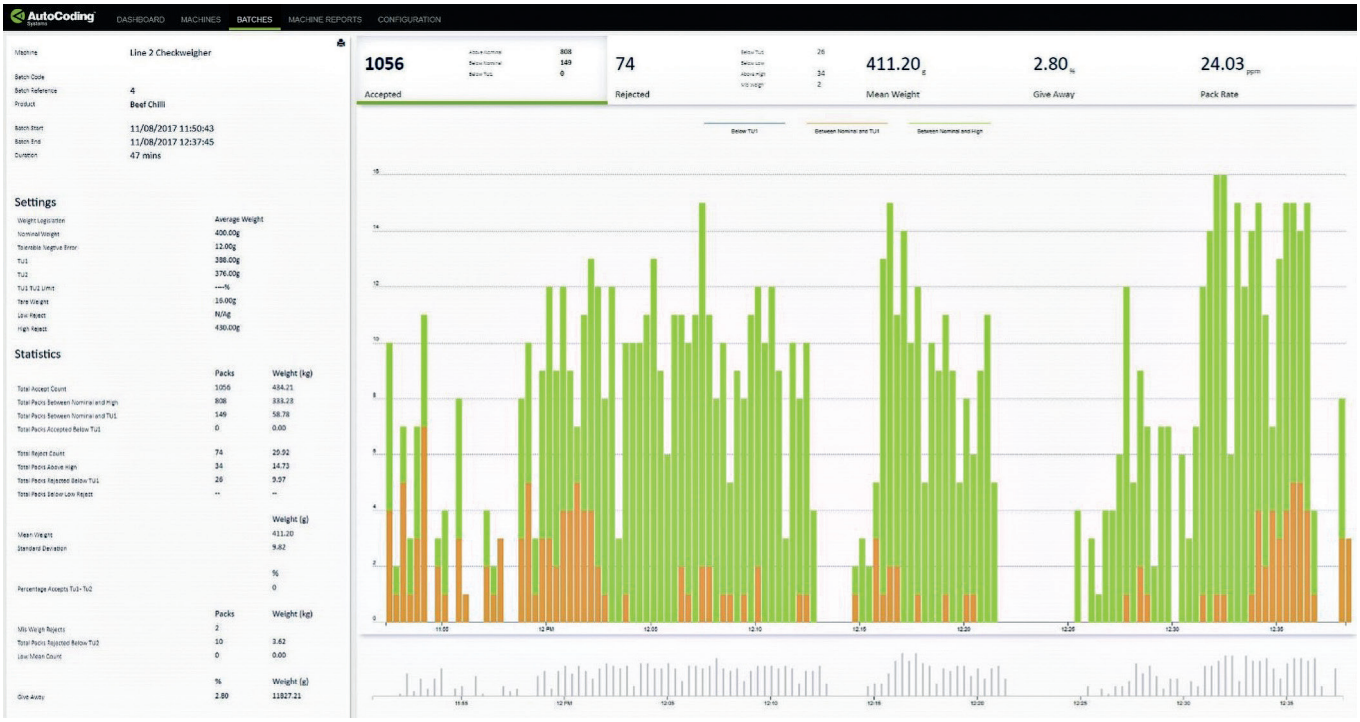
How do you benefit?

- Take corrective action during a production run to minimise product giveaway and consistently achieve target weights
- Ability to drill down to individual devices to gain a real-time snapshot of rejects, weight and giveaway
- Monitor and record cost of giveaway and track against baseline performance
- Access reports on any network connected device
- Save time in collating statutory Compliance Reports; all information is recorded and can be exported as a CSV file

Production processes can be adjusted quickly ensuring product giveaway is kept to a minimum and unit weight targets are achieved.



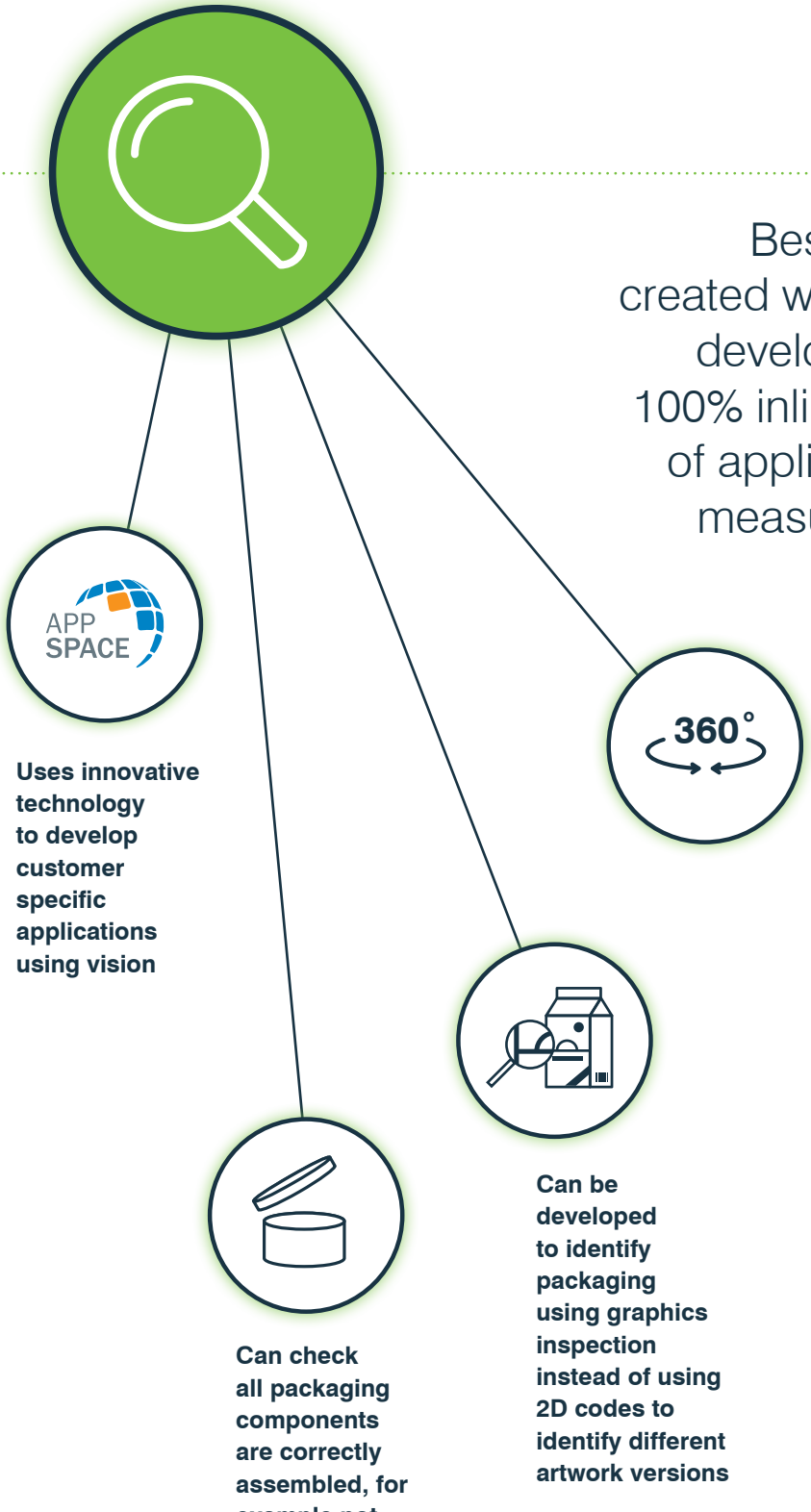
Historical and live data trends allow immediate inefficiencies to be addressed quickly, as well as understanding long term device and process performance.



Custom inspection solutions

using SICK AppSpace

Bespoke vision applications created within the SICK AppSpace development platform allow for 100% inline inspection for a range of applications, such as product measurement, location, quality and identification.



Uses innovative technology to develop customer specific applications using vision

Can be used for 360° pot inspection to detect packaging defects to ensure damaged pots are not despatched

Can be developed to identify packaging using graphics inspection instead of using 2D codes to identify different artwork versions

Can check all packaging components are correctly assembled, for example pot and lid

SICK APP SPACE

How do you benefit?

- Full turn-key solution, from hardware and software design to implementation and support
- Custom algorithms targeting exact inspection requirements
- Custom communications with existing PLCs via discrete I/O, Ethernet/IP, TCP/IP, Modbus and more

Support

As well as working with you to specify a solution to meet your requirements, following implementation, ongoing support for both software and hardware is available, such as:

- 24/7 Helpdesk (with a valid maintenance contract)
- Remote system technical support (via VPN)
- On-site support, when required
- Free software updates to ACS products
- Available hardware spares and components for quick replacement
- System health checks and training, as required

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