





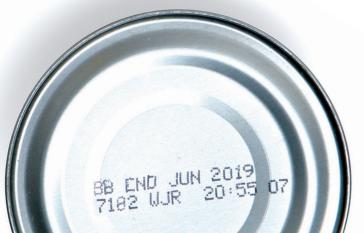


Software Solutions for Smart Factories

AutoCoding Systems are global specialists in code assurance, packaging verification and device automation across packaging lines. Our real-time software solutions improve accuracy, reliability and performance by integrating users, data, devices and existing information systems in and around the packaging area of your factory.

The AutoCoding suite of modular software products helps to eliminate the risk of coding, labeling and packaging errors which can lead to emergency product recalls. From an entry level option for code deployment through to the automatic set-up and control of multiple devices on multiple lines, the solution is completely scalable; basic solutions can be created cost effectively, increasing functionality as and when required.

Whatever the scale of your operation, AutoCoding Systems will add value to your packaging line operations.



Flexible Applications

For End Users

The AutoCoding product offers flexible functionality depending on the customer's specific requirements. From set-up and control of a single device to full integration of other packaging line devices, the solution can operate on a single line or multiple lines and can be extended to embrace the whole factory, as required. The solution is equally comfortable operating in a small factory, in effect as the sole coding and packaging verification system – or as an integrated element of a broader MES, with seamless integration to the ERP, WMS, Planning and other elements of the existing system's environment.

For OEMs

In recent years the business has established very close links with line equipment manufacturers. The product is well suited to the OEM market, for example to other coding manufacturers, where they can use the AutoCoding product to not only control their own equipment, but also other existing devices and coding brands. AutoCoding Systems has a comprehensive list of device drivers and a dedicated team to undertake any new software development to aid communication with a specific device. We can also provide our own UI or integrate with the OEM's brand preferences to provide a customized and consistent "look and feel".

For System Integrators/Partners

We have an established network of System Integrators where our solutions can be sold alongside the products and services they already provide.

Our specific expertise in packaging line automation means that we can easily add value to the projects they are working on for their customers or enhance an existing system. Frequently, in one of its many standard configurations, the AutoCoding product is used to satisfy a number of project deliverables or value-add requirements that otherwise were difficult and/or time consuming to develop and execute.

AutoCoding Systems carefully selects those partners who already have a proven, viable business within their own geographical area/market. We work with those Systems Integrators who can readily deploy and support our standard solutions.

The solution is suited for global use and is multi-lingual with all the main European languages, with significant other languages soon to be added.

We are delighted to be working with AutoCoding Systems as one of their lead Systems Integrators in the US, with close proximity to the West Coast and Pacific Northwest. We believe that by combining the product expertise from both our companies we can deliver an immediate advantage in brand protection to our customers. The AutoCoding product focuses comprehensive and powerful functionality exclusively on the packaging line, which perfectly complements our broader enterprise control system capabilities and frequently used system architectures.

Apex, Boise





PROVEN PRODUCTS from AutoCoding Systems

AutoCoding

The entry level product starts with a centralized application deploying secure set-up and message data to one or more devices on a limited number of lines.

As the scope of the system grows, additional modules and applications are available. It is then recommended that a dedicated HMI for each packaging line is used for ease of visualization and operator interaction.

This presents the optimum hardware configuration for adding other "value-add" modules, as detailed below. These can be used as stand alone applications or integrated with the AutoCoding system.

In all configurations local IO is provided to invoke a line stop in the event of the system detecting an error or fault with the device or in-line inspection.

Line Performance Reporting

Automatic capture of real-time manufacturing data to identify and evaluate where potential problems, performance limitations and constraints exist. Provides accurate machine performance information via a suite of highly professional reports, including all the usual KPI and production metrics, eg OEE and downtime pareto etc. Resulting information assists in structuring continuous improvement efforts, identifying a need for deeper analysis and the justification of investment to reduce/eliminate manufacturing constraints. This makes business improvement decisions more easily measureable and accountable.

Vision

Flexible solutions for multi-criteria in-line inspection, ranging from simple ink detection of a date code, through to "smart" cameras and more complex bespoke vision applications for multiple inspections at high line speeds.

Paperless Quality

Automated system capture of in-line/off-line QA/QC processes with consolidated reports for compliance and traceability. User interface can also display relevant electronic documentation and standards for the packaging line.

Custom Labeling

This allows for efficient off-line print management of variable data for labels, sleeves and stickers.

Unique Numbering/Traceability

As well as creating unique numbers for batch traceability, a special module exists to create unique numbers for promotional activities. These numbers can be used by our customers and their digital marketing partners.

Pallet Labeling System

Powerful standard application that integrates to all leading pallet labelers and interfaces to ERP, WMS and conveyor line control, as required. Additional module enables cases/pallets tracking throughout logistical workflow.

Inspection Reporting System

A real-time data analysis tool which monitors the performance of product inspection devices. Collected data can be stored and analyzed for trending leading to improved operational control and efficiency.

All applications feed data into a central reporting engine facilitating collation of enterprise-wide statistics.

Modular Applications

Positioning of our products within the MES space

To ensure the system fully operates as an integrated MES, the standard solution can integrate seamlessly with all associated IS infrastructure systems, eg Planning, ERP, other MES, WMS, etc.

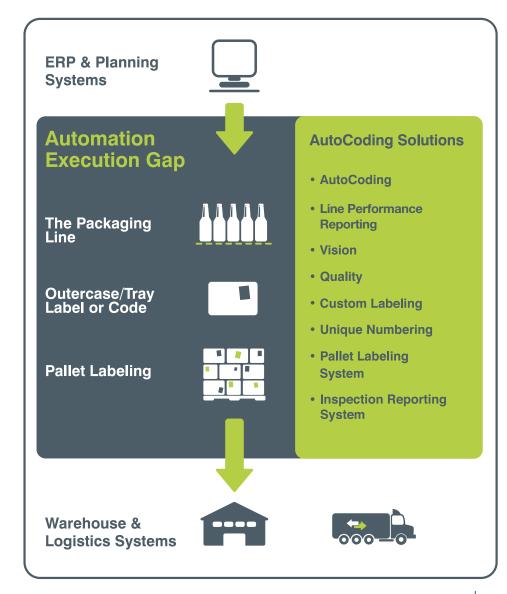
Often there is a data connection between the front and back of the system infrastructure of a business, usually via the ERP. However, there are gaps in the system connectivity in the middle, where actual products are created, coded, packed and inspected. The AutoCoding product can provide an integration framework for these and ensures a seamless end-to-end solution.

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We have AutoCoding installed on 6 lines in our Newbury and Chester factories. The AutoCoding system integrates seamlessly with our Unity ERP system and manages the date code which is then applied by our coders. With the addition of online scanning of our packaging film and labels, we can be sure that our date coding and packaging will be correct at all times. We are now extending the system to include Paperless Quality to reduce the amount of paperwork we generate as part of our quality processes.

The English Provender Co





AutoCoding

At its entry level form, this innovative centralized solution comprises many of the latest developments in software techniques.

The entry level product is scalable and can start with a single coding device, extending to multiple devices on multiple lines.

It is, therefore, well placed to serve as the standard software solution for those equipment manufacturers that wish to offer a world class software solution for their own products and perhaps do not have the in-house software engineering resources, or time, to create and develop their own.

We are very happy with the detailed design and seamless implementation of the AutoCoding system.

This solution has provided immediate benefits and we can see that the future expansion capability of the system will be a benefit to our business.

Murray de la Motte - Project Manager
Danone





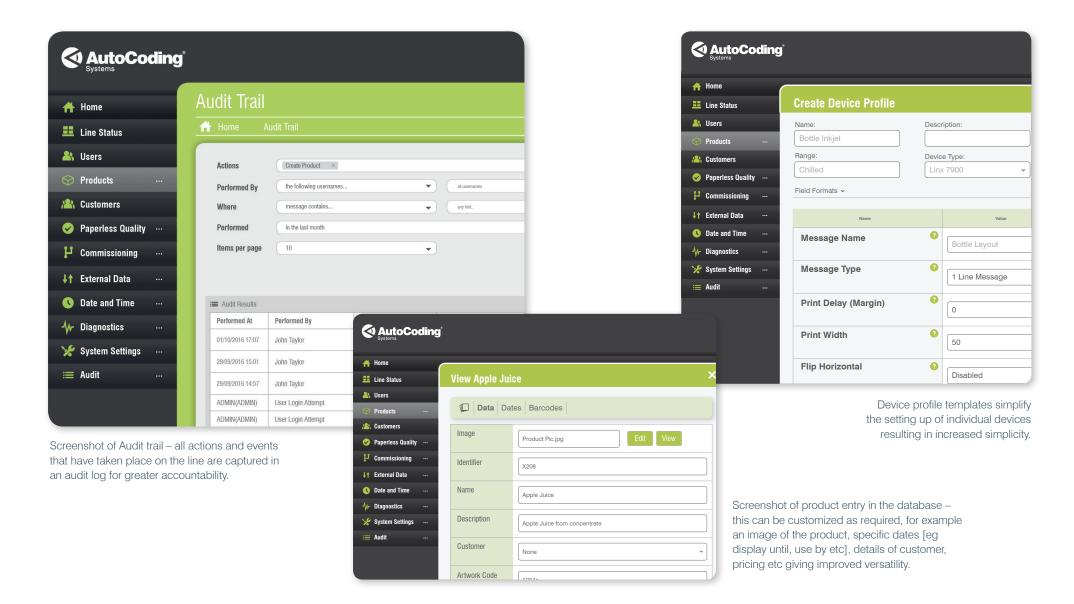
Packaging line activity can be viewed remotely via a web browser on a PC, tablet or Smartphone



Ethernet connection direct from server to packaging line devices



Intuitive user friendly screens with pull down menus simplify the set-up process and give operators clear instructions on specific tasks.

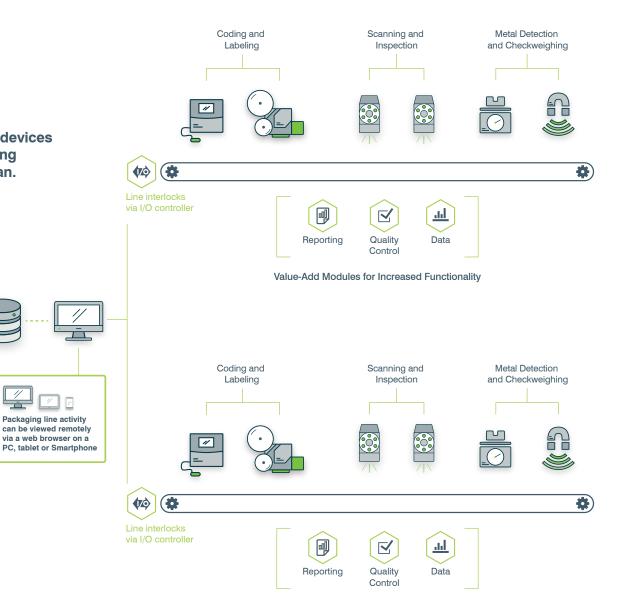


Seamless Integration

AutoCoding product can set up all packaging line devices with SKU specific instructions from either a planning system or specific product packaging barcode scan.

Through its modular expansion, the AutoCoding system can seamlessly integrate to leading ERP and Planning systems, including MS Excel spreadsheets.

Links to ERP ensure master SKU data is automatically populated to the AutoCoding system database.



Industrial Components



AutoCoding

By removing operator intervention in the setup processes of devices on the line, the risk of error is immediately reduced. By obtaining product data from a reliable source, such as the ERP or Planning System, and with the addition of a validation or inspection system, the risk of coding or packaging errors is all but eliminated.

AutoCoding is an extremely powerful modular application from single device set-up and control through to an integrated MES for the packing line.

Features and benefits of the system, available through scalable modules:

- Removes the risk of incorrect coding through operator error
- Removes the need for operator programming of coders, labelers and barcode scanners
- Automatic calculation of date code for each product
- Automatic selection of correct device and coding layout for each product
- Provides verification of correct product packaging through in-line barcode scanning

We had specific functional requirements that the coding management system had to meet. AutoCoding Systems offered us a cost-effective solution that fully met our user specification and our budget. The comprehensive training course delivered on-site was excellent and equipped our operators to use the system with confidence.

Isleport Foods – part of Bakkavor



A significant cause of EPWs (Emergency Product Withdrawals) and Red Alerts is incorrectly packaged and/or coded goods.

AutoCoding Systems has established itself as a leader in advising UK retailers on best practice to avoid these errors using standard solutions.

- Line visualization is possible via any web-enabled device, such as PC, tablet or Smartphone
- Ability to create / receive notifications relating to specific activities on the line
- Accommodates necessary line stops and equipment breakdowns safely and securely
- Dedicated line HMIs can be added to provide local visualization of the line equipment status and operator interaction
- Can be extended to automatically set-up all packaging line devices, eg checkweighers and metal detectors
- Device polling, data aggregation, trending and web reporting module can be added, as required.
- Provides comprehensive line reports with a 100% event log
- Specific screen interfaces can be customized to present a consistent brand oriented user experience.

Typically customers like to use the entry level product for coding and scanning operations.



Hand scanner can barcode scan a production plan pack list to "start the job".



Specific QC routines can be incorporated into 'job start', 'job running' and 'end of job' procedures.



In its simplest form, the AutoCoding solution can set up a single coding device to ensure the correct date code is always printed on every product.

As a supplier to a major retailer, Gunstones Bakery needed a coding and packaging integrity system which demonstrated functionality in line with the retailer's code of practice on packaging and coding verification. Not only did AutoCoding Systems offer us a solution which ticked all the relevant boxes, their solution enabled us to make significant improvements to the verification of film, label, skillet and sleeve identity, providing us with secure artwork revision control on our various types of packaging.

Gunstones Bakery



Automatic printing of barcode with special pack price.



Line visualization is possible via any web-enabled device eg PC, tablet or Smartphone



Automatic coder set-up for date code printing.



AutoCoding can be extended to also control outercase coding.

Device Integration

As AutoCoding is an automation solution for most packaging line devices, it can be extended to set-up other devices in the inspection of product and associated packaging.

Checkweigher and Metal Detector Integration

- Functionality depends upon the model and its remote communications ability
- Where feasible, a line terminal can be used to prompt for checks and actions, as per QC event
- All checks and activities undertaken on equipment, together with operator details, are sent back to the line terminal and recorded centrally in the audit log
- Summary of all rejects, eg "out of tolerance" products and contaminated products, also stored in the audit log
- Ability to capture and report on pack give-away weights



Loma are very pleased to partner with AutoCoding Systems and have worked in a collaborative manner to develop our Loma TRACS product. This provides our customers with an easy-to-use, web-based reporting tool for our current range of metal detectors and checkweighers showing key performance indicators, including compliance reports and giveaway weights.

Loma Systems







AutoCoding can be extended to control metal detectors and checkweighers.



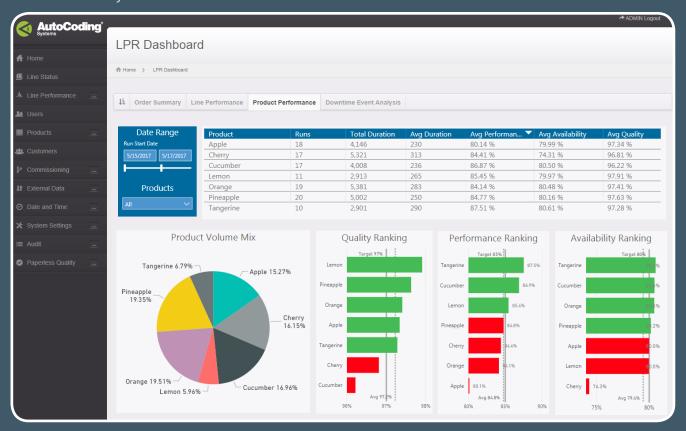
All checks and activities undertaken on the equipment are recorded in the audit log.

Line Performance Reporting

If you want to measure the efficiency of your packaging line equipment and calculate OEE you need the ability to collect the relevant data. AutoCoding Systems have developed a reporting solution to assist factories to collect this data to proactively increase productivity.

- Performance when the line is running, is it running at the rate costed for the product (ie optimum line speed)?
- Quality of the products manufactured, how much is saleable and how much is scrapped or re-worked?
- Availability how much of the available production day is lost due to breakdowns or line stops (ie downtime)?

Performance by Product



We recognize that precise and timely information is the first step in achieving a competitive advantage but collecting data manually can be highly inefficient:

- Collection of manual data is often inaccurate
- Speed losses are hard to capture and downtime is not always recorded
- Reports using manually collected data don't usually reflect what's currently happening in the factory

The key is to gather data in real time from a variety of packaging line devices and to visualize that data into reports that are easy to understand and interpret.

The following are examples of some of the reports that can be created to give accurate packaging line, device and product performance information:

• Downtime Event Analysis

- Top 5 downtime reasons by duration and frequency
- Percentage availability for a specific period
- Percentage efficiency by order run

Order Summary

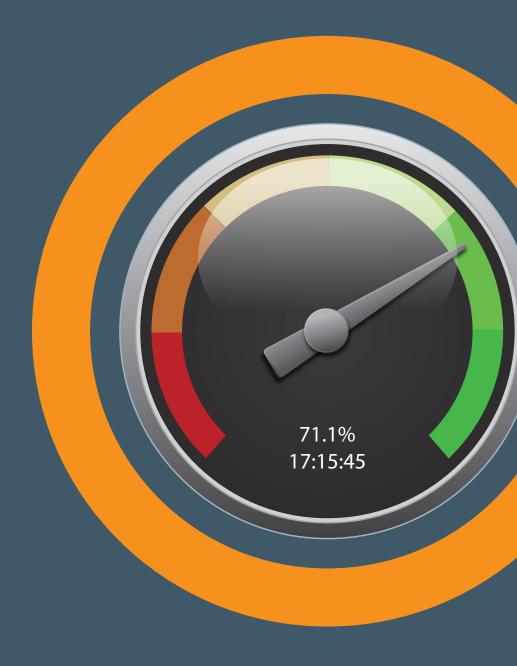
- Product run with start and end time, duration and nominal targets
- Actual quantity and production trend
- Speed loss, stop loss, availability

• Performance by Packaging Line

- Availability
- Efficiency
- Production

Performance by Product

- Number of runs, total/average duration, total/average production, by product
- Average performance, average availability, average quality by product
- Volume mix by product

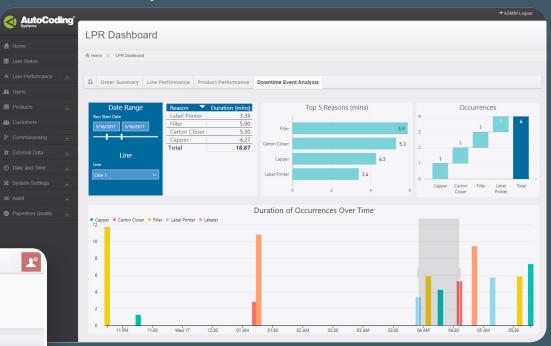


The AutoCoding solution concentrates on capturing real-time manufacturing data which is then visualized, via a suite of user-friendly, easy-to-read reports to display accurate performance information. The reports are accessible to view at any time via a network or internet connected device, such as a PC, tablet or Smartphone.

Performance by Packaging Line



Downtime Event Analysis



Vision Precision

AutoCoding Systems are able to offer solutions for all levels of vision. These range from relatively simple ink detection, in the case of date coding, through to 'smart' cameras for more capable detection of code presence, location and alphanumeric text recognition (OCR) and on to more complex bespoke vision using customized algorithms for multiple inspections at high line speeds.

Vision by itself can deteriorate into a 'line policeman' causing too many nuisance line stops. Used correctly within AutoCoding it becomes a powerful tool to drive up coding and packaging compliance and quality standards.

Vision

- Modular application to manage challenges such as poor date code quality, poor pack presentation, varying pack sizes, etc
- Provides inspection and confirmation of presence, position and content quality of critical packaging features
- Can be used to monitor the aesthetic quality and location of the date code, promotional labels and unique graphic/text wording within the primary packaging itself
- Enables forecasting of failure points and root cause analysis for preventive action
- A seamless add-on module to the AutoCoding system architecture





We have enjoyed a longstanding business partnership with AutoCoding Systems, spanning many years. The ACS team have worked with us to develop a combination of software and engineering solutions that specifically meet our requirements in the areas of coding and packaging integrity, performance monitoring, vision and pallet labeling. We have found the systems robust and reliable, the people dependable and the technical support second to none.

Refresco Gerber UK Ltd



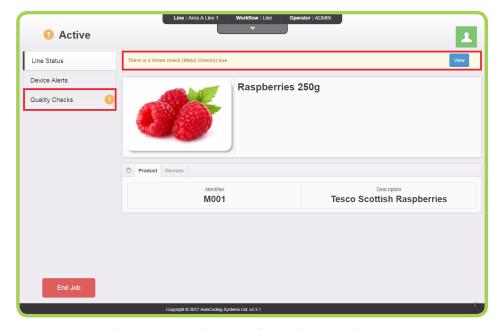
Quality

All manufacturing involves routine quality checks at various stages of the process. These are quite often manual checks undertaken at set times during operations.

AutoCoding Systems' "paperless" quality module automates in-line/off-line QA/QC processes with data capture and subsequent reporting.

Quality

- Line terminal can be configured to individual requirements creating various methods for capturing quality data
- Provides opportunity for QC activities to be mandated within the line start procedure
- Time prompted checks can be included throughout the job run, as well as "end of job" checks
- System can be configured to invoke line stops, when necessary, and prompt for corrective action as appropriate by local operational procedures
- Can incorporate a wide range of data variables, eg weight, temperature, traceability codes etc
- Webcams can be used to acquire digital images of products and coded information. These can be automatically saved and archived for traceability purposes
- Consolidates all QA/QC events in the AutoCoding audit log from both in-line and off-line activities
- Reduces much of the physical paper records of completed quality checks



Automated timed checks initially instigate a notification that a check is due by displaying a message on the screen and a beacon flash.

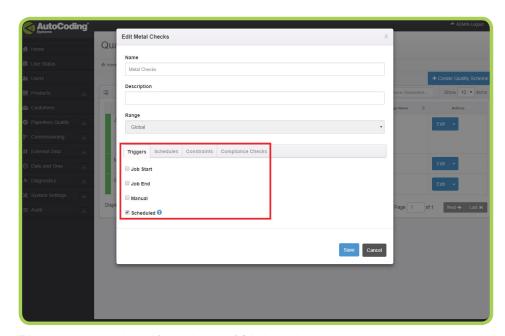
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At Pinguin Foods Ltd we use an automated scanning and labeling system in our outfeed areas at our King's Lynn and Boston sites which was provided by AutoCoding Systems. The project was professionally scoped, managed and delivered to our expectations and importantly to our budget.

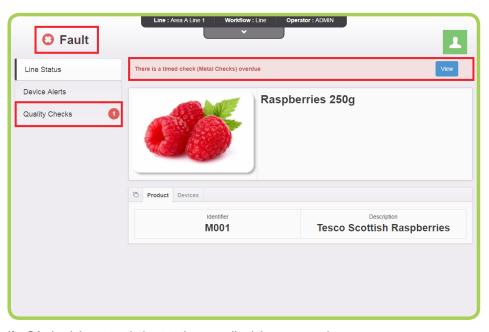
We would certainly use AutoCoding Systems again for any future projects they can help us with.

Pinguin Foods Ltd





Trigger points are selected for each type of QA check; job start, job end, schedule timed check or manual check.



If a QA check is not carried out at the prescribed time, an overdue message appears on the screen and the beacon flashes. The system can be configured to stop the line after a defined period if the check is not carried out.





Tulip now has AutoCoding installed on over 85 lines in their UK factories. We value the expertise they have demonstrated in the area of coding and packaging systems integration and we look forward to our business relationship continuing in the years to come.

Tulip Ltd







Clear Efficiency

In many factories there are additional coding and labeling operations that take place away from a standard automated packaging line.

Custom Labeling Applications

- With the latest generation of AutoCoding, dynamic labeling applications can be quickly customized to meet specific requirements
- Custom workflow functionality of the application uses inbuilt configuration tools to create specific customer applications
- Further benefits include integrated access to other parts of the AutoCoding solution stack, such as customer database

This functionality has been borne from the many years' experience in pallet labeling applications.

This flexible module can work in a variety of ways depending on the partners involved and the end user's requirements. Unique, non-predictive and random numbers can be generated by the AutoCoding system or "fed" to the system from an external source.

Unique Numbering/Traceability

- At line level, a local controller completely manages the code printing operation
- Comprehensive logging and reporting included as standard to ensure ease of reporting and trouble shooting
- The solution works with all well-known coder brands and technologies

We have successfully worked with AutoCoding Systems since 2003 implementing their coding management system across all our lines. The system has proved to be reliable throughout this time, giving us the confidence to increase the scope into other areas.

Meeting the needs of a variety of customers has often resulted in a requirement for differing software functionality and the AutoCoding team has always risen to the challenge. We consider AutoCoding Systems to be a valued partner to our business.

Rowan Foods



Pallet Labeling

With manufacturers producing a variety of goods for different customers, it is of paramount importance to ensure pallets of products are identified and labeled correctly.

Manual labeling is time consuming and prone to human error. Automation of pallet labelers is, therefore, becoming a necessity. Auditable and controlled labeling of pallets, from different lines, with information such as batch code, order ID, line ID, SKU and SSCC18 information ensures compliance with the requirements of the EU Food Safety Regulation (EC) No 178/2002.

Pallet Labeling System

- Standard application works with all leading pallet labelers
- Accommodates a manual label station as back-up
- Interacts and interfaces with the palletizer conveyor line control
- Communicates to ERP and WMS, as required
- Correctly identifies pallets out of sequence or multiple lines
- Can be extended to provide full traceability of product, case and pallet
- Can be provided as an OEM tool kit for those vendors wishing to configure and implement the solution themselves.



AutoCoding Systems successfully delivered the AutoCoding Pallet Labeling System at the pilot site within a very tight timescale. Their technical expertise was invaluable and facilitated the seamless implementation. Following this success, the solution has now been rolled out to further factories and forms an integral component of the UBUK Warehouse Management System.

United Biscuits

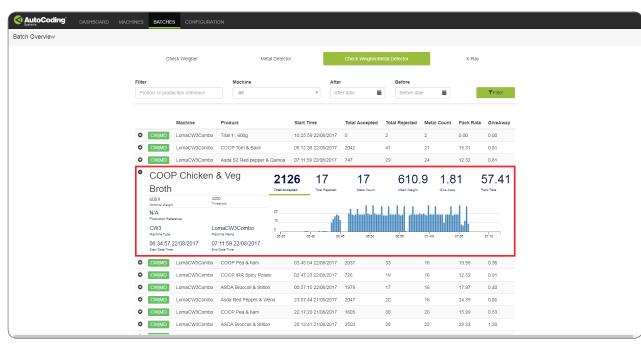


Inspection Reporting System

AutoCoding Systems work closely with device OEMs to support analysis and visualization of data from a range of product inspection devices.

The AutoCoding Inspection Reporting System allows for the performance of product inspection devices to be stored and analyzed for trending. AutoCoding offer both an on-premise solution to provide access to real-time statistics, as well as cloud-based cross-site reporting.

- Options for exporting data to external applications and databases
- Low cost, high scale "Big Data" technology stack enables vast data storage and superfast querying
- Access reports on any network connected device visual reports are compatible with all modern browsers, including mobile devices
- Cloud licence options available, reducing on-premise IT infrastructure overhead and enabling cross-facility reporting
- User login system allows fine grained control over access to plant data and easy access to reports tailored to user preferences
- Historical and Live data trends allow immediate inefficiencies to be addressed quickly, as well as understanding long-term device and process performance



Batch overview showing multiple combi units with the ability to drill down to access data on individual units

Loma TRACS Reporting Tool – powered by AutoCoding Systems

The Loma reporting tool is designed to monitor the performance of multiple Loma checkweighers, metal detectors and X-Ray systems; providing instant feedback across all production lines in a central format. The PC-based real-time data analysis tool offers improved operational control, efficiency and easy-access compliance reporting.

- Information relating to contaminant detection rates, weight and overfill records can be compiled quickly
- Ability to export, as CSV file, end of batch reports for checkweighing and metal detector equipment (including combo machines)
- Ability to collect and export, as a CSV file, individual pack weights for checkweighing equipment
- Inefficiencies can be identified and addressed quickly rather than waiting for historical data
- Cost of product giveaway can be recorded and tracked against baseline performance targets
- Production processes can be adjusted quickly ensuring product giveaway is kept to a minimum and unit weight targets are achieved





Example of checkweigher historic batch report





AutoCoding Systems has SAFEContractor approval which recognizes very high standards of health and safety practices amongst UK contractors.

Reliable Support

Any automated system can have problems from time-to-time.

At AutoCoding Systems we are always available to assist our customers to diagnose the root cause of a problem and provide a solution quickly. Through remote links and locally available resources, we offer a support service to be proud of, for both hardware and software.

- 24/7 Helpdesk available
- Remote system technical support (via VPN)
- On-site support when required
- Free software updates to ACS products
- · Swap out and replacement of failed hardware, as required
- Available hardware spares and components for rapid replacement
- System health checks and further training, as required
- Online training packages

Prior to the AutoCoding system being implemented, all the devices on the packaging lines were set up manually leaving us vulnerable to human error. The AutoCoding system has given us peace of mind; with over 300 different products and in excess of 200 label versions, we need to be 100% confident that the correct label is applied with the correct coding information.

Scotbeef Ltd



Strategic Partnerships

AutoCoding Systems has a strong commitment to our partnerships with OEMs. We have a long and successful track record working with all the major coding and labeling companies, as well as packaging equipment and software providers. This co-operation is imperative, not only to ensure we can offer creative and robust automation solutions to our customers, but also to enable our partners to add value to their product offerings.

Our in-house product development team has many years' experience creating robust and reliable data connections and interfaces to many different types of machinery and IT systems such as ERP, planning tools, recipe control systems and, as required, MS Excel spreadsheets.







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Domino is proud to be associated as an OEM partner with AutoCoding Systems. Both our companies have enjoyed many years of successful shared project work utilising equipment, systems and expertise to provide customers with turnkey solutions to a wide range of automation requirements.

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Linx has worked with AutoCoding Systems for many years collaborating on various projects in the UK where AutoCoding can add value to our product offering. We look forward to continuing partnering together in the future for the mutual benefit of both our companies and customers. 6677

By partnering with AutoCoding Systems, Loma have extended their capabilities in data capture to offer customers a remote reporting solution based on the latest software technologies. The solution can be installed on any production line and has the advantage of ongoing specialist technical support. Our customers also now have the option to expand the scope of their data management solution via AutoCoding Systems' broader automation expertise across packaging line operations.



SICKSensor Intelligence.



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AutoCoding Systems has enjoyed a strong working relationship with Markem-Imaje for many years. They have worked together to deliver added-value solutions integrating into all types of Markem-Imaje equipment covering inkjet, thermal transfer and pallet labelling.

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SICK and AutoCoding Systems have enjoyed continued growth through constructive relationship building, utilising product/application knowledge and good commercial practices. SICK see AutoCoding Systems as a strategic customer going forward, offering excellent technical advice and added value for their customers.

Videojet has established a successful partner relationship with AutoCoding Systems in the UK and parts of Europe. We are now seeking to expand the relationship further throughout Europe and continue to develop mutual valueadd solutions for our customers.



Barrie Fallon
Software & Service
Delivery Manager



Dean Rockstro
Business Development
Manager – Australia & Asia

AutoCoding Systems in the US and Australia

Our packaging line automation and control solutions are now available through AutoCoding Systems LLC in the US and AutoCoding Systems Pty in Australia.

Building on our extensive experience in the food and beverage sector in the UK, we have already implemented our solutions across multiple lines in major food manufacturers on both sides of the globe.

To support us overseas, we have developed strong partnerships with a number of Systems Integrators in Europe, the US and Australia. They have recognized the distinct advantage of integrating our solution into their own product offering giving their customers greater functionality and flexibility, as well as saving their own time and resources.

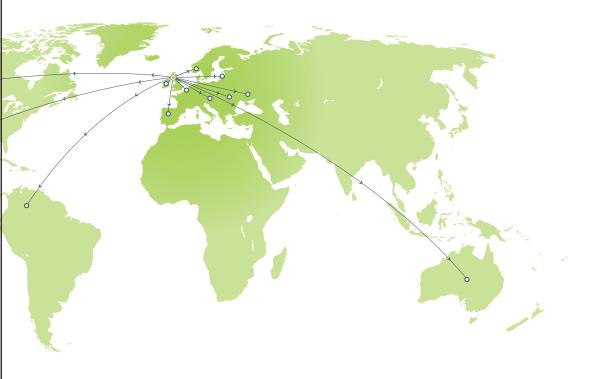
Using our joint expertise and technologies, as well as professional partnering on projects, has opened up many mutually beneficial opportunities.

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The team from AutoCoding Systems are creative solution providers with an appreciation for shop floor dynamics. The solution works seamlessly with our existing systems and adds an additional layer of security to our already robust processes.

Clif Bar & Company





AutoCoding Systems are members of the Control System Integrators Association (CSIA).

This gives us access to a wide network of professional and reliable System Integrators from around the world. The CSIA is a global non-profit professional association that seeks to advance the industry of control system integration for the success of members and their clients.

Membership of the CSIA gives us the opportunity to get to know other reputable System Integrators who share the same commitment to professional business practices and exceptional customer service. Through joint collaboration and sharing expertise from different areas of software engineering, information technology and manufacturing disciplines, we can ensure that our software solutions fully support the solutions of our selected partners.



AutoCoding Systems are pleased to work with the following System Integrators

In the USA





In Australia





spectrumautomation

In Indonesia



In the Philippines





AutoCoding Systems Limited

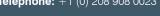
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