

PALLET LEVEL TRACEABILITY

AIS ENHANCED DIAGEO'S TRACK & TRACE CAPABILITY

With the introduction of EU Food Safety Regulation 178/2002 in January 2005, Diageo Baileys Global Supply were well positioned to meet the requirements of the new legislation following their early decision in 2002 to embark on an ambitious Track and Trace programme when the EU 178/2002 legislation was still in it's infancy.

Back in 2002, Diageo identified the need to raise the bar on product traceability throughout it's supply chain. Improving product safety, increasing consumer confidence, making global distribution information readily available and meeting increasingly demanding customer needs, were among the targets of a programme that would also ensure legislative compliance for the future.

One of the key elements of the programme was to enhance the businesses existing 'lot trace' capability by introducing 'pallet level' traceability. This would then allow Diageo to pinpoint it's product at a pallet level through to their first paying customers.

To make this happen, Diageo began by introducing an EAN standard pallet label across it's supply organisation where every finished product pallet would be labelled up with key operational detail (including Serial Shipping Container Codes a.k.a. SSCC codes). This data would then be captured at all the key product movement points (despatching, receipt etc.) and linked into a new web-based Global Track and Trace System. This system would allow any product to be tracked by pallet to the first paying customer.

According to Diageo's Programme Manager Richard Dunne, *"the easiest technical solution would have been to simply install a printer, scanner and PC with the relevant software, but that didn't fit with our best practice way of working. Instead, we decided to go for a benchmark automated solution that delivered our technical requirements, as well as being capable of handling the volume of pallets being produced each day without placing excessive resource demands on our operation."*



Richard Dunne of Diageo and Simon Smyth of AIS Ltd.

The Diageo specification was to introduce a system that operated automatically, wherever possible, with the absolute minimum of interaction. *"To create the Benchmark solution"* said Richard Dunne, *"our concept was to source all data from our existing ERP systems across the business, and to then have this information called in with an order number input. Finished product would then be scanned automatically as it left the production line, and as it was loaded into containers."*

The solution provider not only had to deal with the hardware side of the project but also the complex task of getting up to 4 different information systems to come together and produce labelled pallets.

After a thorough tendering process, Diageo Baileys selected Dublin-based Automatic Identification Systems Ltd. as their vendor of choice. A portfolio of major multi-national clients, a close relationship with top quality manufacturers such as Datalogic and Zebra Technologies and a highly experienced technical staff were among the factors in AIS's favour.

"The challenge for AIS", said Managing Director Simon Smyth, "was the integration into three third party information systems, requiring data from each system to be drawn down on a real time basis, processed and then distributed to RF terminals, automatic labelling equipment and pallet bar code scanning equipment."

To do this in a production environment meant developing software that would access external data in live mode, with a fall-back to saved data copied regularly from the external databases for use in the event of a link failure.

The Baileys' bottling hall is the first point of operator interaction with the Track and Trace system. The operator updates the system by entering new work orders on the AIS-designed data terminal, one mounted at each bottling line.



AIS VPM2 Data entry terminal mounted in the Diageo Bottling Hall

The work order is transmitted to a local controller, which in turn checks the MFGpro for the relevant product and destination information. This data is then transmitted back to the data terminal and displayed on the LCD for the operator to confirm, after which it is activated on the system.

Automatically assembled pallets travel on the existing Diageo conveyor system to one of two automatic labelling stations in the warehouse. The product and quantity information for each pallet is maintained on a database and its position is constantly monitored on the conveyor system.

Before shrink wrapping, pallets are scanned by a Datalogic DS4600a bar code scanner to confirm any special attributes (e.g. 'part pallet'), with the output fed via an AIS-designed embedded controller to a local PC controlling the printing of the pallet labels.



Datalogic DS4600 scans pallets before shrink wrap

Pallets pass through the shrink wrap machine and are presented to the Altech automatic pallet label applicator. Using data from four different sources, the AIS custom-designed software produces the label format and, before transmitting this to an Altech labeller, updates the necessary information systems.



ALTech pallet label applicator automatically labels two adjacent sides of pallet

An integrated Zebra Pax engine prints the A5 label and the Altech labeller automatically applies duplicate labels to two adjacent sides of the stationary pallets. Labels are then automatically scanned by a Datalogic DS2400 unit, to transmit information back to allow pallets to be 'production received'.



Pallet scanned at dispatch bay by automatic scanning station

Pallets are then picked up by pallet truck and placed in the warehouse. Mounted at each shipping bay are industrial PCs running AIS software and a Datalogic.

The shipping manager assigns orders to each bay and as they are loaded on to the truck, the pallets are automatically scanned by a Datalogic DS8100 high-speed bar code scanner, and updated on the information system.



AIS Automatic pallet scanning stations at Diageo's shipping bays

The system alerts the pallet truck driver by siren and PC screen to such errors as excess pallets, or the wrong pallet, etc. When each order is complete, the system informs the pallet truck driver and the data for that order is automatically stored and later updated on Diageo's Global Track and Trace system.



The Datalogic Viper, Portable RF terminal in use in Diageo's Warehouse

The final piece of the jigsaw involved the use of portable Radio Frequency terminals to facilitate manual pallet scanning where necessary. Diageo chose the Ruggedised Viper terminal from Datalogic due to its superior ergonomics and performance.

The system went live in March 2004, just four months after the initial meeting of the Diageo and AIS project teams who worked closely to meet the tight schedule. As a result, all pallets leaving the Diageo Baileys' plant now have a unique label applied and have a unique record on Diageo's global track and trace system.

"The secret to this project's success," commented Richard Dunne, "was dogged persistence pre- and post-project to achieve our vision of a fully automated system. Rigorous follow-up coupled with constant support and commitment from AIS delivered a first class finished product, so we are now in the very comfortable position of being able to add 'pallet level traceability' to our business."