

SLIM FIT

Lean, tailor-made and cost-efficient track-and-trace solutions help smaller tobacco companies comply with TPD2.



Photo: Videopet

By Stefanie Rossel

The tracking and tracing of tobacco products is a major requirement of the EU's revised Tobacco Products Directive (TPD2)—and one of its most complex. The legislation calls for an EU-wide system for the legal supply chain, as well as visible and invisible security features to help authorities distinguish genuine and legal tobacco products from illicit products.

Articles 15 and 16 of TPD2 stipulate that each smallest salable unit of a tobacco product must be marked with an irremovable unique identifier carrying, among other things, comprehensive information about the product's origin and intended destination. Aggregated packaging such as cartons, master cases and pallets must be marked and recorded too. All data generated in the encoding process must be stored.

The new system and the security features are scheduled to be introduced in phases. Cigarettes and roll-your-own tobacco are supposed to be compliant as of May 20, 2019, followed by compliance of all other tobacco products as of May 20, 2024.

Noncigarette products represent a challenge for tracking and tracing because their smallest salable units can differ significantly from standardized cigarette packs. Roll-your-own tobacco, for example, often comes in round tins; sophisticated mechanical processes are required to apply the code in the correct position.

Pouches pose a similar hurdle. Making matters worse, the new, enlarged health warnings leave only one-third of the packaging for branding. Somewhere in this area, the code has to be applied in such a way that it will still be readable at later stages of the supply chain. Engineers are currently trying to find ways of effectively applying coding onto such nonstandard packaging forms. A Confederation of European Community Cigarette Manufacturers study, published in late January, suggests it may become difficult to meet the TPD2 deadlines.

The European Commission's Directorate-General for Health and Food Safety, DG Sante, has appointed Eurogroup Consulting to determine the technical standards for the track-and-trace system and the security features, as well as the key elements of the data storage. The group finalized its report in May 2015.

A stakeholder consultation was organized in July 2015. To ensure that TPD2 track-and-trace legislation will also be compliant with the World Health Organization's Protocol to Eliminate Illicit Trade in Tobacco Products, DG Sante decided to seek further advice. It has launched a tender for a second study, which will consider the consulting group's conclusions but also explore further options; the contractor should be selected shortly, the report says. "There are some delays in the process, so it seems unlikely that the foreseen deadlines for adopting relevant secondary legislation will be held," the report concludes.

Finding the right solution

Regardless of the current regulatory uncertainty, tobacco manufacturers must adapt their production processes *now* to ensure compliance once the legislation has been implemented. Particularly for small and mid-sized tobacco companies it will be a challenge: Integrating a comprehensive track-and-trace system presents a significant financial burden for a company producing only small cigarette volumes or specializing in lower-volume products such as cigars. The technical requirements may also represent a major hurdle if the manufacturing equipment used is older and the level of automation in the production process is low.

For years, the leading international tobacco companies have been using Codentify, a coding system originally developed by Philip Morris International in 2005. The company turned Codentify into a joint tobacco industry project by licensing it for free to British American Tobacco, Japan Tobacco International and Imperial Brands, formerly known as Imperial Tobacco Group. In May 2013 the four formed the Digital Coding & Tracking Association (DCTA) to further promote the technology, which is currently deployed in more than 50 markets. Codentify enables tracking and tracing, product authentication and digital tax verification. According to the DCTA, the system is simple: a unique and secure, eye-readable, 12-digit code is printed directly onto packs and cartons during manufacturing. The solution works on standard equipment and is easily integrated into the production process. ▶

Although Codentify sounds like a system designed exclusively for high-volume cigarette production, it may also be a good solution for smaller or specialized tobacco manufacturers, says Mario Bock, director of global tobacco and security business and global strategic accounts for Europe at Videojet Technologies, which advises tobacco firms on the implementation of track-and-trace systems.

“Tobacco coding demands sophisticated solutions and near-constant uptime,” he says. “Each tobacco company, with different brands, cans, cartons and cases, must ensure that communication between the individual stages is established so that the manufacturer has comprehensive and reliable information on every step in the supply chain.”

For high-volume production, Bock says, the technology must deliver high-quality codes reliably and efficiently while meeting the challenge of demanding production line speeds. Smaller players have different needs, he says: “They want a simple system with manageable costs and data volume. They know that their production lines need to be made compliant, but they are often insecure about how to achieve this and whether all of their products will be affected by the forthcoming tracking-and-tracing legislation.”

Smaller manufacturers, he explains, have a different logistics expenditure; sometimes their manufacturing and logistics processes still involve manual labor, placing special demands on the coding system.

Three packages needed

According to Videojet, each tobacco manufacturer needs to consider the acquisition of three packages. For a factory, a tobacco manufacturer will require an IT package, which contains all elements that are necessary to communicate between the different systems and stakeholders. The scope of this IT package depends on the complexity and is a one-time investment per factory; later on there may be licensing costs for the software. The IT package should offer a track-and-trace solution as well as serialization and authentication solutions.

As a second element, an aggregation package will be needed for each production line, which should fulfill the following minimum requirements: Apart from aggregation of the smallest salable units, it should include the installation, the hardware and software, as well as training and commissioning. Depending on the final installation, additional cameras and sensors may be required.

The third package is the hardware coding package comprising all equipment that must be installed on the factory floor. Depending on the types of machinery involved, this package, which is needed for each line, will include a laser or a continuous



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inkjet printer, a label applicator, and vision systems to read the codes and accessories.

One of the companies offering an IT package for track-and-trace compliance is Blue-infinity of Switzerland. The company has developed Anti-Illicit Trade (AIT) Central, a suite of packaged solutions and services that provides scalable, TPD2-ready track-and-trace capability to tobacco companies and related operators, such as third-party logistics suppliers and warehouses.

“As the solution is fully scalable, it fits the needs of smaller and mid-sized manufacturers,” says Stephane Huck, director of packaged solutions, track and trace, at Blue-infinity. “Blue-infinity will customize a tailor-made solution, based on open standards, in order to integrate the production and IT landscape of manufacturers,” he says. “Its heart relies on three focused technologies covering serialization, tracking and authentication needs. We provide packaged services, operation and management of these systems.”

One of the system’s advantages, according to Huck, is that it has been made by the industry for the industry. It also has a proven capacity to sustain high volume, speed and data integrity; offers a rapid time to market; and provides flexibility at all levels. What’s more, the system is compatible with Codentify. To facilitate implementation and help secure timelines and cost, AIT Central is designed modularly; the company says the solution is forward-looking in that it “learns” and continually evolves with experience.

Blue-infinity’s approach meets the challenges often found at smaller tobacco manufacturers, such as organizational issues, heterogeneous equipment and the lack of unique internal specialists, Huck explains.

“Blue-infinity goes beyond traditional IT services with a hands-on knowledge of manufacturing facilities and extensive know-how to support complex problem-solving at the factory floor down to supply chain. Finding a knowledgeable specialist covering the challenges within small companies is the challenge. That’s where a team of partners is used to work together, with clear roles and responsibilities, which is a key factor to speed up piloting and roll out a working solution in a controlled time.” ▶

While manufacturers often focus on their production line, 70 percent of the integration process is in fact related to the remainder of the supply chain, according to Blue-infinity.

“To overcome significant supply chain impact, phased-approach, retro-planning integration activities are strongly advised,” says Huck.

The industrial approach also allows manufacturers to generate and manage vast amounts of data. “We recommend a cloud-ready approach as a first step, benefiting from Blue-infinity hosted infrastructure and fully managed services to shorten time to market, improve flexibility and cost,” says Huck. “Secondly, our customers have the choice of transferring the platform to their environment, knowing that most probably the regulation will push for data not being stored on manufacturer premises. We believe that technology should be an enabler, not a barrier.”

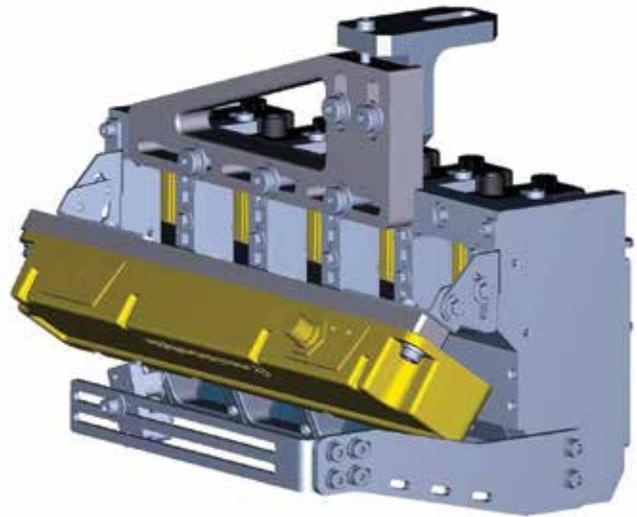
From pack to carton—and beyond

Solutions for aggregation come from companies such as Hermos, a German specialist in IT process integration and automation. The company provides full aggregation solutions from pack to pallet level. The case-to-carton—or bundle—aggregation is considered to be the core process. Pack-to-carton or any other aggregation processes, such as multicarton-to-case, are easily adaptable to this core. The standardized software framework connects all these process hierarchies to logical groups through parameter settings, explains Harald Koehler, chief technical officer at Hermos. Hermos also offers a modular hardware and software toolkit that can be integrated into existing production lines. The system is versatile and enables the aggregation from pack to carton to case to pallet or only from pack to carton. The parameters allow users to set threshold values in compliance with TPD2. With this tool, Hermos says it can guarantee that only goods that have been tracked 100 percent are stored in the warehouse.

The process is the same for all manufacturers, as are the factors to be considered before an investment in track-and-trace solutions. “To reach a workable end-to-end track-and-trace solution that is realistic and reliable in price, it is important to start the technical assessment as early as possible,” Koehler says. All business segments and technical disciplines should be involved in the solution-finding process, as implementation will result in production downtime, he stresses. Success depends on clear communications and the buy-in of all parties involved.

“For smaller tobacco companies, the pack-to-carton-to-case process often is very complex. While modern bundle makers send the wrapped cartons onto a conveyor line to an automatic case packer, older production lines have neither a conveyor nor a case packer at the outbound of the bundle makers, but a simple table instead, which leads to a pileup of cartons. At this point, manual labor comes in—an operator will pack the pile of cartons into a case, [which means] pack tracking is no longer a safe process.”

Two years ago Hermos developed a fully manual case-packing process with a 100 percent tracking efficiency, at that stage comprising only carton-to-case aggregation. This provides a solid tracking process even for manual operation. Pack tracking can be added to that system as well, if an automated upstream conveyor exists. If not, which is quite often the case, a newly developed Hermos solution will solve the problem.



Hermos’ aggregation solutions are all derived from the core case-to-carton process.

In addition to the retrofit solutions for packing lines already mentioned, Hermos says it offers the “ideal” infeed tracking conveyor consisting of carton itemizer, insertion station, pack tracking (for clear wrap cartons), mounting location for the carton label applicator and reject station. All process equipment is as compact as possible and processable in the same modular way as all other solutions provided by the company, Koehler says.

Manageable hardware

Videojet provides solutions for the third package, the coding hardware. The company offers a variety of stand-alone printers, label applicators and laser systems with high efficiency rates—to be integrated at various points in the production line—to comply with the full coding requirements. The units, which pass signals to a reject unit, are mounted onto existing systems and have minimal footprints. “We advise smaller tobacco companies about the minimum they need to invest in the hardware to make their production compliant,” says Bock. “Often, coding units at the packer and the bundle maker, which should be compatible with SAP or other MES systems, will suffice.” The actual manufacturing process will not be changed by the additional equipment. In order to avoid rejects and to enable efficient aggregation, coding needs to be clear and easily readable from the start, he points out. To optimize the track-and-trace process for its smaller customers, Videojet offers to take on the template management for them. The company can set up a template with all the information required by TPD2 for various packing machines.

There are many SAP-based track-and-trace systems on the market, and of course customers can implement their proprietary solutions. Nevertheless, Bock recommends Codentify for smaller companies. “It is simple and manageable, has a proven track record and involves comparatively low investment.” He points out that implementation can now be simplified with new Codentify interfaces that are designed to improve integration and connectivity between digital printing technology, the required Codentify code generator and the tobacco applications. TR