Brand Protection:

Combating Counterfeiting and Piracy

Micro colour-codes:
tiny but highly efficient

by Rolf Simons

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Recent statistics published by the European Commission clearly show that product piracy is still far from being extinguished. On the contrary — in some sectors, counterfeiting is rising most alarmingly. Next to protection strategies, companies also need to focus more and more on the traceability of their products.

For the first time in years, the number of interventions due to counterfeited products at European borders has decreased slightly. In 2008, 49,381 cases were recorded, in 2009 this number dropped to 43,572 cases. The total of seized articles decreased from nearly 179 million to approx. 118 million. Does this mean that counterfeiting is diminishing altogether? This, indeed, would be a positive perspective. But we need to keep the economic downturn of 2009 in mind when analyzing these figures. Exports went down by 16%, imports even by 23%. However, the number of interventions only decreased by 12%. Parallel to the more positive economic forecasting, it is predictable that counterfeits will be on the rise again.

Counterfeits are potentially dangerous to health

Most alarmingly, in 2009, medicines were again among the top counterfeited products seized at the borders of the Single Market and made up 10 percent of all seized articles.

The European Commission also notes: "In the past IPR infringements were mainly a problem for the luxury industry. As in previous years, more and more of the products detained by customs are for daily use such as shampoos, toothpaste, toys and household appliances, and products potentially dangerous to health, such as food, beverages and medicines. Products for daily use and products potentially dangerous to the health and safety of European consumers account for a total of 17 million items or 18 percent of the total amount of detentions."[1]

More and more companies recognize the importance of taking action against counterfeiters. Numerous different anti-counterfeiting technologies are in use and their number is rising continually. Yet, not every technology is necessarily counterfeit-proof itself. Many labels, codes and other security features are forged nearly as quickly as they are launched. Counterfeiters are often on the same technical level as the companies. Some are even one step ahead, implementing security features which the original manufacturer does not use at all. A successful protection strategy needs to be, above all, counterfeit-proof.

No guarantee against forgery

With the importance of traceability growing fast, nowadays it is often not sufficient to secure products, parts and packaging against forgery. Every single item needs to be traceable, which means that manufacturers, retailers and consumers must be able to backtrack each individual step of the item within the supply chain. This is mainly done by data matrix codes and RFID (radio frequency identification). These track & trace features are technically quite sophisticated. But does sophistication necessarily imply security?
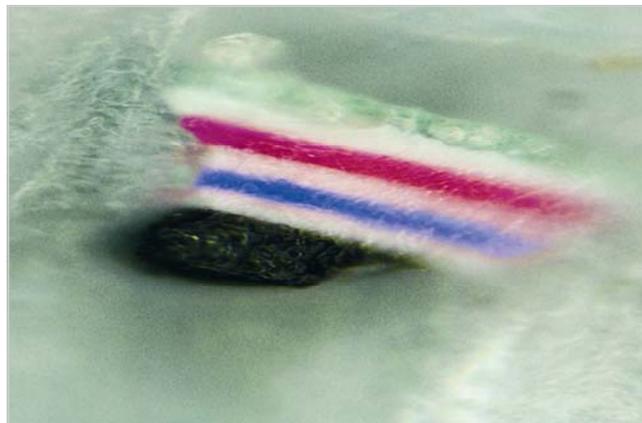
The smallest micro colour-code in the world SECUTAG®: legally binding and counterfeit-proof for 15 years

[1] European Commission – Taxation and Customs Union: Report on EU Customs Enforcement of Intellectual Property Rights, Results at the EU Borders – 2009.

Without a doubt, both coding systems are leading products in the traceability market. But still, there is no guarantee of them not being cloned by forgers. Especially low cost RFID tags are prone to counterfeiting: "the low cost RFID tag contains an unencrypted identifier that can be stolen for duplication efforts. For example, an attacker can gain physical or electronic access to the tag's identification number and generate a second, false tag with this same number. This illegitimate tag can be used to perform a replay attack in which the counterfeit tag is used to mimic the behavior of a valid tag." [2]

Counterfeit protection plus traceability

It is neither completely safe nor sufficient to apply a track & trace code to a product and hope for the code to be secure. What is required is a solution which combines both traceability and security and, what is still most important, is itself counterfeit-proof. The German company 3S Simons Security Systems GmbH, based in North Rhine-Westphalian Nottuln, has developed an industry solution that combines the logistic advantages of well-tried traceability codes with the counterfeit protection of their micro colour-codes SECUTAG®. The colour-codes have been forgery-proof for 15 years and are legally binding, i.e. they are accepted as evidence by international courts.

SECUDATA®: offers a combination of traceability and counterfeit protection

² Homeland Security – Smart Border Alliance: RFID Feasibility Study Final Report, Attachment E.

Direct protection of spare parts is accessible with SECUPRODUCT

In the SECUDATA® industry solution to the problem, the micro colour-codes totally support the protection of branded products against forgery. An RFID or data matrix code ensures the traceability of the products. Both codes in combination ensure the continuous security of the entire flow of goods and material. Both codes are conjointly applied either directly onto the product, its primary or secondary packaging or onto labels or seals. Thereby the traceability code and the product are unambiguously identifiable as originals. The same applies to security labels of all kinds: The company information deposited on the label as well as the product is sustainably secured.

Double-layer security approach

The system is very user-friendly as far as product controlling is concerned. Producers, suppliers and consumers alike are able to trace their products and test them for originality. The data matrix code, for example, can be user-defined and contain information such as product code, EAN code, producer initials, manufacturing date, batch number and serial number. The product ID is scanned and its content checked and matched with the information provided in databases worldwide. But even if the data and the information in the database coincide, the originality of the product is not yet guaranteed.

Therefore, the colour-code provides a double-

layer security approach: In case the notice shows that the product in question has already been verified, it will most probably be a counterfeit. Through the marking with colour-codes, its authenticity can be double-checked immediately. The micro colour-code particles are detectable under a simple microscope or automatic reader. The identification of a product as original is absolutely secure, due to the legal certainty of SECUTAG® and because each manufacturer possesses a unique colour-code with which all his products are marked.

Unique code for each company

The world's smallest micro colour-codes are invisible to the naked eye. They are made of melamine alkyd polymers, manufactured in different sizes beginning at 8 micrometers (µm). The code consists of four to ten different colour coatings. The selection of colours and the arrangement of the layers form the unique code for each company. The codes are extremely temperature and chemical resistant. They are added to various transfer media before application and can be combined with pastes, liquids, powders and granulates or included in polyester threads and are printed via all standard printing processes, applied by brush, coating machine, heat transfer or dispenser.

Especially for spare parts or machines, direct

marking is the most favored protection method. Special security labels on packaging constitute another or double safety layer. For products with long supply chains and many different intermediate stages, protection of delivery documents is also a strategic option. Due to its easy and efficient implementation into production processes, colour-codes are suited for use in all kinds of industries, on products, primary and secondary packaging, labels, seals and documents. And, of course, for combination with traceability codes.

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The packaging of testing equipment manufacturer INGUN is effectively secured by SECUTAG®