

Intelligent software the key to brand protection?

To counter cigarette smuggling, track and trace is the name of the game. New technology from Swiss company AlpVision combines digital imaging and intelligent software.

As in other industries, the digital revolution opens exciting new possibilities and software engineers and digital imaging specialists are beginning to replace chemical, micro or nanotechnology experts as spearheads in brand protection. With today's technology and equipment it is possible to print invisible information with normal ink and standard printing machines, i.e. an industrial packaging printer, using standard printing machines and standard ink, can produce secure packaging for manufacturers of branded products incorporating high-security, covert marking without additional production cost and without reducing production speed. This latter consideration is of great importance for the tobacco industry, considering the large volume of production.

AlpVision's Cryptoglyph is a patented security process providing invisible marking with standard ink or varnish standard printing processes (offset, rotogravure, flexography, etc). It is a pattern of random micro dots or holes, invisible to the naked eye, generated by a 128 bit key, big enough to offer billions of billions of different patterns, each one constituting a unique identity. These patterns are camouflaged within the imperfection of the printed material and impossible to replicate.

For cigarette packaging printed with high-speed web rotogravure printers, the security feature is optimally created by micro holes. These micro holes are invisible to the naked eye, and generated in the varnish layer within standard printing processes. The covert security



Authentication in the field with a PDA camera phone.

feature is produced without any change in the production process and without alteration of the production speed. This means no extra production costs are involved. The process even saves a small percentage of the varnish ink, compared to the printing of the same packaging without the covert protection, the company claims.

Accordingly, Cryptoglyph can be integrated easily into any current packaging production line. Simply embed the invisible Cryptoglyph file in the prepress

In essence

- ▶ New security process provides invisible marking with standard ink or varnish standard printing processes
- ▶ Solution requires no changes in production process or speed
- ▶ Authentication possible with web applications

packaging artwork before printing, without any modification of the packaging design. This covert security solution does not require any extra security consumables compared to other solutions needing additional security features, such as taggant, special security ink or DNA-like imprint, which mean a modification of the production flow and probably a slowdown of the production speed.

The constant progress in microelectronics and home computing has led to very powerful off-the-shelf imaging devices, such as office flatbed scanners, webcams and PDA camera phones. These devices can capture an image on a mouse or button click and send it to a secured server for analysis; the same way people send family photographs to their relatives. The secured server will automatically process the image sent by the examiner via Internet or mobile networks. This will return a "genuine or fake" verdict on the PC or mobile phone screen. If the product is genuine, AlpVision's identification software will mention the cylinder number used for producing the invisible varnish marking, which could help to uncover possible market diversion.

Using state-of-the-art web application technology allows any authorised person to proceed automatically to authentication, anywhere, any time, by just taking a picture of the packaging under examination. The increasing computing power of consumer mobile devices has made off-line solutions a more than viable option.

This opens up new possibilities for brand manufacturers to provide a single point of contact for the authentication and identification of products along the whole supply chain worldwide. Deployment can be extremely rapid, given that only standard software, such as an Internet or mobile browser, is required to get access to a secured authentication point from anywhere in the world. Standard printing processes and standard ink or varnish used by traditional industrial packaging printers can produce a high level of covert security, using technologies fully under the control of the brand owner.