Kluwer Trademark Blog

Transparent ink – a new weapon to combat counterfeit goods

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We need all the help we can get to fight counterfeit goods. Counterfeit goods are produced and distributed by organised criminal groups and this crime represents as much as 2.5 per cent of world trade, or USD 461 billion. For more information see Europol's webpage here: https://www.europol.europa.eu/crime-areas-and-trends/crime-areas/intellectual-property-crime/counterfeiting-and-product-piracy.

A Danish researcher and associate professor, Thomas Just Sørensen, and fellow researcher, Riikka Arppe-Tabbara, from University of Copenhagen's Nano-Science Center have taken up the challenge of disrupting the sale of counterfeit goods by coming up with an affordable and transparent 'tag' the size of a comma. The 'tag' is an easy way for consumers to tell counterfeits from originals. The researchers confidently refer to the invention as 'the world's safest'.

The 'tag' consists of a bit transparent ink containing various microparticles, sprayed upon a bar code, for example on paper. Just as a handful of sand thrown over a surface would, the particles form a random, completely unique pattern of tiny white dots when applied. As there is no chance of creating identical patterns using this method, it is impossible to copy. Having conducted nearly 10,000 tests, the researchers have proved that their method has an error rate of zero.

Because the ink can be sprayed with an airbrush over any type of bar code and onto many types of materials, the tags are inexpensive to mass-produce. The system works in such a way that each product leaving a factory receives its own fingerprint, which is then registered in a database. The 'tag' can be printed on a wine bottle, a gold watch, a painting, pharmaceuticals – whatever.

How do you use it?

Basically, all you need is your smartphone and an internet connection. Who goes anywhere without that these days? In a purchase situation, consumers can take their phone and scan the product they are about to purchase. The 'tag' will then be validated against all the 'tags' listed from the original producer, and the consumer is informed right away whether the product is genuine or fake. In other words, consumers can validate the product using an ordinary smartphone that, by way of an app, scans an item's fingerprint and checks for a matching database image. In this way, you can check whether the product is genuine before you buy it.

Pharmaceuticals

Most of us will probably get over buying a new designer bag, watch or other merchandise only to

discover that it was a fake. On a more serious level, people die from counterfeit drugs on a daily basis. Globally, the trade with counterfeit consumer products is growing. As such, it is difficult for consumers to feel entirely secure about their purchases.

In addition, European studies performed by the European Commission suggest that over 50 per cent of medicines purchased from unregulated websites are falsified medicines, counterfeit medicines or substandard medicines. From my point of view, I see a great potential for increasing patient safety especially when purchasing pharmaceuticals online. It will still not be possible to check the originality of the pharmaceuticals prior to buying them, but at least the consumer can check the originality of the pharmaceuticals prior to consuming the them.

Estimated costs

According to the researchers, the estimated costs for the protection of retail goods (wine, sneakers, sunglasses etc.) produced in volumes of 1-10 million per year, are in the range of USD 0.15 to 0.30 per fingerprint/product for the manufacturer.

For luxury goods, the researchers plan to offer a subscription-based system based on the number of registered items. This will include an Application Programming Interface (API) between a Customer Relationship Management (CRM) system, a customer database and an authentication register. The researchers expect that this solution will be priced at USD 20,000-50,000 per year for up to 1,000-10,000 items in the register.

Is this the end of counterfeit goods?

Unfortunately no! Nothing is bulletproof. This new invention is a useful tool for us who would rather be caught dead than buying a counterfeit product. It is also useful for rights holders to tell original and counterfeit goods easily apart and useful for customs authorities when scanning containers in transit for counterfeit goods. For those who do not care or consumers wanting to buy a ‘look-a-like’ at a low price, this invention will have no effect.

For more information on the invention, please refer to the following link: https://www.researchgate.net/publication/330436019_Versatile_and_Validated_Optical_Authentication_System_Based_on_Physical_Unclonable_Functions

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