



# Ingenia Technology: Counter the Counterfeits

A number 10 jersey and a ticket to see Brazil in the 2010 World Cup have more in common than Ronaldinho's draw as a world-class athlete. Both items, because of that very desirability, are likely targets for counterfeiters. If I were to travel from London to Capetown to see a match, security features would be passing through my hands at every step in the journey: a 2D barcode printed on my e-ticket, encrypted RFID in my passport at border control, a hologram embedded in my ATM card, colour-shifting ink in my 50 Rand banknote, not to mention the myriad security features embedded in the World Cup ticket itself.

All of these authentication features are secure because the genuine manufacturer can do something that the counterfeiter cannot. Whether it is because the technique is too difficult (holograms), the materials are hard to obtain (colour-shifting inks) or the information is secret (encryption) the security feature is valuable only as long as the counterfeiter's knowledge and resources do not equal those of the legitimate source. Unfortunately history has shown that the counterfeiters are smart and motivated; if a method exists to produce a security feature, then the counterfeiters can replicate it.

Ingenia Technology is pioneering a different approach to authentication technologies. Ingenia's security does not rely upon any feature or taggant that has to be added to an item or product, it uses the unique features already present in every man-made object. Whether it is the particular orientation of the paper fibres or the microscopic imperfections (a thousand times smaller than a human hair) in a plastic security badge, these naturally-occurring

random variations are present in nearly everything we use.

Ingenia's patented Laser Surface Authentication (LSA™) system uses a harmless laser to scan over these microscopic variations and use them to generate a code or signature. Just like a human fingerprint, the particular 3D variations of any surface are unique, and so is the LSA™ signature. And just like with a human fingerprint, finding the signature of a product, document or package allows you to know exactly which product, document, or package you have.

Unlike traditional security features, LSA™ does not require a specialized manufacturing step (in most cases the sensor can be retrofitted into existing production methods) or consumables of any kind. The genuine manufacturer of an LSA™-authenticated document, product, or packaging does not have to invent a new process that only provides a couple of years' breathing space before the counterfeiters replicate it. Instead, the manufacturer uses features that are present in their product already, while the counterfeiter is forced to do something that even the original manufacturer cannot—control the shape of the entire surface with sub-micron precision.

LSA™ is the perfect complement to convenient but insecure identifying features, like 2D barcodes or RFID tags. With an LSA™ signature embedded alongside ticket information and printed in a datamatrix, the ticket becomes self-authenticating. Even the most careful copy, where the barcode is reproduced down to the last pixel, would be on a different piece of paper, and an LSA™ scan would immediately determine it was a fake.

Dr. Brian Rafferty - Engineering Director - Ingenia Technology Ltd. - [brafferty@ingeniatechnology.com](mailto:brafferty@ingeniatechnology.com)

[www.ingeniatechnology.com](http://www.ingeniatechnology.com)

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