Anti-counterfeiting and anti-piracy technology guide

https://euipo.europa.eu/anti-counterfeiting-and-anti-piracy-technology-guide

Copy Detection Patterns

Copy detection patterns, also called secure graphics, are small, random or pseudo-random digital images to be printed on packaging, products or documents to detect counterfeits. The technology is based on the principle that every time a digital image is printed or scanned – regardless of the quality of the scan or the photocopying technology used – some of the information contained in the original image is lost. Copy detection patterns (CDPs) are designed to maximise this information loss when it is printed or copied. Because a counterfeit copy detection pattern will have been copied or scanned at least once more than the original, the resulting counterfeit image will contain less information than the original image. Authentication is, therefore, done by an algorithm comparing the amount of information in the scanned copy detection pattern with the original.


Image © Justin Picard, 2024

Used for
- Authentication
- Tracking/Tracing

Suitable for
- Very small products
- Small products
- Medium-sized products
- Large products

Goes on
- Product
- Packaging

Can be used for
- Physical products

Visibility
- Visible
- Invisible

Reading device needed
- Yes

Connection to server
- Yes

Description

Copy detection patterns, also called secure graphics, are small random or pseudo-random digital images that are designed to be sensitive to printing and copying. The images are usually generated by specific software modules before printing. They can be scanned using a mobile phone camera or scanner, and authenticated via a mobile phone app. Copy detection patterns can also be inserted into 2D barcodes (e.g. QR codes or data matrices) for enhanced security, which facilitates smartphone authentication and improves traceability.

Uses

Copy detection pattern technology can be applied to documents, products and packaging.

Implementation

As the copy detection pattern integration process is essentially digital, you will not need to make any major

changes to production or logistics operations if you want to implement this technology.

Cost

It is difficult to give a general idea of the costs associated with copy detection patterns, but they typically do not scale up in direct proportion to the quantities of objects to be secured.

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