ORIGIFY BY BOSCH

When deciding how to best protect a brand's products, there are several options for security features and authentication technologies. Serial numbers, barcodes, encrypted optical and radio codes such as QR, RFID and NFCs enable serialization and end-to-end traceability. Yet, physical security features are no guarantee of authenticity, because sooner or later they can be copied or manipulated by counterfeiters. Also, there are products that cannot be marked directly due to their small size, or because the marking could have a negative impact on the design or performance of the products. Thus, some brands may not find any secure product authentication at all or rely on invisible technologies for protection.

Origify by Bosch is a completely mark-free (without QR code or similar) and digital solution for product authentication that can be used to identify whether a product is original i.e., scanned and registered by the original manufacturer. The technology can also be used for general traceability purposes. With our covert and digital product authentication solution, manufacturers can track and verify original products within seconds. We can authenticate almost any product type with a sufficiently random surface structure by leveraging our optical fingerprint powered solution, which is non-invasive and keeps your product design intact.

Our state-of-the art authentication solution is smartphone enabled and traceable to the unit level, unlocking new opportunities for brands and manufacturers to increase the number of users verifying product authenticity as well as enabling broader use cases.

How it works

Fingerprinting Technology

Products might look similar or the same to the naked eye, but when examined more closely, a difference in the material pattern is found, just like our human fingerprints, that look alike, but are vastly different when closely compared. Origify Product Authentication uses the fingerprint technology to optically capture the natural surface of a product. Just like a fingerprint reader the technology allows the ability to identify and match the surface patterns of products.

Registration of pattern signature

Origify is designed to support the brands or original manufacturers in identifying specific individual items of newly produced goods as such individual items. The customer can use Bosch Product Authentication with two IOT-Devices or one IOT-Device and a smartphone to optically capture his products mark-free and contactless and match them by means of IDs generated by the system. The initial image capture, hereinafter referred to as "registration", and the image capture of a product for the purpose of matching, hereinafter referred to as "verification", shall be carried out on two separate IOT-Devices. The optical capture is only performed in an adequate surface area of the product, which has been defined in advance between the customer and Bosch. Precondition is the uniqueness of that area. For a robust process flow, a product-specific design of the image capture is necessary. This is determined during a preceding one-time examination. Factors include material properties, surface texture, and geometry. No technical line integration is required. To avoid downtimes and interventions in automated customer

production lines, the IOT-Device is designed as a stand-alone system which works independently after initialization and connection to the customer LAN connected to the Internet. An on-premises solution could be provided based on an additional development contract.

After transferring the image data via the Internet to the Bosch cloud, the system generates a unique and non-interchangeable ID according to an algorithm used by Bosch. This ID is assigned to the respective individual item in the system and linked to suitable metadata previously agreed between the customer and Bosch. Verification is done via a simple smartphone application (also available as White Label or SDK) that can be used by all stakeholders. In this step of the authentication process, the user is guided to capture the predefined area. During verification, after being transferred to the Bosch cloud, the generated ID is checked for consistency with the IDs stored therein. This real-time process can also be performed via the IOT-Device for an industrial setting.

Insights for business optimization

For further optimization, Bosch provides a digital management solution that helps manufacturers to manage and control the IOT-Devices across the supply chain. On the other hand, it also allows manufacturers to gain meaningful insights through aggregated data (dashboard) collected by the smartphone scans. To just give a few examples, these data points can be used to display product model specific sales figures, regional product preferences as well as failed authentications which can offer insight into areas where counterfeiters are trying to enter the supply chain.

Our solution has been tested and industrialized for various Bosch plants including our sensitive ceramic sensor elements (recognition rate 99.8% and no false positives) that could not be marked and secured using conventional technology – proving that only a very small surface area >5mm² is needed to protect your products with our technology.

Origify makes the authentication of any product less complicated and time consuming for manufacturers and resellers.

Find out more about us at: www.bosch-origify.com, or follow our journey on LinkedIn.

Trace, verify and secure your brand with Origify!