IAI industrial systems automates personalization of Britain's Next-Generation ePassports

The Project

Her Majesty's Passport Office (HMPO) was established in 2006 as the sole issuer of passports to citizens of the United Kingdom on behalf of the Crown. It operates through the General Register Office, which also oversees civil registration in England and Wales. Each year, more than five million passports are issued through seven regional offices and over 50 interview offices across the UK. HMPO also provides a passport validation service to support the business community and government departments in preventing fraud.

Challenge

To enhance its British passports, HMPO sought to issue a next-generation document featuring a polycarbonate data page and enhanced security. To meet deployment targets, however, the new design would need to be rolled out within months — including developing the technology to accommodate the required high-speed, high-volume personalization and laser engraving.

"With passports requiring a high level of security, the personalization automation technology needed to be reliable during fast production rates," explained Marcel Borg, Head of Product Design at HMPO.

"IAI was able to develop its technology, implement the system and train our staff all within an incredibly tight timeframe."

Marcel Borg,
Head of Product Design,
Her Majesty's Passport Office (HMPO)

Solution

IAI Industrial Systems was chosen to provide HMPO with the industry-leading BookMaster® One (BMOne) and BookMaster® Pro (BMPro) passport personalization systems in cooperation with Thales Group, a global provider of passport solutions, which was in charge of the passport's design.

One of the major factors in reducing stress during the introduction of a new passport has been the versatility of IAI's systems.

BookMaster® One

BMOne has been used in passport projects worldwide. It features a modular design that allows the user to choose from functionalities including input, book identification, chip encoding, inkjet printing, lamination, cleaning, laser engraving, verification, labelling, output and the patented NumberPerf® security feature.

BookMaster® Pro

BMPro is an industrial laser personalization solution for passports that produces documents forensically identical to those produced on BMOne, its high-volume counterpart. BMPro also features a modular design for maximum versatility and customization, with functionalities that include input, book identification, chip encoding, inkjet printing, laser engraving, verification and output.

The ease with which all areas can be accessed for maintenance, coupled with the use of limited consumables, also mean operational costs are minimal.

For HMPO, IAI installed 10 BMOne systems and 18 BMPros at two main production sites in Manchester and Fareham, as well as in seven local production sites in Belfast, Glasgow, Liverpool, Newport, Peterborough, Durham and London. Doing so involved developing new technology — a BMPro with a back engrave unit — as well as providing training and on-site support during the go-live phase. IAI also provides system maintenance.

Result

Today, IAI's passport personalization systems are generating 13 different types of passports for HMPO, including documents for British citizens residing overseas. Throughput is exceptional, with the BMOne generating 500 passports per hour and the BMPro generating 100 per hour.

Systems were deployed in two batches, with all 28 implemented and operational — allowing HMPO to roll out its next-generation passports by the target date.

"IAI passport personalization systems allow us to protect British citizens with state-of-the art, highly secure passports that align with our commitment to integrity, reliability and exceptional customer service."

Marcel Borg,
Head of Product Design,
Her Majesty's Passport Office (HMPO)

Security Features:

CHIP ENCODING
All personal data is encoded in the contactless chip.

LASER ENGRAVING
The photograph, personal data and signature are engraved at the front and back of the data page. These are done in combination with a diffractive optically variable image device (DOVID) for additional security. Subsequently, a holder's photograph is engraved on the back of the data page.

COLOUR INKJET PRINTING
On page three of the passport, being the observation page, a full colour inkjet image is printed.

VERIFICATION
The applied graphical data is verified with vision technology, which checks whether the information is applied correctly through high-precision verification cameras. The electronic data on the chip is verified by the inspection system, which compares the data from the integrated chip with the data received from the host computer.

LABEL PRINTING
A barcode and document number are printed on a label, which is applied onto the back cover for easy identification of processed booklets.

BRITISH PASSPORT // CASE STUDY

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