IAI industrial Systems Boosts U.S. Passport Production by 9 Million Highly-Secure Next-Generation Booklets

The United States Department of State is responsible for the country's foreign policy and relations, including advising the U.S. President on international relations, administering diplomatic missions, negotiating international treaties and agreements, and representing the country at the United Nations. It also manages the U.S. Foreign Service, provides diplomatic training to U.S. officials and military personnel, exercises partial jurisdiction over immigration, and provides various services to Americans – including issuing nearly 23 million passports and passport cards in its 2022 fiscal year.

CHALLENGES:

In 2021, the State Department began rolling out its Next Generation Passport, featuring enhanced durability, high-tech imagery, and a laser-engraved data page. The new design is based on polycarbonate data page technology and utilizes sophisticated security features delivered through the personalization process, including encryption on a contactless chip embedded in the booklet.

A combination of advanced laser engraving and secure inkjet technology are used to provide multiple images on both sides of the data page. This enables accurate holder recognition and combats threats like counterfeiting to ensure the passport's Integrity.

The goal was for all U.S. passport agencies to be issuing the new booklets by the end of 2022. To achieve this, the State Department needed to accelerate production with technologies capable of producing the new booklet's advanced security features.

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CASE STUDY

SOLUTION:

The State Department tapped IAI industrial Systems and IAI's installation and services partner, GET Group North America, to deploy in excess of 100 IAI's industry-leading BookMaster® (BMone) and BookMaster® Pro (BMPro) passport personalization systems across more than 20 different locations across the country.

IAI's versatile systems automate the passport personalization with a modular design. As a result, the customer is able to choose the functionalities and throughput they require while allowing for future upgrades.

Modular design distinguishes the BMone that enables the user to choose from functionalities, including input, book identification, chip encoding, inkjet printing, lamination, cleaning, laser engraving, verification, labeling and output.

An industrial solution of high-quality precision engineering that rapidly produces personalized passports, designed for office spaces due to space constraints and other related factors, BMPro features a modular design for maximum versatility and customization. Functionalities include input, book identification, chip encoding, inkjet printing, laser engraving, verification, and output.

For the U.S.'s next-generation polycarbonate passports, IAI's systems laser-engrave comprehensive personal data into the data page, including photo, signature, passport number, date of birth and expiration data, all using a special font in combination with microtext – every detail is engraved in combination with a diffractive optically variable image device (DOVID) for added security. A full-color secondary image is applied with hidden data, including the Jura LetterScreen++® feature. Finally, all data is integrity-checked and verified with vision technology, including image enhancement and matched to the source data.

"The scope, security requirements, and timeline for deployment and training in locations across the U.S. made this a unique project,– in the middle of the Covid-19 pandemic, which complicated logistics and budgets. Inspite of various challenges, IAI and GET never wavered to meet all deadlines and expectations without delays, bottlenecks, or overruns," said René Strijbos, VP and Head of IAI.

"IAI and GET Group worked together with extreme flexibility that was critical to accommodate frequent scope changes to meet all expectations and deliver to the State Department advanced passport personalization systems and technologies. Our combined expertise and strong partnership led to success in increasing production of U.S. passports by 9 million."

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VP and Head of IAI industrial Systems

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RESULTS:

IAI and GET installed over 100 BMone and BMPro systems in more than 20 locations across the U.S. at a rate of seven units every six weeks. Each system was customized to support the unique features of the new booklets – including appropriate angles for printing multiple laser images, lockable input/output trays, and enhanced ergonomics – and throughput was optimized to produce 350-500 booklets per hour with a rejection/waste rate of less than 1 percent. A "train-the-trainer" program was established for GET to train a team of more than 50 engineers.

Spare parts and consumables are kept in consignment stock with GET to reduce lead times for fulfilling orders and repair requests.

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RESULTS

- **Chip Encoding** — All personal data is securely encoded in the contactless chip.
- **Image Enhancement** — This is done on the background as data processing before we even print a single book. As soon as the data comes into the machine.
- **Secure Inkjet Printing** — Full color secondary image is applied on page 3 with hidden data including the Jura LetterScreen++ ® feature.
- **Laser Engraving** — The data page engraved area included: the photograph, personal data, signature, tactile on passport number, date of birth and date of expiration, special font and microtext. These are done in combination with a DOVID for additional security.
- **Verification** — These data is integrity checked and verified with vision technology. The visual and electronic data on the chip is verified and all matched with the source data.

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