

The Swiss passport: a unique high-tech product

Interview with Bernhard Deufel, Director Government ID, Orell Füssli Security Printing, on the Swiss passport and driving licence flagship projects.

After 20 years in circulation, the Swiss driving licence was replaced with a new version in 2023. Following the passport in 2022, another Swiss identity document had to be updated within a short period of time. What do these projects mean for Orell Füssli?

Both the driving licence and the Swiss passport are flagship projects, and highly complex jobs as far as security printing and project management are concerned. Orell Füssli has been printing the Swiss passport since 2003, the year it was first issued in machine-readable form. In 2006, a chip with biometric data was added.

Both documents meet the highest security quality standards and are equipped with state-of-the-art security features.

as well as a four-colour intaglio with a tilt effect. The whole passport contains complex motifs with colours that are visible only under a UV light.

Four proofs are made to ensure the functional, or artistic, design is completely suitable for printing. The printing presses have to be configured for these test runs as they would be for an actual production run.

Dozens of presentations involved not just the client for the new passport, but also the Federal Office of Police (fedpol), the general contractor Thales, the cantons and numerous federal agencies.

How significant are physical security elements in the digital age?

Digital readers are less widespread than commonly assumed. They are generally not available for checks at railway stations or on the street. And professionals can destroy the RFID chip in the passport. Smart physical security features are the last line of defence and can be easily verified in practice. For the paper pages and the cover, Orell Füssli worked with forensic experts from fedpol and the Zurich Forensic Science Institute.

What impact does the complex design have on production?

The Swiss passport undergoes two print runs on the offset printing press, which uses more than 40 inks. All cantonal emblems, for instance, are printed to match their true colours. In security printing, the colour emerges not from printing individual half-tone dots, but the intelligent interplay of different halftone cells, which is why even the finest patterns appear as solid lines or solid infill when viewed under a magnifying glass.

“Physical security features are the last line of defence.”

Bernhard Deufel

The general contractor Thales tasked Orell Füssli with the design and technical printing of the cover, endpaper and inner pages of the new Swiss passport. How was the design process organised?

The Swiss passport presents designers with a major challenge, as it is one of the best documents in the world in terms of both appearance and security features.

The new passport is packed with printed security elements. There is microtext in many places, and complex transparent registers integrated into every inner page reveal the Swiss flag and the country code for Switzerland when viewed in transmitted light. The endpaper contains screen-printed elements with optically variable magnetic ink (OVMI),



Orell Füssli's ID team (left to right): Dr. Bernhard Deufel, Natalia Steinauer, Hélène Dejean de la Batie and Beatrice Amann

How many passports does Orell Füssli produce every year?

Based on the length of validity and other factors, over the course of 10 years the print run fluctuates between about 400,000 and 800,000 per year. Today, there are seven types of passports, including diplomatic passports and emergency passports, a provisional document that can be issued by Swiss representatives abroad.

Let's talk about the new driving licence. What was Orell Füssli's role here?

Our designers created the new polycarbonate driving licence in-house. It made an interesting change from their work on banknotes. Along with the development of the card body and the design of the identity document, Orell Füssli developed the production security concept and managed the project, including quality control and monitoring of operations at partner companies.

Each year Orell Füssli delivers about 600,000 new licences in credit card format to Switzerland's Association of Road Traffic Offices (asa). They are issued to new drivers, on changes in the owner's personal data, and on changes in vehicle category. Next year the old licences on blue paper will be completely withdrawn from circulation, so there will be another 100,000 or so licences.

Currently, we are working on enabling the licence photo to be digitally updated via mobile phone. This is already possible in some cantons. We hope to be able to roll out this solution across the country in cooperation with asa.

Will you and your team run out of work when the passport and driving licence projects go into regular operation?

Absolutely not. First, a lot of work remains to ensure the supply of official Swiss documents. And, second, on the basis of these two flagship projects we are working on extending our business in passports, driving licences and visa issuance systems internationally; for example, in Africa, where Orell Füssli is already well established. This and other pillars will be expanded as part of our growth strategy 2028 over the next one to three years.

What future do you see for physical ID documents?

We expect that physical documents, including passports, ID cards, visas and driving licences, will still be required in physical form and in demand by citizens for many years to come, not just in Switzerland but worldwide. With our extensive experience, our contacts and the expertise of Procivis, we are ideally positioned to enter new markets with the digital twins of these security documents, particularly in the area of visa vignettes and driving licences.