

# CASE STUDY

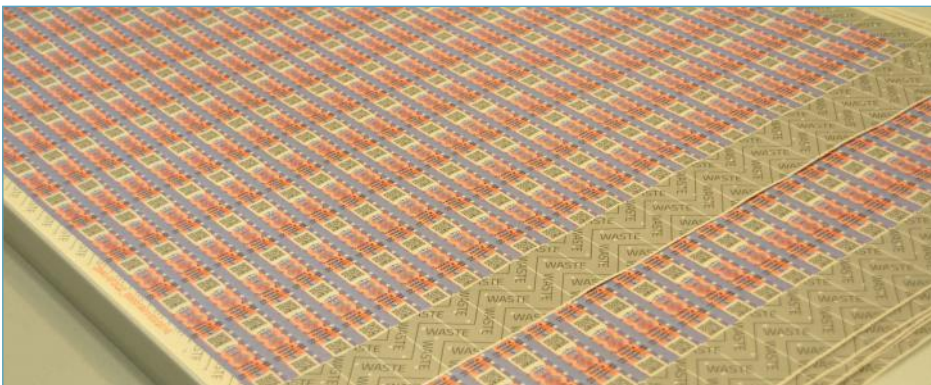


## Fedopress

### Lake Image Systems Automate Variable Data Validation for One Billion Tax Stamps Annually

Fedopress, the state owned print service provider to the Belgian Federal Public Service (FPS), produces over 25 million transactional postal items including Tax, Customs and Treasury documents for Belgian citizens.

For over 40 years, the Belgian FPS has placed tax stamps on cigarette packs and other tobacco products as proof that the excise duty has been paid. With the recent rise in cigarette prices there has been a steady growth in illicit trade, primarily due to the increased circulation of counterfeit tax stamps. This has resulted in a significant reduction in the revenue collected by the Belgian government. In March 2016, Fedopress started the production of a new and highly secure tax stamp, to stem both revenue losses and offer better traceability in the future.



#### NEW, FULLY DIGITAL TAX STAMP

Being litho-printed, with the nominal tax value overprinted, large stocks of the old tax stamp often piled up to satisfy fluctuations in expected demand. However, with 7 differing formats, any changes to the old tax stamps resulted in significant wastage and further time-consuming and expensive reprinting. The FPS knew that digital, on-demand printing of tax stamps onto security paper (incorporating the latest in security features) was the only way forward and commissioned Fedopress to find a solution.

Following an in-depth tendering process, Bart Vanwijnsberghe, Director of Fedopress, opted for the Xeikon 3500 digital, 5-colour, roll to sheet printing press which was capable of printing on security paper at speeds of 19.2 m/min. It offered print resolutions of 1200 dpi, essential for printing security features such as micro-text, guilloche and fine line rasters using their chosen Arziro design software from Agfa Graphics.

As a further security measure, the new tax stamp also contained an image printed with an invisible UV fluorescent ink and a unique QRcode to enable traceability. As Vanwijnsberghe explained, "Our aim was to produce the most secure, digitally printed tax stamp at an affordable price. It was important to have UV printing, as this enables crucial anti-counterfeiting features. Furthermore, with the imminent legislation anticipated from the European Union (EU) and World Health Organisation (WHO), traceability was something we wanted to build-in from the very start of this project."

#### CHALLENGE

When producing in excess of a billion tax stamps a year, even a small glitch somewhere in the production process can severely impact the quality and more importantly the integrity of the tax stamps that Fedopress produce. "During our peak production period we could be producing in excess of 400,000 tax stamps per hour, each with a unique QRcode. At these speeds we had to make sure that all of our processes were efficient and that we are able to detect and rectify any errors immediately," said Vanwijnsberghe.

Using a specially formulated security UV ink, which fluoresces in a choice of colours, can be an effective, yet simple way to authenticate tax stamps. But ensuring that the UV ink is correctly applied to all tax stamps during production can be a tricky process. Prolonged exposure to UV radiation, even limited, can cause serious health issues and therefore UV light sources must be correctly contained to appropriate health standards. Furthermore, ensuring that every printed QRcode is readable, unique and is correctly logged into a database is an essential component of a tax stamp track and trace system - otherwise, the integrity of the whole traceability process can be compromised.

As Vanwijnsberghe clarified, "A manual or an offline inspection process to detect the presence of UV Ink and to verify every QRcode for uniqueness was just not viable. What we needed was an in-built, automated inspection system, to verify our ongoing production, in real-time."



#### CUSTOMER PROFILE

- Fedopress is the document service facility of the Belgian Ministry of Finance
- Responsible for the print and production of Belgium's tax & communication documentation.

#### BUSINESS CHALLENGES

- To stem the growth in illicit trade of cigarettes, Fedopress implemented a new, fully digital, secure tax stamp production solution using a Xeikon 3500 printer
- The tax stamp contained the latest in digital printed security features including a UV ink raster pattern and a QRcode for future track and trace capability
- UV light source to verify the presence of UV ink was required and had to be safely contained
- With peak production of 400K tax stamps per hour, Fedopress concluded that they needed an in-built, automated inspection system to verify their on-going production in real-time.

#### SOLUTION SUMMARY

- Fedopress implemented the Inspection module for the Xeikon 3500 which contained the Discovery Multiscan verification system and the Discovery Maxscan linear scanner
- The system was capable of processing tax stamps printed 24 across and 360 per sheet.
- Discovery Maxscan with integrated LED and UV lighting captures distortion free images at 600 dpi and at press speeds of 19.2m/min
- Discovery Multiscan reads, inspects and verifies a QRcode on each tax stamp and logs the information into a database
- Discovery Multiscan verifies the presence of UV ink on each stamp
- When an error is detected, Discovery Multiscan alerts the operator, immediately stops the press and logs the nature of the error.



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## SOLUTION

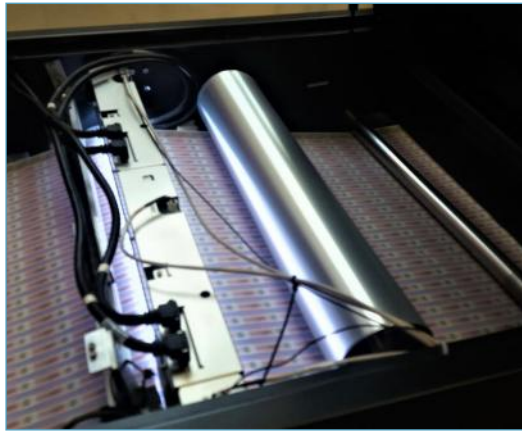
One of the key reasons why Fedopress chose the 3500 printing system from Xeikon was because it came with an in-built inspection module option, incorporating technology from Lake Image Systems. The collaboration between Xeikon and Lake Image Systems has enabled Xeikon clients to benefit from an integrated "Print & Inspect" feature that required minimal additional equipment, installation, set-up and configuration.

The Xeikon Inspection module includes the latest and most advanced variable data verification solution available today, namely Discovery Maxscan and Discovery Multiscan.

Discovery Maxscan is an award winning, revolutionary, low profile linear scanning technology with integrated LED and UV lighting that captures crisp, distortion-free images at a resolution of 600 dpi - ideal for high security applications such as tax stamps. With a working distance of only 12mm (1/2") and a maximum headroom requirement of less than 130mm (5"), Maxscan neatly integrates within the 3500's transport system, without the need for additional rollers. Importantly, it securely contains the UV light source to the appropriate health regulation standards.

Together with Lake's highly acclaimed Discovery Multiscan software, the inspection module provides the perfect solution for verifying the presence of UV fluorescent ink and also reads, verifies and logs every QRcode on tax stamps, printed 24 across, 360 to a sheet and at rated press speeds. When an error is detected, Discovery Multiscan alerts the operator, immediately stops the press and logs the nature of the error.

"I was already familiar with Lake's reputation prior to selecting the Xeikon so I was pleased when this integrated solution was offered to us," injected Vanwijnsberghe.



## IMPACT

After a year of production and after printing over one billion tax stamps, the inspection system is now an integral part of the Fedopress tax stamp operation.

The solution has proved to be highly successful in helping Fedopress to inspect and validate the integrity of every tax stamp.

"To date we have had zero failures. This gives us tremendous reassurance that our production processes are performing well and that we are not producing defective tax stamps which would normally create issues for our enforcement agencies downstream," said Vanwijnsberghe.

The new inspection system is also a big hit with the operation staff. According to Vanwijnsberghe, "The Lake Image solution has enabled our operation to achieve its high quality standards and has automated time-consuming inspection processes to maintain our high level of productivity. The inspection solution does exactly what we need it to do and surprisingly, has had little or no impact on our overall production process."

Vanwijnsberghe is already working on the next stage of the tax stamp project which is to introduce "Track and Trace" capability. Track and trace technology aims to pinpoint cracks in the supply chain where cigarettes can fall into illicit trade. Ultimately, the consequences are revenue losses for governments, increased criminal activity and promote poor public health. Vanwijnsberghe concludes, "Imminent legislation to implement a supply chain track and trace, imposed by the EU and WHO is just around the corner. With our Lake Image inspection solution we are well ahead of the curve and ready to implement this requirement whenever it is necessary."

## BUSINESS BENEFITS

- Implementing an integrated "Print and Inspect" solution from Xeikon has enabled Fedopress to quickly deploy a tax stamp verification solution with minimal effort.
- The in-built UV light source enables the safe validation of UV Ink application to each tax stamp
- Automating the tax stamp verification has given Fedopress the reassurance in their operational processes, freeing operations to focus on more important activities
- Ability to read and log QRcodes printed on each tax stamp enables quicker, simpler implementation of track and trace capability in the future.

**“ THE LAKE IMAGE SOLUTION HAS ENABLED  
OUR OPERATION TO ACHIEVE ITS HIGH  
QUALITY STANDARDS AND HAS AUTOMATED TIME-  
CONSUMING INSPECTION PROCESSES TO MAINTAIN  
OUR HIGH LEVEL OF PRODUCTIVITY.”**

**Bart Vanwijnsberghe**



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