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Cash and ID face similar issues



Most of the articles in InfoSecura concern issues or developments that are somewhat complicated and sometimes even worrying. But every now and then there is an item that is just a pleasure to report. In this issue that pleasure is to report on the 500th anniversary of Swiss security printer Orell Füssli. The company will present its new house note, which is the centre-piece of the celebration, at SecurityPrinters - Banknotes + Identity in Copenhagen.

Half of this issue of InfoSecura, the last before SecurityPrinters, Banknotes + Identity in Copenhagen in October, is of course, just like most of the preceding issues, about money. A reoccurring question among people professionally concerned with money is what will happen to cash. It seems that bitcoin and its many siblings are now generally seen as too volatile to be able to replace central bank money, but the idea of 'stablecoin', backed by a basket of currencies seems a more realistic threat. We report on the head of the Bank for International Settlement and a former central banker giving their opinion on this question.

Two reports, which are the subject of a brief article on page 9 deal with the same threat, but from the viewpoint of the cash industry: 'The Cash Industry in Transition' and 'Virtually Irreplaceable: Cash as Public Infrastructure' are weighty reports that merit a close read. Both are available online. What companies in our industry are doing also occupies considerable space in this issue. The efforts of one papermaker to work sustainably and to reduce its carbon footprint as much as possible provides a good example of what production companies should do to gain the acceptance of that part of the population that cares about the environment. The other company, also a paper maker, shows that it is possible to be successful as an independent, after having been part of a larger group. And the ups and downs of the largest security printing company, which recently sold its identity business, provides a link to the ID section of this issue. The ID industry faces similar issues to the banknote industry: the fight is on to replace physical ID documents with digital versions. It is encouraging that at the last ICAO TRIP Symposium, the organisation's new NTWG DTC Sub-Group recommended a hybrid form of digital travel credential, which would retain physical ePassports and augment them with a digital document.

Under the title 'Lets talk about certification' we are also introducing in this issue a subject that will become a regular feature. Intergraf has just published a new brochure explaining how certification works and in which way it benefits certified companies. There will also be an Intergraf stand at the exhibition in Copenhagen where anyone interested can talk to the relevant Intergraf staff and representatives of the independent auditors that conduct the certification audits.

And finally, the SecurityPrinters, Banknotes + Identity Conference and Exhibition is only weeks away. As much that is contained in this issue of InfoSecura is about the future, the keynote address of the conference, which the speaker, the futurologist Rohit Talwar calls 'The many futures of identity and money', should be especially relevant.

The Editor

HEADING TO COPENHAGEN

Final preparations for SecurityPrinters, Banknotes+Identity are in full swing. With just a few weeks to go before 800+ delegates make their way to Copenhagen from around the world, we catch up with Intergraf's Secretary General, Beatrice Klose, to hear what they can expect from this 2019 edition.



Beatrice Klose, General Secretary of Intergraf

Q. Decades after it debuted in Milan in 1976, SecurityPrinters remains one of the biggest events on the calendar of any banknotes or identity professional. How do you explain that?

Intergraf took a stand over 40 years ago – and our stance hasn't wavered since. SecurityPrinters is a truly neutral platform for two interlinked sectors of the industry: banknotes and identity. Our agenda is free from commercial bias. And our speaker selection is not influenced by sponsors: we enable all the key stakeholders to have their voices heard.

Clearly, this matters to our delegates and to the steadily growing number of senior-level professionals that central banks, ministries and police forces send year after year. For them, as for the rest of our target audience, this is what sets us apart from just about every other event they attend.

Q. Could you tell us: how does the programme come together?

We are fortunate to have a distinguished Committee of Experts working with us. From big players to central banks to law enforcement, they represent the full spectrum of the industry. Within their respective field of competence, they take it upon themselves to research what is to come. Their insider knowledge, not to mention dedication, is key to delivering innovative content that will be of value to banknotes and identity delegates alike - whether they are printers, suppliers or end customers.

Q. What can delegates expect from this Copenhagen edition?

Every SecurityPrinters conference is built around core issues shaping the global banknotes and identity market. This year will be no exception. It will be a full two-and-a-half day agenda, split between a plenary and 10 parallel sessions packed with innovative technologies, strategic insights and actionable tactics.

Our speakers, over 70 industry leaders chosen for their internationally recognised expertise and forward thinking, will drill down into the security ecosystem, the cash cycle and the banknote supply chain on the one hand, and into document authentication, the identity chain and border crossing systems on the other, to mention just a few. And not to forget, obviously, counterfeiting and fraud.

These are all big, enduring questions. But we are also acutely aware of the changes in society. Digital

technologies are transforming the banknotes and identity industry at an ever accelerating pace. This is reflected in the broadening scope of SecurityPrinters. Digital currencies, digital travel credentials, digital identity, banknote apps, the darkweb etc. More than recurring motifs, they are key variables of tomorrow's digital ecosystem and fully integrated into our agenda.

Q. What about your keynote?

Providing unique perspectives is essential to sparking debate and broadening our thinking. For that reason, we opted to look outside the immediate sector. Past keynotes like cyberpsychologist Mary Aiken proved a real eye-opener to many. Her take on cybercrime stirred a lot of thoughts, on a professional as well as personal level. It generated a lot of healthy discussion.

This year, futurologist Rohit Talwar will have equally captivating stories to tell in his keynote address 'The many futures of identity and money'. Everything is changing quickly. Everyone needs to keep up. Rohit's extensive research has much to teach us about how to navigate the threats and opportunities that are likely to emerge. It affords valuable insights into global future trends that can help us craft and implement appropriate anticipatory strategies, both to shape and to prepare for tomorrow's scenarios.

Q. In today's global business environment, time is often of the essence. What networking opportunities does SecurityPrinters offer to busy industry professionals?

We have strict screening procedures in place. All SecurityPrinters delegates are individually vetted by Intergraf before they can be invited to attend. So, whether in conference sessions or on the exhibition floor, you can rest assured that everyone at the event is a potential quality contact: someone who spends every day grappling with similar challenges.

We pride ourselves in creating the ideal environment for two-and-a-half days of networking. From central banks to governments to law enforcement to security printers and suppliers, we connect the entire security printing community. Making new contacts is guaranteed as 40 per cent first-time attendees join each year. And with 100+ exhibition booths treating you to the latest technologies, products and solutions, there will be many opportunities to forge stronger relationships, start new collaborations and drive business growth.

Q. Final words?

If you are a banknote or identity expert, then SecurityPrinters is your community. Intergraf builds it for you. All the team is there to make sure that it meets your expectations and beyond. This is what we have been doing for the past four decades and we certainly look forward to having you back in Copenhagen! ■



...and still in the top team

The Swiss security printer Orell Füssli is celebrating its 500th anniversary by presenting a new house note. Since March this year, the public was able to see a puzzle, revealing small bits of it. At Intergraf's SecurityPrinters Banknotes+Identity in Copenhagen, experts can finally get the whole picture.

There are several security printing companies with very impressive histories but there is only one that can claim that it has been in existence for half a millennium. That company is the Swiss security printer Orell Füssli, which celebrates its 500th anniversary this year.

The date of Orell Füssli's founding coincides with a particularly turbulent period of Europe's history, coming only 64 years after the printing of Gutenberg's famous 42-line bible. Printing contributed to the intellectual blossoming of the renaissance and marked the beginning of the modern age. Woven into Orell Füssli's celebration were exhibitions in Zürich about the importance of printing at that time, from bible printing to printing pamphlets. Another exhibition extended the thematic even to banknotes, although when Christoph Froschauer set up his print shop in Zurich, banknotes were still a long time away.

SAY IT WITH A BANKNOTE

The main feature of the anniversary, however, is the creation of a new house note, which is to signify the highest level of technological and artistic sophistication banknote printing is capable of. Switzerland has occupied a disproportionately large place in banknote printing and Orell Füssli amplifies this by including the companies of Sicpa, Kurz, KBA-Notasys, CCL, Hueck Folien and Landqart in the production of the anniversary note. To show its printing excellence on any substrate central banks may choose, 30 000 sheets each will be printed on three different substrates: cotton paper, Landqart's Durasafe and CCL's Guardian polymer. Like the Swiss franc banknotes it produces, Orell Füssli's planning process and the design of the note was not a hurried affair. It started in 2015 and

involved a design contest, which was won by the designer Christophe Métroz. The look of the new note, however, was not fully revealed and instead, a puzzle was shown on the ofs.ch website, which in regular intervals showed a little bit more of the design. The final moment, when the public can see - and just as importantly, touch - the note will be at Intergraf's SecurityPrinters, Banknotes + Identity conference and exhibition on October 23 to 25 in Copenhagen.



The company plans to show an informative film depicting how the note was produced, in which selected printing and application processes are shown. Also a detailed presentation will be developed that describes the note from its genesis to its release as well as an associated booklet describing more details about its design and security features. ■

CASH: IN TRANSITION BUT IRREPLACEABLE

Two well-argued reports are looking at the problems the cash industry will increasingly face and make the case that cash is a public good the disappearance of which would lead to great loss and no gains.

Publications and conferences as well as discussions among professionals have, for some time now, been dominated by the question of what will happen to cash. Defenders of cash have been pointing to the fact that cash in circulation is still rising the world over, but the increase in non-cash payments and especially contactless payments is undeniable.

Two recent reports have been pondering the same question of what will happen to cash from different angles and while both strongly defend the use of cash, one is more pessimistic than the other. The report “Cash in Transition”, published by Currency Research in August, examines the impact of external and internal forces on the companies and government departments involved with the cash cycle as a whole. It assumes that cash will experience a decline globally – this will be faster than the cash industry and cash departments predict, but slower than those in the payments industry anticipate. The report does not forecast the end of cash or the sudden emergence of a cashless society, but a future of less cash. The decline will not be uniform the world over, there are still countries with very robust cash-use but there are others where cash seems to be on the way out.

The report points out that two of the main barriers for a cashless society, technological and financial, have been or are close to being resolved. What is left is the political barrier and that centres on the fact that a cashless society will depend solely on commercial, for profit organisations for all payment operations. The payments industry has a commercial interest in replacing cash with non-cash alternatives and it has invested nearly \$ 100 billion in venture capital in fintech between 2010 and 2017 to reach its goal. Central banks on the other hand have to protect cash as a public good that also serves wider interests and as a contingency in the case of natural disasters or wars, even if it is only used by a minority. Banknotes are the main point of contact between central banks and the public and through them, governments maintain monetary stability in markets by issuing cash. Cash supports the central bank’s monetary independence from the government by providing a source of revenue (seigniorage) to fund its operations.

Looking at banknote manufacturers, declining demand, less frequent issues and an increasing life expectancy of banknotes through improved substrates put pressure on banknote printers and

substrate makers. Declining domestic demand has also lead to free print capacities at a number of national banknote printers, which are now pushing into the export markets of private banknote printers. Overcapacity at a state print works could mean a potentially “subsidised” bid to print for the export market. Thus, at the same time as print and substrate capacities are increasing across the globe, the tendency is for prices to fall, the report warns. Eventually cash-in-circulation will also decline and the central bank’s forward planning for cash becomes less about a transactional currency and more about building a social safety net for marginalised populations and building a disaster scenario plan.

CASH: VIRTUALLY IRREPLACEABLE

The press release for the white paper “Virtually Irreplaceable: Cash as Public Infrastructure”, the second study by Cash Matters, a movement by the International Currency Association, also mentions that “cash in circulation is growing, globally, at a rate of ca. 3 per cent per year, and 80 per cent of all payments worldwide continue to be cash transactions. Cash is, by default, an essential part of every stable financial and economic system.” That may be so, but as cash is also a product, the creation, distribution and circulation of which incurs costs, there needs to be a minimum level of acceptance by both merchants and banks to continue dealing with it. That at the moment is still a given, but it will be one of the weak points in the battle about cash. The ICA study argues that cash is a distributed public infrastructure - not a good in itself but a system of relationships technologies and qualities that make cash unique and offer an indispensable complement to mobile and digital payments and that much would be lost and nothing gained if we were to go cashless.

The ICA white paper offers a wealth of sound arguments for cash being a public good, not least the one that only physical cash guarantees independence from the issuer. All digital forms have the capacity to restrict freedom, whether in terms of restricting access to funds and choice over how to spend these or in terms of surveillance and tracking. Cash offers an exit from the formal financial system, whether in good times or bad, and especially during a financial, environmental, or political crisis. The latter argument is supported by a number of highly relevant case studies from Puerto Rico to the UK and to India. The study also casts an eye on CBDC (central bank digital currency), which, while still untried, also may create as many problems as it solves.

Both studies are available online: The Cash Industry in Transition and Virtually Irreplaceable: Cash as Public Infrastructure. ■

FACEBOOK MONEY AND FINANCIAL STABILITY

So far, digital, or crypto-currencies, such as bitcoin have suffered from much volatility, which made them attractive mainly to financial adventurers. A 'stablecoin' pegged to a basket of fiat currencies could spell greater danger to the world's financial systems.

The announcement in June by Facebook that the company intends to launch a crypto currency called Libra, returned digital currencies again to the 'hot news' section of the general press and TV. In Facebook's case, although Libra won't be available until the first half of next year - if at all - the company is already struggling with a number of fake accounts on its own social media platforms, some of which offer discounted Libra. This shows how Facebook is "struggling to rebuild trust and fight the fraud likely to surround the new financial system," The Washington Post wrote. In the political arena, the plan received a skeptical and critical reception, with US and European politicians almost immediately expressing concerns, that stem from Facebook's history of data security problems. Facebook had to defend its plan in the US Congress, amid regulatory concerns about data privacy and potential illegal use. Some commentators said that the prospect of a tech firm with billions of users launching its own money, potentially poses a threat to state currencies.

While Libra is still some time off and there will be an ongoing discussion about it, the announcement prompted serious thoughts about digital currencies from Augustin Carstens, the head of the Bank for International Settlement (BIS) and Jean-Pierre Landau, a former deputy governor at the Banque de France, now a senior research fellow at Harvard Kennedy School.

BIS AND THE THREAT OF LIBRA

Augustin Carstens told the Financial Times that the BIS supported the efforts of the world's central banks in creating digital versions of state currencies. "Many central banks are working on it; we are working on it, supporting them," Mr Carstens said. "And it might be that it is sooner than we think that there is a market and we need to be able to provide central bank digital currencies." At present, only private sector lenders can borrow directly from monetary authorities. So far digital currencies such as Bitcoin have not had a great influence on sovereign money systems, as their volatility makes them unsuitable as currency. However, Libra - a "stablecoin" with its value pegged to a basket of as yet unspecified currencies backed by as yet unspecified assets - and other coins backed by tech

giants could "rapidly establish a dominant position" in global finance and pose a potential threat to competition, stability and social welfare, the BIS said in its annual report.

"A very simple way to regulate this is to start with anti-money laundering rules. That is a very immediate and very obvious concern", Mr Carstens told the Financial Times. He acknowledged that developments in the rest of the currency market would influence the extent to which central banks pursued their own stablecoin projects. "There needs to be evidence for demand for central bank digital currencies and it is not clear that the demand is there yet," he said. "Perhaps people can do what they want by using electronic wallets provided by banks or fintech companies. It depends on the development of payment systems."

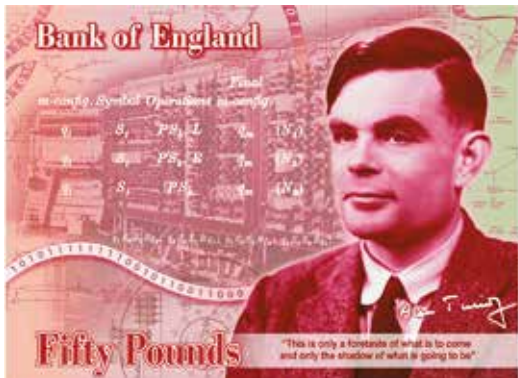
THE FEARS OF A CENTRAL BANKER

In a further comment on the same subject, former deputy governor of the Banque de France, Jean-Pierre Landau, wrote in the Financial Times on July 1st, that digitalisation of money raises new challenges for governments and central banks. Physical cash may be disappearing as a medium of exchange and the public's trust in banks has always depended on the perceived convertibility of deposits to cash. In a cashless society, there would be no direct access by citizens to sovereign money. Deposits would no longer be convertible with possible detrimental effects on financial stability.

New forms of digital money, such as Libra could lead to the monetary system becoming more fragmented. Networks and platforms have an incentive to maximise user numbers and a tendency to evolve into closed systems. They may create "digital currency areas" independent of national borders and currencies, where participants are kept together because they share and exchange the same type of digital money. This could lead to new forms of currency competition, including "digital dollarisation" in certain countries, through the penetration of foreign currencies in their domestic economy. Digital currencies have thus the potential to significantly reshape the international monetary system. Sovereign governments have the power to protect their currencies. They can decide which money serves as legal tender and in which currency taxes must be paid. They can force private payment systems to be open through technical interoperability. They can require the acceptance of cash. And they can strictly regulate e-money issuers. They should do more, Mr Landau stresses, the general public is entitled to keep access to central bank money as technology changes. If cash is eliminated, it should be replaced by a digital equivalent, namely Central Bank Digital Currency.

The balance between private and public money in our societies is a fundamental question. A CBDC would protect the pre-eminence of public money in a digitalised economy. It would maintain effective convertibility of private into public money and provide a defence against digital dollarisation. For that purpose, a CBDC should be as close as

possible to cash. It should be a complement, not a substitute, to bank deposits. It should not carry interest. Whether it should be anonymous, as cash currently is in certain limits, is a fundamental social choice. It must be openly debated as the digitalisation of money forces us to reconsider and rethink the place of privacy in our lives, Mr Landau emphasises. ■



THE UK'S NEW £50 NOTE

Just like Central Banks in other countries, the Bank of England is acutely aware that the use of banknotes for everyday purchases is on the wane. Getting the people involved in the creation and design of its banknotes might help to keep them interested, the BoE thinks. When the new series of polymer pound notes was being planned, the BoE asked the general public to suggest suitable personalities from a given sector, such as politics, the arts, industry, etc. and it set up the Banknote Character Advisory Committee to whittle down the public's suggestions to a final list, with the Governor of the BoE making the final decision.

In 2018, the Banknote Character Advisory Committee chose to celebrate the field of science on the £50 note and this was followed by a six week public nomination period. The Bank received a total of 227,299 nominations, covering 989 eligible characters. Considering all nominations, the Committee decided on a shortlist of 12 options, which were put to the Governor.

At a speech in Manchester in July, the Bank's Governor Mark Carney announced that he had chosen Alan Turing to be on the new £50 note, which will enter circulation by the end of 2021. He commented: "Alan Turing was an outstanding mathematician whose work has had an enormous impact on how we live today. As the father of computer science and artificial intelligence, as well as war hero, Alan Turing's contributions were far ranging and path breaking."

Alan Turing provided the theoretical underpinnings for the modern computer. While best known for his work devising code-breaking machines during WWII, Turing played a pivotal role in the development of early computers first at the National Physical Laboratory and later at the University of

Manchester. Turing was homosexual and was posthumously pardoned by the Queen having been convicted of gross indecency for his relationship with a man. His legacy continues to have an impact on both science and society today.

The shortlisted options demonstrate the breadth of scientific achievement in the UK, from astronomy to physics, chemistry to palaeontology and mathematics to biochemistry. The shortlisted characters, or pairs of characters, considered were Mary Anning, Paul Dirac, Rosalind Franklin, William Herschel and Caroline Herschel, Dorothy Hodgkin, Ada Lovelace and Charles Babbage, Stephen Hawking, James Clerk Maxwell, Srinivasa Ramanujan, Ernest Rutherford, Frederick Sanger and Alan Turing.

THE DESIGN OF THE NOTE

The images on the new note are the following:

- o A photo of Turing taken in 1951 which is part of the Collection at the National Portrait Gallery.
- o A table and mathematical formulae from Turing's seminal 1936 paper "On Computable Numbers, with an application to the Entscheidungsproblem" Proceedings of the London Mathematical Society. This paper is widely recognised as being foundational for computer science. It introduced the concept of a Turing machine as a thought experiment of how computers could operate.
- o The Automatic Computing Engine (ACE) Pilot Machine which was developed at the National Physical Laboratory as the trial model of Turing's pioneering ACE design. The ACE was one of the first electronic stored-program digital computers.
- o Technical drawings for the British Bombe, the machine specified by Turing and one of the primary tools used to break Enigma-enciphered messages during WWII.
- o A quote from Alan Turing, given in an interview to The Times newspaper on 11 June 1949: "This is only a foretaste of what is to come, and only the shadow of what is going to be."
- o Turing's signature from the visitor's book at Bletchley Park in 1947, where he worked during WWII.
- o Ticker tape depicting Alan Turing's birth date (23 June 1912) in binary code. The concept of a machine fed by binary tape featured in the Turing's 1936 paper. ■



How sustainable can banknotes be?

Where it all starts: the cotton comber.

Sustainability and carbon footprints are among the most (over) used talking points today. Louisenthal, part of Giesecke & Devrient Currency Technology, decided to transform these buzzwords from mere talking into action – and to be transparent about both the roadmap and the results.

Who decides on the sustainability and the ecological parameters of banknotes? If anyone, it is the central banks. Some of them are well aware of the issue, while others do not seem to have an issue. De Nederlandsche Bank clearly belongs to the former when it decided that the cotton substrate for its production of euro notes must come from sustainable resources according to “Fairtrade” principles.



Its cotton, but is it Fairtrade?

BANKNOTE PRODUCTION MEANS RECYCLING

When asked in a recent interview, Clemens Berger, CEO of Louisenthal, said that such a specification does not create technical problems, however, the production price might probably increase somewhat and the fluctuating availability of such cotton fibres may need additional reserve stocks. He pointed out that most people do not realize that the cotton in banknote paper comes from residual waste from the textile industry – i.e. cotton combers, the short-fibre leftovers from the cotton used in textile production. Such comber material relies on suppliers having access to those special supply chains, e.g. organic cotton, GOTS certified cotton or BC cotton (Better Cotton Initiative). The Dutch central bank's specification means finding suppliers who are able to build “sustainable” supply chains, including farmers who are paid according to fair trade principles and textile industry partners providing sustainable cotton combers. “It can be done, and we are increasingly doing it anyhow”, Berger said. “Central banks today in general are looking more closely at the material that goes into the banknotes they order.”

Cotton is just a small part of what is needed to produce a banknote. In its sustainability campaign, which is addressed to all stakeholders, from central bank customers to neighbours in the Gmund valley, Louisenthal, looks at the whole value chain, from raw materials to production, energy, water and location, upstream issues of transportation, packaging and logistics and finally recycling and disposal. In this chain, cotton may be the most visible part, but it plays a miniscule part in the world's raw cotton supply; just 0.375 per cent of the total is used in banknote paper production. Plastic is only used for specialized functional elements, e.g. as carrier films for paper embedded threads or foils applied on the paper surface. Ultra-thin foil can also be used to protect the security paper as in the case of Louisenthal's ‘Hybrid’ substrate. “As little as possible and only as much as absolutely necessary” is the company's principle for the use of plastics.

PRETTY (AND) USEFUL

A large part of making a product sustainable is tied to the production site. Louisenthal is situated in an exceptionally beautiful location in Gmund on Tegernsee, in the foothills of the Alps in Germany. And with staff, many of whom come from this valley. “We didn't have to do much to create a ‘green’ awareness among the Louisenthal staff”, said Isabel Krippendorf, responsible for the sustainability campaign at G+D Currency Technology. “Everyone was fully behind the campaign immediately, and ideas on how to improve our carbon footprint keep pouring in.” For an industrial enterprise that uses a lot of water, electricity and heat, this location could pose a problem, as the area is part of the

drinking water supply area for the City of Munich. Louisenthal turned it into an opportunity: Like any other papermaker in the EU, the paper mill is subject to strong environmental protection regulations. In addition, the rules for controlling water quality in that area are possibly the strictest in the world. As a consequence, water protection is in Louisenthal's genes. Louisenthal even installed a fish escalator along the river Mangfall outside the factory to enable fish to swim upstream. Over the past 15 years, the company spent more than € 15 million on sustainability projects. This resulted in a 40 per cent reduction in water usage. In addition, Louisenthal generates much of its own electricity through hydropower and a combination of heat and power. Altogether, the company self-produces 24 per cent of the energy it consumes and has been saving 1,5 GWh per year through its natural cooling system with water from the river Mangfall.

SUSTAINABILITY IN THE DNA

The company's efforts to be sustainable don't end at the winder station of the paper machine. Conventionally, finished sheets sent to the printing press are shrink-wrapped in reams of 500 sheets and boxed in a carton. To save plastic and other packaging material, Louisenthal developed a new packaging system called Ready2Press, which not only saves material, time and effort but also improves quality. The same principles for sustainability apply to transport: transportation with a smaller carbon footprint is favoured over air transport wherever possible. And finally, disposal and recycling. What happens to banknotes at the end of their lives depends on the central bank that issues the money. While in theory polymer banknotes can be recycled into flowerpots or garden chairs, in practice this probably does not happen all that often. Banknote paper, on the other hand, is usually 'calorifically recycled' or, in plain language, burned. Cotton has a particularly good calorific value and can be used where extra high temperatures are required.

Reaching a high degree of sustainability might look like process optimisation but it pursues a different goal: it is not about increasing a return on investment, but about having the smallest possible carbon footprint. It also means creating products that last as long as possible and need to be replaced less frequently. This is the thinking behind Louisenthal's 'hybrid' banknotes, cotton banknotes with a thin foil layer for protection that increases their durability and hence reduces the environmental impact. Capital intensive decisions, for more sustainable production methods, require a long-term vision and commitment. "We are only able to plan and implement these long-term strategies",

Berger remarked, "because we are privately owned. Looking at our long history, our shareholders stand for sustainability. They accord us the luxury to invest into projects that often do not pay off immediately but only some time later."

SUSTAINABILITY IS MULTI-DIMENSIONAL

Explaining sustainability cannot be done in three short sentences, as most issues involved are typically rather complex. Louisenthal decided to put all its arguments, thoughts and plans into a 28-page newspaper in tabloid format. It is quite refreshing to read, as it not only mentions success, but also talks about the ambiguities accompanying every step of the process, from growing cotton in various countries to the crisp banknote in your wallet. Cotton, yes, better than plastic, especially since banknote paper makers only use residuals from the textile industry. However, in order for cotton to be sustainable, it needs to be organically grown which is available through specially controlled supply chains only. Or cancelling CMR substances: Louisenthal has critically looked at every material they use. On the way to true sustainability, every step needs to be discussed, and compromises are inevitable.

SINCERE AND HONEST APPROACH

Louisenthal is well aware of these ambiguities and is honest about the challenges and the extent of the complexities involved. But the story is true and the efforts sincere. Central banks are increasingly taking "green" aspects into consideration when ordering a new banknote series, or, as in the case of the Dutch central bank, set new requirements for a reprint.

To illustrate the complexity of making a banknote not only sustainable but also as difficult to counterfeit as possible, Louisenthal's parent company G+D Currency Technology, designed and printed two sample notes on Louisenthal's Hybrid ADDvance substrate, which protects the cotton core with thin protective foils and allows for embedded security elements and the integration of state-of-the-art patch-windows.

GETTING THE MESSAGE ACROSS

Both the sample notes and the sustainability campaign may provide something of a template for central banks when contemplating the issuance of a new banknote. And both carry a message for the general public, namely that banknotes are part of a complex and sustainable ecosystem that is worth defending.

Central banks are public institutions that listen to the citizens they serve, convincing them and the public at large of the merits and above all the security of cash payments, even in adverse circumstances. And this is increasingly important. ■

DE LA RUE: JUST CHANGING COURSE?

De La Rue has sold its International Identity Solutions business, covering passport production and is closing a printing line in its Gateshead printing factory, leading to job losses. And on top of this, the CEO is leaving and the Chairman has been replaced. But with over 200 years of experience of dealing with the ups and downs of business, the company is certainly capable to weather this storm as well.

In April 2018, by coincidence during the Intergraf SecurityPrinters Conference in Dublin, it was one of those “I can’t believe my ears” instances, when the UK Government announced that the contract to print the new blue UK passport went to the French/Dutch firm Gemalto instead of to the national champion De La Rue. The ‘new, true blue’ passport was a much-hyped symbol of the Brexiteer’s dream of leaving the clutches of an ‘overbearing European Union’. As it turned out, Britain could have kept its blue passport all along, as common EU and other international regulations for passports refer mostly to security features, machine readability and size but not to colour. Still, Brexiteers saw it as a national humiliation for the job to have gone to ‘Europe’ and De La Rue’s CEO, Martin Southerland, duly promised to protest. Only four weeks later he dropped the appeal, citing “pragmatic business reasons” and legal advice.

DEPARTING FROM THE PASSPORT MARKET

It may well have been pragmatic business reasons as well that led to the decision to get out of making passports altogether. On 12 June 2019, the announcement was made to sell De La Rue’s International Identity Solutions business to the US based HID Corporation Limited (“HID Global”), itself a part of the Swedish ASSA ABLOY Group, for £42m on a cash free debt free basis, payable upon completion, as the press release said. De La Rue explained that the sale would “allow the company to “refocus on identity-related security features and components where the market opportunities are more accessible. Strong synergies in technology and customer relations between identity security features and the rest of the Group will enable it to generate better returns on investment.”

Martin Sutherland added: “We believe that exiting the end to end identity solutions market is the right one for the Group and will deliver the most value to shareholders. Focusing on the identity-related security features and components is in line with our strategy to transform De La Rue to an asset light and more technology-led business.”

In the financial year to March 30, 2019, the business generated sales of £37.8m and an operating profit of £2.3m (post allocated corporate overhead).

The gross assets of the business were £88m as at March 30, 2019, of which £38m will be transferred with the business. The transaction is expected to complete within this calendar year. HID Global will acquire De La Rue’s international identity solutions contracts, associated software, passport assembly facilities in Malta, and certain printing contracts of security documents such as visas and birth/death/marriage certificates. The agreement also includes De La Rue providing printing services to HID Global until March 2022. The UK passport contract, which will run out in 2020, is outside the scope of the agreement.

Just like the company it is buying, the new owner of the International Identity Solutions business is claiming that the new acquisition will bring strong synergies with its present activities in the “government-to-citizen identification market”. HID Global describes what it does as giving people convenient access to physical and digital places and connect things that can be identified, verified and tracked digitally. HID Global has over 3,000 employees worldwide and operates international offices in more than 100 countries.

HID’s parent, the ASSA ABLOY group, has a background in physical security, and describes its activities as offering products and services related to openings, such as locks, doors, gates and entrance automation solutions. This also includes expertise in controlling identities with keys, cards, tags, mobile and biometric identity verification systems. The group made several acquisitions in the security field, such as Arjo Systems SAS, a former division of Arjowiggins Paper and Arjowiggins Security, in 2017 and IAI Industrial Systems B.V. in 2015.

BOARDROOM UPHEAVALS

De La Rue, which in its own press releases proudly calls itself the world’s premier currency and authentication provider, has recently been subject to some severe knocks. The latest one, in mid July, was the demand by one of its investors, the activist fund Crystal Amber, a fund manager that owns just over 6 per cent of De La Rue, that the chairman of the company, Philip Rogerson, should step down at or before the annual shareholder meeting in July.

In June, Mr Rogerson said that he would retire after overseeing the recruitment and integration of a successor to Chief Executive Officer Martin Sutherland but some investors wanted Rogerson to leave before then. The CEO’s decision to leave the company, announced at the end of May, was another of these knocks delivered by the market - or by fate. His and his chairman’s decision to leave is linked to the failure of De La Rue to secure the £490m contract to print the new blue UK passport,

which went instead to Gemalto. It was probably also influenced by a string of profit warnings and the failure of the Venezuelan central bank to pay £18m (US\$ 23m) for printing a series of new Bolivares banknotes, helping to send shares in the banknote printer tumbling. Venezuela, which is facing economic melt-down and saw inflation hit 130,000 per cent last year, had previously been a “very good” customer, Martin Sutherland, told the *Financial Times*, until US sanctions against the South American country made it harder for the central bank to transfer money. “We are in constant contact with the customer, they really do want to pay that debt,” De La Rue’s chief financial officer said.

Anger at De La Rue’s management had been brewing for some time, but erupted in summer following the disclosure that bonuses were awarded to the company’s management for last year, *Sky News* reported.

Meanwhile, while still no new CEO has been appointed, De La Rue announced on September 2nd, that Kevin Loosemore had been appointed as a non-executive director and chairman designate. Philip Rogerson will retire as chairman and as a non-executive director on October 1st, 2019 to be succeeded by Mr Loosemore. Kevin Loosemore comes from the software business area, serving until his new appointment, as Chairman of Micro Focus International plc, and a non-executive director of Iris Software Group Limited,

SAVING COSTS

De La Rue had announced Sutherland’s exit alongside its full-year results, which showed a large drop in pretax profits from £113.6m to £25.5.

Sutherland said the end of its UK passport contract in 2020 and “competitive pressure in the banknote print market” presented significant challenges for the business. “To partially mitigate against this, today we have set out a three-year cost reduction programme intended to deliver in excess of £20m in annual savings by full-year 2022,” he said.

The cost reduction programme has already led to the decision to close one of the banknote printing lines in Gateshead, in the North of England, with the loss of some 170 jobs. The Gateshead factory, which employs about 600 people, prints passports and also foreign currency, as the UK Pound Sterling is printed by De La Rue in a Bank of England owned factory in Debden, Essex, UK. Although the closure is part of the banknote operation, the union Unite said losing the passport contract could have contributed to the move.

De La Rue told the *Financial Times* that its operating model would be reorganised into two divisions:

authentication, which includes security features and identification, and currency, its banknote printing business.

DOWNS BALANCED BY UPS

While the last few years have been tough for De La Rue, there also have been notable successes. In June, De La Rue signed a contract to jointly supply polymer for the Bank of England’s new £50 bank note. The order is split between De La Rue’s ‘Saveguard’ polymer substrate and that of CCL Secure Limited’s, ‘Guardian’ polymer. The eight-year contract also includes future production of polymer substrate for the current £5 and £10 banknotes. In 2017 De La Rue signed a contract for 25 per cent of the polymer substrate for the newly launched £20 polymer note.

In 2018, DLR signed a contract with the Sveriges Riksbank to print Swedish banknotes in a contract valid for just over three years. The decision, made in September 2018, follows the termination of the Riksbank’s contract with its former supplier, Crane Currency, after the (US headquartered) banknote maker announced that it will be closing its printing operations in Tumba.

Another long-wished for success was a judgement by the Kenyan Appeals Court confirming that De La Rue International will retain the KSh 10 billion-a-year tender to print Kenya’s new-look currency, reversing a High Court decision that nullified the award. The Kenyan High Courts original decision was based on a claim by three competitors that DLR received a 15 per cent preferential advantage in the bidding process, a claim that was rejected by the Appeals Court. A follow-on is the announcement in April this year that its joint venture with the Government of Kenya on its currency and secure printing site in Nairobi, will commence operation. The site in Nairobi will become a centre of excellence for banknote production and security printing.

Under the terms of the agreement, the National Treasury of Kenya has taken a 40 percent stake in De La Rue’s wholly owned subsidiary, De La Rue Kenya EPZ Limited. De La Rue will continue to operate and manage the business day to day and will appoint three of the five directors of the joint venture’s Board.

The facility, which remains the only factory in Africa to hold the highest security accreditation (ISO14298 CB), employs around 300 people locally and will supply both the domestic and export markets. De La Rue has a long history of supporting governments in Africa with currency and identity solutions and this Joint Venture enhances the Group’s position in East Africa and is in line with its strategic objective of building global partnerships. ■

Portals - one year on

After one year of independence from De La Rue, Portals has quite a lot to celebrate

RE-FOUND INDEPENDENCE

In the security printing and in particular its banknote sector, it is not unusual to find companies that go back hundreds of years. The Swiss banknote printer Orell Füssli is celebrating its 500th anniversary this year. De La Rue, the world's largest private banknote printer, printed its first banknote in 1860, the banknote papermaker Arjowiggins in France started in 1761. But age is no guarantee for an even longer life. Arjowiggins declared bankruptcy at the beginning of this year and one of the oldest banknote paper makers, Portals in the south of England, founded in 1712 lost its separate identity in 2007 when it was fully integrated into De La Rue, which had bought the two paper mills that comprised the company, in 1995. De La Rue sold 90 per cent of its papermaking business in February 2018, leading to the re-appearance of the traditional name, as the new company is now called Portals De La Rue.

PORTALS: SUCCESS ONE YEAR ON

Now, well over a year after regaining independence, Portals could proudly proclaim that it is doing well. At the time of the sales negotiations, the then owner, De La Rue, expected that Portals would generate sales of about £ 120 million, but for the period ended March 30, 2019, the company generated an EBITDA of £14.0 million on revenue of £138.5 million. The positive results have been delivered from a combination of sales to long-standing customers and, encouragingly, to new customers. Many of these new customers have been attracted to working with the company as a direct result of its new independent status. These strong results and support of Epiris, the company's new private equity owner, has enabled Portals to begin a £17 million capital investment programme – the largest such investment in the company for many years. One important factor in the success was the skilled and dedicated workforce in Overton and Bathford.

Both mills, which are certified according to Intergraf's CWA 15374, have a combined capacity of about 13,000 tonnes per year, supplying paper for 12 billion banknotes and around 70 different passports. Around 45 per cent of sales are intra-company transactions, and the remainder external. In the new context, intra-company should now mean Portals sales to De La Rue. Last year De La Rue also stated that Portals De La Rue will commit to supply pre-agreed volumes of paper to De La Rue with a pre-agreed price mechanism for the next ten years. This will meet most of the De La Rue's anticipated internal requirements for finished banknotes and security documents. In addition, De La Rue will be Portals De La Rue's preferred supplier for security features. However, now that De La Rue is selling its passport business, there must be some doubt over the not inconsiderable part of the paper supply agreement that refers to passport paper.

ONE EYE ON TRADITION THE OTHER ONE ON PROGRESS

Fortunately, memories in the security printing industry are also long and after the absence of the name for over ten years, Portals is back again in the consciousness of the industry. And, understandably, Portals makes much of its long and illustrious history. For example, in 1724 it received the first order from the Bank of England and in 1860 it won the contract to produce paper for the Indian Rupees. In 1919 Portals introduced cylinder mould machines into the papermaking process and in 1940 the first banknotes with a security thread were produced, still considered one of the most effective ways of preventing counterfeiting today. In 1984 the windowed thread followed, where the thread appears on the surface in regular intervals and the continuous thread is only visible when it is viewed against the light.

With a history like this it is obvious that Portals places much value on watermarks and invests in new development in this area. The company recently published a white paper on cylinder mould watermarks, explaining the technology behind it and introducing the latest development in this area, Texmark, which was launched in 2017. Texmark looks like a traditional watermark but it enables the addition of personalized bright and/or dark text in the watermark design. The watermark continues to be easy to see and simple to explain, but the underlying technology is complex, making it difficult for the counterfeiter to copy. Improving on tradition seems to be a reoccurring theme at Portals. And as its continuing cooperation with De La Rue promises to put much more emphasis on developing up-to-date security features, it is guaranteed that Portals will be technologically at the leading edge. Thus also keeping to tradition is not a bad bet. ■

GOING UP THE IDENTITY LADDER

The UN Development Projects thinks that most of the severe and common problems millions of people still encounter in trying to obtain a legal identity are technical and administrative. As there is no agreed standard, nor a common format for birth certificates even within countries, it is difficult to verify all existing birth certificates. It will take much co-operation within and between countries to provide 'legal identity for all'.

The basis of the worldwide identity system is the birth certificate. It is also its weakest link. With migration between crisis-countries and developed ones, it is also an international problem, as the ability to prove identity is an important part of settling in a new country.

At Secure Document World, a conference in June in London, much concerned with identity documents, Niall McCall of UNDP, the UN Development Project, said that the UN had postulated 'a common working definition of legal identity'. In this context this means a legal identity for persons, not companies. In its Sustainable Development Goals (SDG Target 16.9) the UN demands "legal identity for all, including birth registration, by 2030".

It is reasonable to assume that most Europeans and North Americans don't see a problem in this and are probably not aware that there are people who legally do not exist, because they don't have a birth certificate. But in much of the world, the problem is real. World Bank data show that about 1 billion people are without legal identity. There are 650 million children whose birth was either never registered or never certified. This means that later they will be unable to get an ID card or a passport or as adults open a bank account, or indeed get a marriage certificate or a death certificate. Very rightly, these documents are called breeder documents, because they are the first steps to put a person onto the ladder of recognized, personal identity. In a country with a functioning civil administration, registering a birth and a death are of almost equal importance but there are countries, where birth registration rates are low, such as in Chad with 12 percent, the Democratic Republic of Congo with 25 percent and Somalia with 3 percent. Death registration can be as low as 2 percent in some countries.

The next step up from a birth certificate is the ID card, which according to the Worldbank ID4D Dataset 2018, is issued by 175 countries in some form but only in 140 countries are these compulsory. However, they are not all conventional ID cards, but some form of proof of identity, such as driving licences. The most severe problems of obtaining a legal identity with a birth certificate, and

thus an identity card, are technical and administrative. As there is no agreed standard, nor a common format, even within countries, it is difficult to verify all existing birth certificates.

Considering that the validity of the document is the period between birth and death, changes are inevitable, with administrative changes and even whole countries disappearing or emerging. In many emerging countries, it takes considerable efforts to get a birth registered, and in poor, rural communities it is often the village headman, who has to confirm that a child is born in that village. However, "confidence in the integrity of Village Headmen to vouch for registrants' citizenship varies significantly..." – a UNDP NRIS project document noted in 2016.

Even if birth registration is carried out, many national ID systems are not linked to a core civil register recording births and deaths. The reason is often administrative as well, with state or regional agencies competing with each other. This raises the question of which system is preferable, centralized national IDs versus decentralized civil registers. The answer is probably national or local, but in any case an efficient administration is needed.

In the security industry the danger is that breeder document systems and following ID systems are seen primarily as tools to prevent crime, such as identity theft, but that is not their most important function. They are there to provide a service to citizens and if the integration of civil registration and national ID system is poor there will be many people who will not be able to prove their identity and there will be many loopholes for fraudulent identities. In poorly regulated countries, it is difficult to confirm the identity of a teenager entering an adult digital national ID system and in such countries it is equally difficult to get dead people off the national ID register. The result of such administrative failures will be identity theft, identity fraud, 'ghost workers', dead voters, etc.

There are a number of positive trends in national ID systems, Mr. McCall said. Due to advancements in biometrics, children are now registered earlier and birth registration is getting more centralized in many countries. National administrations are also making efforts to clean-up "multiple identities". The introduction of eIDs in many less developed countries is also an encouraging sign. A look at relevant press releases shows that India is working on a chip-enabled ePassport and Bangladesh will issue ePassports from July onwards. A new report from Juniper Research found that the number of people using government-issued digital identity credentials will grow by over 150 per cent from an expected 1.7 billion in 2019 to over 5 billion in 2024.

But there are many challenges that remain. For example: how can errors in distributed ledger technology, e.g. incorrect birth certificates, be corrected? Or, how can we empower national identity authorities without centralizing 'single points of failure'? And, as much of the technical development in the ID sector comes from private industry, how do we ensure that innovative digital ID systems developed by the private sector, if separated from state systems, are not exploited by criminal and terrorist networks?

While to be a part of a national, and internationally recognized ID system is vital for individuals in all

countries, do we want to encourage mass surveillance using facial recognition? We also have to recognize that even identities are not set in stone. And while the goal is for every individual to have a single legal identity, we also need to recognize the rights of individuals to reject or amend elements of their legal identity. The aim of the identity chain from birth certificate to death certificate is clear and it is well defined in the UN's Sustainable Development Goals, of which Goal 16 states: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels. ■



RUSSIA'S CHIP-CARD PASSPORT: NO SPUTNIK MOMENT AFTER ALL

The headlines spoke of a new credit-card sized passport with an implanted chip for Russian citizens. That would have been a 'first'. It was not and the answer lies in the definition of a passport.

The Russian English language newspaper 'The Moscow Times' reported on 20 July that Russia is planning to introduce digital passports in the form of plastic chip cards in size ID1 and subsequently phase out paper passports within three years, as part of its national digitalisation programme. That news was something of a "Sputnik moment", prompting the observation that Russia got there before anyone else. (Sputnik was the first artificial earth satellite launched by the USSR in 1957.)

Getting there, in this context, means finding a way to introduce electronic visas into a passport chip, or better, allowing another country to introduce such a visa into a Russian passport chip. Closer reading of the Russian language sites that are given as a reference, tells a less dramatic story.

As a leftover from Soviet times, Russians carry 'internal passports', which look much like the international kind, but are mandatory from the age of 14 and are written in Russian only. They cannot be used for international travel and hence do not need to accept visas. So, Russia has not found an ingenious way to combine chip passport cards with visas after all. By reducing the current internal passport book to a chip card, the document becomes a simple ID card, stating the customary ID data and confirming Russian citizenship, which is the original

purpose of the internal passport. Proof of citizenship was also necessary, as in Soviet times Soviet citizens from areas that meanwhile have become independent countries - Belarus, Ukraine, Moldova, the Baltic and the Central Asian states, etc. - could settle anywhere in the Soviet Union, while now, they may not necessarily have Russian citizenship.

The first passport cards will be issued next July in Moscow, Deputy Prime Minister Maxim Akimov said. "Those who don't want to change their paper passports...can keep them to the grave," he told reporters. The government started a \$53-billion Digital Economy Program in 2017 to roll out digital technologies nationwide by the last year of Vladimir Putin's presidential term in 2024, giving four in five Russians a digital profile by 2025.

INDIAN PASSPORTS GO ELECTRONIC - EVENTUALLY

Russia is not the only big country with plans for digital ID. India will soon have a chip based international (paper) passport using software that has been developed in India by IIT-Kanpur and the National Informatics Centre (NIC). The Ministry of External Affairs announced that it has begun negotiations with the India Security Press in Nashik, which will manufacture the passport. Apart from saying that it will be issued soon, no definite issuing date had been given. India Security Press, Nashik, has received approval for procuring ICAO-compliant electronic contactless inlays along with their operating systems for manufacturing the e-passports. This will be done in a floating three-stage global tender. ICAO has developed universally accepted norms on how the e-passports can be read, but it has not prescribed a format on how personal information can be written and the safety features for e-passports. The process for the Indian e-passport was initiated in 2017, and as per plans, the first in line for these passports will be diplomats and officials. Second in line will be the general public. ■



Bridging the Physical-Digital Document Divide

The 15th Symposium and Exhibition on the Traveller Identification Programme (TRIP) hosted about 600 participants, representing 94 States, 12 international organizations and 39 industry partners from passport-issuing offices, aviation security authorities, civil registries, border control and law enforcement agencies, airlines, airport authorities, travel document industry members, immigration authorities and other interested parties.

With the theme of “Bridging the Physical-Digital Document Divide” the Symposium convened at the International Civil Aviation Organization (ICAO) Headquarters in Montréal, Canada in June 2019. This annual gathering provided an opportunity for representatives from the public and private sectors to coordinate their efforts to advance the five elements of the ICAO Traveller Identification Programme (TRIP) Strategy.

ICAO’s mission in this field is to contribute to the capacity of Member States to uniquely identify individuals by providing government authorities worldwide with the relevant supporting mechanisms to establish and confirm the identity of travellers. Support of the implementation of the ICAO TRIP Strategy is essential to achieve the goals of the important ICAO Strategic Objectives: Security and Facilitation.

The enhancement of security in border management and facilitation for passengers flow are twin and reciprocal objectives. Travel facilitation focusses on increasing the efficiency and effectiveness of passenger clearance processing, with the objective of providing to the passenger the best air travel experience.

During the past 70 years, these efforts have been guided by consecutive amendments to the Standards and Recommended Practices (SARPs) of Annex 9 – Facilitation, since its inception in March 1949.

The ICAO TRIP strategy has been designed to help States prioritize and implement security-related

Annex 9 SARPs. It includes elements related to Machine Readable Travel documents (MRTDs) and border control management and as such also helps to harmonize the global line of defence for global security.

The importance given to ICAO’s TRIP Strategy by the international community has shown to be substantial this year and in recent years. Its contributions are well recognized by the United Nations Security Council (UNSC) resolutions 2178, 2309 and 2396, adopted in 2014, 2016, and 2017, respectively.

Along with this recognition, ICAO is a core partner of the UN Countering Terrorist Travel Programme (UNCTTP), a new flagship initiative of the UN Office on Counter-Terrorism (UNOCT), which was launched on 7 May 2019 by the UN Secretary General with the participation of the Secretary General of ICAO.

With the support of other UN offices, the UNCTTP intends to assist Member States to meet their obligations towards the UNSC resolutions mentioned previously by enhancing their detection capacity against foreign terrorist fighters (FTFs) and serious criminals through the collection, identification, and analysis of their travel information, including advance passenger information (API) and passenger name record (PNR).

Specifically, it recognizes the important role of airlines in passenger data exchange matters which allows, notably to track the movement of all passengers to help mitigate potential associated risks.

However, more progress remains to be achieved with respect to the global implementation of API systems and I would like to remind you that API is mandatory under Annex 9, as of 23 February 2018. The full implementation of the API Standard is supported by the global transition to machine readable passports (MRPs), MRTDs being a corner stone of the ICAO TRIP Strategy. The deadline by which all non-MRPs should have been removed



(right) The full assembly at the ICAO Trip Symposium

from global circulation was 24 November 2015. It is therefore critical that States encourage their citizens to return their non-MRPs, if they have these, and apply for MRPs without delay.

E-PASSPORTS

In the area of ePassports, more than 135 of ICAO's 193 Member States are now issuing ePassports representing about 1 billion ePassports in circulation. The physical composition of the document which has to be compliant with Doc 9303 MRTD specifications is one important aspect of global interoperability, while the criteria applied in determining entitlement are also crucial considerations. As per the first element of the TRIP strategy, Evidence of Identity, there is a need to ensure that the bearer is deemed legitimate.

THE ICAO PUBLIC KEY DIRECTORY (PKD)

However, a significant number of States issuing ePassports have not joined the ICAO Public Key Directory (PKD). This tool helps verify and authenticate the ePassports at borders, and permits States to capitalize on the benefits that ePassports are meant to deliver. It is of great importance to join and effectively use the ICAO PKD as an essential element of an effective border control management. Another key aspect of the document issuance and control processes is States' obligation under Annex 9 Standard 3.10 to report information about their stolen, lost, and revoked travel documents, to INTERPOL for inclusion in the Stolen and Lost Travel Documents (SLTD) database. States are also encouraged to query travel documents against this database at all border control points.

This chain of trust has many links that must all support the collective foundation for reliable border checks.

State's implementation of the ICAO TRIP strategy, requires coordinated action between many government entities and other stakeholders, such as passport issuing offices, immigration authorities, civil registries, border control agencies, airlines and airport authorities.

The mechanism and requirement for this coordination already exist in Annex 9 Standards 8.17 and 8.19 through the development of national air transport facilitation programmes and implementation of their related committees. However, many States have yet to establish a comprehensive National Facilitation Programme, National Air Transport Facilitation or Airport Facilitation Committees which are the very first steps in the States' roadmap for their TRIP implementation.

Beyond national, sub-regional and regional

coordination, international cooperation is essential and ICAO is working closely with many international and regional organizations, such as several UN entities, as well as the International Criminal Police Organization (INTERPOL), the International Standardization Organization (ISO) and the Organization for Security and Co-operation in Europe (OSCE).

Relying on donors' contributions and as part of the ongoing "No Country Left Behind" initiative, ICAO is determined to establish a more systematic approach to assist States in the implementation of Annex 9 SARPs and Doc 9303 specifications supporting the full deployment of the ICAO TRIP strategy.

With regards to the Symposium theme and the question "how to Bridge the Physical-Digital Document Divide"? In that context, a dedicated ICAO working group has started working on the Digital Travel Credentials (DTC) in order to answer the evolving travellers' behaviours and expectations.

In our ever-increasing world of digital transactions, it is hard to imagine a future, at least in the long-term, where we will still need to present a physical passport to cross a border. Increasing international traffic volumes are placing pressure on airport passenger facilitation, and the need for secure and trusted traveller identification remains ever present in the face of global turmoil.

Taking these challenges into consideration, standardizing an ICAO digital travel credential (DTC) policy was developed, in close coordination with the International Organization for Standardization, which is in charge of setting the corresponding technical specifications. Under the DTC scheme, the ePassport is used as the benchmark given that it offers a secure, portable, verifiable and unclonable token.

ICAO is continuing to foster the implementation of the TRIP Strategy awareness worldwide, with this Symposium being one of them. ■



UPCOMING ICAO TRIP EVENTS	
16 th TRIP Symposium	March 31 – April 2, 2020
17 th TRIP Symposium	May 25 – May 28, 2021
18 th TRIP Symposium	March 29 – March 31, 2022
*Dates are subject to change	

ISO 14298 | CWA 15374

LET'S TALK ABOUT CERTIFICATION

At 'SecurityPrinters' in October in Copenhagen, Intergraf will again explain the benefits of certification and introduce the new certification brochure.

Banknotes and identity documents are becoming ever more sophisticated, but so is counterfeiting. Security printers and their suppliers cannot afford to stand still. Closing gaps and keeping ahead of the counterfeiters on a global level remains a constant challenge.

Intergraf launched its certification scheme in 2003 as part of its mission to promote and protect the interests of the printing industry. Together with technical experts from all over the world, it developed international standards with one goal in mind: to provide security printers and their suppliers with a solid framework for managing all security printing processes.

From logical security to physical security to supply chain assurance, Intergraf's ISO 14298 and CWA 15374 ensure that a set of requirements are met to guarantee a high level of security across all operations and processes, eliminating risk for customers and their products.

Over 130 production sites in 50 countries across 5 continents are already reaping the benefits of Intergraf's certifications. And in doing so winning more business.

Certification has both internal and external benefits. Internally, certification can uncover blind spots in your back-office operations, implement a proven security management system and guarantee maximum security from development to deployment. Externally, it provides a recognised reference for governments and industry, enhances your tender prospects and increases customer confidence and satisfaction.

There are two different schemes, one for printers, ISO 14298, which specifies the requirements for management of security printing and hologram manufacturing processes and another for suppliers, CWA 15374, which specifies the requirements for suppliers to the security printing industry. Find out more at the Intergraf booth at 'SecurityPrinters, Banknotes and Identity' in Copenhagen. ■



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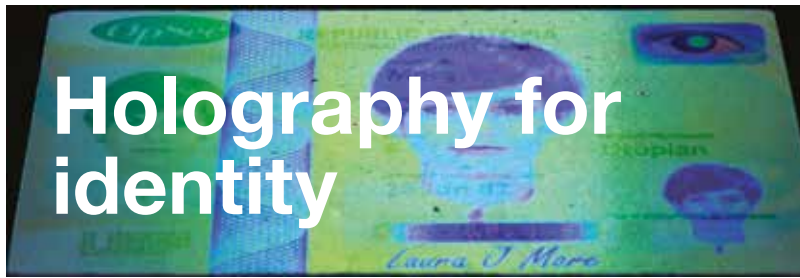
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Security is not a product, but one of the most valuable goods of a nation. The core of a holistic ID program is the constant capability to increase and optimize the integrity of the national identification scheme. Mühlbauer is strongly committed to providing reliable and secure government solutions for your citizens, thus creating trust and absolute confidence whilst meeting all your individual requirements.

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Dr Paul Dunn, IHMA
Chairman

In the face of continued reports about fake identity documents and the 'skills' of counterfeiters to reproduce passports, driving licenses and other official papers that look like the real thing to the untrained eye, Dr Paul Dunn, chairman of the International Hologram Manufacturers Association (IHMA), considers the latest developments in security and authentication holography.

There can be little doubt that the illicit production of counterfeit and fake ID documents is big business. Around the world, the combined cost of fraudulent passports, driver's licences and pass cards adds up to billions of dollars a year in lost revenues. It also impacts on corporate reputations, share values and issues around product efficacy and safety. Meanwhile, the cost of paying for anti-counterfeiting measures and teams tasked with bringing the criminals to justice can run into the millions of dollars.

We continue to see the impact of identity theft on a truly global scale. There have been recent reports from China about more than a million fake identity documents seized followed by dozens of people arrested by Chinese police after an investigation into a counterfeit gang operating across 20 provinces. Elsewhere, millions of people are falling victim to identity theft - in the last few years, identity thieves have stolen over \$107 billion in the U.S., according to a 2017 Identity Fraud Study.

In the UK, a national newspaper report highlighted a disturbing case involving criminals providing illegal immigrants with fake passports and documents to land jobs caring for the vulnerable. Australia is so awash with fake driver's licences, passports and other IDs, that the Commonwealth Department of Home Affairs has introduced a document verification service (DVS) to check that various government-issued document, which also include visas and birth certificates, are indeed legitimate.

Also, modern reprographic technologies make it possible to copy many things, but the real issue is just how accurately can holograms be copied? The

answer is that their intrinsic features ensure that the techniques and visual effects make it extremely difficult, perhaps almost impossible, to copy a well-designed security hologram 100 per cent.

But in the fight against fake ID, holography continues in the frontline, where its value in securing data and protecting against criminal interference, tampering, alteration, forgery or imitation is priceless - new technology, innovation and advanced processes ensure protection against the forgery of variable information (photographs and personal data).

Holographic technology offers a means of protection and authentication, and a warning about the dangers of counterfeiting. Therefore, they are not solely to prevent counterfeits but perform the role of an effective detection device, making it easier for the trained eye to distinguish the genuine item from the fake.

Manufacturers are responding to the technical challenges this imposes and in recent times, we have seen significant growth in the number of passport and other documents issued, which feature OVDs (Optically Variable Devices) to stay at the forefront of overt asset and brand protection programmes - the OVD can be used as a stand-alone feature or combined with printed security features to create devices that are extremely difficult to replicate using conventional photocopy or scanning technologies

Indeed, data from a leading manufacturer of products for ID and Secure Document production, personalization, verification and protection - ITW - says that when it comes to passports and ID cards, 81 per cent of them feature holograms, according to an estimate that spans the 2010 to 2016 period. That compares to 69 per cent for the period from 2000 through 2009. By the end of 2016, 89 per cent of passports had holograms (compared to 60 per cent in 2006).

NEW GENERATION

There's a new generation of high security innovative holograms emerging, which are driving improvements in ID document security and protection, helping those responsible for law enforcement stay ahead of the criminals.

These include Surys' Spectreod, which scooped the Innovation in Holographic Technology category at the Excellence in Holography Award 2018, for its advanced utilisation of phase shifting micro-optic authentication elements. This enables the viewer to pick out and identify information using a smart-phone light source. When observed at a direct angle, Spectreod is recognisable to the naked eye, but

when it comes under a light source, pre-selected floating coloured information appears that follows the movement of the light. This can help to confirm the authentication of a document at a glance. The company has also continued to further expand their DID (diffractive identity device) technology platform with a portfolio of products for identity applications including their latest DID Wave and DID Virtual.

Another pushing the boundaries is the Singapore University of Technology and Design, which has developed a new holographic security device that shows as a colour image when viewed in white light but reveals up to three different hidden holographic projections under red, green and blue laser illumination. It's believed to be the first time that holograms have been encrypted into a colour print for enhanced optical security applications across a range of ID document security applications.

Offering high level of counterfeit resistance, a new generation of optical features, which incorporate holographic effects, offer overt, covert and forensic features, will herald a step-change in the secure document industry over the next few years. OpSec Security is in the vanguard with proprietary Advanced Colour Control (ACC) technology that can be changed by wavelengths/intensities of light, altering the liquid crystal molecules and the colour they reflect.

Zhongchao Special Security Technology's ColorSpace is a new micro-optic feature that uses holographic micro-nanostructures to provide colourful 3D dynamic graphic features with full parallax. The colours are fixed and can be precisely controlled at the nanometre level and are also easy to observe and describe. ColorSpace is ultra-thin (less than 30 microns) enabling it to be easily integrated into security threads, foil stripes, labels and ID applications.

Promoted as a significant step forward in moving further than the current state-of-the-art in light transmission, optically variable coloured effects are visible through Surys' metallic foil Plasmogram: a new generation, high security DOVID that combines reflective and see-through effects on a nano-structured film incorporating physical properties. It's one of several 'break through' technologies that are now available for the high security ID sector. For instance, we are seeing optical security features coming through that can be integrated with almost any substrates - plastic cards, polycarbonate material, composite and paper - to deliver 'smart' ID solutions, which combine optical and digital technologies to offer both visual and automatic authentication based around the interactions of the user and smart devices.

Companies at the forefront of these developments include OVD Kinegram with digital seal. The technology integrates digital ID with the physical document in a secure manner in an innovative way, which takes the biographical data found in the optical character recognition (OCR) line from an identity document and encodes the information into a quick response (QR) code that can be easily and quickly read using a smartphone. The QR code can be encrypted if required and is protected against counterfeiting or manipulation using a Kinegram optical structure and the information read using an intelligent smartphone app that does not require any special add on. Surys have also developed their Optical Smart technologies that combine a digital data matrix code with a high definition micro image, which is part of the holographic security design. Using a dedicated app, specific images and properties can be authenticated without the need for an internet connection.

FUTURE CHALLENGES

Looking to the future, while holography undoubtedly faces challenges as ID technology and associated criminal behaviour continue to evolve, if it remains focused on its role as an effective, flexible and reliable anti-counterfeiting measure, then its position among governments and law enforcement will be assured. It will continue to play an important part in moving ID documents to the next stage of development, ensuring quality and checking the trade in fake ID while those documents not displaying security holograms are seized and destroyed.

The technology may have been around for decades, but holograms for secure authentication are still standing strong as an effective document security feature. Moreover, the use of well-designed and properly deployed authentication solutions, as advocated by the ISO 12931 standard, enables those with ID protection responsibilities to verify the authenticity of a legitimate product, differentiating it from counterfeits.

Even those that carry a 'fake' authentication feature can be distinguished from the genuine item if that item carries a carefully thought-out authentication solution. And it would appear that the advantages holography offers, will continue even as digital and mobile ID technologies gain increasing traction.

The IHMA (www.ihma.org) is made up of almost 100 of the world's leading hologram companies. Members include the producers and converters of holograms for banknote security, anti-counterfeiting, brand protection, packaging, graphics and other commercial applications around the world, and actively cooperate to maintain the highest professional, security and quality standards. ■

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