

INFOSECURA

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CURRENCY+IDENTITY
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A magazine for the security printing industry worldwide, published four times a year by Intergraf in Brussels and mailed to named members of the security printing community, such as security printers, their suppliers, banknote issuing, government and postal authorities as well as police forces in more than 150 countries.

INTERGRAF

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A long journey



When the Organizing Committee of the International Security Printing Section of Intergraf, as it was called at the time, decided in 1997 to launch a newsletter under the name of Infosecura, it was one of the first regular publications in our industry. Number 1 of Infosecura was issued at the turn of the year 1997/1998 and a look at the subjects discussed in that number shows how far, technically, the industry had advanced. There was an article on the Dutch Postbank's efforts to fraudproof Giro checks, fears that the collapse of the USSR and the consequent re-emergence of 14 independent states in its former territory plus a further seven in the wider former communist block would lead to a glut of new banknote printing works and the news that the German Bundesdruckerei had made a large investment in its banknote printing plant to be ready for printing the Euro. The European Monetary Institute (EMI) had just finalized the design for seven Euro notes to be put into circulation by the European Central Bank (ECB), but it took to January 1st. 2002, for the notes to appear in the hands or pockets of the public, although the Euro had been used as an accounting currency since January 1st, 1999. The Euro is now the second-largest reserve currency as well as the second-most traded currency in the world, after the United States dollar.

Things like crypto money, Bitcoin and even CBDC were not even thought about and ideas that travel documents could be issued in electronic form or that physical passports could be read in 'gates' at airports were still in the far future. Whether the dictum 'everything that can go digital, will' will finally prevail, against the well-founded opinion of experts in our industry and also the general population, remains to be seen. Moreover it will be seen by a younger audience than the one of the outgoing editor, because both physical banknotes as well as physical identity and travel documents still have a lot of milage in them.

It is with a certain sadness but also with gratitude that the editor of this magazine will hang up his (what do you hang up, if you only work on a computer?) whatever, for having been able to closely observe a sophisticated and important industry. Intergraf will continue to publish important announcements and from time to time also news, but you will have to read them on the Intergraf website instead of in a printed magazine.

So, farewell and good bye. It has been a pleasure to have been closely associated with security printing because of the people that represented this industry at Intergraf, especially in its Committee of Experts. Not forgetting the colleagues at the Intergraf office itself. All, without exception, were warm, thoughtful, kind and supportive colleagues. It has been a privilege to work with you over the years.

Au revoir

The Editor



AU REVOIR LYON, BUENOS DIAS BILBAO

If Currency+identity in Lyon was a return to the much missed normality, Currency+Identity in Bilbao will confirm the role of an international conference that has no commercial objective, its only objective being the one to give voice to what is happening in the industry. It is not sponsored. Neutrality and objectivity are guaranteed. Clear and up-to-date information and informed opinion is what you will get. So its 'Buenos Dias Bilbao' - or if you prefer 'Egun on', which is the same in Basque.

Looking back at Intergraf Currency+Identity in Lyon, just about everyone attending the conference, listening to the speakers and talking to colleagues and acquaintances at the coffee breaks, in the exhibition and the social events afterwards felt that it was good to be back. It is true that information can be transmitted almost as efficiently electronically but the value of social interaction was brought home to most by its absence during the height of the Covid pandemic.

We, Intergraf and Infosecura, had been talking about getting back to real, physical conferences for some time. Back in August last year the headline on the cover of Infosecura read: Where we'll meet next year: Lyon, 6 to 8 April 2022. We were confident that that statement would be true, but we had our fingers crossed. About three months later, the Infosecura cover declared: WE ARE BACK! Confidence and hope were evenly balanced, but it took the next issue, which was published in March 2022 to really enable us to say: Back in Session. And we were. Intergraf welcomed 800 attendees in person and 40 online - 840 in total - from 54 countries.

Not surprisingly, the absence from the real-life conference scene did not only bring disadvantages: Intergraf introduced the concept of "warm-up webinars", before the actual meeting, intended to be not only 'appetizers' but a more thorough and detailed transfer of information. They too proved to be successful, so much so that they are still available on the Internet under [Intergrafconference.com](https://intergrafconference.com) - Conference - Warm up Webinars. The subjects are: "Digitalising travel documents", presented by Mikko Hakkarainen of the European Commission, "Manufacturing the banknotes of the future – security and reliability", presented by Astrid Drexler of Papierfabrik Louisenenthal, and Jochen Kirsch of ISRA Vision, Germany, and "An introduction to FIELDS" presented by Robert Frain of INTERPOL and Claudio Kavrecic of Frontex.

AND SO TO BILBAO

Bilbao is not the Spain we all know. It has of course all the amenities necessary to host a large conference: a superb conference centre, good hotels and a very convenient international airport. It is also

the main city of the Basque country in the north-west of Spain and the capital of the province of Vizcaya or Biscay, part of the Basque Autonomous Community. But it is a far cry from the Costa de Sol.

Formerly one of the main industrialized areas of Spain, Bilbao's more recent claim to fame is its rise as a city of art and architecture. Frank Gehry's Guggenheim Museum Bilbao started a contemporary architecture movement which transformed the image of Bilbao to make it an emblem of creativity and avant-garde architecture. The pleasant walk next to the Bilbao estuary connects the historic centre with the Bilbao Art District and contains several hugely interesting sculptures.

The Bilbao Art District includes more than 30 art galleries very close together that offer intimate access to art. Most of the galleries focus on contemporary art and historical avant-gardes. The whole area has an abundance of shops with different artistic elements.

CURRENCY+IDENTITY 2023

The preparations for Bilbao 2023 have already begun. The Committee of Experts has taken stock of the latest developments in both the currency and the identity sectors of our industry and started the process of putting together the programme. On September 20th, 2022 there will be the customary 'call for papers' and 'further details' will be released and the sale of space for the exhibition will open in October. All details will be published in a timely fashion on the 'intergrafconference.com' website.

A FOND FAREWELL

You will, however, not be able to read about the upcoming conference and other newsworthy happenings in the industry in Infosecura, as this will be the last issue of the Intergraf Security Printing Magazine. As already announced in Lyon, the editor will take his leave and retire. To have worked for 15 years beyond the official retirement age on Infosecura should perhaps be taken as a sign that observing the security printing industry is highly interesting and stimulating. ■



(right) One of Bilbao's many and surprising modern sculptures.

CASH AND EVERYMAN

A book, and a corresponding article in a UK paper, describes the problem of having cash for payments and the equal problem of no longer having it. The arguments are clear and well understood in our industry, but it is useful to have them again at your fingertips.

One of the major subjects being discussed in the banknote world is the future of cash. The position of those attending Intergraf's Currency+Identity conferences is clear: cash has to stay. But what about the general public that certainly cares just as much about money, but mainly in the sense of 'having enough or not enough of it'. The form this money takes is often of secondary importance and very few people outside the financial and currency world even consider what is behind a simple payment.

Our choice, to pay by cash or by tap, wave, insert, or click; has consequences. Two authors, Natasha de Terán and Gottfried Leibbrandt just published a book called 'The Pay Off' that shows the hidden workings of payments, and reveal that how we pay is so fundamental that it underpins almost everything, from trade to taxation, stocks and savings to salaries, pensions and pocket money. They also published an article in the UK daily 'The Guardian' about their findings. The arguments in this article and in the book are well known in the currency industry but it is good to have them restated as a kind of mental guide when discussing the future of cash with non-experts.

The Covid 19 crisis has accelerated the move to cashless, but the trend is relatively recent. In the UK, card payment overtook cash as a mode of payment only in 2017. In some countries this happened earlier, in others the change still has to come.

The advantages of non-cash payments are clear: seamless, efficient, convenient. But have we really decided to adopt these new habits, or have we sleepwalked into them, with a little help from those who stand to profit, the article asks.

Merchants are keen to reduce cost and increase spend: the less friction we experience at the till, the less chance there is for second thoughts. Payment providers sell their equipment and services to merchants, so they want to satisfy them before anyone else and customers happily go along.

Of course, that level of convenience comes at a price, not least the one that cash may disappear. The Bank of England has committed to making physical cash available "as long as there is demand for it". Presumably if demand ceases, the Bank will stop. Handling cash presents high fixed costs,

whether delivering £500 in £20 notes to an ATM or £50,000, the costs of driver, security and fuel are the same. Similarly, if a shop takes just £5 of cash in a day, the owner still has to run a till, maintain a float, account for cash payments and deposit that cash in a bank. The less we use cash, the higher the cost of handling it, which means fewer merchants will accept it and fewer ATMs will distribute it. Before we realize it, the demand for cash that the Bank is monitoring may have simply evaporated.

WHAT ABOUT THE UNBANKED OR THE DIGITALLY UNCONNECTED?

Cancelling cash has many ramifications. For children, learning about money means handling it. Discovering that a banknote has a value and that there is a limit in how much to spend is a lesson that is difficult to learn with only non-cash payments. Many old people only feel comfortable using it, while those on a tight budget find it helps in managing their outgoings.

Then there's inclusion, the authors say. True, cash holders are unable to build up financial histories, essential for getting access to a wider array of financial services. But cash alone offers a universally attainable means of paying and being paid. For those who can't or won't get banked or go digital, what happens in a cashless future? There are an estimated 1.3 million "unbanked" adults in the UK and many more who lack either digital confidence or access.

The accessibility is cash's upside and its downside. Its use may be shrinking in the legitimate economy, but in the underground economy it is still very important. The fact that the number of legal transactions involving cash is declining, but the number and value of banknotes in circulation is increasing may point to an increased use in illegal transactions, the article seems to insinuate. But that is most probably a wrong conclusion, as with interest rates at a historic low, much of cash in large denomination has probably disappeared 'under the mattress', of ordinary people.

Whatever the economic and law-enforcement arguments against cash are, a payment isn't just an economic or administrative act; it is a social one that depends on the two parties' common acceptance of a currency and the mode of delivering it. With cash, this social act is limited to two parties – the payor and the payee – and it's private between them. Conversely, digital payments leave myriad traces that accumulate into vast stores of information about us.

Abandoning the freedoms of cash may not be of any great concern for those of unlimited trust in

governments and the electronic net that covers all of us. But the disappearance of cash means that every transaction is recorded and, by definition, controllable. And as we live in most unusual times, prone to both natural and political upheavals of unimagined magnitude, to rely on physical money

seems a more natural choice than to rely only on bits and bytes.

The book "The Pay Off" by Natasha de Terán and Gottfried Leibbrandt was published in April 2022 by Elliott & Thompson Ltd, ISBN: 9781783966417. ■

A FINE BALANCE: CANADA'S NEW \$ 5 NOTE

Many central banks no longer design a whole series of banknotes, but individual denominations at certain intervals. This is to take account of technical developments in bank note security, but also to reflect changes in the national mood, such as growing tolerance. Canada is keen to show its inclusiveness in its banknotes.

Central banks are thinking about new banknote design. The European Central Bank announced in December last year, that it is planning to redesign the Euro banknotes, promising the widest possible participation of all eventual users in all 19 Euro area countries, as well as design experts and cultural leaders. Considering the wide cultural differences and preferences within the Euro countries, reaching unanimity will not be easy. Britain tried a similar process some years back and pulled it off and now the Bank of Canada has finished an open call for nominations, inviting Canadians to suggest which iconic Canadian they would like to see on the next \$5 bank note. The Bank has experience in this, as the same selection process was used in 2016 to select Viola Desmond as the portrait subject of the vertical \$10 note.

BALANCING THE JUGES

Being the home of independent minded French Canadians as well as of a majority of English speakers, and of indigenous Indian and Inuit peoples, the independent Advisory Council, which will select the 'winner', is itself a perfect example of the balancing of identities. The seven-member Council comprises two 'francophones' (both males), four women, of whom one is black, one is a native Inuit speaker, and one a member of the military. The open call for nominations received 45 000 answers, resulting in over 600 nominees. Of these, the above Advisory Council selected eight candidates for a short list to be voted on. The list is again an example of balance and inclusiveness. There is a female Inuit artist, three indigenous men, one a famous Blackfoot chief who preferred diplomacy to fighting, as well as two much decorated WW1 veterans who later fought for indigenous rights.

"A list of eight names may seem like a very short list, but the selected nominees emerged from thoughtful considerations and deep deliberations, to ensure it is a list we would all be proud to present and stand by with determination, whatever the end decision is. We deeply believe this list emphasizes the diverse contributions of Canadians to our shared history," the Bank of Canada declared.

To compile the list, the advisory Council followed this set of guiding principles:

Positive change: The shortlisted nominees should have changed Canada and Canadians for the better.

National icon: Their impact is known nationally across Canada.

Universality: They have had an impact in Canada and this impact should reflect Canadian values.

Uniqueness: They are uniquely Canadian and known beyond their local/regional communities.

Relevancy: They had an impact that is relevant today.

Also: They must have died at least 25 years ago.

Looking at the list of nominees, it seems that indigenous Canadians, both 'First Nations' (Indians) and Inuit, which used to be known as Eskimos, received a lot of attention and votes. Whether that means the original inhabitants of the country have really risen in the estimation of their fellow citizens or that the vote is merely an expression of a guilty conscience remains to be seen.

It is hoped that increased recognition of indigenous Canadians will raise them eventually from their position close to the bottom of the social and economic ladder. Even something as modest as appearing on a Canadian banknote could make a positive contribution to the situation of the 'first nations'.

NEXT STEPS

The Minister of Finance will make the final decision, and the name of the individual selected will be announced following the Minister's decision. Once the new portrait subject has been selected, the bank note design process will begin. All that is known now is that it will be a polymer note with a vertical design and it is expected the new \$5 note to begin circulating in a few years. ■



For this note the Bank of Canada received the 2018 Banknote of the Year Award from the International Banknote Society. Will the Can \$ 5 note be a candidate for one of the next awards as well?

BANKNOTE SUSTAINABILITY AND G+D'S GREEN BANKNOTE INITIATIVE



In the contest between electronic forms of payments and physical cash, banknotes cannot be left behind for reasons of environmental performance and sustainability. Intergraf's Currency+Identity provided an example of how the traditional banknote production industry is fighting back in the «green corner».

At Intergraf's Currency+Identity in Lyon, Alexandra Geiger of Giesecke+Devrient asked the question: What makes a banknote green? She described the efforts of the company and its papermaking arm, Papierfabrik Louisenthal, to increase the sustainability of banknotes.

To tackle the subject, several action fields have to be considered: renewable energy, resources, fibres, foils, recycling and end of product life solutions. G+D had asked an external institute to conduct a product carbon footprint and a water footprint study on three alternative substrates: standard cotton substrate, longlife varnished substrate and G+D's Hybrid substrate, which has a cotton core covered by ultra-thin polyester foil back and front.

The study was based on the design and format of a specific customer order, defining results for a 'Functional Unit' of the production and use of 1000 banknotes over a period of 10 year, considering the average banknote lifecycle. The fields so looked at for emissions and water use were cotton production, thread production, substrate production, printing, distribution and use.

MEASURING THE CARBON FOOTPRINT

To examine the carbon footprint and using the standard substrate as the 100 per cent mark, longlife substrate came in at 103 per cent, and Hybrid at 123 per cent. The differences occurred all in the substrate production stage. However, in the cash cycle, Longlife and Hybrid substrates have lower carbon footprints than standard cotton substrate due to the longer lifetime.

Comparing the product carbon footprint of the Hybrid substrate with polymer substrates, show

that its carbon footprint is 13 per cent lower than that for polymer. If conventional cotton is substituted with alternative fibres such as flax, cellulose or organic cotton, the carbon footprint can be further significantly reduced, most dramatically by using organic cotton, which does not need artificial irrigation. For water consumption in banknote production, the irrigation water used in the production of standard cotton is the main culprit. If water consumption for standard cotton is taken as 100 per cent, substituting this with organic cotton would lower the water consumption to 1 per cent.

In conclusion, Ms Geiger said that there are many opportunities to reduce the water and CO₂ footprint of cotton-based banknotes and renewable raw materials can be used for this task, at the same time paving the way for further innovation based on natural fibres.



THE GREEN BANKNOTE INITIATIVE

At the end of her presentation, Ms. Geiger presented G+D's 'Green Banknote Initiative' which aims to foster collaboration and ensure that banknotes based on natural fibers make cash a greener payment system. Only by applying the principles of a circular economy, by decreasing emissions in the complete cash cycle, and by driving resource efficiency across global value chains and operations, the common goal can be reached. G+D insists, that its ambition is that the Green Banknote Initiative should be the work of many and serves as a discussion forum and platform for dialogue, both at one-to-one level and at conferences and events.

The initiative for environmentally-friendly banknotes is a joint endeavor by G+D and its papermaking arm Louisenthal. The "Green Banknote Initiative" is an open dialogue platform addressed to all cash issuers. The aim is to work together to create the banknote of the future – one that is sustainable, durable and counterfeit-proof in order to make the cash cycle more sustainable and efficient.

G+D's research has identified that longevity alone does not make a banknote sustainable. Only a balanced interplay of security, sustainability and longevity can achieve this. A study commissioned by G+D found that cotton-based coated banknotes have the lowest CO₂ footprint of all available banknotes. Hybrid banknotes generate up to 13 per cent

less CO₂ during their lifetime and up to 24 per cent less CO₂ during their production than banknotes made of polymer.

At the same time, their durability is comparable to that of polymer banknotes: they last about 2.5 to 3 times longer in the cash cycle than conventional cotton banknotes. Additionally, replacing conventional cotton with organic cotton or alternative fibres not only further reduces the CO₂ footprint, but it is also the biggest lever for reducing the water consumption of banknotes.

G+D calls the interplay of durability, security and sustainability "Durability+". The concept takes into account the entire spectrum, from product to production to end of life, and covers various fields

of action over the life cycle of a banknote. This starts with security solutions for banknotes in a combination of embedded, printed and applied security features and ends with the multitude of options for the use of natural fibre-based banknotes.

"The Green Banknote Initiative and the Durability+ concept expand our sustainability strategy and help us to support our customers and partners in their sustainability goals," explains Bernd Kümmerle, Managing Director of the Banknote Solutions Division at G+D Currency Technology. "For example, we advise them on their environmental strategy or work on specific production and product solutions. This ranges from analysing substrate optimisation to discussing end-of-life solutions, to name just a few examples." ■

MONEY GROWS ON TREES

Well, not quite. At Currency+Identity in Lyon, the Banque de France had festooned a small tree with what looked like banknotes. This was, of course, to draw attention to a new product, the Banque de France was proposing, that would increase the life of banknotes in circulation.



The Banque de France was merely pointing to the link between the sustainability of banknotes and the general effort of the industry to reduce its environmental footprint. With over 1 billion banknotes produced in its commercial entity for countries with highly demanding circulation conditions, the Banque de France has an advanced knowledge of the lifetime of banknotes in the field. It found that resistance to soiling, resistance to ink wear and lasting mechanical properties over time are the three pillars of durability which could be improved.

This was the idea behind EverFit, a 100 per cent cotton banknote substrate that is laminated with a protective layer as a finishing step. The cotton paper substrate provides optimal printing conditions and allows the integration of security features that are easily recognized by the public, while the final protective layer offers the increase in mechanical properties.

The final protective layer on both face- and reverse-side is a polymer laminate that provides maximal soil resistance and protects the security features and the printed design from wear, achieving both tear resistance and folding resistance. At a circulation trial in Madagascar, EverFit achieved 4.3 times the soil resistance compared to varnished banknote paper. In lab results, cotton paper resists 2 - 3 000 double folds, polymer over 50 000 and EverFit also 50 000. As for tear resistance, the lab results were 600 - 700 for paper, 200 for polymer and 650 for EverFit. The feature reduces the carbon footprint in banknote production and issuing cost in a series lifetime

Recently, the Banque de France signed a licence agreement for its EverFit solution with the UK based Portals Paper Ltd., one of the world's leading banknote and security paper suppliers. ■



DESIGNING A CBDC THAT WORKS - BUT NOT TOO WELL

It looks as if CBDC will be a fact of life for many of us, although most central banks of big countries insist they have not made up their mind about CBDC. But what will CBDC do and how will it fit into the existing financial system. An article in 'The Economist' makes some interesting points.

Today physical cash has fallen out of favour, 'The Economist' boldly declares in an article entitled 'Designing a digital currency that works - but not too well'. Most money is digital and created by tightly regulated commercial banks. Cash as a percentage of 'broad money' is between 10 and 12 per cent in the USA, just over 9 percent in the Euro area and slightly over 3 per cent in Britain and as low as around 1 per cent in Sweden. There are unregulated digital currency start-ups aplenty, and 89 countries making up 90 per cent of world GDP, are exploring a central bank digital currency.

As a claim on a central bank, a banknote, is the safest form of money, but only commercial banks have access to a central bank's reserves. A CBDC would change that by giving everyone access to central bank money, either by having accounts with the central bank, or holding central-bank money in privately issued wallets. Some countries are already circulating CBDC. The Bahama's deputy head of the Central Bank spoke about the experience of circulating the 'sand dollar' at Intergraf's Currency+Identity Conference in Lyon. The East Caribbean dCash and Nigeria's e-naira are also already circulating. On a trial basis, China has expanded the e-cny to over 260m wallets. However, what the take-up of CBDC will be is everyone's guess, as so far, no country has plans to abolish banknotes altogether. In China, the average amount in an e-cny wallet is three yuan (47 cents), which does not suggest it has been a runaway success.

The ECB seems to be getting keen on CBDC as well. Its President Christine Lagarde said that she would prefer "to see something in place by 2025". In Sweden a parliamentary inquiry will give its opinion on an e-Krona soon. In the USA, President Biden has issued an executive order asking the government and the Fed to explore the idea of a CBDC. In February researchers at the Boston Fed and the MIT announced that they had built a system to handle up to 1.7m transactions a second, far exceeding the throughput of Visa.

WHAT WILL CBDC DO?

The consequences of CBDCs depend on how 'total' their introduction would be. They might make central banks responsible for how credit is intermediated. Because public money is safer than commercial-bank money, deposits could trickle out of banks towards the central bank. This would be especially serious in crisis times. Deposits are a source of cheap funding for banks. If they disappear, lenders would either have to raise money on pricier wholesale markets or reduce their lending.

And central banks' liabilities would expand, raising the question of how they should be matched on the asset side. Direct lending to companies and households would be unlikely, but they might have to lend more to banks. Another worry is that if lenders depend too much on central banks, the balance of relations might be disturbed, by giving central banks power to determine who gets credit. The need to monitor payments data, if only because of anti-money-laundering rules, would increase the power of the the central bank immensely and turn it into an 'all-seeing tool of the surveillance state' the article states, which in turn would be a threat to the independence of central banks.

Most central bankers agree that a well-designed CBDC can minimise their intrusiveness, but still be attractive and many are working on a set of principles to avoid destabilising banks. None of the digital coins so far introduced or tested, pay interest, so as not to compete with bank deposits. To avoid the risk of bank runs, most existing CBDCs limit the amount of virtual cash that customers can hold. A report by the BIS and seven big central banks suggests that a system of escalating fees could make CBDCs less attractive than commercial-bank accounts. The users of the Bahamian sand dollar can hold up to \$500 without providing any information to set up an account, but those that hold up to \$8,000 must pass identity checks. In an attempt to keep central banks at arm's length from the public, most countries use private providers to offer CBDC wallets, so wallet providers do the anti-money-laundering checks.

These changes would, by design, make CBDCs an inferior form of money. Physical cash typically satisfies three functions of money: it is a unit of account, a means of exchange and a store of value. Caps on virtual cash would, however, mean that it would no longer be a store of value. The optimistic view is that this could open the door to innovation and competition. But the pessimistic view is that it might doom the attractiveness of a CBDC.

The result is something of a paradox. Central banks must ensure that the currencies are successful, but not too successful, thus a central bank "will have to ensure that the Central Bank Digital Currency is present everywhere but important nowhere".

There are fads and fashions even in the exalted central bank world and where CBDCs have been introduced, it is probably too early to say if they did what they were supposed to do. However, the momentum for CBDCs is building, even if in Britain, a House of Lords committee concluded that Central Bank Digital Currencies were a "solution in search of a problem". ■

CBDC AND COMMERCIAL BANKS

CBDC is one of the subjects just about every central bank is talking about. One of the main questions about CBDC is what the banking system will look like when CBDC has been introduced. What will be the role of commercial banks?

In an article, published in November last year in “The Global Treasurer”, Dr Wolfram Seidemann, CEO of G+D Currency Technology, said that while the potential of Central Bank Digital Currencies is substantial and more and more central banks explore their options in adopting a CBDC strategy, there are many challenges and considerations to cover. They range from cybersecurity and privacy concerns to the impact on financial markets, legislation and the role of commercial banks. The two-tier banking system, a working relationship between stated-owned central and private commercial banks, has typically supplied the fundamental support for the real economy. It is therefore important to consider both the banking system and how CBDCs are implemented and programmed so that central banks issue the value and grant its authenticity, while commercial banks as well as financial services providers issue the wallets that handle CBDC and are responsible for the application.

MAINTAINING THE TWO-TIER SYSTEM

The cooperation between central banks and commercial banks has proven itself over many decades. The central banks take care of macro-economic aspects, such as money supply management and currency stability, while the commercial banks are responsible for services such as customer advice, lending or corporate financing.

The balance between these two players can and should be maintained in the future era of a CBDC. While central banks will be in charge of the creation and destruction of digital money, commercial banks will be vital to its deployment. Commercial banks are the best players to take on a customer-facing role in the CBDC ecosystem and be responsible for the distribution – just as they are now with physical money. But more than that, since CBDC offers the opportunity to develop new financial products and services.

In the future scenario, they not only retain their previous role and function, they can even expand their position as service providers. The introduction of a general CBDC paves the way for new digital business models and additional revenue and growth opportunities. For example, automated functions in e-commerce can be used and

further developed. Linked value chains and smart contracts ensure that the rules stored in electronic contracts trigger defined actions at certain trigger values and monitor their execution independently.

There is no need to fear competition from central banks; the proven division of roles and tasks between central banks, customer banks and financial service providers, in which consumers are supplied and serviced in a decentralised manner, remains intact. Commercial banks can also use the introduction of a digital central bank currency to bind customers even more closely to themselves with special apps for the use and custody of CBDC and to link them with new CBDC-based customer services.

DESIGNING CBDCs TO SUPPORT COMMERCIAL BANKS

By providing a stable CBDC core system that enables programmability on wallet level, commercial banks can not only remain relevant in a digital world, but even offer new and innovative services. The digitisation of currency has already taken place with commercial banking, making up much of the money created globally.

A CBDC for example can utilise programmable features that reside at the commercial bank level, giving them the authority to manage these features and helping to improve the overall performance and reduce the complexity of its ecosystem. Additionally, with the basic currency infrastructure provided by central banks, this provides a driver for digital innovation. Commercial banks are able to set additional conditions at the point of issuing secure smart digital wallets.

With smart digital wallets, consumers are able to create local rules within the policies and wallet conditions, such as setting up one for their family to use or creating spending limits for a child. Smart wallets are able to bring together traditional account-based infrastructure and the features of a token-based CBDC. This setup can help facilitate financial inclusion and be ideally suited for the digital world.

WHY IT IS KEY TO KEEP COMMERCIAL BANKS IN THE FRAME

Despite the jurisdiction that central banks will hold over CBDCs, commercial banks can continue to be a vital component in a world defined by digital currencies. In tandem with central banks, they have a responsibility to provide value when it comes to user adoption of CBDCs and trusting in a digital currency. ■

TAMING THE CRYPTO WILD WEST

This is an edited and shortened version of Fabio Panetta's speech entitled "The Wild West of crypto finance". The original version can be found on the ECB website.

In a speech at Columbia University in New York, Fabio Panetta, Member of the Executive Board of the ECB, used the metaphor of the Wild West to describe the current Crypto scene. He said that Satoshi Nakamoto, who created the source code of what he thought could be decentralised digital cash, wanted to realise an anarchistic utopia of a stable currency free from public scrutiny. Of course, it was a dream and it remains just that, but Crypto enthusiasts marvel at the rise of the crypto market and a whole ecosystem from miners to intermediaries has duly emerged. Crypto evangelists promise riches, using an illusory narrative of ever-rising crypto-asset prices to maintain inflows and thus the momentum fuelling the crypto bubble, Mr. Panetta said. The reality is different. Crypto-asset transfers can take hours to process. Their prices fluctuate wildly. The supposedly anonymous transactions leave a trail that can be traced. A large majority of crypto holders rely on intermediaries, contrary to the avowed philosophy of decentralised finance. In El Salvador, for instance, which is the first country to adopt bitcoin as legal tender, payments are carried out via a conventional centrally managed wallet.

Crypto-assets are bringing about instability and insecurity – the exact opposite of what they promised and they have to be taken seriously. The crypto market is now larger than the sub-prime mortgage market was when – worth USD 1.3 trillion – it triggered the global financial crisis. And it shows strikingly similar dynamics. In the absence of adequate controls, crypto-assets are driving speculation by promising fast and high returns and exploiting regulatory loopholes that leave investors without protection. Limited understanding of risks, fear of missing out and intense lobbying of legislators drive up exposures while slowing down regulation.

Mr. Panetta insisted that we must not repeat the same mistakes by waiting for the bubble to burst, only then realising how pervasive crypto risk has become in the financial system. Now is the time to ensure that crypto-assets are only used within clear, regulated boundaries and for purposes that add value to society. And it is time for policymakers to respond to the people's growing demand for digital assets and a digital currency by making sovereign money fit for the digital age.

CRYPTO'S UNDERLYING DRIVERS

Crypto-assets are the result of advances in cryptographic methods and distributed ledger technology. Innovation has made it possible to create an asset that lacks any underlying claim. In "unbacked crypto-assets", nobody is liable, nor are

these assets backed by any collateral or managed by a trustworthy operator. This makes them purely speculative in nature, and hence highly volatile.

To create some stability, "stablecoins" have emerged, the value of which is linked to one or more low-risk assets. But, if left unregulated, they are stable in name only. They can be low-risk but not riskless, and cannot guarantee redeemability at par at any time. They do not benefit from deposit insurance, nor do they have access to central bank standing facilities. They are therefore vulnerable to runs. They are often purely speculative assets, exposed to high financial and operational risks: research finds that one-third of stablecoins launched in recent years have not survived.

In spite of these weaknesses, the number of crypto-assets has expanded significantly, with around 10,000 available on the market today.

Driving this growth is a complex and opaque crypto ecosystem made up of cryptocurrency miners and service providers, such as exchanges or wallets, that are largely unregulated and insufficiently supervised or overseen.

The supply of crypto-assets has been met with strong demand from both professional investors and the public. In 2021 around 16 per cent of Americans and 10 per cent of Europeans invested in crypto-assets. This strong appeal of crypto-assets, especially unbacked ones, is a cause for concern given the lack of fundamentals, the number of recent scandals, their use in illegal activities and the high volatility of their prices. All this points to unsound underlying market dynamics.

For one thing, the market is highly concentrated: for example, retail investors holding less than 10 bitcoins own one-tenth of bitcoin supply, while professional investors and high-net-worth individuals hold almost two-thirds.

Vested interests of large investors naturally lead to increasing lobbying activities. In the United States, for example, crypto firms spent around USD 5 million lobbying the Senate in the first nine months of 2021 alone.

Rising prices are fuelled by extensive news reports and investment advice on social media, highlighting past price increases and features such as artificial scarcity to create the fear of missing out. As a result, many invest without understanding what they are buying.

Like in a Ponzi scheme, such dynamics can only continue as long as a growing number of investors

believe that prices will continue to increase and that there can be fiat value unbacked by any stream of revenue or guarantee. Until the enthusiasm vanishes and the bubble bursts.

BUT DO CRYPTO-ASSETS REALLY GENERATE VALUE FOR THE PAYMENT SYSTEM?

Unbacked crypto-assets cannot fulfil their original objective of facilitating payments. They are simply too volatile to perform the three functions of money: medium of exchange, store of value and unit of account.

For example, between November 2021 and January 2022, bitcoin prices fell from roughly USD 68,000 to about USD 38,000. Their three-month volatility was 60 per cent, almost five times higher than gold and four times higher than US stocks. Such high volatility also means that households cannot rely on crypto-assets as a store of value to smooth their consumption over time. Similarly, firms cannot rely on crypto-assets as a unit of account for the calculation of prices or for their balance sheet.

And this is just as true for stablecoins, given the poor consumer protection and the vulnerability to panic selling that characterise them in the absence of appropriate regulation and supervision. When adequately regulated and supervised, stablecoins are nothing more than e-money arrangements. This is something we have known for many years.

So crypto-assets, especially unbacked ones, are not useful as money. But do they at least perform other worthwhile social or economic functions, such as funding consumption or investment, or helping to combat climate change? There is reason to believe that they do the exact opposite.

Crypto-assets are widely used for criminal and terrorist activities. It is estimated that the amounts of crypto-assets exchanged for criminal purposes are substantial, exceeding USD 24 billion in 2021. Research suggests that as much as USD 72 billion per year, or about 23 per cent of all transactions, is associated with criminal activities. Ransomware attackers usually demand crypto payments.

Crypto-assets may also be used for tax evasion or to circumvent sanctions. For example, North Korea has actively tried to recruit cryptocurrency experts over the past few years.

Crypto-assets based on proof-of-work (PoW) blockchains can also cause huge amounts of pollution and damage to the environment. They are created in a decentralised mining process which consumes an enormous amount of energy and computing hardware. It is estimated that mining in

the bitcoin network uses up about 0.36 per cent of the world's electricity – comparable to the energy consumption of Belgium or Chile. Worse still, efforts to reduce energy demand may prove futile. The networks' hunger for energy is potentially limitless, since the validation process encourages miners to keep upgrading their computing capacity to ensure system security. And even where crypto mining uses clean energy or less energy-intensive techniques, this is energy that is not available for other purposes, increasing the consumption of fossil fuels and impeding the fight against climate change.

So crypto-assets are speculative assets that can cause major damage to society. At present they derive their value mainly from greed, they rely on the greed of others and the hope that the scheme continues unhindered. Until this house of cards collapses, leaving people buried under their losses.

Crypto-assets still comprise a small share of total global financial assets (about 1 per cent). But they already have a larger market than sub-prime mortgages had before the global financial crisis started. We cannot afford to ignore them.

Indeed, the popularity of crypto-assets is spreading beyond their core supporters. The launch of the first bitcoin exchange-traded fund in the United States last October is a sign of increased institutional activity in these assets, largely in response to demand from customers. The retail segment is also growing, with retail investors often attracted by misleading advertisements that fail to clearly set out the risk involved in these products.

Big payment networks have stepped up their support services for crypto-assets and intermediaries are seeing a significant increase in retail holdings. For example, Coinbase, which is the biggest US crypto-asset exchange, now has 56 million users – an increase of 65 per cent since March 2020.

REGULATION AND TAXATION

We need globally coordinated regulatory action to address issues such as the use of crypto-assets in cross-border illicit activities or their environmental footprint, Mr Panetta said. Regulation should balance the risks and benefits so as not to stifle innovation that could stimulate efficiency in payments. Crypto-assets need to be held to the same standards as the rest of the financial system and taxation on crypto-assets should be in line with other instruments and aim for alignment across jurisdictions. There could also be a case for higher taxation of some crypto-assets – such as those based on PoW – to take account of the negative effect on the environment of instruments such as Bitcoin. ■

BANK OF CANADA: CASH AND COVID: WHAT HAPPENED IN 2021

The Covid pandemic probably had similar effects on cash use and cash holdings in most of the economically advanced nations. It is however useful to chart what actually happened, as a paper from the Bank of Canada shows.

The bank of Canada recently published a 'Staff Discussion Paper' on the demand for cash and the methods of payments used during 2021, when the Covid-19 pandemic was at its height. In Canada, cash is distributed to banks and other financial institutions through the Bank Note Distribution System (BNDS). Its regional distribution points correspond roughly to the country's provinces.

The paper shows that the value of notes in circulation (NIC) increased significantly in the early months of the pandemic, and this growth slowed significantly only in July 2020. To gauge the pandemic's impact on NIC, the paper's authors constructed simple projections of 2020 and 2021 NIC based on what could have been expected if the Covid-19 shock had not occurred.

For small-denomination notes, the withdrawal from the Bank of Canada in 2020 increased sharply from less than -0.5 billions in January to over 0.8 billion in March when the withdrawal without Covid would have been around less than 0.5 billion. In May, July and October 2020 withdrawals stayed below the figures expected in a non-Covid scenario, and in December, when amounts of around 1 billion could have been expected, only around 0.4 billion were withdrawn. In 2021, a similar pattern was observed with generally lower withdrawals compared to average rates in previous years, from 2017 to 2019.

Looking at large denomination notes in the same timeframe, they show an almost opposite pattern. In March 2020, almost 1 billion in large denomination Canadian dollar notes (\$50 and 100) were withdrawn, while in a non-Covid scenario, less than 0.4 billion would have been expected. Throughout the year, withdrawals of such denomination were well above expected averages, but an expected peak in December 2020 of above 1 billion fell short by about 0.3 billion. For the rest of 2021, in February, May, July and September, withdrawals were significantly higher than those in the pre-Covid control time, and the expected peak in December surpassed 1 billion, topping the non-Covid expectations.

The findings of the research team suggest that the pandemic doubled the increase in the value

of NIC in 2020 that could have been expected over this period in a typical year (that is, without the Covid-19 shock). Generally, the level of NIC remained high throughout 2021.

The change in the value of NIC equals the value of net note withdrawals from the Bank (withdrawals of bank notes less deposits made to the Bank). These net note withdrawals can be grouped by denomination. Small-denomination bank notes include \$5, \$10 and \$20, and large-denomination notes include \$50 and \$100. The small denominations are typically used for transactions. The large denominations typically are safety reserves or store-of-value, the paper states.

MAIN FINDINGS

The paper lists the following points as key findings: Cash in circulation remained high throughout 2021, driven mainly by demand for large-denomination notes.

Canadians' holdings of cash in hand in April (median \$70) and August (median \$80) were comparable to results seen in 2020. Other cash holdings reported by Canadians remained elevated, with a median value of \$260 in August.

According to the most recent surveys, a significant proportion of Canadians used cash for payments, reaching 62 per cent in August 2021. This was the same as the proportion who used debit, but less than the proportion who used credit, which was 76 per cent in August. So, a large percentage of Canadians used cash for payments even though electronic methods continued to dominate methods of payment.

Indicators of merchant acceptance of cash continued to improve in the April and August 2021 surveys. In the August survey, only 2 per cent of Canadians reported hearing news reports about merchants not accepting cash for payments, and only 4 per cent reported that they were unable to use cash at a point of sale.

Finally, a large majority of Canadians, around 80 per cent, continue to report that they have no plans to go cashless. The share of people saying that they are already cashless was 13 per cent in both the April and August surveys. However, those who stated that they are already cashless and actually held no cash is 6 per cent. This kind of outcome is evident across all of the surveys and suggests that some respondents might overestimate the extent to which they are already cashless.

In the near future, Bank staff are planning additional surveys of ownership and use of cryptocurrencies. ■

A NEW FACE FOR YOUR ID CARD ?

ID cards have become highly sophisticated in countries where they are mandatory, although in many countries – such as Australia, Canada, Ireland, New Zealand, the United Kingdom, and the United States – there are no government-issued compulsory identity cards for all citizens. There is, however, a standard for such cards issued under ISO/IEC 7810 and ICAO Doc 9303 (precisely: Part 5), where, in one Subgroup of the ICAO NTWG, improvements are being discussed.

The circumstances under which passports and ID cards are presented, differ greatly. Passports are not obligatory and they are generally used when crossing borders. They are inspected by officials authorized to do so and they are also read in automatic border gates. On the other hand, ID cards, which are obligatory in most countries, are presented and inspected in much more casual circumstances, despite the fact that they are used to cross borders, especially in the Schengen area. A policeman may ask for your ID card or you may have to identify yourself at the post office, a local authority office or even a liquor store, if you look very young. That is to say, those that inspect ID cards are not always professionals. A quick glance at a very small portrait photo on an ID card is no guarantee that the person presenting the card and the person named on it are the same. A larger portrait would be very helpful, but space on an ID card is very restricted.

Trying to solve this problem, a group of experts under the auspices of ICAO decided to research the various possibilities on offer. Under the chairmanship of Ronald Belser, Senior R&D Adviser at the Dutch Ministry of Justice and Security, and including Dr. Uwe Seidel of the German Bundeskriminalamt - a Member of Intergraf's Committee of Experts - they created a subgroup of the ICAO NTWG (New Technology Working Group) called "WG Modern TD1 layout" to examine the various options on offer.

One of the first decisions the working group took was to suggest to turn at least the front of the standard TD1 85,60 mm x 53,98 mm sized card from a horizontal document into a vertical one and thus enable a much larger image of the bearer. This left the question of where to put the alphanumeric information, which in the current - horizontal - style card takes up more than half of the width of the card.

The options considered among the first three models, were a) no MRZ (machine readable zone), but CAN (card access number) as digits, b) a 2D barcode containing the MRZ and CAN as digits and finally c) had no MRZ on the front side but the CAN represented as digits and as 2D barcode. This version, which met with agreement, allows the machine assisted chip access from the front side via the barcode CAN, but also enables manual input while at the same time minimizing the space loss compared to the other alternatives.

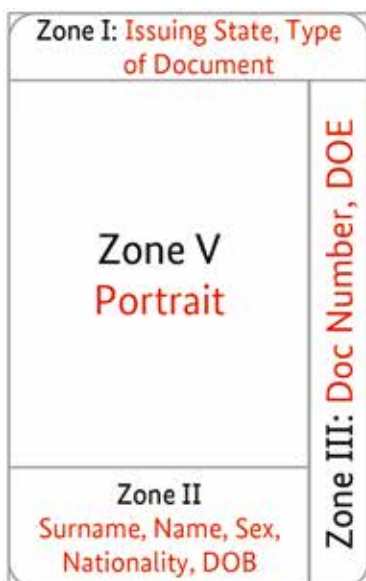
The information on ICAO standardized machine-readable travel documents is organized in "zones". For a novel layout, deciding on the zones was another aspect to be examined. There are five zones on the front of TD1 sized cards: Zone I, the mandatory header, zone II, mandatory and optional personal data elements, zone III, mandatory and optional document data elements, zone IV, mandatory holder's signature and zone V, mandatory identification feature (portrait). In the new approved front design, zones I, II, III and V are on the front, while zone IV has been put on the back of the card.

Different possibilities for the zones were discussed, as was the concern that the space for data elements in zones II and III might not be sufficient, especially for countries with several official languages.

ONGOING DISCUSSION ABOUT THE BACK

The design for the back of the card is still under discussion. There are alternative possibilities, e.g. retaining the horizontal format for the back, or going vertical like the front. None of the suggested versions has CAN digits, which are on the front of the card. However, machine assisted chip access is facilitated either by the traditional MRZ in OCR-B lettering or by an additional 2D-barcode, containing that very MRZ. For a long to mid-term future, even the replacement of the traditional OCR-B MRZ by the barcode representing the MRZ data is an option.

As for the front, there are various ideas about the zone arrangements, both for the horizontal and the vertical layout of the back. Every possibility, however, needs to provide room for alphanumeric data being moved from the front. But also other security features (or even the contact chip) will have to compete for real estate on the densely packed back of the card. ■



NOT JUST FUNNY, BUT CLEVER TOO

The new Belgian passport has been discussed briefly in the last issue of Infosecura. Meanwhile further details about the design and the security elements of the document have been made public. Here is some additional information.

The last version of the Belgian passport, which most Belgians still carry, as the new version was only introduced in February this year, had an odd feature: The data page was printed on the same paper as the rest of the passport booklet, but it had a laminate on the variable information side. On this side there was also a patch that showed the letters BEL when tilted. It also had the customary coloured portrait photo of the bearer.

The real identification features were on a 'greyish' polycarbonate page that followed the data page: here were two further portraits of the bearer, the second, paler one, again accompanied by 'BEL', a tactile BEL that matched the patch on the data page, a clear circular area below the portrait space with the Belgian coat of arms and a tactile right-hand corner with the repeated letters BEL. On the following page there are illustrated recommendations on how to check the security features. On the visa pages of the 32-page passports there were discreet images of Belgian classic architecture. In total, this version of the Belgian passport had 24 security features.

TO MUCH ACCLAIM: THE NEW VERSION

It was complicated and it was not funny. Enter the new version: the number of security features has been doubled to 48, which combine with and reinforce each other. According to the manufacturer, Thales, the main innovation of this new passport is the use of a polycarbonate page for the customizable elements, a material already widely used for card-sized ID documents. In recent years, it has also become a standard for the customizable page in passports.

All security features have been extensively revised, both in printing and physical elements, including the secure hinge between the booklet and the polycarbonate page.

The chip is now integrated into the data page instead of into the back cover as before. The result is a fully updated version produced by Thales that offers the highest level of protection available today.

The variable data includes a security feature developed and registered jointly by IAI and Zetes and used principally for the black/white portrait photo, which combines a perforation technique with laser printing. The photo on the data page is made

of multiple perforations, using different perforation angles to make falsification more difficult. At present, it is only used for the Belgian eID. Its use for passports is therefore a 'first' and remains a Belgian exclusivity. There is also no longer a 'decoding page' as in the last version of the passport.

On the back of the data page a barcode gives again the personal details of the passport holder.

For added security, the portrait is reproduced five times throughout the booklet using different techniques. The biometric passport also includes fingerprints, and the passport number now consists of 7 digits instead of the 6 digits previously. A further control number has been added.

FUNNY AND SECURE

Even the cartoon characters, which will be the main focus of public attention, contain security features. With a magnifying glass one can read for each illustration a reference to the author of the design or the comic book. For example, at the foot of Tintin's rocket there is a reference to the author Hergé.

Each of the cartoon scenes of the visa pages spreads over two pages and all of them are, one way or another, linked to the subject of travel. An added headache for potential counterfeiters will be the UV images of any of the cartoon scenes. There is also embedded data which is readable only under UV light. Another 'first', according to the manufacturer Thales, is that the passport number is also laser-etched on the hinge connecting the polycarbonate data page and the booklet. ■



Images: Hergé-Moulinsart
2021
via
Federal Public Service
Foreign Affairs

WANTED: DIGITAL NOMADS

For real nomads, life is getting constantly harder. Loss of grazing grounds, encroachments from outsiders, climate change, to name but a few difficulties. By contrast, the life of the 'digital nomads' is improving in leaps and bounds. Ever more countries seem to want them and are prepared to be generous.

Now, 'digital nomads' can enjoy the charms of Italy for at least a year with the newly approved digital nomad visa, which had been proposed in January 2022. "We are happy to have approved the proposal, but we are also aware of the next steps. The government has to work on a new bill to implement the law, defining all the procedures and details," the Italian Member of Parliament Luca Carabetta, (Five Star Movement) said, who promoted the digital nomad visa, SchengenVisaInfo.com reported. In addition, Carabetta stressed that they are working with the Ministry of Foreign Affairs in this regard while stressing that he is sure they will lead this process.

Italy believes that there is an opportunity in welcoming digital nomads, whose numbers are constantly increasing since the breakout of the pandemic, as more and more people realize that many jobs can be done remotely without the need of physically being in an office.

Digital nomads contribute to the local economy and help bring back some of the lost tourism revenues, after the pandemic. They stay longer periods, many of them seek engaging with the local community by sharing skills and ideas. In that way, digital nomads represent a significant boost to the economy and the communities, especially in remote villages and small cities, that may be out of view for tourists.

THE VISA

The new Italian visa for digital nomads will allow them to stay in Italy for a year, that can be extended. So far, non-EU visitors were allowed to stay for a maximum of 90 days.

The visa is open for all non-EU professionals who work using technology, such as the internet, to conduct their work remotely, whether as freelancers, self-employed or working for a company, as long as their employer is not in Italy. Programmers, content creators, digital marketers and many other categories of digital professionals are examples of digital nomads who can take up that visa.

The law is aimed at "highly qualified" remote workers and freelancers who work from outside the European Union, including American and British citizens, Italy's Il Sole 24 Ore reports.

Inspired by similar schemes in Germany, Malta, Croatia, Portugal, Estonia, and Norway, the Italian government is eager to bring in professionals who want to live and work there, not just vacation, to stimulate the economy.

Since Italy is part of the European Union, any EU national can start working there without a visa or work permit, but anyone from outside the EU must apply for a visa if staying over 90 days and a work permit. Applying for one can be a complicated process and it isn't always available to freelancers and remote workers.

Furthermore these schemes tend to require proof of earnings so the government will need to set out the minimum income requirement for applicants. For example, Estonia, which launched its visa scheme in 2020, requires applicants to earn at least €3,504 (£2,934/US\$3,843) a month. In Malta digital nomads have to earn at least €2 700 / US\$2,963 a month.

ENTICING NOMADS

Recently, the government of Italy announced that it plans to make a €1 billion investment in order to attract digital nomads to work remotely from villages in Italy.

Such an initiative aims to transform about 2,000 "ghost towns" into attractive places for digital nomads. According to Coldiretti, an agricultural organisation, in rural zones, only 75 per cent of families have access to the internet. Obviously, some improvement are needed before the nomads arrive.

Up to this point, several European countries have launched their Digital Nomad visas, among them Hungary, Spain, Romania, Portugal, Germany, France, Malta, Croatia, Estonia, Greece, Malta and the Czech Republic.

Such new visas aim to attract internationals to work remotely from European countries that offer such opportunities and also help their economic sectors recover from the damages caused by the Coronavirus and its new strains.

In January this year, authorities in Spain also announced that they plan to launch the digital nomad visa in the next month in order to bring to the country a large number of internationals who can temporarily live in Spain while working from companies located outside the country. ■

... and there are no traffic-jams on the way to the office.



FRONTEX 1: STRIFE AT THE BORDERS

“We can’t deter people fleeing for their lives. They will come. The choice we have is how well we manage their arrival, and how humanely.” These words by UN General Secretary António Guterres state a simple fact. The EU created an agency, Frontex, to give them substance, but its task is inherently political. If Frontex is too effective in keeping arrivals out, it may break European law, if it is not effective enough, it will help to alter the political landscape in Europe, by causing a backlash against too many new arrivals.



Images: Frontex news releases

There is hardly a subject more difficult and incendiary than refugees arriving at a country’s borders asking for asylum because the intended target country of the asylum seekers can usually do nothing to ameliorate the conditions which made people flee their country in the first place. It simply has to deal with the results of actions, humanitarian, economic, political or climatic, that made life intolerable for those forced to flee. Although the question of asylum has changed the political make-up of many receiving countries, leading a.o. to the rise of the extreme right, the position of the Geneva Convention and the EU is clear. The EU charter of fundamental rights states in Article 18 that “the right to asylum shall be guaranteed with due respect for the rules of the Geneva Convention of 28 July 1951 and the Protocol of 31 January 1967 relating to the status of refugees and in accordance with the Treaty on European Union and the Treaty on the Functioning of the European Union.”

Recognizing that asylum and immigration are problems that cannot be treated by national governments alone, the EU created the ‘European Agency for the Management of Operational Cooperation at the External Borders’ in 2004, which in the following years developed into Frontex, the European Border and Coast Guard Agency, headquartered in Warsaw, Poland. Frontex is tasked with border control of the European Schengen Area, in coordination with the border and coast guards of Schengen Area member states. In response to the European migration crisis in 2015 - 2016, the EU extended Frontex’s mandate and transformed it into a fully-fledged European Border and Coast Guard Agency, that was officially launched on 6 October 2016 at the Bulgarian external border with Turkey.

At the same time its budget was gradually increased from €143 million for 2015 to €543 million for 2021 and the staff of the agency is planned to

reach 10,000 by 2027. There are currently 520 standing corps officers working along the Eastern border from Finland to Romania. This includes 362 officers working at the EU-Ukraine borders. To support Moldova which is currently facing unprecedented number of arrivals of refugees, Frontex deployed 73 officers to help Moldovan authorities following the signing of a status agreement between the European Union and the Republic of Moldova in March.

WEAPONIZED IMMIGRATION

Refugees are sometimes used as political instruments to destabilize other countries. Last winter, the Belarusian president, Alexander Lukashenko, organised the movement of asylum seekers with the promise of a safe passage to Europe, apparently in reprisal for sanctions that Brussels had imposed on his regime, opening a new migration route to the EU. The humanitarian emergency reached its peak in November, when the Belarusian security forces escorted thousands of asylum seekers to the Polish border in an escalation of the crisis. Witnesses said that Belarusian troops had gathered groups of up to 50 people and cut the barbed wire to allow them to cross. Most of the asylum seekers were caught, and illegally and violently pushed back to Belarus by Poland’s border guards.

But hundreds managed to escape into the forests. Trapped between the violence of the Polish authorities and false promises from the Belarusians, families lived in small tents, trying to keep warm in damp sleeping bags as night-time temperatures fell below zero, the Guardian wrote on 8. February.

A similar story had occurred in February this year, when Turkey’s President Erdogan announced that it would no longer enforce a deal reached with the EU in 2016 to block irregular migration routes into Greece. The resulting influx of asylum-seekers, migrants and refugees into Greece was met with violence at the borders, with Greek police using tear-gas, water cannons and stun grenades. This was followed by a war of words and the usual blame game amongst EU, Turkish and Greek actors, the London School of Economics academic EUROPP blog wrote.

Another academic blog, ‘eumigrationlawblog.eu’ wrote that Greece considered the overall situation at its borders as a national security emergency, and when following the closure of the border by Greece, Turkey sent 1,000 special forces at its side of the border to obstruct these measures. On 13th March, it was reported that Turkey was scaling back its actions and on 18th March it announced that it was closing its borders to Greece and

Bulgaria because of COVID-19. Nonetheless, so far, the tensions between Greece and Turkey endure. It may have been just a twenty-day crisis, but it had echoes beyond this date. On 28th April Turkish soldiers fired at German Frontex border guards at the Greek-Turkish border.

ECHOES FROM GREECE

Another echo of the ‘Greek-Turkey pushback crises’ was the resignation on April 29 of the director general of Frontex. Fabrice Leggeri, a French citizen, submitted his resignation to the board of the European Border and Coast Guard Agency in Warsaw, which was accepted. The European Commission said in a statement that the deputy director, Latvian Aija Kalnaja, would serve as interim director until a successor was appointed. “Frontex must be a robust and efficient agency. The Commission will continue to support it fully in this mission,” the statement said.

Ms Kalnaja is the longest serving of all the three Deputy Executive Directors and she will deputise for the vacant Executive Director function with the support of Uku Sarekanno, Deputy Executive Director for Information Management and Processes and Lars Gerdes, Deputy Executive Director for Returns and Operations, a Frontex press release wrote.

The extraordinary meeting of the board of directors at which the resignation was made, was to consider a non-public report by the European Anti-Fraud Office (OLAF), the result of a lengthy investigation that ended in February; OLAF had recommended the opening of disciplinary proceedings against Mr. Leggeri, a recommendation that the board of directors did not follow, Lighthouse Report said.

OLAF had shown interest in acts of “harassment,” “misconduct” and “the return of migrants” at the external borders of the European Union (EU), according to MEPs on the Parliament’s budgetary control committee, who had suspended the clearance of Frontex’s accounts in view of the “seriousness” of the office’s findings. “Nothing has been done about the reports of fundamental rights violations in Greece. The operations to return migrants through Hungary continued in 2020, despite a ruling by the EU Court of Justice that they were incompatible with European law,” MEPs wrote in a statement on March 31st.

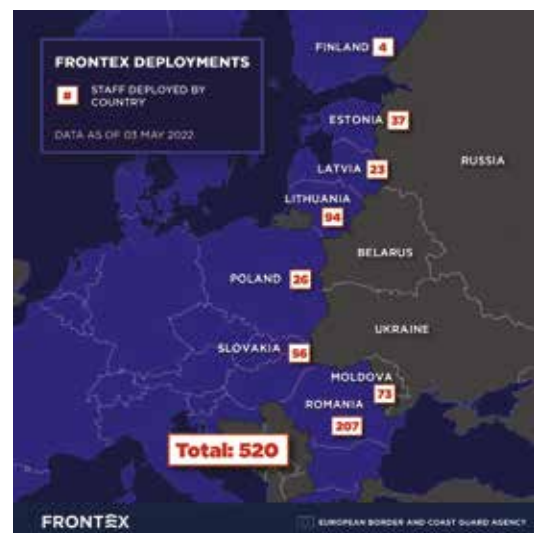
Already, in September 2021, MEPs had called for part of the 2022 Frontex budget to be frozen for as long as the agency failed to recruit 20 fundamental rights officers, establish a mechanism for reporting serious incidents at the EU’s external borders and create an operational system for monitoring fundamental rights.

Frontex has been repeatedly accused of participating in the illegal return of migrants, particularly at the border between Greece and Turkey. The Commission, however, had always supported Leggeri. Margaritis Schinas, vice-president of the Commission in charge of promoting the European way of life, had even deplored “Frontex bashing”.

These occurrences do not shed a good light at Frontex, but as they are now out in the open, improvements will follow, although it will be difficult for Frontex and for the EU, as well as for all developed countries which are ‘receiving’ countries for asylum seekers, to find a balance between domestic political voices that demand as few refugees as possible and the lofty ‘right to asylum’ as proclaimed by ‘Article 18 of the EU charter of fundamental rights’.

THE WAR IN UKRAINE

The war in Ukraine may have changed the image Europe has of itself. By May 2022, almost 6.3 million refugees have entered the EU from Ukraine and Moldova since the invasion began. The Polish and Romanian border sections continue to be the most affected. More than 3.4 million refugees arrived in Poland. However, press reports stated that passenger flows of Ukrainian citizens to EU Member states remain manageable with an average of 32 000 crossings a day. The EU’s eastern member states and especially Poland, have shown a kindness that was not expected but sorely needed.



Frontex also helps non-Ukrainian and non-EU citizens fleeing the war reach their home countries as the agency can charter aircrafts or buy tickets for commercial flights to allow them to return home. Up to 4th May, Frontex helped 725 non-EU citizens fleeing the war to return from Poland to Armenia, Azerbaijan, Kyrgyzstan, Tajikistan and Uzbekistan. ■

FRONTEX 2: FIELDS, A FRONTEX-INTERPOL DOCUMENT COOPERATION

Document fraud is recognised as a global challenge for migration management. It is the driver of many other criminal activities, such as migrant smuggling and trafficking, terrorist mobility, smuggling of drugs or weapons. At Intergraf Currency+Identity 2022 in Interpol's hometown Lyon, participants heard about the latest tool in the fight against document fraud: FIELDS, the joint effort by Frontex and Interpol to create a better and more complete document database for the border forces of their member countries. FIELDS had gone 'live' shortly before Currency+Identity, also in Lyon.

The role of Frontex is certainly not limited to having uniformed personnel at borders and on patrol ships to protect the European Union's external land and sea borders. Its remit is also to stop much more sophisticated intruders, criminals that use forged documents to ply their business from within and from without the EU.

Officers conducting first-line checks have only seconds to assess whether a document is genuine or potentially fake. Therefore, it is vital for them to know the signs to look for. For this purpose, Frontex developed, some years ago, a system to enable border agents at airports or at land or maritime crossings, to quickly compare the security features in a presented document with a reference set provided on a "Quick Check Card".

Interpol had developed its own system with a similar purpose called the Dial-Doc platform (Digital Interpol Alert Library) which made it easy for officials in any of Interpol's 190 member countries to check if a travel document is fake, through comparison with worldwide images of counterfeit documents.

At the time Interpol said that "Dial-Doc will play a central role in the swift provision of information to law enforcement agencies, particularly in the fields of border management and the fight against identity fraud, human trafficking, terrorism, and financial crime." It certainly did.

Dial-Doc became an integral part of Interpol's strategy to provide integrated solutions for border security and to offer access to an array of systems and data that help officers to prevent and combat transnational crime. Until then, Interpol member countries circulated their own 'alerts' relating to fraudulent travel documents. Dial Doc became the data processing platform regulating this information and making it accessible to all Interpol member countries. To become part of the platform, a country submitted its 'alert' to Interpol, which performed a quality control before final validation and its publication within the Interpol Information System.

With two sophisticated systems in place and available to border forces both Frontex and Interpol felt that combining and thus further improving the system would be of benefit for both sides.

In April 2022, the heads of Frontex and of Interpol launched the Frontex-INTERPOL Electronic Library Document System (FIELDS) at a demonstration of the new system at Lyon Airport. "Frontex's cooperation with INTERPOL touches upon many areas of common interests. Since Frontex's new mandate in 2019, this cooperation has intensified. FIELDS is one of its most tangible results," said Fabrice Leggeri, Frontex's head at the time

HOW DOES FIELDS WORK?

The FIELDS system provides information on security features of travel collected by Frontex. The system is designed to display original and genuine documents and the main forgeries detected on that type of document. Designed for first-line border control officers, it is a fast and easy to use search engine to support immediate operational decisions.

The system works like this: a border officer scans a traveller's document. FIELDS automatically identifies the document model and provides a Quick Check Card (QCC), showing authentic security features. The officer compares the document against the QCC and refers any suspect document for second-line processing. The images are compiled by document experts, based on risk analysis, known alerts, and the vulnerability assessment of the document.

FIELDS combines and upgrades INTERPOL's existing Dial-Doc platform to make the Frontex Quick Check Cards (QCC) available to front-line border control officers via INTERPOL's I-24/7 secure global police communications system. By covering counterfeits and forgeries, the FIELDS system complements INTERPOL's existing SLTD database of records on stolen, lost, revoked, invalid, and stolen blank documents.

In the future, the FIELDS unit will aim to integrate new features such as Artificial Intelligence and compatibility with automated border control booths. To achieve these goals and populate the database with as much relevant information as possible, INTERPOL and Frontex will continue to rely on their member countries to share document specimens and related information.

The FIELDS unit is based at INTERPOL and supported by Frontex expertise and funding, highlighting the Organizations' joint commitment to bolstering the range of border management tools available to frontline officers. ■

KEY TRENDS THAT WILL SHAPE DIGITAL IDENTITY AND SECURITY

At the beginning of this year, Thales DIS, formerly known as Gemalto, published a blog about five key trends that will shape digital identity and security in 2022. At the time, everybody, including Infosecurity's editor, was preoccupied with the Covid pandemic and Thales' predictions slipped through the net. Now almost six months after their publication it is interesting to see how true the predictions have been, although the final judgement will have to wait until the end of this year.

MEDICAL IOT WILL CONTINUE TO BE OF THE UTMOST IMPORTANCE

Much of the world is still in the grip of a global pandemic which makes leveraging all modern options for safe, resilient and flexible patient care as important as one could imagine. Remote consultations and digital treatment methods are becoming more widely adopted, and the acceptance of wearable medical devices continues to grow, which means a closer connection between patient and practitioner.

What's more, an increasing number of hospitals are adopting smart technologies, cloud platforms, and connected surgical equipment that leverage AI and real time communications to speed diagnosis, improve treatment or even to conduct remote surgery miles away while reducing costs. Of course, keeping patient data private and secure is paramount as connected healthcare takes off.

INCREASED USE OF IDENTITY WALLETS

Identity theft and financial fraud increased massively over the past couple of years, with fraudsters taking advantage of vulnerable people during the pandemic to get access to their personal information and assets. In 2020, consumers in the US alone lost over \$56bn to identity fraud. Fortunately, technologies such as digital identity wallets exist today to not only provide citizens with more peace of mind around their personal data, but also to help them access public services more easily.

2022 will see a rapid investment in digital technologies such as identity wallets. These provide a "trusted, yet convenient and scalable ways to verify and share identity data between parties in a transaction", according to *Gartner's Hype Cycle for Digital Government Technology 2021* report. Digital identity wallets promise citizens greater control over their data while offering service providers the capability for new service models that depend on sharing identity data.

With the European Commission recommending member states to issue digital identity wallets from next year, we're likely to see many EU countries starting to adopt this technology in 2022.

SUSTAINABLE PRACTICES IN FINANCE

Consumers are now more than ever demanding sustainable initiatives from businesses. Large financial institutions and banks are taking steps towards becoming greener by offering green loans to businesses. They are also encouraging consumers to adopt digital statements and online banking that help reduce the use of paper.

Incorporating practices like card recycling as well as eco-friendly products such as the Ocean Plastic Card made of reclaimed marine plastic waste collected by Parley for the Oceans, has also been front of mind for many financial services organisations in the past year. Furthermore, banks such as Italy's Findomestic have started switching their entire cards portfolio from PVC to PLA eco-sustainable cards, and in 2022 we're going to see many more following suit! By changing to sustainable card options, banks help divert plastic used in the 6 billion cards made globally from the waste stream.

ACCELERATED DIGITAL TRANSFORMATION

The digital transformation of industries that started a few years ago and was significantly accelerated by the pandemic, will continue to take central stage for many organisations this year. eKYC and enrollment systems are critical digital enablers. Combined with a rapid adoption of eSIM and 5G, these technologies will continue to reshape the operating environment and create a host of new possibilities for telecom operators.

2022 will see the introduction of even more eSIM-capable devices, enabling instant connectivity for users. Recent announcements by Apple and Visible, requiring operators to prepare for eSIM, will trigger a boost in eSIM adoption. There will also be an increase in use of eSIM in the cellular IoT domain. We'll see commercial drones gaining further momentum, with innovative use cases that are currently in pilot stages becoming mainstream. As the technology continues to mature, we'll see a growth in drone-led applications across a multitude of sectors in 2022 including delivery, energy, inspection, emergency services and agriculture.

MANDATORY MULTI-FACTOR AUTHENTICATION

Organisations have long struggled with the implementation of Multi-factor Authentication (MFA), balancing data protection against ease of use and convenience for employees. However, in 2022 huge industry players such as Google and Salesforce are deciding to make MFA a requirement to access certain services. With attacks on the rise and many other providers expected to follow suit, companies will need to rethink their relationship with the security practice, particularly in line with the rise of remote and hybrid working. ■

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Italy



1977
The Netherlands



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Austria



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1983
Italy



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Portugal



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Italy



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